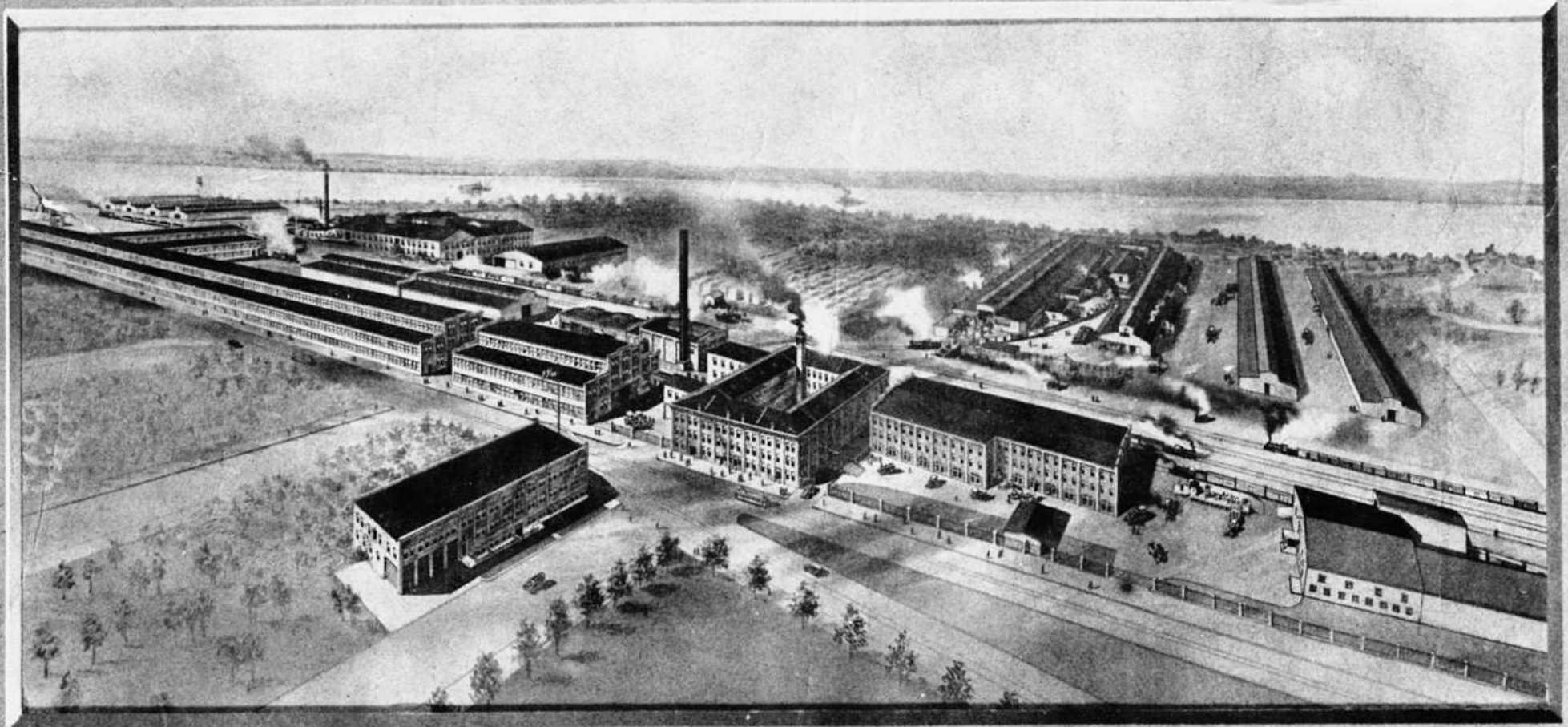




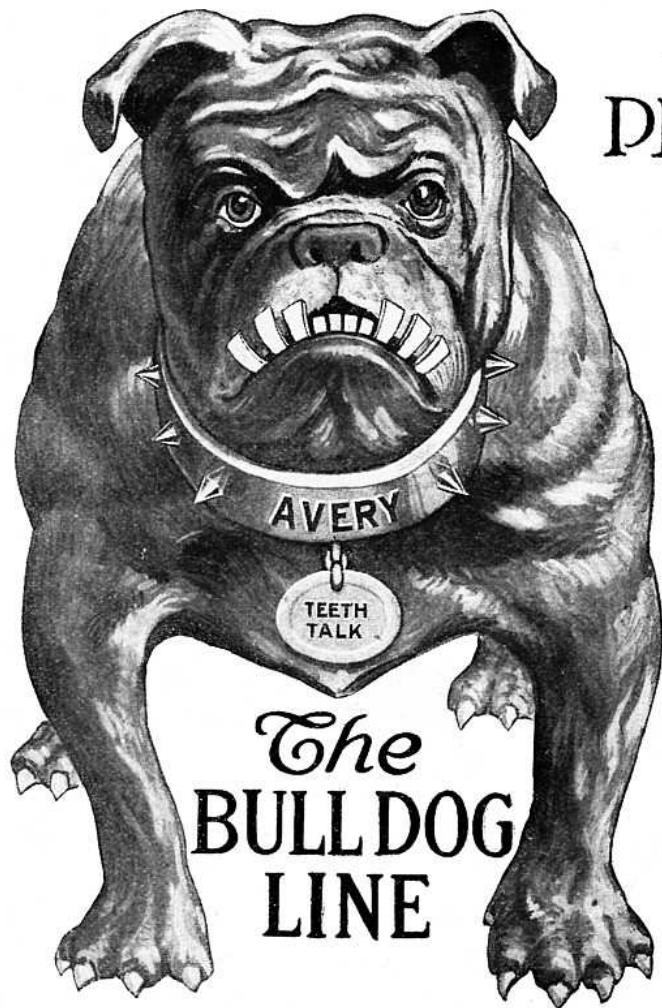
*Theres a Size Avery Thresher
to Fit Every Size Run*

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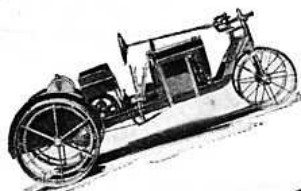
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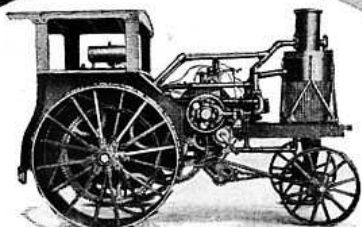
Codes "LIEBER'S" A.B.C. 5th. EDITION
WESTERN UNION.

5-10 H.P. TRACTOR
See Special Circular

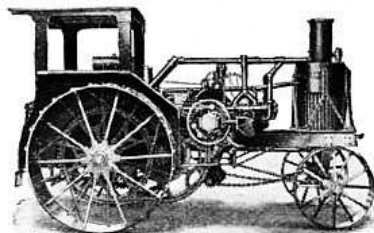


8-16 H.P. TRACTOR
See Page 14

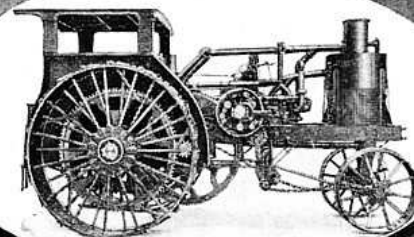
12-25 H.P. TRACTOR
See Page 15



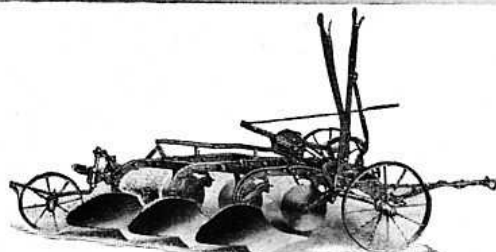
18-36 H.P. TRACTOR
See Page 16



25-50 H.P. TRACTOR
See Page 17

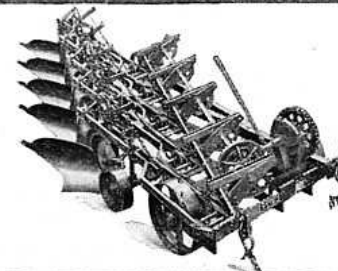


40-80 H.P. TRACTOR
See Page 18

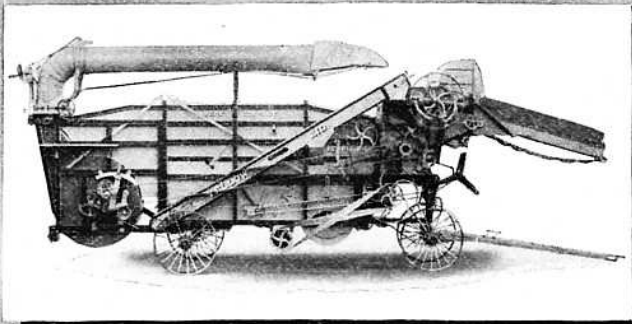


COMBINATION POWER-LIFT PLOWS
SIZES 1 and 2, 2 and 3, 3 and 4. BOTTOMS
See Pages 34 and 35.

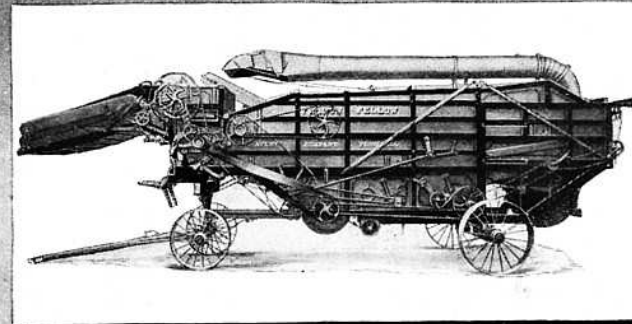
There's a Size
Avery Tractor and Plow
to Fit
Every Size Farm



INDEPENDENT BEAM SELF-LIFT PLOWS
SIZES 3, 4, 5, 6, 7, 8 and 10 BOTTOMS
See Pages 36 and 37.

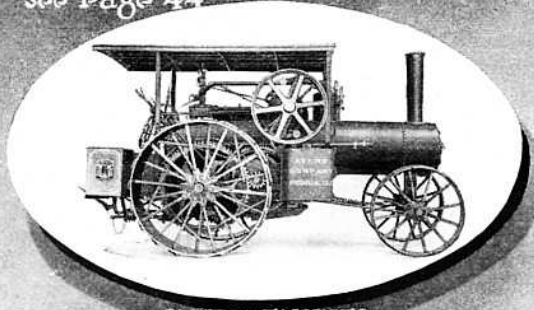


"YELLOW KID" THRESHERS
 SIZES 19x30, 22x36 and 26x40 inch
 See Page 44



"YELLOW FELLOW" THRESHERS
 SIZES 18x46, 32x54, 36x60, 42x64 and 42x70.
 See Pages 42-43.

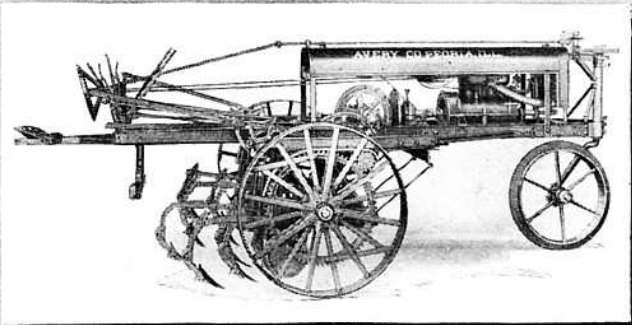
There's a Size
 Avery Thresher
 to Fit
 Every Size Run



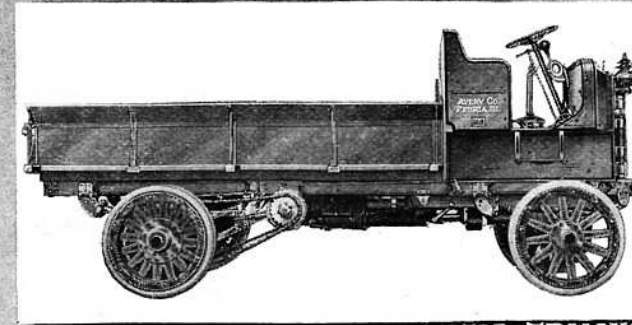
STEAM ENGINES
 SIZES 40, 50 and 65 H.P.
 See Pages 67-69



WATER and OIL TANKS
 See Page 76



TWO-ROW MOTOR CULTIVATOR
 See Pages 78-79



MOTOR TRUCKS
 See Page 77

Why It Will Pay You Better to Use a Tractor for Farming, Threshing, Road Building, Etc.

IF you use animal power exclusively for farming you must keep two sets of horses—the necessary horses for doing the ordinary work and surplus horses to help out on the heavy work. During the spring and fall months, extra power is always required for doing the heavy work, such as plowing, discing, harvesting, grain hauling, etc. It is impossible to do farm work with horse power alone without keeping surplus horses to help out on the heavy work during the rush seasons.

Because of the heavy expense of feeding these surplus horses all through the year and because even with extra horses it is impossible to do farm work at just the right time and in the best possible way, farmers began calling for some new form of power that would save them this heavy expense of feeding idle surplus horses and give them the increased power they needed. It was to meet this demand that tractors were designed.

There are four reasons why it pays better to use a tractor than to keep surplus horses: First, it will enable you to raise larger crops and save them after you raise them; second, it will save you expense; third, it will save you hard work; fourth, it will make you money by doing work not possible with horses.

Why You Can Raise Larger Crops by Farming with an Avery Tractor

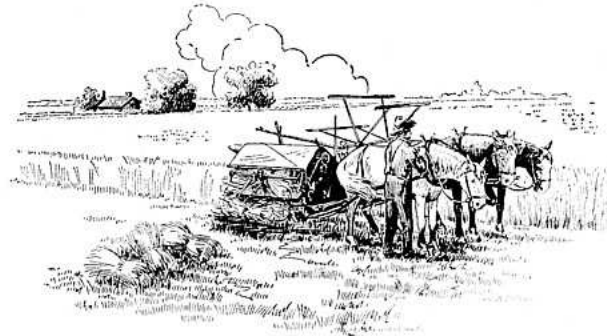
Doing the work at just the right time is now generally recognized as the most important thing necessary in preparing the seed bed. There are only a few days when the ground is in the best condition to plow, disc, harrow and plant. Right then is when you must do the work quick in order to raise the largest crops.

It is also just as necessary to do the work in the right way as at the right time. Reports from agricultural college experiment stations say that the average depth of plowing should be doubled. More discing and harrowing is constantly recommended in order to bet-

ter pulverize the ground and thus make more plant food available and save the moisture.

But to plow deeper and quicker and to disc and harrow oftener would require more horses or more time. To double the depth of plowing would require 70 per cent more horses or 70 per cent more time. You can't afford to take the time or to keep the extra horses. To keep 70 per cent more horses would increase your expense to the same amount, and to take 70 per cent more time would mean smaller crops.

Most men have realized right along, from their own experience, that doing farm work at the right time and in the right way meant bigger crops, but when it came to the question of the power to do it—there's where the rub came in. Horses cannot supply sufficient power to do farm work as it should be done—they cannot supply power in a concentrated form so that one man can handle enough with his own hands—they can only work a few hours until they must stop to eat, rest and sleep—they are soft in the spring, right when you need to push your work—they get overheated if you push them in hot weather—flies and other insects constantly bother them and reduce the work they do.

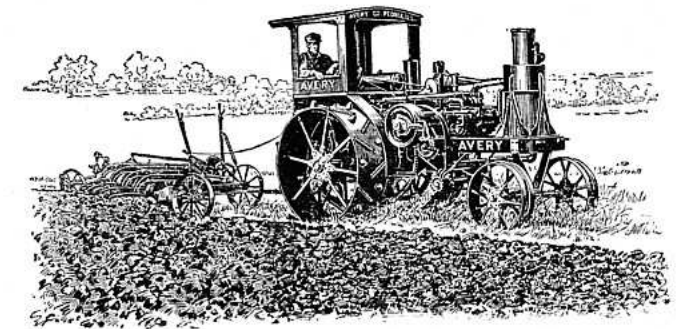


Hot Weather, Hard Ground or Long Hours Can't Stop You When You Have a Tractor, as They Do When You Use Horses.

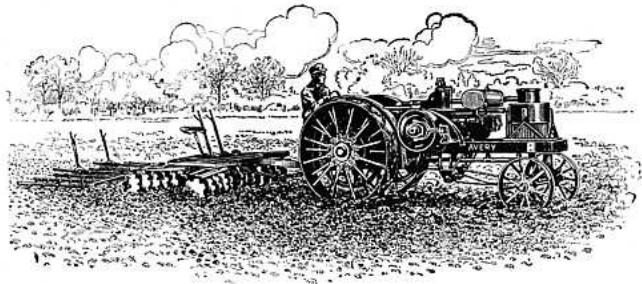
These are some of the reasons why tractors are being bought by the thousands every year—because

tractors are the only real answer to the problem of having the power you need to do all your work in the right way and at the right time and thus raise bigger crops.

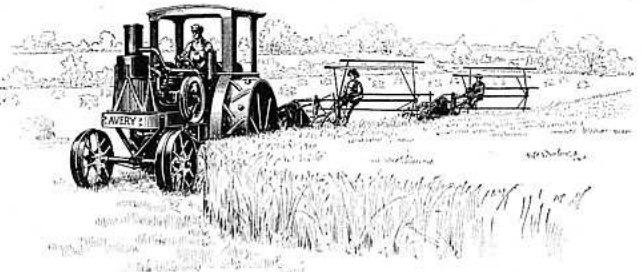
Reports from men who are using Avery Tractors in all parts of the country tell about the bigger crops they are now able to raise with tractor power. One Avery Tractor owner writes: "I put in 165 acres of wheat, which made ten bushels per acre over any wheat where the ground was prepared by horses." Another man writes: "When I threshed my wheat this fall it made twelve bushels per acre more than where horses were used." Another letter reads: "I see the tractor is the only way to do the heavy farm work, as horses cannot do the same amount of work at this cost and at the same time getting it done at the right time and in the right way." Here's another: "I am able to do my work earlier, better and in the way it should be done." Another report says: "It does the heavy work on the farm, goes down after the new soil and does a good job on a hot day." These sample cases from many similar reports show clearly that you can raise bigger crops with the tractor than with horses or mules by being able to do your work at the right time and in the right way.



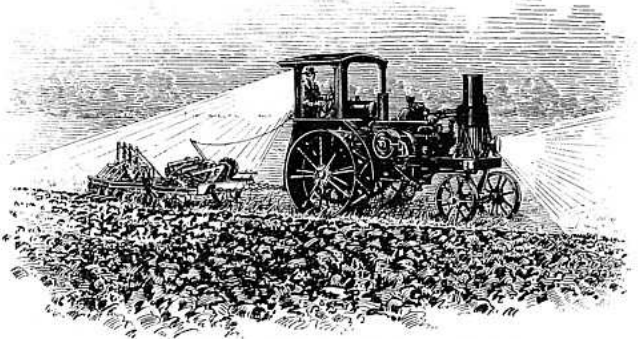
Hard Ground Can't Stop You When You Use a Tractor. You Can Plow Deep, at the Right Time, Even Though the Ground Is Hard and Dry.



With a Tractor You Can Disc and Harrow as Often as Necessary to Thoroughly Pulverize Your Ground, Save the Moisture and Get Your Seed Bed in the Best Possible Condition.



Hot Weather Can't Stop Your Tractor. You Can Harvest Quick When the Grain Is Ripe and Save Your Crop After You Raise It.



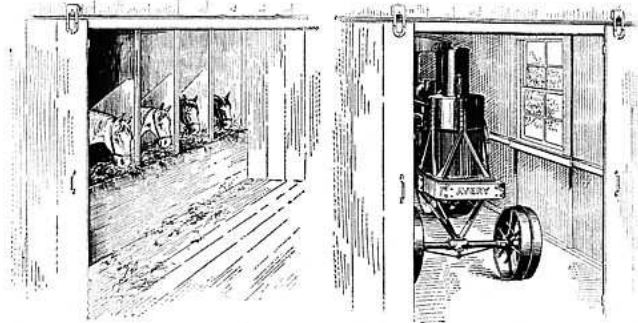
It Makes no Difference How Many Hours of the Day You Want to Work. It Will Work Just as Hard the Last Hour of the Day as the First. Or it Will Run Night and Day as Well, if You Are Rushed.

An Avery Tractor will give you the power you must have to practice the best farming methods. It will give you a lot more power—power in a concentrated form

than one man can handle—power that hot weather can't stop—and power that will work as long hours as you want to run it. An Avery Tractor gives you the power to raise bigger crops by doing all your work in the right way and at just the right time.

Why You Can Save Expense by Farming with an Avery Tractor

Farm horses only work, on the average, about 100 full days' time per year, but they eat all the time whether they are idle or working. When you farm with horses or mules, they eat about one-fourth of all you raise. It takes the crops from five acres to feed each horse.

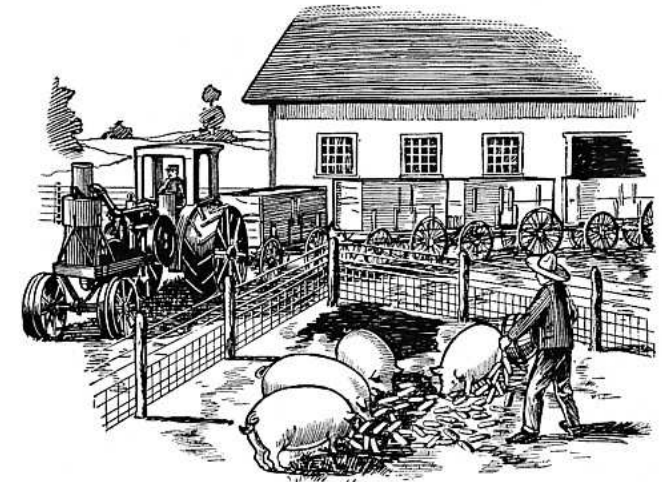


You Can't Turn a Switch and Stop a Horse Eating, Like You Can a Tractor.

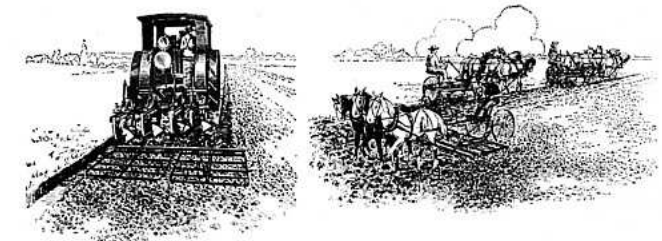
You have to feed them the other 265 days all for nothing, just to get 100 days' work out of them. It's entirely different with a tractor. When it isn't working it costs you nothing for fuel and when it is working it costs you less to do the work than to do it with animal power.

Don't feed your crops into idle extra horses any longer. Sell them—then you can haul your grain to market and sell it or feed it into profit-making hogs or cattle.

It also takes too many men to farm with horses or mules. One man cannot handle enough power with his own hands. This means extra hired help, with wages constantly increasing and men hard to get at all when you need them.



Haul Your Crops to Market and Sell Them or Feed Them Into Profit-making Hogs or Cattle.



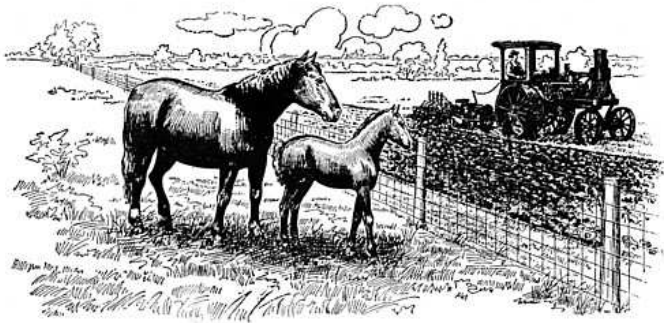
With an Avery Tractor You Can Do as Much Work Alone as Several Men Can Do With Horses.

In order to give you definite evidence of the comparative cost of farming with an Avery Tractor and with horses we sent out record blanks to a number of men who have replaced their surplus horses with Avery Tractors. The facts given in the reports they have sent us are positive evidence. They are not estimates but actual results. These reports show that the average cost of plowing with an Avery Tractor is **less than half** the cost of plowing with horses. Records of discing, harrowing, seeding, harvesting, hauling and grading also show a big saving in expense by using tractor power.

When you consider **upkeep expense** you will find that the cost of repairs for an Avery Tractor will average less than the cost of shoeing, veterinary and other expense, to keep the horses in shape. The **investment** in an Avery Tractor and Plow will average less than

the cost of horses necessary to do the same amount of work. The depreciation on an Avery Tractor from year to year should be less, if properly cared for, than with horses or mules. The life of an Avery Tractor will average, at least, as long as the working life of an average horse, and a tractor never dies. It can always be fixed, but you can't fix a dead horse with a monkey wrench like you can a Tractor. The tractor can't get overheated and die, it can't be poisoned by eating the wrong kind of food, and it isn't subject to all of the common diseases that attack and kill valuable horses without your being able to prevent them. If an Avery Tractor is given reasonable care, it will run steady right along, but you can never be sure what is going to happen with animal power.

It is argued by some as a reason for keeping surplus horses instead of using a tractor that by keeping mares they can be used for raising colts. Here's what a prominent horse breeder says: "I think too much of my good brood mares to work them during the heat of the summer on the binder or on that sure horse killer, the gang plow." You can't use brood mares for heavy work and expect them to raise big colts. Overworked mares can't raise good colts.



How a Tractor Raises Colts.

When you have a tractor it will do the heavy work and you can use your brood mares for the lighter work and raising colts. One tractor owner states his experience like this: "I have ten mares and last year only raised three colts. This year I bought a tractor and have seven colts so I have come to the conclusion that a tractor does raise colts."

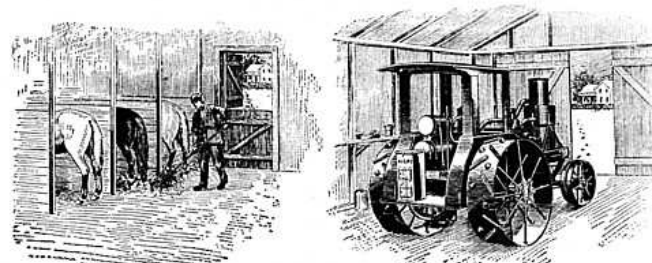
This evidence of the comparative cost of farming with an Avery Tractor and with horses, is based on

the actual experience of men who have done their work in both ways. Other men have proven that power farming with an Avery Tractor is cheaper than with horses. Why shouldn't it pay you also as well as it does them?

Why You Can Save Hard Work by Farming with an Avery Tractor

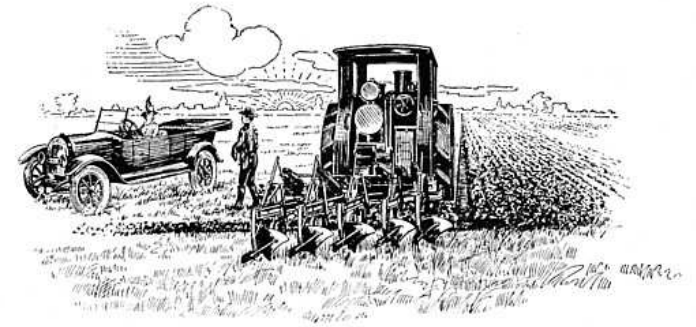
It takes too much time and hard work to care for horses and mules. In the morning you have to feed, water, curry, harness up and hitch up. At noon it's unhitch, feed, water and hitch up. At night it's unhitch, feed, water, unharness and bed. And horses have to be taken care of whether they are idle or working. They average only about 100 days' work a year and take vacations of 265 days' time—but there is no vacation for the man who has to take care of them. He must at least feed and water them every day of the year whether they are idle or working. Government investigations show that it requires 170 hours of a man's time each year to take care of one horse, or 17 full ten-hour days' time. Just to take care of four horses requires time equal to two and one-half months of ten-hour days a year.

Enjoy life more by farming with a tractor. Don't spend your time in the winter taking care of a lot of surplus idle horses. Sell them and get a tractor that doesn't take any care after you run it in the shed until you want to use it again.



A Tractor Doesn't Have to be Taken Care of When Idle Like Horses.

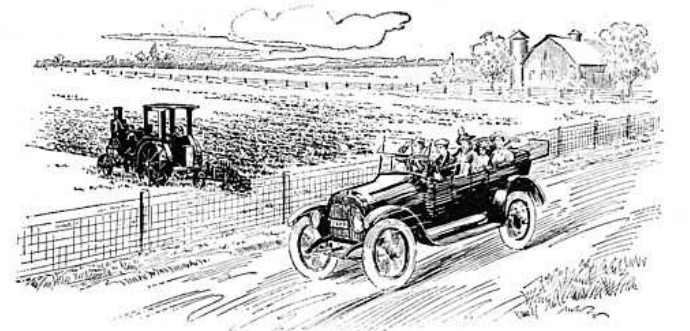
Save all the time it takes you to care for your extra horses every day and spend it instead in enjoying life more and in studying out how to farm better.



Turn the Switch at Noon or Night and You Are Through.

Your tractor will also save you a lot of hard work and time every day you use it. In the morning it will only take about as much time as to care for one horse and at noon and night all you will have to do will be to turn the switch and you are through. All the extra time it takes to feed, water, harness, curry and bed horses you can spend in more profitable work or in getting more enjoyment out of life.

And a tractor helps the mother and girls, too. It makes less hired help than where horses are used.

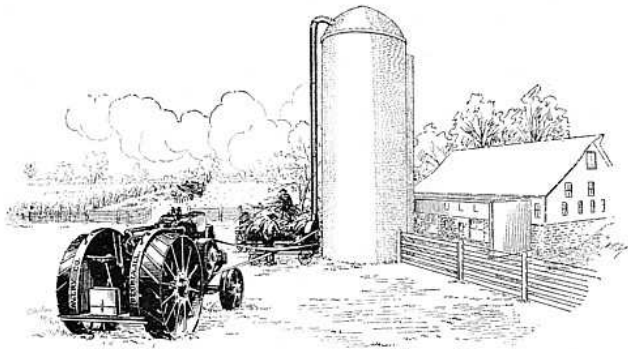


You're Through With Your Chores Early When You Own a Tractor.

Because there are less chores the whole family can get through easier and earlier at night, which means more time to spend together in the evening, more opportunity for going to entertainments, etc.

Don't keep on farming in the old, hard way when you can save yourself and family a whole lot of hard work and make the work more pleasant by adopting tractor-farming and using an Avery Tractor.

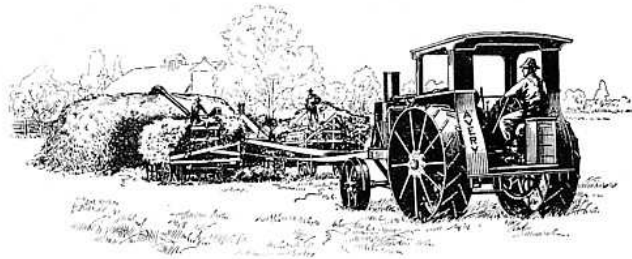
How an Avery Tractor Will Make You Money by Doing Work Not Possible with Horses



You Can Do Silo Filling With a Tractor but Not With Horses.

When you own an Avery Tractor, you not only have power for doing your field work and heavy hauling, but also for your belt work as well.

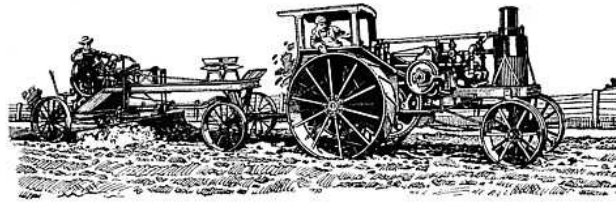
It gives you belt power for running a silage cutter, feed grinder, corn sheller, pump or any other belt-power machinery.



You Can Do Threshing With a Tractor, but Not With Horses.

You can also get an Avery "Yellow-Fellow" Separator in a size to use with any Avery Tractor. The smaller outfits make fine rigs for individual farmers, for threshermen with small runs, or for small farmer companies, while the larger sizes are built for the big runs.

Many owners of Avery Tractors also do road grading with them and make extra money in that way.



You Can Do Road Grading Much Better With a Tractor Than With Horses.

Motorize Your Farm Work

Most farmers have stationary gas engines for doing their light belt work, many have automobiles for transportation purposes. You should have both of these and, besides, a tractor to do your farm work.



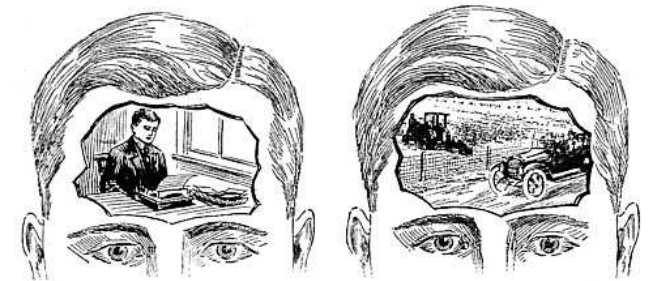
The Best Farm Power Combination.

The best solution of the farm power question is this—keep only enough horses (particularly brood mares) to do your light work—sell the rest of them and get a tractor to do your plowing and other heavy work. This combination of tractor and animal power is the best solution of the farm power question. It is the way to raise the biggest crops and do it with the least expense and hard work.

It is of particular importance, with high prices of crops, to produce all your land can possibly raise and do it with the least expense. It is not so much a question of whether or not a man can afford a tractor

as it is a question of as to how he can afford not to have a tractor.

It is usually the man who first appreciates the advantage of adopting better methods who profits most. Right now is the best time you will ever have for buying a tractor. The reasons are because, in the first place, tractor farming is a proved success. There isn't any question about farming with a tractor being a success and there isn't any question about being able to get a successful tractor. You don't need to experiment now—the experimenting has all been done. In the second place, the prices of farm products are still based on the higher cost of horse farming. What you save in production with a tractor you have as extra profit over and above your usual margin.



Get the Town Idea Out of Your Boy's Mind.

Every boy likes to handle machinery. Few boys like to curry horses. A tractor makes farm life more pleasant and interesting for every boy.

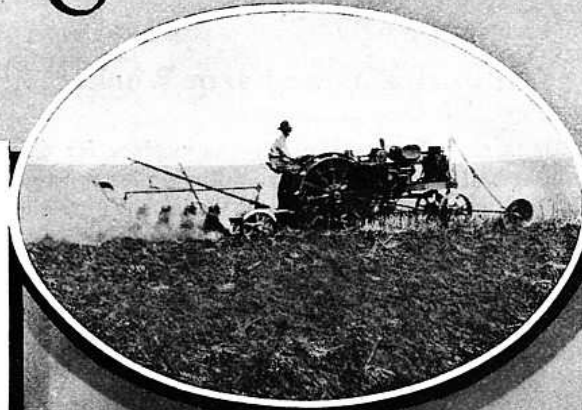
At first men bought tractors principally for plowing. Now they are used for all kinds of work. A tractor is a general all-year-around machine. In the spring you can plow, disc corn stalks, disc and harrow, drill, and pack your ground. In the summer you can harvest, thresh, make hay and do road work. In the fall you can cut silage, plow and shred corn. In the winter you can shell, saw, grind feed, do hauling and other work.

See the next pages for illustrations showing how Avery Tractors do these and other kinds of work. And following the pages of illustrations you will find detailed information about the design and construction of Avery Tractors.

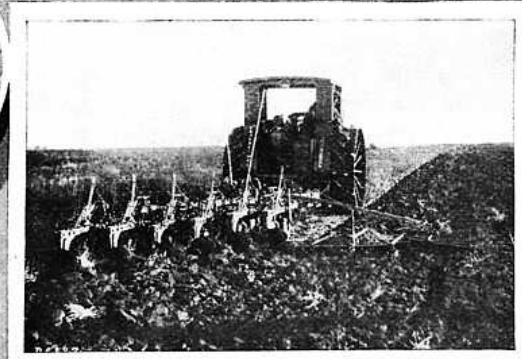
Preparing the Seed Bed



MOLDBOARD PLOWING



DISC PLOWING



PLOWING and HARROWING



PLOWING and PACKING



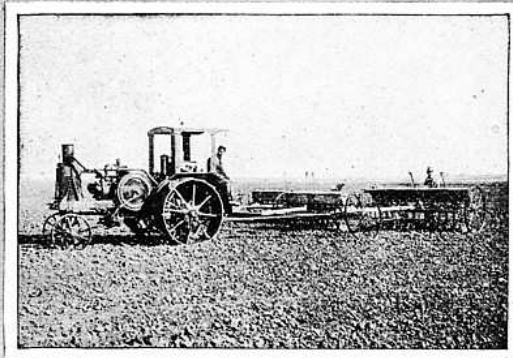
DISCING and HARROWING

YOU must plow to get a crop and then you must plow again whether you get a crop or not. In recent years we have also learned that the depth and time of plowing have a great deal to do with the size of the yield.

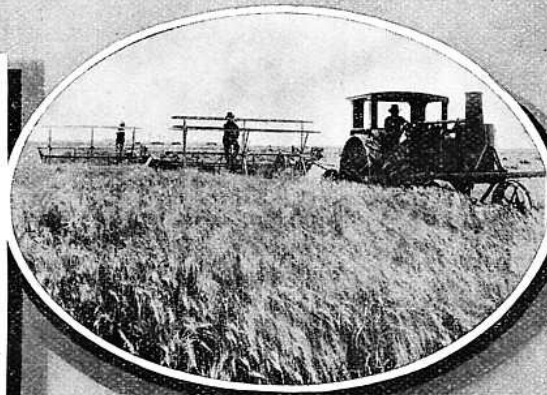
Plowing takes more power than any other kind of farm work. It was always hard to do it with horses. It is harder than ever now that we want to plow deeper and at exactly the right time.

A tractor gives a man power to plow deep and to plow quick; power that isn't stopped by hard ground, hot weather or flies; power that will run day and night if necessary; and power in a concentrated form so that one man can do as much work as two or more men with horses. And with Avery "Light-Weight" Tractors you can also disc, harrow, roll, pulverize and do all the work of preparing your seed bed.

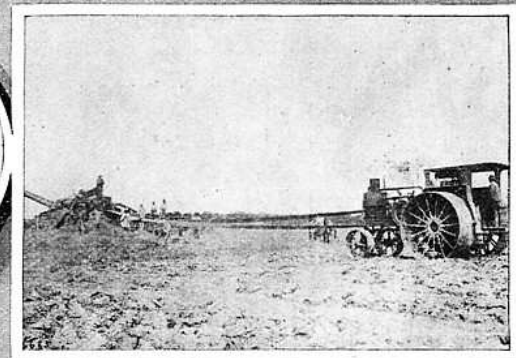
Handling the Grain Crop



DRILLING



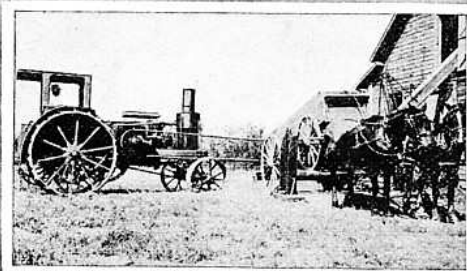
HARVESTING



THRESHING



HAULING



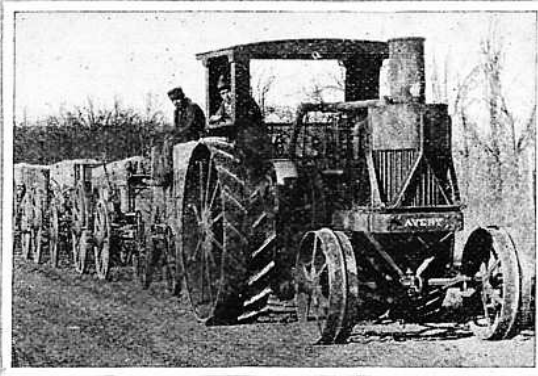
ELEVATING

THERE is no power required in raising a grain crop that a tractor cannot supply. After preparing the seed bed, the tractor will pull the drill to put the crop in, the binder or header to harvest it, the separator to thresh it, the wagons to haul it and drive the elevator to unload it.

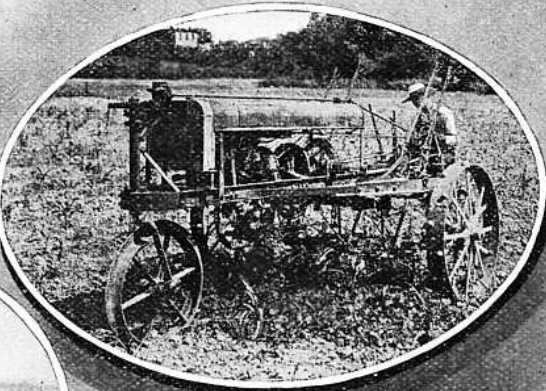
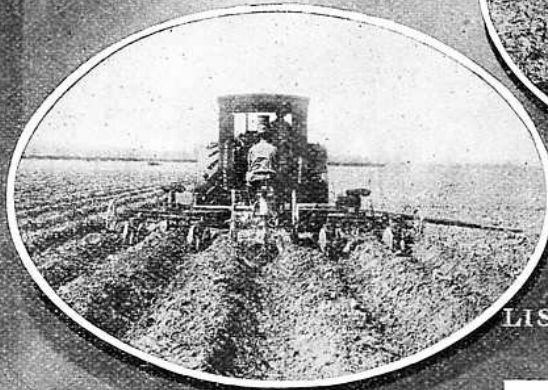
Probably there is no kind of work for which the tractor has been found more satisfactory, outside of plowing, than for harvesting. The grain must be cut quick when it is just ripe and it is then about the hottest time of the year. It's a wonderful satisfaction to cut your grain with a tractor for it doesn't have to stop to rest, eat or even sleep as do horses. A tractor saves your grain after you raise it.

And then when you have a tractor you can also get a thresher and thresh your own grain right away and then thresh as much for your neighbors as you want to. There's a size Avery Thresher to fit each of the five sizes of Avery Tractors from the 8-16 to the 40-80 H. P.

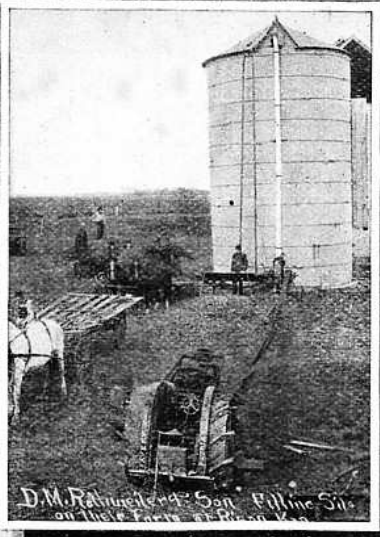
Handling the Corn Crop



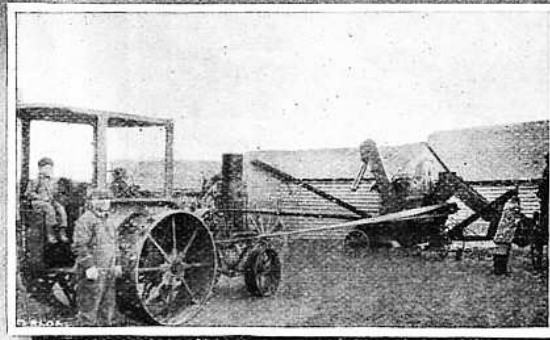
HAULING



CULTIVATING



SILAGE CUTTING



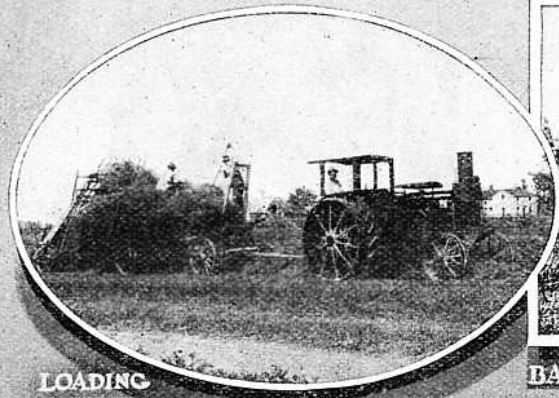
SHELLING

LISTER

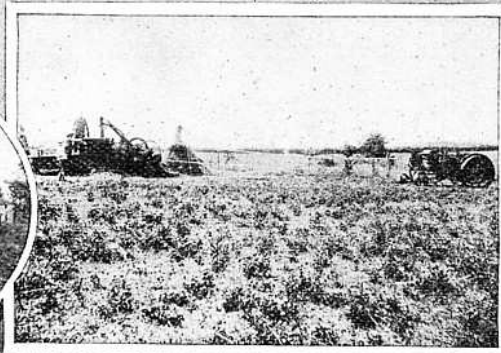
IT is possible to handle your corn crop entirely with motor power if you wish. You can pull a lister with planting attachments and plant your corn. Then cultivate your crop with an Avery Two-Row Motor Cultivator. In the fall you can pull a corn binder or a corn picker with your tractor and harvest your corn crop. After harvesting you can belt up your tractor to a silage cutter, shredder, sheller or feed grinder and get your corn crop ready to feed in any way you wish, or ready for market. If you wish to market it you can also haul it with your tractor.

It was not thought at first that a tractor could do so much in handling the corn crop but it has been found that it is of almost if not equally as much value in handling the corn crop as the grain crop. It is this fact which is now causing corn belt farmers everywhere, who at first hesitated about using tractor power, to become strong advocates of tractor farming and to buy tractors in large numbers.

Handling the Hay Crop



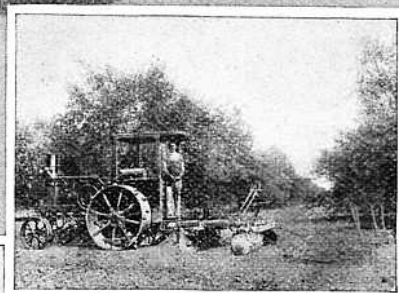
LOADING



BALING

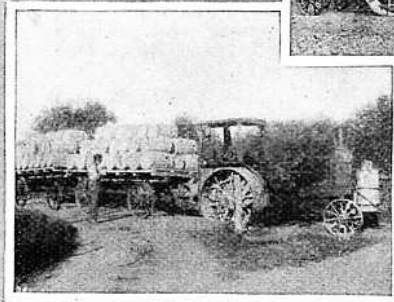


HAULING

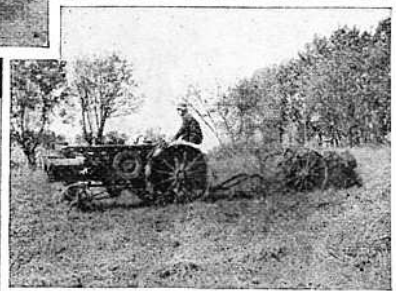


CULTIVATING

Handling Fruits and Vegetables



HAULING



DIGGING POTATOES

QUITE a number of tractor owners use their tractors to mow their hay. Many more of them use their tractors to pull their hay loaders and to do their hauling. Of course if the hay is to be baled the tractor will also furnish the belt power.

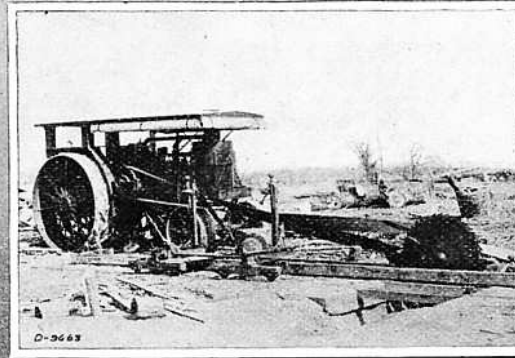
Men who have orchards or raise potatoes on a large scale are rapidly adopting tractor power to do their work. Those who already have them say that a tractor makes it possible to cultivate an orchard much better than it can possibly be done with horses. Pulling a potato digger is also a hard job for horses but an easy one for a tractor. Then of course you can haul your crop anywhere you wish with the tractor.

An Avery tractor turns short and the question of using it is largely only a question of getting the tools you wish to use properly attached.

Miscellaneous Work



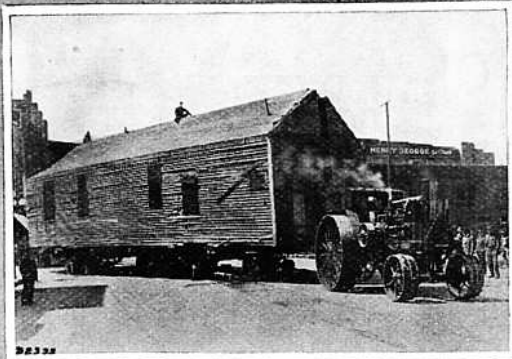
STUMP
PULLING



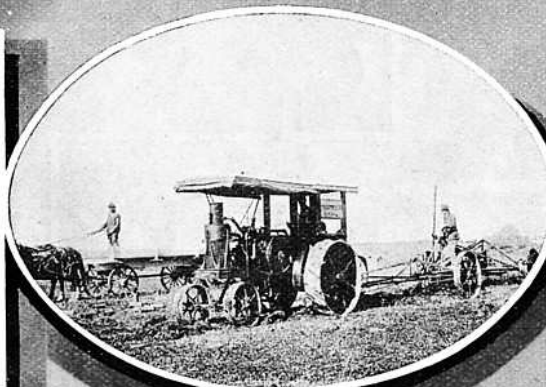
SAWING



WELL
DRILLING



HOUSE MOVING



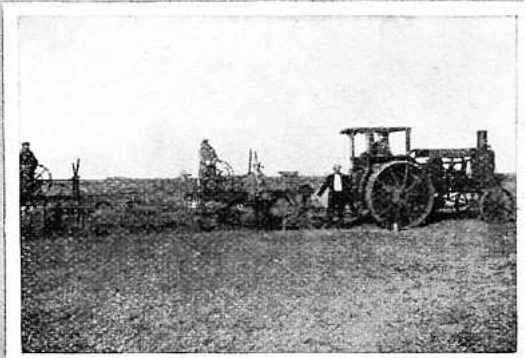
DITCHING

IT would be almost impossible to list all the general kinds of farm work that are being done with tractors. They are all-around traction and belt power machines and can be used for supplying almost every kind of power required on the farm.

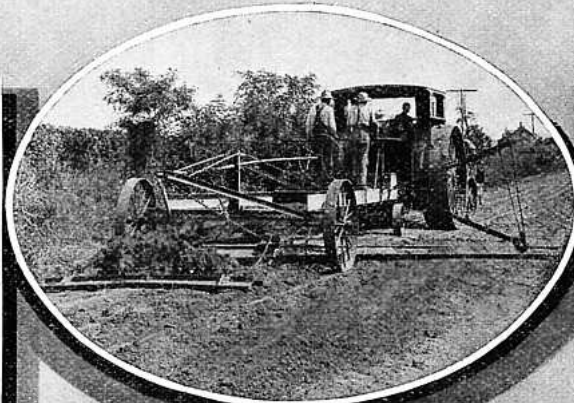
You can use a tractor for pulling a manure spreader, pulling stumps, moving houses, stretching fence wire, sawing wood, pulling a tile machine, well drilling and almost anything else you have to do.

Most men who buy tractors find after they have them that they use them for many more kinds of work than they at first intended when they bought. And they also learn that the extra power they have is of great advantage to them in doing their work.

