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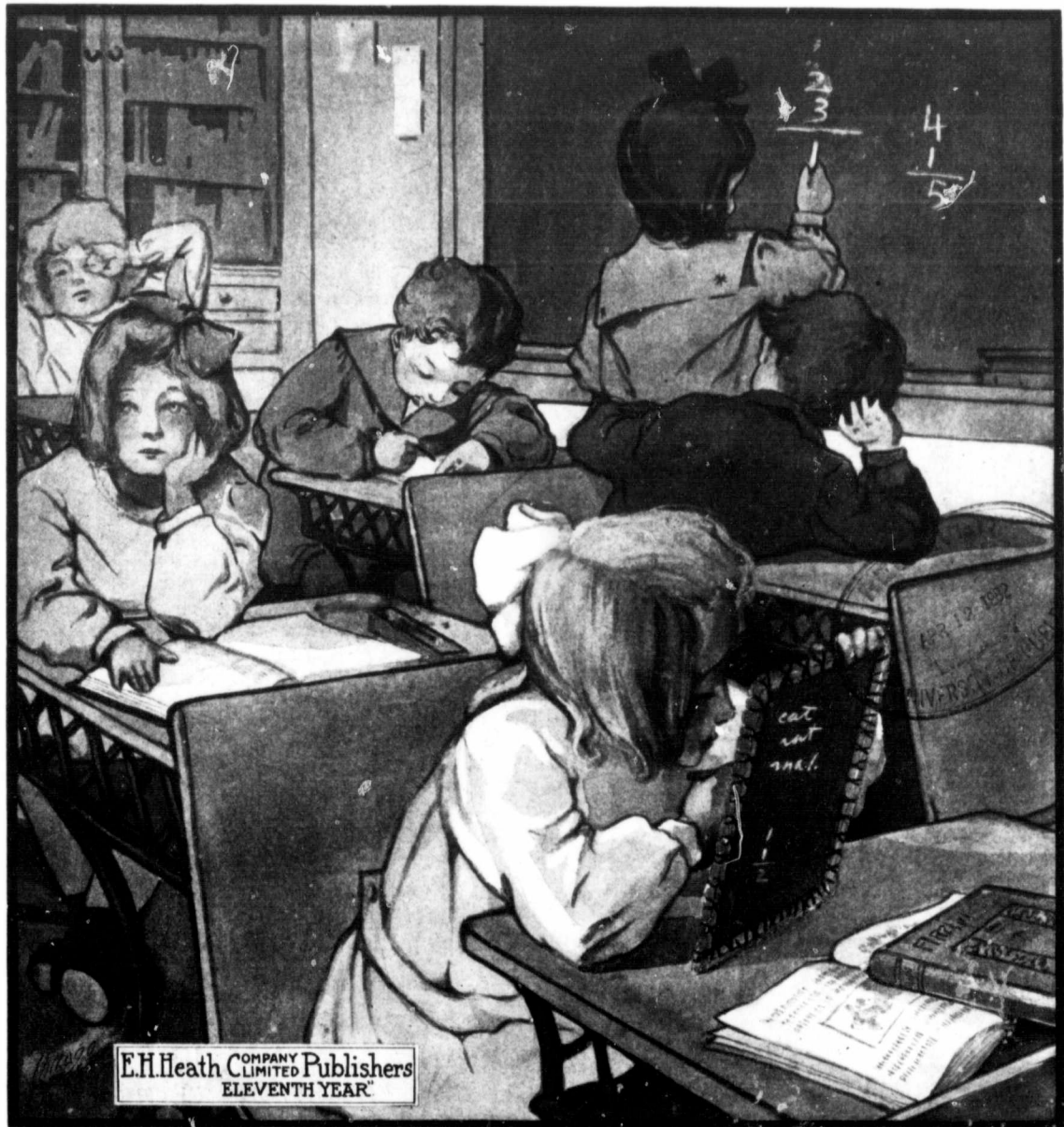
# THE CANADIAN THRESHERMAN & FARMER

CANADA'S FARM MACHINERY MAGAZINE

WINNIPEG

CANADA

SEPTEMBER, 1913



E.H. Heath COMPANY Publishers  
LIMITED  
ELEVENTH YEAR

# JOHN DEERE IMPLEMENTS

## Every Farmer Should Have One

Will Handle all Kinds  
of Small Grain  
Satisfactorily



Horse Power Outfit

## Marseilles Tubular Steel Portable Elevator

Unloading grain by hand is hard, slow work. With a portable elevator twenty to thirty minutes can be saved in handling each load without losing or damaging the grain. Loss due to the scarcity of farm labor is prevented, and the grain is handled in the quickest and cheapest manner possible.

### Why You Should use the Marseilles

It is the only TUBULAR STEEL ELEVATOR in the market. It is the newest, simplest, and most practical elevator built. Like every "John Deere" product, it is "The Leader" in its line.

#### Construction

It is made especially for handling wheat, flax or any small grain. The casing or tube is made of steel. In this casing are fitted round flights with the conveyor chain through the centre. These flights fit smoothly into the casing. There is no grinding or crushing of the grain, increasing draft. The grain is elevated smoothly and easily.

#### Swivelled Spout

The discharge spout can be moved about in whatever direction it is desired to discharge the grain. It can be used through the door of a car or bin.

#### Adjustable Feed

Speed with which the grain is fed into the boat can be controlled and regulated to conform with the power of the engine and whatever quantity of grain desired elevated.

#### Horse or Engine Power

Any two horse power can be used, the connection being made direct to the boot shaft. Any standard gasoline engine can be used and mounted on the elevator truck. To operate by engine a special connecting attachment is necessary and can be supplied with the necessary connections when desired.

#### Easily Handled

The angle of the elevator can be adjusted to suit delivery. For transportation purposes it can be lowered to horizontal position by merely turning a hand crank.

Do you get our Farm Paper "The Furrow"? We will send it to you  
**FREE**

Farm labor is scarce and uncertain. The weather may prove unfavorable and suspend operations. With a Marseilles Portable Grain Elevator you will be independent of these emergencies. Your grain will be handled with the least expense in the shortest possible time. Let us send you a booklet telling you all about the only steel elevator.

Get Quality and Service.

John Deere Dealers give both.

**JOHN DEERE PLOW COMPANY, LIMITED**  
WINNIPEG REGINA SASKATOON CALGARY EDMONTON LETHBRIDGE



# JOHN DEERE IMPLEMENTS

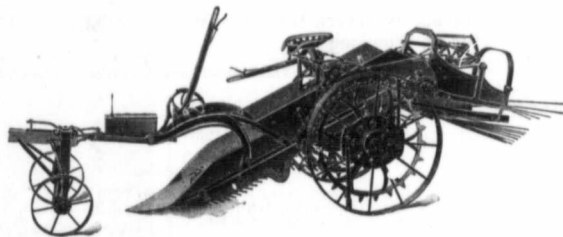
## Reduce the Cost of Your Potato Crop



### DEERE POTATO DIGGER

For the farmer who raises a small potato crop, this digger is suitable and can be obtained for a small outlay.

It has a flat blade with side wings, which guide the potatoes on to the grate. The grate is hinged at the front and is given an up and down motion by a sprocket wheel at the rear. This action shakes off the dirt and tubers from the potatoes. Being equipped with forecarriage insures steady running.



### No. 304 HOOVER DIGGER

Strength and great capacity characterize this machine. Equipped with a rear agitating rack and vine separator, which have a backward and forward motion, sift all dirt and rid the potatoes of all vines. Agitating rack and vine turner can be removed and picker attachment used instead.

### No. 302 HOOVER WITH PICKING ATTACHMENT

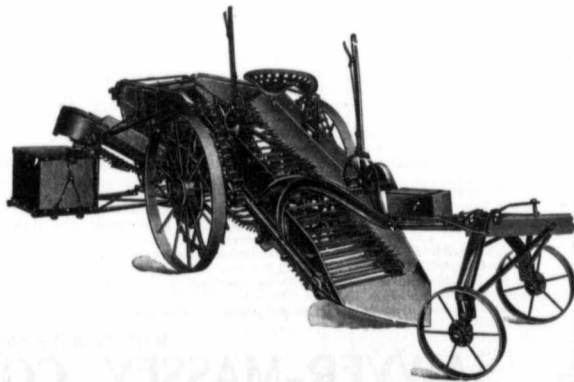
Handling a crop of potatoes by hand is hard slow work. Slow work is always expensive.

Modern machinery has made it possible to cultivate and harvest potatoes quickly and easily, thereby reducing the cost of production.

The less your crop costs the more profit you will realize.

With a Hoover digger the cost of harvesting your crop can be reduced to the minimum.

It is the MOST PROFITABLE digger to use, as it is the MOST ADAPTABLE for this work.



Get our booklet on potato diggers before digging time and find out about the best line of potato diggers on the market

Why buy a second rate machine? The best is the cheapest in the long run

THE BEST CAN ONLY BE GOT THROUGH A JOHN DEERE DEALER

## JOHN DEERE PLOW COMPANY, LIMITED

WINNIPEG REGINA SASKATOON CALGARY EDMONTON LETHBRIDGE



The Premier Company

The Premier Goods



Photograph of Sawyer Massey 25-45 H.P. Gas Tractor in the actual operation of winning the **GOLD MEDAL** at the 1913 Winnipeg Motor Contest, showing the kind of work necessary to win. This applied not only in plowing but also on the brake tests. This Tractor won the highest number of points of any Internal Combustion Tractor in the Contest.

## SAWYER-MASSEY SUPREMACY

Points of superiority over competing tractors brought out by severe test of SAWYER-MASSEY 25-45 H.P. Gas Tractor at Winnipeg

### Economy of Fuel

1. Fuel cost per acre in plowing, 36.6 cents. Competitors verified, 59.9 cents and 67.4 cents. Gasoline figured at 27 cents per gallon.
2. Fuel used per acre in pounds, 14.65. Competitors verified, 15.32 and 17.46.
3. Fuel used per mile travelled, in pounds, 16.5. Competitors, verified, 21.9 and 19.14.
4. Fuel used in two-hour brake test, in gallons, 8.86. Competitors, 12.22, 12.86 and 16.86. (Per hour, 4.43, 6.11, 6.43 and 8.41.)
5. Fuel used in half-hour maximum test, in gallons, 2.97. Competitors, 3.79, 3.38 and 5.04.
6. Fuel used per working hour, in gallons, 4.43. Competitors, 6.97, 5.7, 5.53.

### Economy of Water

1. Water used in two-hour brake test, in gallons, 15. Competitors, 44.7, 48.4 and 32.6. (Per hour), 8, 16.3, 22.4 and 24.2.
2. Water used in plowing, pounds per acre, 3.28, 75.6, 32.6 and 97.
3. Water used in plowing per mile travelled, in pounds, 3.7. Competitors, 46.1, 104.4 and 108.6.
4. Total pounds water for hour's run plowing, 6.95, 104.6, 206.5 and 221.
5. Horse-power hours per 100 gallons water, 60,000 horse-power hours. Competitors, 255, 322 and 376 horse-power hours.
6. Draw-bar horse-power hours per pound of water used, 3.53, .188, .137 and .358 draw-bar horse-power hours.
7. Possible acres plowed without replenishing water, 17.5 miles. Competitors, 14.7, 11.4 and 12.9 acres.
8. Possible miles travelled without replenishing water 15.5 acres. Competitors, 10.6, 10.3 and 9.13 miles.
9. Greatest horse-power hours per pound of water, out of 20

possible points, SAWYER-MASSEY awarded 20; competitors, 7.1, 7.3, and 7.6 points.

10. Greatest draw-bar horse-power hours, 9.6 out of 25 points. Competitors, 6, 6.1 and 6.3 points.
11. Only engine in this class not penalized for lack of water during eight hour run.

### Excess Brake Horse-Power

1. Excess horse-power over rating, SAWYER-MASSEY, 29.6 per cent. Competitors, 18.4 per cent, 7.7 per cent, one short 7.7 per cent (over rated.)

### High Quality of Plowing

1. SAWYER-MASSEY received eight out of ten points possible. Competitors, 4.5, 6.5 and 6.25 points.

### Freedom from Vibration

1. None showed less vibration than SAWYER-MASSEY Gas Tractor.

### Finish, Durability and Proportion of parts

1. None received more points than SAWYER-MASSEY.

### Freedom from Penalties

1. SAWYER-MASSEY Tractor did not stop once during test; all competitors in same class did.
2. SAWYER-MASSEY sustained no penalty for having plows out of ground.
3. Only engine in this class having no time loss due to engine.

### Greatest Speed Range

1. SAWYER MASSEY from 2 to 3½ miles per hour. Competitors, (a) one speed, 2.2 miles; (b) one speed, 2 miles; (c) 1¼ to 2¼ miles.

Write for full particulars

## SAWYER-MASSEY COMPANY, Limited

Builders of Steam and Gas Traction Engines, Threshers, and Road-making Machinery

Head Offices and Factories

HAMILTON, ONTARIO

Branches and Warehouses: Winnipeg, Manitoba; Regina, Saskatchewan

# SAWYER-MASSEY



# Sawyer-Massey

The Premier Company

The Premier Goods



Photograph of Sawyer-Massey 27 H.P. Steam Tractor in the actual operation of winning the Silver Medal in the 1913 Winnipeg Motor Contest. This Engine finished only one and one-third points below the Gold Medal Winner. Note the quality of work necessary to win.

## SAWYER-MASSEY LEADS

At the Winnipeg Motor Contest the SAWYER-MASSEY [27-80 horse-power Steam Tractor, Class "A" clearly established certain important points of superiority over competition.

### Economy of Fuel

1. Cost per acre plowed, 42.8 cents; opponent, 43.6 cents.
2. Per acre plowed, 106.9 lbs. coal; opponent, 109.1 lbs.

### Economy of Water

1. Per acre plowed, 827 lbs.; opponent, 881 lbs.
2. Water used in half-hour maximum test, seventy gallons; opponent 100.5 gallons.
3. Possible hours run without replenishing water, SAWYER-MASSEY .89; opponent, .85.  
Possible acres plowed without replenishing water, 3.04; opponent, 1.68.  
Possible miles travelled without replenishing water, 2.17 miles; opponent, 1.99 miles.
4. Greatest horse-power per pound water, 28.6 out of possible 30 points; opponent, 25.9 points.

### High Plowing Efficiency

1. Acres plowed, 5.29 in 103 minutes; opponent, 3.209 acres in 122 minutes.
2. Number of acres plowed per hour, 3.488; opponent 1.972. In ten hour day, 34.88 acres; opponent, 19.72 acres.
3. Miles travelled per acre plowed, .716; opponent, 1.181.

4. Acres plowed per hour, per economy brake horse-power, 20.9 out of 25 possible points; opponent, 17.3 points.
5. Average draw-bar horse-power, 50.66, rated 27 horse-power; excess, 23.66 horse-power or 88 per cent. Opponent, 30.76 horse-power.
6. Average draw-bar pull, 7,900 lbs.; opponent, 4,950 lbs.

### High Quality of Plowing

1. SAWYER-MASSEY received 7.25 out of 10 points possible; opponent 6 points.

### Freedom from Vibration

1. Penalty 1.5 points; competitor, 4.1 points.

### Ease of Manipulation

1. Received 8.25 out of 10 points; opponent, 8 points.

### Lubrication

1. Oil used in cylinder per maximum and economy brake horse-power, 2.2 out of five possible points; opponent, 1.1.

### Finish, Durability, Proportion of Parts

1. 17.25 out of 20 possible points; opponent, 17 points.

### Rate of Travel

1. Speed, in feet per minute, 220; opponent, 205 feet.

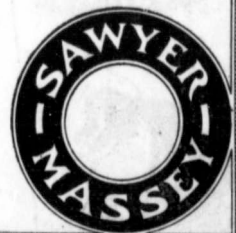
These statements are all matters of record. They are proven facts, worthy of the most thoughtful consideration of the prospective buyer. They not only demonstrate the practicability of the gas tractor on the farm, but the superiority of the SAWYER-MASSEY, revealing its pronounced economy and unequalled efficiency.

## SAWYER-MASSEY COMPANY, Limited

[Builders of Steam and Gas Tractors, Threshers, and Road-making Machinery

Head Offices and Factories ————— HAMILTON, CANADA

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Vol. XVIII.

WINNIPEG, CANADA, SEPTEMBER, 1913.

No. 9.

## The Pneumatic Tank System of Water Supply

By L. J. SMITH, Prof. Agricultural Engineering, Manitoba Agricultural College.

As the western farm grows older and more settled in its lines of activity, the desire for improved conditions and home comforts and conveniences grows apace. The satisfactory meeting of this desire will probably do more than anything else toward creating a contented frame of mind, especially among those whose work lies in the direction of home making.

This is an age of labor-saving devices. Perhaps no one has felt the happy result of the introduction of toil-saving machinery more than the farmer in his most important vocation as a provider of food for the nations. And surely the farmer must feel both with pride and responsibility his important position among the professions of the world; especially at this particular time when the financial interests are anxiously awaiting the result of his labors, knowing that that result will largely determine the financial conditions in America for another year. The outcome of the harvest depends greatly on the ability of the farmer to make the best possible use of the time and labor-saving implements at his disposal.

While rapid strides have been made in the introduction and use of farm machinery, no corresponding progress has been made in the country home. Here and there, a farm house is provided with most of the ordinary conveniences which are considered indis-

pensable to the city house; but this is not by any means the general condition. The time is rapidly coming when the farm house will be made just as convenient as the best equipped city residence; and when that time comes no one will need look with longing eyes on life in the city with its noise and bustle, its dust

heated in spots, but has a uniform temperature most conducive to comfort and health.

There are various systems by which the water can be forced through the house, so that hot and cold water may be had at the kitchen sink and in the bath room. These systems are somewhat restricted in their use in the north-

west solely for springs and flowing wells; so that in most cases the pumping will have to be done by hand, the gasoline engine, or the wind mill.

Curiously enough, in a country where there is no lack of wind, there exists a decided prejudice against wind mills. The reason seems to be found in the common answer that the wind tears the mill to pieces—the very source of power destroys the machine made to utilize it. Now this is indeed an unusual state of affairs. Either the manufacturer does not build his mill strongly enough for the severe winds of the prairies, or the farmer does not give the windmill the little attention that it needs. Certain it is that there are a great many windmills in satisfactory use in the West, but there is no doubt that many are built too light for our conditions. For use in this country, they should be provided with some means whereby they will be thrown out of the wind when it blows too hard. Whenever possible,



Not very inviting to look at but more prevalent than one may think. The open well is always a source of danger.

and dangerous street-crossings, its crowded houses and small lots; for the advantage will be all on the side of the modern country home, where fresh air, sunlight, and plenty of room abound.

One of the first in importance of the modern conveniences of the home is a good water system. It goes hand in hand with the furnace system of house heating whereby the house is no longer

west on account of the cold winters and level country. Where flowing wells or good springs are to be had, the hydraulic ram affords the best possible method of pumping water into the house and barn. The hydraulic ram is simple in its operation, very reasonable in its first cost, needs no attention or oiling, and will operate indefinitely without repairs. Its use, however, is con-

they should also be provided with some means for being thrown out of gear when the mill has done all the pumping that is required. There are a number of such appliances on the market. Too often, the mill is allowed to run twice as much as there is need for, which, of course, cuts down the life of the machine by one half. Then, too, the windmill needs a little attention in the way

of oiling, etc.—not much, but still the little that it does need must be given it at the proper time.

Next to the hydraulic ram, there is no widely used commercial method of pumping water for the farm so economical in its first cost, operation, and upkeep as that of wind power; and there is no doubt but that the farmer of the North-west will use this valuable motor more extensively as he comes to know the makes that will stand the test of our conditions.

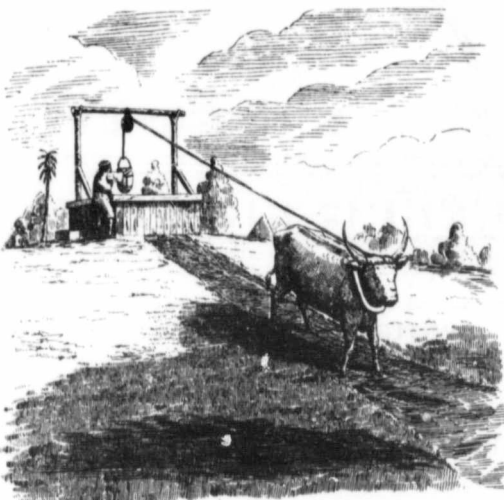
Equal in importance to the means of pumping, is the method of storing the water for household use. In warmer climates a wooden or steel tank on a high tower was used and is still used today to quite an extent, though even in such a climate it has disadvantages. Where the land near the house slopes up to a higher level, no better method of storage can be had than a concrete tank buried in the hillside well above the level of the second floor of the house. This method insures a safe and permanent storage of a cool and ample water supply. Often a storage tank is put in the attic. This is not so objectionable for a system of soft water supply, but where the water is used for drinking purposes, its storage in the attic is objectionable; for the water gets warm in the summer, and dust and dirt are apt to contaminate. Then, there is always the danger of leaks or of freezing, so that while this method of storage is being used under our conditions to quite an extent, still it is not considered an eminently satisfactory one.