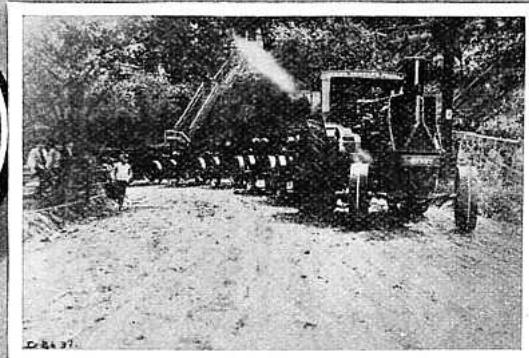
Road Making and Hauling



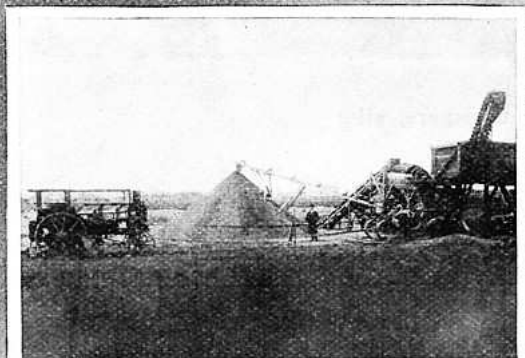
GRADING



LEVELING



HAULING



ROCK CRUSHING



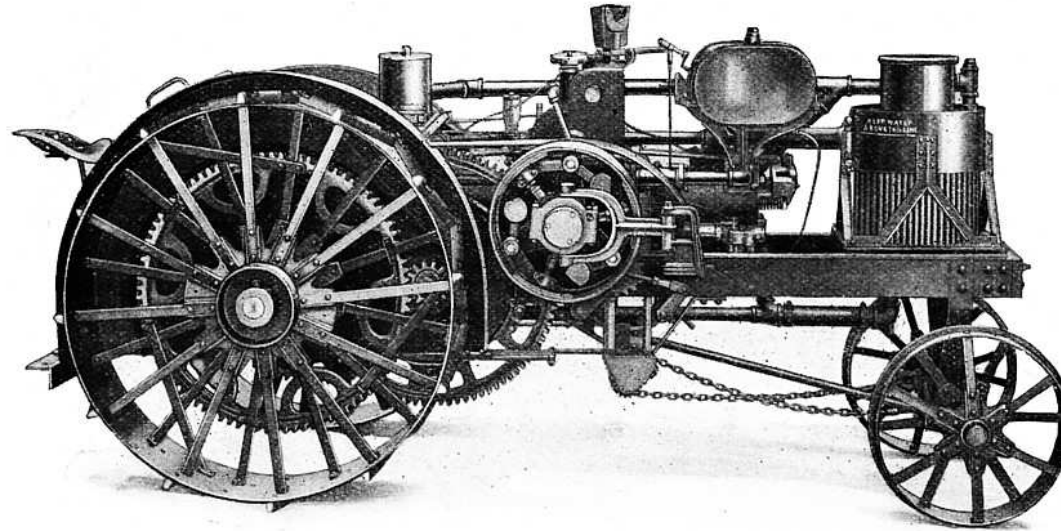
GENERAL HAULING

TRACTORS are certain to almost entirely supplant horses for doing road work. The steady pull required in grading, leveling and hauling road materials is too much for horse power. And when you hitch enough horses on to a road grader or a big leveler you have an awkward outfit to drive and turn around. It also requires too many men to handle such an outfit. But a tractor gives you a lot of power, concentrated in a small form that one man can readily handle.

A tractor will do the grading, leveling and hauling, and besides this you can also get a road roller attachment and do road rolling as well.

We publish a special road building circular that will tell you what others are doing with Avery tractors. They are being bought in large numbers by counties, townships and by individuals having road contracts.

Five Sizes. One Design. The Only Standardized Line of Tractors



Avery 8-Drawbar, 16-Belt H. P. Tractor

For pulling 3 mold board plows, 4 disc plows—driving 19 x 30-inch threshers, silo fillers, etc., and for other field, belt, hauling and road work.

SPECIFICATIONS:

MOTOR

Number of Cylinders.....	2
Bore of Cylinders, inches.....	5½
Stroke, inches.....	6
Revolutions per Minute.....	600
Diameter of Crankshaft bearings, inches..	2¾
Length of Crankshaft Bearings, inches..	5⅞ & 5¾
Diameter of Belt Pulley, inches.....	19½
Face of Belt Pulley, inches.....	7
Capacity of Fuel Tank, gallons.....	14

GEARING

Face of Crankshaft Pinion and Compensating Gear, inches.....	2
Face of Bull Gears and Pinions, inches..	3
Miles per Hour, on low gear.....	1¾
Miles per Hour, on high gear.....	3

WHEELS

Front Wheels, diameter, inches.....	24
Front Wheels, face, inches.....	6
Rear Wheels, diameter, inches.....	50
Rear Wheels, face, inches.....	12
Special Rear Wheel Extensions, inches...	6

SHAFTING

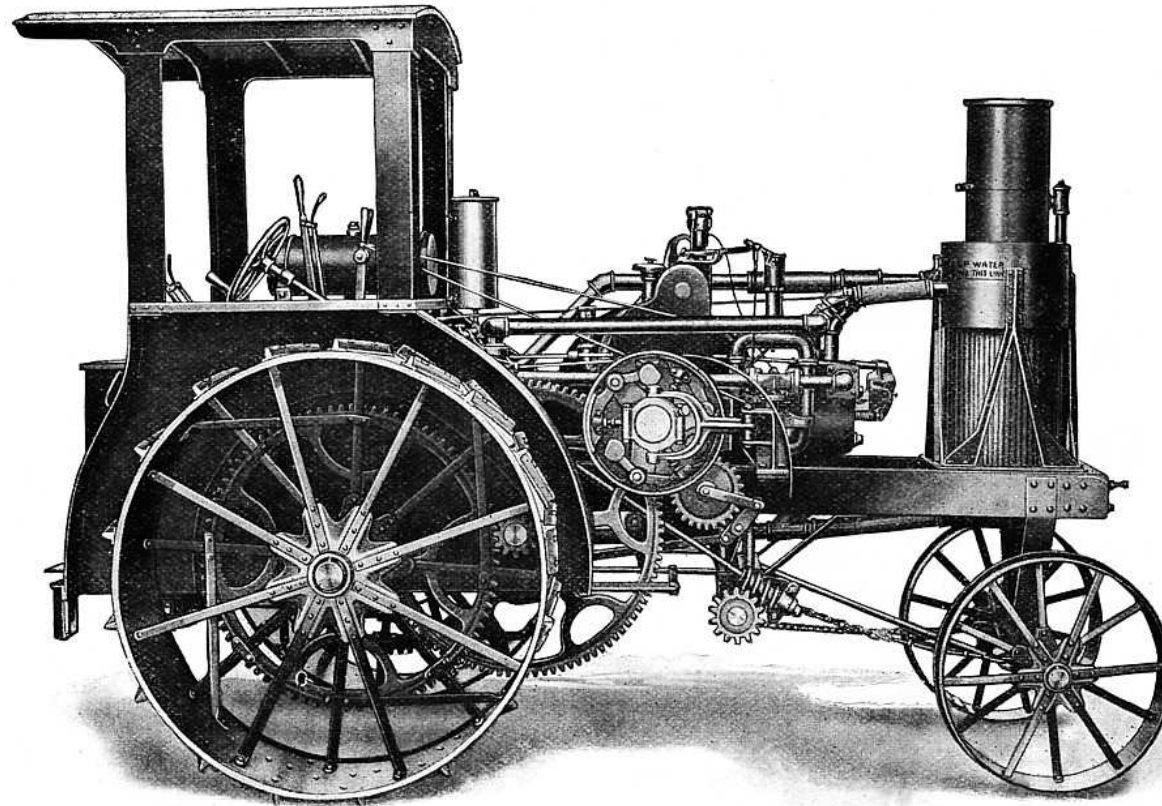
Rear Axle, diameter, inches.....	2½
Front Axle, diameter, inches.....	2
Countershaft, diameter, inches.....	2

MISCELLANEOUS

Extreme Width, inches.....	56
Extreme Length, inches.....	130
Extreme Height, inches.....	53
Shipping Weight, pounds.....	4,900

The Avery Duplex Gasifier Turns Kerosene Into Gas

See Page 22



Avery 12-Drawbar, 25-Belt H. P. Tractor

For pulling 4 mold board plows, 6 disc plows—driving 22 x 36-inch threshers, silo fillers, etc., and for other field, belt, hauling and road work.

SPECIFICATIONS:

MOTOR

Number of Cylinders	2
Bore of Cylinders, inches.....	6½
Stroke, inches	7
Revolutions per Minute.....	570
Diameter of Crankshaft Bearings, inches.....	3¼
Length of Crankshaft Bearings, inches..	6 & 7¼
Diameter of Belt Pulley, inches.....	19½
Face of Belt Pulley, inches.....	7
Capacity of Small Fuel Tank, gallons....	6¾
Capacity of Large Fuel Tank, gallons....	14

GEARING

Face of Crankshaft Pinion and Compensating Gear, inches.....	2½
Face of Bull Gears and Pinions, inches..	3
Miles per Hour, on low gear.....	1¾
Miles per Hour, on high gear.....	2¾

WHEELS

Front Wheels, diameter, inches.....	30
Front Wheels, face, inches.....	8
Rear Wheels, diameter, inches.....	56
Rear Wheels, face, inches.....	20
Special Rear Wheel Extensions, inches..	8

SHAFTING

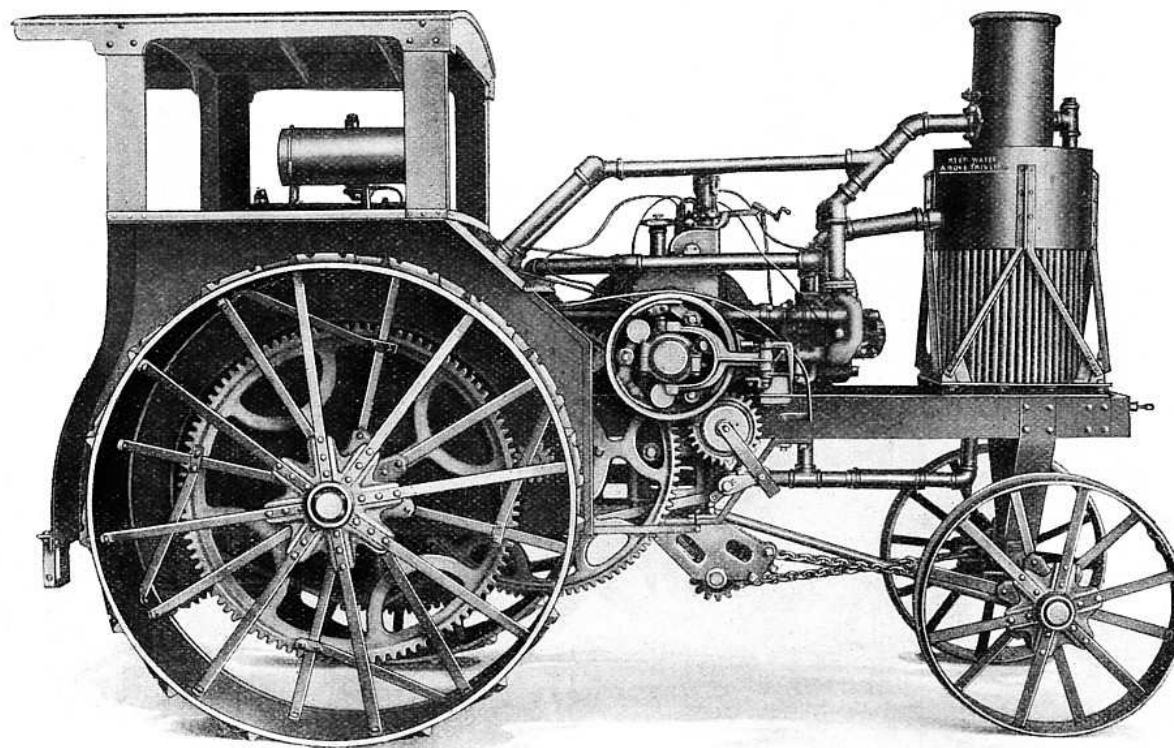
Rear Axle, diameter, inches.....	3
Front Axle, diameter, inches.....	2
Countershaft, diameter, inches.....	2½

MISCELLANEOUS

Extreme Width, inches	80
Extreme Length, inches	164
Extreme Height, inches	105
Shipping Weight, pounds	7,500

The Only Tractors With Renewable Inner Cylinder Walls

See Page 21



Avery 18-Drawbar, 36-Belt H. P. Tractor

For pulling 5 mold board plows, 8 disc plows—driving 28 x 46-inch threshers, silo fillers, etc., and for other field, belt, hauling and road work.

SPECIFICATIONS:

MOTOR

Number of Cylinders.....	4
Bore of Cylinders, inches.....	5½
Stroke, inches	6
Revolutions per Minute.....	650
Diameter of Crankshaft Bearings, inches.....	3¾
Length of Crankshaft Bearings, inches..	5½ & 7¼
Diameter of Belt Pulley, inches.....	18
Face of Belt Pulley, inches.....	8
Capacity of Small Fuel Tank, gallons....	6
Capacity of Large Fuel Tank, gallons....	27

GEARING

Face of Crankshaft Pinion and Compensating Gear, inches.....	3
Face of Bull Gears and Pinions, inches..	4
Miles per Hour, on low gear.....	2
Miles per Hour, on high gear.....	3

WHEELS

Front Wheels, diameter, inches.....	35
Front Wheels, face, inches.....	8
Rear Wheels, diameter, inches.....	65
Rear Wheels, face, inches.....	20
Special Rear Wheel Extensions, inches..	8

SHAFTING

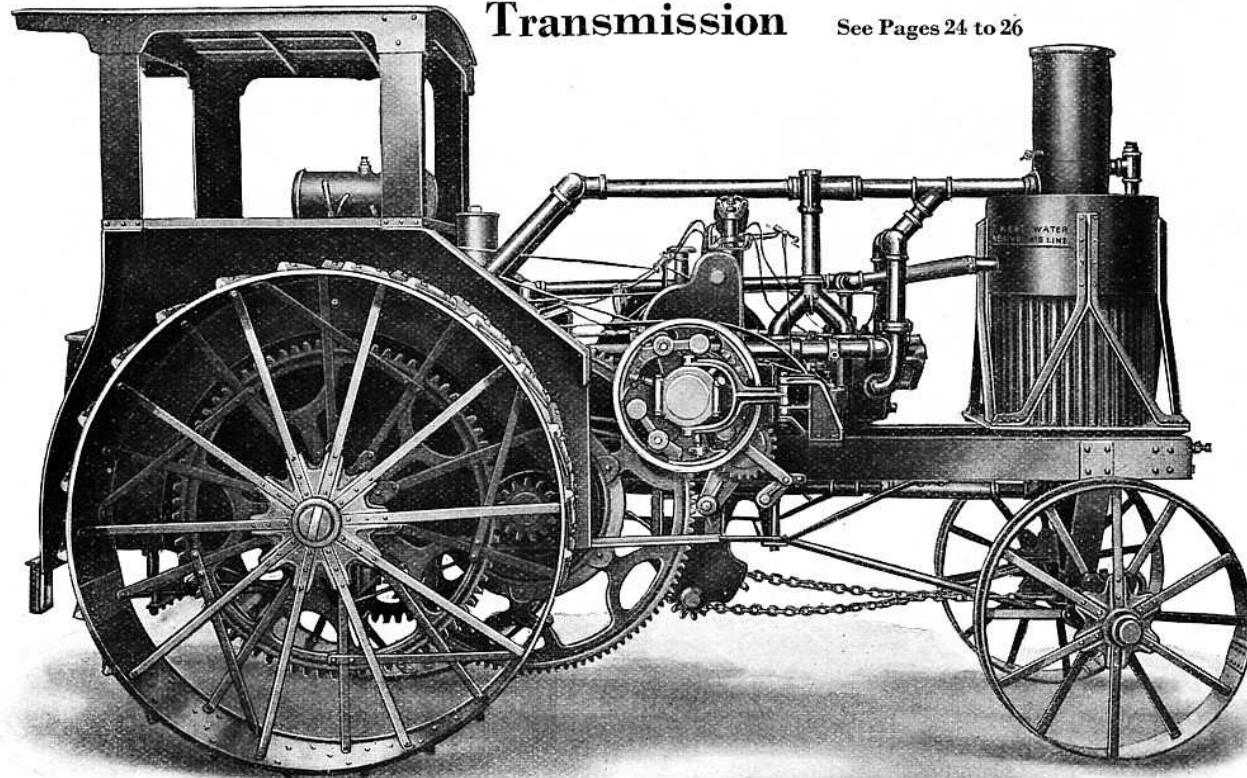
Rear Axle, diameter, inches.....	3
Front Axle, diameter, inches.....	2½
Countershaft, diameter, inches.....	2½

MISCELLANEOUS

Extreme Width, inches	84
Extreme Length, inches	152
Extreme Height, inches	105
Shipping Weight, pounds	9,250

The Only Tractors with a Sliding Frame, Two-Speed, Double Drive, All Spur Gear Transmission

See Pages 24 to 26



Avery 25-Drawbar, 50-Belt H. P. Tractor

For pulling 6 mold board plows, 12 disc plows—driving 32 x 54-inch threshers, silo fillers, etc., and for other field, belt, hauling and road work.

SPECIFICATIONS:

MOTOR

Number of Cylinders	4
Bore of Cylinders, inches	6 $\frac{1}{2}$
Stroke, inches	7
Revolutions per Minute.....	500
Diameter of Crankshaft Bearings, inches	3 $\frac{3}{4}$
Length of Crankshaft Bearings, inches..	6 $\frac{5}{8}$ & 7 $\frac{1}{2}$
Diameter of Belt Pulley, inches.....	22
Face of Belt Pulley, inches.....	8 $\frac{1}{2}$
Capacity of Small Fuel Tank, gallons....	6
Capacity of Large Fuel Tank, gallons....	27

GEARING

Face of Crankshaft Pinion and Compensating Gear, inches.....	3
Face of Bull Gears and Pinions, inches..	4
Miles per Hour, on low gear.....	2
Miles per Hour, on high gear.....	3

WHEELS

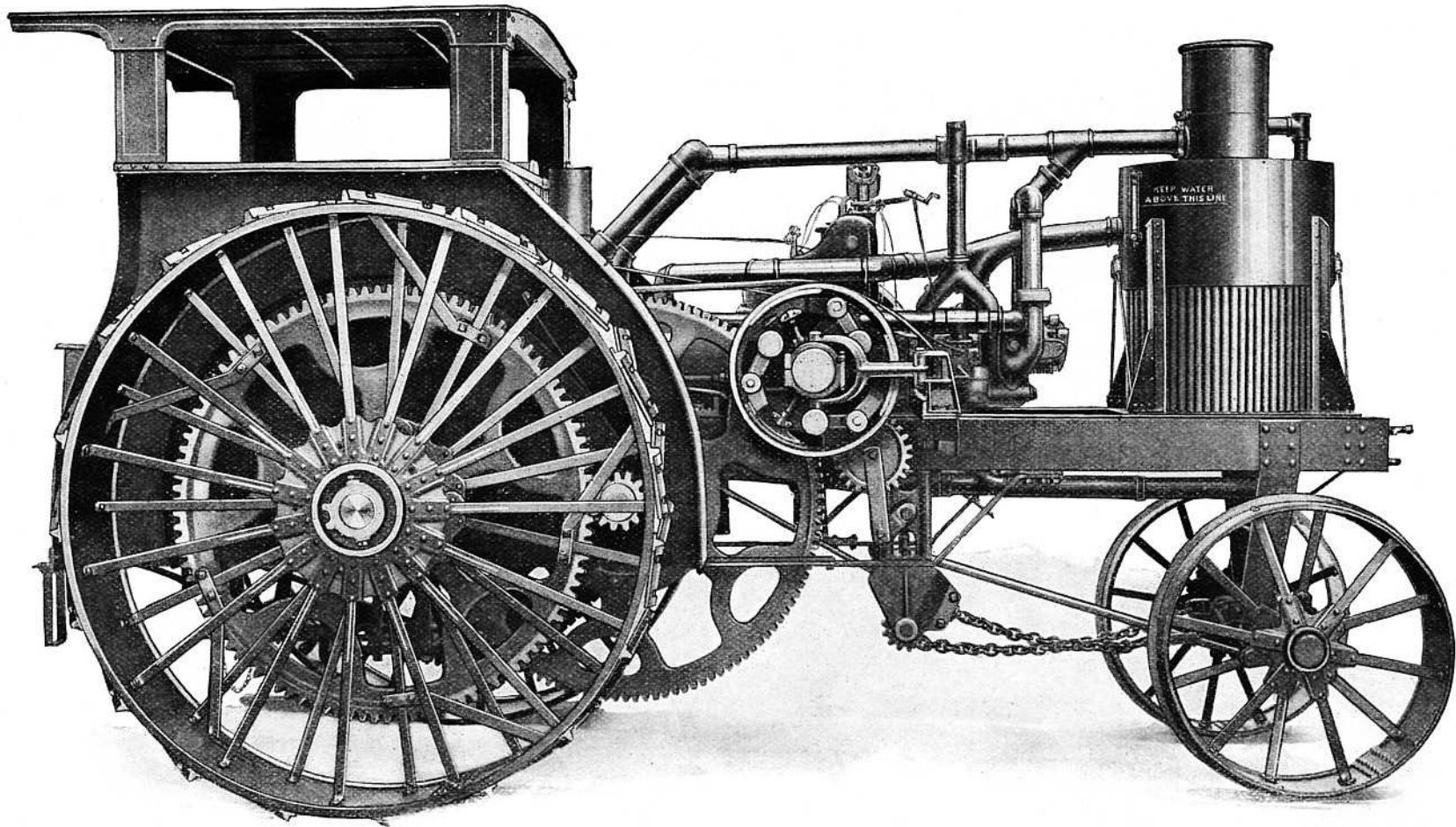
Front Wheels, diameter, inches.....	38
Front Wheels, face, inches.....	10
Rear Wheels, diameter, inches.....	69
Rear Wheels, face, inches.....	20
Special Rear Wheel Extensions, inches...	8

SHAFTING

Rear Axle, diameter, inches.....	3 $\frac{1}{2}$
Front Axle, diameter, inches.....	2 $\frac{1}{2}$
Countershaft, diameter, inches.....	3

MISCELLANEOUS

Extreme Width, inches	90 $\frac{1}{2}$
Extreme Length, inches	176
Extreme Height, inches	108
Shipping Weight, pounds	12,500



Avery 40-Drawbar, 80-Belt H. P. Tractor

For pulling 8-10 mold board plows, 16-21 disc plows—driving 36 x 60, 42 x 64 and 42 x 70-inch threshers, and for other field, belt, hauling and road work.

SPECIFICATIONS:

MOTOR

Number of Cylinders	4
Bore of Cylinders, inches.....	7 ³ / ₄
Stroke, inches	8
Revolutions per Minute.....	500
Diameter of Crankshaft Bearings, inches	4 ¹ / ₂
Length of Crankshaft Bearings, inches..	9 & 9
Diameter of Belt Pulley, inches.....	26
Face of Belt Pulley, inches.....	10
Capacity of Small Fuel Tank, gallons....	6 ³ / ₄
Capacity of Large Fuel Tank, gallons....	44

GEARING

Face of Crankshaft Pinion and Compensating Gear, inches	5
Face of Bull Gears and Pinions, inches..	6
Miles per Hour, on low gear.....	1 ³ / ₄
Miles per Hour, on high gear.....	2 ² / ₃

WHEELS

Front Wheels, diameter, inches.....	42
Front Wheels, face, inches.....	16
Rear Wheels, diameter, inches.....	87 ¹ / ₂
Rear Wheels, face, inches.....	24
Special Rear Wheel Extensions, inches...	12

SHAFTING

Rear Axle, diameter, inches.....	5
Front Axle, diameter, inches.....	3 ¹ / ₂
Countershaft, diameter, inches.....	4

MISCELLANEOUS

Extreme Width, inches	111 ¹ / ₂
Extreme Length, inches	215
Extreme Height, inches	121
Shipping Weight, pounds	22,000

Why It Will Pay You Best to Get an Avery Tractor

WHEN you buy a horse you ask how old he is and then you look at his teeth to see whether the facts bear out the answer that you get. You inquire about his weight and then drive him across a scale to make sure. You ask about how he travels and then hitch him up and drive him around to make certain that he has the kind of action that is claimed for him. You know what a good horse is and you investigate the facts behind the claims that are made.

Buying a tractor is just like buying a horse. Of course, men have not had so much experience in buying tractors, but by careful investigation and comparison you can find out what points are necessary to make a good tractor, and then by carefully investigating the claims for each machine you can determine the tractor which has the features you want.

The Design and Construction of Avery Tractors

You should study the design and construction of a tractor from two points of view—first, the design and construction of the individual units, and, second, the results of the combination of these into the complete machine.

There are nine units in every tractor—

Motor	Oiling System	Transmission
Fuel System	Cooling System	Frame
Ignition System	Clutch	Wheels

You should investigate the design and construction of each of these nine units and then should consider how well they are combined into the complete tractor to produce these nine results—

Durability	Light Weight	Economy
Reliability	Power	Accessibility
Simplicity	Speed	Ease of Handling

It is no easy thing to build a tractor where every part—motor, fuel system, ignition system, oiling system, cooling system, clutch, transmission, frame and wheels—are each so designed as individual units, and so combined into the complete machine as to produce a tractor that possesses durability, reliability, simplicity, light weight, power, speed, economy, accessibility and ease of handling. A chain with a broken link is useless. A boat with a hole in it will sink, even though the rest of the boat may be all right. So it is with a tractor—if any part fails, the whole tractor fails.

On the following pages you will find full detailed illustrations and discussion of the design of the nine units in an Avery Tractor and the results of the combination of these into the complete machine.

Even without a detailed investigation, however, of all of the facts about Avery Tractors, this one thing

stands out strongly as proof of the success of the Avery design—that **Avery Tractors are the only make built in five sizes all alike.** When a company starts building one size tractor and then, because of its success, builds another size, then another, then another and then another, until it has five sizes all of the same design, it is proof in itself that that design must be successful, otherwise it would be changed or the company would not be successful. The fact that the Avery Company is the only company building five sizes of tractors all of the same design is strong proof in itself of the superiority of Avery Tractors.

Most other companies building new sizes of tractors are building them of a different design than their former tractors, which is an admission of the failure of their former design, and the best that can be said of any new design is that it is an experiment.

The Tests That Have Been Made of Avery Tractors

A tractor may appear to have a good design and construction and yet not show up as one would think when it comes to the actual test.

There are three kinds of tests which you should investigate—first, those made by the company itself; second, those made in public competition; and, third, those made by the users of the tractor.

We do not believe that any company has more efficient testing apparatus than the Avery Company, or that any company subjects its machines to a more thorough test before shipping them out to the customer. We are always glad to have anyone visit our factory and see how we test our machines.

You will always find Avery Tractors entered in every important contest and demonstration. We are always glad to show them in competition with other makes. They were the only make entered in every Winnipeg Motor and Plow Contest and have been entered in every important tractor demonstration held since the Winnipeg Contests.

Avery Tractors have also met the test of actual field use in the hands of owners and have proven themselves to be what we claim for them. They were introduced and sold for three years on a sold-on-approval policy, to be paid for only after they had made good in the field and been accepted by the purchaser.

They are the only make which has been proven out by all of these tests. They have met every kind of a test that is known and have proved that they will do all we claim for them and even more.

The Avery Selling Plan

We guarantee and stand behind Avery Tractors and are in position to back up the guarantees we give.

Avery Tractors are sold at low prices. We are able to make these low prices for the following reasons: First, Avery Tractors have the simplest construction of any. Second, they are built in large quantities in our own large factory, with modern equipment. Large quantity production in our own factory makes possible a low manufacturing cost. Third, owing to the degree to which Avery Tractors have been perfected, there is comparatively little service work required in connection with them. Fourth, the Avery Company has also perfected its selling methods to the place where we are able to market our machinery at the least expense considering the giving of real service to our customers after they get the machinery. Fifth, our cash prices save you the amount necessary to add to cover the average collection expenses and losses on time deals.

We urge you to compare Avery Tractors with others on the basis of quality plus service for the price.

The Company Behind an Avery Tractor

Who and what is back of it is as important a question to consider about a tractor as it is to consider the pedigree of an animal. Men are coming more and more to realize the importance of the company behind the tractor they buy.

There are five things of which you should satisfy yourself about any company whose tractor is offered you—first, the **experience** of the company; second, the **spirit**; third, the **factory**; fourth, the **methods**; and, fifth, the **service**.

The **experience** of the Avery Company in building tractor farming machinery has extended over many years—in fact, the Avery Company was the first company in this country now manufacturing tractors and plows to design and build a power plowing outfit. We are, however, never satisfied. Our designing department is constantly at work endeavoring to make Avery Tractors even more successful than they are. It is this **progressive spirit** and policy which has made the Avery line so successful. The Avery Company owns its own **large and up-to-date factory** where Avery Tractors are built under careful supervision. The Avery **policy** in dealing with its customers is "A Good Machine and a Square Deal." We are proud to refer you to those who are already our customers as to our methods. And we do not stop with simply building and selling you a machine—we have established our own branch houses at points most convenient for our customers, where we carry complete repair stocks and have our own service men ready to take prompt care of you in case you need any help or repairs. Avery Tractors are backed by **prompt and permanent service**.

The Avery Motor

(The First Unit in a Tractor)

Why Avery Tractors Have Opposed Motors

BECAUSE of the fact that stationary gas engines and automobiles were developed in advance of the tractor, it has been easy for almost anyone to buy a motor and mount it on wheels and call it a tractor. But there is a great deal of difference between such an assembled machine and a tractor where the motor and every other part were designed especially and exclusively for tractor use. It is easy enough to assemble a machine using a stationary gas engine or automobile motor but when put to actual tractor use the faults of such motors at once begin to show up.

There are four types of motors used in tractors—the single cylinder, twin cylinder, automobile type and opposed motor. We will discuss here all four kinds of motors and show why Avery Tractors are built with opposed special tractor motors.

The single cylinder motor. It is not necessary to spend much time in discussing the disadvantages of the single cylinder stationary gas engine when used as a tractor motor. It is entirely too heavy for the power it develops. It is unbalanced, which makes necessary the use of counterweights on the crankshaft, and even with them it is impossible to vary the speed to any great degree.

The twin cylinder motor. This type of motor is no more nor less than two stationary gas engine cylinders placed side by side. It has the same faults as the single cylinder engine—it cannot be made to balance and run at greatly varied speeds, which is necessary in a successful tractor. Furthermore, the placing of the two cylinders side by side makes the motor wider than it should be for the best mounting in a tractor frame.

The automobile type motor. The automobile type motor was built to be carried on spring mounted axles and pneumatic rubber tires—it was not built to stand the shocks of rigid axles and solid steel

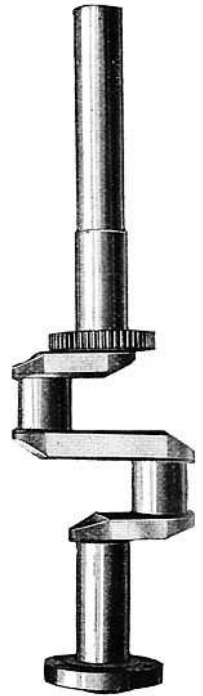
tires or to pull a heavy load behind, as is required of a tractor motor. Again, an automobile motor was not built to develop regularly anywhere near as large a percentage of its power as is required in a tractor motor. An automobile motor must develop an average of only about 25 to 33 1/3% of its rated horse power while a tractor motor must develop up to 80% of its horse power almost steadily for hours at a time. One authority says, "An automobile motor running on low gear up a heavy, sandy grade is not operating under as severe conditions as a tractor motor in ordinary plowing."

Besides its lack of strength, an automobile motor does not have the proper design to mount in a narrow tractor frame and combine with the proper kind of tractor gearing. The straight or spur gear type of transmission is generally conceded to be the best transmission for use in a tractor. It is also generally conceded that a tractor should be as narrow in width as possible. If an automobile motor is placed crosswise of the frame in order to use the straight spur gear type of transmission, it necessarily, because of its length, makes the tractor too wide. If an automobile type motor is placed lengthwise of the frame in order to narrow up the tractor, it is necessary to use some other form of transmission than all straight spur gears in order to turn the power at right angles. When an automobile type motor is used, it is necessary to sacrifice either one or the other of these two important features in a tractor—narrow width or straight spur gear transmission—the tractor is bound to be too wide or it is necessary to use some other form of transmission to turn the power at a right angle.

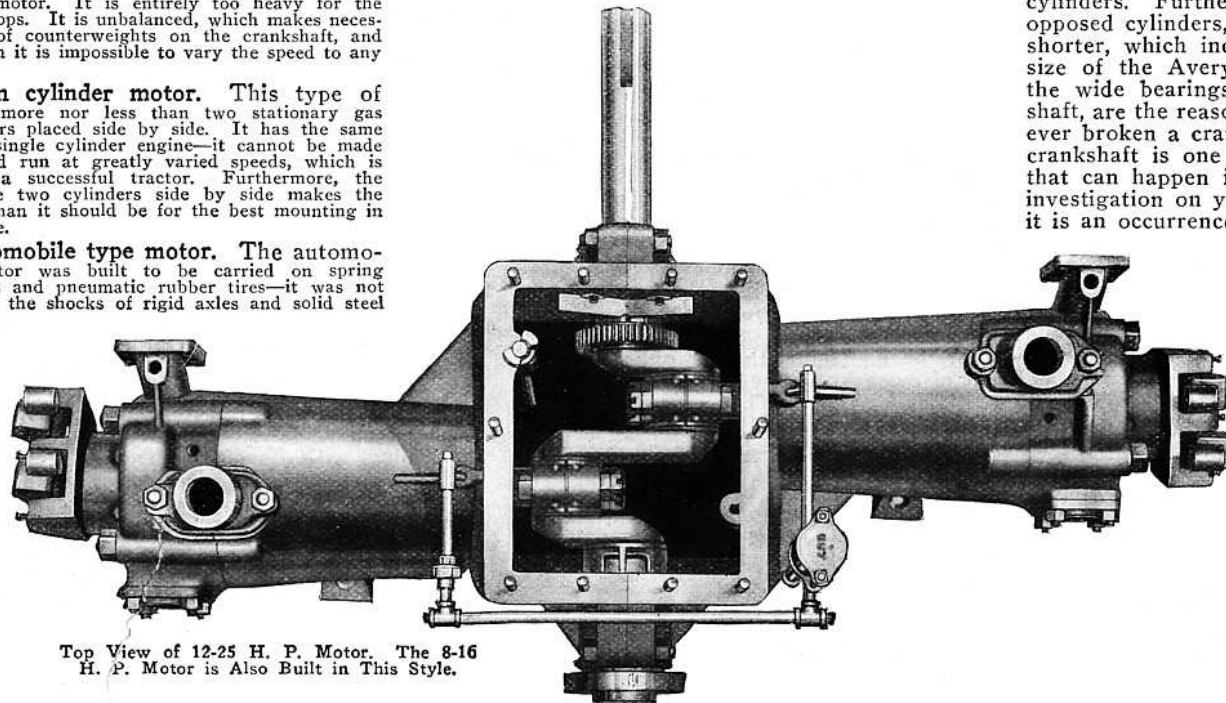
The Avery Opposed Motor. Avery opposed motors are perfectly balanced and have no counterweights on the crankshaft and thus are free from the serious faults of the single cylinder and twin cylinder motors. They are much stronger in construction than the automobile type motor and are able to stand up under the severe strains of tractor work. Furthermore, the cylinders overlap one another, as will be seen in the illustrations, and hence the motor is very narrow. This is the reason why it is possible to combine in the Avery Tractor these two necessary features of a successful tractor—narrow width and all straight spur gear transmission. The opposed motor lends itself most successfully in its shape and construction to the requirements of tractor purposes. The illustration on another page of the top view of an Avery Tractor shows how the Avery opposed motor combines with a narrow frame and a straight spur gear transmission as no other type of motor does.

Special Features of Avery Motors

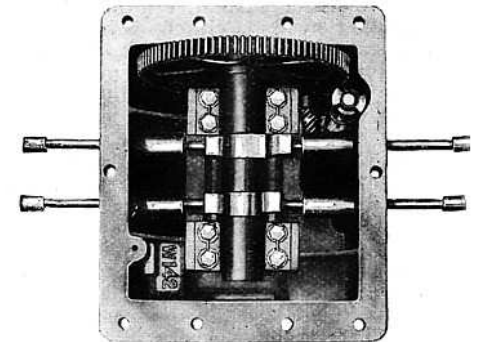
No owner has ever broken an Avery Crankshaft. The smallest Avery crankshaft is 2 3/4 inches in diameter and the largest 4 1/2 inches. The diameter of an Avery crankshaft is one-half or more than the diameter of the cylinders. The diameter of each bearing is the full size of the crankshaft and the length nearly equal to or even longer than the diameter of the cylinders. Furthermore, on account of using opposed cylinders, Avery crankshafts are also shorter, which increases their strength. The size of the Avery crankshaft, together with the wide bearings and the shortness of the shaft, are the reasons why no Avery owner has ever broken a crankshaft. The breakage of a crankshaft is one of the most serious things that can happen in any machine and a little investigation on your part will show you that it is an occurrence which quite often happens with some tractor motors.



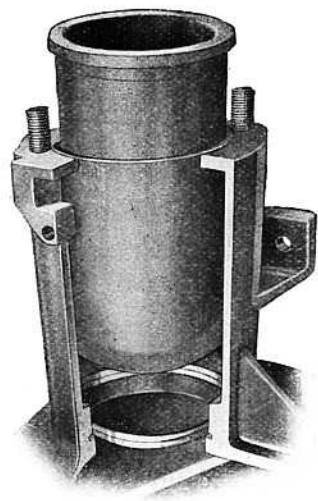
12-25 H. P. Tractor Crankshaft.



Top View of 12-25 H. P. Motor. The 8-16 H. P. Motor is Also Built in This Style.



Cam Case on 12-25 H. P. Motor.



Cylinder Cut Out, to Show How the Avery Inner Cylinder Wall May be Removed.

Another special feature of Avery motors is the fact that they have **renewable inner cylinder walls**. The inner cylinder wall is cast separately from the main cylinder. Just consider what this renewable inner cylinder wall means.

First, should you have any trouble, such as scoring from lack of lubrication or from any other cause, you can easily and quickly take out the inner cylinder wall and replace with a new one at very small cost. With other tractor motors, should you have trouble of this kind there is just one of two things to do—either take out the motor, crate it up, ship it back to the factory where it was made, get it rebored, reground and an oversized piston turned up and fitted, or throw it to one side and get a new cylinder, either of which is a pretty expensive proposition, and, more than that, is certain to delay you seriously in doing your work.

Second, all things wear out in time, and when an Avery cylinder wall has become worn it can be removed and replaced with a new one by you in your own shop, or right in the field, and your motor made just as good as the day it left the factory.

Third, if the water which you use for cooling contains sediment which collects on the inside of the cylinder, you can remove the Avery inner cylinder wall and clean the scale off by scraping it, and thus insure the motor being cooled perfectly at all times.

This original Avery feature of renewable inner cylinder walls is in itself one of the strong reasons why so many men are buying Avery Tractors—when one fully appreciates the advantages of this feature, he will not consider having anything else.

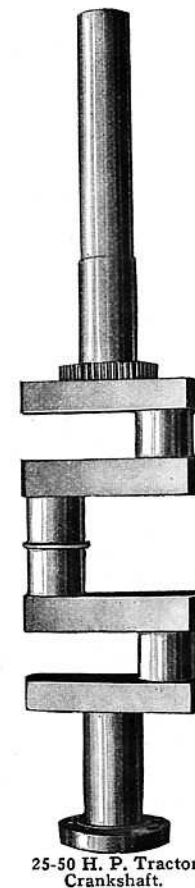
Avery motors **run at low speeds**—only from 500 to 650 revolutions per minute. Low speed means less wear, easier lubrication, greater economy, and requires less gears in the transmission.

All Avery motors are of the **valve in the head** type, which is admitted to be the most powerful and economical type of all. The full explosion of the gas drives directly against the head of the piston instead of part of the power and fuel being wasted in valve chambers, as in the case of the T and L-head motors. Each piston in an Avery motor has five rings. These five-ring pistons enable an Avery motor to hold the compression better and thus save fuel and produce more power. One of the cylinder rings holds the piston pin in place, so that it cannot work out and score the cylinder.

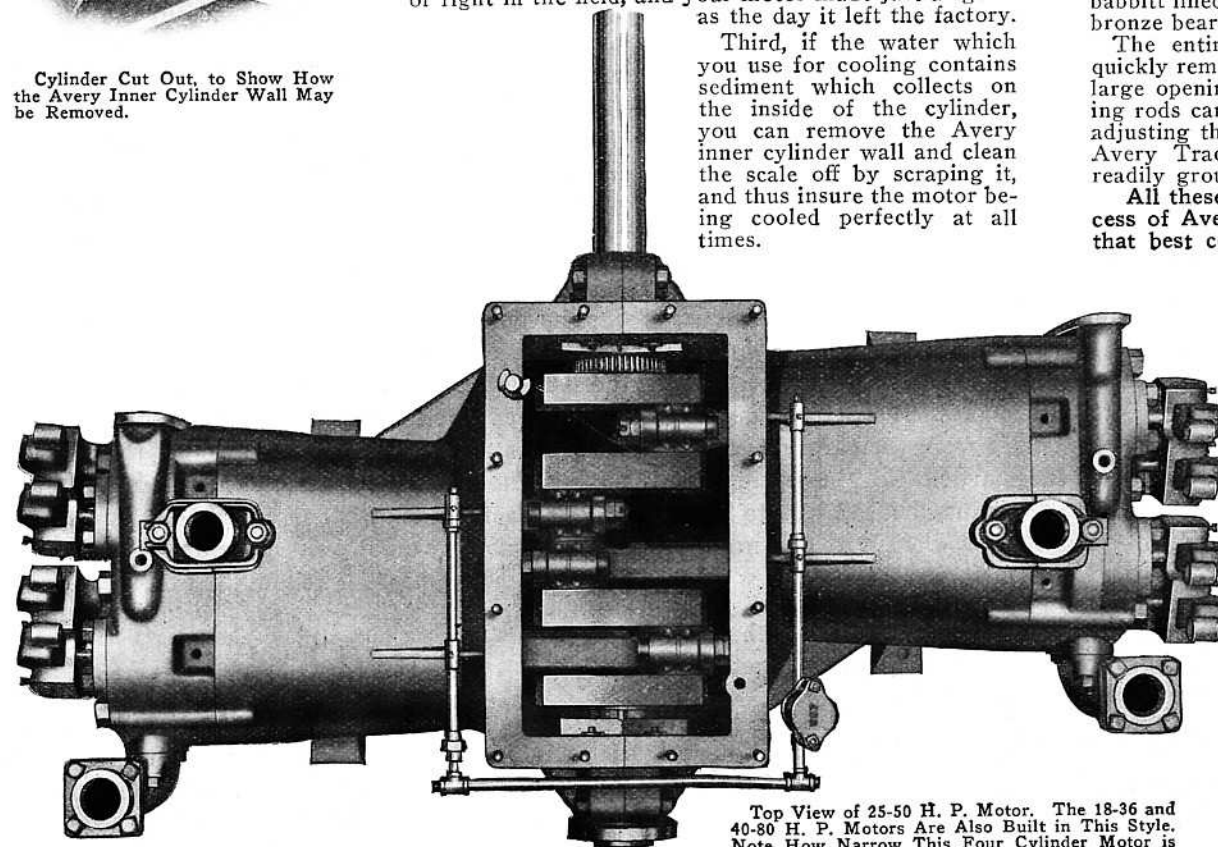
Avery **connecting rods** are steel forged with heavy babbitt lined bronze bearings on the crankshaft end and bronze bearings on the piston end.

The entire **cam case** on an Avery motor can be quickly removed by taking off a few nuts. This gives a large opening into the crankcase, so that the connecting rods can readily be gotten at for any tightening or adjusting that is necessary. The cylinder heads on an Avery Tractor are easily removable and the valves readily ground.

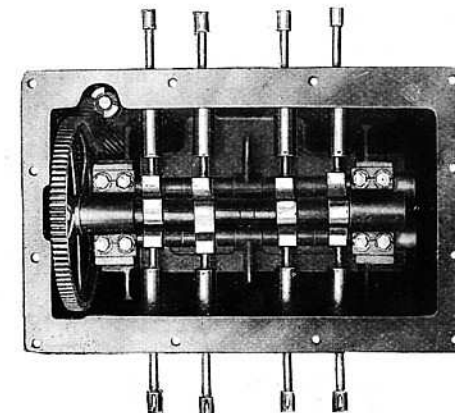
All these facts are the reasons for the unusual success of Avery Tractor motors. They are of a design that best combines with all the other features which go to make up a successful tractor, they are built strong to stand up under the strains of hard traction work and they are so designed that they produce a lot of power and are economical in fuel consumption.



25-50 H. P. Tractor Crankshaft.



Top View of 25-50 H. P. Motor. The 18-36 and 40-80 H. P. Motors Are Also Built in This Style. Note How Narrow This Four Cylinder Motor is and How Strong in Construction.



Cam Case on 25-50 H. P. Motor

Avery Fuel System

(The Second Unit in a Tractor)

A Wonderful Invention—Avery Duplex Gasifier—Turns Kerosene Into Gas

We have discovered the way to burn kerosene more successfully than it has ever been done before.

We burn the kerosene that builders of so-called kerosene tractors admit they waste.

We use the lubricating oil over and over again that others use only once and then waste on the ground.

We get as much power out of a gallon of kerosene as the old style so-called kerosene burning tractors get out of a gallon of gasoline.

We burn kerosene without the troubles previously experienced in burning this fuel, such as fouled spark plugs, pitted valves, carbon in the cylinder, pre-ignition, etc.

We burn kerosene so successfully that we are able to use a closed crank case and gear pump oiling system, which is much superior to the mechanical oilers which builders of so-called kerosene tractors use to prevent the kerosene which passes their piston rings diluting the oil and causing the crankshaft bearings to be cut out.

We burn kerosene successfully with a long manifold so that we are able to use an opposed perfectly balanced motor while others are forced to use unbalanced twin motors with short manifolds in order to burn kerosene even as well as they do.

The secret of all these wonderful results is found in the Avery Fuel System, consisting of

our double carburetor, duplex gasifier and auxiliary air inlet fuel system.

How Avery Tractors Burn Kerosene

All Avery Tractors are equipped with **double carburetors**. One bowl is for gasoline and the other for kerosene. The motor is started on gasoline and when it warms up you pull the lever and instantaneously switch over to kerosene without having to make a single adjustment of any kind. This double carburetor is the first special feature of the Avery fuel system.

But while a carburetor will mix gasoline with air and form a gas which burns readily in the cylinder, no carburetor has yet been designed which alone will successfully handle kerosene. In the Avery fuel system we accordingly place between the carburetor and the cylinder our **duplex gasifier**, which takes the mixture of kerosene and air as it comes from the carburetor and further reduces the particles of kerosene and mixes them with the air in such a way as to form a gas that burns more successfully than kerosene has ever been burned before.

We then use an **auxiliary air inlet**, which tempers this gas to the proper degree to get the most power out of it.

The Avery Company has originated and made it possible for buyers of tractors to have the advantages of many valuable tractor features, such as a sliding tractor frame, renewable inner

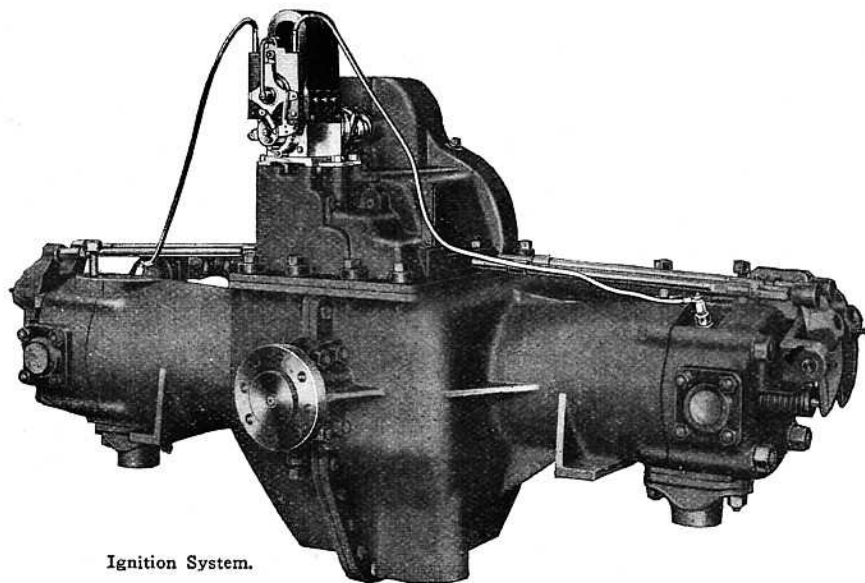
cylinder walls, simple two-speed double drive spur gear transmission and other features, but nothing which we have ever done is more important than the invention of the double carburetor and the duplex gasifier that **turns kerosene into gas**. With this Avery fuel system an owner of an Avery Tractor can burn kerosene so successfully that he is forever free from any concern as to any change that may take place in the prices of fuel from year to year in the future—a thing which he can never determine in advance. He can use either gasoline or kerosene at will, depending only upon whichever fuel is the cheapest in his locality.

Governor

The governor on an Avery Tractor is of the throttling type, controlling the butterfly valve in the intake manifold. This governor gives a uniform speed to the motor. It is very sensitive and opens and closes quickly to meet the variations in the load. Recording cards made in tests at our factory show that with this governor Avery Tractors run at even more uniform speeds than steam engines.

Fuel Feed

The fuel tanks on an Avery Tractor are carried higher than the carburetor and the fuel is fed to the carburetor by gravity. This eliminates the necessity of using a fuel pump, which requires packing and is subject to trouble and breakage.



Ignition System.

Avery Ignition System

(The Third Unit in a Tractor)

EACH Avery Tractor is regularly supplied with a high tension magneto with an impulse starter. With the impulse starter the motor can be started off the magneto. The high tension magneto eliminates batteries, coils, switches and a large amount of wiring, which are the parts that cause most of the trouble with ignition systems.

Avery Cooling System

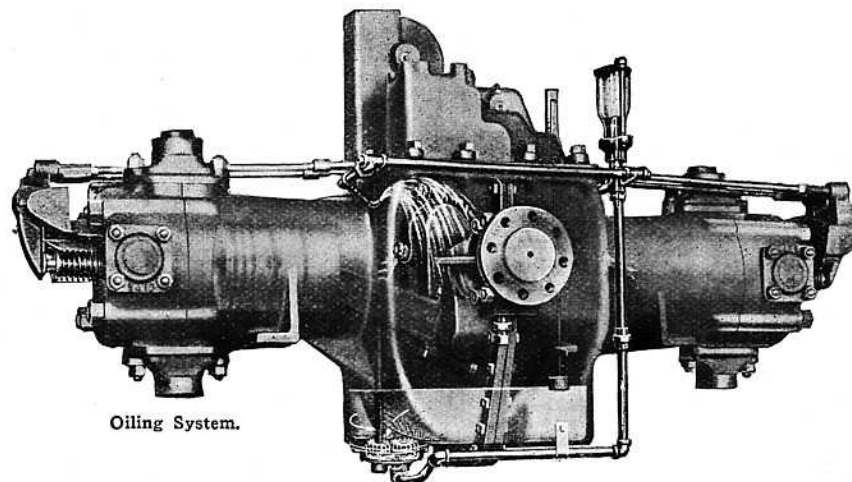
(The Fifth Unit in a Tractor)

IN THE Cooling System on an Avery Tractor we use the thermo-siphon system, in which the heat of the water causes its own circulation. No circulating water pump is used on Avery Tractors and thus all wearing of gears, packing of pumps, draining, freezing and such other troubles are done away with.

Furthermore, by the construction of our radiator we do away with the fan and use the exhaust to draw the cool air past the tubes, which saves the power required to drive a fan, as well as doing away with the fan, fan belt and pulleys, which are trouble makers and make a tractor more complicated.

The radiator itself is round and made of vertical copper tubes. It is open on all sides. The air will strike the radiator no matter from what direction it is blowing, while with the styles of radiators open only in front, the wind does not blow on the tubes unless coming in just the right direction.

The illustration of the Avery Cooling System here shows everything in detail—the round tube radiator open on all sides, the exhaust which is piped in such a way as to cause a vacuum and draw the cool air past the tubes, the water jacket around the cylinder and cylinder head, and the manner in which the water circulates.



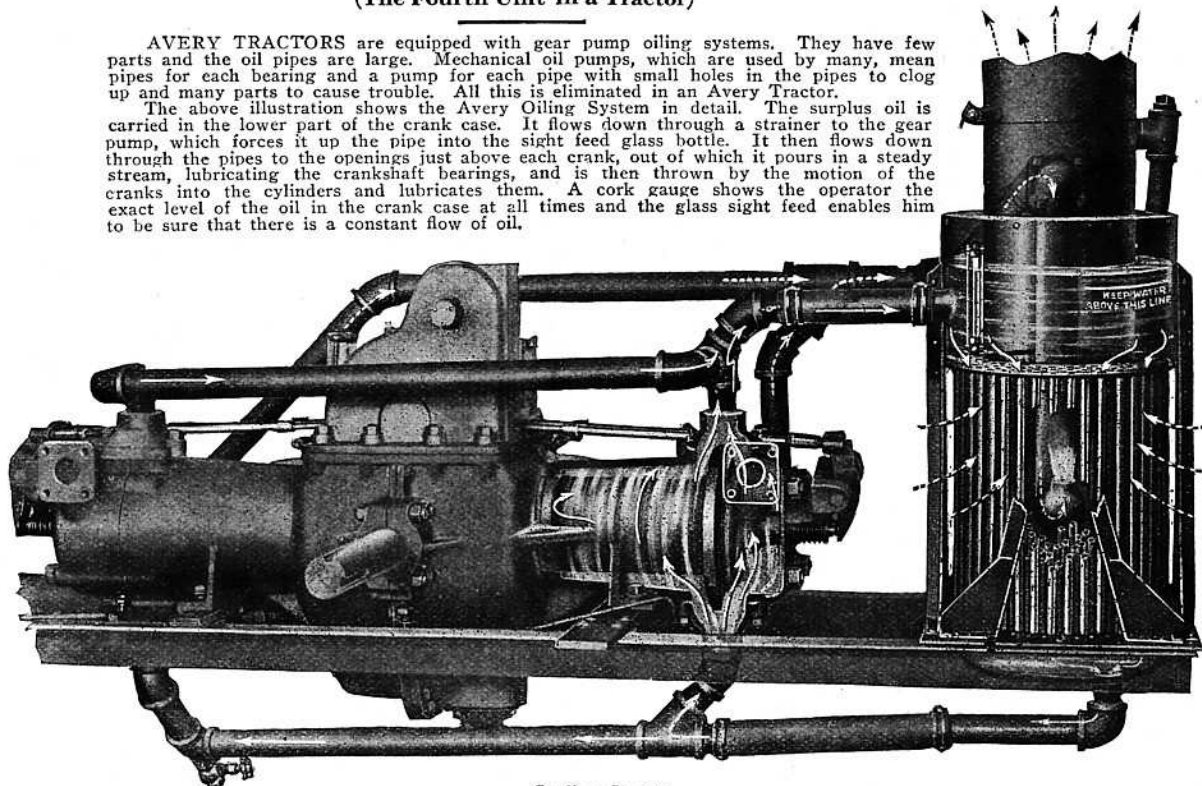
Oiling System.

Avery Oiling System

(The Fourth Unit in a Tractor)

EVERY TRACTOR are equipped with gear pump oiling systems. They have few parts and the oil pipes are large. Mechanical oil pumps, which are used by many, mean pipes for each bearing and a pump for each pipe with small holes in the pipes to clog up and many parts to cause trouble. All this is eliminated in an Avery Tractor.

The above illustration shows the Avery Oiling System in detail. The surplus oil is carried in the lower part of the crank case. It flows down through a strainer to the gear pump, which forces it up the pipe into the sight feed glass bottle. It then flows down through the pipes to the openings just above each crank, out of which it pours in a steady stream, lubricating the crankshaft bearings, and is then thrown by the motion of the cranks into the cylinders and lubricates them. A cork gauge shows the operator the exact level of the oil in the crank case at all times and the glass sight feed enables him to be sure that there is a constant flow of oil.



Cooling System.

Solid Arrows Show Water Circulation—Broken Arrows, Exhaust and Air Circulation. No Water Pump or Fan is Used.

Avery All Spur Gear Transmission and Sliding Frame

(The Sixth and Seventh Units in a Tractor)

THERE are three principal types of transmission used in tractors in delivering the power of the motor to the drive wheels—straight or spur gear, bevel gear and chain.

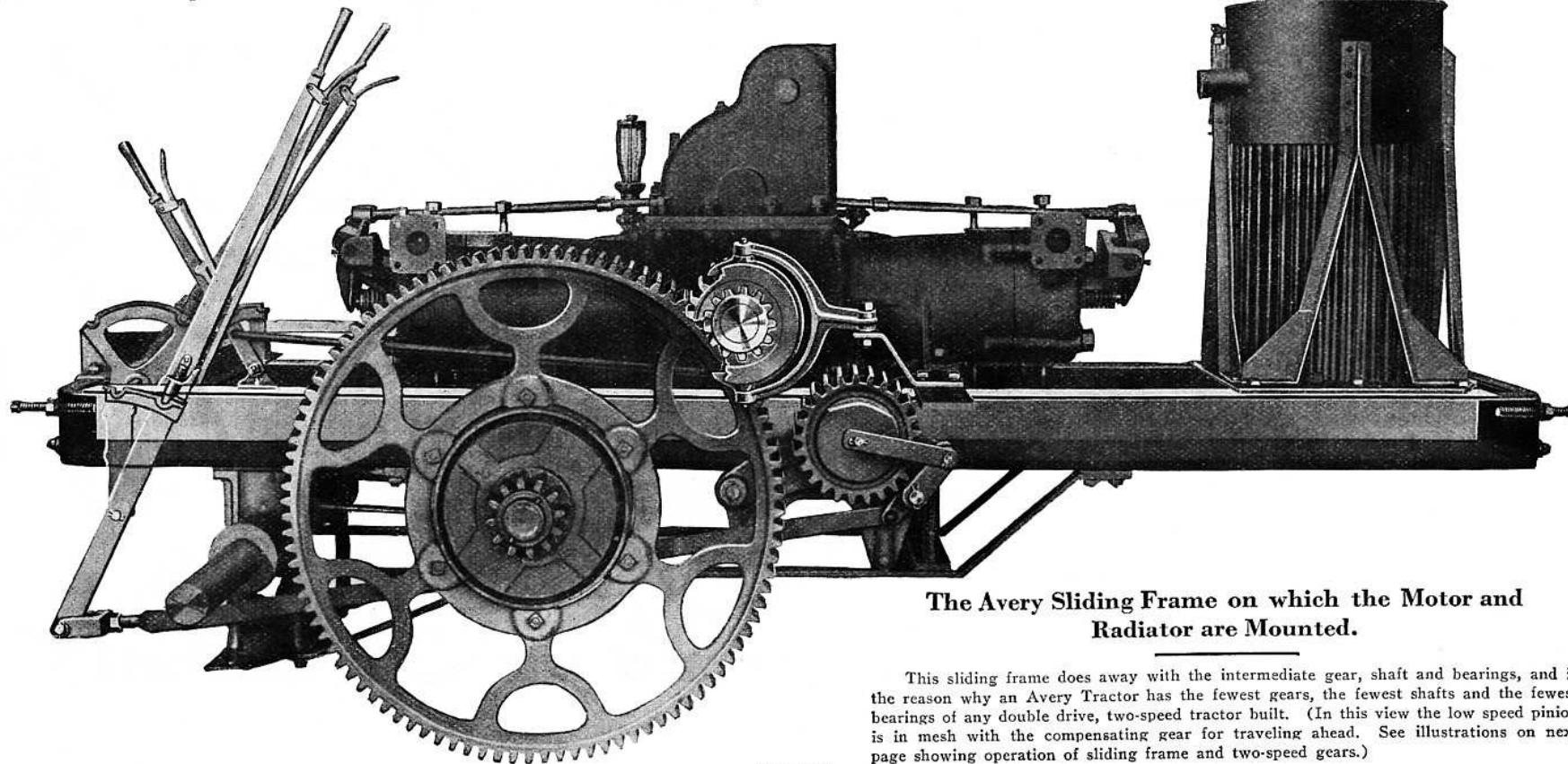
In comparing types of transmission in order to determine the best for tractor use, you should first remember that steam traction engines are the machines most nearly doing the work which tractors are required to do and that, in fact, the general purpose of the two machines is exactly the same—delivering a large amount of pulling power at the draw bar while traveling at a medium rate of speed.

It would seem that it is a fair conclusion to draw, that the type of transmission which years of steam engine experience has developed as being the only successful transmission for steam engine purposes, namely, the spur gear type, is the type which will most successfully meet the needs in a tractor. The chain drive transmission has been used on steam engines and discarded. The bevel gear transmission has been used on steam engines and discarded. Both proved to be inefficient as a means of transmitting

power for heavy duty work. The spur gear type developed as being the best type of transmission which would deliver the power to the rear wheels with the least loss and stand up under the work.

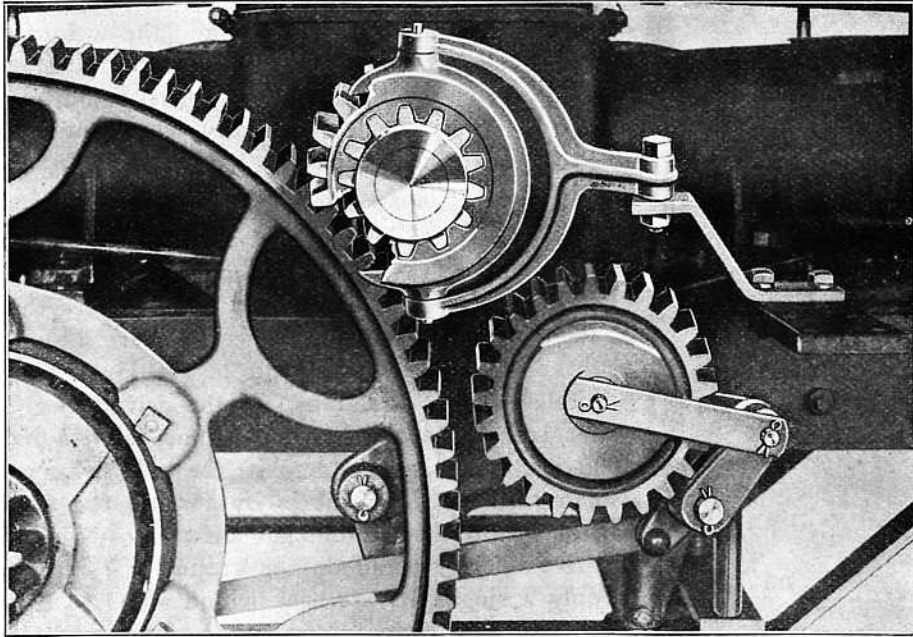
Avery Tractors are equipped with a combination all spur gear transmission and sliding frame. They have a double drive to both rear wheels and a two-speed gear on the crankshaft.

Furthermore because of the sliding frame they have the least gears, the least shafting and the least bearings of any two-speed double drive tractors built. Only six gears are used in forward travel. Avery Tractors have only one countershaft and only five transmission bearings.

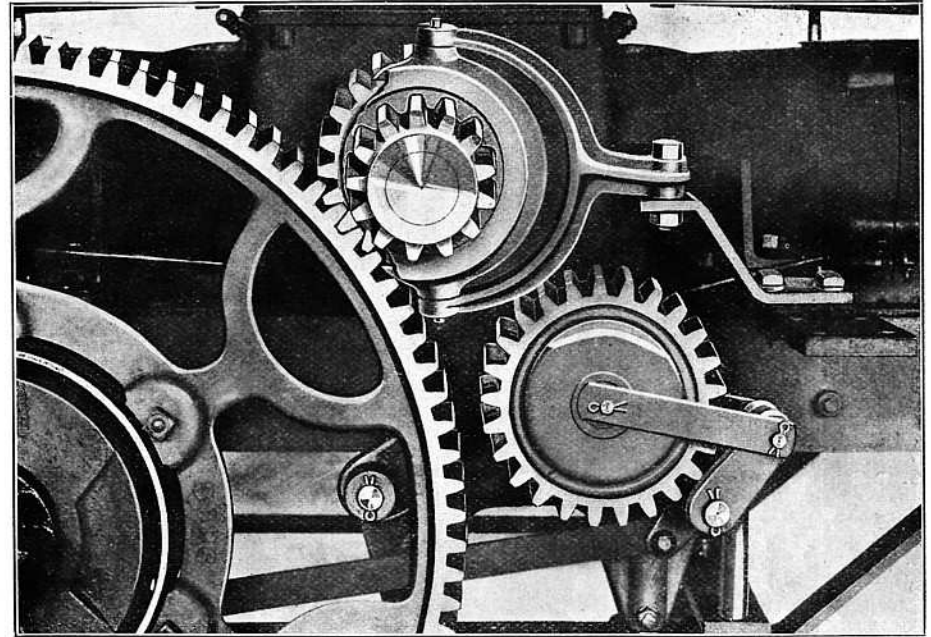


The Avery Sliding Frame on which the Motor and Radiator are Mounted.

This sliding frame does away with the intermediate gear, shaft and bearings, and is the reason why an Avery Tractor has the fewest gears, the fewest shafts and the fewest bearings of any double drive, two-speed tractor built. (In this view the low speed pinion is in mesh with the compensating gear for traveling ahead. See illustrations on next page showing operation of sliding frame and two-speed gears.)



Shows Sliding Frame Moved Forward to Release Low Speed Crankshaft Pinion from Compensating Gear for Belt Driving. (High Speed Gear is Broken Away to Show Low Speed Pinion Released from Compensating Gear.)



Shows High Speed Pinion in Mesh with Compensating Gear for Traveling Ahead.

The Special Avery Sliding Frame and What It Does

The wonderful simplicity of the gearing and shafting on Avery Tractors is made possible by the use of a special sliding frame as shown in the illustration on the opposite page.

In the Avery Tractor the entire power plant is mounted on a sliding frame.

When traveling ahead on low gear the low speed crank shaft pinion meshes directly into the compensating gear—no intermediate gear is used. (See view on opposite page.)

For belt work, backing up, or high speed, the sliding frame is pushed forward until the low speed crankshaft pinion is disengaged from the compensating gear.

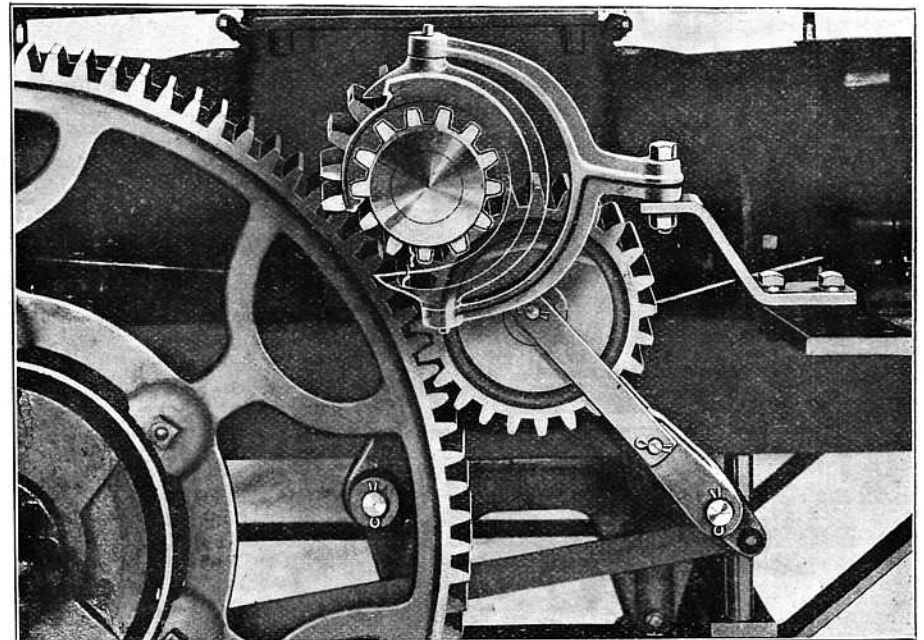
With the crankshaft pinion disengaged from the compensating gear, you are in position for **belt driving**. (See left-hand view above.)

If you wish to travel ahead in high gear, slide the high-speed pinion over to engage the compensating gear. (See right-hand view above.)

If you wish to back up, draw back the reverse gear to engage both the crank shaft pinion and the compensating gear. (See view at right.)

By the use of this sliding frame, no intermediate gear is required for traveling ahead and the intermediate shaft and bearings are done away with, thus eliminating loss of power by the friction of the extra gear and shaft, decreasing the dead weight to move around and reducing the expense of wear and breakage.

(See next page for Other Advantages of the Avery Transmission and Frame.)



Shows Reverse Gear Drawn Back to Engage Low Speed Crankshaft Pinion and Compensating Gear for Backing Up.

All Avery Tractors Have Two-Speed Gears

The sliding frame on an Avery Tractor makes possible the simplest two-speed gear on any tractor. The low-speed gear is double the width of the compensating gear and the high-speed gear slides back and forth over it. No gear box, third crankshaft bearing or double ring gear are necessary for speed changes.

Furthermore, Avery Tractors are direct drive on both high and low gear. Both gears when in mesh are directly against the crankshaft bearing, thus making a third crankshaft bearing or double ring gear unnecessary.

The combination sliding frame and sliding gear construction on an Avery Tractor is unquestionably the most simple and successful two-speed gear made. The advantages of having a two-speed tractor with a low speed for plowing and other work and a fast speed for light work and traveling on the road does not need to be discussed to be fully appreciated by anyone.

All Avery Tractors Have Double Drives

Avery Tractors have two rear wheels of equal size and are geared to both rear wheels.

A number of attempts have been made to build tractors with single drives. All of them, however, have developed serious faults.

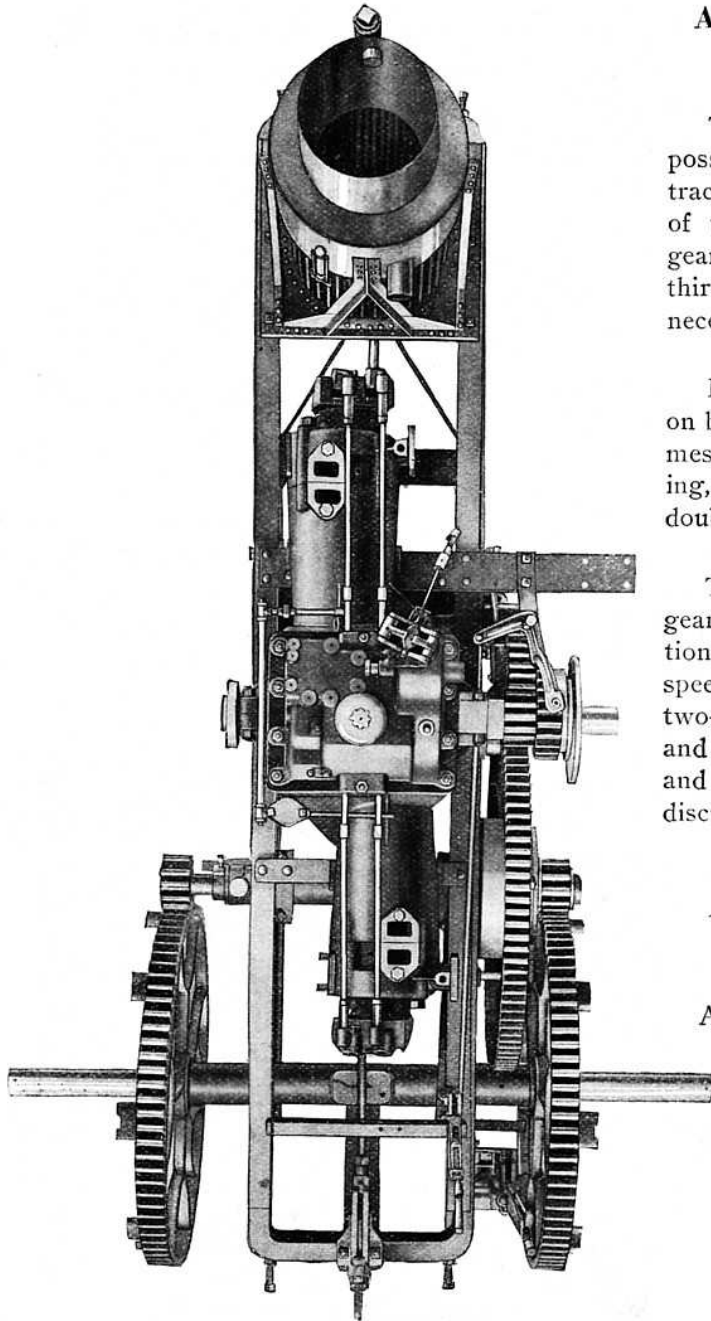
With a double drive there is no constant twisting strain on the frame. With a single drive the power delivered at the

draw bar is determined by the ability of the frame to resist being twisted and the weight of the tractor to resist being tipped over. Many single drive tractors have shown that they will tip over very easily, especially when pulling a load and turning a corner.

With a double drive a tractor can be turned short either way, as the compensating gear will enable either drive wheel to travel faster than the other in turning a corner. Where a single drive is used, it is difficult to turn in a short circle in both directions. If the drive wheel is located on one side of the frame, with a balancing wheel opposite to it, the only way you can turn to the right is by forcing the front wheel into the ground sufficiently to slide the drive wheel around on the ground. If there is only a single drive wheel behind and two front wheels, you cannot turn either to the right or to the left except by forcing one or the other front wheel into the ground and thus sliding the drive wheel around. Remember, also, that in plowing you must turn to the right principally, and that is just the direction in which single drive tractors find it difficult to turn in a short space.

A double drive also makes a strong, durable transmission for traction work—much stronger and longer lived than any single drive can possibly be.

The single drive construction, therefore, has these three principal faults: There is a constant tendency to twist the frame or tip over; it is difficult to turn short; and the single drive lacks durability. A double drive, as used on all Avery Tractors, eliminates all frame twisting, makes it possible to turn short either way, and is strong and durable for heavy traction work.



Top View of an Avery Tractor, Showing the Two Speed Gear on the Crankshaft and the Double Drive to Both Rear Wheels. Also Note How the Avery Opposed Motor Makes Possible the Use of Both a Narrow Frame and an All Spur Gear Transmission.

Other Advantages of the Avery Transmission and Frame

The sliding frame and opposed motor used on Avery Tractors also make possible a narrow tractor, as will be seen by comparing the width of Avery Tractors with other makes. A narrow tractor means less side draft, less double travel on the ground in field work, shorter turning and being able to pass through narrower gates. The Avery motor is also located centrally between the sides of the frame, giving an equal distribution of weight on both rear drive wheels.

All Avery Tractors have steel and semi-steel gears—no cast iron gears are used. All Avery Tractors have revolving rear axles—no stub axles are used. All Avery Tractors have the rear axle and countershaft bearings in one casting with oil wells in the center, thus making them easily oiled and keeping the bearings always in line—no separate bearings are used for each end of the shaft.

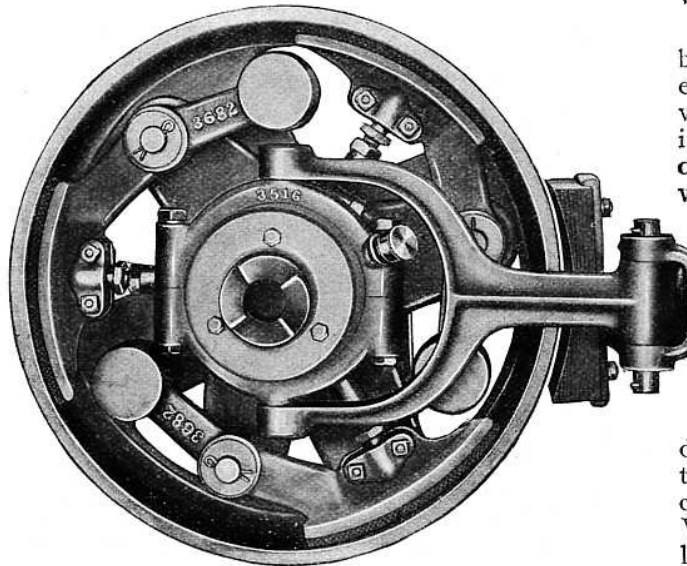
The mesh of all Avery gears is adjustable for wear. The countershaft and rear axle are tied together with rods threaded on each end, making it possible to adjust the mesh between the bull pinions and bull gears. The adjusting screws on the sliding frame also make it possible to adjust the mesh between the crankshaft pinions and compensating gear.

The design of Avery Tractors makes all gears in the transmission easily accessible. There is no complicated speed change gear box. The compensating gear is on the outside of the frame and there is no third bearing on the crankshaft to be removed to get at the crankshaft pinions.

This combination of a spur gear transmission, sliding frame, two speeds and double drive, with all these advantages, is found only in Avery Tractors and has a big part to do with their unusual success.

Avery Clutch (The Eighth Unit in a Tractor)

ONLY one clutch is used on Avery Tractors. Many tractors have two or even more. This is so designed that it serves for traveling ahead, reversing or belt driving. It is of the steam engine type, not the light automobile type. The steam engine type of clutch, such as is used on the Avery Tractor, is the type which has developed out of years of steam engine experience as being the best type for heavy work such as tractors have to perform, and is plainly far the most durable.



Clutch and Belt Wheel Brake.

The Avery Clutch has three clutch arms, on the ends of which are riveted Raybestos brake linings. It has a good grip on the belt wheel and yet will release easily. The shoes push straight out against the inner surface of the belt wheel and do not cause any end thrust on the crankshaft.

The belt wheel on the Avery Tractor does not travel with the motor unless the clutch is engaged. This makes it possible to put the belt on the belt wheel and back into it, by slipping the clutch, much more easily than it is possible when the belt wheel is fast to the shaft and revolves at the motor's speed. Furthermore, the same lever which throws the clutch in, when drawn back, engages a brake on the outer surface of the belt wheel, by which it can be quickly stopped for engaging the gears or should any accident happen to the separator, sheller, saw or other machine which is being driven.

Avery Wheels (The Ninth Unit in a Tractor)

EVERY TRACTORS have round, built-up steel wheels with flat spokes. They are cheaper in first cost, longer lived and require less repairs than any other wheel built.

In the tractor demonstrations the round wheel proved itself able to travel anywhere the sprocket type of wheel would go. Avery Tractors will travel on any ground in fit condition to be worked.

Both rear drive wheels on Avery Tractors, being located outside of the frame, can be equipped with extension rims for traveling over very soft ground, while with drive wheels located inside of the frame, you are limited to traveling over the ground which will carry the regular width wheel, as it is impossible to attach extension rims. One tractor owner has written us that he has found more places where he needed three drive wheels than where he could have gotten along with one, and with his Avery Tractor he can get what amounts to the width of three wheels by simply attaching extension rims to his two regular drive wheels.

We have spent a great deal of time and effort devising various forms of cleats, spuds and lugs to be used on Avery drive wheels to meet all conditions. We are in position to supply either V cleats, heart-shaped spuds or spiral angle-bar lugs, as may be desired. All these are bolted to the drive wheel, making it also possible to have smooth drive wheels when wanted. We furnish as regular equipment V cleats with a number of heart-shaped spuds. See illustrations on page 32 of the various styles of wheel equipment we are in position to furnish.

Avery wheels are built-up steel with flat spokes riveted hot to the hubs and rims. This construction makes them extremely durable under hard traction work.

The question of the wheels on a tractor is a very important one, and we believe that you will find that this question has been better solved on an Avery Tractor than on any other make.

How the Nine Units in a Tractor are Combined in an Avery to Produce Reliability and Durability

(The First and Second Results)

As we have said before, the success of any tractor is dependent upon the design of the nine units in the tractor—motor, fuel system, ignition system, oiling system, cooling system, clutch, transmission, frame and wheels—and the combination of these into a complete machine to produce these nine results—reliability, durability, simplicity, light-weight, power, speed, economy, accessibility and ease of handling.

On the previous pages we have discussed the design of these nine units in an Avery Tractor—now we will tell you how they are combined to produce these nine results.

Why an Avery Tractor Stands Up So Well Under Hard Work and is So Long Lived

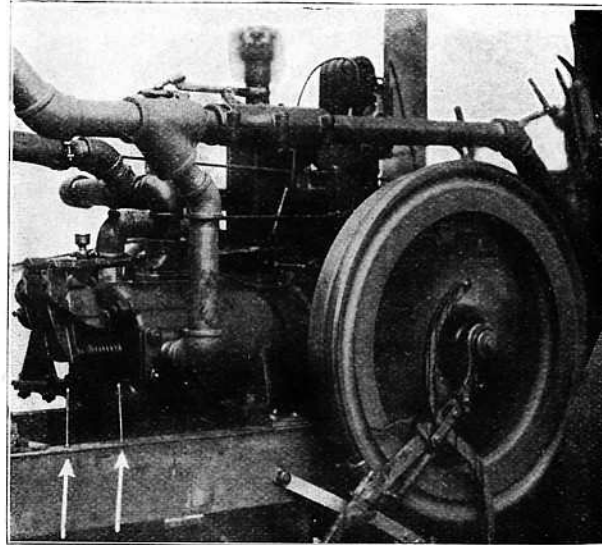
THE FIRST two results of the successful combination of the nine units in an Avery Tractor have been to secure an unusual degree of **reliability and durability**. These are the points of first importance in buying a tractor. **How much a tractor is worth depends, first of all, upon how well it will stand up under the work and how long it will last.**

In an Avery Tractor the nine individual units are so designed and combined as to produce a tractor that runs steady and is built to last.

The design and construction of the Avery motor makes an Avery Tractor extremely reliable and durable. It is of the opposed type, which makes possible an extra strong construction. It runs at a low speed—only around 500 revolutions per minute—which means that there is little wear on the parts. Being of the opposed type, no balancing counterweights are required on the crankshaft, which are a constant source of trouble and repair expense with many makes of motors. It balances perfectly and prevents the great vibration found in many tractors, which is constantly jerking them to pieces. Watch an Avery Tractor and see how still it stands and then watch the others and you will appreciate this fact. In the Winnipeg Motor Contest

Avery Tractors were first in lack of vibration in all four classes in which they were entered.

An Avery Tractor is so perfectly balanced that our customers often stand nails on their heads on the frame when the motor is pulling a full load, to show how little vibration there is. (Note illustration below.)



The elimination of the fan, fuel pump, water pump and lubricator also does away with a lot of delicate parts that often break and cause trouble on other tractors.

The clutch on an Avery Tractor is large and strong and of the steam engine type, which has shown itself to be the most durable for heavy traction work.

The gear type of transmission as used on Avery Tractors has proven itself on steam engines to be the most reliable and durable type for heavy traction work.

Furthermore, no ordinary cast iron gears are used on Avery Tractors. A combination of steel and semi-steel gears is used. We have found that this combination of gearing wears much longer than all steel and by using a high grade quality of material, we are able

to produce semi-steel gears that for tractor use are almost as unbreakable as all steel. The best proof of this is that we have comparatively little call for gear repairs.

A straight spur gear type of transmission, with the fewest gears of any, together with a combination of steel and semi-steel, are the reasons why the transmission on an Avery Tractor causes so little trouble and is so long lived.

The crankshaft on an Avery Tractor is extremely large in diameter. It is short in length. It is made from forged steel. It is mounted in wide bearings. The countershaft is cold rolled steel and revolves in a solid babbitted box. The rear axle is a cold rolled steel shaft and also revolves in a solid babbitted boxing. We do not use stub axles as do many. The countershaft box and rear axle box are not only bolted solid to the frame, but special rods are provided for holding these positively at the correct distance apart to give the proper mesh to the gears. Remember, also, that because of the Avery sliding frame, an intermediate shaft and bearings are unnecessary. Large shafting, wide bearings, and fewer shafts and bearings than on other tractors, are further reasons for the unusual reliability and durability of Avery Tractors.

The wheels are built-up steel with flat spokes. The rear wheels on the larger sizes have reinforcements rolled from the solid stock on the inside outer edges of the rims. This is the longest lived wheel construction known.

The main frame on an Avery Tractor is a combination of channel steel bars and angle bars. The Avery frame has proven to be of absolutely dependable and durable construction.

All these features—a strong opposed motor with a large crankshaft and wide bearings, the strongest type of clutch known for traction work, a straight spur gear transmission, all steel and semi-steel gears, a revolving rear axle and strong wheels and frame—all these make up a combination that results in unusual reliability and durability and are the reasons why an Avery tractor stands up so well under hard work and is long lived.

How the Nine Units in a Tractor are Combined in an Avery to Produce Simplicity and Light Weight

(The Third and Fourth Results)

The Facts Which Prove That Avery Tractors Are the Simplest Tractors Built

THE THIRD result of the successful combination of the nine units in an Avery has been to produce a tractor that is the simplest tractor built. And we don't simply stop with making this claim—we give you below the facts to back it up.

An Avery Tractor has a simple opposed motor with no counterweights on the crankshaft to come loose and tear the motor to pieces. No heavy flywheel is required for keeping up the momentum. There are but two bearings on the Avery crankshaft instead of three or more as on many others which increase friction and make it more likely for the boxes to wear and cause the crankshaft to bind and spring out of line.

An Avery Tractor has no fuel pump to leak and require packing or to break. The fuel is fed to the carburetor by gravity.

An Avery Tractor has no troublesome clockwork lubricator to get out of order or to clog up and cause the motor to overheat.

An Avery Tractor has no cooling fan to waste power or cause trouble—the exhaust draws the cool air past the tubes for cooling. It has no fan belt to get loose or break.

An Avery Tractor has no water pump to leak and require packing or to freeze and cause delays and expense. The thermo-siphon system of water circulation is used and the pump eliminated.

An Avery Tractor has no belts or sprocket chains to break or wear out.

No successful tractor ever has been or, we believe, ever can be designed with less gearing and shafting than are used in an Avery Tractor.

An Avery Tractor has the fewest gears of any two-speed double drive tractor—no intermediate gear is used in traveling ahead—the crankshaft pinion meshes directly into the compensating gear. Only six gears are used in traveling ahead. There are but two gear contacts—crankshaft pinion to compensating gear and bull pinion to bull gear. There are no idle gears in mesh and running, either when belt driving or pulling.

An Avery Tractor has no intermediate shaft—there are but two main engine shafts, crankshaft and counter-shaft. It has no intermediate shaft bearing. There are only five transmission bearings.

An Avery Tractor has but one friction clutch, which serves for traveling forward or backward or when working in the belt. This saves a lot of unnecessary parts. Furthermore, this clutch is of the steam engine

type, which is the simplest and strongest type ever designed for traction work.

An Avery Tractor has no counterweights on the crankshaft, no fuel pump, no clockwork lubricator, no fan, no water pump, no intermediate forward gear, no intermediate shaft, no intermediate shaft bearings, only one clutch. Claims of simplicity are sometimes made without being backed up. These facts prove that Avery Tractors are the simplest tractors built.

The Lightest Weight Tractors Built Considering Their Draw-Bar Efficiency

Light weight is the fourth result of the successful combination of the nine units in an Avery Tractor. But do not confuse the meaning of the word light-weight with the question of size and think that Avery "Light-Weight" Tractors mean only our small size tractors. Every Avery Tractor is built "Light-Weight," from the small 8-16 H. P. size to the large 40-80 H. P. size.

When we say "Light-Weight" per draw-bar efficiency," we mean that Avery Tractors are the Lightest Weight of any, considering the power they deliver at the drawbar and their ability to keep it up. Weight must be considered in connection with both power and strength of construction to mean anything. It's easy to build a Light-Weight Tractor, but the hard thing is to build a Tractor that is Light-Weight for its power and also has a strong enough construction to stand up in the field, year in and year out.

We claim for Avery Tractors that they are the Lightest Weight Tractors built, considering both their power and their strength of construction.

The Advantages of the "Light-Weight" of Avery Tractors

An Avery "Light-Weight" Tractor doesn't waste fuel or power moving useless dead weight. It's an absolute waste of power and money to move around all day the tons of surplus iron and steel found in heavy weight tractors. For every surplus ton of weight in a tractor you can figure a waste of about the power of one good farm horse. In other words, this means that if you have from 2 to 3 tons of surplus weight in a tractor to move around you will have to waste about enough power to pull one extra plow, which means so much less work. You can also figure that for every unnecessary ton of weight it takes about 2 gallons of

fuel per day to move it around. And all of this waste of power and fuel is all for nothing. It is not necessary to have this extra weight to make a strong and durable tractor.

An Avery "Light-Weight" Tractor won't pack your ground to injure your crop. The pressure of an Avery Tractor wheel on the ground is much less per square inch than the pressure of a horse's foot.

With an Avery "Light-Weight" Tractor you can get into the field earlier in the spring or after a rain. Reliable reports state that owners of hundreds of the "Heavy-Weight" Tractors have to let them stand idle in the spring because they can hardly move themselves, let alone pull plows and other machinery. One letter says that one-half of the tractors in a certain locality were idle. At the fairs Avery "Light-Weight" Tractors have followed behind the "heavy-weights" and plowed right along over ground where the "heavy-weights" mired down or had to unhitch from their plows.

An Avery "Light-Weight" Tractor will work on any ground that is in condition to be worked with horses or mules. The best possible evidence of this is reports from actual users of Avery "Light-Weight" Tractors. Here are samples: "The tractor is working fine so far and could not be beat on this soft marsh. We can use it where horses mire; in fact, we crossed places without the least trouble where it would not be safe to cross with a team of horses." "I want to tell you what I have been doing with my tractor—pulling a binder cutting rice where the ground was so soft that mules could not go and pull the binders." "From my experience there is no danger of tractor wheels packing ground when drilling, for my Avery Tractor is not the heavy kind." "Owing to their light weight in comparison to the power they develop, they do not pack the ground any more than horses."

Consider What It Means to You When You Get a "Light-Weight" Avery Tractor

We cannot emphasize the advantages of this "Light-Weight" feature of Avery Tractors too strongly. It means these most important things to you—saving expense because of not wasting fuel moving around useless dead weight—more work because no wasting of power—no packing your ground to injure your crops—and being able to do your work whenever the ground is in condition to be worked.

Remember that Avery "Light-Weight" Tractors are the Lightest Weight Tractors built considering their draw-bar efficiency.

How the Nine Units in a Tractor are Combined in an Avery to Produce Power, Speed and Economy

(The Fifth, Sixth and Seventh Results)

You Get a Fine Combination of Power and Speed in an Avery Tractor

These are the fifth and sixth results of the successful combination of the nine units in an Avery Tractor.

Power and Speed must, of course, be considered together. Everybody knows the law of physics that when you increase speed you lose power and when you decrease speed you increase power.

Some manufacturers build tractors with a low speed and then talk about the large number of plows their tractors pull when, if you compare their speed in the field with others, you will find that they actually turn over less ground in a day's time than tractors pulling less plows

There are also tractors built that run at an unusually fast speed. It's easy enough to build a tractor that way, but a race horse tractor isn't any more fitted for farm work than a race horse animal.

And so, right here, we want you to get this fact, that Avery Tractors are built to deliver their full rated horse power when traveling at a fair rate of speed. Their power is not gotten by using a very slow speed, nor is it wasted by using a very high speed.

Why Avery Motors Develop an Unusual Amount of Power

And now we want to tell you also why it is that Avery motors develop an unusual amount of power and why more of this power is delivered to the draw bar than in any other tractors.

The reason why Avery motors develop the large amount of power they do is because, in the first place, we use motors of large dimensions, considering the size tractors in which they are used; in the second place, we use a valve in the head type motor; and in the third place, we use five piston rings which are closely fitted by careful hand filing into accurately bored cylinders. The large dimensions, the valves in the head, and the 5 piston rings, with extra good fitting, are the things which make Avery motors so powerful.

Why More of the Power Developed by the Motor Is Delivered to the Draw Bar in an Avery Tractor

The motor in an Avery Tractor is placed lengthwise of the frame, which makes it possible to drive through straight spur gears, which deliver more of the power of the motor to the drive wheels than any other kind of transmission. Furthermore, because an Avery Tractor has no intermediate shaft and no intermediate gear is used in traveling ahead, the power lost by friction of these parts on other tractors is also eliminated. Engineering authorities say there is a loss of from 8% to 10% of power in every gear contact. The one less gear contact on Avery Tractors saves this power for use at the draw bar, which in other tractors is lost in the transmission.

We have already explained in discussing the question of weight as to the heavy loss of power in moving around the surplus tons of iron and steel found in heavy-weight tractors and how in Avery "Light-Weight" Tractors this power is saved for pulling at the draw bar.

It has also been shown that it requires about 3 Brake H. P. on the average to drive the fan used on most tractors. This power is not wasted on Avery Tractors. No fan is used, the exhaust being piped in such a way as to draw the cool air past the radiator tubes.

These four facts are the principal reasons why Avery Tractors deliver a large amount of power in the belt or on the draw bar.

First, Avery Tractors drive only through straight spur gears, which deliver more of the power of the motor to the drive wheels than any other transmission.

Second, Avery Tractors have but two gear contacts instead of three, as in the ordinary tractor construction, and thus save the power lost by the friction of this extra gear contact and the friction in intermediate shaft boxings.

Third, because Avery Tractors are "Light-Weight" their power is not wasted in moving around surplus unnecessary weight but is delivered to the draw bar.

Fourth, Avery Tractors save the power lost in driving a fan.

Power is what you want when you get a tractor. You get the full rated belt and draw-bar power when you buy an Avery Tractor. The motor develops more than the necessary amount of power and this power is not wasted in driving useless accessories, it is not used up in unnecessary friction of shafting and gearing, and it is not lost through having to move around a lot of surplus weight.

Avery Tractors are regularly equipped with a two-speed gear—a low speed for plowing and other heavy work and a fast speed for light work and traveling on the road.

Thus in an Avery Tractor you get the full rated horse power either in the belt or at the draw bar; you get a tractor that doesn't waste its power in useless friction or in moving around unnecessary weight; you get a tractor that travels at a good rate of speed, and you have a different speed to use as you may need for the special work you are doing.

Avery Tractors Have Demonstrated Themselves to be Unusually Economical in Fuel Consumption

By the successful combination of the nine units in an Avery Tractor you get as the seventh result an unusual degree of economy.

Avery Tractor Motors have demonstrated themselves to be unusually economical in fuel consumption, both in competitive tests and in the hands of users.

The reasons for the small fuel consumption of Avery Tractors, considering the work they do, are first, the construction of the motor, which makes it possible for it to produce a large amount of power, with a small amount of fuel; and, second, the fact that less of this power is used in moving the tractor itself on account of the simple transmission and light weight.

An Avery Motor is, first of all, of the valve in the head type, which is admittedly the most economical of all. Second, it has 5 cylinder rings for holding the compression. Third, the inner cylinder wall of an

How the Nine Units in a Tractor are Combined in an Avery to Produce Accessibility and Ease of Handling

(The Eighth and Ninth Results)

Economy (continued)

Avery motor, being a separate casting, stays round better, which means better compression and increased power.

The fact that in an Avery Tractor there is less loss of power in the transmission than in other tractors has been fully explained under the subject of Power and Speed, and it is not necessary to repeat it here except to point out that this fact not only means increased power at the draw bar but also that less fuel is required for doing the same amount of work.

The question of fuel economy was the one important point that the Winnipeg Contests covered, and it was to prove this point against all comers in a contest open to the world that we entered Avery Tractors year after year. Here are the records which Avery Tractors made in fuel economy:

In the 2-hour Economy Brake Horse Power Test, Avery Tractors were **First in lowest cost of fuel** per Horse Power in 1 of the 4 tests and second by only four-thousandths of a per cent in another of the tests.

In the Plow Test, Avery Tractors were **First in lowest cost of fuel per acre plowed** in 2 of the 4 tests. The Avery 40-80 H. P. Tractor plowed the cheapest acre of any of the gasoline classes, its record being over 10c an acre less than its nearest competitor.

The Avery Company was the **only** company entering the **same** tractor in both the Gasoline and Kerosene tests.

Gasoline, kerosene, or motor spirits can be used in an Avery Tractor as desired. You can have the choice of burning whichever fuel is the cheapest in your locality, no matter what the price may be from year to year, a thing which you can never determine in advance.

You Can Easily Get At Any Part of an Avery Tractor

Accessibility is the eighth advantage of the successful combination of the nine units in an Avery Tractor.

The cylinder heads are easily removable for grinding the valves.

The inner cylinder walls are easily renewable in case of wear.

Removing the cam case gives a wide opening for using wrenches in tightening the connecting rod boxes.

The valve rods are adjustable from the outside.

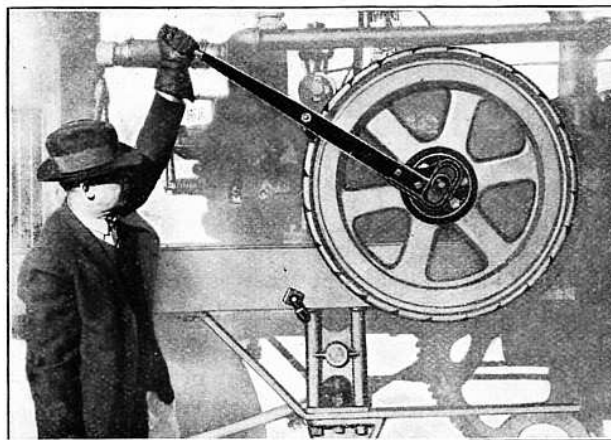
The gears are all located outside the frame and handy to get at.

In every way possible an Avery Tractor is designed to be easy to take care of and keep in good running order.

It Doesn't Take an Expert to Run an Avery Tractor

This is the ninth and last important result of the successful combination of the nine units in an Avery Tractor—**ease of handling**.

An Avery Tractor is so simple that anyone who is able to handle the levers can easily operate it.



Every Avery Tractor is regularly equipped with our special easy safety starting lever as shown here. This is by far the finest thing ever devised in the hand tractor starter line. The lever is permanently at-

tached to the flywheel and rests in the hook on the side of the frame. To start the motor, the operator raises the lever to the position shown in the illustration. When he pulls down, the block on the lever presses against the rim of the flywheel and revolves the motor. This lever makes starting the motor wonderfully easy. It is even easy to turn the motor over with all the priming cocks closed.

Avery Tractors are built to turn around in an unusually short space, which is of special advantage. In the steering device we use double cross chains with accurately shaped rollers so that the chains remain taut at all times.

There is much less to cause trouble in operating an Avery Tractor than with many others—no fan or fan belt to break, no fuel or water pumps to leak or clog up, no clockwork lubricator to choke up.

About all there is to do to run an Avery Tractor is to pour in the fuel, lubricating oil and water, and keep everything tightened up. It does not take an expert to run an Avery Tractor. It is simple and easy for an ordinary man to handle and keep in running order.

General Fittings

A PLOW HITCH is furnished regularly with Avery Tractors.

Each tractor, except the 8-16 H. P., is also equipped with an **automatic coupler** for coupling on wagons or other machinery.

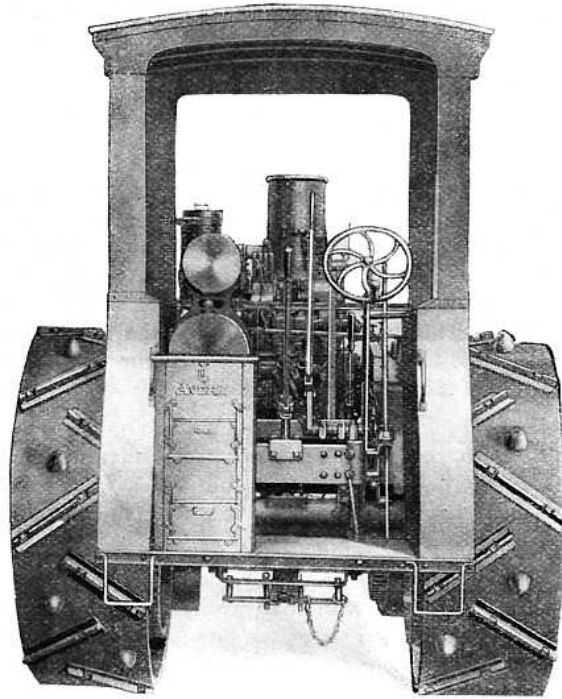
All size tractors have **steel platforms**.

A strong **foot brake** is provided which operates a steel band around the compensating gear shell.

A cab is furnished regularly with these tractors, as shown in illustrations, except on the 8-16 H. P. size.

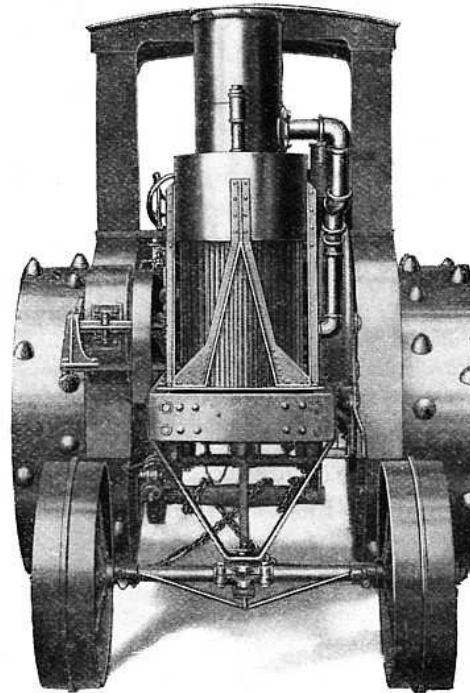
Each tractor is equipped with **two steel fuel tanks**.

A **gravity gear oiler** is furnished regularly for oiling the gearing and shafting.