The pneumatic tank offers one of the best methods of storing water for the country home. The system is a comparatively new one, not being used to any extent for over a decade; but in that time it has come to be recognized as the best all-round system for the country and suburban home and in many cases, for the small town; and the number of installations has exceeded those of any other system. This pneumatic or air-pressure system is so recent in its use, that the general public knows very little about it. The principle upon which it operates, however, is so simple that it is surprising that it was not utilized at an earlier period. The water is pumped into an air-tight steel tank; and as the water comes in, it forces the air that is in the tank into the upper part of the tank. Then this compressed air, acting on the water, forces it through the pipes to the kitchen sink, the bathroom, the barn, or to any place where the water is to be used. It is simply a matter of storing up power by compressing air in the tank.

The figure shows such a system installed in the cellar, though, in

many localities where the frost line does not go too deep, the tank is buried in the ground. The system is used either for soft or hard water. Where the level of the water is not more than

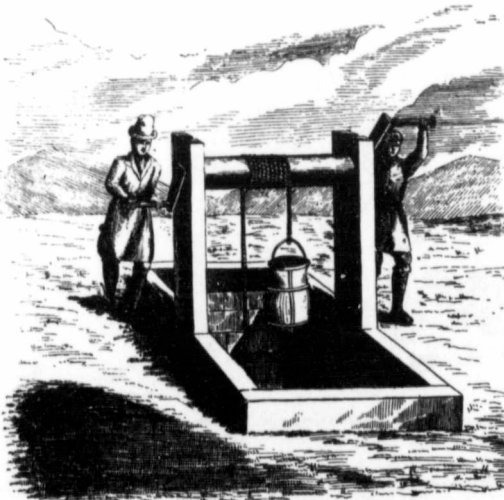
3/4-inch connections in the order given from pump to tank: Union, valve, check valve, elbow, with pipes between. These connections are usually furnished by the company if they sell both the



One of the earliest ways of drawing water.

twenty feet below the cellar floor, a pump such as is shown at "P" can be installed. As the pump is operated the water is sucked into the cylinder and is forced on into the steel tank "T," which may be either vertical, or horizontal as shown in the sketch. There is a water column "C" similar to that used in a boiler, which shows the level of the water in the tank. The pressure gauge "G" registers the pressure of the water in the

tank and pump. At the opposite end, where the water leaves the tank, there is first a short nipple, a tee with plug for washing out the tank, then a short horizontal piece of pipe, and another tee. Into this tee is screwed a hydrant tap, which should be at least high enough from the floor to allow a pail to slide underneath. The tap should have threads for a garden hose as it would be handy for use in washing down the concrete



Human power is the most expensive of all. Gas or wind has now superceded it almost entirely.

system at the level of the gauge. Where other than hand power is used for pumping, the tank should have a safety valve to prevent too high a pressure. Between the pump and tank are the following

cellar bottom, or for washing out the soft water tank. Passing up the vertical pipe, we come to another tee from which branches off the smaller pipe leading to the gauge "G." This gauge is sup-

posed to register the air pressure in the tank. In order to do so accurately, it should be connected directly to the upper part of the tank. No connections, however, are made to the air part of the tank unless absolutely necessary, as each joint increases the liability of air leakage. For convenience, the connection is made as shown in the cut, at which position the gauge will register a pound or two less than that of the air in the tank. This gauge is often graduated to show in addition to the pressure, the number of feet that the pressure will raise the water above the level of the water in the tank.

Farther up the pipe is a valve "V," which can be closed should any of the valves or fittings in the kitchen or bath room need repairs. The connections up to and including this valve are usually furnished with the pneumatic tank system.

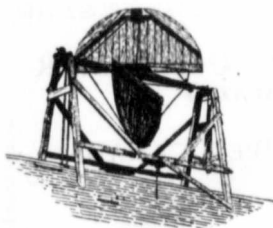
In a system of this kind, it is always well to provide a connection out through the cellar wall, for sprinkling the lawns, watering the garden, or for putting out a fire on the roof with the hose. Sometimes a 1/2-inch pipe is used for this purpose, but a 3/4-inch pipe is better, for then a 3/4-inch garden hose can be used and a stronger stream of water can be had. A stop cock is placed just inside the cellar wall to be shut off in winter, in order to drain the outside connection.

Before water is pumped into the tank, it of course, contains air at atmospheric pressure, and the gauge reading is zero. When the tank is pumped half full, the water has compressed the air into half its original space or volume, and the air pressure in the tank will be about 14 1/2 lbs. above atmospheric pressure. In other words, the gauge registers 14 1/2 lbs. The following would be the air pressure in the tank corresponding to the volumes of water and air in it:

Full of water	Air.	lbs. air pressure.
1/4	3/4	5
1/3	2/3	8 1/2
1/2	1/2	14 1/2
2/3	1/3	24
3/4	1/4	44
3/8	5/8	102

The tanks are usually guaranteed to stand at least 100 pounds air pressure, but they are not ordinarily filled much more than three-quarters full, as it takes a good deal of power to pump in the water at this point, since the pressure is then rising very rapidly.

For every pound of pressure in the tank, the air will force the water a little over two feet above the level of the water in the tank, or to be more accurate, very close to 27 inches. Two feet is the figure ordinarily used, however, the rest being more than ample for taking care of the friction of the water in the pipes.



Homemade windmill No. 1.

If the bathroom is on the second floor, it will take between 8 and 10 pounds pressure to force the water into the fixtures. This means that the air will no longer force water into the bath room when the volume of the water in the tank gets below  $\frac{3}{8}$  of the total volume. If the tank were pumped three quarters full of water on the start, only  $\frac{3}{4} - \frac{3}{8}$  or  $\frac{3}{8}$  of the volume of the tank could be utilized for domestic purposes under the conditions just described, without again having to pump water into the tank. This might be called the working capacity of the tank, so that if the capacity of the tank were 240 gallons, the working capacity under the above conditions would be 90 gallons. If the bathroom were on the first floor the working capacity of the tank would be increased to about half the capacity of the tank or 120 gallons. Raising the tank nearer the ceiling of the cellar also increases the working capacity of the tank somewhat. In installing such a system, I would use a horizontal tank and support it near the ends by two rather thin slabs of concrete, so that the top of the tank would be within 2 or 3 feet of the cellar ceiling. I would then cement in the crack between the back of the tank (if it were used for storing cool well water) and the cellar wall and put in shelves between the piers which would afford a cool place for putting provisions. Wooden doors would be used to close in the front.

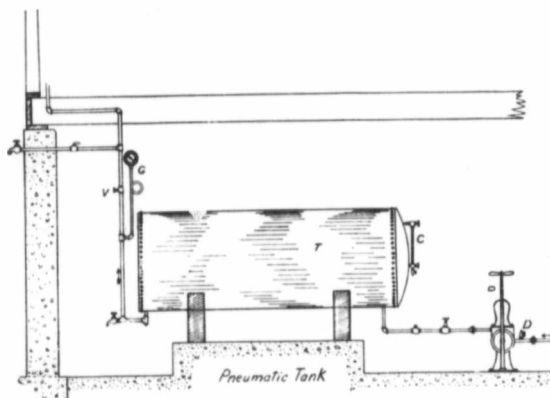
Practically any type of force pump can be used in connection with a pneumatic tank; also the hydraulic ram. The one shown in the sketch is something like a thresherman's tank pump. It has an air chamber on top as all heavy pressure force pumps should have, and is pumped by hand, though similar pumps can be readily secured that can be oper-

ated by power. If the well is a deep one or quite a distance from the tank, or both, the deep well force pump is used, with the cylinder close to the water level, and a foot valve at the suction end of the pipe. This valve is a vertical type of check valve with a coarse strainer. Its function is to hold the water in the pipe right up to the pump so that water can be had as soon as the pump starts.

When the water comes from a well, it does not contain much air; but after it is forced into the tank it will absorb some of the air from the tank. This must be replaced, else the tank will finally contain water only, and will not then force the water to a higher level. The common method of supplying air is by use of a two cylinder pump, which has a large cylinder for the water and a small air cylinder but with the same length stroke—something like the tandem compound steam engine cylinder. When soft water

working capacity, for the greater increasing the volume of air in the tank. The greater the volume of air, the greater will become the working capacity, for the greater the volume of air, the greater will be the expansion, and therefore the greater the volume of water forced from the tank for one pumping. It follows that this additional amount of air that one can get into the tank over and above that which is required to replace the air absorbed by the water, can be increased to a point where all the water in the tank can be forced up into at least the kitchen; or in other words, the working capacity can be easily increased to three-quarters of the tank's capacity.

Pneumatic tanks must be built and tested for the purpose for which they are to be used. It should be remembered that a tank that is water tight may not be air tight. Unless the tank is absolutely tight the system will not be a success. Tanks are made



is used, the air cylinder is not necessary, though it is desirable. Instead of the air cylinder, a  $\frac{3}{4}$ -inch drip cock is screwed into the top of the suction pipe as shown at "D," and is partly opened when the pump is being used. The air is drawn in at this point and passes through the cylinder with the water into the tank. If the water is much below the level of the pump, the air valve must be opened but a small amount or it will stop the suction.

As rain water or water in an open well has absorbed about all the air that it will take up before entering the tank, the air cylinder or the air valve need not be used much to prevent water logging. But these air attachments have other functions equally valuable. The presence of free air bubbles in the water going to the tank helps purify and freshen the water. Earlier in the article, we explained in part what determined the working capacity of the tank; but at that point thought it best not to mention one of the chief factors which will increase the

according to standard specifications, and are tested to at least one hundred and twenty-five pounds pressure by the manufacturer.

All the smaller sized tanks may be galvanized, which is a very distinct advantage in many cases. The plain black tank made of open hearth steel and coated on the inside with waterproof cement and on the outside with asphaltum, is held in great favor. Some water attacks galvanized material very quickly, and one who contemplates installing a pneumatic system is advised to be sure that the water he contemplates using will not attack galvanized material before installing a galvanized tank. Where the galvanized tank can be used, it is of course the best.

Pneumatic tanks are made in all sizes up to as large as can be transported on the railways. Tanks as large as ten feet in diameter by forty feet long are in use, and are perfect successes. Tanks of this size are used for very large country places or for



Homemade windmill No. 2.

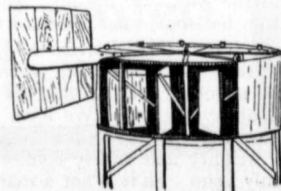
small towns. All the larger sizes of tanks are fitted with manholes for convenience in cleaning. Such tanks may be cleaned and given a fresh coat of waterproof coating on the inside every now and then, which insures that they will be protected from corrosion.

**Installation.**—When it comes to the installation of the pneumatic system, there is need for the greatest care in both the design and the quality of the work. The material must, of course, be of the best, and should be obtained from a responsible firm who will guarantee it in every particular. There are several firms who make a specialty of this class of material, and it is a good plan to follow their advice both in regard to the type of outfit to install and the size, as such firms will not recommend anything that would be detrimental to their reputation. Figure 5 is a diagram showing the proper relation of the different parts of the system to each other.

The pneumatic system of water supply is not expensive, nor is it hard to install. Anyone who has done a little pipe fitting around the steam tractor should be able to set up the tank and pump. Five minutes pumping a day should be ample to supply all the water necessary for ordinary domestic use. A tank 30 inches by 8 feet long would be ample for the ordinary farm use. Such a system, complete with pump and connections as described, can be gotten f.o.b. Winnipeg for a little less than \$100. If a 30 x 96 inch tank cannot be gotten into the cellar, a 26-inch x 10 foot will give nearly the same capacity and would cost about the same. Then, in addition to this will be the house plumbing which the writer hopes to discuss at an early date.



Homemade windmill No. 3.



Homemade windmill No. 4.





"Everything Begins and Ends with the Soil"

The CANADIAN THRESHERMAN & FARMER CANADA'S LEADING AGRICULTURAL MAGAZINE

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"The Difference will be Striking"

PROFESSOR J. H. GRIDDALE, Director of Experimental Farms concludes in the words of our heading his report on a trip to the West, made for the purpose of obtaining at first hand the very latest knowledge of crop conditions and on fixing locations for two new experimental farms in each of the Provinces of Manitoba and Saskatchewan. He made big circuits in all of the three prairie provinces, North, South, East and West, and never saw the prospects better. "It will be the finest crop we have had unless something interferes. We ought to have a bumper crop."

THIS IS REFRESHING and all the more satisfactory because the statement is made by one who has no commercial "interest" to serve in making his report. (When "the wish is father to the thought," there's an end to the impartial historian.) But the crux of Professor Griddale's report is in the

words: "I could see in every part the difference between the man who had cultivated and the man who had not. The good farmer is coming into his own this year and the bad farmer is really going to suffer. The difference in the crops will be striking."

THIS TESTIMONY IS BACKED UP by that of every person who has decent eyesight and is not consumed either by partiality or prejudice. The object lesson seems to be more in evidence this year than it ever was, although it has been the invariable experience since intensive agriculture began in Western Canada, that practically anything in crop can be reared to perfection in Western Canada if a man will take the pains. The knowledge is as cheap as apples; it is the disposition to use it that seems to be inoperative pretty well all over.

UP TO THE MOMENT OF WRITING, the natural conditions for splendid growth and early ripening of all crops in 1913 have been almost the very best in the memory of the oldest pioneer. There are exceptions in the case of a few districts, but these are so insignificant when reckoning the vast area of production that they are practically of no account. We sympathize with those who have suffered, but their time will come in due course. Where there is a "striking" exception to our information as to a good crop that is not belated, it will almost invariably be found to be in the case of "the man who had cultivated and the man who had not," as Professor Griddale says.

THE DIFFERENCE IN RESULTS in any kind of work is always striking when it is done on the one hand by a good workman and on the other by the "bum" who is always behind. We have lately covered this ground and now refer to it because we are glad to find so soon such a weighty and timely confirmation of what we said in our July issue. So it is not a matter of opinion but a statement

of unpainted fact made by one of the keenest observers and first agricultural experts in Canada.

MANITOBA APPLES are no longer a novelty except to the invertebrate bum who still believes they "cannot be grown in Manitoba." The director of experimental farms found some nice apple crops on several of the prairie farms he visited, and he refers especially to Mr. Stevenson's crop at Morden. If ever a man earned his Victoria Cross Mr. Stevenson deserves some equivalent to this badge of honor at the hands of the Province of Manitoba if not of the whole of Western Canada, not merely for "growing apples," but for demonstrating that with proper shelter and cultivation, Manitoba can bring to maturity in excellent quality practically anything that can be grown in a temperate—almost sub-tropical climate.

IT WILL TAKE SOME YEARS of intensive apple gardening until Manitoba can set up on equal terms with the maritime provinces in the fruit market. Our point is not that every or any farmer on the open prairie shall begin at once to plant extensive orchards, but it is that if Mr. Stevenson, and others who have imitated his splendid example, can in a comparatively few years transform their acreage of bare wind-swept land or straggling brush into a beautiful and paying garden proposition there is no limit (humanly speaking) to what one may make out of his bit of acreage in Manitoba.

MORE POWER to the great idea of the Experimental Farm; to the work of the much belittled "book-farmers" whose embodied theories have this year shown the "striking difference" between the results of the man who cultivated and the man who did not; to the humblest homesteader who takes the little extra time and pains it requires to make the very utmost that human thought and energy can make of this wonderful heritage of land and climate. "He can who thinks he can" make the wilderness bloom as the rose. The proof is to be seen in every corner of Western Canada, only we hear so little of the men who do well. Like the forces of nature, they are silent; they do not advertise their performances. It is of the failures and the apprehensions of the bums that most is made because it is in human nature to apprehend rather than to trust.

IT IS THIS STRIKING DIFFERENCE more than anything that can be written or preached that will ultimately bring to their senses the fellows who are the real sore spot on the country's fame. They must very quickly either toe the line or get out of business. The testimony and the life work of men and women who have made the country and are still watching with eager solicitude every movement that affects its great destiny are not to be snowed under or even temporarily discounted by fragmentary reports or the ravings of dead beats whose dearest wish is father to the thought.

OUR GUARANTEE

No advertisement is allowed in our columns until we are satisfied that the advertiser is absolutely reliable and that any subscriber can safely do business with him. If any subscriber is defrauded, E. H. Heath Co., Ltd., will make good the loss resulting therefrom, if the event takes place within 30 days of date advertisement appeared, and complaint be made to us in writing with proofs, not later than ten days after its occurring, and provided, also, the subscriber in writing to the advertiser, stated that his advertisement was seen in "THE CANADIAN THRESHERMAN AND FARMER." Be careful when writing an advertiser to say that you saw the advertisement in "THE CANADIAN THRESHERMAN AND FARMER."



# Choose Your Plow

From Canada's Leaders

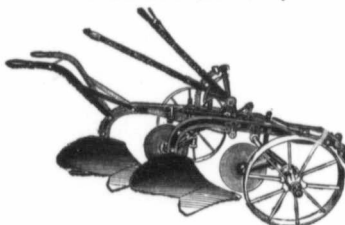
Cockshutt Plows are the choice of experienced farmers. They have been made famous by their dependability. The great superiority of Cockshutt Implements lies in their absolute mechanical perfection and reliability—qualities which have been revealed by thorough tests. We have a great variety of styles and sizes of plows. Six styles are shown here; one of them is suited for the work you want done. Get a Cockshutt Plow and you have the world's best.



J. G. C. RIDING PLOW.

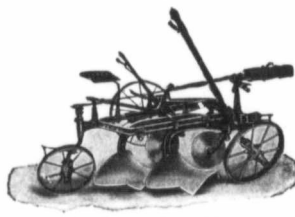
The plow that is built for the hardest kind of work on the toughest prairie soil. It also does good work in stubble. This plow is very easy to turn and handle on rough land. The seat is so located that the driver can watch the turning of the furrow, and his weight keeps the plow in the hard soil.

The J. G. C. Riding Plow can be furnished with 14, 16, or 18 inch stubble or breaker bottoms, rolling coulter or whippetres. It can also be furnished with rod breaker bottoms.



EMPIRE CHIEF GANG.

A light, easy running, walking plow that will do good work. It is unsurpassed for strength and simplicity. The beams are made of heavy high carbon steel, designed to meet the requirements of a light plow in heavy work. The material and design of these beams insures their remaining in perfect alignment when subjected to the severest strains. The high arch of the beams and the unusual clearance of the bottoms, prevents clogging on heavy trash land. The long levers which are fitted with lifting springs make it an easy matter to raise the bottoms.



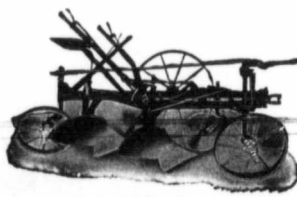
NEW JEWEL GANG.

The latest and best ideas in plow construction are embodied in this plow. It is adaptable to good plowing in any soil. The plow can be turned in its own length. An automatic foot lift raises and lowers the bottoms, and the driver's hands are left free to handle the lines. The bottoms lift high so that all obstructions may be cleared; they may also be locked rigid with the frame, or allowed to float. Long dust proof bearings are provided on the wheels, and when hard oil is used these require but little attention.



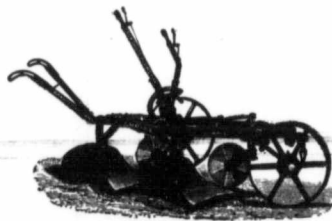
NEW JEWEL SULKY.

This plow is similar in most respects to the New Jewel Gang. The plow bottom is set firmly in the ground by simply touching a foot lever, and when once set for work it will never vary. The controlling rod, which operates automatically, connects the furrow and rear wheels. The wheels have long dustproof removable bearings which require little attention when hard oil is used. This plow is furnished with either breaker or stubble bottoms, rolling coulter and whippetres. It can also be furnished with rod breaker bottoms.



BEAVER GANG.

The handiest light weight plow you ever saw. It combines many of the features of the Jewel Gang such as short turning, high lift, perfect adjustments, removable dustproof bearings, etc., but is much lighter in weight. The bottoms are easily raised and lowered by a convenient lever and spring lift. This plow is fitted with unbreakable steel and malleable standards, and the soft centre shares are the heaviest ever used on a plow. The Beaver Gang is designed for general farming and can be well adapted to a great variety of plowing.



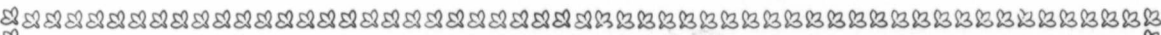
NEW EMPIRE GANG.