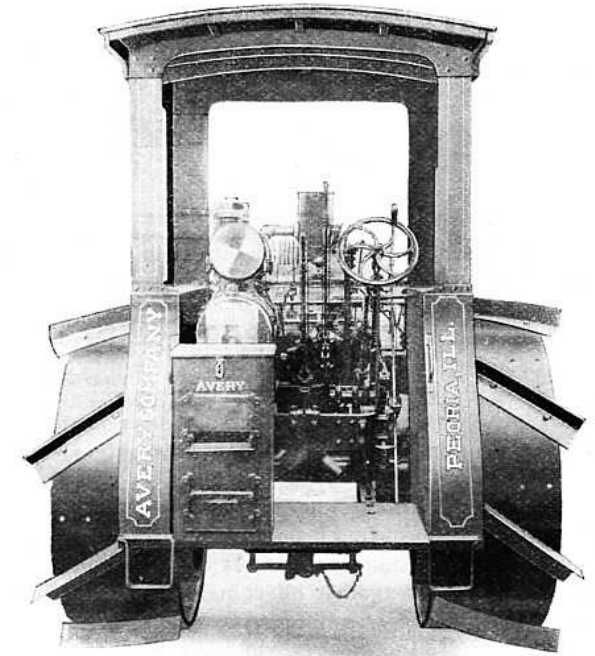
V Cleats and Spuds

These rear wheels are equipped with V Cleats and Heart Shaped Spuds, which is regular equipment on all Avery Tractors.



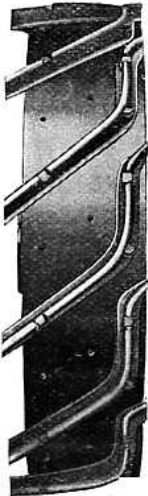
Heart Shaped Spuds

In this illustration the rear wheels are equipped entirely with Heart Shaped Spuds, which can be furnished if desired.



"Never-Slip" Lugs

These "Never-Slip" Lugs were first designed for use in rice lands and have since also been used in soft ground generally with great success.



Universal Cleats

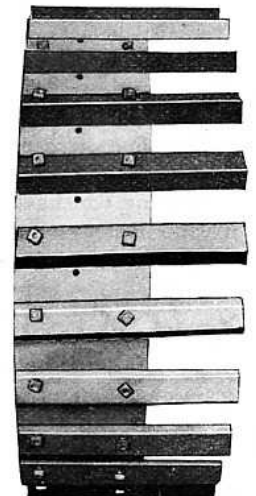
Because of their shape these cleats serve a number of purposes, hence their name "Universal."

Wheel Equipment on Avery Tractors

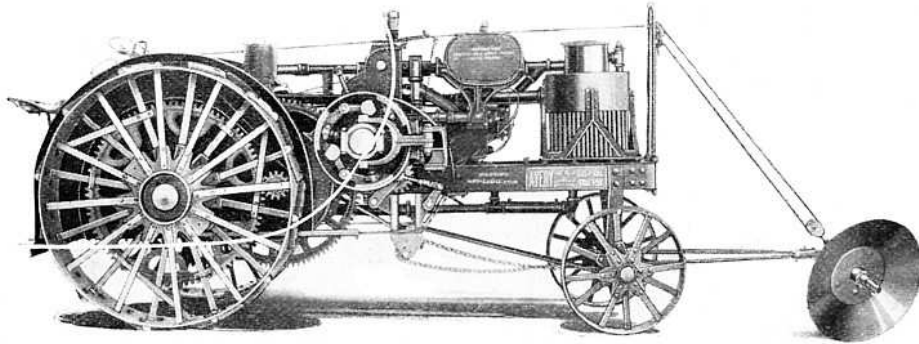
It has not been found possible, at least as yet, to design a single kind of wheel equipment which would meet all conditions everywhere. The Avery Company have, however, succeeded in designing various forms of cleats, spuds and lugs which, when properly applied to the local conditions, have successfully met every condition that has been presented, whether it has been sand, loose ground, soft ground or anything else. Being able to get the wheel equipment which will most successfully meet their special conditions is a great advantage to purchasers of Avery Tractors.

Perfection Lugs

This lug was worked out for sand and light loose ground, and is said by users to meet the conditions splendidly.



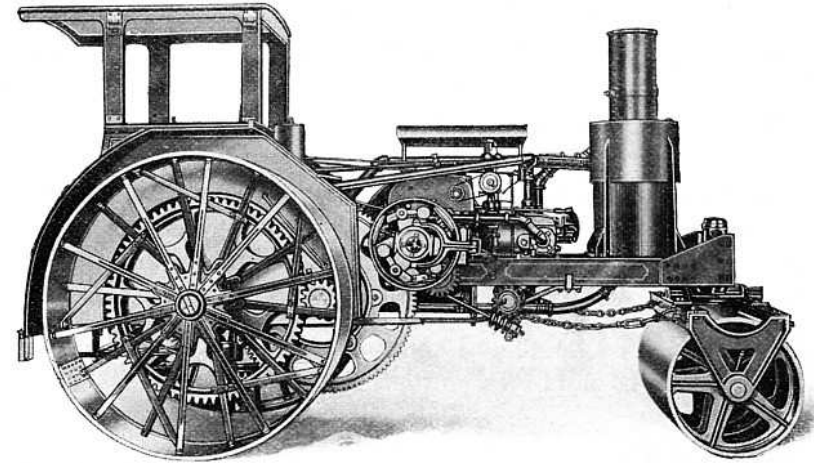
Special Attachments for Avery Tractors



Self-Guide Attachment

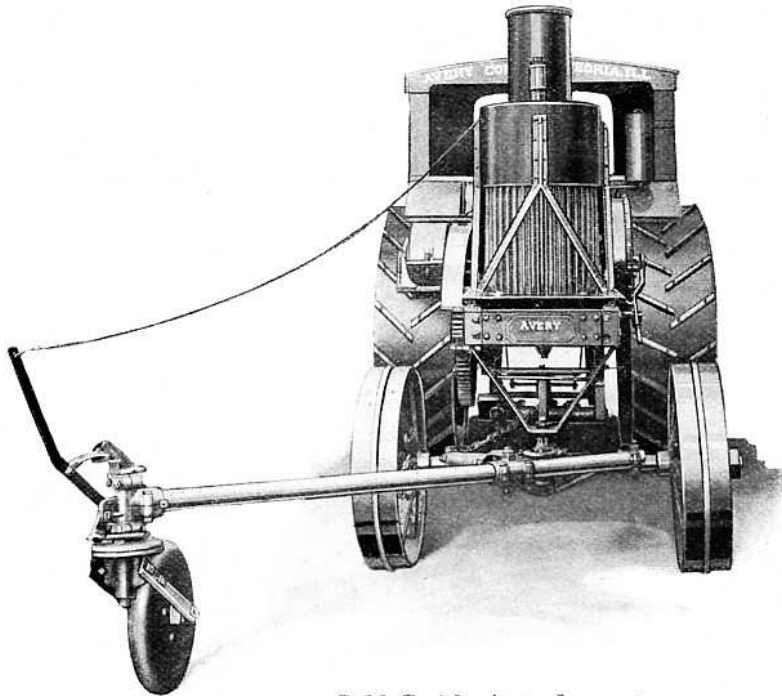
For 8-16, 12-25 and 18-36 H. P. Tractors

This guide consists of a rod frame with a large disc furrow wheel. The wheel is raised from the ground for turning around at the ends or for moving from one field to another.



Road Roller Attachment for the Avery Tractor

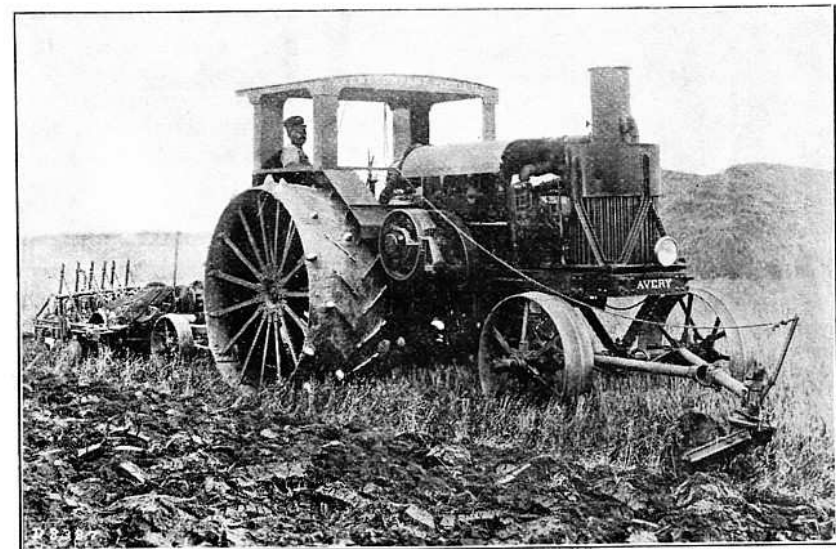
By removing the cleats from the rear wheels and replacing the front wheels with this road roller attachment, an Avery 18, 25 or 40 H. P. Tractor can be easily changed into a road roller. This combination of a Tractor and a Road Roller, all in one machine, means a big saving of expense.



Self-Guide Attachment

For 25-50 and 40-80 H. P. Tractors

This guide consists of a pipe frame and a caster furrow wheel. When you reach the end, pull a cord to release the latch and the wheel will then caster so you can turn around. After turning around, pull the cord again and the latch will engage the guide wheel when it drops into the furrow.



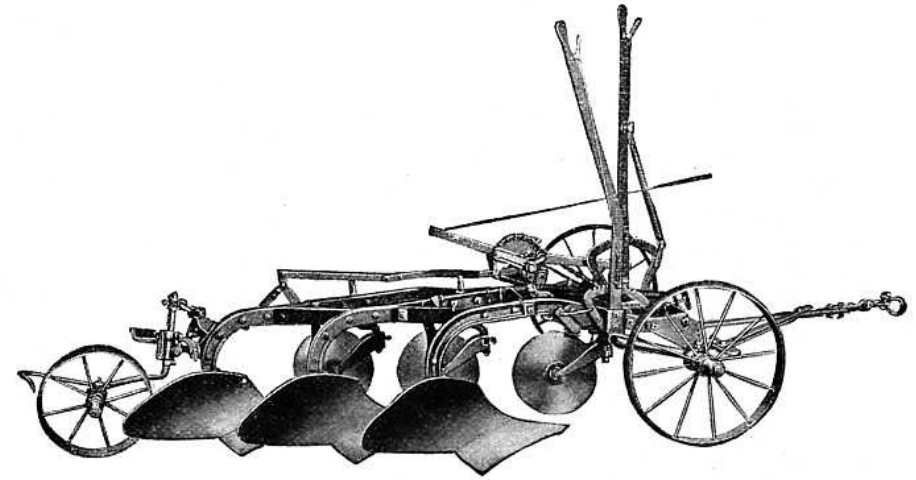
Lights

On special order we can equip a Tractor with either Electric or Acetylene Lights, as wanted.

Combination "Power-Lift" Plows

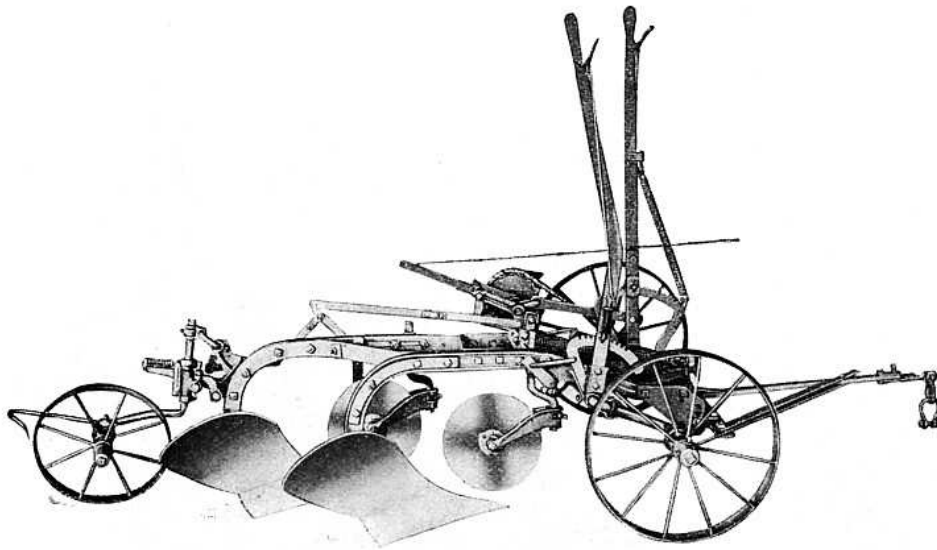
THESE plows do good work and are easy to handle. They have a number of special features including power lift, detachable rear beam, pin break adjustable hitch, high lift for all bottoms, ample clearance, convenient depth gauge levers.

They are built in combinations 1 and 2, 2 and 3 and 3 and 4 bottom sizes and with either 12 or 14-inch bottoms as wanted.



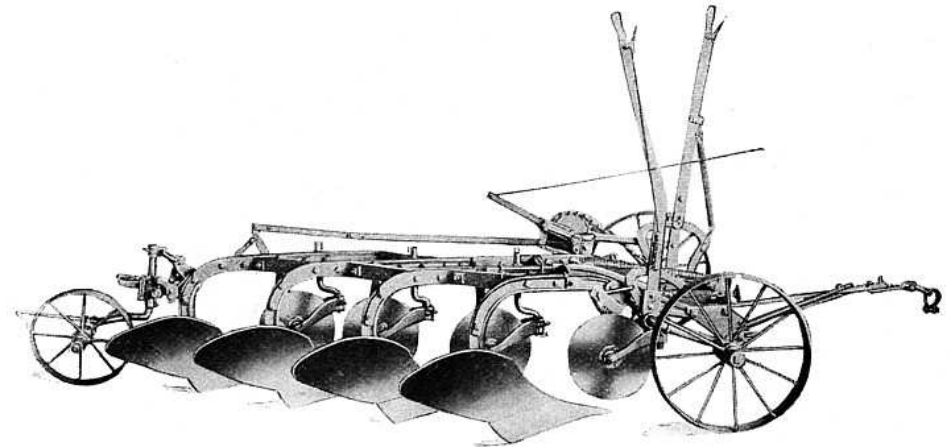
Combination 2 and 3 Bottom Plow

No. 22	2—bottom 12-inch.....	Weight 705
No. 24	2—bottom 14-inch.....	Weight 720
No. 32	3—bottom 12-inch.....	Weight 871
No. 34	3—bottom 14-inch.....	Weight 896



Combination 1 and 2 Bottom Plow

No. 12	—Equipped with 2-12 inch bottoms..	Weight 715
No. 14	—Equipped with 2-14 inch bottoms..	Weight 733

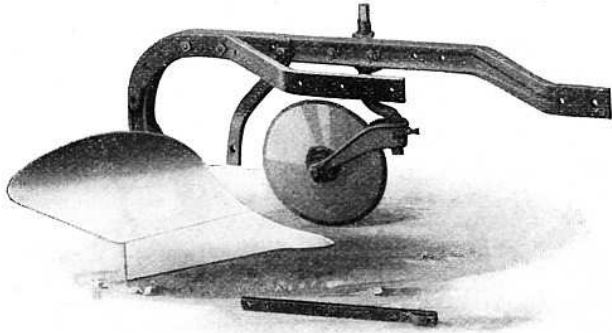


Combination 3 and 4 Bottom Plow

No. 42	4—bottom 12-inch.....	Weight 1240
No. 44	4—bottom 14-inch.....	Weight 1271

Power Lift

The Tractor operator has full control of the plows from his position on the tractor. One rope attached to one lever controls the simple positive clutch by which the plows are either raised or lowered. One pull of the rope and one-half revolution of the clutch raises the plows



from the ground. Another pull of the rope and the plows are released and quickly take their full depth. It is not necessary to stop or slow up tractor when either dropping or raising plows.

Detachable Beam and Bottom

The rear bottom and beam may be detached when desired by the removal of five bolts and the shifting of the rear wheel and axle to the next plow. This is a very valuable feature when you have varying conditions of plowing or when you desire to plow some fields at a greater depth than others.

High Lift for all Bottoms

At furrow ends or at will of operator a pull of the string automatically lifts all plows five inches high. The cranking backward of the front wheels raises the front plows and an ingenious lever connection between power lift bracket and rear wheel attachment raises the rear plow five inches and levels all bottoms. This feature eliminates all chance for gathering trash on plow points and the annoyance and inconvenience incidental thereto.

Pin Break Hitch

A simple adjustable hitch provided with a break pin prevents share breakage and being rigidly fastened to the tractor permits of backing the plow.

Depth Gauge

Two levers, within convenient reach of the operator, at the front of the plow govern the depth of the plowing. Change of depth can easily be accomplished when plowing or when plow is in or out of ground as both levers are always within easy reach of operator of the tractor. By these levers all of the plows may also be lifted out of ground when plow is not in motion. The land lever remains stationary at all times while the furrow lever travels about 30° forward when plows are raised from the ground. Plowing can be done to a depth of nine inches. The beams are extra heavy, made of high carbon steel, bent to provide ample clearance.

Clearance

Single plows seldom clog even when plowing the most trashy ground. Clogging usually occurs, if at all, between first and second or second and third plows. In these plows, not only is ample throat room provided for each bottom, but an unusual distance is allowed between beams for the turn of each furrow slice, which is most important.

Wheels

The wheels are strong and of good height with wide tires, equipped with long distance magazine boxes with grease caps on the ends. A spring lock device on the rear wheel permits the wheel to swivel in turning at ends and automatically is locked into position when plowing.

Bottoms

These plows are built with either 12-inch or 14-inch bottoms. Regular equipment includes stubble or turf and stubble bottoms. These will interchange with breaker, rod breaker, black land or slat bottoms.

Equipment

Standard equipment includes rolling coulters, weed hooks, scraper for rear wheel and tractor hitch. Special equipment includes chilled cast shares, fin cutters for breaker bottoms and jointers.

Combination Coulter Jointer

This Combined Coulter and Jointer consists of an ordinary coulter with a jointer blade so

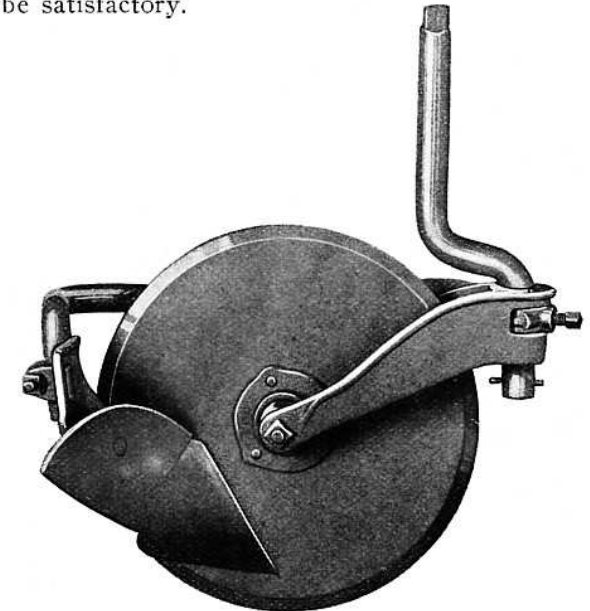
connected to the left hand fork of the coulter yoke that the blade will ride along the furrow side of the coulter blade and turn over a small furrow of soil, weeds, trash, etc., leaving the plow mouldboard an easy job of covering.

The jointer blade is adjustable on the standard and standard and blade are fastened to an adjustable plate attached to the coulter yoke so proper set of blade may be had to suit the working conditions.

The blade, made of hardened soft center steel for easy scouring, consists of two parts and as the point is subject to the greater wear, it will only be necessary to buy this part of the blade to renew the jointer. If it is desired to use a jointer only without the coulter, the blade may be inserted on the regular 1 1/8" or 1 1/4" coulter stem. Jointer point is regularly furnished with soft center steel point but cast iron point will be furnished, if desired.

For a good job of covering under the most trashy conditions, this Combination Coulter-Jointer cannot be beat.

Coulter forks must be drilled for adjustable plate that holds jointer standard and it is therefore, best to order coulter and jointer. If drilling is done in a local machine shop results might not be satisfactory.



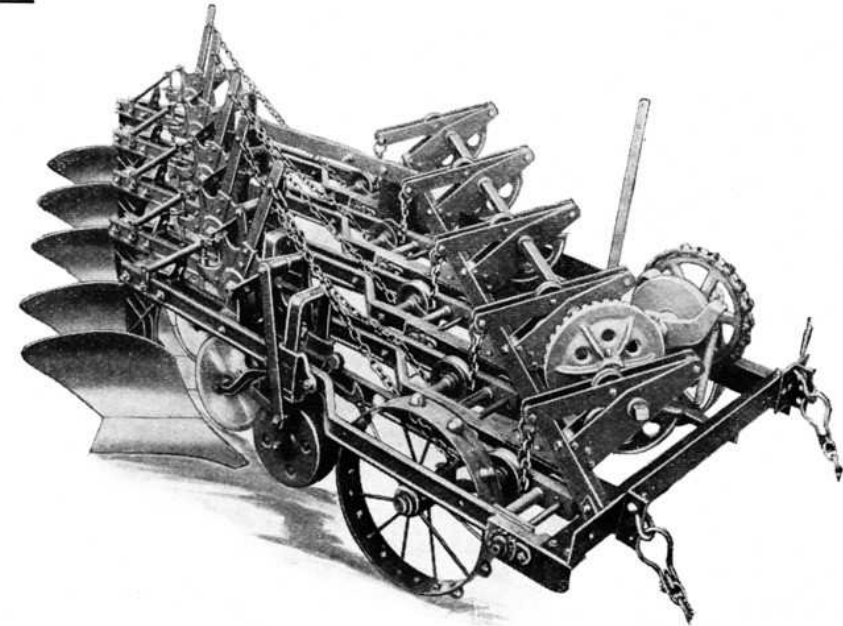
Independent Beam "Self-Lift" Plows

IN the Avery Independent Beam "Self-Lift" Engine Gang, each plow is attached to the frame independent of the others. It is free to raise or lower according to the conditions of the ground and to follow its furrow without being affected by any other plow. If one plow strikes a stone or other object it does not affect any of the others.

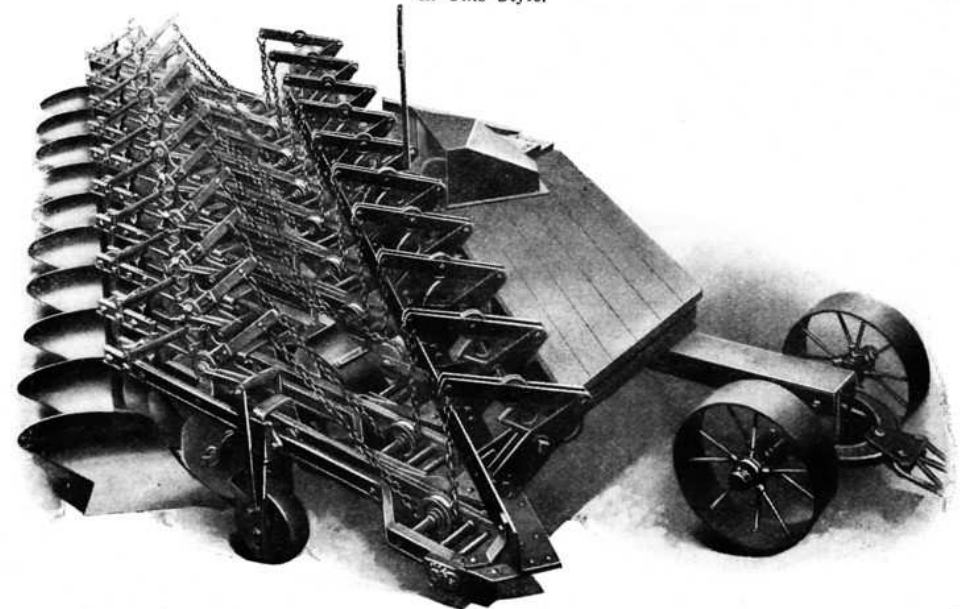
The Avery "Self-Lift" Plow also has unusual strength. Each plow has double heavy beams spread at the front end to give a wide bearing where coupled to the frame. One of the beams is straight while the other receives only a side bend. The Avery Plow may be pulled through ordinary rocky ground without danger of breakage or bending of the beams, but if by any accident a beam should become sprung, it can be straightened by an ordinary blacksmith.

The position and character of the gauge wheel on an Avery Plow is also worthy of special note. It is located directly in front and just forward of the point of the plow. Each plow being entirely independent of the others and the gauge wheel being located in this position, it carries the point of the plow at a uniform depth at all times, which is one of the most important elements in perfect plowing.

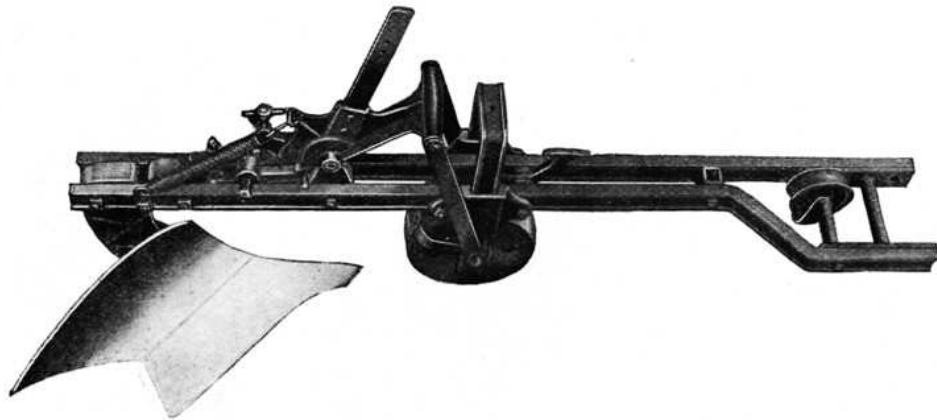
Avery "Self-Lift" Plows were the first "Self-Lift" Engine Gang Plows built and are fully covered by patents Nos. 819,223; 909,919; 933,858; 936,767. We have numerous other applications for patents pending, also Canadian patents and patents pending in Canada. The matter of infringement of patents and damages has already been taken up and will be pushed vigorously against all infringers not licensed under our patents. Manufacturing licenses under our patents have been granted only to the following companies: Deere & Co., M. Rumely Co., Grand Detour Plow Co., Holt Mfg. Co., and Cockshutt Plow Co. in Canada.



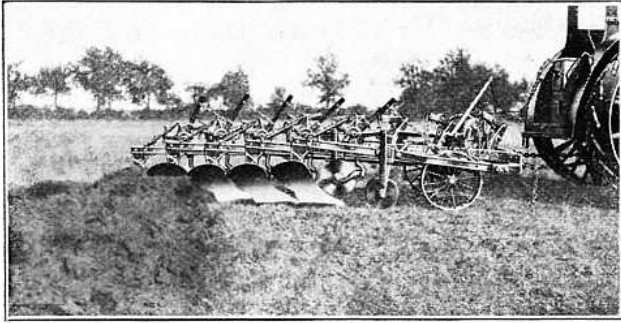
Avery 5-Furrow Independent Beam "Self-Lift" Engine Gang. 3 and 4-Furrow Plows Are Also Built in This Style.



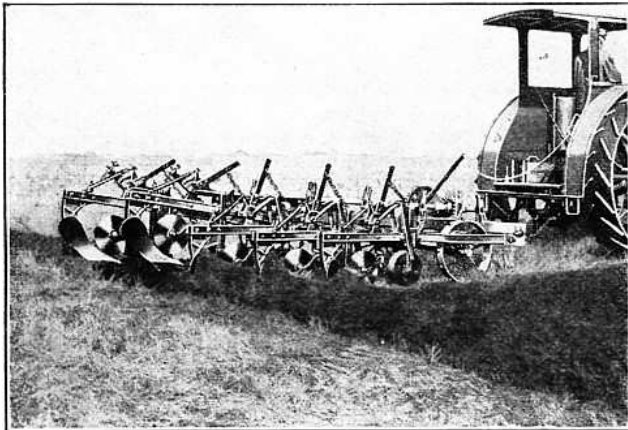
Avery 10-Furrow Independent Beam "Self-Lift" Engine Gang. 6, 7 and 8-Furrow Plows Are Also Built in This Style.



Top View of Single Plow of the Avery Independent Beam "Self-Lift" Engine Gang, Showing the Double Straight Heavy Beams.



In this view the cord has been pulled and the "Power Lift" Device has lifted the first three of the plows out of the ground. Notice how they lift in a straight line. You never need to stop or even slack up in turning around at the end when you use an Avery Plow. Just pull the cord and keep right on going.



In this view the operator has just pulled the cord and part of the plows have dropped into the ground. This shows plainly how they drop in one after the other in a straight line, making clean, even ends.

How the Avery "Power Lift-Self Drop" Device Works

In the construction of the "Power Lift-Self Drop" Device on the Avery Plow, a large simple clutch is used. When the cord is pulled, the clutch immediately engages and the cord can be at once released. It is not necessary to hold it. All you have to do is to pull it an instant until the clutch is engaged.

The plow wheel is provided with grouters to prevent slipping, and the axle, to which the wheel is rigidly attached, carries a sprocket wheel from which power by means of a sprocket chain is conveyed to the clutch mechanism.

When the operator wishes to lift the plows, he simply pulls on the cord and this engages the clutch much after the fashion of the ordinary binder trip. This

transmits the power to a diagonal shaft, extending the length of the plow frame, upon which is located an individual cam and lever for lifting each plow. This shaft turns one-half revolution when the clutch is engaged. The cams are placed on the shaft at different angles. When the shaft turns, the cam for the forward plow operates to raise its plow first and each of the other plows are raised in turn when they reach the point where the first plow emerged from the ground.

To drop the plows, the cord is again pulled and the clutch engaged, when the diagonal shaft turns the other half revolution, the first plow drops ahead of the rest and each plow in turn drops when it reaches the point where the first plow entered the ground.

Accurate Adjustments

The adjustments on the Avery Plow are unusually accurate. The **depth of plowing** is regulated by a hand screw, as will be noted in the illustration, and can be changed easily and accurately. Much finer adjustments can be made than with a hand lever. In an advertisement one manufacturer states that the lever notches on their plow only provide adjustments of $\frac{1}{2}$ -inch in depth, while with the screw thread adjustment on the Avery Plow you can adjust the depth to any fraction of an inch.

A set screw is also used on the plow standard to raise or lower the point of the plow to give **more or less suck**. An absolutely accurate adjustment can thus be easily gotten.

In attaching the plows to the frame an eccentric coupling is employed for lining or winging the plows. After this very important adjustment has once been made, it is rarely ever necessary to adjust again during the life of the machine.

Other Features on Avery "Self-Lift" Plows

The Avery Plow is mounted on supporting wheels of wide face and large diameter, all of which run on the unplowed ground. The construction of the Avery Plow is such that there is no side draft requiring a furrow wheel. The plow will follow the engine without slipping on the ground and as all the wheels run on the unplowed ground, no special adjustments are necessary when opening up a new land. The width of the first furrow is gauged uniformly by a self-guide on the tractor.

By using cross chains for hitching the plow to the engine, the operator may commence turning at the end when the front wheels of the tractor are even with the end of the plowing and the plow will follow straight out, thus requiring only a short turning space at the end.

The gauge wheel itself is 13 inches in diameter and has a 4-inch face. It is made of two shell castings bolted together, and constructed in such a way that both faces of the wheel are completely enclosed and there is no rim to pick up and fill with mud or soft earth. It is carried on a hard maple bearing. This

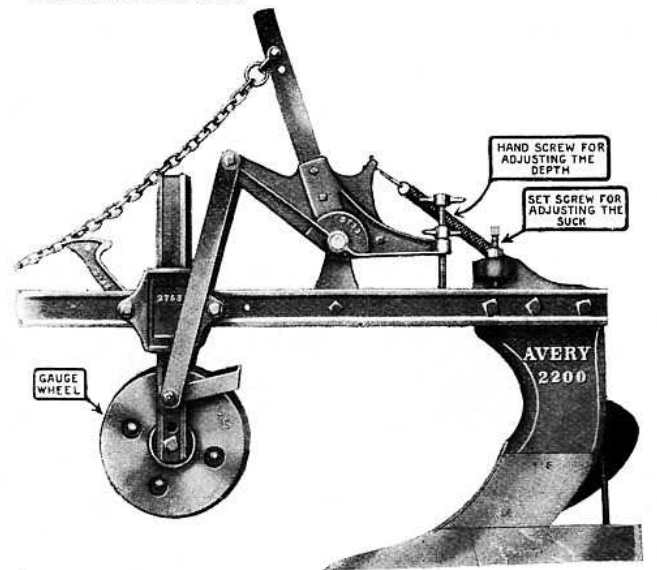
bearing receives a special treatment which thoroughly saturates it with special oil and it will run in dust an indefinite period without lubrication. If it should ever wear, the box can be replaced as good as new at a very slight cost.

An adjustable scraper on the gauge wheel prevents accumulations on the face of the wheel and may be used or removed, as desired, according to the condition and character of the ground. It is constructed in such a way that it does not interfere with the adjustment and working of the rolling couler.

On the 3, 4 and 5 bottom plows we use a malleable standard; on the 6, 7, 8 and 10 bottom we use a heavy cast standard. The plow bottoms are made of heavy material and will stand the grief incident to being pulled by steam or gas tractors in tough or stony land. Any type of bottom will interchange with the beams on any size plows.

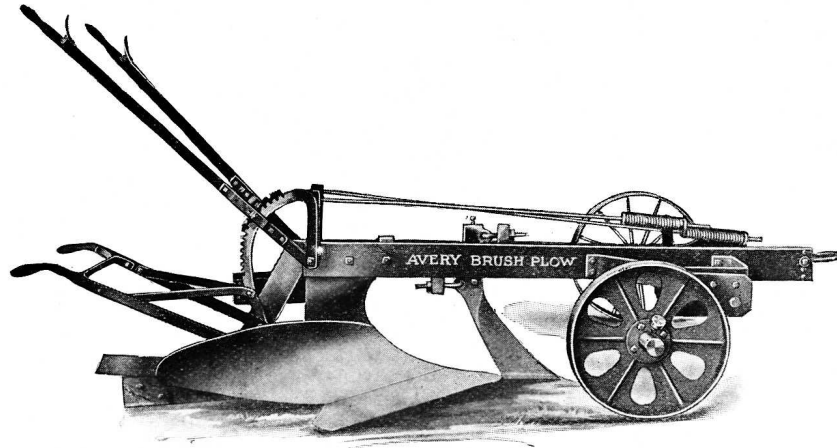
The plow frame, including the plow hitch, is made of steel plates, angle iron and channel bars riveted solidly together, thus making a construction that is very strong and proof against breakage. The castings that undergo the most severe strains are malleable and the whole machine, aside from being very strong, is so designed as to be light in weight.

The 6, 7, 8 and 10 gang plows are mounted on four wheels. The 3, 4 and 5 gang plows have two main plow wheels and one of the single plow gauge wheels serves as a third bearing for the frame. The wheels are built with renewable boxes and are equipped with hard oil cups and so designed that they do not gather mud or trash in wet soil to cause them to clog. They are possessed of sufficient freedom to overcome any trouble of this sort.



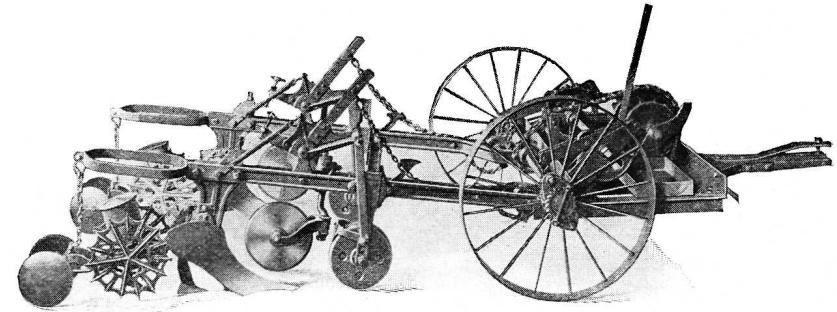
Showing the Set Screw for Adjusting the Suck, Hand Screw for Adjusting the Depth, and Depth Gauge Wheel on the Avery "Self-Lift" Engine Gang.

Special Plows for Extra Deep Tilling, Listing, Etc.



Avery Brush and Marsh Plow

These plows, in connection with the Avery "Light-Weight" 12-25 and 18-36 H. P. Tractors, are being used quite extensively in the Northwest for bringing brush land and land covered with poplar trees under cultivation at a low cost per acre. They are also being used for reclaiming marsh land with splendid success.

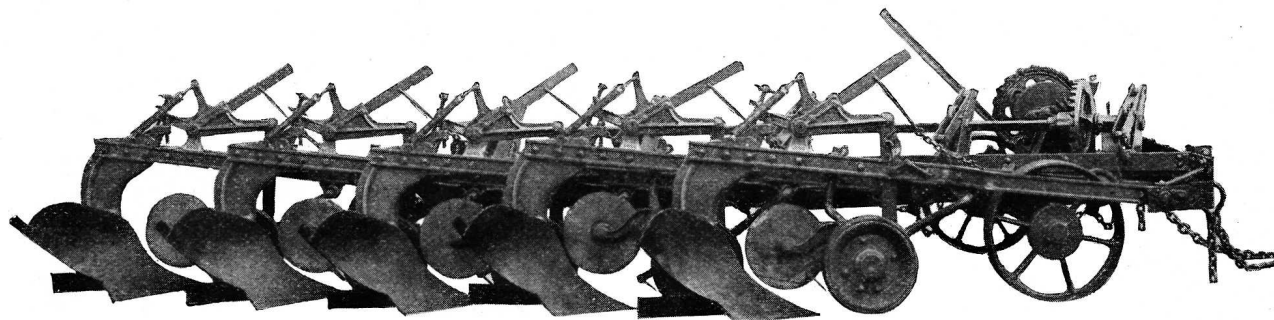


Avery "Self-Lift" Lister

For territories in Kansas, Nebraska and other states where listing is done, we have now built a special Lister to be used with an Avery Tractor. Corn planter attachments can also be supplied for each lister bottom.

In its construction we have used the special Automatic "Power Lift-Self Drop" Device as used on the Avery "Self-Lift" Plow. One man or boy can run the entire outfit alone. All he has to do is to run the Tractor, and at the ends of the furrows pull a cord to engage a clutch on the Lister frame, when the listers are raised out of the ground or lowered as desired.

With one of these outfits you can do equally as good or better work than with any Sulky or Gang Lister. You can also do much more work in the same length of time and at less expense. Avery "Self-Lift" Listers are built in two sizes—two and three-row.



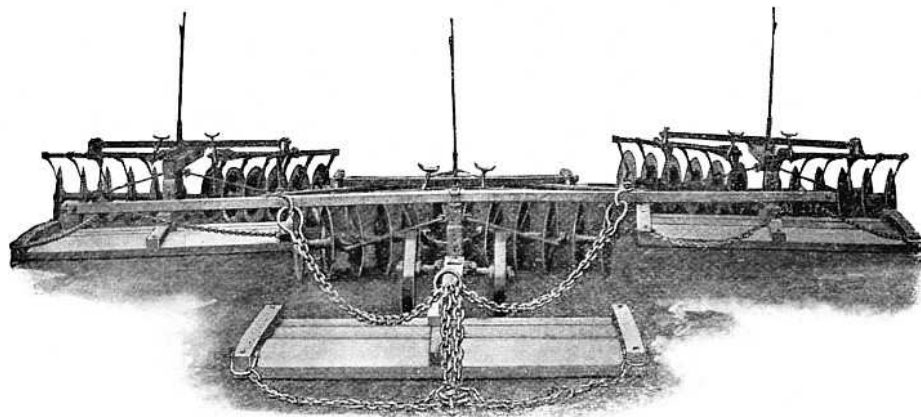
Avery Deep Tilling Plow

For those who want to plow extra deep we have designed the special plow shown above to plow 14 inches deep. This plow is built extra strong and has a clearance of 28 inches between each bottom.

Bottom on Deep Tilling Plow



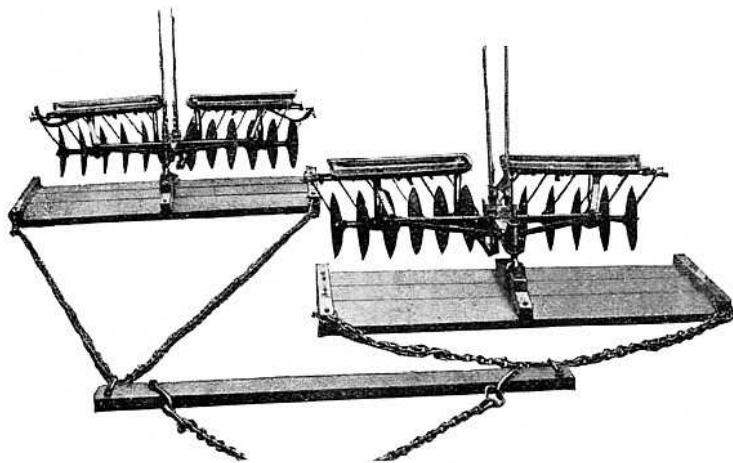
Special Machines and Hitches for Discing, Drilling and Harvesting with Tractor Power



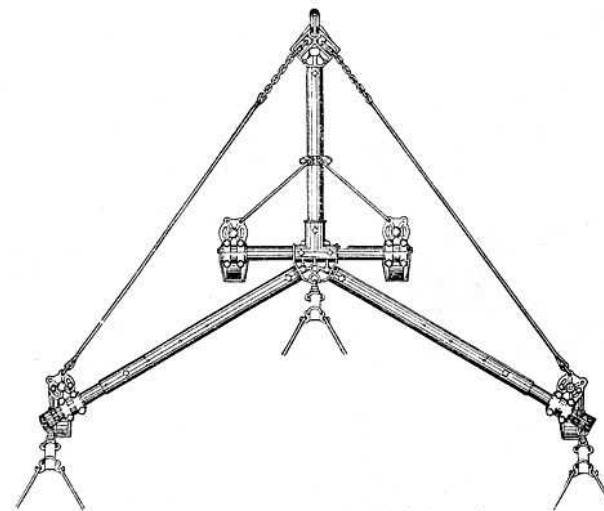
**Disc Harrow and Plank Float Combined—3-Section—
16½-Foot Cut**

This combination of Disc Harrow and Plank Float has been thoroughly tried out and has proven to be, under most conditions, superior to the double disc, because the leveling effect of the plank float and the breaking up of the clods leaves a much better seed bed and the land practically level. This machine is so constructed in three sections that it will not tangle up in turning and it is 25% lighter in draft than the double disc harrow cutting the same width.

The above illustrates a three-section machine cutting a width of 16½ feet and is the proper size for the Avery 18-36 H. P. Tractor. A smaller size of the same general design and construction for cutting a width of 12 feet can be furnished for the 12-25 H. P. Tractor, as shown below.

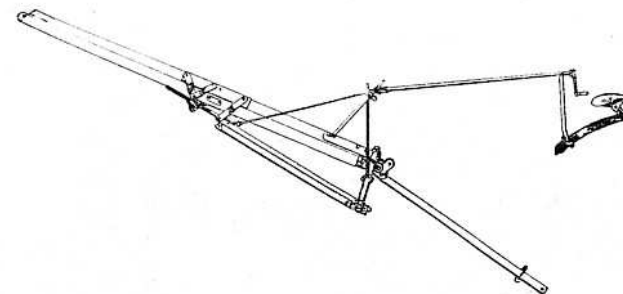


**Disc Harrow and Plank Float Combined—2-Section—
12-Foot Cut**



Hansmann Drill Hitch

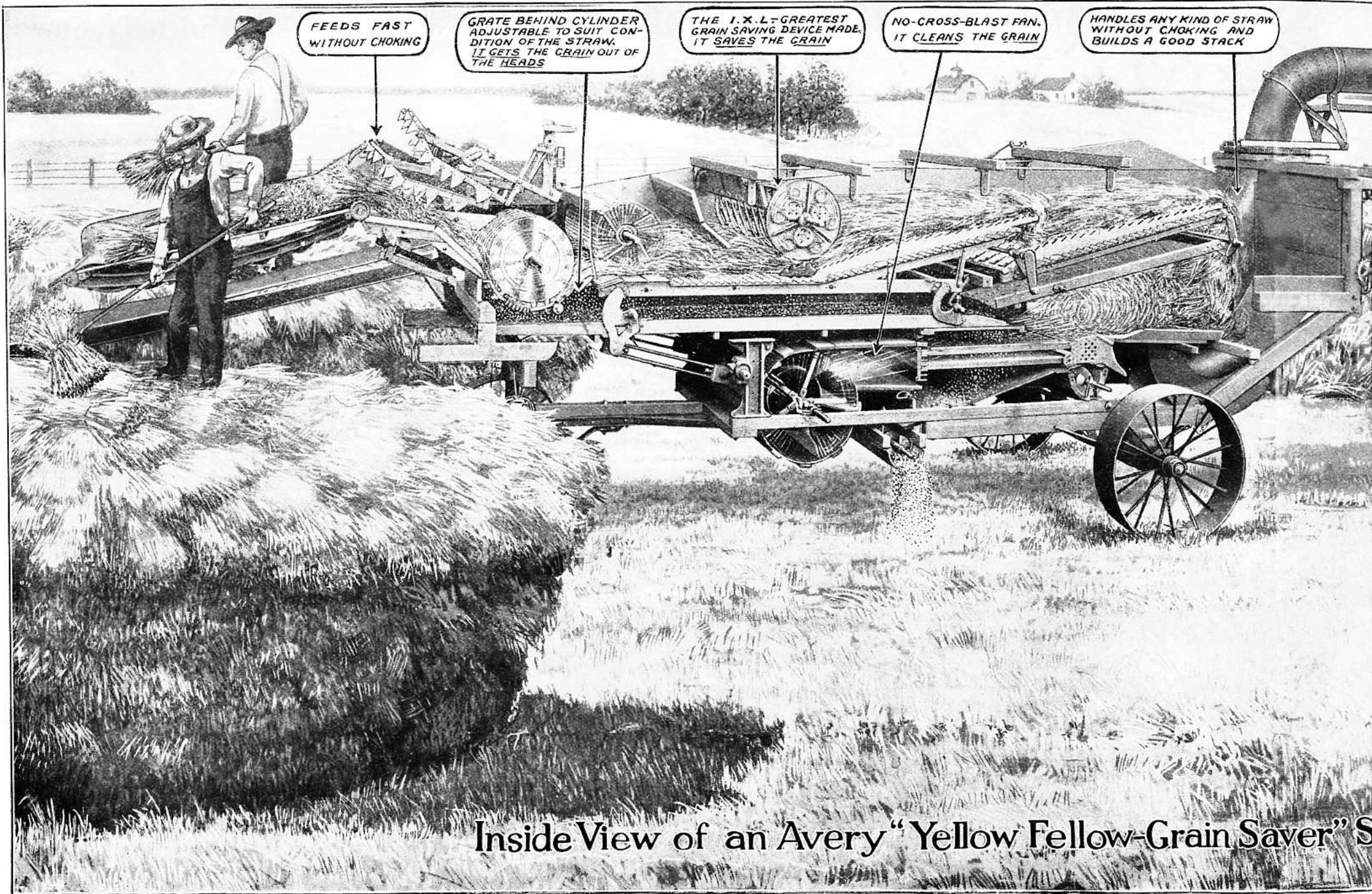
With the introduction of the Tractor for farm purposes came the demand for a hitch by means of which the Tractor could successfully disc and seed land. There have been several such devices on the market, but they failed to stand the test. These devices worked well while the machines were going across the field, but it was at the turns where they failed. This Hansmann Drill Hitch enables a Tractor to pull three or five drills, of any make or size, and permits the turning of the Tractor in as small a circle as necessary. The drills will not bunch or touch one another and will turn about, each one coming in its place as the Tractor leads. The Hansmann Drill Hitch is made of heavy gas pipe with malleable castings. It is sufficiently strong and yet not too heavy for practical service. The four wheels which carry the weight of the Hitch are 24 inches in diameter and have a 4-inch face. This Hitch can also be used for discing, packing and harrowing with equal success.



Hansmann Binder Hitch

The Hansmann Binder Hitch has been designed for pulling any number of binders behind a Tractor. It has been used through several harvests and proven to be a perfect success.

It is guaranteed to operate successfully on any make or size of binder in the world without the least side draft or use of trucks to support the hitch, and that you can operate as many binders as the Tractor has power to pull.



FEEDS FAST
WITHOUT CHOKING

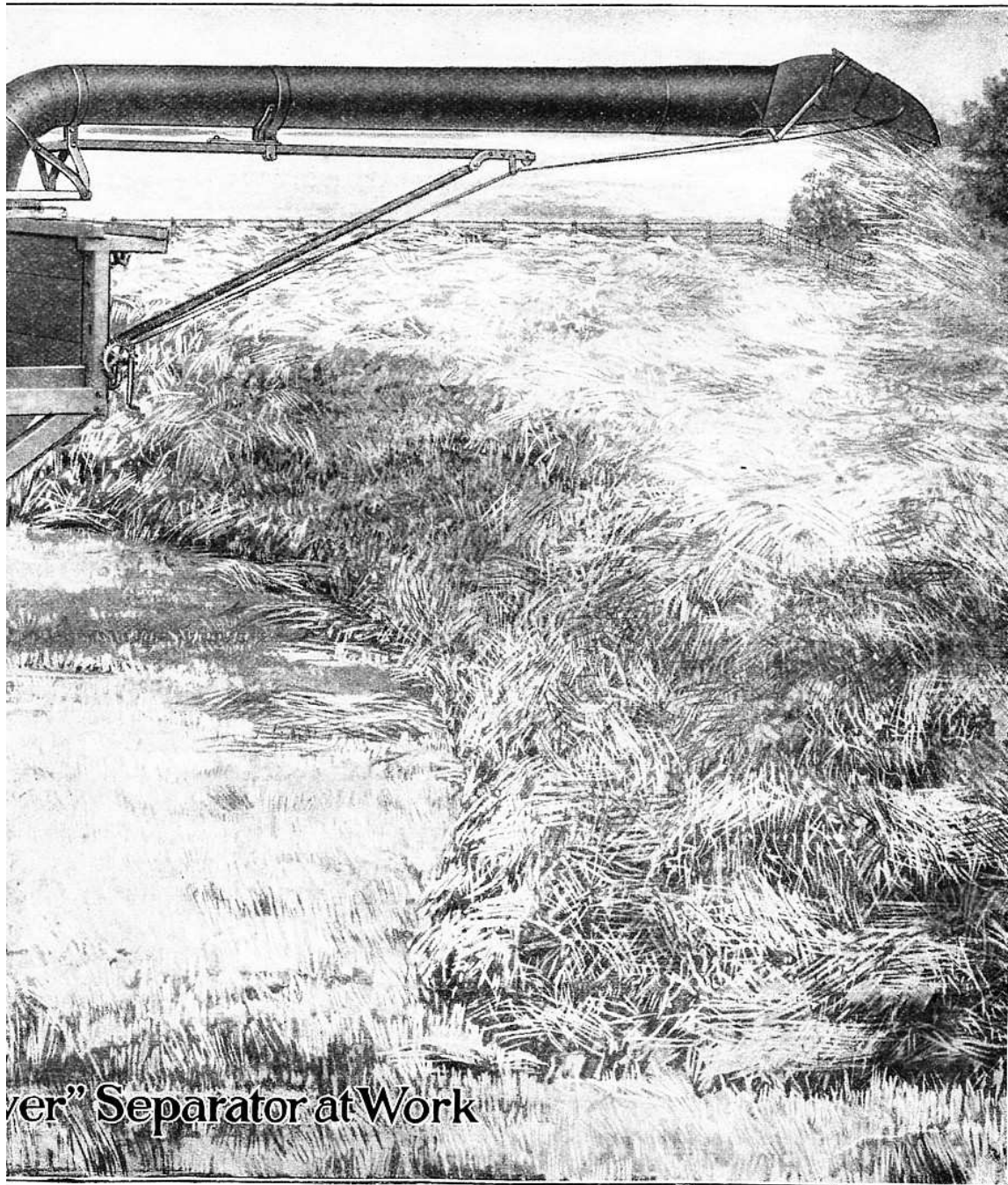
GRATE BEHIND CYLINDER
ADJUSTABLE TO SUIT CON-
DITION OF THE STRAW.
IT GETS THE GRAIN OUT OF
THE HEADS

THE I. X. L. - GREATEST
GRAIN SAVING DEVICE MADE.
IT SAVES THE GRAIN

NO-CROSS-BLAST FAN.
IT CLEANS THE GRAIN

HANDLES ANY KIND OF STRAW
WITHOUT CHOKING AND
BUILDS A GOOD STACK

Inside View of an Avery "Yellow Fellow-Grain Saver" S



What an Avery Separator Gives Grain Growing Farmers and Men Who Own Threshers

MEN who raise grain are looking more closely into the question of the best machine to do their threshing. They want the machine that will do the best job of saving and cleaning the grain and that will thresh fast and stand up on the job.