This is a light, strong two-furrow walking plow that will keep in good condition for a lifetime. It has unbreakable steel and malleable standards. The frame is made of steel and is strongly braced. Heavy axles and dustproof bearings further increase its durability. The New Empire Gang is made right and will stay right always. It is equipped with our fine adjustable ratchets, compound adjustable levers, and spring lift, all of which mean easier operation and better plowing.

## Cockshutt Plow Company, Limited

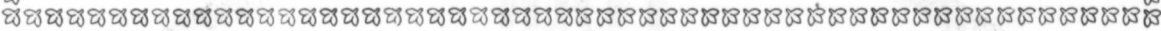
Western Branches: WINNIPEG, REGINA, CALGARY, SASKATOON

Distributing Points: Red Deer, Lethbridge, Edmonton, Brandon, Portage la Prairie.



# TRACTION PLOWING

AS TOLD BY THE MEN WHO DO IT



### Outfit Too Large

Your request for my engine plowing experience to hand, which I will no wtroj to answer.

In 1910 I bought a Hart-Parr 45 H.P. tractor, and an eight bottom Cockshutt plow.

During that very dry summer I broke 600 acres, and in the fall double disced it. In breaking I used about three gallons of gasoline per acre, and about a barrel of water per day. I made two trips to town a week for the oil, and the water I got locally. I reckon it cost about \$2.50 per acre to plow.

My soil is a dry loam, so that I find it impossible to use the engine in the spring, and not all during the past two wet seasons.

My crop of wheat was a total failure from frost, so that instead of a profit of say \$5.00 per acre, I had a loss of \$8.00, and if depreciation of engine is allowed for, at least another \$2.00.

I can assure you I have done some thinking on plowing outfits, and trying to farm on a large scale, and have come to the following conclusion: The first cost of the outfit is too big by half by the time the average man has paid for it, he has so much scrap iron.

The running expenses are too big, gasoline 35 cents, labor and repairs in proportion.

Breakdowns are too frequent, and are most expensive, both for repairs and wasted time. While discing I broke the crank shaft, and it took three weeks in time and over \$100 in money to replace it.

In order to pay for it, the outfit must be run for hours too long for the good of a man's body or brain. Eighteen hours a day may be necessary and advisable at a pinch, but to keep these hours during months at a stretch for such an uncertain reward as a crop of wheat is more than foolish.

Depreciation in value is too rapid. My outfit is in good repair and only ran one season, but the best offer I have had for it is \$1,500, or \$3.00 per acre added to the cost of breaking.

They compel a man to attempt more than he can handle. Instead of how well can I farm, its how much can I try to farm.

A big crop of grain puts a man at the mercy of the weather,

the banks, the labor, the markets, the railways, etc., hence the agitation for reciprocity, national railways, elevators, etc. You do not hear stockmen demanding these things. The big outfit generally takes all the money a man has. Owning a \$5,000 outfit, he lives in a \$50 shack, on 50

all make fortunes, but at least they live like men, and enjoy life as it is meant to be enjoyed.

It is often said by the agents of engines that when not working they don't cost anything, when horses eat all the time. Perhaps they do, but do they depreciate 60 per cent after a year's

constructed (after they all broke down). Did the company replace these parts free of cost, to say nothing of compensation for loss of time? As before stated the crankshaft cost \$100 and the wheels \$300 or \$400 more, another \$1.00 an acre.

An engine is a rich man's proposition, but for the average man "to keep off the grass" is the advice of

Yours truly,  
Norman Jaques,  
Hurst Farm,  
Castor, Alta.



### Uses Engine as Packer

In answer to yours just received, I purchased a 15-30 Rumely OilPull engine with extension on wheels, last spring, and used it for breaking with a John Deere Jumbo breaker. This land is a sandy loam full of willows and pretty rough. I got flooded from municipalities ditch in the spring and again in the summer, till the ground froze up, so that both the engine and myself were up against it in the worst kind of a way, so that is not giving a fair experience but one made under exceptionally bad circumstances. The engine did well, also the Jumbo plow. Of course, we had the engine down about half a dozen times, but seeing the condition of the ground it was surprising that we were not down oftener. Some of the ground was so wet that I don't think a horse could have walked up the furrow behind the plow without miring. I was well satisfied with the showing and the work done, as I consider it better than any I have seen done with horses. We packed the furrows with the engine as we went along, which made a much smoother job and one that the scrub will rot better and quicker. It also leaves the land in better shape for working either with engine or with horses. We used kerosene oil for fuel with a cupful of gasoline to start with. I believe we used between 35 and 40 gallons of kerosene in 10 hours breaking, and about as much water. This seems to be more than the average, but it may be that I did not get the best out of the engine, or else on account of the condition of the ground. My experience in regard to packing this kind of soil with engine is



Little but Powerful—The Avery Tractor.

cents a day, and if his crop fails he loses all.

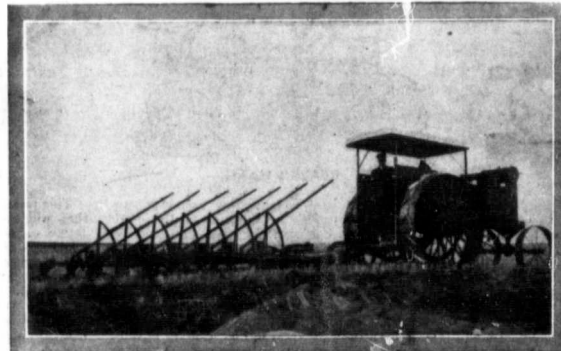
The farm should provide a man with the best of homes, a living, with an occupation healthy for his body and mind, and with enough to keep him in his old age.

Since the drop in prices of grain subsequent to the opening up of vast areas of wheat land owing to the binder, wheat has ceased to be a profitable crop in England.

work, and does it cost us money to grow green grass?

Will an engine present its owner with other engines at a nominal cost as mares do? And would a man keep any horse as baulky as the average engine?

And these same agents who are so polite and obliging before selling their goods, are they the same afterwards? And the manufacturers, situated thousands of

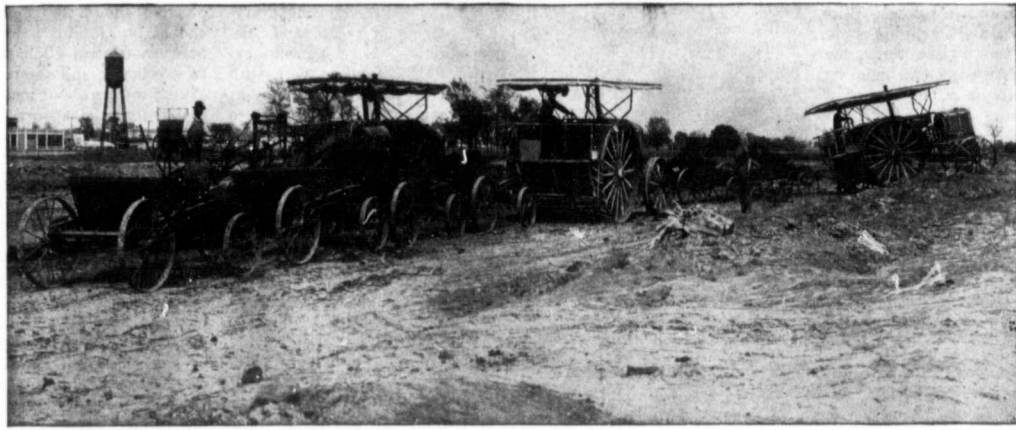


The Flour City doing Business with a Cockshutt

There it is stock, horses, hogs, sheep or cattle that pay the farmer. Have engines ousted horses from their former position, except for threshing? I may be told they are out of date, but they can afford to smile at such criticism, and so can anybody who has been there. They may not

miles away in a foreign country, do they compensate their customers for loss of time owing to their poor workmanship?

My engine was guaranteed against breakages arising from bad material. The wheels and crankshaft in this model were afterwards admitted to be badly



## The Huber "Thirty-Sixty" Gas Tractor Building City Streets

This is what the Indianapolis contracting firm of C. C. King, Brother & Son, thought of the Huber Tractor after they had used one for a month—and what they thought after they had bought two more and given them the same severe handling.

When the contract for grading "Speedway" was first let to them they bought a Huber "30-60" tractor, and shortly afterward wrote that, by actual test they were pulling *twice as many loaded carts of the same size with the Huber as they had with the steam engine previously used.*

"We have never seen any other engine," they wrote, "that will ride as rough ground and make the time that this one will, and there is no necessity of stopping it for anything."

The illustrations give some idea of the adaptability of the big Huber Tractor. Wherever it is a pulling proposition, and a hard one, the Huber will satisfy. For the ordinary work, an ordinary engine may do. For the extremely hard work, the Huber engine is the one to buy.

For the general use of the thresherman and farmer, hauling is but a part of the work for which an engine is

needed—the net result being the purchase of *two more Hubers*. Writing after the *three* machines had been in commission for some time, Messrs. King make the following points to express their approval of "Huber performance":—

The tractors in question travel faster and move heavier loads per unit of power than can horses, working under the same conditions.

They make it possible to increase *both load and speed*.

Hot weather does not "fag" them; nor is it necessary to spend time grooming them—as would be the case with horses. The cost for gasoline is no greater than expense of feed for enough horses to do the same work.

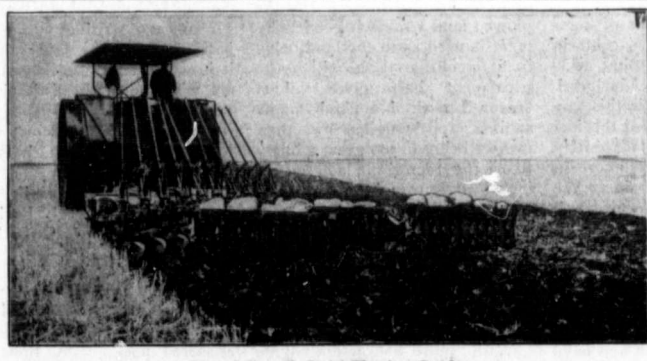
*When the tractor stops, the expense stops.*

Using Huber tractors saves the expenses of at least ten men per outfit, compared with horses and wagons.

Huber Tractors can be worked in any ordinary road.

needed. The Huber is just as good for any kind of belt work. It is equipped with suitable pulley for the belt, and gives you the ideal power for running threshers or other machinery.

When you are considering the purchase of a tractor, don't decide until you have fully investigated the merits of the Huber "30-60."



One of Geo. E. Duis' Plowing Outfits

## THE HUBER MFG. CO.

Engines and Threshers.

Arlington and Logan  
WINNIPEG, MANITOBA

Home Office and Factory:  
Marion, Ohio, U.S.A.



in favor of packing. On some kinds of land it may be different. I had one man with the engine and one with the plow. With long furrows and an engine guide, one man can do the work, but with short furrows two men are best. There is a big saving in long furrows with an engine. This would also apply to seeding, etc. I remain,

Yours truly,  
Francis J. Scott,  
Bagot, Man.



#### Change Direction Each Year

We have three years experience in traction farming and we find the engine just as cheap as horses and it may be a trifle cheaper. We farm only 440 acres. Our engine is a 25 H.P. Simple, J. I. Case steam plowing engine and our plows are 8 bottom Cockshutt engine gang. These machines both operate to our satisfaction and do the work well.

When putting the crop in in the spring we usually plow, harrow, seed and harrow the second time if the ground is very dry, but if the ground is not dry enough we only use the plows and harrow and seed with the horses.

We use about 1¼ tons of coal per day which costs us \$9.75 per ton besides hauling it from town, which is six miles; of course, this takes the time of a man and team. We have plenty of water on our farm and it takes about eight 10 barrel tanks. Our crew consists of four horses, a fireman, engineer, tank man and a coal man.

In using an engine year after year on a field plowing, a person should not plow the same direction every year; it is better to cross plow every two years if possible, as it is liable to get ridges from the weight of the engine wheels, and get the seed in the ground at an uneven depth.

The land around here is real level and there are no stones, so it is just the thing for engine farming. The only way I consider to farm on a big scale is with an engine.

Yours truly,  
H. G. Torill,  
Quill Lake, Sask.

#### Wet Weather Hinders Work

Your inquiry re our experience in tractor farming received and will endeavor to the best of my ability to give you our past experience, although it was necessarily very limited on account of the excessively wet season. We were unable to use our engine, which is a Hart-Parr 30-60 until well on in June at which time we started breaking some land for flax. I broke 33 acres in twenty-four hours of working time with the help of one man. I operated the engine and had a man to tend the plows who helped at times with the steering. We used a team night and morning to haul fuel and water, as at that time we had no tank. In breaking we pulled six 14-inch bottoms of Cockshutt make and a roller be-

necessary. For the breaking of a piece of 60 acres of very tough, stony, heavy land it costs on an average of \$1.50, counting everything except interest and depreciation. We have no experience in any other work with the tractor except threshing, as the season was too wet for us to get on the land in time for seeding. I consider the gas tractor a splendid power for threshing, and find the work much easier on the machine than plowing.

As you will see by the above, our experience was very limited on account of the wet. We summer-fallowed 100 acres pulling 8 plows, 14-inch, and a set of harrows, plowing about 5 inches deep at a cost of 65 cents per acre for fuel, labor and everything except wear and tear and interest. As an all-round help I

successful, especially for plowing and discing, where the plowing season is so short, or in other words, the plowing should be done by the end of June. The water used is between 60 and 70 barrels per twelve hours, and about 1½ tons of coal costing about ten or eleven dollars for a day's work. Usually this amount of coal and water will plow and pack with subsoil packer, and harrow about 15 acres at a cost of nearly \$2.00 per acre. These figures allow about \$4.00 per day for wear and tear on machinery.

My experience discing has been successful using ten sets of discs covering 40 feet, and I double disc and harrowed with 20 feet of lever harrows, as we always use harrows behind the discs. Done in this way, the double discing and harrowing costs between 40 cents and 50 cents per acre.

I have never tried seeding with tractor but once, as I found it not successful, the principal reason being the inability to get enough seeders attached to engine. Five were the most we ever got hung on at once, only making about 1½ load.

Last spring we used a 15 H.P. Rumely OilPull for seeding, and found it a success, pulling four 10-ft. seeders, and sowed a section of wheat in seven days, the cost of fuel being about \$12.50 per day, which cost less than 30 cents per acre. This is not allowing for wear and tear.

It is claimed by some people that the passing of heavy tractor wheels over the ground will damage it in time, but up to the present no apparent damage is evident on my land.

I am not writing you for an indicator or other favors, for if it is worth anything to you, you are welcome to the little time it takes. I like your paper, and consider one copy is worth more to me than it costs for the year's subscription.

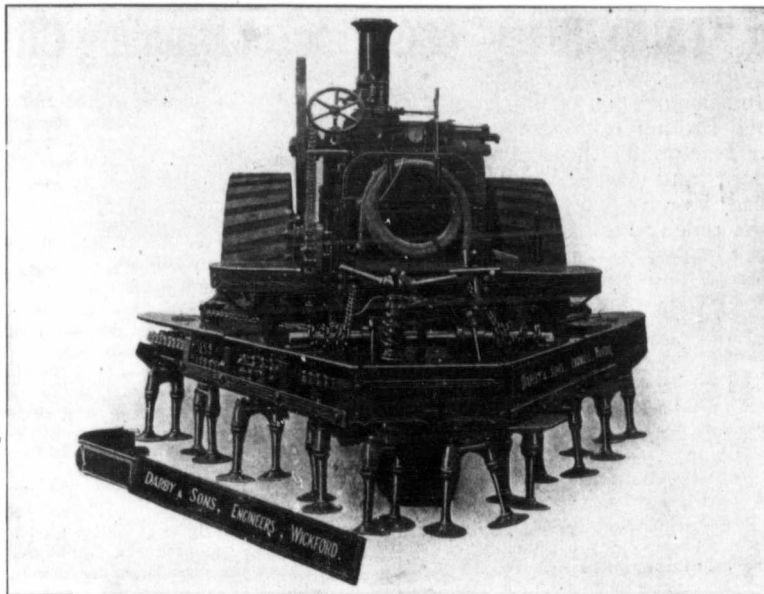
Yours respectfully,  
E. H. Earl,  
Medicine Hat, Alta.



#### Not Even Collars

"Ah, once a Bohemian always a Bohemian!" exclaimed the unscissored poet. "A Bohemian never changes."

"No—not even his collar," remarked the practical man who had met a few Bohemians.



An Oldtimer that never was really in the Running

hind that, and on good footing this was a very ordinary load for the engine. With this load we consumed about 60 gallons of kerosene costing about 17½ cents in barrels, 1 gallon of gasoline at 30 cents per gallon, barrel included.

I give these figures in this way as it is the way most of the fuel is bought as yet, and the outlay for container is always there in spite of the barrel rebate. We use 1½ gallons of gas engine oil and about 1 gallon of gear oil and possibly 1 lb. of hard oil in one 12-hour day's plowing. We used about 1½ barrels of water, not for cooling purposes but to mix with the kerosene. We use two men with the outfit and have the use of a man and team every other day for water and fuel drawing, also to take shares to sharpen and other repairs which may be

think the tractor has come to stay, particularly the gas tractor, and as to its being detrimental to the plowed land I think if good judgment is used as to the land being in fit condition there will be no permanent harm done. Last season I noticed a good many spoiled crops, spoiled by their owners being in too great a hurry to use the tractor, the land not being at all fit to hold the weight.

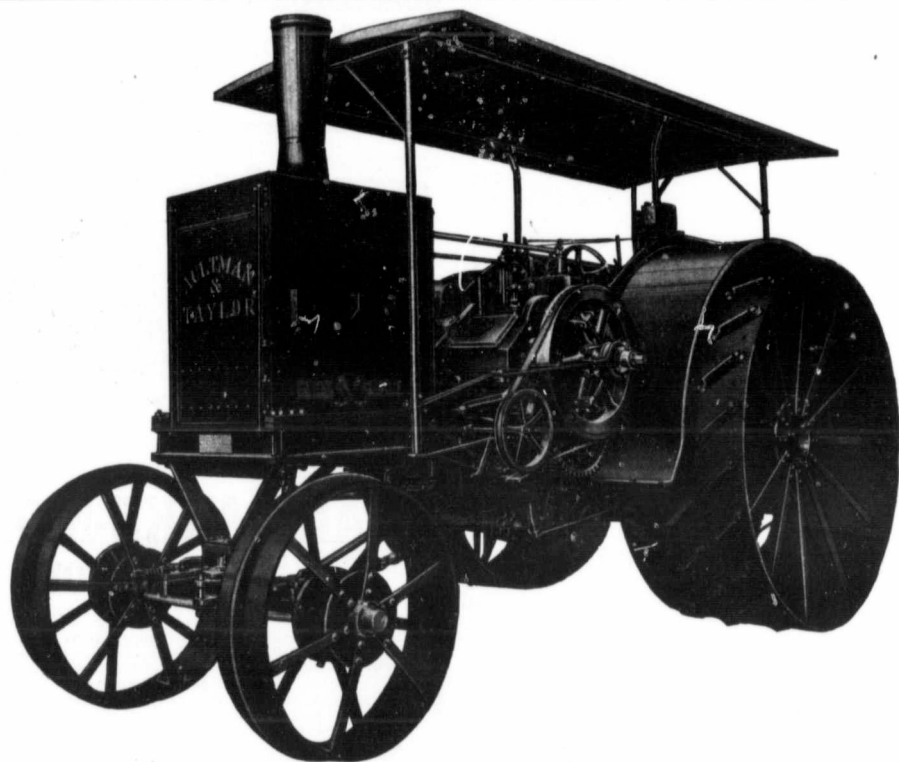
Yours truly,  
P. H. Cox,  
Beaver, Man.



#### Figures Include Wear and Tear

With regard to traction engine work, I may say that I have owned and operated a M. Rumely 36 H.P. steam tractor for three years, and consider it quite suc-





## Aultman-Taylor 30-60 Gas Tractor Still Holds World's Records

In the 1912 Winnipeg Contest the Aultman-Taylor 30-60 Gas Tractor established a **New World's Economy Record for Developing Brake Horsepower. A World's Economy Record in Plowing** by delivering to the draw bar, more draw bar horsepower hours per unit of fuel than any internal combustion engine of any size ever entered in any official test. It also delivered to the draw bar **A Greater Average Draw Bar Horsepower** than any internal combustion engine of any size ever entered in any official test.

We did not enter the 1913 Winnipeg Contest for the reason that the remarkable achievements of the Aultman-Taylor 30-60 Gas Tractor in the 1912 Contest so clearly and convincingly demonstrated that it has not competition that we deemed it useless to enter the 1913 Contest when we were positive that these records would stand without being anywhere near approached by any engine entered in the 1913 Contest. As you are well aware, the 1913 Contest is over and

**We can show you some interesting facts about the actual records established by the Aultman-Taylor 30-60 Gas Tractor at the 1912 Winnipeg contest and the results accomplished by a few tractors at the 1913 Winnipeg contest. If interested, write for this data. They're real facts worth reading.**

The results of the 1913 Winnipeg Contest only tend to substantiate our claims stronger than ever that the **Aultman-Taylor 30-60 Gas Tractor** is in a class by itself—that it is far superior in every way to anything yet designed for similar purposes. The **Aultman-Taylor 30-60** has not only demonstrated its superiority in every competitive test in which it has participated, but its performance on thousands of farms throughout America is proof stronger still of its all around supremacy.

Every farm power user and everyone interested in the purchase of a farm tractor should look into the construction and past record of the **Aultman-Taylor 30-60**. Its performance warrants your careful investigation. Go to our nearest branch and look this Tractor of Tractors over, or write us for nearest point where one may be seen at work. Be sure to write for our Big Catalog—it's free.

WRITE FOR CATALOG OF:—Aultman-Taylor Gas Tractors; Steam Traction and Portable Engines; "New Century" Separators; "Matchless" Clover and Alfalfa Hullers; Bean Threshers and Saw Mills.

# The Aultman & Taylor Machinery Co.

Lock Box No. 64. MANSFIELD, OHIO

BRANCHES: Minneapolis, Minn., U.S.A.; Calgary, Alta.; Regina, Sask., Canada

# Course in Gas Engineering

Conducted by PROF. W. J. GILMORE

## Valves

TOO little attention is often given to the proper timing and condition of the valves. Especially is this true with some operators, for as long as the engine runs, it does not make any difference if it does not develop its maximum power. The exhaust valve opening too early or too late, or the valve not properly seating, which affects the compression, will cause a loss of power. First, will be considered the operation and then the requirements of the valves with a few suggestions on timing and the conditions they should be in for the best working. At this time only the four cycle engine will be considered as the farm gas engine is of that type.

In an internal combustion engine there must be an opening to admit the charge of gas and at least one opening through which the exhaust passes out. These openings must be closed part

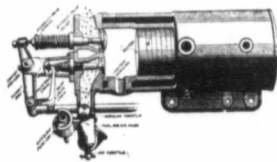


Fig. 1

every cycle and this is accomplished in the majority of cases by means of poppet valves. The valve which admits the mixture to the cylinder is the intake valve, and is opened by suction or mechanical means. Many of the stationary engines' intake valves are opened by suction, and require no timing. The valve through which the spent gases from the cylinder passes, is the exhaust valve and must be mechanically operated. This valve requires timing, that is, there is a time during the four strokes of the four cycle engine that this valve must be open and the remainder of the two revolutions it must be closed as near perfectly as possible.

A sectional view of a cylinder is shown in Fig. 1. The air passes through the air throttle past the needle valve or gasoline throttle and the mixture enters the cylinder through the intake valve, as indicated by the arrows. This valve in this case, is opened by suction, when the piston moves out on the suction stroke. The inlet valve spring assists in closing and keeping it shut, as

also does the compressing of the charge on the compression stroke. After the charge is ignited and expands, working against the piston, the exhaust passes out through the exhaust valve into the muffler. This valve is mechanically operated, as it opens at a time when there is pressure acting on it on the cylinder side. The exhaust

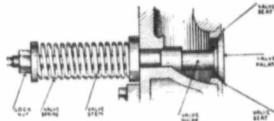


Fig. 2—Valve with names of parts

valve spring has extra tension put on it when the valve is lifted from its seat and tends to close and keep it closed, when not forced open by the tappet arm.

Notice the set screw at the exhaust valve end of the tappet arm. There should be clearance of 1-32 of an inch between it and the valve when the valve is seated, this is to allow for expansion of the valve stem when hot, also to make sure that the valve is not held open during the working or compression strokes.

The exhaust valve spring should be strong enough to close the valve readily and hold it closed during the suction stroke. The intake valve should not be too strong on suction operated valves, as it must be opened readily on the suction stroke. If the exhaust valve spring were no stiffer than the intake valve spring it would open on the suction stroke and no charge would be taken in, but instead, it would be just as easy for the exhaust as the intake valve to open.

While the exhaust valve is open the intake valve check assists in

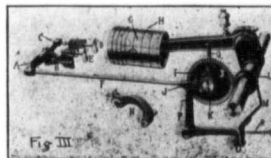
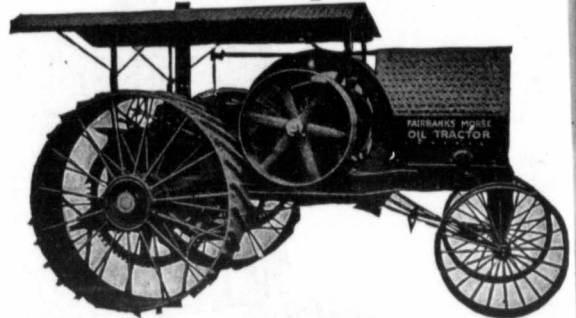


Fig. 3

holding the intake valve closed. This keeps the intake valve from jumping when the "hit and miss" governed engine is hooked up, as there is a tendency for the intake valve to open as the piston moves out.

Fig. 3 shows working parts of a four cycle engine. The small gear (L) is fastened to the crank shaft and meshes with the cam gear (K) containing twice the

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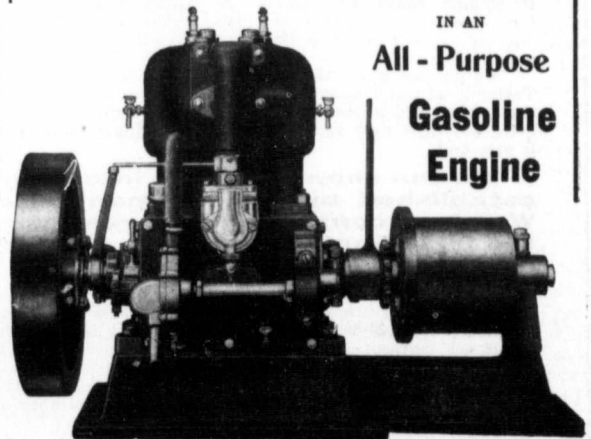
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number of teeth. Thus it is seen that the gear (K) makes one revolution to two of the gear (L). The cam (I) acts against (J) and causes (F) and (A) to move out, which in turn causes (C) to move inwards. (B) is a bracket fastened to the cylinder head, to which (A-C) is fastened. As (C)

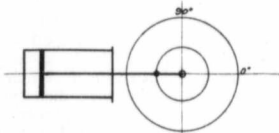


Fig. 4 Head Dead Center

moves inward it acts against the exhaust valve and causes it to open. At this time the spring on the valve stem is put in tension and the roller (J) is caused to follow the cam (I). In this way the exhaust valve (D) is opened and closed. (E) is the intake valve and is opened by suction and closed by the valve spring.

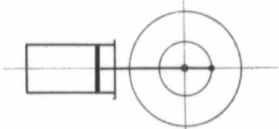


Fig. 5 Crank Dead Center

Sometimes a spring is fastened from (F) to some part of the engine and causes the roller (J) to follow more closely the cam (I). By so doing the moving parts are not so noisy.

The valves are not always located in the cylinder head but on the side close to it. When

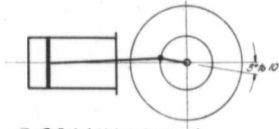


Fig. 6 Inlet Valve Opened.

located on the side, a shaft generally runs alongside the cylinder to which cams are attached to give action to the valves. This shaft is generally driven off the small gear on the crank shaft by a worm gear.

If the intake valve is mechanically operated, it is ac-

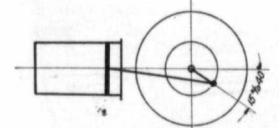


Fig. 7 Inlet Valve Closed

complished in much the same manner that the exhaust valve is operated, that is, by a different cam on the same shaft. Sometimes both cams are located on the large gear shaft and one rod extends to each of the valves on the cylinder head. On large engines both valves are usually mechanically operated.

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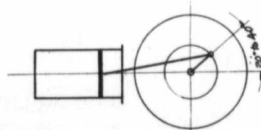


Fig. 8 Exhaust Valve Opened

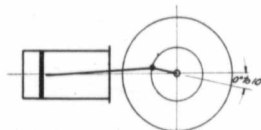


Fig. 9 Exhaust Valve Closed

Figs. 4-9 inclusive, may assist in timing the valves. First is shown the piston at head end center, then it is shown at crank end center. In timing valves it is well to start with the piston at head end center, at the start of the suction stroke. On this stroke the inlet valve should open and the exhaust valve remain closed. During the compression stroke both valves should remain closed, as also the greater part of the working stroke. From 20 deg. to 40 deg. before the end of the working stroke the exhaust valve should open and remain open the entire following or exhaust stroke.

In many cases the inlet valve will take care of itself, as it is opened by suction on a large number of small engines. Should it be mechanically operated, it is well to see that it is timed properly. Engines are not all timed the same, but if the inlet and exhaust valves open and close according to the accompanying diagram, the engine will not give trouble from a lack of timing.

It is readily seen then that if the two to one gear (K) is changed, meshing differently with the one on the crank shaft, the cam which is located on it, will cause the exhaust valve to open at a different time in the stroke of the piston. Thus, instead of the exhaust valve opening at the point on its stroke, that it opened before a change was made, it will open at some other part of the stroke.

To change the time of opening of the exhaust valve, it would be only necessary to change the position of the two to one gear, with respect to the gear on the crank shaft. The time of opening and closing of this valve is

# THE GRAIN SEPARATOR

By PROF. R. MILNE

**T**HE grain separator is one of the most important machines we have on the farm because it tells us the result of our season's toil. It has to work in the busiest season of

about five thousand, two hundred feet per minute or nearly a mile per minute. If the straw is very tough it usually threshes easier to increase the cylinder speed from fifty to one hundred revo-

lutions per minute. The speed must be kept uniform if satisfactory work is to be done. Bent, broken or loose teeth is about the only trouble met with at the cylinder. The separator man should keep a close ear for teeth striking

the cylinder bed, which will readily push the boxes so they will bring the teeth to the proper place. The concave should be run high or close up to the cylinder. If

keep a bunch of wool or waste in the oil cup to catch the dirt. If hard oil is used care should be taken not to get dirt in the grease but try to fill the cup at a time when there is the least dirt flying. They must be kept properly adjusted and rebabbitted when needed.

**Separating Parts.** The separating parts consist of the grates, beaters, pickers and straw racks. A great deal of the separation takes place at the grates just behind the cylinder. Many machines have the grates so they can be raised up high behind the cylinder and close to the beater. This tends to give better separation, they should be used as high as possible under the conditions.

The beater is a drum-like affair just behind the cylinder. It tends to spread out the straw and aids separation. Some machines have provision made so the beater can be raised or set farther back from the cylinders. If there is a tendency for it to wind in very tough grain under ordinary conditions it is better as low as possible. Two curtains are usually found in the separator, one just above the beater and the other a little behind. These catch and stop any grain which flies from the cylinder or beater and prevents it flying clear out behind or lighting on top of the straw near the back of the straw racks. If they get worn or torn they should be immediately repaired. The

straw racks carry the straw after it leaves the grates, to the blower. These are usually in several sections and as there is no adjustments to be made all that is necessary is to keep a close watch for

the year and has a very difficult work to perform in the separating the grain from the straw and weeds. Many times in the busy rush to get the grain gathered in the threshing machine does not get the repairing or even adjustments it should have. So long as it will keep running it is let go, the result being in some cases a great deal of grain is wasted, in other cases the machine is racked and ruined by allowing loose parts to knock and pound until it is almost impossible to repair it. Very often a half hour taken to make a permanent repair in the way of fitting a key or getting a new bolt would have saved a serious break which might cause a day's delay.

The study of the thresher can be divided into six parts. The first three according to the work done. First, shelling the grain; second, separating the grain and chaff from the straw and third, cleaning the grain. The other three may be considered as attachments and are feeder, blower, and high bagger. We will discuss each briefly, taking the three operations first, then the three attachments.

**Shelling Parts.** The shelling parts consist of the cylinder and concaves with their teeth. There are two common sizes of cylinders in use, the old or small cylinders which usually has twelve bars, and the large which has twenty bars. The small cylinder is supposed to run about eleven hundred revolutions per minute and the large one about seven hundred and fifty. In each case the teeth travel at the rate of

and the moment they are heard he should shut down and find where the trouble is. If a tooth gets broken it should be replaced by a new one, because the weight of a tooth tends to put the cylinder off balance. The cylinder teeth should travel half way between the concave teeth. There

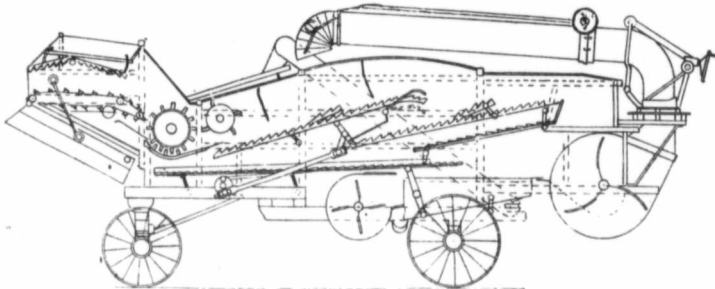
should be about one quarter of an inch clear on each side of the tooth as it travels between the concave teeth. If there is more than that on one side it will be correspondingly close on the other. The open side will let heads pass through unthreshed, while the other side will crack grain. To get this adjustment see that there is only about one sixty-fourth of an inch end play on the cylinder and move the bearings towards the wide space. There are usually set screws in

teeth than is necessary to thresh the grain as it absorbs a great deal of power and causes an extra heavy load of chopped straw to be handled by the sieves.

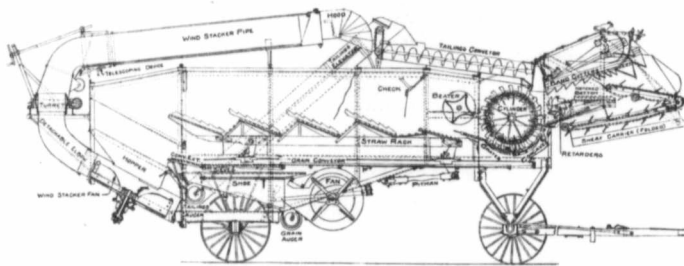
The cylinder boxes require

close attention or there will likely be trouble. They work under a heavy strain and run at a high speed so need plenty of good oil. Care should be taken not to get dirt in the bearing. If oil is used

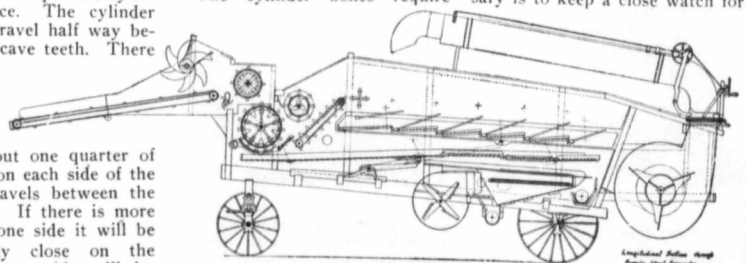
loose nuts, slack gearings or hangers, and oil thoroughly. There is a great tendency to allow the bearings on the inside of the separator to work without oil, they should be oiled at least twice a day.



Interior view Challenge separator.



Interior view J. I. Case separator.



Interior view Rumely Ideal separator.



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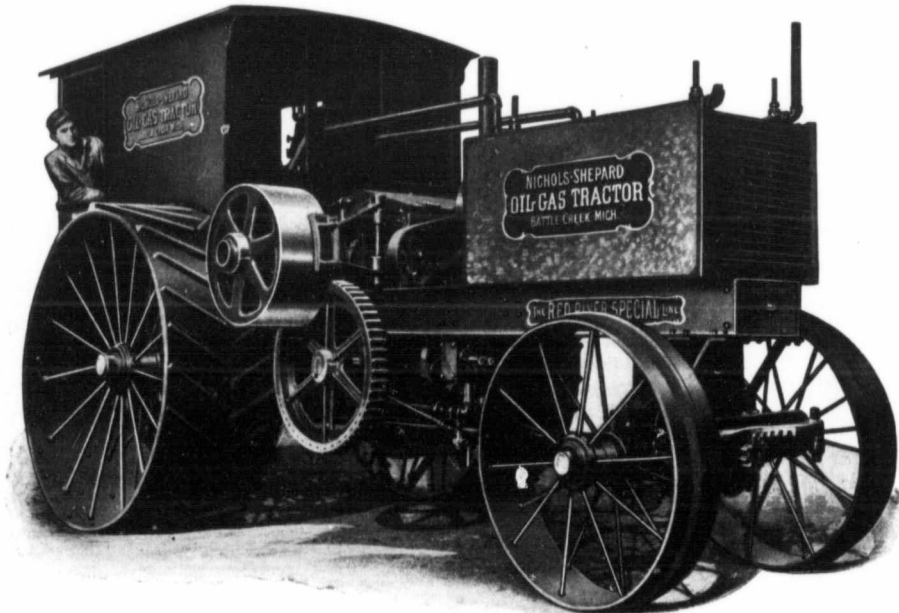
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John A. Steff, Hingham, Montana, says:—

"The 22 Horse Oil-Gas Tractor is doing good work pulling five 14 inch plows and discs in sod."

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"The 22 horse Oil-Gas Tractor purchased this Spring is running fine and doing excellent work. We pulled five 14 inch plows with disc behind in tough Montana sod with frequent patches of hard pan."

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**Cleaning Parts.** The cleaning part of the separator consists of the fan, screen, sieves and chaffer. These parts require careful adjustment in order to get clean grain and yet save it all. Right here I might say that the pitchers have to co-operate with the separator man or it is impossible to clean the grain without wasting

usually be raised or lowered. The second chaffer is in the shoe directly above the sieve, this one is considerably finer and cleans off a little more of the rough stuff. The sieve is where the finishing is done, except the very fine seeds. Most machine companies use some kind of an adjustable sieve which can be adjusted to clean

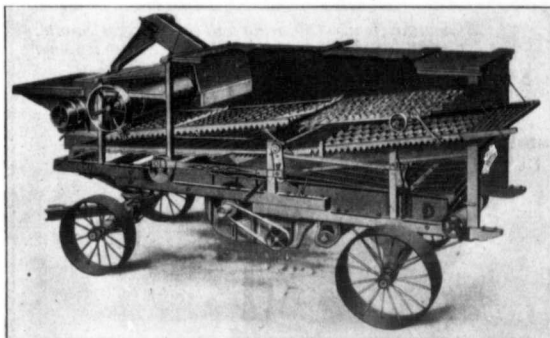
and chaff is going up the elevator see if it comes off of the sieve or the chaffer. If it is coming over the sieve it is likely the sieve is loaded with chaff. To remedy this, if the chaffer is adjustable, close the openings, this does not allow so much chaff to get through. If the grain is coming from the top open the chaffer and leave more work for the sieve. If there is still too much chaff and wheat comes over and you are using all the wind you can without wasting grain and using a full set of new teeth, by taking out a couple of rows of concave teeth and putting in a blank, the amount of chaff and chopped straw will be lessened. If it requires all the teeth to thresh the grain from the head, the only remedy left is to feed slower, giving the shoe more time to do the cleaning.

**Feeder.** The feeder is an attachment that is almost indispensable on the modern threshing machine. It saves what used to be the hardest and dirtiest work about the threshing. Feeding by hand used to be considered an art, but the self-feeder when properly adjusted and with good pitchers does equally as good work. If the feeder racks are made of slats, and chain used as a belt, it is important that the chain be kept

they are set should be governed by the condition of the grain and the size of the bundles. When they are set low they break up the bundle well and there is no danger of any bands being missed. Sometimes when the pitchers are poor, there is trouble with the knives stopping, but it is usually better to have them stop occasionally than to be continually slugging the cylinder.

The other band cutters consist of knives similar to the mower. Sections fastened to a stick one end of which is hinged and farther up is a bearing attached to a crank-shaft which gives the knives a chopping-like motion. This style does very good work, but they are usually more trouble. The crank bearings cannot be oiled often enough, consequently they wear quickly. There is also more parts which are apt to come loose and cause trouble.

The governors or "brains of the feeder" require careful adjustment if good threshing is going to be done. If the feeder continues to feed after the cylinder has dropped in speed a few hundred revolutions, the grain will not be all threshed from the straw and what is threshed will not be properly cleaned, because the low speed allows everything to become dead. The straw is not shaken sufficient to separate the grain and straw, and the low speed of the fan allows the sieves to become overloaded with chaff. Fast feeder governors are usually friction driven. Friction blocks are on arms with weights; these weights are thrown out by centrifugal force against a band wheel which drives the feeder rakes. In order to regulate the speed there are springs to hold the blocks from gripping till the machine is nearly up to speed, by putting more tension of the springs it will be slower to grip tight. By careful adjustment the feeder can be made to stop feeding when the cylinder drops in speed about fifty or less revolutions per minute.