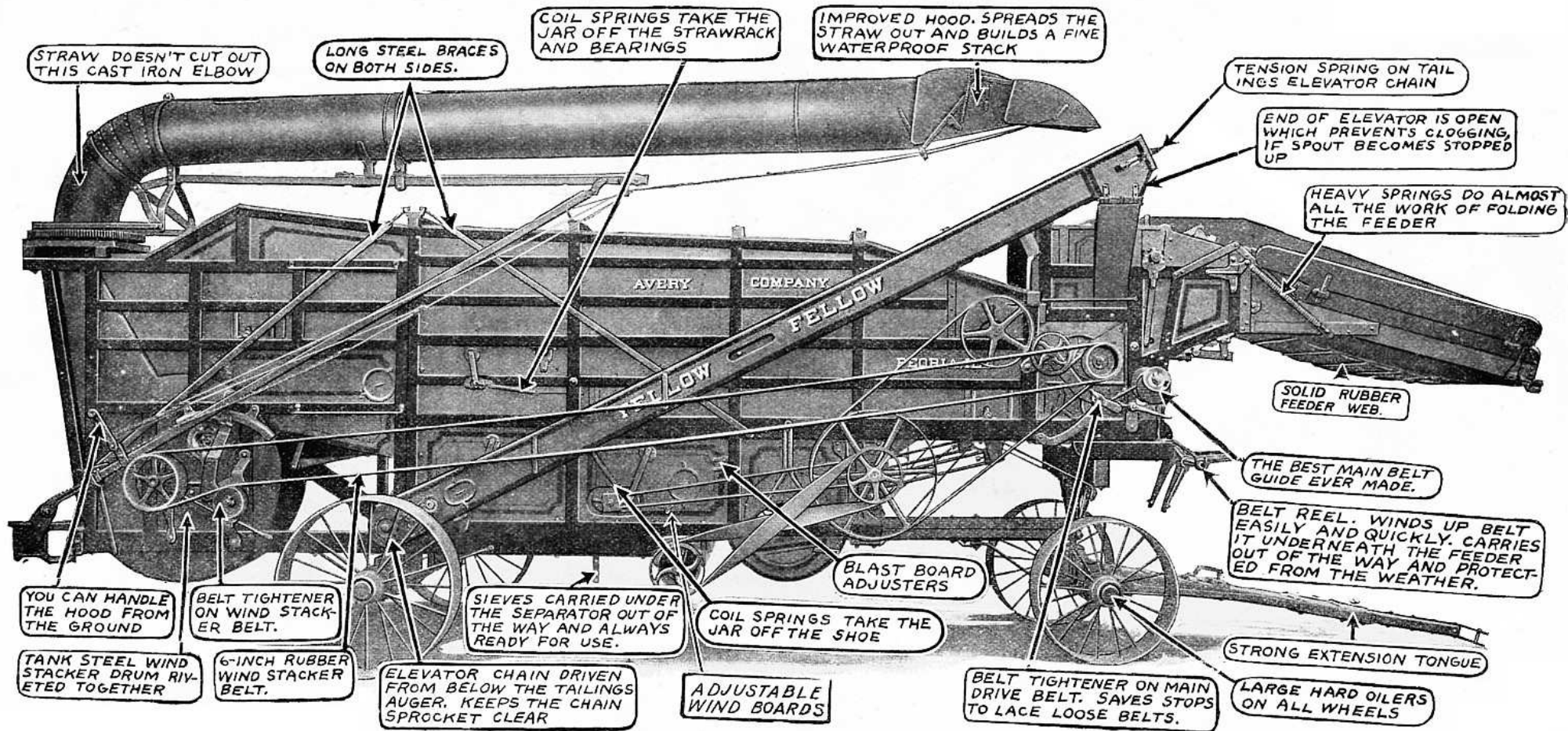
The more investigation there is of this kind, the better pleased we are. For Avery Separators can show the best grain saving record ever made and are guaranteed grain cleaners. As for threshing fast, the only complaint we ever hear is that they wear out the pitchers, and most Avery threshermen make practically non-stop runs through the whole season because there is so seldom any breakdown or trouble with an Avery Separator.

Besides these things, a man who owns a thresher also wants a machine that will last a long number of years, have small repair bills and that is easy and convenient to operate.

The best evidence on these points is the experience of those who now own Avery Separators. We urge you to ask any Avery owner. Just find out what they say. Avery Separators are built to last. Many of them run for years without costing a cent for repairs, and the illustrations of their improved features in this catalog show that they are easy to handle.

And be sure you read also about the strong Avery Guarantees. As one man wrote us, "You must build fine machines if they are as good as you claim they are, and they surely must be as good as you claim or you couldn't give the strong guarantees you do."

Avery "Yellow-Fellow" Separators were named by a thresherman "The Job Takers and Money Makers," and that's just what they are.

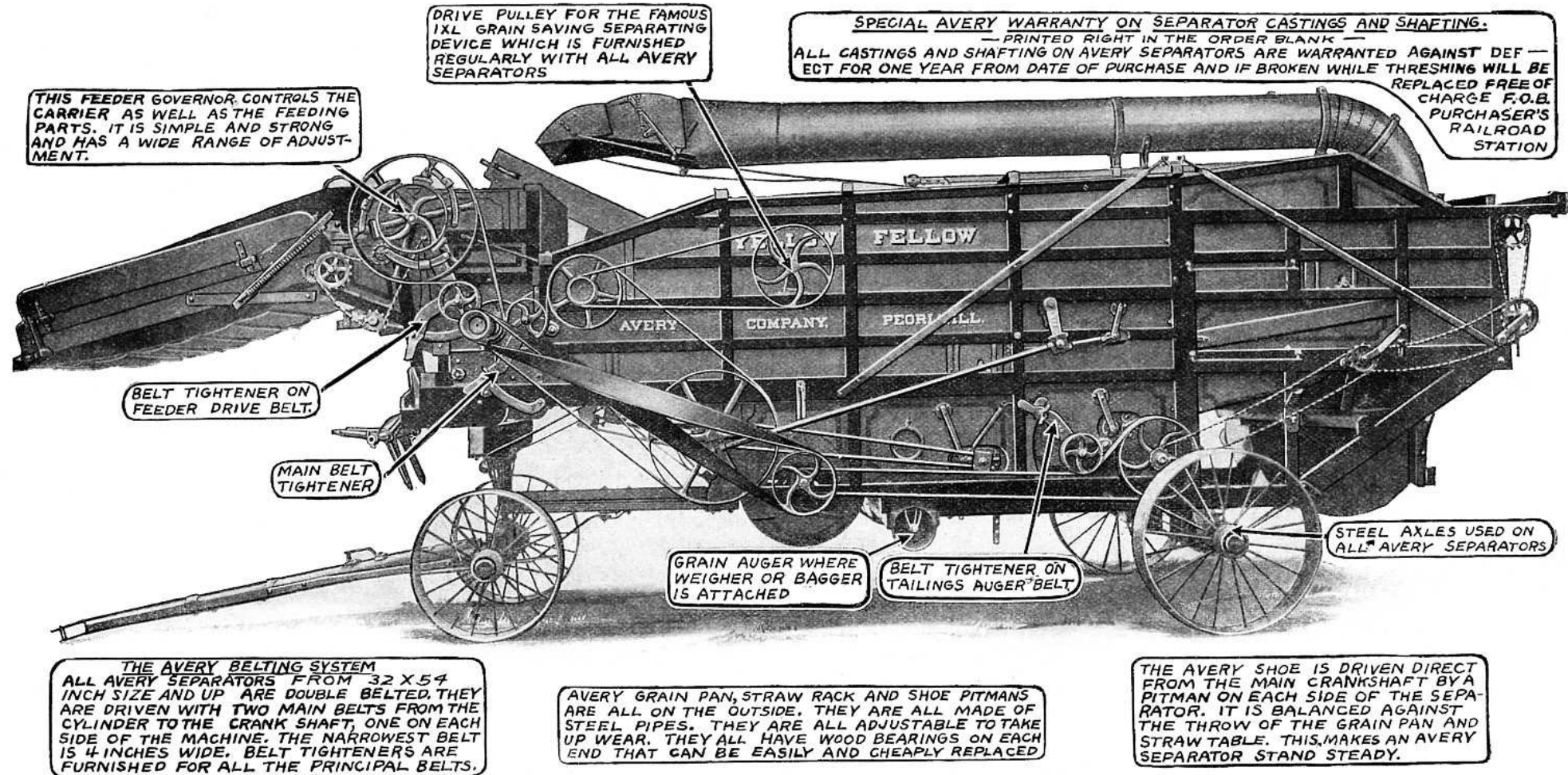


Left Hand Side of an Avery "Yellow Fellow- Grain Saver" Separator

Built in Sizes 28 x 46, 32 x 54, 36 x 60, 42 x 64 and 42 x 70 inch.

Our small 19 x 30, 22 x 36 and 26 x 40 inch "Yellow-Kid" sizes are illustrated and described on page 44.

All Avery Separators are regularly equipped with I. X. L. Separating Device, Cone Pulley Belt Guide, Improved Belt Reel, Lifting Jack, Extra Concaves and Tools without extra charge.



Right Hand Side of an Avery "Yellow Fellow-Grain Saver" Separator

Built in Sizes 28 x 46, 32 x 54, 36 x 60, 42 x 64 and 42 x 70 inch.

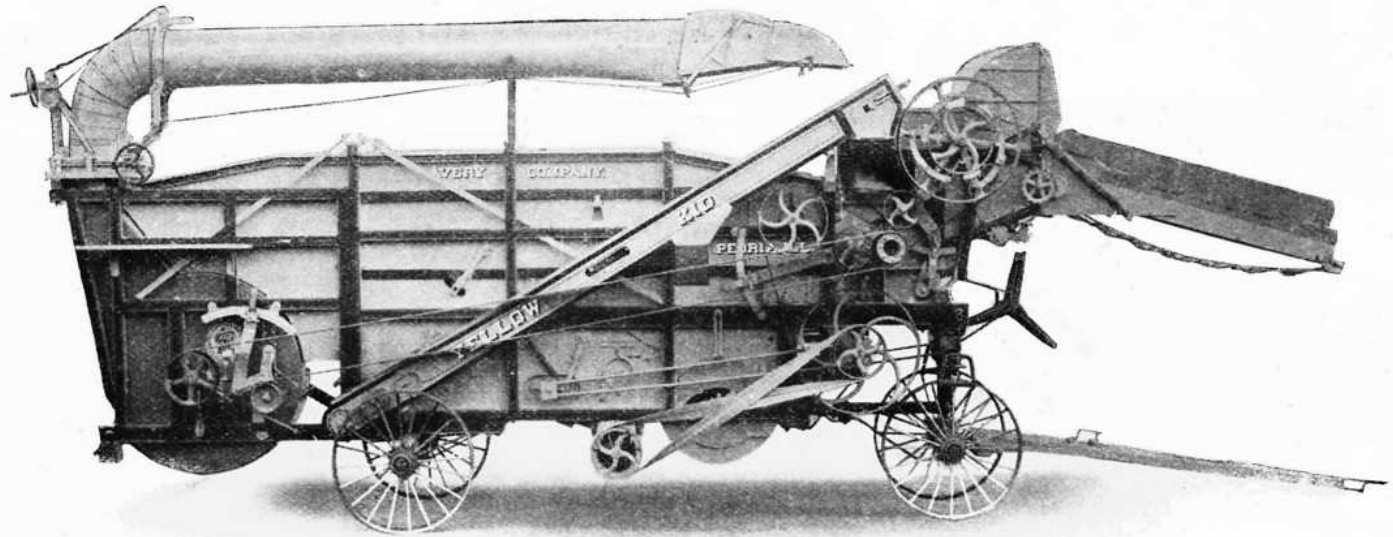
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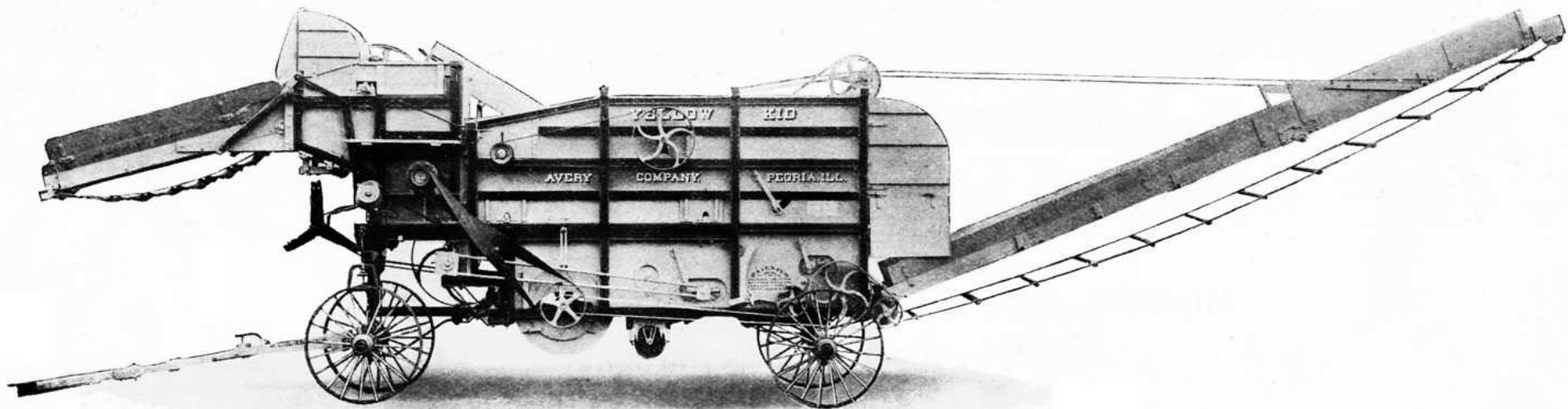
Avery "Yellow-Kid" Separators

THE increasing use of Small Tractors for General Farming has caused a demand for small sized Separators to be used with them. They are being bought by threshermen with small runs, by farmer companies and by individual farmers. To meet this demand we build three small separators named the "Yellow-Kid"—sizes 19x30, 22x36 and 26x40-inch. Can be supplied with Hand or Self-Feeder, and with Common Stacker, Wind Stacker or Sattley Swinging Stacker.

Our "Yellow-Kid" Separator is simply a cut-down, small-size "Yellow-Fellow." It is not built cheaply, as are most small Separators. The frame is as strong as in our larger machines. Has I. X. L. separating device, steel axles, etc. See the following pages for complete description of the many special features in Avery Separators, practically all of which will be found in our "Yellow-Kid" sizes as well as in the larger "Yellow-Fellows."



Left Hand Side of an Avery "Yellow-Kid" Separator (Fitted with Self-Feeder and Wind Stacker).



Right Hand Side of an Avery "Yellow-Kid" Separator (Fitted with Self-Feeder and Common Stacker).

All Avery Separators are regularly equipped with I. X. L. Separating Device, Cone Pulley Belt Guide, Improved Belt Reel, Lifting Jack, Extra Concaves and Tools without extra charge.

Avery "Yellow-Fellow" Separators are Backed by the Best Field Tests Ever Made and the Strongest Guarantees Ever Given

Avery "Yellow-Fellows" Have Made the Best Proven Grain Saving Records of Any Separators

FOR several years we have been making Field Tests on Avery "Yellow-Fellow" Separators. Twenty-seven tests have been made. Each of these tests was made on a different machine in a different locality and while being operated by the regular crew. Each of the tests was witnessed by a number of farmers who have voluntarily signed statements showing the average percentage of saving.

These tests prove that Avery Separators are Wonderful Grain Savers. The average saving in the 27 tests was 99 9/10 per cent—practically perfect. **This is the best proven record of grain saving ever made by any make of Separator. No other make of Separator is backed up by such a record of grain saving field tests.**

Avery Separators Are Also Backed Up by these Strong Guarantees

Special Warranty on Separator

Avery Separating Devices are guaranteed to shake out 99 52/100 per cent OR MORE of the loose grain that is in the straw, the grain to be dry and in fit condition to thresh. When desired we will submit the machine to test.

This is the strongest grain saving warranty ever given. And it's absolutely plain and straightforward.

Special Warranty on Avery Jumbo Razor Steel Cylinder Teeth

Avery Jumbo Teeth are warranted for life against breakage caused by pitchforks, bolts,

spades, or other foreign materials accidentally entering the cylinder.

Notice that there's no time limit to the Avery Special Tooth Warranty against breakages—for life.

Special Warranty on Cleaning

The Fanning Mill and Shoe of an Avery Thresher are guaranteed to clean the grain in perfect condition for the local market.

Special Warranty on Feeders

The Bartholomew Band Cutter and Self Feeder is guaranteed to feed all kinds or conditions of loose, headed or bound grain without slugging the cylinder, and faster and more evenly than feeding can be done by hand.

Special Warranty on Wind Stackers

Avery J. B.'s Wind Stackers are warranted to handle dry or wet straw in any condition or quantity without choking and to be built with tank steel fan housings and boiler plate wings.

Furthermore—

If any purchaser of Avery Machinery prefers the form of warranty adopted by any other manufacturer of this class of machinery, we will allow him the privilege, when placing the order, to substitute such other manufacturer's form of warranty for ours, and such purchaser is hereby authorized before signing the order, to write across the face of the warranty in our order blank, the following:

"This order is given with the understanding that the warranty and all conditions of (insert name) Company are substituted in place of the warranty printed herein."

Nowhere Else Can You Get Warranties Anywhere Near As Strong

And they mean just what they say. There's no "Joker" anywhere in them. No bluff or big talk. No impossible conditions. No hidden meaning. Just out and out straightforward agreements and guarantees that are printed right in every Avery order blank and that you can fall back on when you buy Avery Machinery if it doesn't do just what is represented here, and the Avery Company stands right square back of them and will make good on every point.

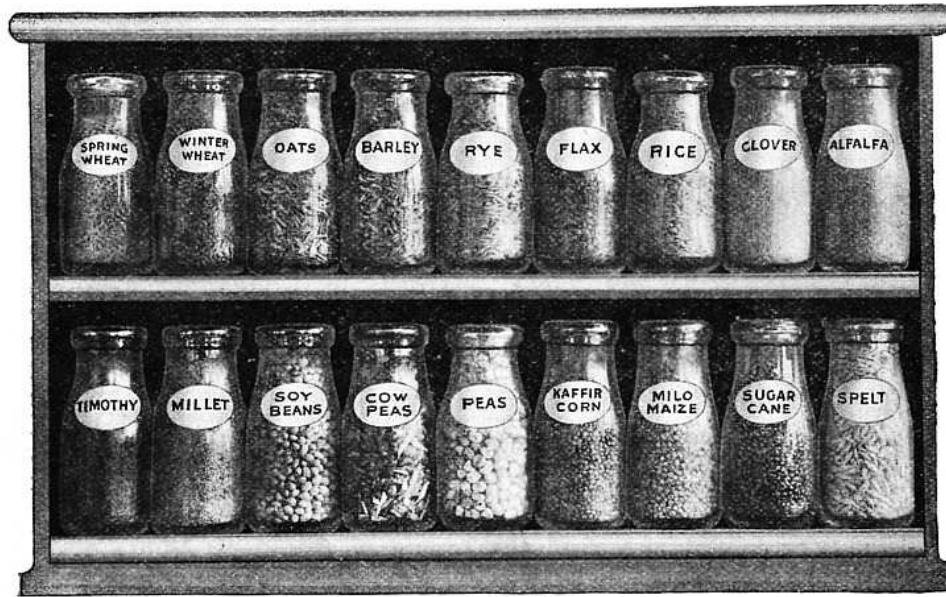
And the reason we can make these strong warranties—much stronger than those given by any other manufacturer—is simply this—because Avery Machines are built with the right kind of high grade raw materials and workmanship and we have perfected them in design and detail to the point where they will go out in the field and do the business and stand up under the work and make good at every turn.

Just Consider What It Means to You to Get a Machine That Is Backed Up Like This

You aren't getting a machine that is simply backed up by claims, but one that has strong guarantees and field tests behind it. Avery Machines must do good work and stand up on the job or we couldn't give the strong guarantees we do. Just compare these guarantees and tests with those which any other company offers.

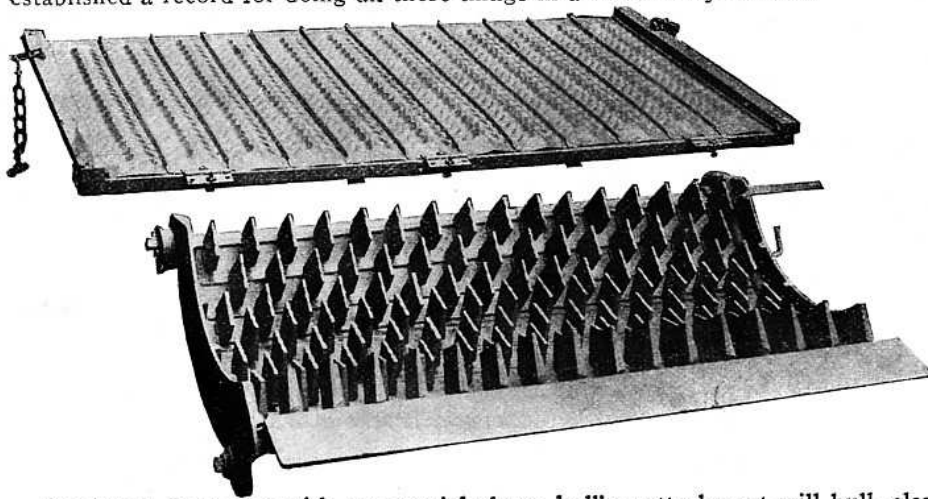
Read the following pages carefully. They tell how Avery Separators are designed and built and show why they are built to run steady and last a long while and do good work all the time.

You Can Thresh All Kinds of Grain and Seeds with an Avery Separator



Eighteen Kinds of Grains and Seeds Threshed by Avery Separators.

An Avery Separator threshes wheat, oats, barley, rye, timothy, flax, rice, bird seed, will hull clover and alfalfa, thresh sweet clover, soy beans, cow peas, buckwheat, kaffir corn or anything else, and it is the only machine in the World that has established a record for doing all these things in a satisfactory manner.



An Avery Separator with our special clover hulling attachment will hull, clean and save clover, as well, if not better, and do it about twice as fast as an ordinary huller. Consists of Special Concaves and Teeth, Extension Chaffer for Grain Pan and Clover Sieve. Can be furnished for any size Avery Separator. We also furnish special attachments for rice, peas, beans, etc.

You Can Thresh Tough Grain with an Avery Separator

MANY threshermen say that 1915 was the worst threshing season they ever ran. Owing to the unusual wet weather in most territories the grain was very tough and damp. It was hard threshing, but it didn't stop the Avery's—it only helped to prove how good they are.

We'll not try to tell you the story ourselves, we'll let a few of the threshermen who ran them do it. Here's what a few of them say:

"This season has been one of the hardest for threshing there has been for a number of years, on account of almost continual rain and tough grain. Avery separators have proved their ability this fall to handle grain under the most unfavorable conditions. I am well satisfied with mine."
Monterey, Minn., 10-23-15. **C. J. H. UHRHAMMER.**

"We had no trouble threshing in the wet grain that we have had here this year. We think the Avery is the best and have proved this by buying our second one."
Wessington Springs, S. D., 11-2-15. **TIEDE BROS.**
Gustav Tiede.

"I bought an Avery in 1914, have run it two years, and I want to say it has got all the other machines beat in every way, and under all conditions it will handle wetter grain with less stopping from choking and belt slipping than any machine I ever saw."
Sedalia, Mo., 10-29-15. **C. W. CURNUTH.**

"I have been in the business 22 Falls and this Fall is the worst I have threshed, wet and tough grain all the time, but in the 40 days so far I have not stopped one minute for the teeth."
Garretson, S. D., 10-30-1915. **D. C. EITRUM.**

"I threshed a lot of oats this Fall that had been cut with grass mowers and raked with horse rakes. There were stones, small stumps and pieces of wood, and all the teeth I lost was one tooth through 39 days of threshing. I done threshing after rains, always one-half to one day sooner than any other machines in my vicinity, and the 'Yellow-Fellow' done satisfactory work without any bother."
Foley, Minn., 11-2-1915. **REINHOLT T. BUCHHOLZ.**

"Our Separator handled wet grain better than any Separator I ever saw, or extra well I called it."
Anthony, Kans., 10-25-1915. **J. C. BURCHFIELD.**

"I like my 'Yellow-Fellow' fine—threshed wet grain this year when other makes of machines had to shut down, but the 'Yellow-Fellow' kept threshing."
Elk Creek, Neb., 11-9-1915. **PRESTON BURCH.**

These strong letters clearly prove that Avery Separators thresh successfully in bad conditions as well as in good. When you thresh with an Avery you can depend upon it doing a good job, even when the conditions are bad.

It's a big satisfaction for a thresherman to own one and for a farmer to have one do his threshing—they are profit makers for both.

Avery Separators are Money Makers for Threshermen and Grain Savers for Farmers. If you are a thresherman, it will pay you to get an Avery Separator to thresh with. If you are a farmer, it will pay you to have an Avery Separator thresh for you. The Avery Separator is an established success, not only all over the United States, but all over the grain growing sections of the World, and it has made good wherever it has gone.

Avery "Yellow-Fellow" Separators Have More Improved and Original Features Than Any Other Make of Separator Built

THE following are some of the Original and Improved Features designed and introduced by the Avery Company which you get in an Avery "Yellow-Fellow" Separator.

We originated and were the first to use the **Big Cylinder Tooth** called the **Jumbo**. This tooth has always been made from Razor Tool Steel and by an original process of forging and tempering, the wearing corner being hardened.

We originated the **double belting system** from the **cylinder** to the **crankshaft**. Also the system of belting all the other important parts of the separator direct from the cylinder shaft, such as the fan, separating device and the beater, thereby driving them in proper speed relation to each other and giving wider belt surface from the cylinder shaft back.

We originated the **belt reel**, which is of great convenience in winding up, unwinding and taking care of the belt.

We originated the **Wind Stacker without gears**, with the **fan located inside the frame work and driven with a straight open belt direct from the cylinder shaft**, this belt being provided with a tightener so that the belt can be adjusted while the machine is in operation.

We originated the **band cutter and self-feeder** with **reciprocating knives and a governor located on the crankshaft**, whereby the crankshaft and all of the feeding parts, including the carrier, will stop when the speed of the cylinder falls below threshing speed.

We originated a **tailings elevator drive**, with the lower sprocket located below the entrance of the tailings, which prevents clogging. We also originated the idea of leaving the upper end of the tailings elevator open, which permits the tailings to deliver on the ground in case the down spout is choked and thus prevents clogging the elevator in the head.

We were the first to introduce **steel axles** for carrying the weight of the separator. Previous to that time wood axles had been used, which resulted in numerous breakdowns, causing delays and loss of time and money.

We were the first to adopt an **extension tongue** of large size and so designed that it may be lengthened for horses and shortened when pulling the separator with an engine.

We were the first to build a separator with the **grain pan, separating table, vibrating table and shoe all driven direct from one crankshaft** in such a way that the shaking parts counterbalance, so that the machine stands so steady that threshermen sit on top of them and write us testimonials to show that there is not enough vibration to make their hand shake at all.

We were the first to adopt a **compressed paper cylinder drive pulley**, which does away with all anxiety about the lagging coming loose in the middle of a hot day on a rush job.

We originated the first really successful **belt guide**, and the only one today that carries the belt on the center of the pulley in a high wind when the engine is several feet out of line.

We were the first to adopt the **marvelous separating device known as the I. X. L.**, which hunts around in the straw for the last kernel and gets it, and we furnish it regularly with Avery Separators, because we have proven its merits as a Grain Saving Device.

We originated a **pivoted cylinder box**, which has a natural tendency to keep in line, in striking comparison to the stationary type which had to be scraped by a thorough mechanic to ever get in line and then spends the rest of its time trying to get out of alignment.

We were the first to use a **rubber feeder web** on the Band Cutter and Self-Feeder, which runs noiselessly and without much wear and takes up all the loose grain and delivers it into the machine without wasting a large percentage of it.

We originated a **concave adjusting device** by which the operator can raise or lower both the front and rear concave and adjust them for the different kinds of grain.

We originated and were the first to use **diagonal frame cross rods**, located underneath the deck of the separator which hold the frame work so rigid that it will run through a long number of years without twisting and causing the shafting to bind in the boxes and quickly wear out.

We were the first to introduce and put on a separator **leveling jacks**, attached to the separator, which are a great convenience for leveling and holding the front of the machine rigid while threshing.

We were the first to build a **fan with bands** to distribute the blast over the shoe and overcome the cross currents of air which had previously given threshermen so much trouble in properly cleaning the grain.

We were the first to encourage the manufacture of and to adopt the **Closz & Howard Adjustable Sieve**, which enables the thresherman to change his sieves for the different kinds of grain without stopping, adjustment being made by a small lever operated from outside the machine.

We were the first manufacturers of threshing machinery that ever had the nerve to send out men during the threshing season in the various states where our machines are in operation and make field tests for the benefit of our customers to show the actual amount of waste that was going into the straw stack, and then publish a correct report of these tests, after putting out a guarantee that these machines would save 99 52/100 per cent OR MORE of the grain.

All of these things certainly show that the Avery "Yellow-Fellow" Separator is without question the **most original and improved machine built today**—and that's the kind of a machine that will make you money and you'll be proud to run.

Other machines have some of these features—copied from the Avery or prompted by our introduction of them—but no other machine offers you anywhere near all of them. **You get them all only in an Avery.**

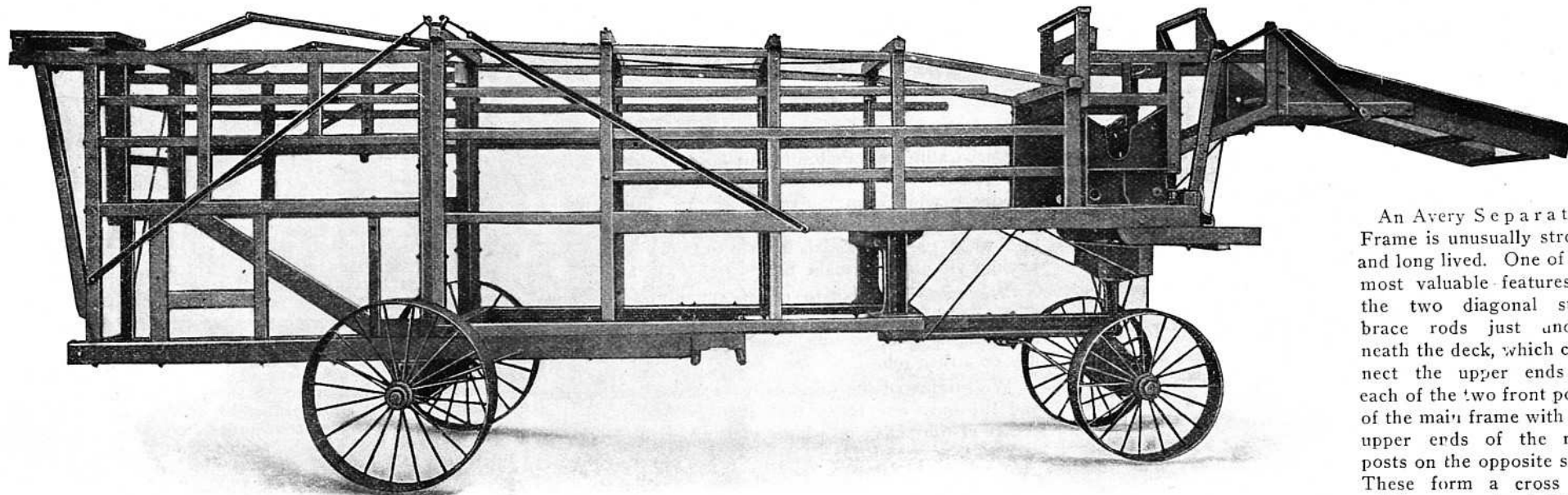
Many of these improvements have been sold by hundreds to threshermen for use on other machines. But, after all, only a few of these can be gotten in this way as only a few can be attached to other machines.

And even though a thresherman might get an Avery Belt Guide, Paper Center Cylinder Pulley, Lifting Jack, I. X. L. Separating Device, and other Avery features to help cure the troubles he finds in some other make of separator, it would add just that much to the cost of his other machine, and after getting all these he would still not have the Avery Heavy Crankshaft, Steel Rod Pitmans, Double Belting System, Belt Winder, Steel Bottom No-Choke Elevator, Heavy Tongue, and all the other improved features found in the Avery "Yellow-Fellow."

The way to get all of these improved features is to buy an Avery "Yellow-Fellow" Separator.

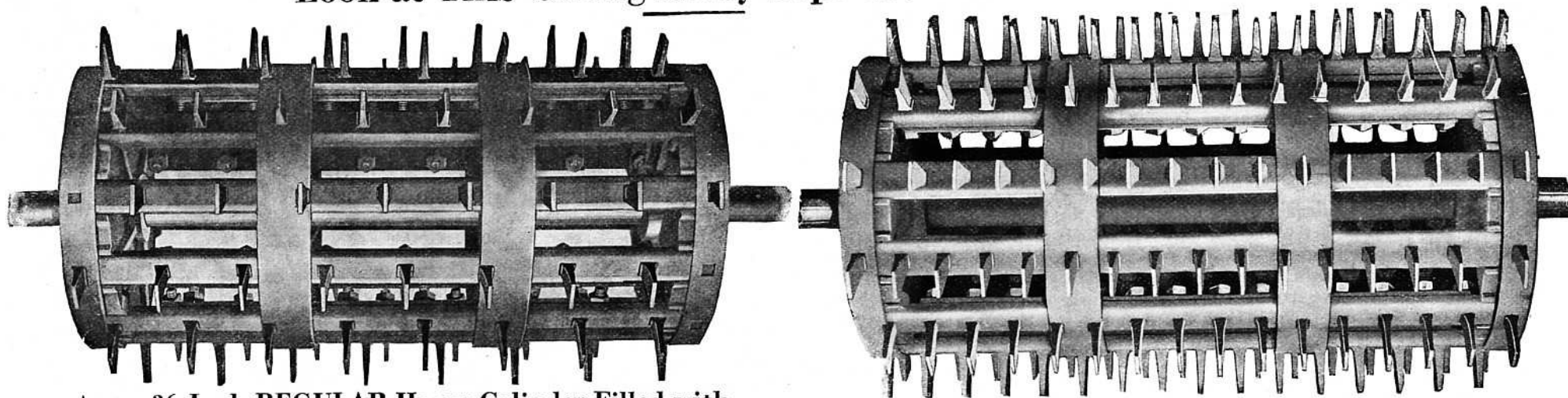
This list of improvements, designed and introduced by the Avery Company, will show you that the Avery Company is progressive—that we keep pushing ahead—that we are always designing and adopting improved features in our machines and you will realize that in placing your order for an Avery Separator you get the most improved and up-to-date machine that can be bought.

Read the further description and see the detailed illustrations of these special features in an Avery Separator on the following pages.



An Avery Separator Frame is unusually strong and long lived. One of the most valuable features is the two diagonal steel brace rods just underneath the deck, which connect the upper ends of each of the two front posts of the main frame with the upper ends of the rear posts on the opposite side. These form a cross tie which prevents twisting and sagging of the frame.

Look at This Strong Avery Separator Frame



Avery 36-Inch REGULAR Heavy Cylinder Filled with Jumbo Tool Steel Teeth

Avery Cylinders are built strong. The bars are $1\frac{7}{8} \times \frac{3}{8}$ inches and are backed up by an inner bar $1\frac{7}{8} \times \frac{3}{8}$ inches. The cylinder shaft is $2\frac{1}{4}$ inches in diameter and the cylinder has wide heavy bands. They are also built extra heavy. The 36-inch size weighs 692 pounds, ready to run. That's why Avery Cylinders last longer and run smoother than others.

Avery 36-Inch DOUBLE SPIKED Heavy Cylinder Filled with Jumbo Tool Steel Teeth

We build our Separator Cylinder in two styles—with the regular number of teeth or double spiked. No matter what you need in your locality, we are able to furnish the proper cylinder to get the best results.

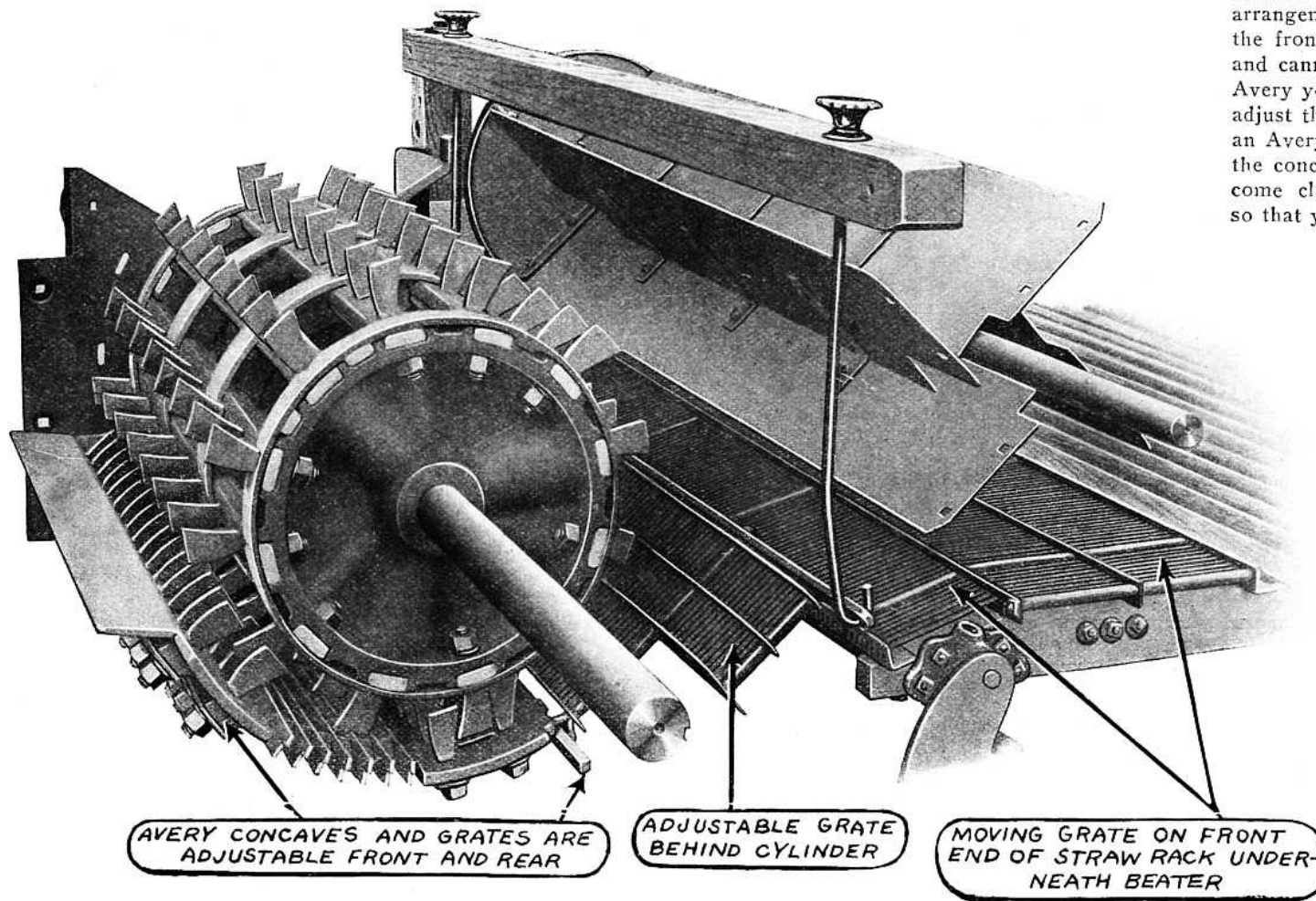
You Can Get the Grain Out of the Heads with an Avery "Yellow-Fellow" Separator

The **Second Reason** is because the **Concaves** are **Adjustable, Both Front and Rear**. With the common arrangement for adjusting concaves you can only raise the front concave about half the length of the tooth, and cannot raise the rear concave at all, but with the Avery you can raise and lower both concaves and also adjust them the full length of the teeth. Furthermore, an Avery Jumbo Tooth is tapered and when you raise the concaves, the cylinder and concave teeth not only come closer together endwise, but sidewise as well, so that you get a double adjustment.

The **Third Reason** is because an Avery "Yellow-Fellow" Separator has an **Adjustable Grate Behind the Cylinder**. A good grate at the rear of the cylinder is a very important feature. Some manufacturers place a stationary grate at this point. A stationary grate may be all right in some conditions of the grain, but it can never be all right in all conditions of the grain. In an Avery Separator the rear end of this grate is hung from two adjusting rods, allowing it to be raised or lowered. In wet grain you can let it down, and thus prevent wrapping; in dry grain you can raise it up closer to the cylinder. The fact that you can adjust this grate according to the condition of the grain, is a strong reason why you can get the grain out of the heads better with an Avery "Yellow-Fellow" Separator.

The **Fourth Reason** is because of the **Moving Grate Underneath the Beater**. The 20-inch grate underneath the beater is a part of the straw table. It moves back and forth with the table and the beater constantly pounds the grain through this moving grate.

Because of this **Concave and Grate Construction**, an Avery "Yellow-Fellow" Separator, when properly adjusted, will get the grain out of the heads and also separate out the largest possible percentage of the grain from the straw right at the cylinder. An Avery "Yellow-Fellow" has a better combination of devices to get the grain out of the heads than can be found in any other machine.

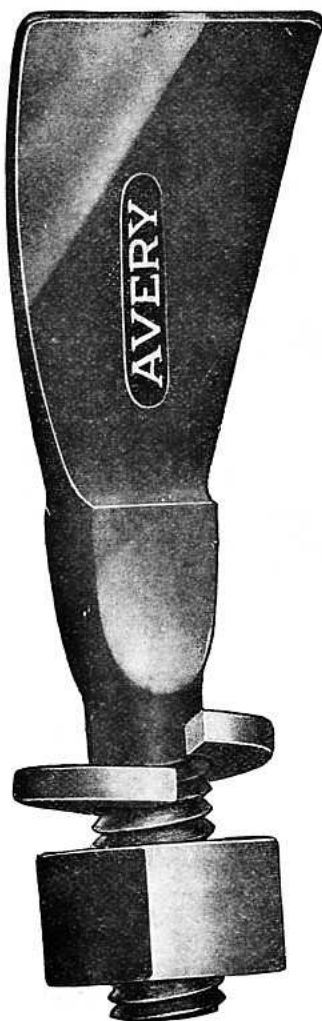


TH**ERE** are **Four Special Reasons** why you can get the grain out of the heads with an Avery "Yellow-Fellow" Separator.

The **First Reason** is because it has a **Long Concave and Grate Surface**. In actual running inches an Avery Separator has an open concave and steel con-

cave grate surface of 18 inches; then at the rear of the cylinder a 14-inch grate, and then under the beater a 20-inch grate, making 52 inches of grate surface, the whole width of the machine. This more than equals the grate surface of the so-called big cylinder machines.

Avery Cylinder and Concave Teeth Are Made from Genuine Tooth Steel



Exact size of our Jumbo Tooth, showing tempered wearing corner.

THEY are extra large in size. The wearing corner is tempered. They are made of better material and by a better process than any other teeth.

We began making Jumbo Tool Steel Teeth because we wanted to make it possible for threshermen to get rid of so much trouble and expense with broken and worn out teeth. All the teeth used at that time were small; they were also untempered. They not only broke easily, but wore out very quickly, so that a full set of teeth had to be replaced very often. A few years ago, in fact, even now with many machines, the sound of a broken tooth is a familiar one, and each time it is heard it means a shut down of from ten to fifteen minutes to put in a new tooth. A large amount must be charged up against many machines because of the profits lost and the heavy expense of an idle crew while broken teeth are being replaced.

The first thing we did was to design a large tooth. The Avery Company made the first large tooth ever used in a separator. That is why we call it by the name "Jumbo."

The next thing was to get a metal that was strong enough so as not to be easily broken and that would wear long enough so that the teeth would not have to be often replaced.

The only metal we could find that in our opinion was good enough for the purpose, was **genuine tool steel**. We wanted **breaking strength**, and everyone knows the strength of tool steel. We wanted **wearing strength**, together with a **tempered wearing corner**, and so we used tool steel, because machine steel will not take a temper. (Note this: That there is a big difference between tool steel and machine steel. Do not let anyone confuse you by telling you that they use steel teeth. Be sure you know whether they are machine steel or tool steel).

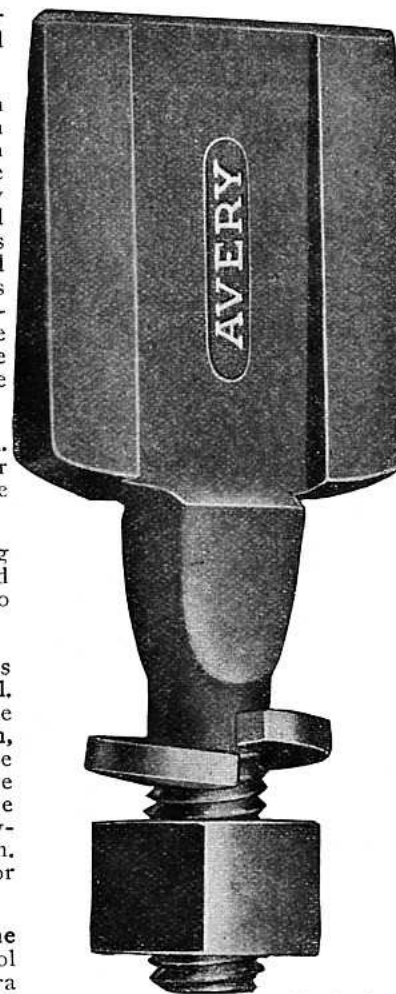
Every Jumbo Tooth is guaranteed to be **genuine tool steel**. We hammer forge them from square Tool Steel bars and the wearing corner is tempered extra hard.

Have you had experience with teeth that are easily broken and quickly worn out? **Does your separator have that terrible toothache?** Do you want a machine that never has this disease? If you want to be relieved of all tooth troubles, get an Avery "Yellow-Fellow" with its Jumbo Tool Steel Teeth. Pitchforks seldom even bend them, and even wrenches, spades and other similar things run through right along without breaking a single tooth or stopping the machine for a minute. Jumbo Teeth will bend double, are almost unbreakable, and will wear longer than other makes. They are a big expense-saver for the thresherman.

When you are buying your Next Separator, remember that by getting an Avery "Yellow-Fellow" you will be free from tooth troubles.

Beware of imitation Iron Cylinder Teeth, sold by supply houses under the name of "Jumbo."

Genuine Avery Jumbo Tool Steel Teeth have the name "Avery" stamped on them.



Exact size of our Turkey Tooth, designed especially for the concaves when threshing Turkey Wheat, hulling clover, etc.



Makes Razor and Shaves Himself Before Crowd at North Dakota State Fair.

Agricultural College, N. D.,
November 16, 1915.

Mr. J. B. Bartholomew,
President of Avery Co., Peoria, Ill.
Dear Sir: I take pleasure in reporting the results of a four days' demonstration at the Interstate Fair held at Fargo, North Dakota, in July, 1915, of the quality of metal in the Avery teeth. In this demonstration both old and new teeth were used, and I found the same remarkable combination of hardness and ductility combined with tensile strength and toughness that I had observed on former occasions.

At these demonstrations spectators sometimes claim that the teeth used for the demonstration are of different quality and superior to those in regular use. This was refuted by allowing them to bring their own teeth and see the tools made.

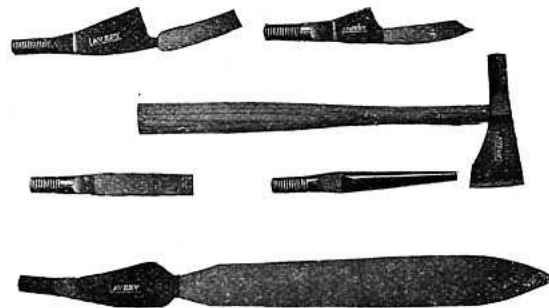
In addition to the tools ordinarily made—chisels, punches, knives, hatchets, screwdrivers and reamers—I made a razor and removed a four days' growth of beard in the presence of a crowd of spectators.

The above results are not due to superior equipment or superior methods, but primarily to the superior quality of the metal from which the teeth are made.

I make no hesitation in stating that the Avery Bull-dog teeth are, for the purpose intended, superior to any teeth that I have ever experimented with.

Very respectfully,
H. CHISHOLM.

Instructor in Forging, North Dakota Agricultural College.



Razor, Paring Knife, Hatchet, Chisel, Punch and Butcher Knife Made from Avery Teeth, to Show Quality of Steel We Use.

Avery Cylinder and Concave Teeth are Guaranteed for Life Against Breakage

You get this Special Warranty on Avery Jumbo Razor Steel Teeth printed right in the order blank:

Avery Jumbo Teeth are warranted for life against breakage caused by pitchforks, bolts, spades or other foreign materials accidentally entering the cylinder.

Read these samples of letters which Avery Threshermen write us about their Jumbo Tool Steel Teeth, and letters which threshermen who own other makes of Separators write us. They tell the story:

"As we are not satisfied with a _____ tooth for cylinder, I am enclosing postage stamps for which please send me a cylinder tooth, which I want to try in our separator. Our trouble is in breaking. Lost about sixty teeth in last season's run."

De Witt, Mich., Mar. 22, 1916.

WM. A. BRACE & SON.

"Have run the same set of Jumbo teeth in the cylinder of my separator for nine years."

Alice, N. D., Feb. 21, 1916.

ANTON HAYERTZ.

"Can you make cylinder teeth for _____ Separator? I believe you have the best cylinder teeth made. I would want to use about 500 tool steel cylinder teeth if you can manufacture them for me."

Missler, Kans., Feb. 29, 1916.

DAVID BASINGER.

"I will tell you what they were going to do to my machine. They had loaded grain bundles with iron and steel shafting. We run several pieces through and bent some teeth. We straightened them again and started. Another piece went through with burlap wrapped around. That came out the blower. They couldn't put the Yellow Fellow and the Bull Dog Teeth out of business."

Sidney, Nebr., Dec. 18, 1916.

JOHN KUPER.

"Have you ever sold any cylinder teeth for _____ & _____ machines? If you haven't please tell me and if you have tell me if they work all right or not and what is your price on them? Would you send me about 250 teeth if I can put them in my separator?"

Philadelphia, Ill., June 19, 1915.

B. F. FLANIGAN.

"When a fork goes in the machine I never slack up as I know the cylinder will put it where it won't bother. I threshed three this fall and they came out of the blower all chewed up without breaking a single tooth."

Wheatland, N. D.

WM. F. RAKOW.

"Would you kindly inform me whether you would make teeth for me to fit a _____ Separator, if I took from 500 to 2000 of them. I want them made of tool steel, of course. My separator is too good yet to discard. I also want to supply about 5 other separators with these teeth."

Mankato, Minn., May 17, 1915.

F. M. SCHWAB.

"The Avery teeth have got the strength. We threshed 40 days and no cylinder tooth broke on us."

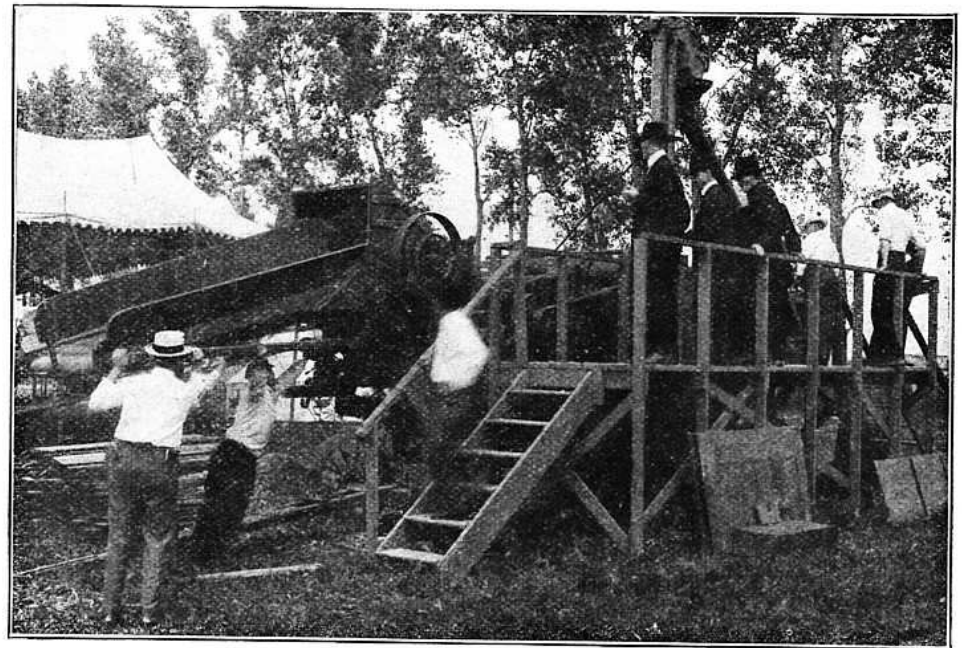
Lester Prairie, Minn.

PAUL QUAST.

"Will you please tell me whether you can furnish teeth of your make to fit the cylinder of the _____ Steel Separator. The _____ teeth seem to be almost worthless as they break out by the handful just in threshing tough oats, and we want to get something better."

St. Charles, Mich., Sept. 24, 1915.

EDWIN H. WALTER.



Threshing a 2 x 12-inch Oak Plank at the Fair to Show the Strength of Avery Jumbo Tool Steel Teeth.

"As to the Avery teeth, will say that I have seen none that would equal them. Two pitchforks went through but we never stopped pitching and wet bundles have never taken out any teeth either."

Redwood Falls, Minn., Nov. 11, 1915.

GLEN D. KLECKNER.

"I would like to know whether I can get your Jumbo tool steel teeth to fit my _____ Separator as the _____ teeth are too soft, make lots of trouble. Send price. Please let me know by return mail all about it. I will take about 100 teeth."

Batavia, Ohio, Jan. 2, 1915.

JOHN SCHNEIDER.

"I never had a tooth get loose. The Separator never had the toothache yet and ran two pitchforks through."

WILLIAM WIRT.

Burlington, Iowa, Dec. 7, 1915.

"I see where one man made a razor out of an Avery cylinder tooth. I made two good butcher knives out of Avery teeth and have used Avery teeth for mud claws on engine wheels and they are all right, too."

WM. WEST.

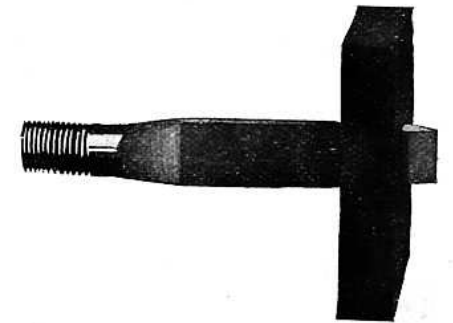
Oakville, Ind., Feb. 2, 1915.

"We had no trouble threshing in the wet grain that we have had here this year. We put a 15-pound rock through our cylinder this fall and never had to stop."

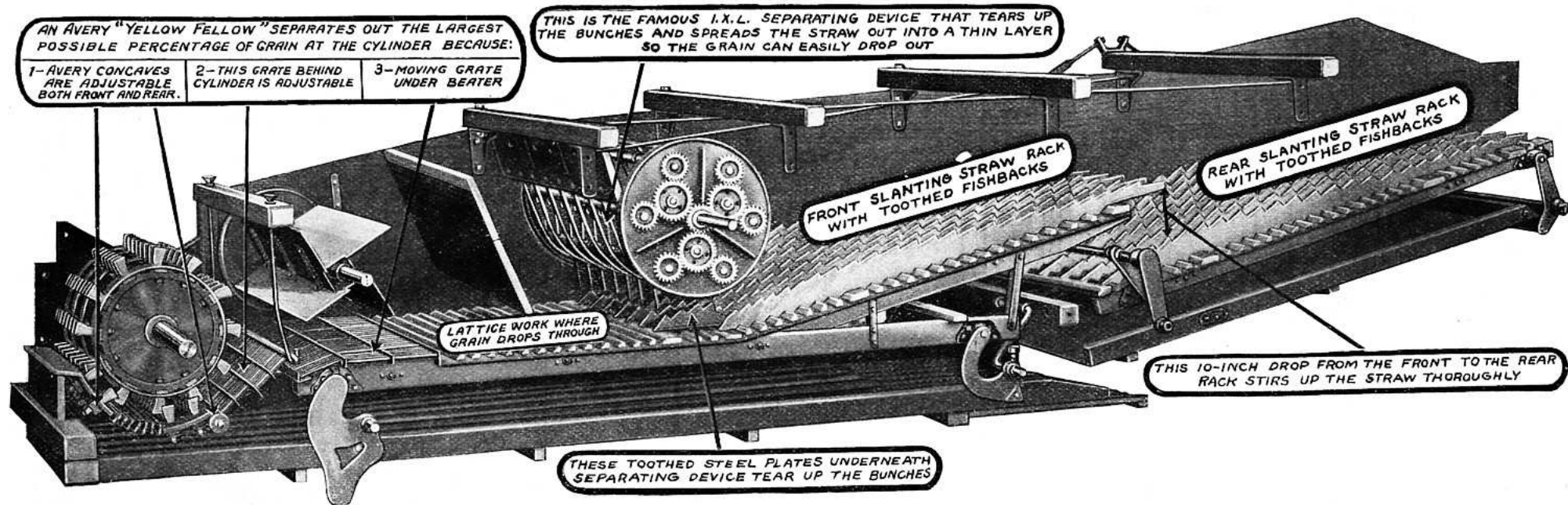
TEIDE BROS.,

Gustav Teide.

Wessington Springs, S. D., Nov. 2, 1915.



Chisel Made From Avery Jumbo Tooth Driven Through a Three-quarter Inch Bar of Cold Steel.



You Can Save the Grain with an Avery "Yellow Fellow-Grain Saver" Separator

THE illustration above shows clearly why an Avery machine is **built right to save the grain.**

Note in the first place the construction of the concaves and grates. The concaves are both adjustable. The rear concave is not stationary as in many machines. The grate behind the cylinder in an Avery Separator is also adjustable to suit the condition of the straw and not a solid stationary grate as used by others. There is also a moving steel grate underneath the beater. These three special features of construction in an Avery machine are such that a large percentage of the separation of the grain from the straw is done right at the cylinder.

After the straw passes the beater it is thrown back on a lattice work section of the straw rack and is carried along by the motion of the rack.

It then reaches the famous I. X. L. Grain Saving Separating Device which is furnished with every Avery Separator. Underneath this separating device is a set of toothed steel plates.

There never has been a separating device of any description made that will do the work that this I. X. L. does in tearing up the bunches and spreading the straw out into a thin layer so that the grain is free to drop through.

This I. X. L. Separating Device consists of six bars on which are located a number of fingers. The bars are driven by gears connected with the main shaft as shown in the end view illustration here. The movement of these bars is such that the fingers remain at all times in a perpendicular position. Six sets of fingers dip into the straw at each revolution of the main shaft, which runs 125 revolutions per minute, thus 750 times per minute one set of fingers dips into the straw and loosens it up.

Only a small amount of straw is handled by each set of fingers at each turn. They draw the straw out into a thin layer, spread it apart, move it rapidly and tear up all bunches of straw, whether wet or dry, and let the grain drop through. The layer of straw is very thin at

this point and the kernels that are left in it cannot help but drop out. This separating device runs steadily and quietly and the guards and its own speed easily keep it clean.

Behind the I. X. L. are placed toothed fish backs on the straw rack slanting upwards. From these the straw drops about 10 inches to the rear rack which is also built with toothed fish backs. Both racks have a strong motion upward and backward and as the straw moves along over these toothed racks it is well shaken and every chance is given any few remaining kernels to drop through out of the straw.

This Combination of Separating Parts—Adjustable Concaves, Adjustable Grates, I. X. L. Separating Device and Racks—makes an Avery "Yellow-Fellow" a Wonderful Grain Saver, as is proven conclusively by the Records of Field Tests and our Strong Grain Saving Guarantee given on the opposite page.

You can save the grain with an Avery "Yellow Fellow-Grain Saver" Separator.

Avery Separators Are the Champion Grain Savers

THERE is just one way to absolutely prove what a Separator will do in saving grain, and that is to make a field test. For several years we have been making field tests on Avery "Yellow-Fellow" Separators to prove what they will do. Twenty-seven tests have been made. Each of these tests was made on a different machine, in a different locality, in eight different states and while being operated by the regular crews. Each of the tests was witnessed by a number of farmers who have voluntarily signed statements showing the average percentage of saving.

These tests prove that Avery Separators are Wonderful Grain Savers. The average saving in the 27 tests was 99 9/10 per cent—practically perfect.

Just think of it! Twenty-seven actual field tests, threshing on canvas, and an average saving of 99 9/10 per cent. This is the best proven record of grain saving ever made by any make of Separator. No other make of Separator is backed up by such a record of grain saving as this. It is so good that we have added the words "Grain Saver" to the name of the Avery Separator and now call it the "Yellow Fellow-Grain Saver."

And besides being backed up by these tests—when you buy an

This Is the Way the "Yellow-Fellows" Saved the Grain in the 27 Field Tests:

Test No. 1	99 92/100%
Test No. 2	99 93/100%
Test No. 3	99 92/100%
Test No. 4	99 91/100%
Test No. 5	99 89/100%
Test No. 6	99 94/100%
Test No. 7	99 94/100%
Test No. 8	99 91/100%
Test No. 9	99 92/100%
Test No. 10	99 93/100%
Test No. 11	99 92/100%
Test No. 12	99 93/100%
Test No. 13	99 86/100%
Test No. 14	99 94/100%
Test No. 15	99 92/100%
Test No. 16	99 73/100%
Test No. 17	99 99/100%
Test No. 18	99 96/100%
Test No. 19	99 96/100%
Test No. 20	99 95/100%
Test No. 21	99 67/100%
Test No. 22	99 80/100%
Test No. 23	99 95/100%
Test No. 24	99 87/100%
Test No. 25	99 99/100%
Test No. 26	99 94/100%
Test No. 27	99 96/100%

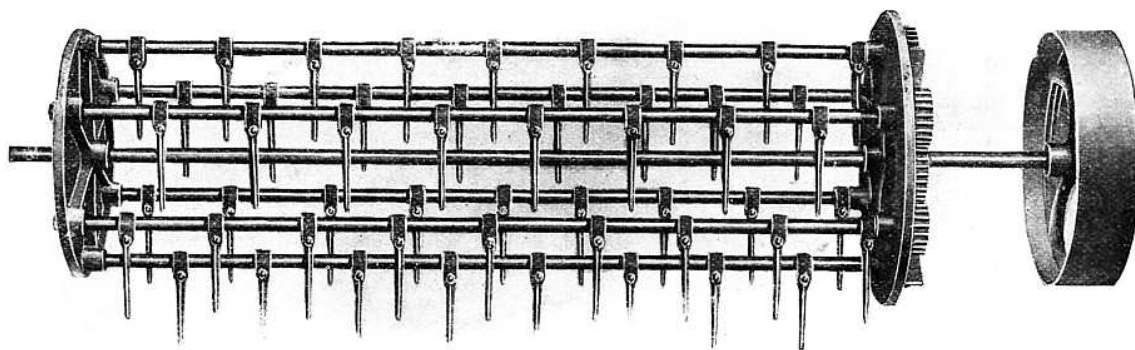
Average Saving, 99 9/10%.
Greatest Grain Saving Record ever made.

Avery "Yellow Fellow-Grain Saver" Separator, you also get the strongest definite guarantee on grain saving ever given with any make of machine. This guarantee is printed right in the order blank.

"Avery Separating Devices are guaranteed to shake out 99 52/100 per cent OR MORE of the loose grain that is in the straw, the grain to be dry and in fit condition to thresh. When desired we will submit the machine to test."

This is the strongest definite grain saving warranty ever given. It is absolutely plain and straightforward. It means exactly what it says and there are no impossible conditions connected with it in any way, shape or form. We guarantee a saving of 99 52/100 per cent OR MORE—and the "or more" means anywhere up to 99 99/100 per cent, for this record has been made by "Yellow-Fellows" in field tests.

These tests and this strong guarantee are positive proof that you get a genuine Grain Saver when you buy an Avery Separator.

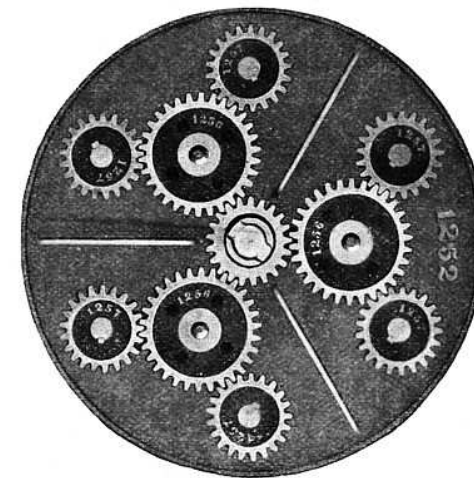


The Wonderful I. X. L. Separating Device That Saves the Grain

Every Avery Separator is regularly equipped with an I. X. L. Grain Saving Separating Device. We also manufacture this device for other makes of Separators as well as our own, and furnish full instructions and diagram sheet showing how

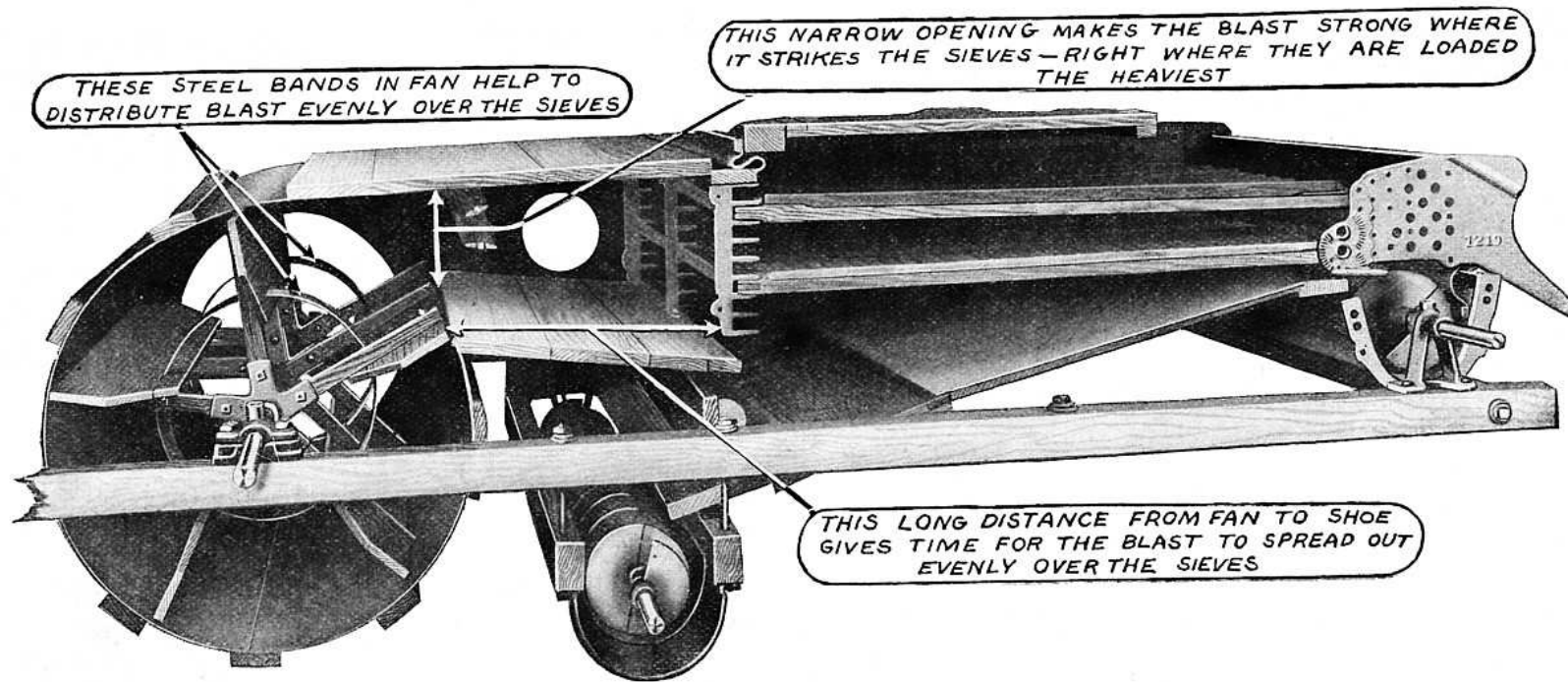
to attach and operate the same. Our very large sales on this device during several years past, for use in other Separators than our own, show that it is meeting a need felt by a great many threshermen. Prices quoted on application.

Remember, that when you get an Avery "Yellow Fellow-Grain Saver" Separator you are backed up by the Strongest Grain Saving Guarantee ever given with any Separator. This is the guarantee the Avery Company gives you—Avery Separating Devices are guaranteed to shake out 99 52/100 per cent OR MORE of the loose grain that is in the straw, the grain to be dry and in fit condition to thresh. When desired we will submit the machine to test.



End View of I. X. L. Separating Device Showing Arrangement of the Gearing

Very little power is required to operate this series of gearing, since the center gear is held in a stationary position, and the entire system revolves around it. The speed being only 125 revolutions per minute, there is practically no wear.



THESE STEEL BANDS IN FAN HELP TO DISTRIBUTE BLAST EVENLY OVER THE SIEVES

THIS NARROW OPENING MAKES THE BLAST STRONG WHERE IT STRIKES THE SIEVES—RIGHT WHERE THEY ARE LOADED THE HEAVIEST

THIS LONG DISTANCE FROM FAN TO SHOE GIVES TIME FOR THE BLAST TO SPREAD OUT EVENLY OVER THE SIEVES

You Can Clean the Grain in Fine Shape with an Avery “Yellow-Fellow” Separator

There are three important reasons why an Avery Separator does extra fine cleaning of the grain:

First—The steel bands in the fan give an **even distribution of the blast** over the entire surface of the sieves and prevent the usual cross-blast. Every experienced separator man will understand the advantages of this.

Second—The fan is placed farther from the shoe, and because of this greater distance the blast has time to spread out more uniformly over the sieves than in other machines.

Third—The fan-housing is built up higher between the fan and the sieves.

With this construction, the blast enters the shoe through a narrow opening and is strongest just as it strikes the sieves (right where they are loaded the heaviest) and as the blast passes back it gets softer

and softer and so does not blow the grain over at the back end, where the sieves are loaded the lightest. With other separators, where the housing is not built up high behind the fan, the blast enters the shoe through a large opening and is choked down to a point at the back end, so that you get the lightest blast at the front end where the sieves are loaded the heaviest, and the strongest blast at the back end, where the sieves are loaded the lightest (it is just like forcing a 4-inch stream of water through a 1-inch nozzle). Then when you close the wind boards sufficiently to keep the grain from blowing over, the blast is not strong enough on the front end where the sieves are loaded heavy, to do perfect cleaning of the grain. Look into other separators and see the short distance between the fan and the shoe and the wide opening where the blast enters the shoe, and you will understand why many machines do poor cleaning.

Threshermen, Farmers and Elevators All Say That Avery Separators Are Extra Good Grain Cleaners

Owners of Avery Separators say they are Good Grain Cleaners.

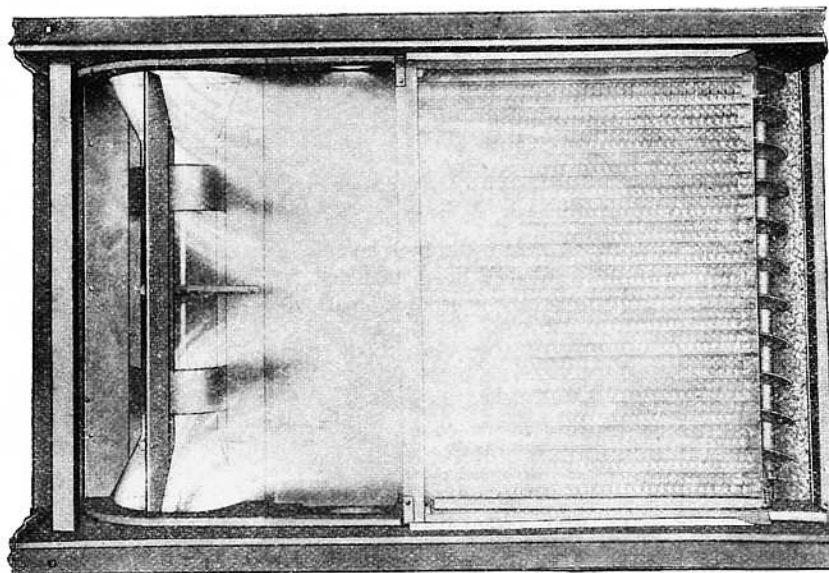
Farmers who have their grain threshed with Avery Separators say they are Good Grain Cleaners.

Elevators who buy the grain that Avery Separators thresh say they are Good Grain Cleaners.

You also get this Special Warranty on Cleaning when you buy an Avery “Yellow-Fellow.”

The Fanning Mill and Shoe of an Avery Thresher are guaranteed to clean the grain in perfect condition for the local market.

Your customers look closely at the way the grain is cleaned. Cleaning the grain well means a lot to you. Get a “Yellow-Fellow” and you will have a machine that will please your customers and give you the reputation of turning out the cleanest grain received at the elevator.



Top View of the Avery Fanning Mill and Shoe

This shows how the Special Steel Bands in the Avery Fan distribute the currents of air evenly over the Sieves and prevent any cross-blasts.

Amarillo, Texas, March 26, 1915.

Avery Company of Texas, Amarillo, Tex.

Gentlemen: We have handled several hundred cars of maize, kaffir, feterita, and redtop during the past season, drawn from the Panhandle of Texas, New Mexico, and Oklahoma, and wish to advise that we have always found grain coming from Avery Separators to be exceedingly nice, containing very little cracked grain, and considerably above the average of country run seed. We believe if there were more Avery Separators throughout the country it would have a tendency to raise the grade, and there would be less complaint of grain being in the shape of chops and full of sticks when received at destination. Yours truly,

EARLY GRAIN AND ELEVATOR CO

Garretson, S. D., Oct. 30, 1915.

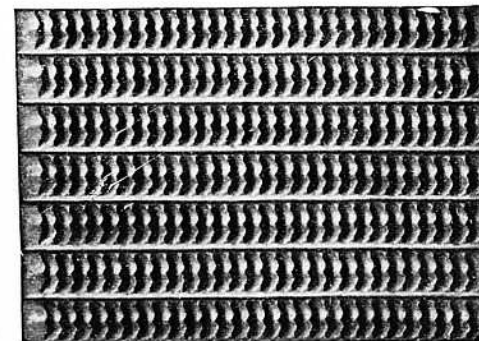
Avery Co., Minneapolis, Minn.

Gentlemen: I thought I would let you know how the 42-70 Avery was behaving. I have owned and worn out three different makes of separators, but the Avery is by far the best machine in cleaning and saving the grain. I have been in the business twenty-two falls, and this fall is the worst I have threshed, wet and tough grain all the time, but in the forty days so far I have not stopped one minute for the teeth. I have also used the Avery in my other machines. They are the only teeth that will stand the strain, and the rest of the machine is just as good.

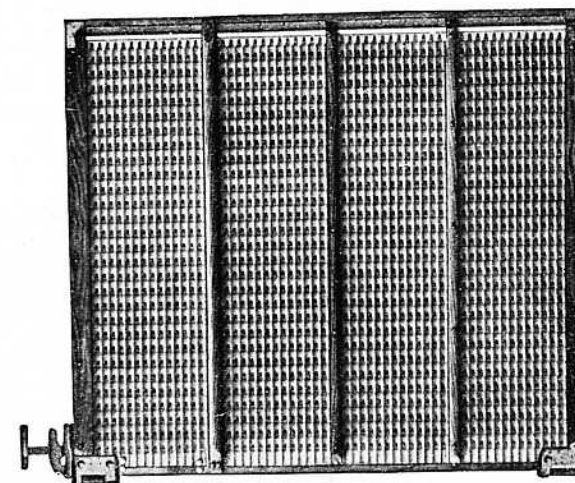
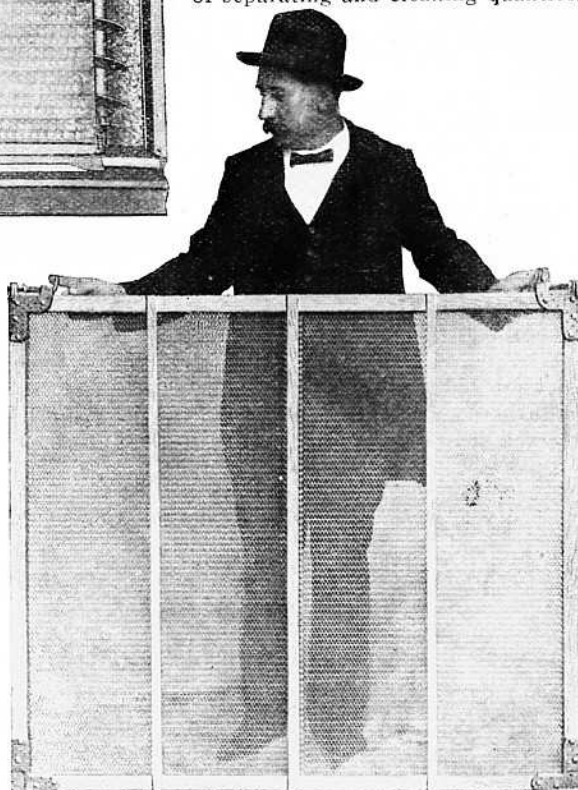
D. C. EITREIM.

All Avery Separators Have Two No-Choke Chaffers

One is attached to the rear end of the grain pan and extends back over the shoe 30 inches. The other is in the shoe. These chaffers are so constructed that all material passing over them is easily and quickly separated. The corrugations and the turned-up edges of metal between them carry all the material very loosely, enabling the wind-blast, which is turned in an upward direction by the curved surface between the openings, to quickly separate the chaff from the grain. We have used these chaffers for years in our machines. They have a large capacity and the best of separating and cleaning qualities.



When you buy an Avery Separator you get a Guaranteed Grain Cleaner.



Closz & Howard Adjustable Sieves

are furnished regularly with Avery Separators in place of the regular Sieves, when desired, and without extra charge.

After investigating and experimenting with different makes of adjustable sieves we are able to recommend this one when an adjustable sieve is wanted, and feel sure that it will prove more satisfactory than any other adjustable sieve on the market. It is built in a very strong and substantial manner and is adjustable from outside the separator. Made with our special malleable sieve corners. We charge extra for these sieves, but will allow for regular sieves not taken.

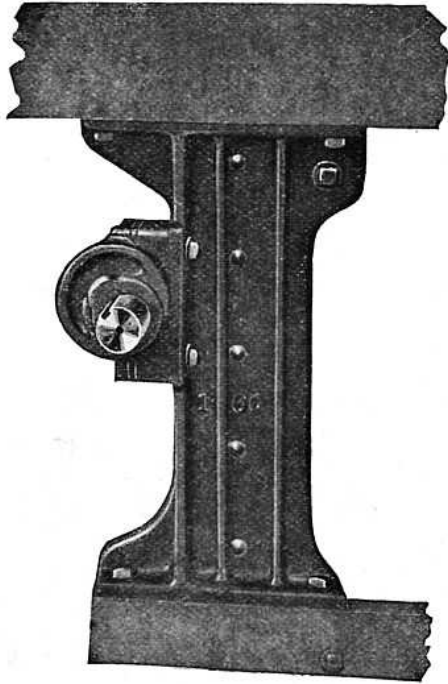
Avery Sieves Are Strong and Durable

They have malleable iron corners, with spring latches. Compare them with the cheap construction of many others.

Strength and Convenience

are two things we have always worked for in designing an Avery Separator. And we have given unusual attention to the smaller features which are often passed by.

Read here about some of the original and improved smaller features in an Avery Separator and see how they are designed to give you a stronger and easier handled machine.



All Avery Separators Have Iron Crank Shaft Posts

When the crank shaft boxings are bolted to wood posts in the separator frame, there is always a possibility of the post springing and the shaft bending out of line. The Avery Iron Crank Shaft Posts overcome all this and hold the crank shaft firmly in position, without danger of springing under heavy strains.



The Avery Main Separator Crank Shaft Is 2 Inches in Diameter

Our Separator Crank Shaft is 2 inches in diameter, or from $\frac{1}{4}$ to $\frac{1}{2}$ of an inch larger than the ordinary separator crank shaft, and on that account much stronger. It is made of the best steel and is neatly bent and turned. The size of the Avery shaft makes it extra strong, and almost wholly does away with all possibility of its being sprung out of line in any manner.



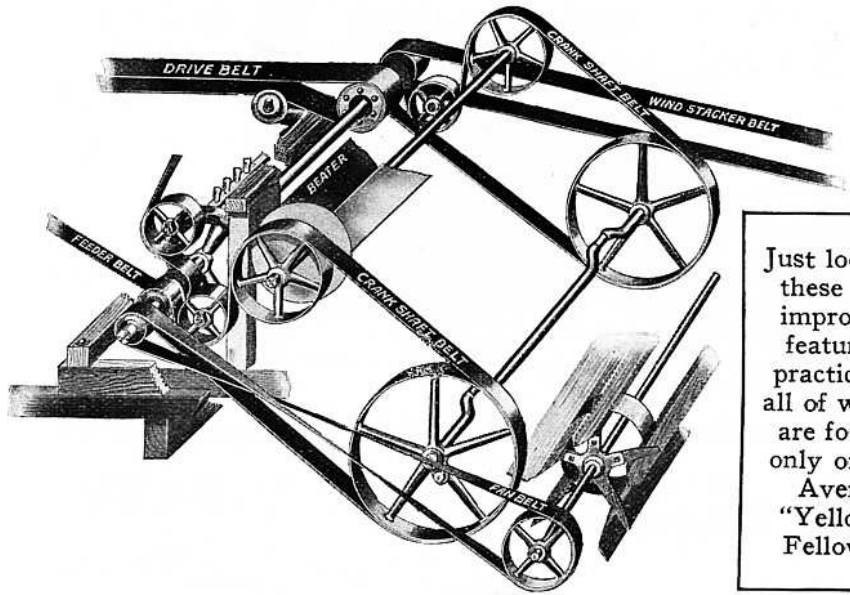
Avery Vibrating Tailer Pitmans Are Made from Steel Pipe

They are light in weight and much stronger and neater than wood pitmans. They have maple boxings at each end with hard oilers attached and take-up provisions for wear and lost motion. This pitman leads from the separator crank shaft to the rear rock shaft, and drives the rear straw rack and the return grain pan.



Avery Shoe Pitmans Are Made from Double Steel Pipes

They have heavy maple boxes at each end. Bolts extend through the pipes from one end to the other, thus holding the boxes in a substantial manner and providing a simple method for taking up wear and lost motion at either end. This pitman is operated by the main crank shaft, and one is used on each side of the separator to drive the shoe.

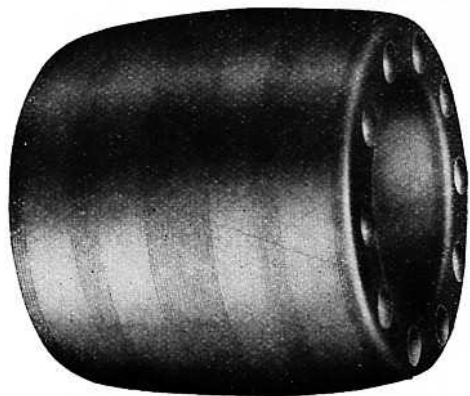


Just look at these fine improved features, practically all of which are found only on an Avery "Yellow-Fellow."

All Avery Separators, Size 32x54 and Up, are Double Belted from the Cylinder Shaft to the Crankshaft

WE ALSO use wide belts, the narrowest belt being 4 inches wide. On single, narrow belted machines the belts have to be drawn up to such a tension that they wear out quickly and also draw the shafting tight so that the machine runs harder. Avery Separators, from 32 x 54 up, are driven with 22 inches of belting surface, besides the main drive belt; the smaller sizes with 18 inches. Easy on belts and the separator always runs smooth. Another valuable point in an Avery is that all the principal belts are equipped with belt tighteners.

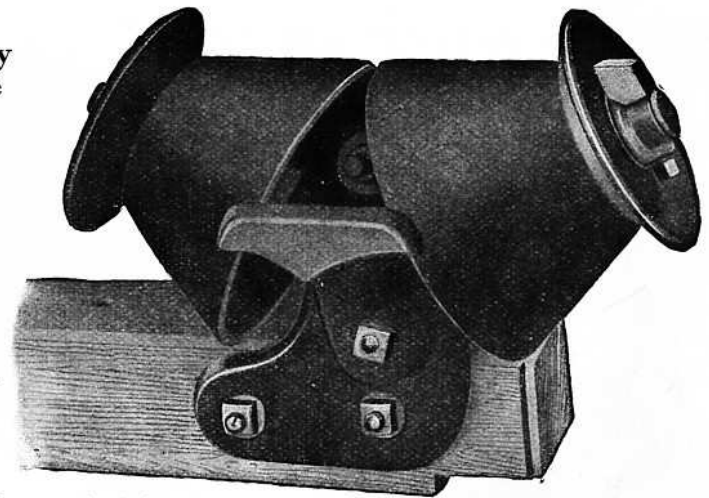
All Avery Separators Are Equipped with Compressed Paper Cylinder Pulleys



This Compressed Paper Pulley has the following advantages:

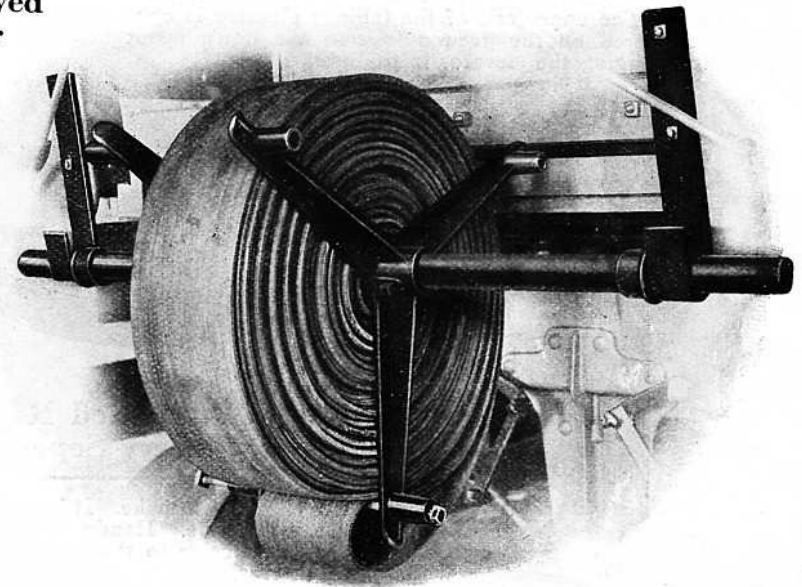
It grips the belt much better than wood, leather or iron; there is no covering to quickly wear out; it saves time and trouble replacing worn out laggings; it lasts longer than others; the main belt can be run slacker, which increases the life of the belt.

This Is the Famous Avery Double Cone Pulley Belt Guide

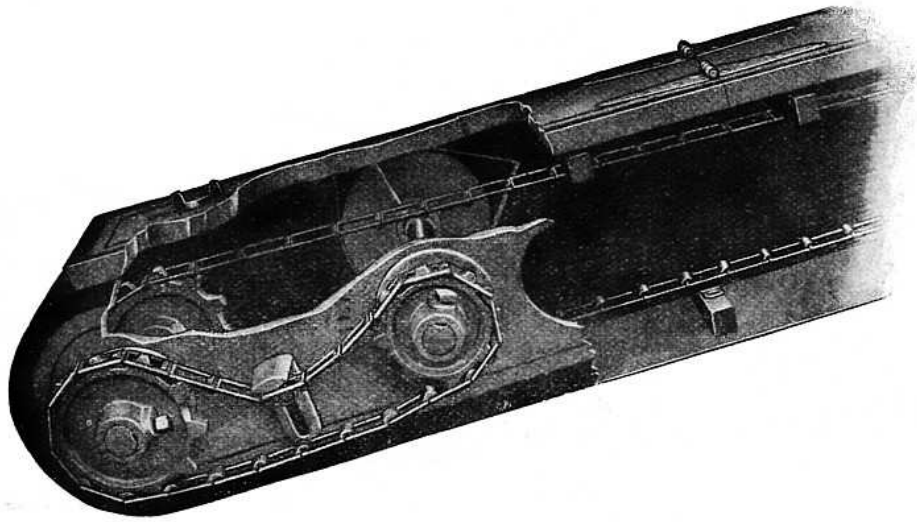


Our Belt Guide is constructed with tapering cone pulleys set at such an angle that the belt surface is flat and runs at the same speed at all times. Notice that the flanges are a part of the pulleys, and as the belt is driven by the wind it is held by the flanges, which are running just as fast as the belt is, and so protect the edges of the belt instead of wearing them off, as other makes of belt guides do, where the edges of the belt are constantly rubbing against pulleys that only run when the belt is forced against them. When the belt is blown to the side, the guide quickly runs the belt back to the center of the pulley. It also holds the under part of the belt up closer around the cylinder pulley, giving you more lap, preventing slipping and adding that much more to your power. This is, without question, the best belt guide made. It must be a fine thing, for we sell hundreds of them every year to threshermen to be used on other makes of machines.

This Improved Belt Winder Is Furnished with All Avery Separators



The belt is carried underneath the feeder—it is out of the way when pulling between the stacks. It is also protected from injury by the weather. With this Belt Winder you can very easily wind up or unwind the drive belt. There is no sagging of the separator frame, as often happens when the heavy drive belt hangs on one corner of the frame.



An Avery Tailings Elevator Has Four Original Fine Features

First—It has a steel bottom which doesn't cut out in ridges or wear the face of the blocks uneven, as do the wooden bottom elevators.

Second—The drive sprocket is located below the entrance of the tailings, which keeps the sprocket clear and prevents clogging.

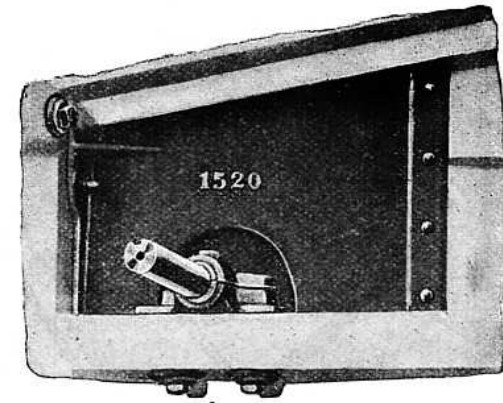
Third—The sprocket chain drive also does away with slipping, common with belt-driven separators.

Fourth—The upper end of the tailings elevator is open, which permits the tailings to be delivered on the ground in case the down spout becomes choked and thus prevents clogging the elevator in the head.



This Jack Is Furnished Regularly with Every Avery Separator

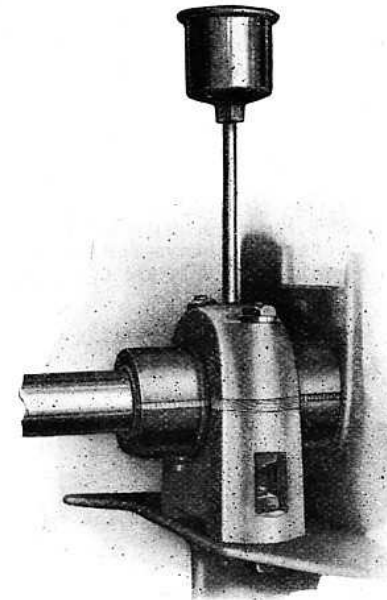
This Jack is our own make. It is a dandy. The finest medium size jack made. Handy to operate, strong and durable. Much superior to the ordinary jacks furnished with threshing rigs. It has sufficient strength to handle an ordinary-sized engine, and is just the thing for use around a separator in setting the machine. You get one regularly with an Avery machine.



Avery Separators Have Removable Iron Beater Casings

If for any reason you wish to remove the beater from an Avery Separator, all that you have to do is to unbolt the iron casings on either side, after which the beater can be easily lifted out.

An Avery Separator isn't always breaking down on the job. It gets there and gets away.



Avery Repair Bills don't eat up your profits. An Avery Separator is built to last.

Avery Separators Have Self-Aligning Cylinder Boxes with Ring Oilers

Avery Cylinder Boxes are self-aligning. They are of the ball and socket type and always keep themselves in line. They also have ring oilers which insure cool running boxes.

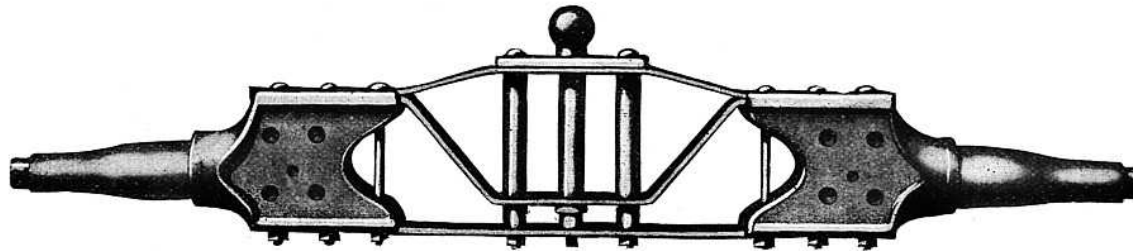
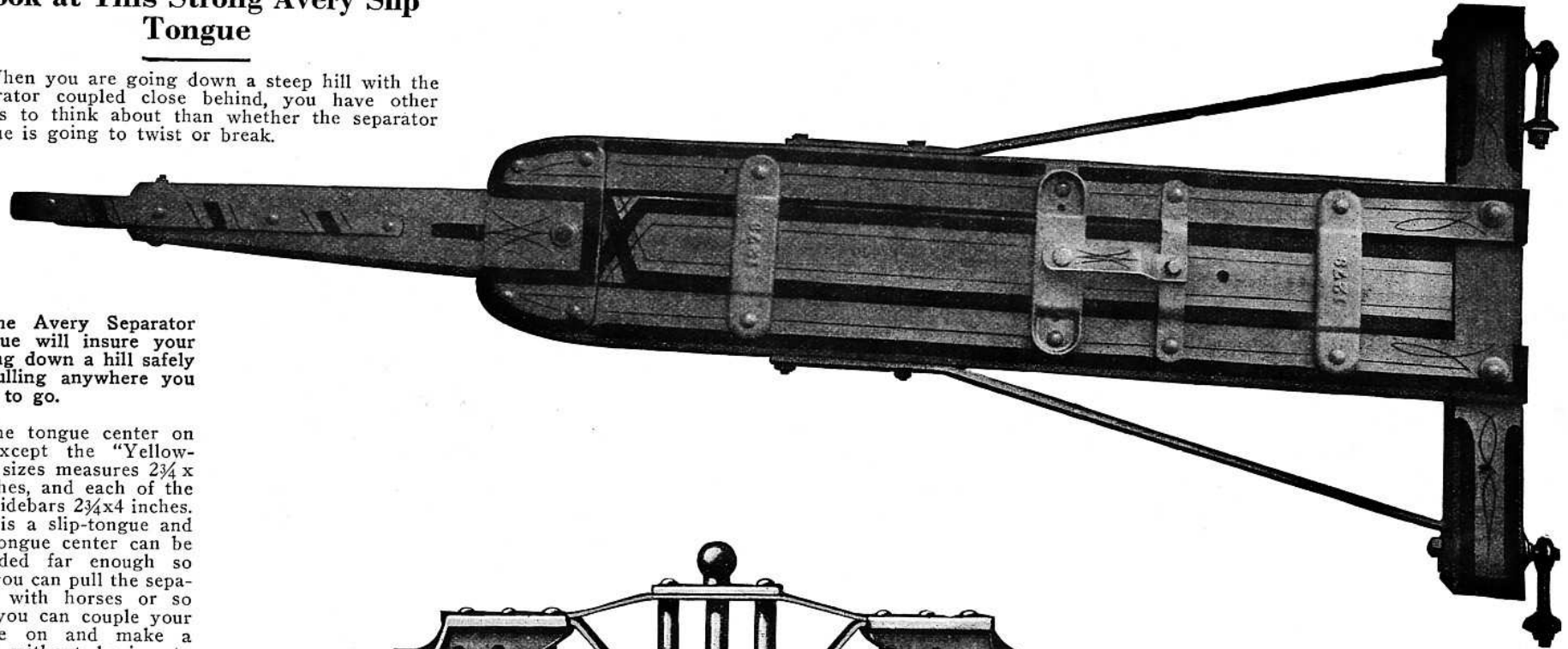
Look at This Strong Avery Slip Tongue

When you are going down a steep hill with the Separator coupled close behind, you have other things to think about than whether the separator tongue is going to twist or break.

The Avery Separator Tongue will insure your getting down a hill safely or pulling anywhere you want to go.

The tongue center on all except the "Yellow-Kid" sizes measures $2\frac{3}{4}$ x 6 inches, and each of the two sidebars $2\frac{3}{4}$ x 4 inches. This is a slip-tongue and the tongue center can be extended far enough so that you can pull the separator with horses or so that you can couple your engine on and make a move without having to fold the feeder back over the deck.

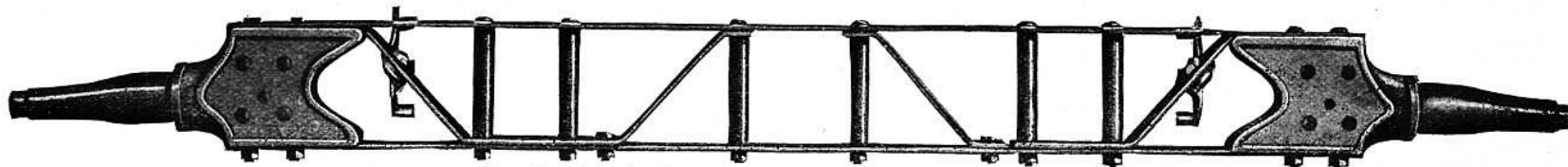
An Avery Separator isn't worn out by the time you earn what it costs.



Front Steel Axle for Avery Separator; Carrying Capacity 40,000 Pounds.
(Notice the Ball and Socket Style of Bearing. It is Strong and Easy to Turn.)

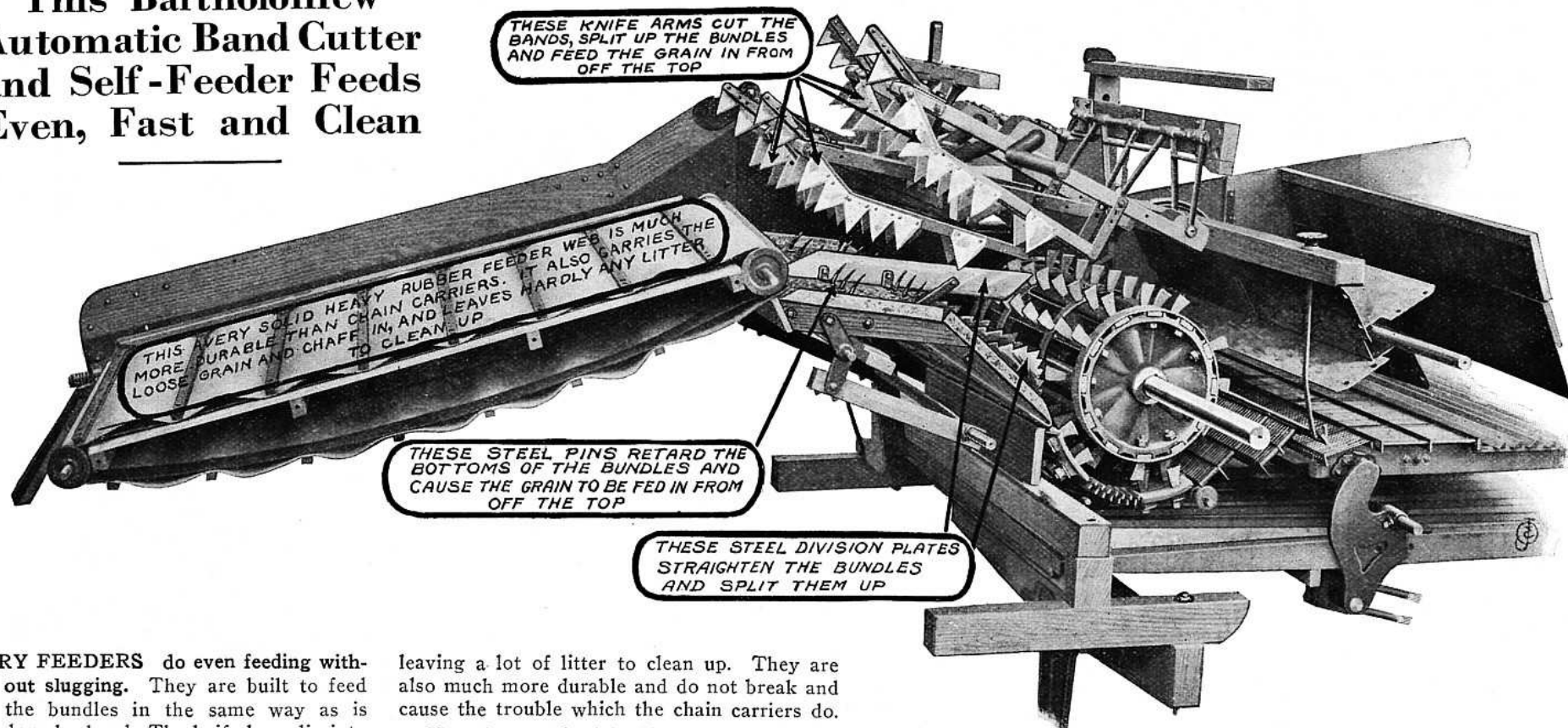
All Avery Separators Have Steel Axles

They are made from steel bars, bridge trussed and bolted together. Each axle has a carrying capacity of several times the weight that rests upon it. There is no comparison between them and the old style, wooden axles, still used by some manufacturers, which rot out and break down and cause so much expense and loss of time.