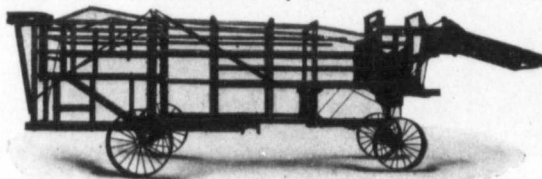
Interior view Sawyer-Massey (Great West) Separator.

a great deal. If there is great bundles piled in two or three deep for a few minutes the cleaner has to be adjusted so it will handle the heavy load of chaff, then if the machine runs practically empty for a few minutes the extra blast required to raise the heavy load of chaff carries a great deal grain over into the blower. Unless the feeding is nearly uniform it is impossible to do a good clean job without wasting grain.

Most of the fans used are over-blast fans, that is the wind comes from the top of the fan. An over blast fan is always driven by a cross belt from the cylinder. The fan blinds regulate the amount of wind or blast that the fan produces. These blinds have to be adjusted so there is just sufficient wind to carry the chaff over with out carrying grain over the shoe also. The blind on the right side of the fan regulates the blast on the left side of the shoe and vice versa. If grain is being blown over on one side, remember the blind on the opposite side must be closed a little. Use as much wind as is possible without blowing grain over. Between the fan and the sieves, there are two wind boards; these boards can be tilted up or down by levers, the object being to make the strongest part of the blast strike the sieve at any desired place. It is impossible to tell how these should be set. This is when the separator man has to use his good judgment. Usually it is well to have the blast pass the sieve near the front end. It then passes through the chaffer and keeps it clean. When the wind is properly adjusted the chaff seems to float over the choffer just high enough so it does not clog or load.

The chaffer is a very coarse sieve, which separates the rough stuff. This is the first separation in the cleaning. Some machines have two, the top one is very coarse and is hinged on the back end of the deck, the hind end can

any kind of grain without stopping the machine. These sieves do good work, when properly adjusted, save a great deal of time, and the trouble of carrying three or four extra sieves which are very apt to get broken or injured in handling. The sieve can usually be set at any angle desired. This and the adjustment has to

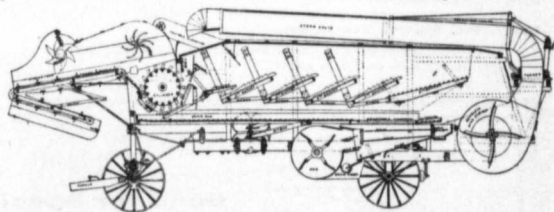


Design and framework of Avery separator.

be worked out by observing the condition and the work being done. The screen is very fine and is below the sieve. The clean grain drops on the screen and passes over it on the way to the grain spout. The fine seeds pass through this screen and drop out of a crack in the floor of the shoe on to the ground near the hind axle. When very small seeds, such as clover or flax, it is necessary to close this opening in the floor of the shoe or all the seed will drop through on the ground, unless a special fine screen is put in.

The tailing elevator returns to the cylinder for a second threshing, the unthreshed heads and all substances that drop through the straw racks which are too coarse to go through the sieves and too heavy to be blown out. The tailings are carried from the sieve to the elevator by the tailing spout which either shakes or has an auger which conveys the tailings to the elevator. The tailings are a good indication of the work being done by the sieve. They should contain very little plump grain or chaff. If too much grain

tight enough, so there is no danger of the links coming unhooked. There should always be a good supply of extra slats and chain in case of accident. It sometimes happens that the chain breaks and the rakes start into the cylinders. When this happens there is very apt to be several feet of chain and



Interior view Nichols & Shepard separator.

several slats spoiled, also several cylinder teeth bent and broken.

There are two common types of band cutters in use. One known as the rotary band knives which consist of sharp knives attached to a shaft which revolves at a rather high speed. The rotary cutters can usually be raised or lowered. The height

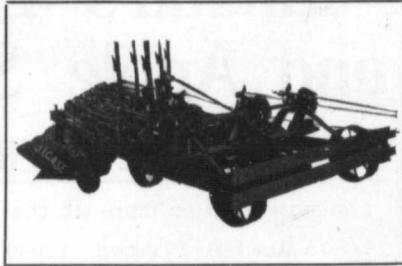
**Blower.** There has been several styles of blowers on the market, but of late years most of the manufacturers have adopted the cyclone blower. The straw enters the fan at the centre where the wind is taken and forced out through a long spout which can be swung in different positions so

Continued on page 50

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With our new Power Lift Tractor Gang Plow, the genuine Case outclasses all of its competitors. Time and time again have actual plowing demonstrations been won, proving to farmers in their presence that the genuine J. I. Case is a superior plow. Our power lift feature is simple and effective, giving easy control of the plow, yet each bottom can be adjusted independently.

The wonderful Performance of our Tractor Gang Plows in everyday work demonstrates conclusively that the original and genuine Case leads the field on points of merit.

The lining-up chain, the bumpers between beams, and the rear furrow wheel on the genuine J. I. Case Tractor Plow insure absolute uniformity of furrow width. Each bottom is independent and can be instantly adjusted so that uniformity of furrow depth is also insured. Our power lift is exceedingly simple. A pull of the rope lifts any two bottoms. They do not have to come up in rotation. A pull of the rope lowers any two bottoms, still the bottoms are independent and can be adjusted for depth and suck easily and quickly.

Remember that these features are found on the original and genuine J. I. Case Tractor Plow as made by

**J. I. Case Plow Works - Racine, Wis.**  
U. S. A.

Fill in this Coupon and Mail to  
**J. I. CASE PLOW WORKS, RACINE, WIS.**

Please send me your circular No. 235, illustrating and describing the genuine J. I. Case Tractor Gang Plow.

Name .....

Town .....

Prov. .... R. F. D. ....



## Three Years on a Farm in Western Canada

By R. WHITEMAN

IN selecting a farm, many things have to be carefully thought out, for in buying land on which to establish a home all things conducive to happiness must first of all be considered, and this can only be brought about by buying a farm that pleases more and more as the years roll by. It should be one that the farmer will take pride in and so keep everything neat, and one that gives ample returns for the labor expended, thereby adding to the comfort and happiness of his family. The first thing in buying a farm is to have a definite object in view, as to the locality, kind of land most suited to the particular kind of farming to be undertaken, nearness to market, and lastly but perhaps most important, have a water supply. The locality includes social conditions as to nearness of neighbors and kind of neighbors; nearness to school and church and general type of country, whether rolling or flat. Then, the kind of land is very important; for grain raising nothing beats a black clay loam. A slightly sandy soil is good if there is abundance of rain fall, but in dry seasons the grain burns up for want of moisture. Then again, a heavy clay is good, but in wet seasons becomes water soaked and the grain fails to ripen properly. But a black clay loam has splendid moisture retaining qualities, is easy to work and warms up early in the spring allowing seeding to proceed early, thus insuring an early harvest. The nearer a farm is situated to a good market the better, because it reduces the cost of hauling and also enables the farmer to ship his produce just at the proper time, whereas if he was a considerable distance away advantage would have to be taken of good weather and roads and perhaps at a time when prices were at their lowest. A farm without water is of no value at all, because water is the most essential thing as regards life; wells should have a good head of water, or if this is not obtainable, choose a farm with a spring or creek running past.

In the spring of 1907, a young man with two of a family sold his farm in Ontario and came west with the intention of taking up land and farming on a large scale. After a considerable study of conditions he decided that the north western part of Manitoba

was the most suitable for the style of farming he wished to undertake. The farm chosen had a plentiful supply of water, was somewhat rolling and was nearly clear of scrub. There was about 300 acres of land available for cultivation, the remainder consisting of a series of small sloughs, which furnished a fair amount of hay. The soil was a black clay loam, fairly free from stones and not too hard to work. The price of the land was \$15 per acre, or \$4,800 for the half section. As he was starting with a capital of \$3,000 and had all the buildings to erect, he made arrangements whereby the payments were extended over ten years, with interest at 6 per cent; the first payment was to come due one year from the coming fall. His equipment consisted of four horses, a gang plow, sulky breaker, drag harrow, disc harrow, packer, seeder and a binder; also a complete set of tools, and in addition all the furniture necessary to furnish a house. As there were 20 acres broken this was prepared for crop and seeded down to oats, sowing 2 1/4 bushels. It required 45 bushels for seed which at 30 cents per bushel cost \$13.50. He then proceeded to break with the four horses and sulky breaker. By steady work two acres were turned over per day, and by the middle of July 120 acres were broken up at a cost of \$2.50 per acre, or \$300 total. The land was disced twice and harrowed four times and then left till the following spring. A fence was built around the whole half section. Two strands of barbed wire were used in its construction. As one rod took one pound of wire it required 1,920 pounds at a cost of 4 1/2 cents per pound, or a total of \$85.40 for wire. The posts were placed one rod apart requiring 960, costing 5 cents apiece, or \$48.00, making the total cost of construction \$133.40. A small barn 24 ft. x 30 ft. and house 24 ft. x 26 ft. were erected at a cost of \$2,000, the former costing \$700 and the latter \$1,300. The farm was now in good shape for the next year, and as most of the heavy expenses such as building, fencing, etc., were done and paid for, the coming crop was left entirely free to pay off the debt on the farm. By fall the heavy work was over and the crop harvested. They yielded 60 bushels per acre, giving him

Continued on page 45

# FARMERS, Agricultural Societies Boards of Trade

Show the World what Western Canada can do by your exhibit at

## Canada's Land and Apple Show WINNIPEG, OCTOBER 10-18

and win \$250 or more at the same time  
25,000 Square Feet of Exhibits. \$2000 in Cash Prizes

### LIST OF PRIZES

<b>WHEAT</b>		<b>VEGETABLES</b>	
1st Prize best 3 bushels .....	\$250	Best collection (any varieties) vegetables, occupying not more than 18 square feet space .....	\$50
2nd " " " .....	150	<b>DAIRY</b>	
3rd " " " .....	100	Best 10-lb. crock dairy butter ....	\$50
<b>OATS</b>		Best 20-lb. home-made cheese ....	25
1st Prize best 3 bushels .....	\$100	<b>ALFALFA</b>	
2nd " " " .....	75	1st Prize best 2 sheaves alfalfa, grown from 10-acre plot .....	\$100
3rd " " " .....	50	2nd Prize best 2 sheaves alfalfa, grown from 10-acre plot .....	50
<b>BARLEY</b>		<b>FRUIT</b>	
1st Prize best 3 bushels .....	\$100	1st Prize best 5 boxes apples .....	\$200
2nd " " " .....	75	1st Prize best 5 boxes pears ....	\$100
3rd " " " .....	50	2nd " " " " .....	50
		3rd " " " " .....	25

The West is reaping a Great Harvest. Tens of thousands will be at this Show to see. Have your Exhibit there.

Government Railroads and all Progressive Districts will have general non-competing Exhibits

**NO ENTRY FEE, NO FREIGHT TO PAY, NO SPACE CHARGE**

**ONE AND ONE-THIRD FARE ON ALL ROADS. SEE YOUR RAILWAY AGENT**

## Canada Land and Apple Show

CHAS. F. ROLAND, Secy., Winnipeg

Fill out the Entry Form below and Mail it today

Prize Competition **ENTRY FORM** Prize Competition  
**Canada Land and Apple Show**  
Winnipeg—October 10th to 18th, 1913

THE undersigned hereby makes application for entry in the competition for prizes for which I intend to exhibit the following:

.....  
.....

This entry is made in compliance with the rules and regulations in which it is understood that the Canada Land and Apple Show pays all freight on my exhibits to Winnipeg, and arranges same in space provided free of cost to me for which I assign the Canada Land and Apple Show my exhibit, the proceeds from sale of which is to go to the general prize and expense fund of the Canada Land and Apple Show.

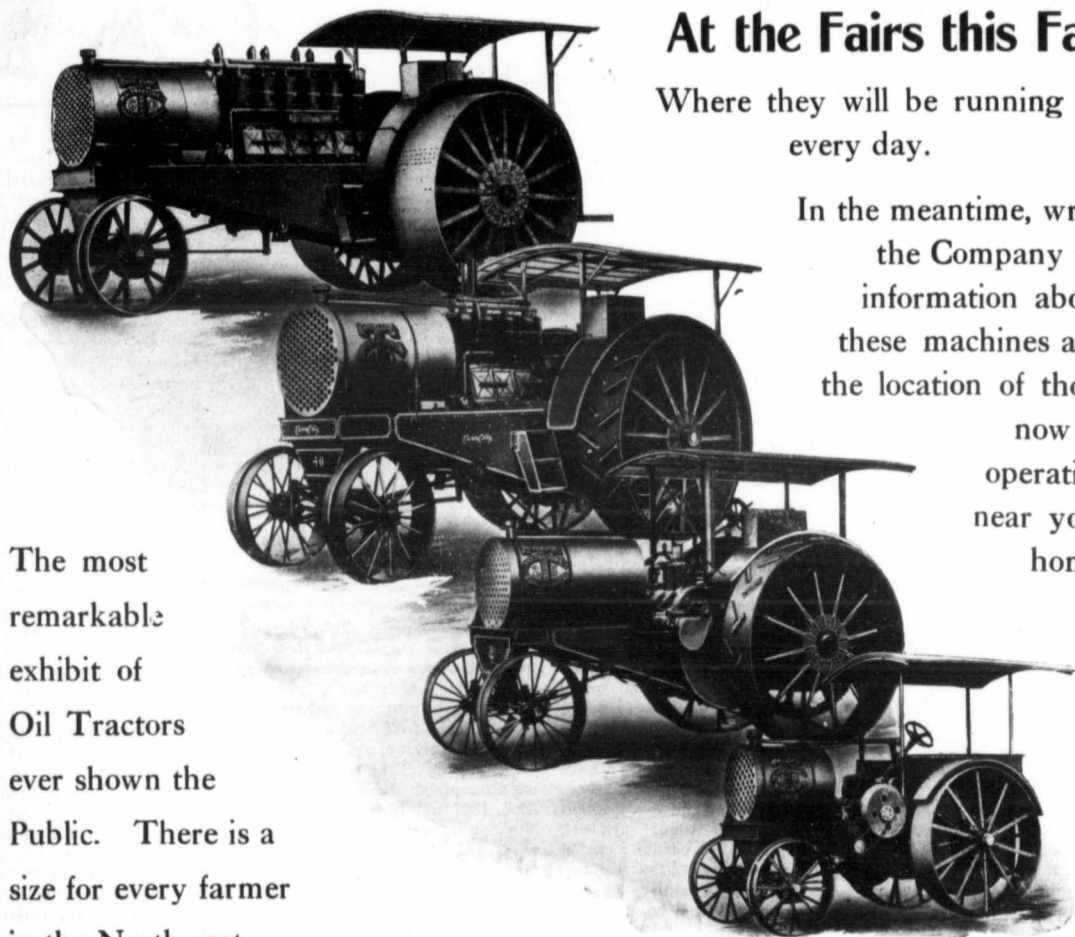
Name.....  
Address..... Date.....

# See This Exhibit of Tractors

## At the Fairs this Fall

Where they will be running every day.

In the meantime, write the Company for information about these machines and the location of those now in operation near your home.



The most remarkable exhibit of Oil Tractors ever shown the Public. There is a size for every farmer in the Northwest.

## *Twin City Tractors*

### **Twin City "60"**

Cylinders 7½ in. x 9 in.  
The most powerful Tractor in the World.

### **Twin City "40"**

Four Cylinders, 7½ in. x 9 in.  
The Original Twin City Tractor. The machine that has carried the Name of Twin City Tractors all over this Country, South America and Europe.

### **Twin City "25"**

Four Cylinders, 6 in. x 8 in.  
A remarkably powerful machine that equals many of the so-called thirties in draw bar pull.

### **Twin City "15"**

Four Cylinders, 4½ in. x 7 in.  
The last word in small tractor design.

*All Twin City Tractors use Kerosene, Gasoline or Distillate.*

*Write for Catalogs.*

## **MINNEAPOLIS STEEL & MACHINERY CO. OF CANADA, Ltd.**

REGINA - SASK.



### As I See It Today

HAVE spent a month traveling in the West looking at the wheat crops, or for that matter, the crops of all kind. It is impossible to do this without having a number of things brought home very forcibly.

The present season has been, in many respects, an abnormal one, and in some districts even the very best farming has to some extent failed. The most scientific farming that can be practised is no protection against hail for example, neither will it wholly take the place of rain or heat to germinate the seed when it is planted, but there is no form of damage to which crops in the Canadian West is subject, with the single exception of hail, which scientific farming can not, to some extent, lessen, if it does not wholly prevent it.

As I see it today, the great bug bear of the Canadian West is the large area inadequately farmed. The man with an equipment suitable to 320 acres is nine times out of ten trying to farm 600 acres if not 1,000, with the result that there is an enormous amount of late seeding and thousands of acres in serious jeopardy from frost. Without any doubt, the province of Saskatchewan is the biggest sinner in this respect. Large areas have become a positive obsession. There is much talk of mixed farming and there is no doubt an increase in the number of those who are going in for this form of agriculture, but the progress along this line is very slow.

Of course, the getting back into stock is not an easy matter nor can it be done at once, but getting the stock is not the whole of mixed farming. Rotation of crops is just as much a part of mixed farming. Rotation of hogs, sheep and cattle and this is a part of mixed farming which can be begun at any time, with not only no additional expense but with an actual saving of initial outlay, and yet I do not think it is any exaggeration to say that fully one quarter of the wheat crop of Saskatchewan was this year put in on stubble. In some cases this method of cultivation, or lack of it, has produced not too bad a crop, but in the vast majority of cases, especially south

of the main line of the C.P.R., the stand is thin and short, the heads poor and often inadequately filled.

I have been on farms where whole half sections stubbled in this way, and are producing crops that will barely pay for cutting and threshing. The time and money spent on discing in 320 acres would have been sufficient to at least thoroughly spring plow, horrow and pack 150, and from that amount the man would have stood a good chance to reap a 20 bushel crop, if not more, while on his 320 acres of stubble crop, with its additional cost for cutting and threshing, he will probably not get more than 10 or 12 bushels and in a good many cases not even that. Had he put in the 150 acres, the remaining 170 could have been well summer-fallowed and ready for the next year. He would have saved a lot of good seed, and his 3,000 bushels of better quality of grain would bring him a higher price.

One or two of the best crops I have seen in my trip were in on spring plowing, such as I have described, and moreover, these crops were ripe and ready to cut by the 12th of August. Indeed, one of them was partially cut on the 10th of August.

Of course, the farmers who did this spring plowing would have greatly preferred to do it last fall, but weather conditions were such as to make this impossible.

It is not pleasant to single out any particular district or line of railway, but I cannot help commenting on conditions from Melita in Manitoba to Bienfait in Saskatchewan. Unless it should happen to be the Swan River Valley, I do not think there is any portion of the Canadian West blessed with more ideal conditions for mixed farming. The water is splendid and there is abundance of it; there are well sheltered valleys in which stock could be wintered in the open at little or no expense. The soil is good and easily cultivated. I had not been over this line for two years and was struck with the general air of lassitude and deadness of the towns. I had a long talk with an implement man who resides in one of the towns and who is familiar with the whole territory. I said to him, "What is the matter with this country anyway?" And

he replied instantly, "Too large farms and too little equipment, too much money in binders and too little in hogs." He then went on to give me instance after instance of the men who had come in there with little capital, but who from the first had gone in for a few cattle, hogs, sheep or horses and who had farmed with a regular rotation of crops. These men were wealthy, able to pay cash and were in a number of instances loaning money to their neighbors who had persistently grown wheat. He called my attention especially to the success of men who had begun with perhaps 25 or 30 sheep and had increased their number so as to retain from 150 to 200 sheep on their land each year, to eat down the summer-fallow and later fatten on the stubble. If it had not been that these men were able to show chapter and verse for their profits it would sound almost like a fairy tale.

Jumping to northern Saskatchewan, I had a long talk with Mr. Dunlop of Yorkton, a pioneer who went through all the heart-breaking attempts at wheat growing of 1888, 1889 and 1890. Of course, Yorkton in these days is very wisely devoting very much attention to oats, and by the way, it would be well if newer sections along the same line were doing likewise, instead of wasting their time on large areas of wheat which are far too often caught with the frost. I noted that Mr. Dunlop had wheat which was fully two weeks ahead of almost any of his neighbors and I asked him how he did it. He told me that after one or two experiences of frozen wheat he had determined that there was some way of growing wheat without getting it frozen, and while he made oats his principle crop, he carefully experimented with wheat and for many years now his method has been to plant wheat only on summer-fallow. He plows his summer-fallow early in June and keeps it well worked up and cultivated until the first week in July when he seeds it to a soiling crop, probably a mixture of wheat, oats and barley, and as soon as it is well above ground he turns on a bunch of cattle and lets them eat it off at their leisure. As soon as it is thawed out in the spring he puts on the disc harrows,

works it up, watches for the psychological moment and puts in his seed. With this method he has never had frozen wheat. This year he had a splendid field of Marquis as well as some very good Red Fyfe.