Rear Steel Axle for Avery Separator; Carrying Capacity 30,000 Pounds.

This Bartholomew Automatic Band Cutter and Self-Feeder Feeds Even, Fast and Clean



THESE KNIFE ARMS CUT THE BANDS, SPLIT UP THE BUNDLES AND FEED THE GRAIN IN FROM OFF THE TOP

THIS VERY SOLID HEAVY RUBBER FEEDER WEB IS MUCH MORE DURABLE THAN CHAIN CARRIERS. IT ALSO CARRIES THE LOOSE GRAIN AND CHAFF IN, AND LEAVES HARDLY ANY LITTER TO CLEAN UP

THESE STEEL PINS RETARD THE BOTTOMS OF THE BUNDLES AND CAUSE THE GRAIN TO BE FED IN FROM OFF THE TOP

THESE STEEL DIVISION PLATES STRAIGHTEN THE BUNDLES AND SPLIT THEM UP

AVERY FEEDERS do even feeding without slugging. They are built to feed the bundles in the same way as is done by hand. The knife bars dip into the bundles and thoroughly loosen them up. The motion of these arms also feeds the bundles in from off the top, while the steel plates and pins in the grain pan hold back on the lower part of the bundles. This is exactly the way that hand feeding is done. That's why you get even feeding without slugging with an Avery Feeder.

Avery Feeders do fast feeding. Users of them say that the capacity of Avery Feeders has never been reached. We do not use any delicate feeding devices, such as are often used, which greatly reduce the capacity of the feeding and wear out quickly.

Avery Feeders do clean work. They are equipped with solid rubber feeder carriers, which carry the loose grain and chaff into the machine instead of wasting the grain and

leaving a lot of litter to clean up. They are also much more durable and do not break and cause the trouble which the chain carriers do.

You also get the following strong warranty with this feeder:

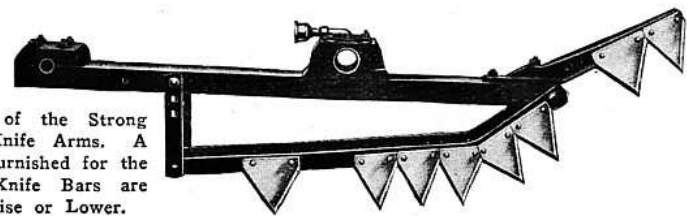
The Bartholomew Band Cutter and Self-Feeder is guaranteed to feed all kinds and conditions of loose, headed or bound grain without slugging the cylinder, and faster and more evenly than feeding can be done by hand.

You get this warranty printed right in the order blank.

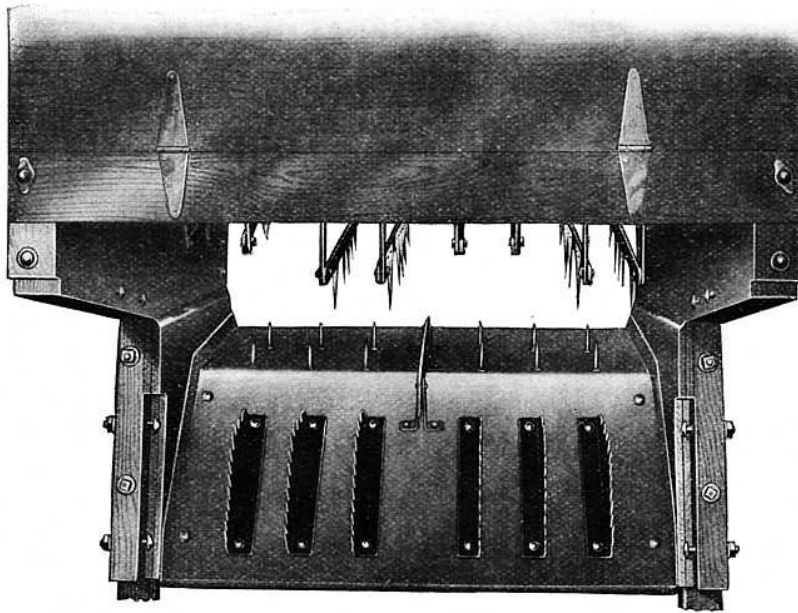
You can see from the construction of an Avery Feeder that it is built to do even, fast work and to last a long time. If it didn't do it we couldn't give this strong warranty that goes with every order. Read the letters from users which we publish telling about the work of the Avery Feeder and ask anybody who owns one and you will find that Avery Feeders do all we claim for them.



The Crankshafts on Our 36 and 42-inch Feeders are Made from 1 3/4-inch Open Hearth Steel. Those on the Smaller Sizes from 1 1/2-inch. All the Bearings are Accurately Machined. They are Heavier than Many Others and Less Liable to Spring or Break.



This is one of the Strong Avery Feeder Knife Arms. A Hard Oiler is Furnished for the Journal. The Knife Bars are Adjustable to Raise or Lower.



This Shows the Steel Division Plates and Retarding Pins on the Avery Feeder Pan

STEEL PLATES are bolted to the feeder pan. These plates straighten any bundles that have started in cross-wise. No bundles can pass through to the cylinder without being thoroughly split up by these plates and the knife bars. Notice also the steel retarding pins in the bottom of the feeder pan which hold back on the bottoms of the bundles and cause them to be fed in from off the top.



The Avery Feeder Governor Is the Best Governor Made

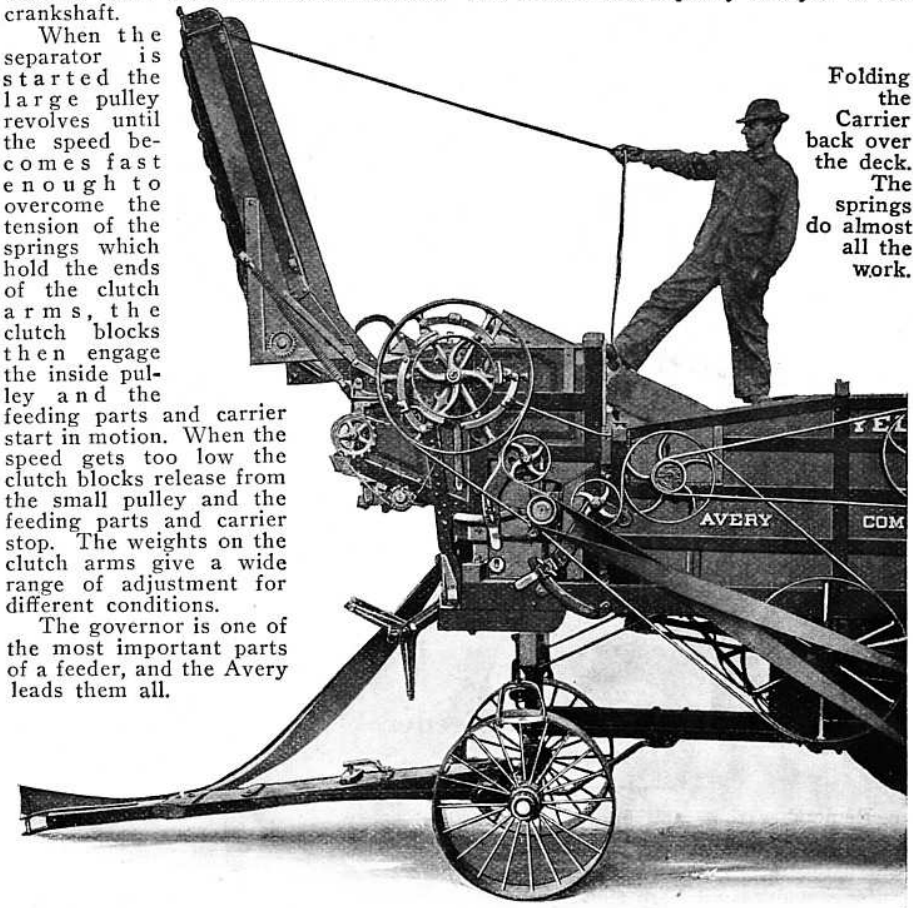
Other makes of Governors control only the carrier and hence allow the feeding parts to keep on pulling grain into the cylinder, even when the speed is low, but the Avery Governor cuts off and stops the feeding parts, as well as the carrier. Furthermore, on other machines the feeding parts start with the cylinder, and thus often slug or choke it at the start, but with an Avery Feeder no part of the feeder will go to work until the cylinder has reached threshing speed, then the whole feeder starts into operation and takes care of the grain which the pitchers have pitched into it while the machine was stopping.

This governor is, furthermore, very sensitive in stopping and starting, and also has a wide range of adjustment, so that it will give you perfect control in all kinds of grain, whether threshing a small or large number of bushels per minute. Another feature of importance is that our governor is strong enough to control a feeder extension also.

The action of this governor is as follows: The large pulley is loose on the shaft and is driven by the feeder drive belt. Attached to it are three clutch arms, on the ends of which are wooden clutch blocks. The smaller inside pulley is keyed to the crankshaft.

When the separator is started the large pulley revolves until the speed becomes fast enough to overcome the tension of the springs which hold the ends of the clutch arms, the clutch blocks then engage the inside pulley and the feeding parts and carrier start in motion. When the speed gets too low the clutch blocks release from the small pulley and the feeding parts and carrier stop. The weights on the clutch arms give a wide range of adjustment for different conditions.

The governor is one of the most important parts of a feeder, and the Avery leads them all.

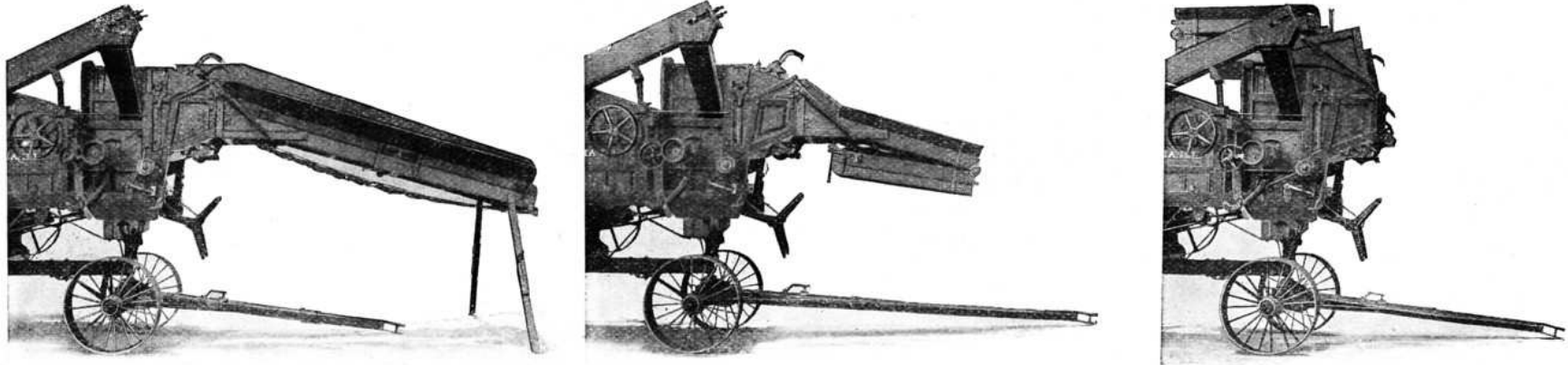


Folding the Carrier back over the deck. The springs do almost all the work.

Avery 6 and 8-Footer Feeder Carriers

No legs are required to hold up the end of either our 6 or 8-foot carriers. There is nothing for the wagons to run against and cause the carrier to fall; neither does the carrier have to be folded when a move is to be made.

Our Feeder Carriers fold easily over the top and out of the way. The springs are attached just right to do almost all the work.

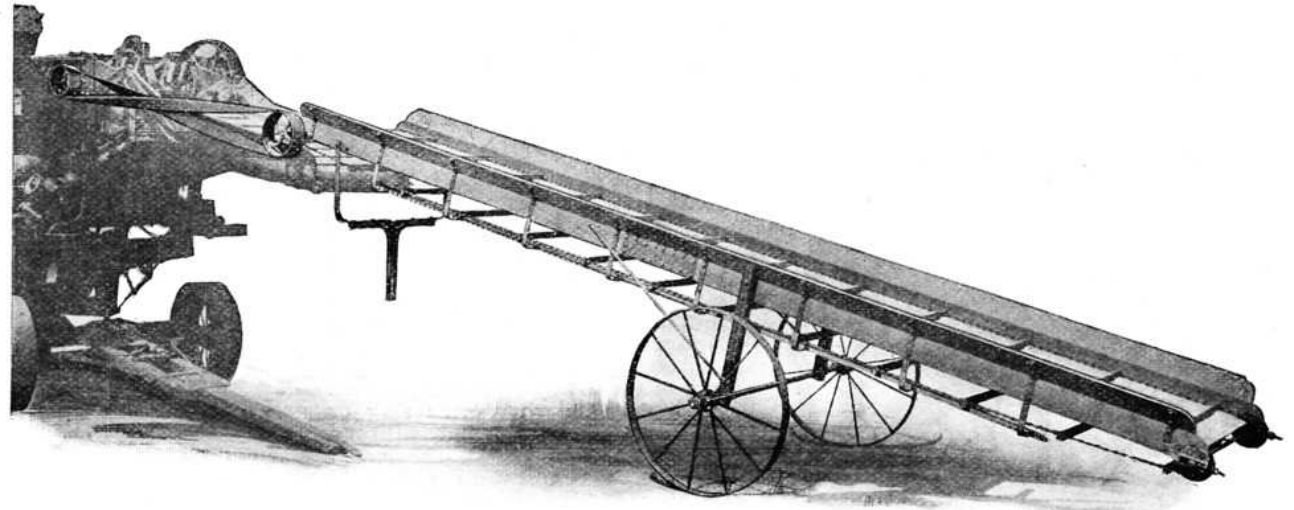


Avery 10 and 14-Foot Feeder Carriers

These three illustrations show the carrier extended ready for use, the first fold underneath and the second fold back over the top of the separator. Notice particularly, in the middle view, that with our Extensible Tongue only the first fold need be made to couple the engine on and make a move. The second or top fold is excellent for storing the separator, the carrier being entirely out of the way.

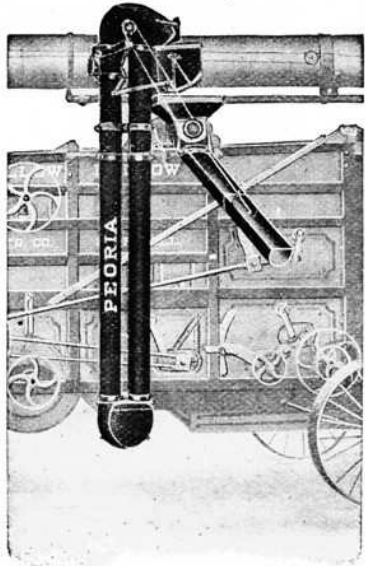
Avery 18-Foot Mounted Feeder Extension

Remember that, unlike other makes, the Avery Feeder Governor is strong enough to control this Extension also, and that the carrier on the Feeder Extension does not keep running and piling up the grain after the feeder carrier has stopped. This is an exclusive Avery feature.



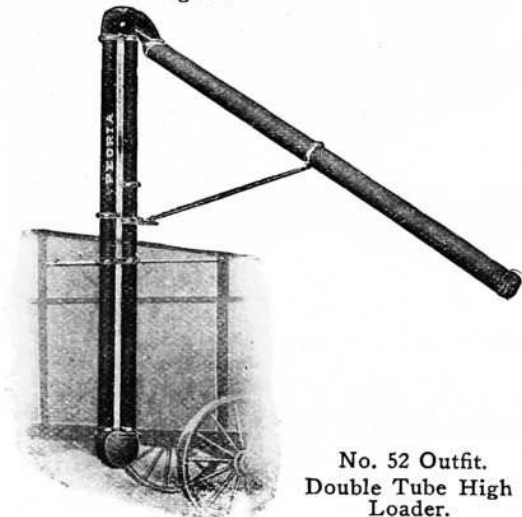
Weighers and Loaders

These are the principal styles of Weighers and Loaders commonly used.

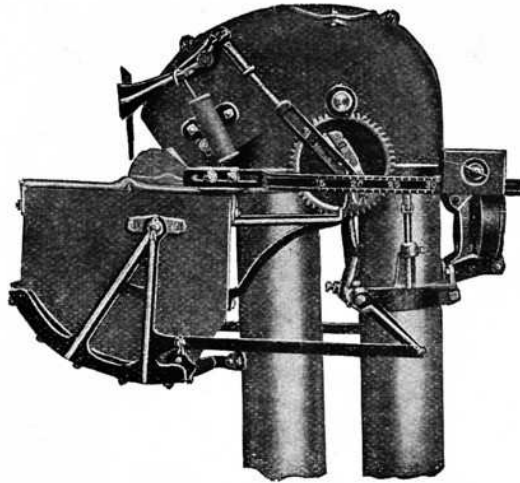


No. 50 Outfit.
Weigher, with Cross Conveyor and
Two Wagon Spouts.

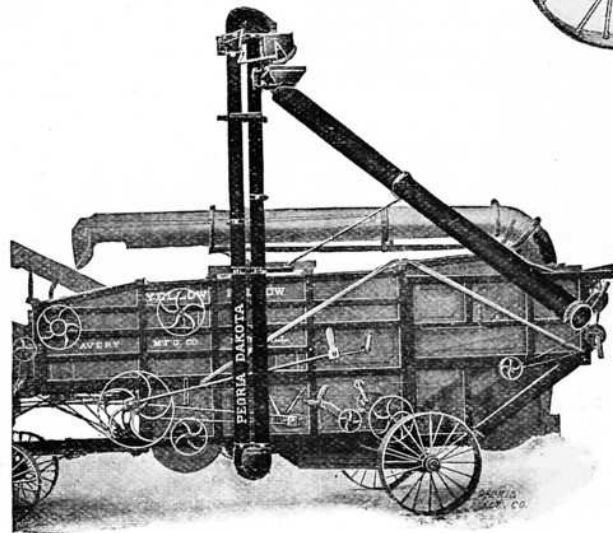
No. 54 Outfit.
Loader, same style as No. 50
Weigher.



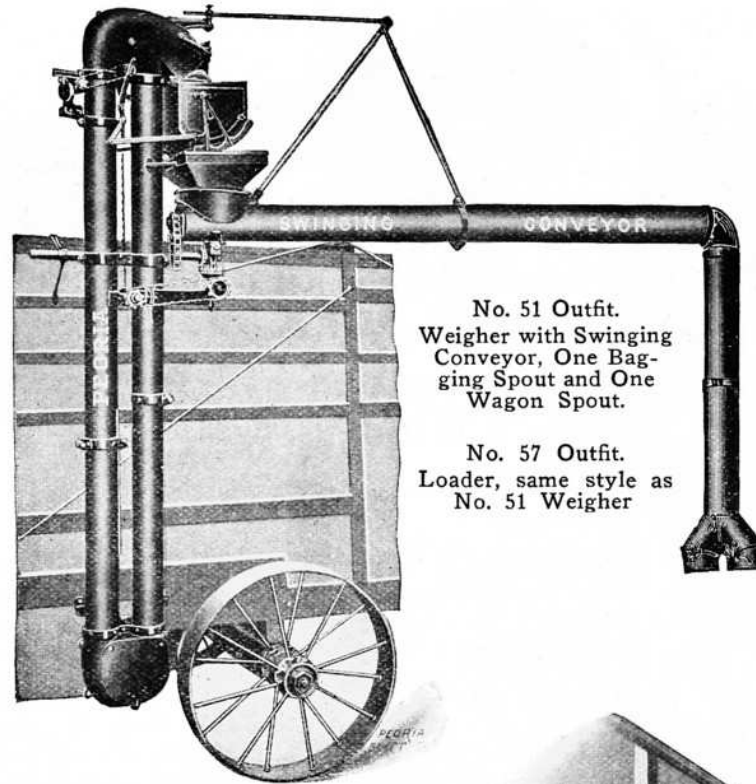
No. 52 Outfit.
Double Tube High
Loader.



Weigher Head.

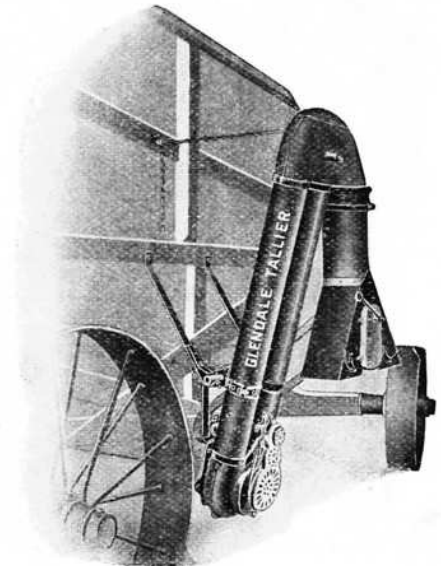


No. 53 Outfit.
High Weigher, Dakota Style.



No. 51 Outfit.
Weigher with Swinging
Conveyor, One Bag-
ging Spout and One
Wagon Spout.

No. 57 Outfit.
Loader, same style as
No. 51 Weigher



No. 55 Outfit.
Short Tallying Bagger.

You Pay the Same Price and Get a Whole Lot More for Your Money When You Buy a J. B.'s Wind Stacker

WE INVITE comparison between our Wind Stacker and all other makes. Just notice the cast iron elbow, special hood, heavy fan, steel fan housing and other parts, and compare these with others. Our Wind Stacker is made from heavier and better materials and costs more to build than any other stacker on the market.

Our Stacker Fan is driven with a straight open belt direct from the cylinder shaft. There is no gearing to rattle or break, and no power lost by the belt having to travel around the rear corner of the separator frame. The belt is also equipped with a good tightener by which the tension can be adjusted as desired and without stopping the machine.

The separator man can stand on the ground and easily raise or lower the pipe by means of the ratchet lever; can extend it or shorten it with the cable and the crank lever, and can adjust the hood in the manner desired. No need to climb up on top of the separator.

The Stacker Pipe is supported by a heavy steel brace attached to the rear lower corner of the wind stacker frame. No tackle or blocks needed to carry the pipe, and our manner of supporting it also prevents any strain coming on the reversing gear to wear it out.

When you get an Avery Wind Stacker you also get the following Special Stacker Warranty:

Avery J. B.'s Wind Stackers are warranted to handle dry or wet straw in any condition or quantity without choking, and to be built with tank steel fan housings and boiler plate wings.

The Avery J. B.'s Farmer's Friend Wind Stacker is made of the Best Materials, has the Best Design, and is the Strongest Guaranteed Stacker Built.

"The Wind Stacker never gave us one moment's bother and is the easiest to handle of any we ever saw or worked with."
West Hope, N. D.

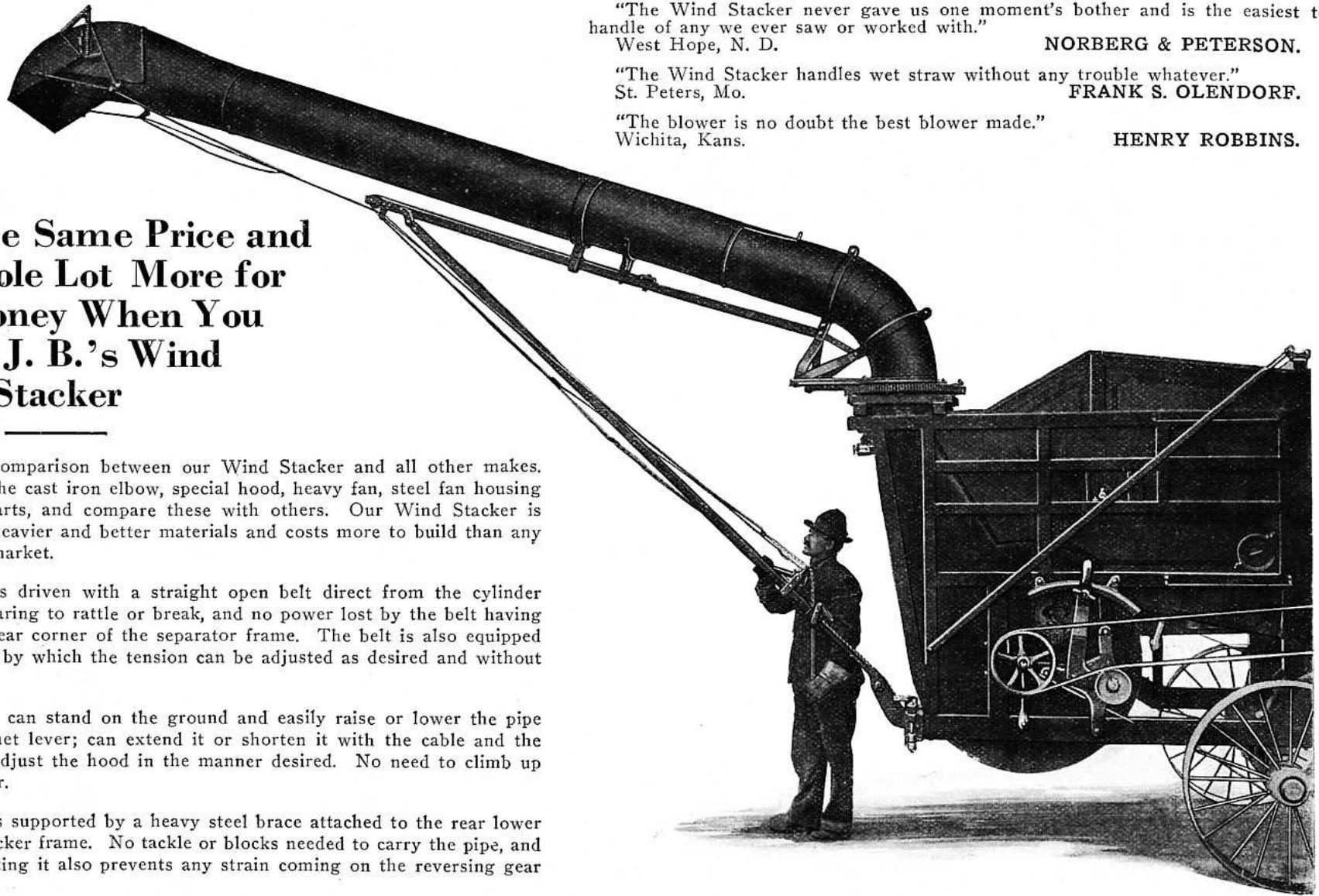
NORBERG & PETERSON.

"The Wind Stacker handles wet straw without any trouble whatever."
St. Peters, Mo.

FRANK S. OLENDORF.

"The blower is no doubt the best blower made."
Wichita, Kans.

HENRY ROBBINS.



"The farmers are telling me nearly every day that I certainly have the best wind stacker in the neighborhood."
Parkers Prairie, Minn.

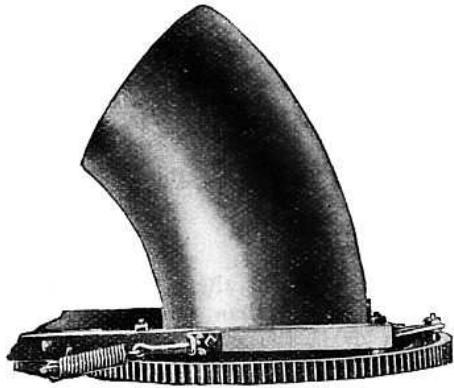
N. ALECK NELSON.

"I can show straw stacks that one man built that look like hay stacks, they are so neat and trim."
Ida Grove, Ia.

HENNING DAHLQUIST.

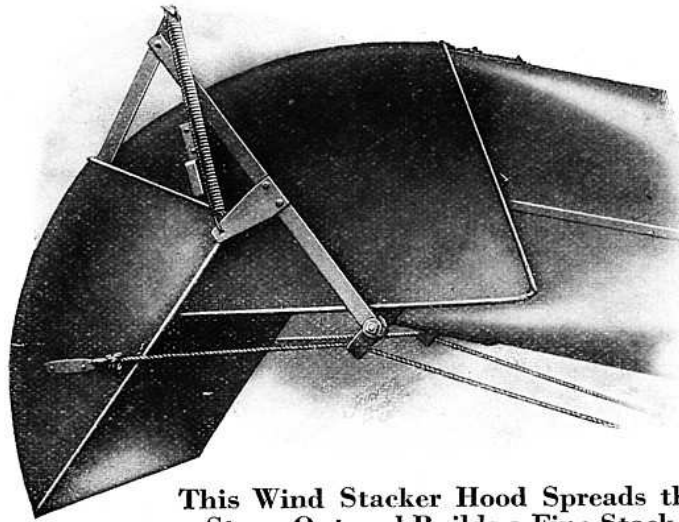
"The blower never was choked all fall."
Clinton, Mo.

BRUNO ALBIN.



**Our Wind Stacker Elbow
Is Cast Iron**

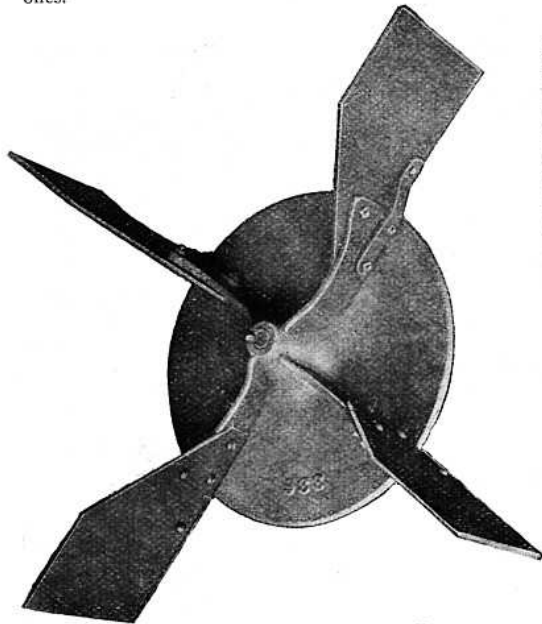
Just compare it with the ordinary tin or galvanized iron styles. The passage of the straw doesn't wear holes in this cast iron elbow like it does in the tin or galvanized ones.



**This Wind Stacker Hood Spreads the
Straw Out and Builds a Fine Stack**

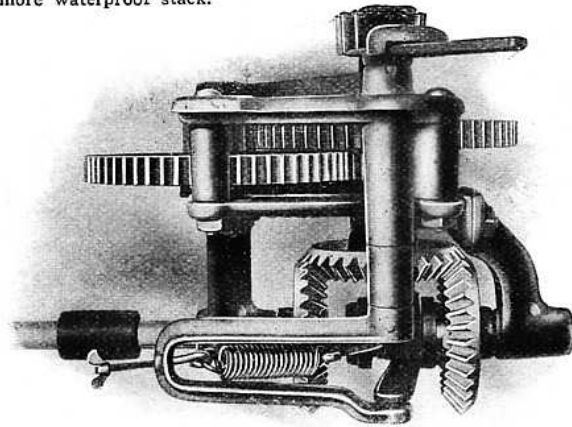
Threshermen tell us that our wind stacker hood is a fine improvement. With it you can build a better stack, and if you use a man in the straw he will have much easier work than with the old style round-stacker hood.

This hood is so hinged that it maintains a perfect curve, no matter in what position it is placed, thus causing the straw to always pass out in a steady, unchecked stream. The outer end of the hood has a broad, flat face, with square sides, which spread the stream of straw out into a wide, thin sheet, depositing it over a large area on the stack and without too great force. These thin layers of straw lap back and forth upon one another and bind the stack into one compact mass, while with the round hoods large bunches of straw are delivered in one place, holes are bored in the stack, large chunks rolled off and the stack built up piece by piece. With this hood you can place the straw anywhere you wish, build up the stack more uniformly, bind it closer together, top it out in finer shape and make a better built and more waterproof stack.



**The Avery Wind Stacker Fan Is
the Strongest and Heaviest Fan
Used in any Wind Stacker**

Has 1/4-inch steel boiler plate wings, much stronger than the sheet iron style. Pitchfork handles don't bend or break them, and they will take care of more straw and blow it to a greater distance than will other wind stacker fans. Total weight of fan is 150 lbs. It runs smoothly. The fan head alone weighs more than most other complete fans.



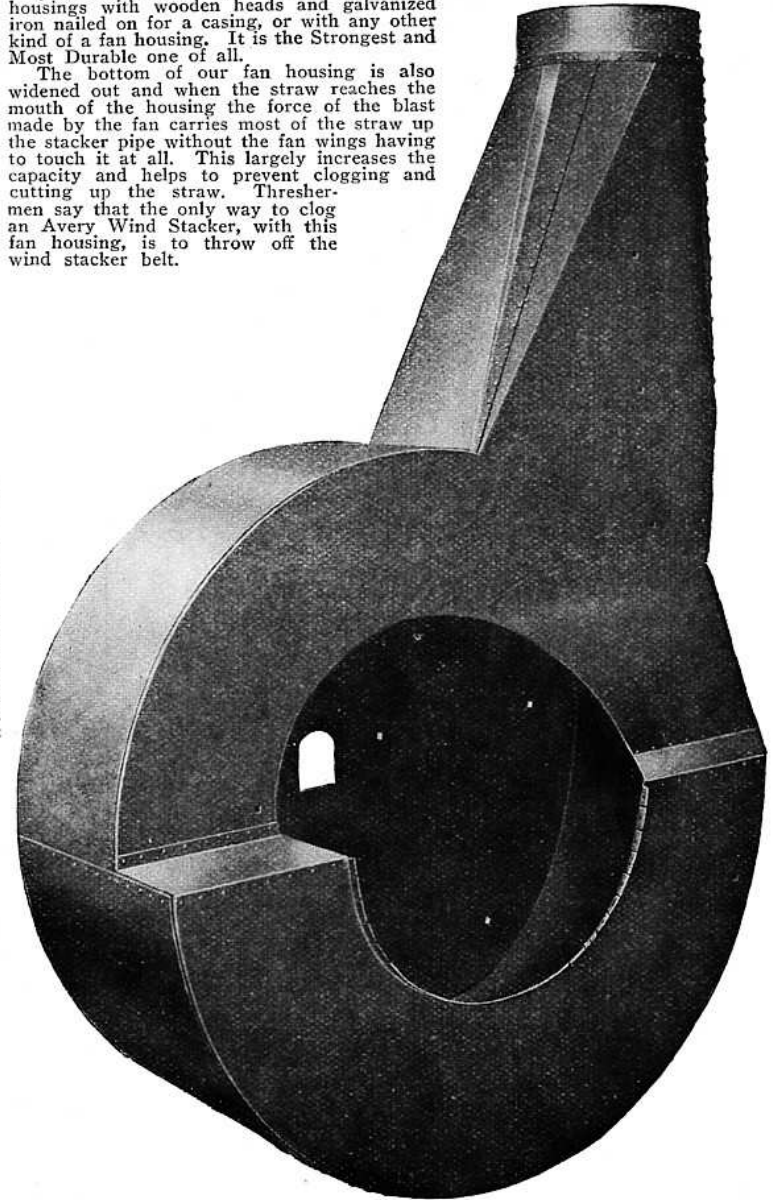
Reversing Gear

Instead of attaching our Reversing Gear, piece by piece, to the wooden wind stacker frame, the gearing is mounted in an independent iron frame, and this iron frame is then bolted to the wind stacker frame, hence the gears cannot get out of line and run hard or wear out unnecessarily.

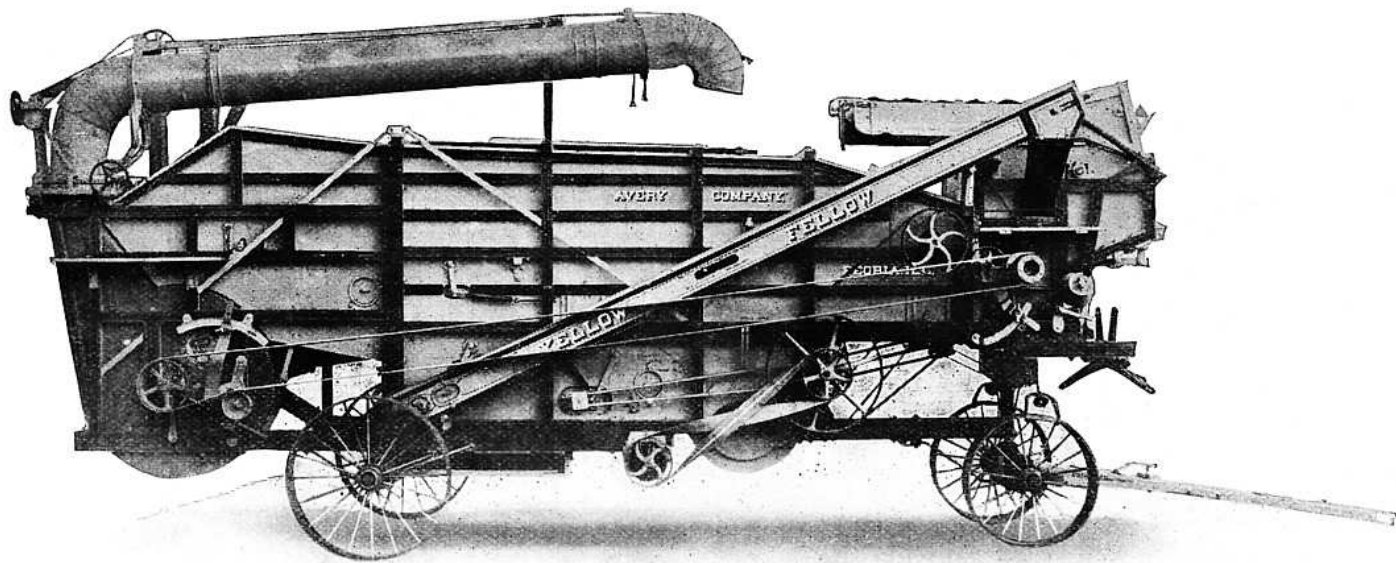
**Our Wind Stacker Fan Housing Is Made of Heavy Sheet
Steel and Boiler Riveted**

Just compare it with one of those fan housings with wooden heads and galvanized iron nailed on for a casing, or with any other kind of a fan housing. It is the Strongest and Most Durable one of all.

The bottom of our fan housing is also widened out and when the straw reaches the mouth of the housing the force of the blast made by the fan carries most of the straw up the stacker pipe without the fan wings having to touch it at all. This largely increases the capacity and helps to prevent clogging and cutting up the straw. Threshermen say that the only way to clog an Avery Wind Stacker, with this fan housing, is to throw off the wind stacker belt.



"The large fan housing on the Blower is just the right thing when you come to thresh wet and rotten grain, as we have all kinds of it this year; other makes of machines are unable to handle this without trouble."
Cannon Falls, Minn. HEINLEIN BROS.



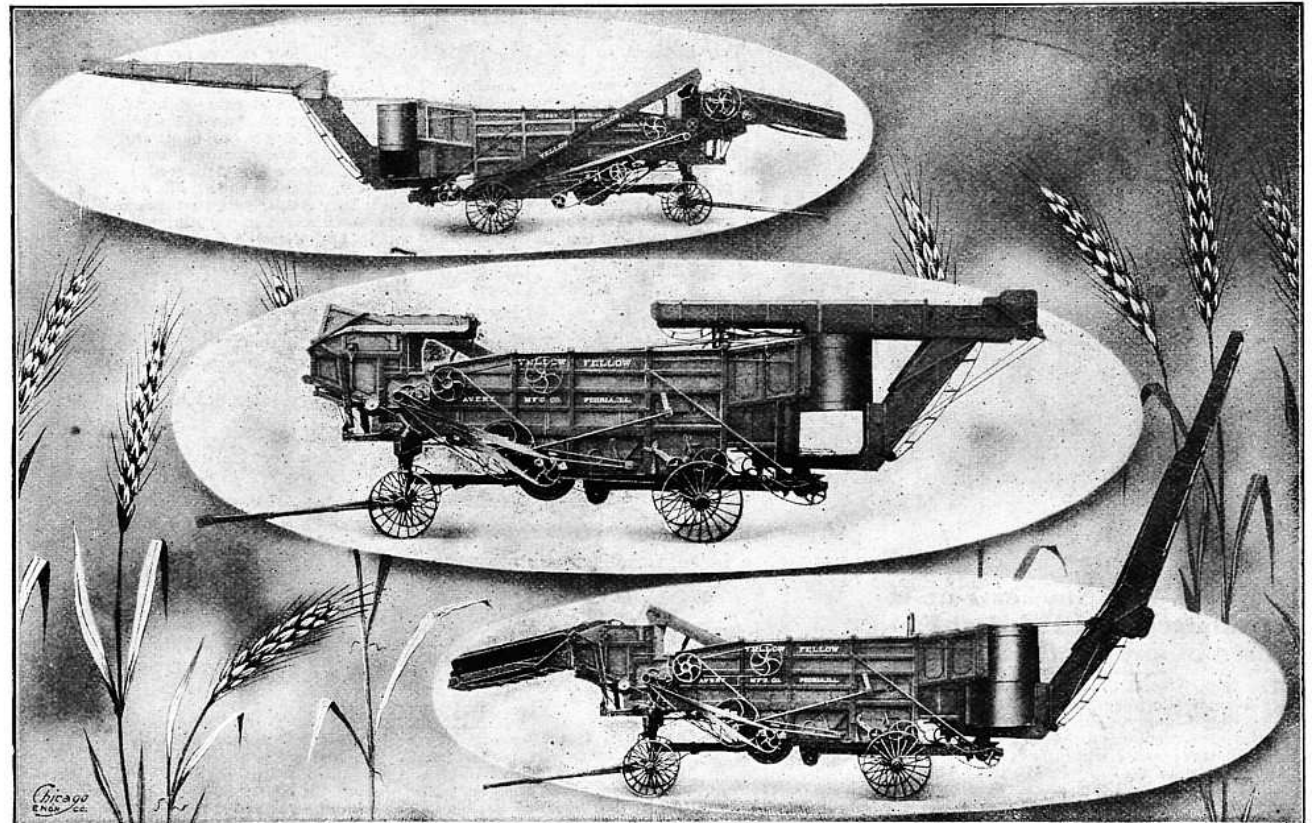
Sattley Attached Swing- ing Stacker

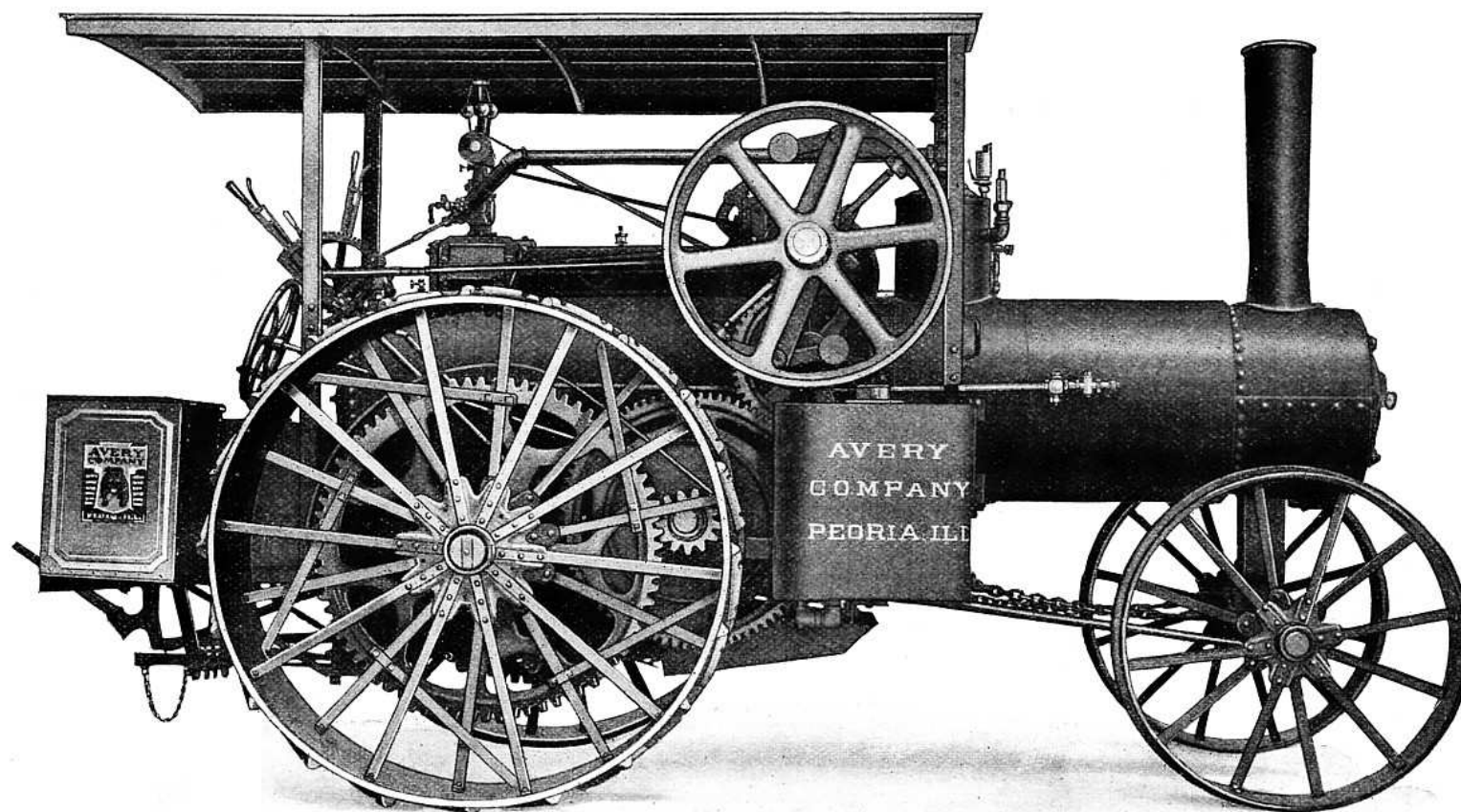
AS an Attached Stacker there is certainly nothing made better than this one in its construction or in the work which it will do. It can be furnished for any size separator. Stackers for 28 x 46 inch and larger machines have automatic oscillating turn tables. Those for the "Yellow Kid" sizes do not have the automatic oscillating attachment but can be swung around by hand.

Low Down Barn Style Separator

FOR territory in which a considerable portion of the threshing is done in barns, our low down barn style machine, as shown above, is just the thing. The deck of the Separator is cut down at the rear to permit locating the turn-table 7 inches lower than the regular style. The chute used on this machine differs from that sent out with regular wind stackers; the elbow is shorter, and both the lifting and telescoping devices are arranged to operate from the deck. When the stacker chute is folded on top of the Separator the highest point of the elbow is only 10 inches higher than the upper end of the return elevator. The reduction in height of our machine is not made by cutting down the size of the truck wheels.

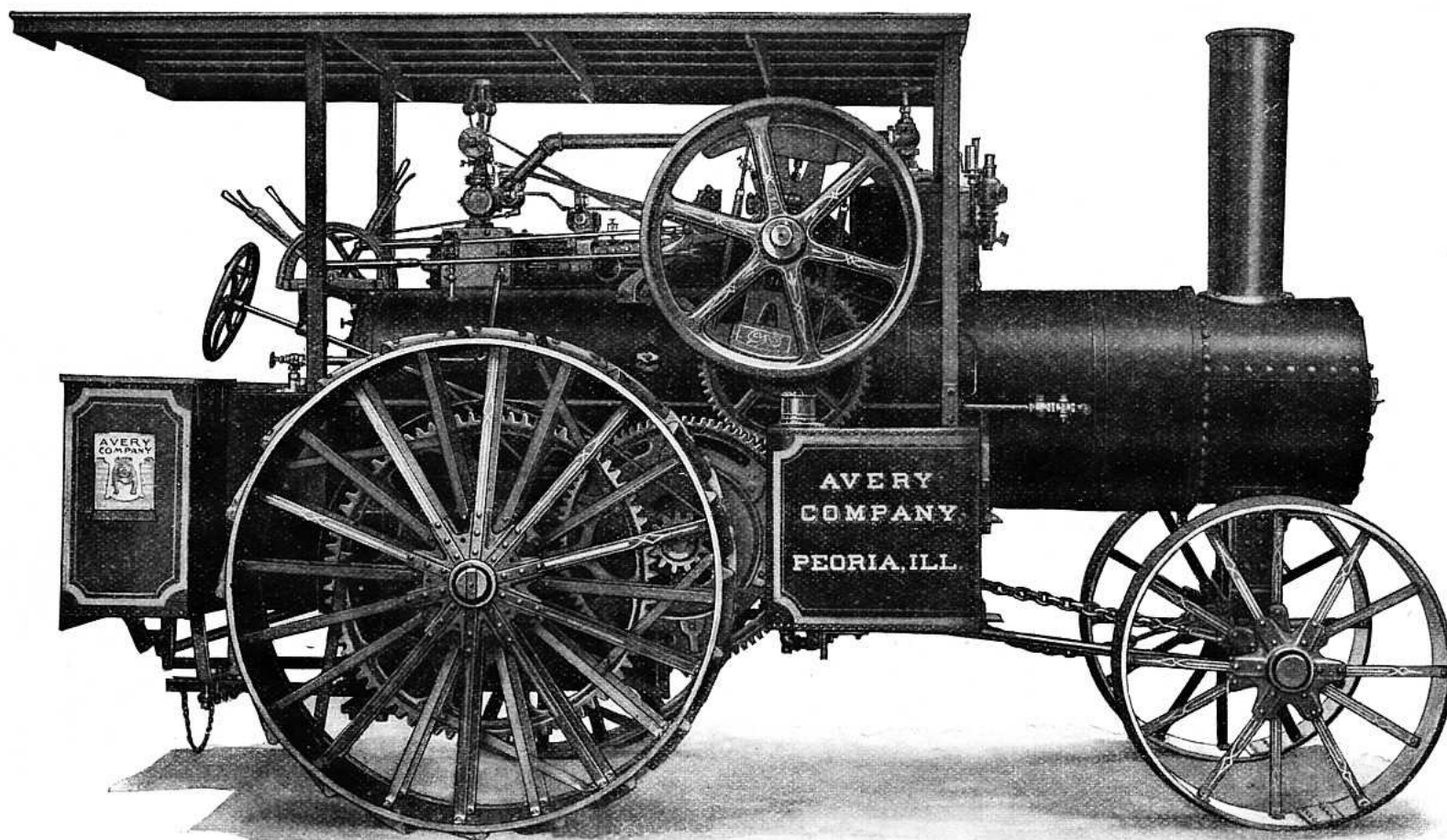
This illustration likewise shows the Russell type of Wind Stacker, which we also build and which operates from the deck.