Alberta has been doing some very foolish farming, but she seems to be coming to her senses more rapidly in this respect than Saskatchewan. Perhaps the raps over her fingers have been sharper.

Southern Alberta's pet obsession in the past few years has been to grow winter wheat and quite frequently she has been trying to grow it on land which the good Lord never intended for anything but a cattle range. Now, the farmers of southern Alberta having lost many thousands of dollars, and at least four years of time are awakening to the fact that while there are places in Southern Alberta, where as fine winter wheat can be grown as can be produced anywhere in the world, that country as a whole is not suitable to it. Forty per cent of the total area seeded in the August of 1912 was winter killed, and a good deal of the balance fell before the onslaughts of cut worms and eel worms. The latter is a new form of pest in the West, and one of the Department men from Ottawa is busy making a study of it. As although its ravages so far have been mainly in the winter wheat, it has also to some extent attacked the spring wheat. This year Southern Alberta is seeding mighty little winter wheat, but she has a fully 30 per cent increase in her summer-fallowed land. All the good crops in Southern Alberta, south of the Crow's Nest Pass of the C.P.R., are on summer-fallow this year. North of the main line of the C.P.R. between Calgary and Edmonton mixed farming has always been practiced, and it is no exaggeration to say that this is individually the wealthiest farming district in Alberta. Southern Alberta has taken a leaf out of their book and is producing hogs extensively. How extensively hogs are being produced in Alberta may be gathered from the fact that already one hundred and forty thousand hogs have been moved over the railroads in this province this year.

Continued on page 45





## **Another Valuable Improvement Added to the :: Wonderful Avery "Light-Weight" Tractors ::**

### **Avery "Never-Slip" Spiral Lugs**

With a set of these "Never-Slip" lugs on each rear wheel, an Avery Tractor will travel practically anywhere you can go with horses or mules. They are just the thing for Sand or Soft Ground.

They prevent slipping of the wheels. They keep themselves clean. They do not fill up like other lugs. They cut in and pull out without tearing up the ground. Because of their spiral shape, they roll along over hard roads with less jarring than with ordinary lugs.

Remember too that because Avery Tractors are "Light-Weight" they don't pack the ground to injure the crop and they don't waste fuel or power moving useless dead weight. They are the Lightest Weight Tractors built considering their power and strength of construction.

There's also another big point about Avery Tractors that means a lot to the man who gets one—they are the Simplest Tractors built. They have the least gearing and shafting of any Tractors—no fan, no water pump, no fuel pump, only one clutch. Easy to handle and keep in running order.

Just think what it means to have an Outfit like this—a "Light-Weight" Simple Tractor, with "Never-Slip" Lugs, "Self-Guide" Attachment and a "Self-Lift" Plow. You get all these things only in an Avery "One-Man" Outfit. Write for Complete Avery "Light-Weight" Tractor and "Self-Lift" Plow catalog and new "Never-Slip" Lug Circular. Also see them at the Fairs or at our Branch Houses or Jobbers. Address.

## **AVERY COMPANY, 675 Iowa Street, Peoria, Illinois**

### **Canadian Avery Co., Ltd., Winnipeg, Regina, Calgary.**

**WESTERN CANADIAN DISTRIBUTORS.**



# CASE VICTORY at WINNIPEG

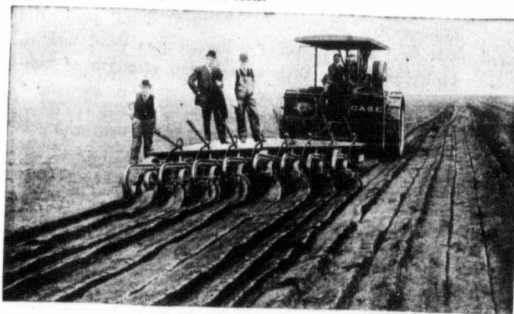
## It's Significance To You Who Farm With Tractors and Gang Plows

In last month's issue of this paper our eight-page ad chronicled a most notable



feat. The winning by Case of nine out of ten gold medals in the 1913 Winnipeg Contest was, perhaps, the most extensive piece of farm paper advertising that has ever been done. What was it all about? Was it only a sensational bit of advertising? Would some call it extravagant?

To the progressive, to the "live" user of farm power, to the farmer with good business sense, these pages contained a world of valuable information, because they stand for the results of tests that tell him real truths. What he finds out from Winnipeg, he knows is reliable. To every prospective buyer of steam, gas or oil tractor or tractor gang plow these tables, comparisons of costs and figures, are alive with data of value, because they give absolutely accurate information based on wholly reliable tests.



The winning of nine out of ten gold medals by Case was an interesting, a phenomenal record, but what does it mean to the man in Montana, to the man in Texas or any other state? Simply this. The tests in this contest are the only scientific, official, unbiased examination of farm power in America. Its results, therefore, give to the buyers informa-

tion founded not on personal prejudice, for or against, but on close study, with careful conclusions from tests accurately made of just those things that the user of farm power wants to know. The judges are men respected for their ability in the United States and Canada. They give to the world authentic reports accepted the world over as standard.

You appreciate the value of a third party's substantiation of a statement of your own. You may be absolutely confident in your own mind that you are right, but when a third party stands by your contentions, the strength of your belief is more than doubled; it is practically established. Thus, to the users of farm power the Winnipeg results stand as the reliable opinion of the third party. The awarding to Case nine out of ten gold medals for the performances and tests of its steam, gas and oil tractors and tractor gang plows, is convincing proof of the superiority of Case products, because the tests from which these medals of superiority were awarded are just the same as are found on your farm. Maximum and economy brake tests show what an engine will do at the belt, the plowing test, what it will do at the draw bar, and the design and construction tests give the details of mechan-



ical value of your tractor. Vitally important, of course, is the fact that these engines are stock engines; that what they did at Winnipeg they will do for you.

What kind of power do you want?

"Steam"?

With steam tractors, from 30 H. P. to 110, Case meets every demand. There is no power job for which you can not get a Case steam tractor that will exactly fill your needs. The 110 not only won the gold medal this year in Winnipeg, but for four years it has been entered and four years it has won the Gold Medal and for four years it has been awarded the Grand Sweepstakes Honors. In 1912 it made a record of 3 01 pounds of coal per brake horse power hour, a phenomenal score then. In 1913 it broke this, it's own world's record, by developing the same power with 2.65 pounds of coal. What it did at Winnipeg, it will do for you under the same circumstances. The other two Case entries, the 80 and the 40 won the gold medals in their classes, giving Case all the gold medals awarded to steam tractors. The

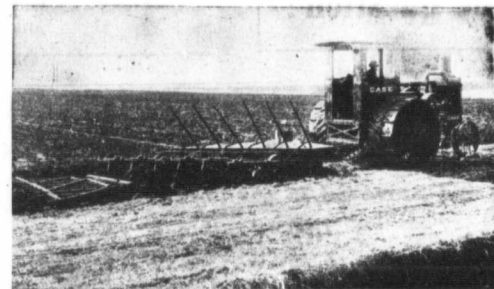
# CASE VICTORY at WINNIPEG

## With Tractors and Gang Plows

performances of all Case steam engines are as notable in contests and in the fields as those of the 110, the 80 and the 40.

"Oil"?

In this year's contest, the Case 60 H. P. Oil Tractor won a gold medal in its class. It has made a strong record for points scored in accessibility, ease of operation and protection of working parts. Durability, simplicity, reliability typify Case construction in every detail. You, who buy tractors are interested not only in fuel economy, but also in general design and construction. The tractor showing only low fuel consumption, but lacking



and produced 41 per cent more draw bar horse power for the same amount of fuel than its competitor. It cost our competitor 42 per cent more to plow an acre than Case. You, who farm with horses cannot afford to postpone a close investigation of these tractors. The seventh gold medal for tractors was awarded to the Case 25 gas tractor. Whatever your problems in power, Case has the solution. All Case tractors are built with the same sterling qualities of skillful design by recognized authorities in the steam and gas tractor fields (this saves you time, because they are designed with the utmost consideration for your convenience), honest construction in one of the world's greatest factories where producing costs are at a minimum (this saves you money), sold with the same genuine guarantee (this saves you worry). All these things go to make the contented buyer, thus the profitable industry. For seventy-one years Case has made

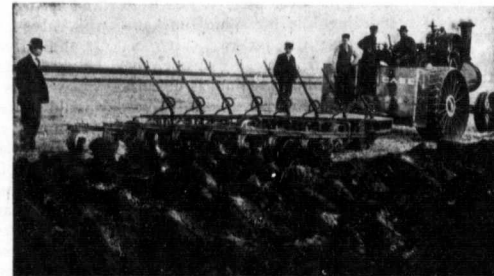


these other qualities, will prove an expensive investment. Simplicity, accessibility and rigidity combined with economy, mark the characteristics of the Case 60, and go to make the perfect tractor. The winning of the gold medal by the 60 with its notable score of 79.15 points on design and construction, out of a possible 100, is a just recognition of those features which have always characterized Case machinery.

The Case 40 Gas and Oil Tractor, burning kerosene, also won the gold medal in its class, scoring 42 per cent more points than its nearest competitor, and it cost its nearest competitor 32 per cent more to plow an acre than Case on kerosene. The lower your operating costs the greater your profits.

"Gasoline"?

The Case 40 Gas and Oil Tractor burning gasoline, and winning the gold medal, developed 20 per cent more draw bar pull than its nearest competitor,



wholly reliable machinery. Our reputation is in every product turned out from our shops, it is your guarantee of safety.

May we send you our catalog describing more in detail our profit producing power for farms of every size?

### J. I. CASE THRESHING MACHINE COMPANY INC.

CANADIAN BRANCHES, TORONTO, WINNIPEG

741-791 STATE ST. RACINE, WIS. U. S. A.  
SASKATOON, REGINA & CALGARY



# KOAL!

To buy or not to buy  
— and where? —  
that is the question!

THRESHERMEN and Steam Plow Operators can secure their requirements of genuine Youghiogheny Steam Coal direct from the miners as follows:

Youghiogheny Run of Pile, \$3.78 f.o.b. Fort William, Port Arthur and Duluth  
Youghiogheny Screened Lump \$4.08 " " "

N.B. Screened Coal cannot be shipped to C.N.R. points as the Canadian Northern Dock Co. will not screen soft coal. We recommend run of pile to all of our customers as best value in relation to price.

Remember our Coal is PITTSBURGH YOUGHIOGHENY the most famous Steam Coal in the world.

## ANTHRACITE

The Celebrated "PITTSTON"

Egg and Stove	\$6.75	per ton	f.o.b.	Fort William, Port Arthur and Duluth
Nut	7.00	" " " "	" " "	" " "
Pea	3.75	" " " "	" " "	" " "

NOTE—Minimum Cars 20 tons, maximum 40 tons, terms cash with order or C.O.D.

## PITTSBURGH COAL COMPANY LIMITED

320 MAIN STREET, WINNIPEG, CANADA.

### Course of Gas Engineering

Continued from page 90

very important if the best running is desired. The foregoing method is not the only means of timing the valve. Changing the length of the exhaust valve rod or a change of some part of the tappet-arm would also affect the timing, as also would the changing of the length of the valve stem. An increase in length of valve stem, with the same movement of the tappet-arm would cause the valve to open sooner, and on the other hand, a shorter valve stem would cause it to open later. The method to employ in timing the exhaust valve depends so much on the design of the machine that it will not be taken up in detail here, and must be judged by the operator.

The exhaust valve should properly seat in order to hold the compression. The heat of the exhaust causes the valve parts to become very hot and as they are subjected to more or less of a pound or strain, they often become unsmooth, thus giving poor seating. The heat may warp the valve stems causing the palate to fit snugly only on one side; or the glowing carbon from the cylinder may lodge on the valve or its seat. Whatever causes poor seating, it should be overcome. Regrinding the valve may be all that is necessary.

Valve stems sometimes become bent and fit so snugly in the valve guide that there is too much resistance there to work freely. They may become so badly bent that they will stick and cause trouble. Lack of lubricating oil on the valve stem plus deposits may cause them to stick. It is not an uncommon thing to turn an engine over after it has been standing idle for some time and find that the intake valve is hindered from closing or opening.

The cooling medium is circulated as close as possible to valves, especially the exhaust valve, to keep them from expanding and sticking. This is noticed in Fig. 1, as the cylinder head is so cast that a water jacket is formed about the valve. On some engines there is no water jacket in the cylinder head and trouble will no doubt be experienced with the valves becoming very hot.

Make sure that the lock nut does not come off the valve and let it go into the cylinder, as a valve in the cylinder of a running engine can do a great deal of harm in a small time. Sometimes a valve breaks and a part goes in the cylinder. This can not be hindered by the operator, yet is the cause of some trouble.

### Valve Grinding

Reseating or grinding of the fuel, inlet, and exhaust valves are

often very necessary; especially is this true of the exhaust valves, since they become very hot and easily become rough. The design of the engine will determine a great deal as to how one is to proceed. In most cases—especially with stationary engines—it will be necessary to remove the cylinder head, take the lock nuts and spring from the stem, lift out the valve and examine the seat. If the valve does not show a bright bearing all around, the valve needs grinding, and you should proceed as follows:—

A mixture of fine emery and oil should be placed on the valve seat, which is placed back into its working position. With the aid of a brace and a screw driver attachment revolve the palate first in one direction and then in the other, lifting occasionally from the seat. Take out the valve when it turns without any apparent grinding friction, examine it, and if the bearing is not perfectly bright, apply more oil and emery and repeat. After the operation is completed, the valve and seat should be thoroughly cleansed with gasoline to free it from all emery that might remain therein.

With this done the valve can be replaced to its working position, and should be so perfectly seated that it will not allow an escape of gases when the valve is closed. Occasionally the fuel and in-

take valve needs reseating, and when necessary these may be ground in much the same way, using great care not to allow any emery to remain, later to get into the cylinder, as the cutting effect may be serious.

Many tractors are so constructed that valve grinding is a difficult task. Like a large number of stationary engines, it is necessary to remove the cylinder head to grind the valves of some tractors. This is sometimes a difficult task, as more time is spent in getting the valves ready to grind than it takes to grind them. Fortunately, in many cases the valves of tractors which need grinding quite frequently can be removed quite easily. In one case by removing two nuts both the inlet and the exhaust valve may be ground with rapidity. Many manufacturers design their machine so that, by unscrewing a cap the valve can easily be lifted out, enabling the operator to reseat and replace the valves in a minimum time.

Valve grinding itself is not a difficult task after once being able to get at them. The high speed engine needs attention in this respect more frequently than does the slower running engine. The valves do, however, need a certain amount of reseating, which should be accomplished, or there will be a loss of compression which means a loss of power.



# "The Great Minneapolis Line"

POPULARITY

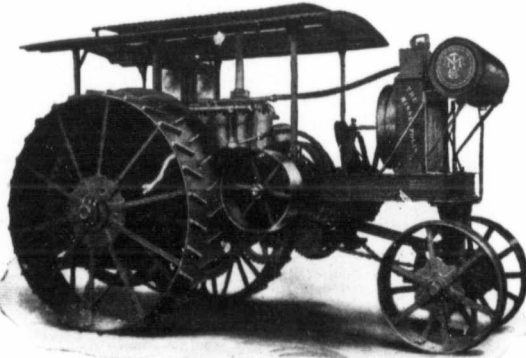
INCREASING



Delivering the Goods in Manitoba

The Minneapolis 25 h.p. Farm Motor using Gasoline has long since demonstrated its ability to develop Strong, Steady, Economical and Reliable power for all kinds of belt and traction work, and it affords us pleasure to announce the perfecting of a Kerosene attachment for this motor.

GASOLINE



KEROSENE

This attachment is not a makeshift merely to advertise, but is fully up to the Minneapolis standard of excellence and different from others in many ways.

We will be glad to explain the difference or demonstrate the superiority to you if interested.

Easy to Operate

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Reliable

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Why Delay Longer?

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DO IT NOW

A Fast Thresher -  
A Perfect Cleaner -  
It Saves the Grain

Ask any Owner  
Ask the Grain Buyer  
Ask the Farmer

## The Minneapolis Threshing Machine Co.

West Minneapolis (Hopkins P.O.), Minnesota, U.S.A.

Builders of High Grade Gas Tractors, Steam Tractors, Separators, Engine Gang Plows, etc.

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PRACTICAL TALKS TO THRESHERMEN

CONDUCTED BY PROFESSOR P. S. ROSE

Talk No. LXXII

Note.—The term "gas engine" in these lessons will be used indiscriminately in speaking about all internal combustion engines.

HEAT.—It is the heat of the fuel that does the work. When the fuel burns, the gases in the cylinder get very hot and have a tendency to expand, but since they cannot expand at once the pressure increases until in the ordinary gas engine cylinder it reaches from two hundred to three hundred pounds to the square inch. It is this pressure that propels the piston. In order to gain some idea of the magnitude of this force let us consider a ten inch piston with an initial pressure at the beginning of the stroke of 220 pounds per square inch. The area of the piston is 78.54 square inches, which multiplied by 220 gives a total of 17,278.8 pounds, or more than eight tons. Towards the end of the stroke the pressure drops to only twenty-five or thirty pounds to the square inch or to a total on the piston of only about one ton. These figures give some idea of the enormous force that drives a gas engine piston and when taken in connection with the speed at which the piston travels accounts for the engine's power. The average pressure per square inch on a gasoline engine piston is approximately ninety pounds, while the average piston speed of a tractor is about six hundred feet a minute.

Relation between Work and Heat. Heat causes the engine to do work. The engine turns the heat into work; hence a definite relation exists between the two. It has been definitely determined by careful experiment that one heat unit is equal to 778 foot pounds. A heat unit is the amount of heat required to heat one pound of water from 62 to 63 degrees Fahrenheit. Heat in this sense is different from temperature. Temperature is a measure of the intensity of heat but has nothing to do with quantity. To heat one pound of water, as above, through one degree, requires one heat unit, but to heat ten pounds requires ten heat units. The temperature of the larger quantity of water is just the same as of the smaller, but the quantity of heat is ten times as great.

It is frequently stated that a pound of gasoline contains 18,500 B.t.u., meaning British thermal units. This merely signifies that the pound of gasoline, if burned, will set free enough heat to raise 18,500 pounds of water through one degree Fahrenheit. So with all other kinds of fuel, the heat units specified show the heating

capacity of the fuel when completely burned. It does not follow, however, that because a fuel has a high heat or thermal value that it will be fully utilized in producing power. As a matter of fact, few engines turn more than a small percentage of the heat of the fuel to useful account. Ordinary gasoline engines use from twelve to twenty per cent of the fuel and waste the rest. Even the best gasoline engines rarely exceed twenty-five per cent efficiency. Some of the Diesel engines, which are the most economical of all gas engines, are said to have shown as high as forty per cent efficiency.

Steam engines and boilers utilizing coal are very inefficient, utilizing only from three to ten per

cent of the total heat except in the most elaborate plants and even there twenty to twenty-two per cent is an exceptional performance.

Work.—The statement was made in the last lesson that work, as we understand the term in mechanics, is the product of two factors, force and distance, just as area is the product of length and breadth. We also showed that work can be represented by an area and that the familiar indicator diagram is a diagram of the work accomplished in the engine cylinder during a single stroke of the piston. Work is measured in a number of units such as the foot pound, watt hour, etc., but the foot pound is the fundamental unit and therefore, before we can fully understand the meaning of the terms work or horse power, we must learn exactly what the term "foot pound" means. If one pound be lifted one foot high, one foot pound of work will be accomplished; we have exerted a force of one pound intensity through a distance of one foot. The moving of a weight of one pound along the floor for a distance of one foot does not necessarily represent a foot pound of work; in general, it

will be a good deal less, because the force required to move the pound weight does not generally amount to a pound. The work required to move a load over any surface depends upon the force required, as shown by a spring balance or dynamometer, and the distance traversed. For example, if it requires a force of one hundred twenty pounds to move a wagon on a good hard level road, and the wagon is moved twenty feet, there will be twenty-four hundred foot pounds of work done, no matter what the wagon and its load weighs.

The time required to travel the twenty feet does not enter into the problem at all; there will be the same number of foot pounds of work performed whether the time taken be ten seconds or thirty days. The power required, on the other hand, depends upon the time element as well as upon force and distance; the shorter the time in which any piece of work is done the greater will be the power required.

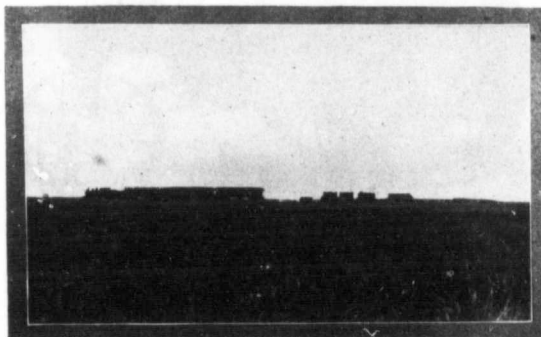
The term power as applied in mechanics is not generally well understood. It is confused with the popular definition of power which is ability to do work. In mechanics power is defined as "the rate at which mechanical energy is exerted or mechanical work is performed." It takes into account the time element. For example, if one engine can move one hundred foot pounds in a second while another engine can do the same work in half a second the engine which does the work in half the time exerts twice the power.