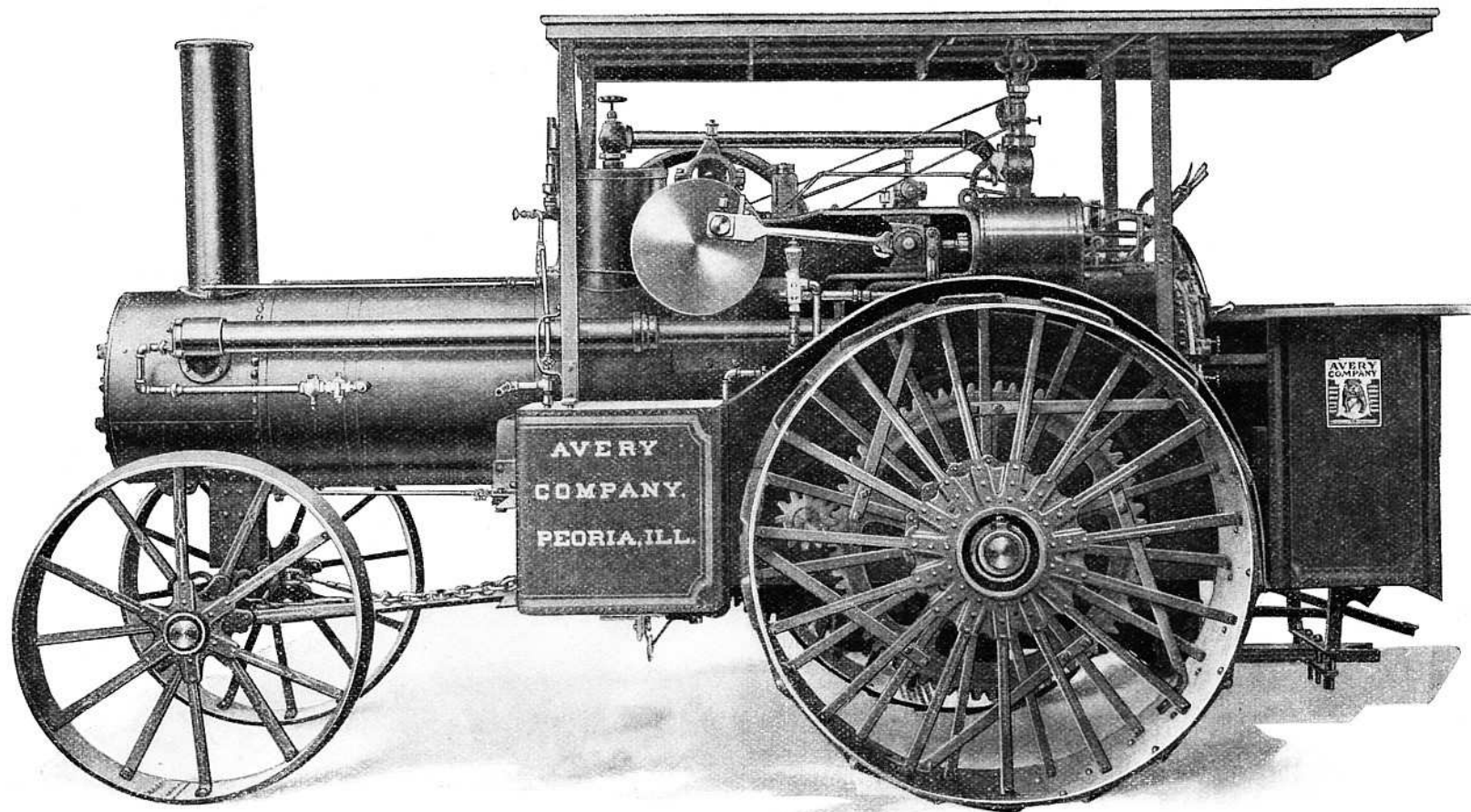
Avery 40-H. P. Single Cylinder Straight Flue Steam Traction Engine

Regular Equipment: Rocker Grates, Automatic Fire Door, Automatic Coupler, Lifting Jack, Tools, Etc.



Avery 50-H. P. Single Cylinder Straight Flue Steam Traction Engine

Regular Equipment: Rocker Grates, Automatic Fire Door, Automatic Coupler, Lifting Jack, Tools, Etc.



Avery 65-H. P. Single Cylinder Straight Flue Steam Traction Engine

Regular Equipment: Rocker Grates, Automatic Fire Door, Automatic Coupler, Lifting Jack, Tools, Etc.

General Description of Avery Single Cylinder Straight Flue Steam Engines

THESE Engines have many of the special features designed by the Avery Company and used for years on our other steam engines.

They also have a number of new features which have appealed strongly to engine users.

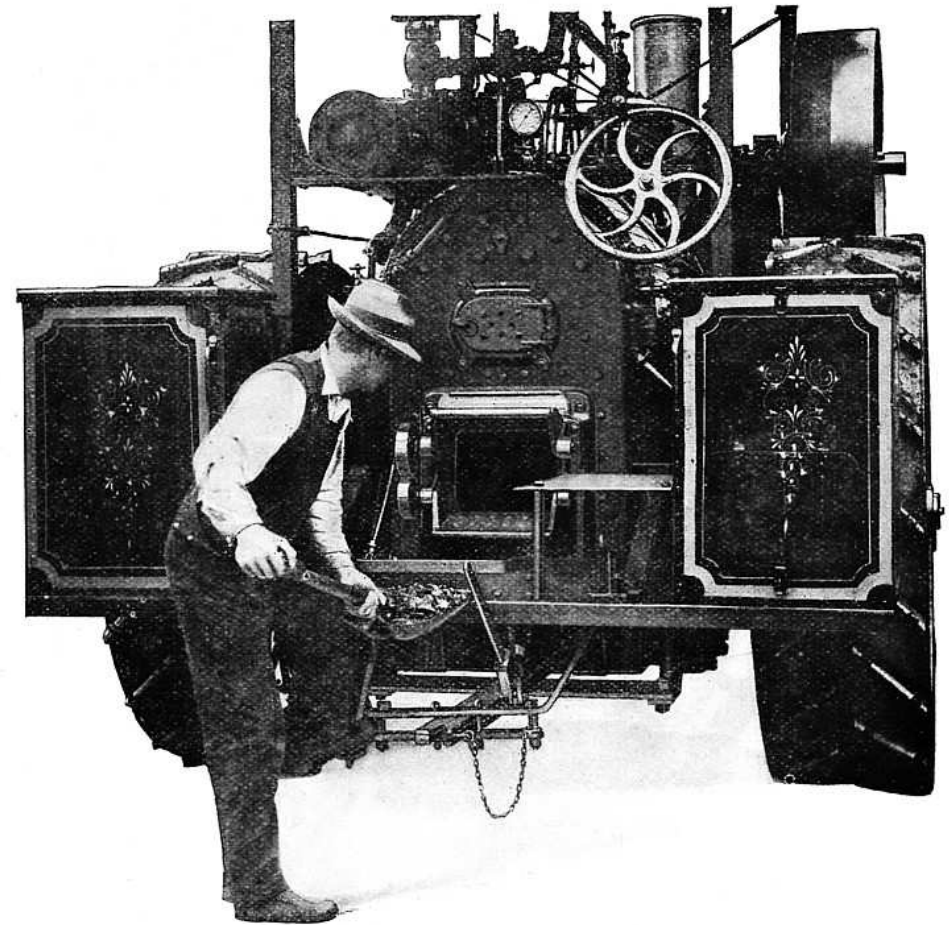
Avery Boilers Are Reinforced for Carrying High Pressures

Avery boilers are built for carrying high pressures. They are reinforced under each bracket and have long stay rods reaching from the front to the rear head.

The boilers have long flues and large fire boxes. There is a 1-inch space between the flues at the rear end which insures perfect circulation and a strong flue sheet. The flues are arranged perpendicularly so that there is a $\frac{1}{2}$ -inch vertical space between each row, making it possible for the sediment to easily drop through. Will burn straw, coal or wood.

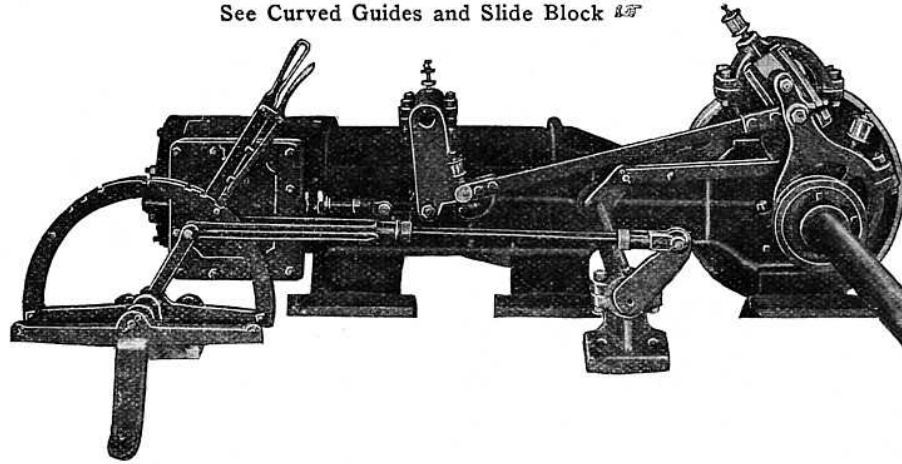
The general equipment of the boilers on these engines is unusually fine. They have Brick Arches and Rocker Grates. The original Avery Automatic Fire Door, which is shown in the illustration of the rear view at the right, is furnished regularly. This is a fine feature. It is so arranged that it can be operated by the engineer either when standing on the platform or on the ground. The door is opened by pressing one foot on the lever, leaving both hands free to handle the shovel. The door closes automatically when the foot pressure is released.

Another splendid improvement in these engines is the Heater. This is so constructed that it is wonderfully efficient. It will heat the water to the boiling point before it enters the boiler, making these engines unusually easy to steam and economical.



Shows operation of Automatic Fire Door, also shows automatic coupler, special hitch, and lever for operating rocker grates.

See Curved Guides and Slide Block 457



The Avery Curved Block Reverse Gear Gives Equal Lead and Cut Off

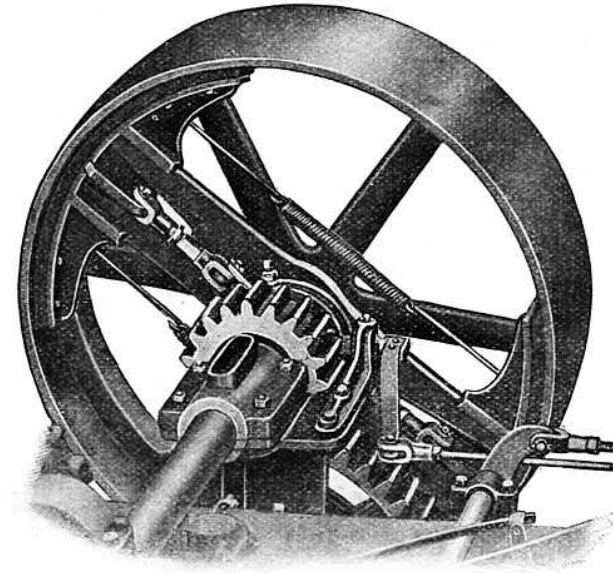
TO get the most fuel economy you must use the expansion of your steam. To get expansion it is necessary to hook up your valve gear and close the steam ports earlier. One of the hardest problems which designers have had to solve has been to produce a simple valve gear that would positively give an equal lead and cut off at all points of the reverse lever quadrant when hooked up as well as when wide open and whether running forward or backward.

The link motion is too complicated and has too many joints and pins which quickly wear and become loose and throw your valve off.

This Avery Reverse Gear is the only valve gear that is positive in action and at the same time is simple in construction. It has few wearing points. These all have abundant take-up provisions. It has only one eccentric.

It is equipped with our own design Curved Slide Block and will give an equal lead and cut off at all points with the reverse thrown clear over or hooked up, and whether the engine is running in one direction or the other. The curve in the block also makes it extremely quick opening, which allows the steam to hit the piston head a regular sledge hammer blow, giving you greater power on the start of the stroke and allowing you to hook up the valve and let the piston travel the balance of the way on expansion which produces the greatest economy.

Our Curved Block Valve Gear is one of the most important features which makes an Avery Engine economical and powerful.



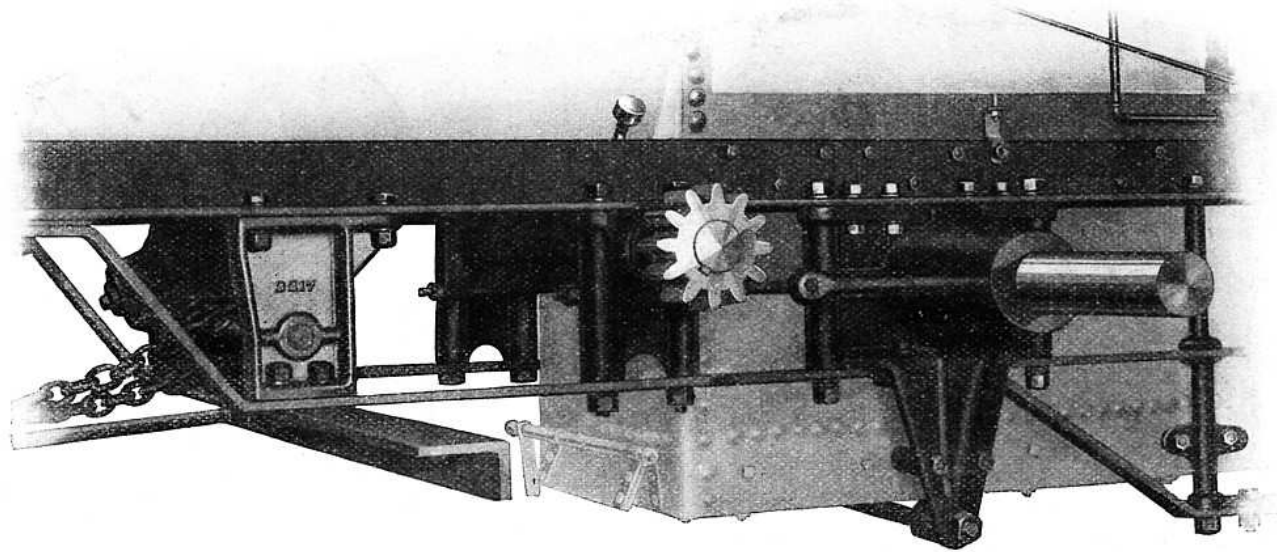
The Avery Friction Clutch is a Dandy

Our Friction Clutch has long, heavy shoes, which cover about one-half the circle of the flywheel. They hold fast when the clutch is thrown in. The shoes push straight out against the rim and thus bring no end thrust on the main shaft to quickly wear the engine out of line, as in the case of those which engage from the side on a beveled surface. When the clutch is thrown out they are drawn well back from the wheel.

This Clutch never binds, and yet the action is so delicate that the engine can be moved an inch at a time. You can depend upon this Clutch holding or letting go when you want it to.

All Avery Engines are Regularly Equipped with Automatic Self-Coupling Draw Bars

All you have to do is to back the engine up and guide the end of the tongue into it when you want to couple the separator to the engine. To uncouple, pull the chain and you are ready to go. By removing the pins the bar can be swung to either side for convenience in coupling up.



This Frame Relieves an Avery Boiler of Strains

IN building this engine our designers worked with the idea in mind of reducing the number of bolts in the boiler to the minimum. Following out this idea, they designed a special angle and flat bar steel frame to which the axle and countershaft brackets are attached instead of directly to the boiler. The boiler is then bolted to this steel frame with as few bolts as possible. It is practically carried in a saddle between the two angle bars of the frame. One of the worst sources of trouble on ordinary engines is where the countershaft boxes are bolted to the corners of the boiler. All these troubles are eliminated on the Avery Engine by bolting the countershaft boxing to the angle bar frame and not to the boiler. The countershaft box is a full length solid boxing. It has long babbitted bearings in each end. The center is arranged as an oil well and a grease cup is also placed on each end.

Avery Brackets Have Many Improved Features

All the brackets on these engines are put on with stud bolts. No cap screws are used. They are laid out in such a way that any bracket may be removed without removing a single bolt. All you have to do is to take off the nuts. You do not have to disturb the tight steam joint made

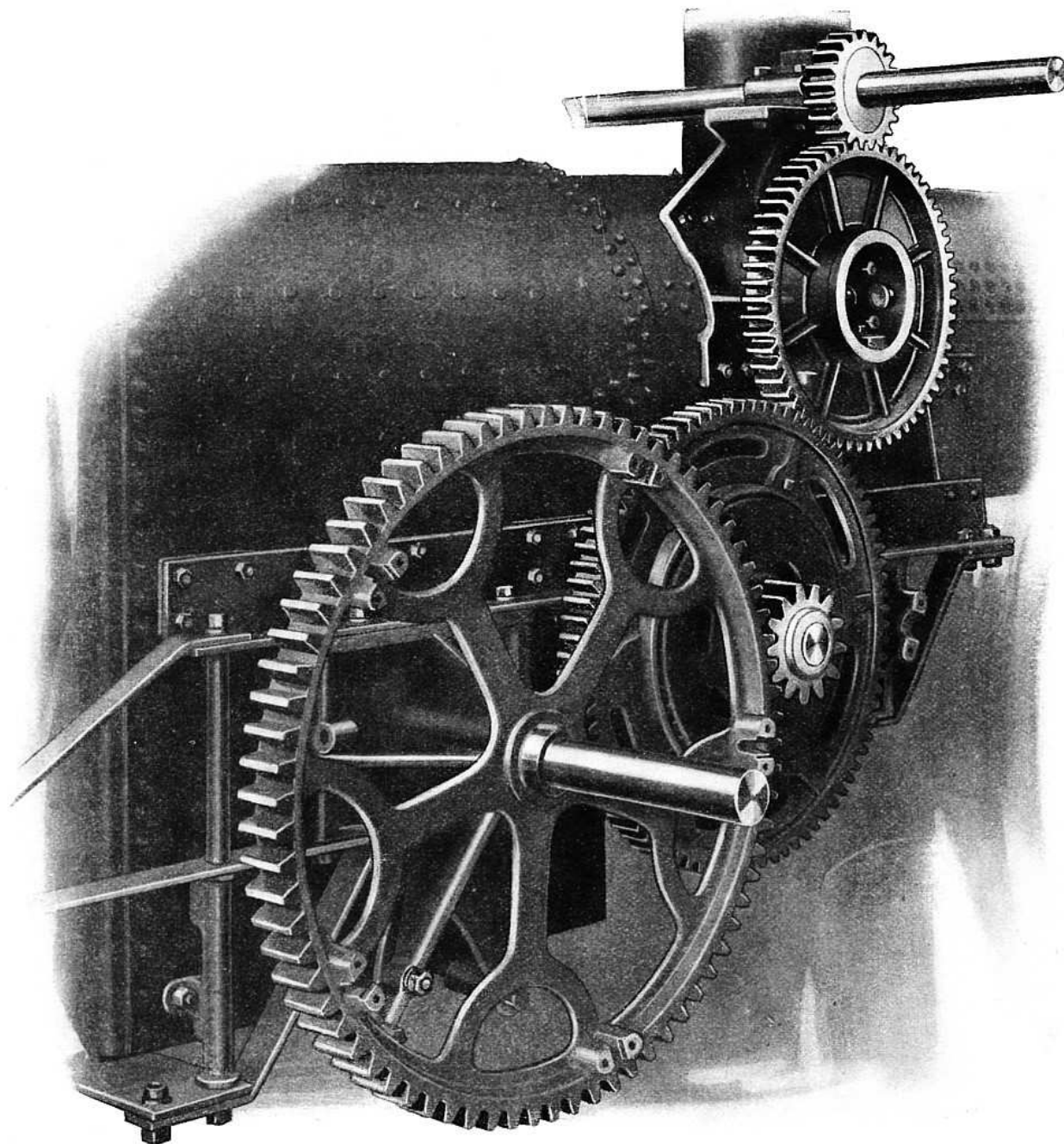
between the stud bolt and the boiler when the bolt is first put in at the factory.

Note also in the illustration on the opposite page that the pillow block and intermediate gear bracket are all one casting, thus insuring the absolutely correct mesh of the crankshaft pinion and intermediate gear. We also use on these engines a special tie rod between this bracket and the frame angle bar which likewise insures a positively correct mesh between the intermediate and compensating gears.

All Avery Gears are Steel and Semi-Steel

All pinions on Avery Engines are steel. All the rest of the gears are semi-steel. We have found that for the larger gears semi-steel is superior to all-steel, as it wears much longer, and by using a high grade quality of material we are able to produce a semi-steel gear that for traction engine use is almost as unbreakable as all-steel. The best proof of the quality of these is that we have had but comparatively little call for gears for repairs since we have used this combination. Another feature of Avery gears is that they are all made from cut metal patterns. No wood patterns are used, as is done by some companies. This is why Avery gears are perfectly round and true and always absolute duplicates.

See illustration of gearing on next page.



Gearing on Avery Single Cylinder Engines.

General Fittings

THE rear wheels on 40 and 50 H. P. Engines have 20-inch face and are 69 inches in diameter; the 65 H. P. Engines have 26-inch face and are 75 inches in diameter. The front wheels on 40 H. P. Engines have 10-inch face and are 46 inches in diameter; the 50 H. P. Engines have 12-inch face and are 46 inches in diameter; the 65 H. P. Engines have 12-inch face and are 52 inches in diameter. They are built up steel and hot riveted.

Extension rims for rear wheels can be furnished on special order.

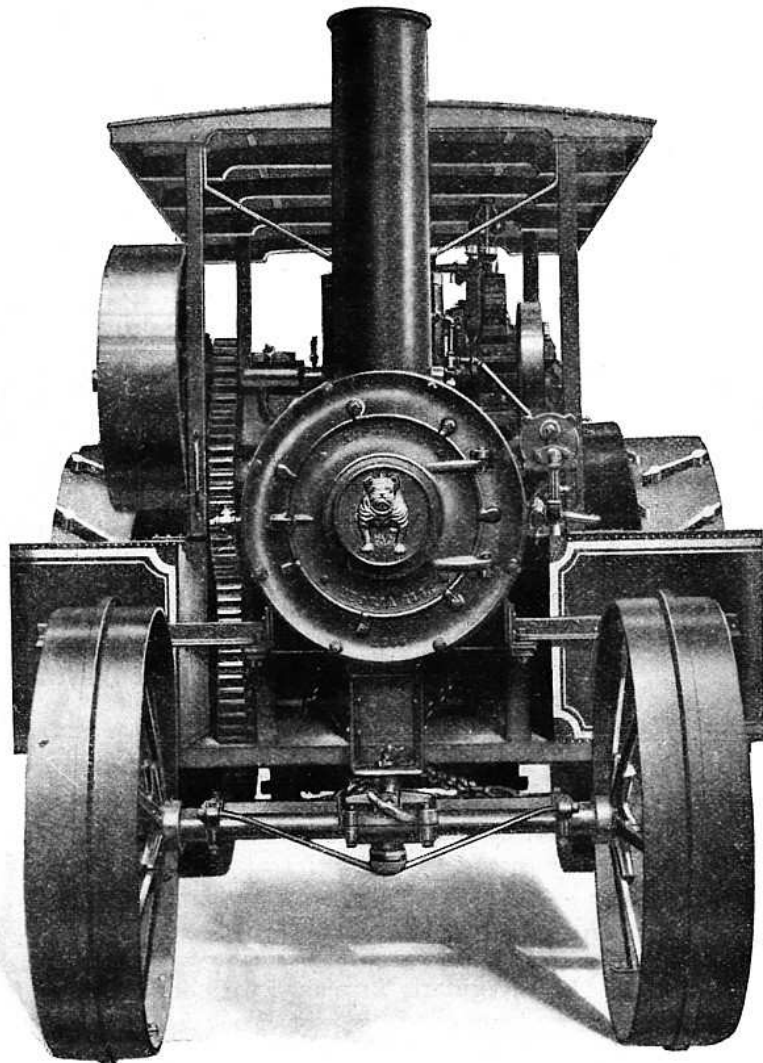
The platform is all steel.

A canopy top as shown in the illustrations is furnished when ordered.

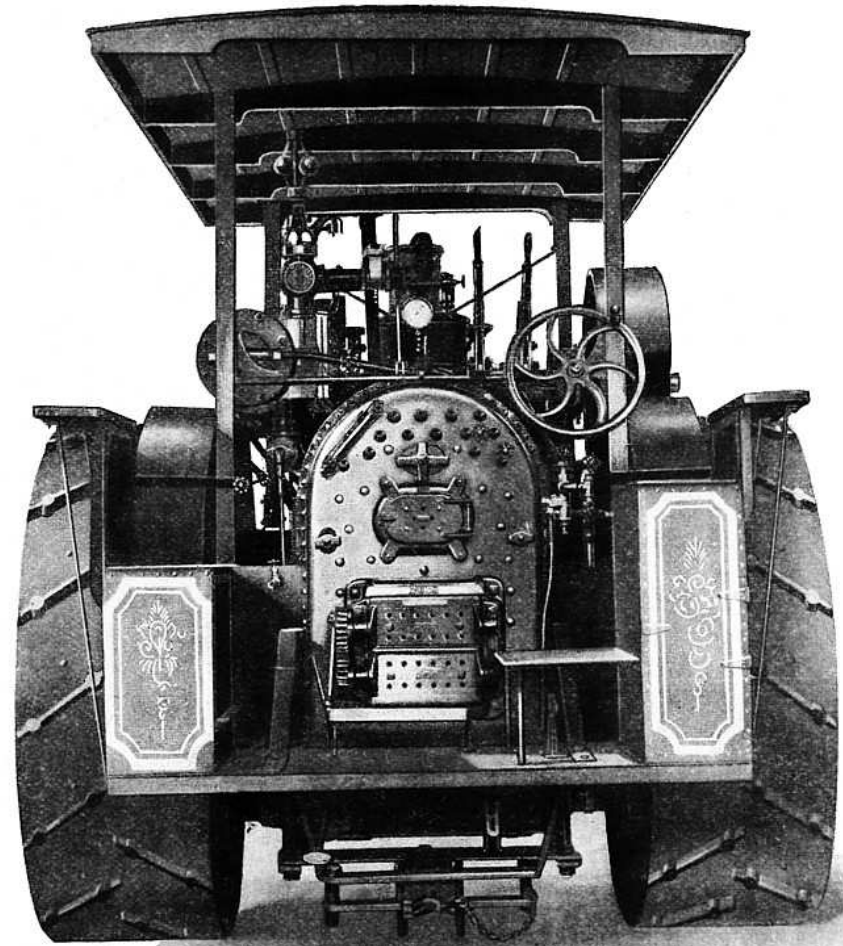
Has a water tank capacity of 140 gallons on the 40 H. P., and 180 gallons on the 50 H. P. and 230 gallons on the 65 H. P.

An Independent Kipp Oil Pump is used for oiling the cylinder.

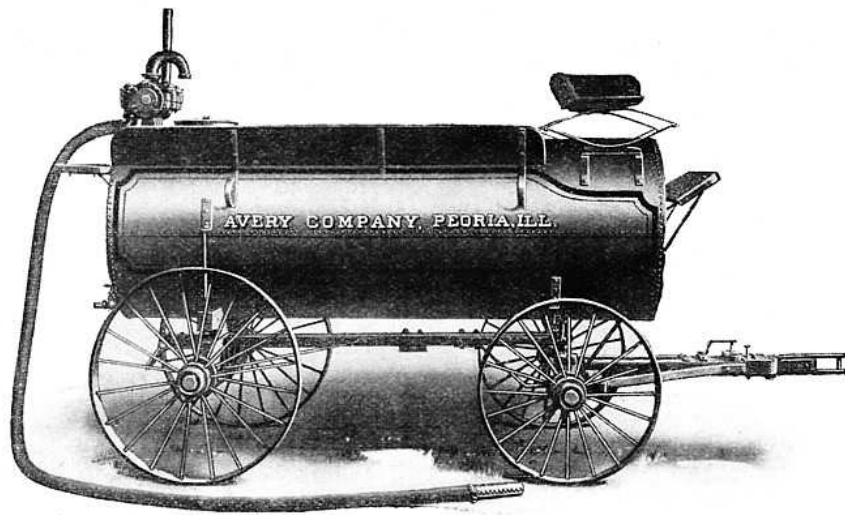
Regularly furnished with double boiler feed system consisting of cross head pump with heater and one injector.



Front View Avery Single Cylinder Straight Flue Engine.



Rear View Avery Single Cylinder Straight Flue Engine.

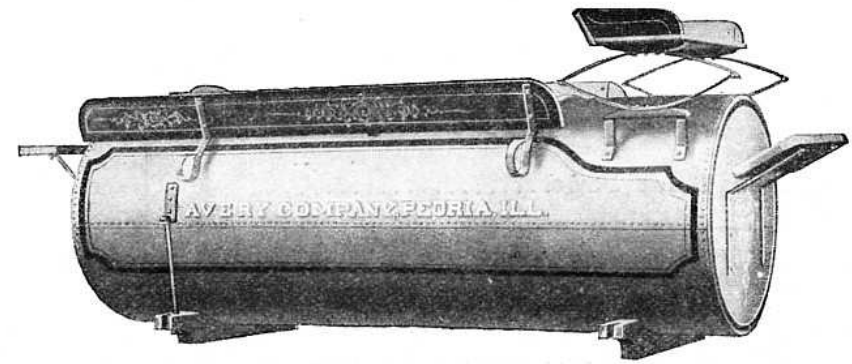


Avery 15-Barrel Steel Water Tank, Mounted on Our Regular Steel Tank Trucks

WE SHOW above our Steel Water Tank mounted on our regular Steel Water Tank Trucks. The front wheels are 33 inches and rear wheels are 39 inches high, with 4-inch tires. The tank is made of No. 12 tank steel and is built round, 36 inches in diameter, and 108 inches long over all. A good spring seat is furnished for the driver. Eight-inch flaring side-boards are arranged on top for carrying anything that is desired. On one side, near the center, is a hook for carrying a lifting jack, and on the opposite side are hooks for carrying the flue cleaner and scraper for the engine.

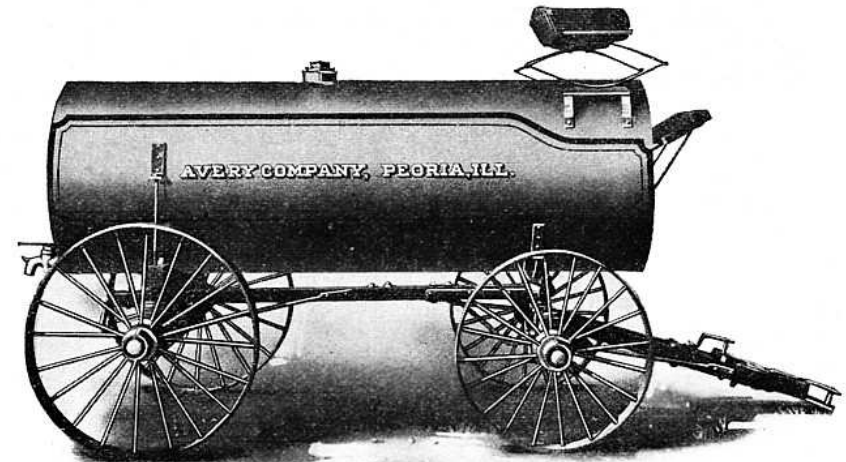
A steel splash-board is riveted in the center of the tank, which prevents the water from running rapidly from one end to the other while being hauled up or down hill or in bad places. At the rear is provided a step, where the operator may stand when pumping, or he may stand on top, as may be desired. An opening is made in the top of the tank, close to the front end, in which is fitted a piece of 2½-inch boiler flue, extending downward 10 inches; this leaves sufficient opening through which to insert a 1-inch hard rubber suction hose; thus water may be taken from the tank and supplied to the engine while moving. On account of the flue extending downward, water will not splash out at the opening. A manhole, sufficiently large to admit an ordinary pail, is located near the tank pump. The tongue is made so that by taking out one piece it can be coupled very short when it is desired to haul the tank behind the engine. Being built in cylindrical form, the front wheels turn sufficiently to allow a very short turn to be made without cramping. The tank is finished and painted in nice style and is complete in every detail. It is light, strong and durable.

In comparison with the old style wooden water tanks which require soaking up, which allow a great deal of water to leak out, are heavy to haul and soon rot out, the Avery steel water tank overcomes all these disadvantages, since it is always ready for use, has no leaks whatever, and will last for a much longer time. While the first cost may be a little more, the Avery Steel Tank is unquestionably the more economical in the end.



Avery 15-Barrel Steel Water Tank with Wood Saddles for Mounting on an Ordinary Wagon Gear

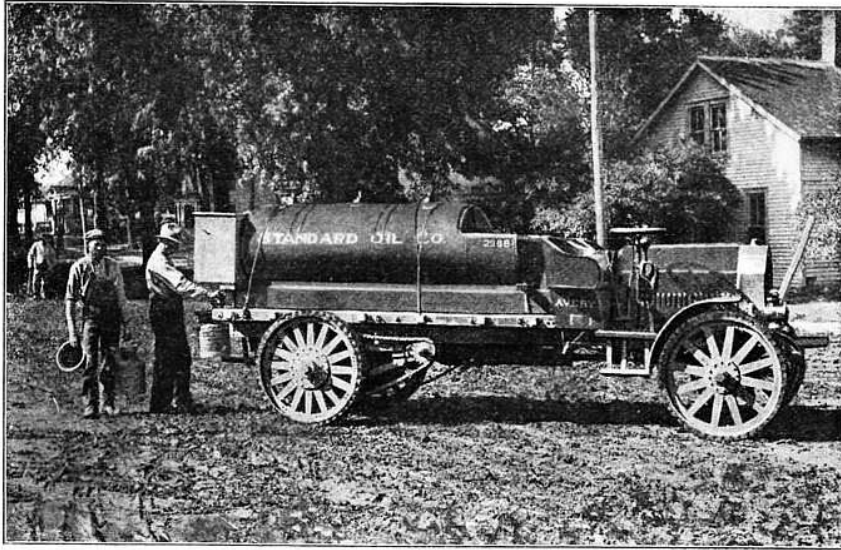
Either the water or oil tank can be furnished mounted on our regular Steel Tank Trucks or with bolsters for mounting on an ordinary wagon gear.



Avery 15-Barrel Steel Oil Tank, Mounted on Our Regular Steel Tank Trucks

The seams in this tank are welded. For hauling gasoline, kerosene or oil. Can also be furnished with bolsters for mounting on an ordinary wagon gear, as shown above.

Haul Cheaper and Quicker with an Avery Truck



Avery Truck with Cast Steel Rim Wheels.

MANY are hauling with horses who could haul much cheaper and easier with an Avery Truck.

A large number have already purchased Avery Trucks to replace their horses. It costs less for fuel to run the truck than it does to feed enough horses to do the same amount of work. When the truck is idle, it costs nothing for fuel. One man can run the truck and do as much work as two or three men with teams. You can get over the ground much quicker, which is especially important in long hauls or when you have a perishable product. Avery Trucks are now being used for hauling grain, oil, flour, sand, gravel, crushed rock, tile, milk, cream, fruits and vegetables and other farm and manufactured products.

We have a number of letters from users which we have printed, and will send you upon request. If you have hauling to do, write us, giving

all the facts about the work you are doing, the number of horses you use, the amount you haul, the distances, etc., and we will send you information about others doing the same or similar work, and assist you in determining as to whether or no an Avery Truck would be practical for your special requirements.

Avery Trucks are built for either country or city hauling. We can furnish either hard rubber tires or cast steel rim wheels as desired.

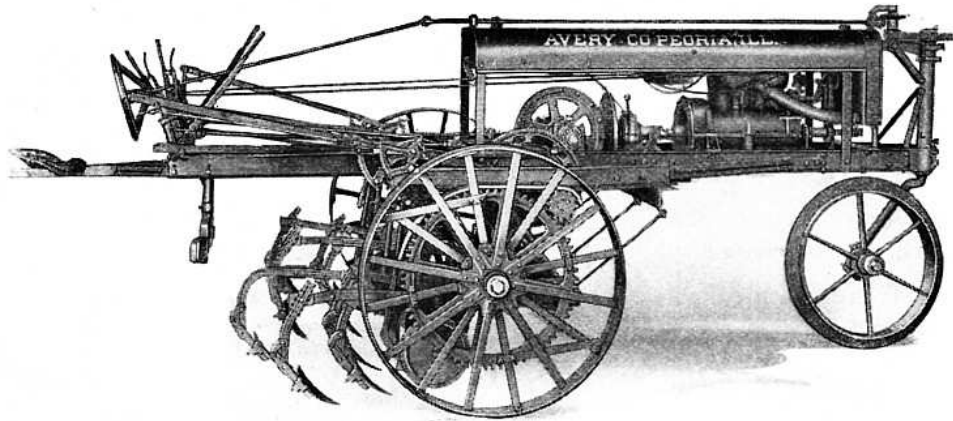
There are men who have paid for their Avery Trucks in one season's hauling.

Investigate the work an Avery Truck will do for you. Write for our Special Motor Truck Catalog with complete description of Avery Country and City Trucks.

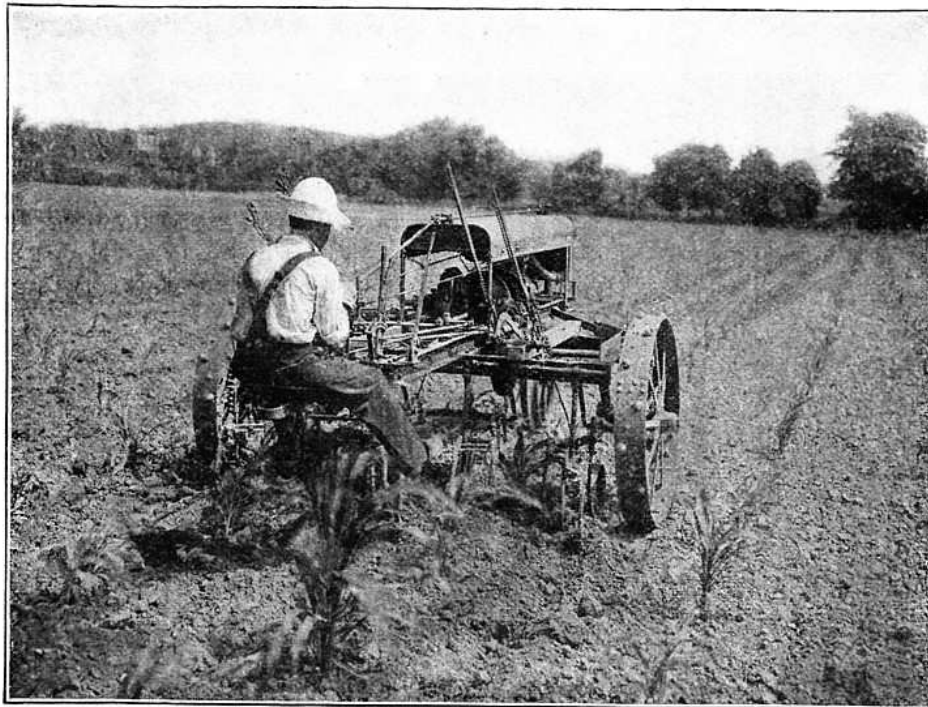


Avery Truck with Hard Rubber Tires.

Now You Can Also Plow Corn Without Horses



Avery Motor Cultivator—Equipped with Shovels.



Avery Motor Cultivator at Work in the Cornfield.

TRACTORS supply the demand for power to do plowing and other heavy farm work. But that isn't enough—no sooner does a man get a tractor and find out the wonderful advantages of using motor power for plowing, discing, drilling, harvesting, etc., than he begins to want to be able to also use the same kind of power for plowing corn and other similar work.

After long consideration and experimentation on this problem the Avery Company now offer their answer to the demand for motor power to do all kinds of farm work. For heavy work we have the established line of six sizes of Avery Tractors—a size for every size farm. For corn plowing and other similar work we now offer an independent new machine—the Avery Motor Cultivator.

Tractors have proved that they are able to do away with the surplus horses formerly required—this new Avery Motor Cultivator now offers you the chance to do away with still more horses and use motor power practically altogether, if not exclusively, for your farm work.

Many men have had the idea of a combination machine for doing all kinds of farm work. But the attempts to build such a machine seem only to have resulted in building something which is lacking on one or both sides. If it is built with the features necessary for heavy work it is not satisfactory for corn plowing and such lighter work, if it is built for light work it lacks things which are required in a machine for heavy work.

The first big advantage of two independent machines—a tractor for heavy work and a motor cultivator for light work—over a combination machine is in the fact that while a two-row motor cultivator satisfies all the demands for light work, the same size machine when used as a tractor cannot supply all the demands for heavy work. With the Avery independent machines you can get an Avery Two Row Motor Cultivator to do your light work and can then get an Avery Tractor in whichever one of the six sizes is best suited to do your heavy farm work.

The second big advantage in having two independent machines—a tractor and a motor cultivator—is in the fact that each machine is built with the design, strength, power, speed and all other features especially required for the class of work it is intended to perform.

The third big advantage in having two independent machines—a tractor and a motor cultivator—is in the fact that either machine can be attached to any tool you desire to pull by simply using a clevis without having to spend a big lot of work and time changing over attaching parts.

Motorize your farm the Avery way. Plainly the Avery plan offers you the most successful method of motorizing your farm work—an Avery tractor in the size which best fits the amount of heavy farm work you have to do and an Avery two-row motor cultivator for your light work.

How The Avery Motor Cultivator is Built

THE new Avery Motor Cultivator is a two-row machine. It will ordinarily cultivate about 16 to 18 acres per day. It has a friction drive which gives you a wide variation of speed so that you can plow as slow as necessary the first time over when your corn is small and at faster speeds when your corn is larger.

The cultivator is guided by a single front wheel which runs between the two rows. It is driven by two rear wheels which run outside the two rows.

When plowing along, the power of the motor is applied to both rear wheels by means of two clutches. Both rear wheels drive the cultivator and a compensating gear takes care of any variations in the direction of the rows. The front wheel guides the Cultivator and is operated by a hand steering wheel.

When the end of the row is reached, the operator releases the steering wheel which allows the front wheel to act as a caster. At the same time he takes hold of the two levers operating the drive wheel clutches, and by releasing one clutch and allowing the other to remain engaged, one drive wheel remains stationary while the other revolves around it until the Cultivator has turned around onto the next two rows. The other clutch is then also engaged and both wheels begin to travel forward. The operator releases the clutch levers and again guides the Cultivator with the steering wheel.

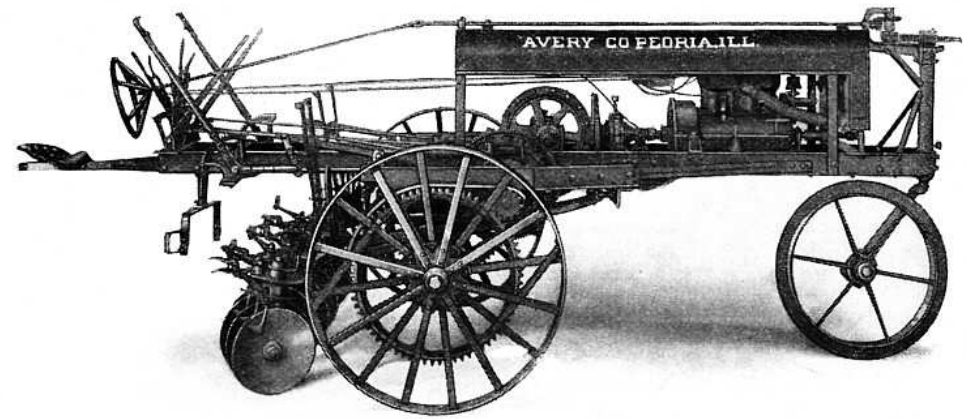
This Cultivator will turn around in its own length. It will turn either way depending upon which drive wheel the power is applied to.

The motor used in this Cultivator is the same as used in our 5-10 H. P. Tractor. The Cultivator is gear driven—no sprocket chain drive is used. The Cultivator itself is the regular Avery two-row cultivator which has been on the market for years. Can be furnished with either shovel or disc gangs.

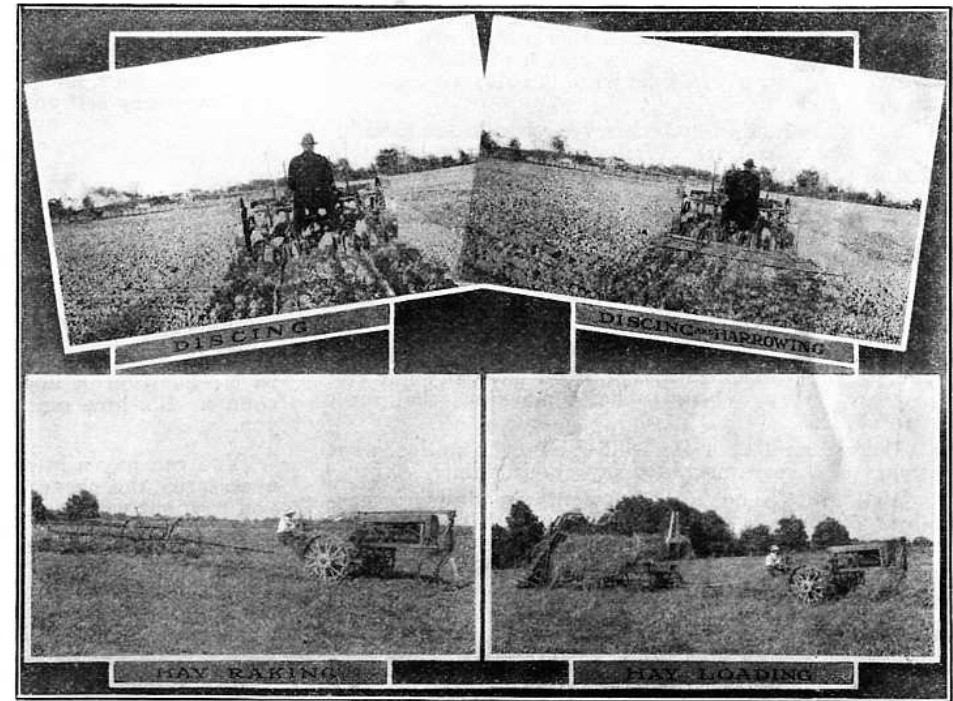
The general design of this machine is original and different from previous attempts which have been made to build a successful motor cultivator. It was exhibited at the National Tractor Farming Demonstrations and unquestionably attracted more attention and favorable comment than any other new machine on the grounds. The first machine built tended 65 acres of corn in the spring of 1916. Actual field use proves the success of the Avery Motor Cultivator.

Other Farm Work You Can Do

The illustration at the right shows the Avery Motor Cultivator being used for hay loading, hay raking and discing and harrowing plowed ground. This machine can be used for such other kinds of work as pulling a corn binder, manure spreader, grain binder, drill, etc. It is an all-around power machine for all such kinds of farm work.



Avery Motor Cultivator Equipped with Discs.



Avery Motor Cultivator Doing Other Farm Work.

THE AVERY POLICY— A Good Machine and a Square Deal

Avery Design

IN building Avery machinery we work to build what you want. We investigate your needs carefully and work out many original improvements, but to a large degree we are guided by the suggestions made by the large number of owners of Avery machines.

That's why the Avery line of machinery leads in Originality and Improved Construction. The reason is, because we have recognized the fact that our job is to build the kind of machines you want—and we have been open to suggestions from every source and these suggestions have had the consideration of practical men who know your needs. **Doesn't this appeal to you as being the way in which a machine ought to be designed?**

Avery Materials

The standing order originally given to every workman by our first president, Mr. R. H. Avery, and which has been continued ever since, and always will be continued, is not to put into a machine a piece of material that he wouldn't put in if he were building the machine for his own use.

That's the kind of materials you want in the machinery you buy, isn't it? Well, that's why we use that kind of materials—because we believe you want it.

Avery Tests

Every year you find Avery machinery entered in contests or demonstrations. The "Bull Dog" is always there. We are willing to show you what we've got compared with others.

When there's a good reason why a special test is required, we will make it. You can have any fair test you want. We're here to build machines that meet your needs.

There's another thing—did you ever notice what owners of Avery machines say about them?

Well, most of our advertisements are simply a repetition of phrases and expressions which such men as you have applied to their Avery machines because they were so pleased over owning them. That's where the evidence is gotten that is offered you to prove what an Avery machine will do—it's what other people have actually done with them and said about them.

THE AVERY IDEAL—We propose that every Avery owner shall be, in so far as we are able to assist him, the best profit-making machine owner and the best satisfied customer of any man owning any make of machine in his neighborhood.

We say, "Ask any owner of an Avery." Do it. See what they say.

Avery Guarantees

We don't care how strong a guarantee a man wants—just so it's fair and he is willing to give us a square deal—we will give it to him. Avery machinery is backed up by the strongest guarantees ever given by any company selling machinery.

But we do even more than we guarantee. These guarantees put the Avery Company squarely behind every Avery machine. It isn't just your order we want—we want your friendship and good will, and also your backing and recommendation to help sell the next man. We take care of your needs and help you to keep your machine running steady and giving you the best service. It's the Avery policy to take care of its customers.

We are proud of Avery machines. We are glad to back up the kind of machines we build. **That's what you want, isn't it—a Company to stand behind the machines they sell you? Well, that's just what we do.**

Avery Prices

And about the matter of price. You know that you can buy articles of the same name for a different price. A horse is a horse, but when you buy a horse the price you pay depends on how much he is worth. And often the horse that costs the most dollars is the cheapest.

Well, that's just the way in buying a machine. It isn't a question of how many dollars it costs you that counts. It's how much the dollar you spend gets for you.

You can pay a low price—but don't think that it is necessarily the cheap price. Remember, it's not what you pay, but what you get for your money that counts.

The Avery Company has always built quality goods. The reason we build them is because we believe you want that kind of goods, and we don't believe we are mistaken. Certainly, the increasing sales of Avery machinery would not indicate it.

We believe that you want machines that are built of good materials, with good workmanship, that have the best improved features for saving time, labor and money. That's why we endeavor to build that kind of machines. **The price we ask for them is a fair price—you get a big dollar's worth of actual value for every dollar you invest in Avery Machines.**

Avery Factory and Branch Houses

We have our own large factory, with up-to-date equipment and a skilled factory force. This, together with the high grade materials we use and the originality of our designing department, is what makes it possible for us to produce machinery that supplies the needs for which it is built in such fine shape.

Our Branch Houses are located at central points in the middle and western states, and carry on hand a stock of complete machines with which to fill quick orders. Repair stocks are also carried at each Branch House to take immediate care of breakdowns, although breakages with Avery machinery are extremely rare compared with ordinary machines. If they were not we couldn't give the strong guarantees we do against breakage.

We have the designing department to design improved and up-to-date machines, the factory to build the goods, and then we take care of you in the way of quick repair shipments and the help of service men after you get an Avery Machine.

The Avery Policy

It's like this as we see it—a question of **mutual benefit**. You need good machinery—we are to supply you with what you need—you should give us a fair return for doing so.

The Avery organization is built up on this basis—to serve the customer—which means you—by building the kind of goods you want and dealing with you on a square basis. The Avery Policy is "A Good Machine and a Square Deal." That's undoubtedly why it's one of the largest companies in the business and why this Company has had such a rapid growth.

If these methods appeal to you, we invite you to take up with us further the matter of your requirements. **Write us a letter or call at our Home Office or any of our Branch Houses, Jobbers or Agents.**