The term horse power is defined as the accomplishment of thirty-three thousand pounds of work in one minute. The time here is all important, and just as important as the work done. This definition of horse power is purely mathematical. It is the mathematical unit adopted for measuring the power of steam engines, gas engines and water power generally. Electrical machines are sometimes measured by the foot pound but more often by the kilowatt, which is another unit for measuring power.

Smith: "I lost my identity for two whole weeks this summer."

Jones: "How did it happen?"

Smith: "Spent my Easter among my wife's relations, where I was simply known as Anna's husband."



The way the Spectators were brought to the 1913 Motor Contest.

# When the gang draws pay for loafing



**T**HE foreman who is studying for efficiency must see the waste in using Belts that go wrong—tying up the whole outfit. He must see the waste of precious time—which is money. He must also see the loss entailed by a gang being thrown off work, but not off the pay roll.

A cheap belt piles up a bill of expense that may seem purely incidental—but which is directly attributable to poor belting.

A Goodyear Belt will not run slack—it will not stretch. The seam cannot open. It is sealed with pure rubber fused into the cover. The splicing is very carefully made. It will not pull apart.

In the making of Goodyear belting, the many plies of hard-fibre cotton duck—each thoroughly permeated with rubber “friction”—are compressed into a solid combination of strength and grip.

The Goodyear “curing” or vulcanizing is done while the Belt is stretched to its utmost limit by special machinery. All tendency to stretch in service is taken away. That is why Goodyear Belts do not stretch in service.

The toughness of carefully tested cotton fibre inseparably united under tremendous pressure with high-grade rubber friction, makes a pliable Belt of great strength. One that cannot pull apart or split.

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Goodyear Thresher Belts grip the pulleys. They convey all the power because they do not slip. The outer surface of rubber holds tenaciously to the pulley. The belt is pliable under any weather conditions.

The rubber covering protects the inner fabric of the Belt from rain, oil, etc., which would set up rot and decay.

Neither heat nor cold, rain or shine, can affect the pliability and effectiveness of our Thresher Belts. They remain pliable under the hardest service. Repeat orders from Threshermen, and big increases in our Belting sales, prove that they are satisfying the demands of experienced men.

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Our Free Book on “How to Choose a Belt” would interest you. A card to our nearest branch will bring you one.

Branches at—Victoria, Vancouver, Calgary, Edmonton, Regina, Winnipeg, Hamilton, Montreal, St. John.

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The  
**Thresherman's Question  
 Drawer**

ANSWERS TO CORRESPONDENTS

**Q. A.C.G.** I have a 9 x 10 simple traction engine, and am thinking of putting compression cups on the pillow blocks. Is that a good system of lubrication?

The oil pump on my engine fills with water, and the pump will not feed any oil. What is the trouble and what is the remedy?

...A...Compression boilers are satisfactory for ordinary bearings, but we do not know whether they would work very well on top of the boiler or not, because the heat of the boiler would melt the grease, and probably feed the oil too fast. You would certainly have to be careful in adjusting the oil feed. A good many people imagine the pillow block bearings are too hot, but as a matter of fact they are running all right. A boiler under a hundred and forty or fifty pounds pressure is very hot, and naturally the bearings will receive a great deal of heat therefrom. When running under the best conditions the pillow block bearings of a steam traction engine are always uncomfortably hot. However, if they do not smoke they need cause no alarm.

The reason the oil pumps filled with water is the check valve in the delivery line does not hold. It may be worn a little, or there may be some dirt in the valve that prevents it from seating properly. An examination of the check valve ought to reveal the cause of the trouble.

**Q. A.H.G.** We have just examined a 12-horse power gas-line engine, in which the wrist pin worked to one side, and made a groove in the cylinder about one-eighth of an inch deep the full length of the stroke. Do you know of any preparation that could be placed in the groove that will harden and remain in place? Will it be necessary for the owner to replace this cylinder with a new one?

**A.** We know of no preparation which can be used successfully to repair a grooved cylinder. Smooth-on and other iron cements are suitable for repairing sand holes, but they are not suited for filling up a groove. We suggest that you measure the thickness of the cylinder walls, and determine if it is possible to rebore the cylinder and fit a new piston and rings. This is the

usual method of repairing a scored cylinder. It may, however, be found cheaper to purchase a new cylinder.

**Q. P.B.D.** Why doesn't my 12-horse power Case engine pull as well with a low pressure of steam as other engines? Is it because the cylinder is larger?

**A.** If your 12-horse Case engine does not pull as well as other engines it is perhaps because there is too much friction at some point either in the cylinder, bearings or gearing which consume a good deal of power. We suggest that you examine the engine carefully to determine if such a condition exists. The fact that your engine is fitted with a large cylinder ought to make it much stronger and better able to pull loads even at low pressure.

**Q. L.P.** I have a 12-horse power Case compound engine that needs to have the main shaft bearing rebabbited. Can you explain through the columns of your paper how to do a job of this kind? Also tell me what to do with the hand holes. It seems as though the sides of the boiler are sprung out, and the hand hole plates do not fit tightly. Could I straighten the sheets with a hammer without damaging the boiler sheet?

**A.** The first difficulty in rebabbiting the main shaft boxes is in placing the shaft exactly right, so that the Woolf valve gear will act properly. We suggest that you write the Case Company for the necessary measurements, showing how to place the shaft, then you can go ahead and rebabbit the box without much trouble, once you have the shaft placed in the proper position. In lining up the shaft you will find it necessary to take out the piston, crosshead and connecting rod, and then stretch a fine wire through the centre of the cylinder. From this you can line in the main shaft at exactly right angles with the centre line of the cylinder. Then, by means of a plumb line, and from measurements taken when crank pin stands vertical at the top of its throw, and again at the bottom, determine when the shaft is set level. Before beginning this work you will find it necessary to place

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 will swell your Bank Deposits**

**WHY?**

Because they will cut your oil bills in two, and will properly lubricate your engine at all times doing away with hot boxes, burned out journals and dry and squeaky cylinders, which are very costly to the man with an engine in the field.

See that your engine is equipped with a Madison Kipp Oil Pump before starting out on this season's threshing and you will return a happier and a richer man. Get our Catalog.

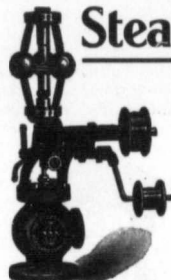


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 MADISON, WIS.

Canadian Agent:  
**THE MAYTAG CO., Winnipeg, Man.**

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**Steam or Gas Tractors**



Equipped with

**PICKERING**  
 THE GOVERNOR WITHOUT JOINTS

give greatest efficiency

FITTED TO EVERY BUILD OF  
 ENGINE

Patent Ball Ranger Speed Changer Supplied on all Genuine Pickering Governors. Will increase speed 50% or more.

**The Pickering Governor Co.**

PORTLAND

CONN., U.S.A.

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**Sawyer-Massey Co.**

**NOT**

**IN A COMBINE!**

# The Fate of the THRESHING Hangs by the Belt

Get the very best that natural products and human skill can make. The best is far cheaper than the next best or the lowest priced belt you can buy. You have got THE BEST and are assured against breakages and slipping if you get either a



## LION BRAND Rubber Belt

or a



## MAPLE LEAF Endless Thresher Belt

Any Thresher Company can supply you with our belts. In fact the majority use them exclusively. Don't accept a substitute, you will regret it just when you most need belt service. If you have any difficulty in getting our goods, write direct to the

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**WINNIPEG Not in any Trust or Combine. CALGARY**

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the engine on level floor. After the main shaft is squared up and placed in the right position, you are ready to fit the liners between the halves of the boxes. These liners should touch the shaft, and have "V" notches cut on the shaft side, so that when babbitt is poured in the upper half of the box it will run through to the lower half through the notches. At each end of the box place a paste-board ring around the shaft, to prevent the babbitt from running out, and hold this in place with moist clay. You will find it a good idea to warm up the box with a blow torch before pouring the babbitt. After the pouring is done you can separate the two halves of the box by means of a cold chisel, then take the shaft out and dress the edges of the babbitt back from the shaft on both sides about three-eighths of an inch, and also cut the oil grooves, and drill oil holes in the upper half of the box. You should also scrape both halves of the box to remove any dress, and to give the shaft an even bearing all along.

The boiler plate around the hand holes can be straightened up by means of a soft-faced hammer, such as lead or copper, without any damage to the plate.

Q. C.W.H. I would like some information about lining and babbitting an engine.

1. After you have the old babbit out of the main shaft boxes, your plumb line centred through the cylinder, your plumb line dropped across the disc wheel, the engine is leveled. Now, how will you place line shaft exactly at the right place in the boxes after you have it at exact right angle to cylinder bore and guides? Is there any correct method for dividing it so it will be at the original distance in the eye or straps of the connecting rod? For example, take the Case engine side crank type. It is simple enough to get the engine on crank end dead centre, and your line through cylinder to come exactly through guides across the end of the main shaft in disc wheel and across centre of crank pin, but is there a rule to get the exact distance the other way? Moving the shaft closer or farther from the cylinder affects the travel of the valve, and I have been, on one engine in particular, unable to adjust the travel of the valve by the transmission or reach rod. The pedestal on the reverse was neither raised nor lowered. The valve was correct before lining, but since then the tram will drop in

the punch mark on the valve stem at exactly 4 3-16, but on the opposite end it misses 1-16 of an inch, engine being exactly on 8 x 11 patch on right hand side to punch mark on disc wheel.

2. In putting a patch in fire box, would cutting away the inside sheet under the patch to allow for water to circulate, be sufficient by drilling three or four holes through sheet, or should the old sheet be cut away. This is a 9 x 11 patch on right hand side of water leg in fire box.

3. In drilling holes in patch for patch bolts, say half-inch bolts, what size drill should be used? What size for nine-sixteenths bolts and seven-eighths bolts?

4. Should holes in patch be counter sunk to fit bevel of bolt head, and should the holes in patch be threaded?

A. 1. The distance from the centre line of the main shaft to the cylinder is one of the important measurements on all radial gear engines. This distance varies with different styles of Case engines and our suggestion is that you write to the Case Company, giving the size and number of your engine, and ask them for all of the measurements necessary for the reassembling of the valve gear and for locating the

main shaft. Their drawings for this engine should, and doubtless do, show all those dimensions. We have never obtained copy of all these drawings, and so are unable to tell you just what they are. As a general thing, when the Case engine is on exact dead centre the moving of the reverse lever will not move the valve. This indicates that the eccentric is set high and, of course, it also indicates that the main shaft is in the correct position with reference to the pedestal and guides for the eccentric arm. In some of these engines the centre of the guides should be directly vertical over the centre line of the shaft, and in others there is an offset of one inch. We do not know what style of engine you have, and consequently are unable to advise you, therefore the best we can do is to refer you to the makers.

2. In our estimation it would be better to cut away the injured portion of the sheet entirely rather than depend upon cutting holes in the old sheet. The double thickness of metal which would be left would be liable to cause the patch to overheat, especially where it is exposed to such high temperature as it is in the fire box.

3. We would advise drilling holes

a thirty-second of an inch larger than the bolts through the outer patch. The size of tap drill for half inch is  $\frac{3}{8}$ , for 9-16 is 7-16, and for  $\frac{7}{8}$  holes use 23-32.

4. The holes in the patch should not be threaded, and they should be counter sunk to fit the bevel of the bolt heads.

Q

Q. C.M.F. We are running a 32 x 54 separator with geared wind stacker, self feeder and weigher. This separator was claimed to run as easily as the best. We also have an 8 $\frac{1}{4}$  x 10 threshing engine with thirty-six inch band wheel, which runs at 275 r.p.m. The pop valve is set at one hundred and thirty pounds. There are six and fourteen-hundredths square feet of grate surface, and one hundred and thirty square feet of heating surface. This engine was recommended to pull this separator and do it with ease. We find the engine burned from twenty-two hundred to twenty-four hundred pounds of coal every full day throughout the season while other engines in the neighborhood doing the same work used from six hundred to seven hundred pounds less coal and one-third less water. Two good engineers handled the engine during the season, and they both used about the same amount of coal and water. What is the matter with the engine? The people from whom we got it claimed that it had been thoroughly overhauled and rebuilt. What size of an engine would you recommend to run the above size separator economically?

A. There is no question that the engine uses altogether too much coal and water, but it is not an easy matter to tell why without making a personal examination. It may be that the boiler is badly scaled inside, in which case, of course, it would require an excessive amount of fuel to make steam, or the valve may be set badly and thus require more steam than is ordinarily needed for an engine of this size. We have encountered just such conditions as you describe, caused in one case by a badly set valve and in another by a dirty boiler. Your engine is a trifle small for the separator, provided the straw is heavy or a little damp. We would recommend an 18 or 20 H.P. engine to do the work most economically.

Q

Q. M.F.N. What is the horse power of a 7 $\frac{1}{2}$  x 9 engine? Boiler pressure on hundred and forty pounds and speed 300 revolutions per minute.

A. If we assume that the pressure in the cylinder is fifty per cent of the boiler pressure and apply the usual formula for indi-

cated horse power, we obtain forty-two as the result. We judge your engine is rate at about 15 horse power, but it will develop 42 horse power without any great amount of trouble.

Q

Q. P.F. The crosshead box of the connecting rod on my engine has some side play and I should like to know how to remedy it. It is a brass box and heats considerably whether I have it loose or tight. The box is set up with only one wedge. Kindly give me full directions as I am a beginner and have had no experience.

A. You do not state what make of engine you have nor whether it is a new engine or one that has been used for several years. If an old engine, we should say immediately that the main shaft is out of line with the piston and crosshead. Very likely the pull of the drive belt has pulled the shaft forward until the angle between the shaft and the center line of the engine is no longer square. This would cause side play of the connecting rod at the crosshead and would be an explanation of the heating of the boxes. The only way to remedy a difficulty of this kind with babbitted boxes is to realign the shaft and rebabbit the boxes. If your engine is provided with brass quarter boxes, all that would be necessary is to realign the main shaft by setting the fly end wheel further back. You can easily determine if the main shaft is out of line by stretching a hard twisted line like a fish line exactly through the center of the cylinder and center of the guides and fastening it to some secure place beyond the main shaft. The line should cross the crank pin exactly midway between its two shoulders, first when the crank pin is at its extreme forward position and again when it is rotated to its extreme back position. It will require very careful measurement to stretch the line exactly right. You can do this best by centering it at the front end of the cylinder and where it goes through the stuffing box at the rear. Your measurements must be absolutely exact.

Q

Q. T.P. How is it when I took off the steam chest cover I found plenty of oil for the valve, but when I took the cylinder off I found the inside of the cylinder perfectly dry? The oil was supposed to be of good quality and I fed about three quarts a day with steam pressure at one hundred and fifty pounds. The oil was guaranteed 600 degrees fire test. I have been threshing for nine falls and have

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The GANDY Thresher Belt is the pioneer, stitched cotton-duck belt. It is positively water- and weather-proof; laughs at the sun's fiercest rays.

When it stretches, it stretches **uniformly**, keeping the edges true and straight. The

# GANDY Thresher Belt

is the choice of twenty thousand (20,000) American threshermen who want the best, and who **know** the best when they see it.

The GANDY Belt is so popular that countless imitators have been painting belts red and calling them "GANDY." To protect you in getting the right belt, we have painted one edge of the red GANDY belt **green**; so look for the red belt with the green edge.

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The Gandy Belting Co.

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New York Office---88-90 READE STREET

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## THRESHERMEN!

What is SCALE costing you?

# ECLIPSE



## BOILER ENAMEL

The Eclipse Boiler Enamel absolutely prevents formation of Boiler Scale in any water.

"Eclipse" is a purely vegetable preparation made from tropical plants which treats the iron on a new principle. It contains no mineral acid, soda lye or any injurious substance whatever, and may be used indefinitely without injury to the boilers or their fittings. "Eclipse" forms a film-like coating on the plates and tubes of boilers in which it is used. This coating is of such a slippery character that scale cannot adhere to it. Hence the solid particles in the water are deposited in the bottom of the boiler as a soft, slimy mud, which is readily blown out. The coating has no visible thickness and has nothing of an oily or greasy nature in its composition.

Send for our Booklet, free by mail.

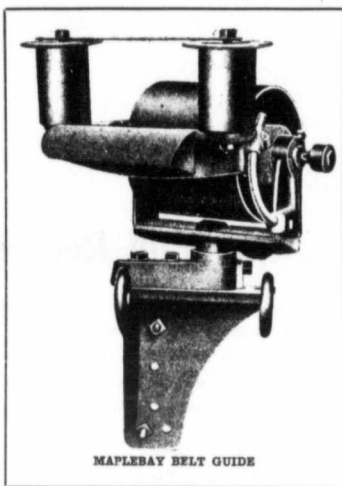
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SASKA THRESHER TANK



MAPLEBAY BELT GUIDE

**Built for WESTERN CANADA Threshermen  
In a WESTERN CANADA Factory.  
By men who know WESTERN CANADA  
Requirements**

**For Prices Delivered in WESTERN CANADA ANYWHERE**

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**SASKA MANUFACTURING COMPANY LTD.**

Saskatoon, Saskatchewan

OR

**Any Implement Dealer in WESTERN CANADA**

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never experienced anything like this.

A. In our opinion you are using an oil that is too heavy for steam engine work. It is too high a fire test. Steam engine cylinder oil for traction engine should be about 450 degrees fire test. The oil you are using contains too large a percentage of mineral oil. It would work better in a gasoline engine than in a steam engine. We have taken off the steam chest cover of a traction engine and found a pool of oil lying at the bottom of the steam chest but no lubrication in the cylinder, when a very heavy oil was used. We judge that this is the trouble in your case.

Q

Q. H.J.J. 1. What makes the valve gear on the small cylinder side of a Reeves engine clatter all the time? I have tightened all the boxes, but it does not seem to help it any.

2. How much lubricating oil should a Reeves engine have in a day of ten hours?

3. Which is considered the best separator, the Case or the Advance, for all kinds of grain, and which is the easiest of up-keep., that is, with belts and all moving parts.

A. 1. We can't tell you definitely where the trouble is but there is no question

if the valve gear clatters that there is lost motion at some of the joints. There are a great many joints in a Reeves valve motion and very little lost motion in one or two places is sure to make a racket. Possibly the trouble is with the cross-shaft which passes under the engine beds. We have seen this get quite loose and cause annoyance.

2. The amount of oil any engine should have depends upon the condition the engine is in, the load it carries and the kind of water used. Ordinarily ten to fifteen drops per minute are enough. This would require about two gallons of oil a day. Engines are often run with considerably less, but for rough traction work it often requires two gallons.

3. We never made any inquiry in regard to the comparative merits of different machines and can't answer this question.

Q

Q. J.J.N. I am running a 32 H.P. steam engine in plowing and have trouble with the flues leaking. The engine was run two seasons; in all about fifty-six days in threshing, and at the end of that time fourteen flues in the lower rows began to leak. I used the roller expander and then beaded them down tight and they held for about two weeks. On

the last day of threshing three flues started to leak again. I should like to know how to repair them. Shall I expand them and bead them while the boiler is dry or should it be done when the boiler is full of water? The seam around the fire box door on the lower side also sprung a leak. How shall I proceed to make it tight? I run the engine myself, and fire with coal and am very careful not to let any cold air in over the flues, and still they leak. What is the cause? The water we are using is quite strongly alkaline. Does that have anything to do with the trouble? From which end of the fire box should I take the draft when firing with coal? I have tried both the front door and the rear and seem to get better draft from the front. Would you advise using a fire brick arch in a coal burning boiler of this size?

A. You did about the only thing that could be done with the flues—that was to expand them and bead them. This can be done two or three times if you are very careful and after that the only remedy is to take out the old flues and put in new ones. Alkaline water is very hard on boiler flues and when an engine does heavy work, as in plowing, there is bound to be more or less trouble. This is the principal objection to the use of a steam tractor in an

alkaline country. In some parts the alkaline water is so bad that a set of flues will not last more than a single season. We suggest that you keep down the percentage of alkali in water by blowing out a part of the water each day. You can take out some of the water at noon and put in new and part at night. You understand, of course, that the alkali salts do not evaporate and pass out with the steam but remain in the boiler. Consequently, if you do not wash out the boiler frequently and blow out some of the water each day, the alkali will accumulate in the boiler and add to your troubles. We are inclined to think with a large boiler such as you are using, that a fire brick arch would be advisable, providing you are careful to remove the ashes and carbon from the top of the arch at least twice every day and keep the lower flues clean. In that case it will not make much difference whether you use the front draft door or the rear draft door though if you can do so we advise the front door.

USE  
**STERLING GAS ENGINE OIL**  
A heavy bodied non-carbonising oil  
**CANADIAN OIL COMPANIES LIMITED**  
Winnipeg, Regina, Calgary

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Last year, Rumely OilPull tractor won gold medal and gas tractor sweepstakes. OilPull Tractors are better this year than they were last. We are constantly improving them, but our competitors will find our 1912 oil-burning marks unbeatable for a long time to come.





Rumely OilPull Tractors are the only tractors that have the Secor-Higgins Carburetor and the only ones that can employ the Secor-Higgins Oil-Fuel System. That is why no other tractor can equal the OilPull in efficiency when kerosene or distillate is the fuel.

The OilPull furnishes the steady, reliable, low-priced power that threshermen like. The OilPull is winning higher marks in 1913 than it did in 1912. This year the OilPull has won the hearts of thousands of farmers, as the best and cheapest power on earth, for farm belt work, traction work, and both combined.



The 1912 Gold Medal and Sweepstakes Winning Plowing Combination.

## Look Over These Figures

-  **Total Points Won Winnipeg, 1912—449.76.** Best competitor's score on kerosene in 1913, 338.10 points. Best competitor's score in any class, 1913, 437.30 points.
-  **Fuel Cost per Brake Horsepower Hour, 1912—1.296 cents.** Lowest fuel cost on kerosene, 1913, 1.41 cents. Lowest fuel cost in any class 1.06 cents, made by a steamer, labor cost not included.
-  **Fuel Cost per Horsepower Hour, 1912, at Drawbar—2.16 cents.** Nearest kerosene competitor 1913, 3.1 cents per D.B. H.P.-hr. Nearest competitor, any class this year, 2.38 cents.
-  **Cost of Fuel per Acre, 1912—33.7 cents.** Cheapest acre on kerosene 1913, 43.8 cents. Fuel same price as 1912. Cheapest acre, any class, 37.4 cents, with coal cheaper than in 1912, labor not figured.

## Threshing Outfits in a Hurry

There are no better threshers than the Canadian Advance Separator and the Canadian Rumely Separator. These Canadian built machines have satisfied farmers by their grain-saving, and threshermen by their fast threshing ability, for many years. We have a separator in the size you want, and we can furnish it from a warehouse near you right now.

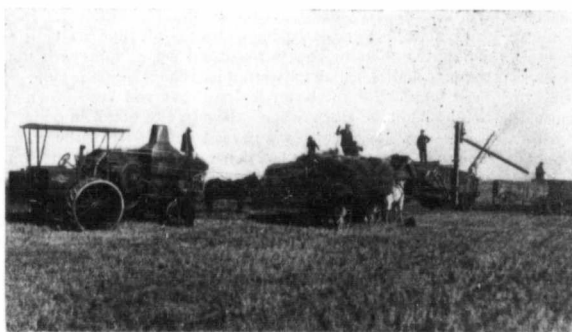
There is no profit in an idle tractor, especially during the threshing season. If you already own a tractor you should complete a money making outfit by the purchase of a Canadian Advance or a Canadian Rumely Separator.

And remember the OilPull does all kinds of farm work well and economically. You will find use for your OilPull all the year round. When threshing is over you can put it to work plowing. We have the engine gang plows, too.

## Quick Delivery, Prompt Service

Quick delivery and prompt repair and supply service is our motto. We can furnish an OilPull Tractor, a Canadian Advance or a Canadian Rumely Separator, a complete threshing outfit, or an engine gang plow from a nearby branch without delay. Our many branches and our thousands of dealers and agents enable us to get supplies and repairs to our machines in the shortest possible time.

If you are in a hurry, let us help you out. If you want a separator, a tractor or a complete threshing outfit at once, or if you decide that you want the best that money can buy, write to our nearest branch for complete details, or talk it over with your Rumely dealer.



Every Canadian Thresherman Should Have One of Our Canadian-Built Machines.



Every Canadian Farmer Should Have One of Our Canadian-Built Threshers.

Ask Your Dealer for Catalogs

# RUMELY PRODUCTS Co.

(INCORPORATED)

## Power-Farming Machinery

LaPorte

Indiana

WINNIPEG, Man.  
SASKATOON, Sask.

REGINA, Sask.  
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Branches in Canada:  
BRANFORD, Man.

YORKTON, Sask.  
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EDMONTON, Alta.  
TORONTO, Ont.





Alfalfa Growing in Western Canada

**A**LFAFA growing and irrigation go hand in hand in Western America. Without question the success of most of the irrigation projects in the western states to the south of us depends largely on the fact that alfalfa grows with such luxurious abandon when water is applied and if it did not thrive as it does the agricultural possibilities of the projects referred to would be seriously curtailed.

Alfalfa was originally a subtropical plant, having been grown and highly prized as a fodder plant in the vicinity of the Mediterranean for several centuries before the beginning of the Christian era. The Spaniards introduced it to Mexico and South America and from there it was carried north into California, thence east into Utah, and from there its spread clear to the Atlantic was rapid. It is now said to be grown in every province in Canada and in every state in the United States, though in some cases its culture is limited to small areas. Its range of adaptability is wonderful, for from even as far north as Fort Vermilion, the last report states that it is doing well. Although it will grow under such a wide diversity of conditions in regard to climate and soil, still it is under irrigation that this wonderful forage plant earns its greatest popularity.

In regard to what is being done with this crop in the Canadian northwest, I may say that it is now being grown in limited areas quite generally in various parts of Alberta, Saskatchewan and Manitoba. Professor S. A. Bedford, deputy minister of agriculture of Manitoba, in a recent letter, wrote me:

"The area of this legume is increasing very rapidly each year, and it is now possible to find fields of from 10 to 30 acres in different parts of the province. This government has about 20 different plots of one or two acres planted in different parts of the province, from altitudes of 1,000 to 2,500 feet above sea level, and

so far they have almost without exception proved successful. The only failures are attributed to insufficient drainage in one or two portions of the Red River valley."

In Saskatchewan fields and plots of alfalfa may be found in many localities, from Prince Albert south to the boundary, although previous to 1904 it was almost unknown in that province. The Saskatchewan government is giving the growing of alfalfa a great impetus by offering liberal prizes aggregating \$6,000 for the best ten-acre fields, to be judged in 1914. The exploitation of this contest, with the necessary attendant publicity, is doing a great deal in the way of influencing farmers to begin the growing of this forage crop.

Alberta is the premier, so far as the prairie provinces are concerned, in the growing of alfalfa. It is so generally grown in the extreme southern portion of the province that the experimental stage has been passed, but further north it is being tested quite generally and it is gratifying to know that in the majority of cases the farmers are meeting with success. Where failures are met with it is usually due to lack of inoculation or to the use of strains of seed not sufficiently hardy. Although the common strains, or so-called varieties, all seem to be hardy in the Lethbridge district, this does not appear to be the case in the other parts of the province. At the Dominion Experimental Farm at Lacombe, serious winter killing has been experienced, except with the Grimm and Turkestan varieties. Failures in certain parts of the province to get the crop to live through the winter has doubtless been due to the fact that the seed used has come from some of the warmer parts of the United States where hardy strains have not predominated. I believe that most of the failures that have been met with in the Gleichen and Strathmore districts have been due to this fact, for I have visited fields of alfalfa in these districts that are two and three years old that were in as vigorous and thrifty condition as one would desire. I firmly believe that it is

# DAIRY PROFITS

are made by the Separator—if the cows are right. No separator will make profits if your cows are poor milkers, but if they are real paying guests, you can break all profit records by using a



## "MAGNET" Cream Separator

This is the Separator without a single kink or corner that will occasion trouble either in running or in cleaning. Its "points" are all strong points because they are simple illustrations of the wonderful simplicity and smoothness of a machine that is absolutely correct in every mechanical detail of construction. Its **ROCK-BOTTOM STEADINESS** is unequalled by any other machine. Its **SQUARE GEAR** is in marked contrast to the "wobbling worm" of other machines and

**HUMAN GENIUS HAS NOT YET DISCOVERED A MORE CERTAIN AND EXHAUSTIVE METHOD OF TAKING THE LAST PARTICLE OF BUTTER FAT FROM THE MILK**

Our Slogan is **"TO SATISFY"**—and we will do it at all costs. We will prove every point we claim for the superiority of the "Magnet" on your farm—at our expense

### The Petrie Mfg. Co., Ltd.

Head Office and Factory: HAMILTON, ONT.  
Winnipeg, Calgary, Regina, Vancouver, Montreal, St. John, N.B. Edmonton, Alta.

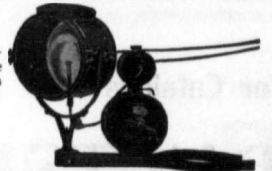
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**Dr. Thomas' Eclectic Oil**  
Relieves all Pain in Man or Beast.  
25 Cent Bottles at all Dealers

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### SPARK ARRESTER

One that gets all the sparks without clogging or interfering with the draft. Fits any engine. Screens adapted to any fuel.



### ACETYLENE GAS HEADLIGHT

Turns night into day. Bracket to fit any make of engine. Throws light 400 feet. Operating expense about 1c. per hour.

### FLUE CUTTER

You need this tool to get ready for your Spring Plowing. Is adjustable in length and size. Cuts the flue without burring the end. Try it.

Estate of E. M. POPE, Watertown, S. Dakota, U. S. A.  
Send for Catalogue and Price List to

**THE MATTAG COMPANY, LIMITED, Winnipeg, Man**

You saw this advertisement in this magazine. Don't forget to say so when writing.

**Don't Fail to Renew Your Subscription Before it is Too Late.**



only a matter of time till this kind of forage crops will be grown quite generally in practically all of the present settled parts of these prairie provinces.

Where it will be always grown with the greatest profit, will, I believe, be in the irrigated districts of Alberta and Saskatchewan. Here it is destined to become the leading factor in our crop rotations. It will not only produce more pounds of the most desirable feed for all kinds of growing stock and milch cows, but it adds nitrogen and humus to the soil enriching it in these essentials to a wonderful degree. A ton of well cured alfalfa hay has about the same feeding value as a ton of bran. The high regard that dairymen have for this hay is so well known that it scarcely needs mentioning. For feeding and fattening cattle and sheep it has few peers. In a lamb feeding test at the Lethbridge Experimental Farm a year ago we found that we obtained about twenty dollars a ton for the alfalfa hay fed. In a similar experiment carried on with lambs this past winter we obtained nearly as much. As a pasture for pigs it is hard to equal. Brood sows relish the hay in the winter time. As a poultry feed it commands a high price when chopped and ground into meal. But why take up your time in cataloging the many virtues of this wonderful forage plant which are doubtless well known to all.

The Lethbridge district has the distinction of being the first locality in the prairie provinces to grow alfalfa commercially. The first fields to be grown successfully were sown twelve years ago. From the small beginning of a few acres the area devoted to this crop has increased by several hundred acres every year. This acreage is practically all on irrigated land. It will grow on dry land, but the tonnage is increased so materially by irrigation that we look on it as essentially an irrigated crop. It is peculiarly well adapted for growing under irrigation, for if the water is not applied just when it should be the crop is not damaged, the only loss is the less growth up to the time of irrigation. This is the case with few other crops, for with most grasses or with grain crops, etc., if they suffer from drought at the critical period in their early development the crop for that season is seriously affected. During the hottest months of the year, July and August, which are usually the driest, we get the greatest growth by being able to supply the necessary moisture during the period of rapid growth.

As previously intimated alfalfa is going to play a very important part in the rotation of

crops raised on irrigated land in Alberta and Saskatchewan. In most countries, a leguminous crop, such as clover, is grown at certain intervals, to enrich the land and so make it more profitable to raise other crops. In the case of alfalfa, however, it being such a valuable as well as profitable crop, the arrangements of the different crops will be changed and it will itself be the main crop grown. The great advantage gained will be that the land will be continuously enriched by nitrates and humus. Nature has been generous and has supplied the prairie soils, and the subsoils, too, with a bountiful supply of all the mineral constituents that plants require. Consequently it will be possible to keep on raising alfalfa probably indefinitely as far as the soil is concerned. I believe that within a short time 60 to 70 per cent of the land under irrigation in this district will be growing alfalfa. Other crops will still be grown, but by rotating them with alfalfa the yields will be increased 50 to 100 per cent. In support of this statement I might say that on the Lethbridge Experimental Farm last year we had potatoes planted on alfalfa sod that yielded 757 bushels per acre, and spring wheat that followed the potato crop yielded 59 bushels to the acre. It will be possible to double our yields of sugar beets. In fact alfalfa is going to be the basis, directly and indirectly, on which the development and wealth of the irrigated sections of Southern Alberta are going to be built, and, of course, the same is true of southwestern Saskatchewan.

The weed problem, which is such a serious menace just now in this district, and which is causing the farmers so much inconvenience, becomes insignificant when alfalfa appears, for the growing of this crop on irrigated land is a panacea for all such troubles, as none of the ordinary weeds can live in an alfalfa field that is being cut twice or thrice during the growing season. In regard to the yield of alfalfa that we get here I may say that on the experimental station farm we have, during the last five years since the farm was established, averaged between five and six tons per acre of field cured hay each season on land that has been carefully irrigated. We cut either two or three times each year. There is not much difference in the total yield between the two or the three cuttings. If however, the hay is cut three times instead of twice a little better quality for cows and sheep is obtained. It is less apt to be woody and is more palatable. The usual practice is to irrigate for

# BULBS

Winter Fragrance and Spring Loveliness

TULIPS, HYACINTHS, NARCISSI,  
CHINESE SACRED LILY, SCILLA  
SIBERICA, LILIES, Etc.

These Bulbs are for Fall and Early Winter planting—they cannot be obtained in the Spring.

WRITE FOR AUTUMN CATALOGUE and ORDER NOW

Have your name added to our mailing list for Spring Catalogue of Tested Seeds.

STEELE, BRIGGS SEED CO. LIMITED.

WINNIPEG.

CANADA'S GREATEST SEED HOUSE

## MONEY IN POTATOES



### Every Bag a DOLLAR

Get them all

THE farmer with a big  
crop of potatoes has a  
gold mine at his back door.

Every bag is a dollar.  
Every bag left in the ground is a dollar lost.  
Every bagful chopped by the plow is a dollar lost.  
If it costs \$5.00 too much an acre to harvest them it is \$5.00 per acre lost.  
To handle the whole crop and handle it cheaply is going to make a big difference in the profits.

We can help you there. Our book "Money in Potatoes" has ideas that will help you to mine that crop of potatoes to the last dollar.

Dollars saved in the potato field are as good as extra bushels to the acre. The "big crop" coupon will entitle you to a free copy of the book "Money in Potatoes." Send it in to-day. There is money in it for you.



BIG CROP COUPON

The Canadian Potato Machinery Co. Limited, Galt, Ontario

As a Potato Grower I would like to have a free copy of this book.

Name \_\_\_\_\_

Address \_\_\_\_\_

## RIDER AGENTS WANTED

In every town and locality to ride and demonstrate a sample 1913 "HYSLOP SPECIAL" bicycle furnished by us and fitted with coaster brake, roller chain, three-spring saddle, extension handlebar and other leading features. Good money can be made selling our bicycles, tires and sundries.

Our large production, together with unexcelled facilities and 26 years' experience in building bicycles, places us in a position to ship high-grade wheels direct from factory to user at LOWEST PRICES.

TEN DAYS' TRIAL

We will send a wheel to any address in Canada on approval and allow 10 days' trial. It will not cost you one cent if you do not desire to keep it after that time. We could not afford to make this offer if we were not certain our wheels are the best value for the money on the market.

Write at once for new illustrated catalogue and full particulars of our attractive new offer and special prices.

HYSLOP BROTHERS, LIMITED

SHUTER AND VICTORIA STREETS, TORONTO, ONT.

NOTE—Mention name of paper when answering this advertisement.



each cutting, that is, just after the hay is taken off. Fall irrigation, just before the water is turned out of the ditch, has been found to be particularly advantageous, for with it is generally possible to make the first crop without applying any water.

We sometimes have difficulty in getting the first cutting cured, as it is made in the latter part of June, which is often a rainy season with us. It is just possible that with the development of the district we may in time use silos in which to store our first cutting when we have to make it during inclement weather.

This naturally leads up to the question of stock. With the great increase in acreage of alfalfa that we confidently expect, it will be necessary to have stock to consume it. Doubtless more or less breeding stock will be kept on the irrigated farms, and each winter these will be supplemented by range stock. We hope that the foothills and mountains immediately to the west of us will be able to graze a large number during the summer time and thus increase the supply.

As successful farming under irrigation means intensive farming, and as intensive farming means increased yields, it naturally follows that we shall be able to maintain more stock per acre than will be the case in other parts of the province where they have not the advantage of irrigation. I firmly believe that the irrigated districts in this part of the country will eventually be the heaviest feeding grounds in Western Canada.

**Does the Farmer Know Where He Is?**

By Dr. Leonard Keene Hirschberg, A. B., M.A., M.D. (John Hopkins)

NOT long ago, an observing gentleman said, what is there that every body thinks they know about, needs most, and yet knows the least? This seemed like some sort of a riddle, so I asked how many answers were permitted. But the one who smilingly put the question, was none the less serious. So I said, "I'm the goat, what is it?" His reply was laconically given as "bookkeeping." And it is true not only is it most needed on the farm as the national government has recognized by publishing a bulletin to that effect by Dr. Thompson, but it is one of the most needed of arts among the supposedly wise commercial world. There are as many desirable improvements in the bookkeeping of the business world as there are in the farm and any bookkeeper or merchant who thinks he knows all there is to be known about the subject,

would better grow busy and begin to learn all over again.

Simplicity, accessibility, and ease with which the accounts are to be made up are the first requisites, and soil, barns, fences, yards, troughs, hen-houses, land, and real-estate, according to Dr. Thompson should be grouped together as one item. Another separate item must be the articles sold as well as those used in the house, then comes the labor independent of those members of the family who do not receive pay.

A card system or a system of books are equally helpful, it is all a matter of preference as to whether you select the one or the other. As soon as you rent or buy a house with or without a farm a careful estimate must be made of all that you own. This stocktaking must be repeated at definite intervals no matter how much trouble is involved. Not only must you know what cash you have, what rent goes out, what daily expenditure is made, but you must know each day, week, month, and year exactly what comes in and where you stand every night. This can only be done by striking a daily, weekly, monthly, and semi-yearly balance. That is to say by subtracting your outlay and income.

First of importance then is a simple way in which you can tell almost at a glance, yet accurately, how many acres, barns, or other buildings and land you have. It does not matter whether you rent them or not. Then you must know practically to a flea, what dogs, horses, swine, chickens or cattle you have. Then the machinery, tools, feed, furniture, corn, oats, potatoes, timothy, hay, bran, paper, twine, cement, and salary list must be known, as well as the interest on mortgages, cash expenditure, and loans must all be down in black and white.

So rare is it to find any home or farm with a completely written-out sheet or book with these necessarily important details, that outside of large business concerns, there is not one farm, home, or even small retail business shop in fifty thousand, that knows where they stand at the end of a month or half-year. True enough, they rashly guess "about" how much they are "in the hole"—and the lack of bookkeeping is why they are not "over and above" words there are few Americans who ever really know their net worth.

Ask your husband or your nearest, intimate relative how much their property, their farm, or their live stock has deteriorated in any given month. They will not only laugh you to scorn, make you perish the thought by upbraiding you soundly. The "very idea" of de-

**Would You Like to Have \$20.00 TO \$35.00 More a Day for Threshing?**



You can save this amount by using HART-BROWN WING CARRIERS, and HART UNIVERSAL THRESHER RACKS.

HART-BROWN WING CARRIER Attaches to ANY Separator with ANY Feeder.

No alterations or re-building necessary.

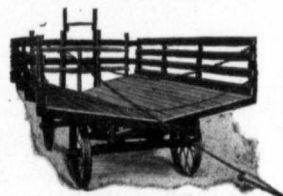
The carrier attaches to the main sills and main frame of separator; no weight on feeder. By using this machine, you can thresh more grain in a given length of time, as the delivery is so arranged that practically every bundle goes to the band knives straight and evenly, eliminating slugging and choking and the consequent delays.

**"Would Not Attempt to Thresh Without Them"**



Gentlemen—  
 In answer to your inquiry as to my experience with the Hart-Brown Wing Carriers and Dump Racks, would say, that after two seasons experience with same, I am well satisfied especially with the improved carrier, as they have few parts, are strongly built, therefore nothing to get out of order.  
 I have used them in all kinds of grain and find they save me about twenty dollars a day for help and will enable the machine to run steadier, therefore, do better work as there is no slugging.  
 The Dump Racks I consider a great improvement over other dumping racks as they do not waste so much grain unloading.  
 I can recommend both wing carriers and racks to any thresherman for they are of mutual benefit to both he and the farmer. I myself, would not attempt to thresh without them.  
 Wishing you success, I remain,  
 Yours very truly,  
 D. HANKIN.

**HART UNIVERSAL THRESHER RACKS**



In shock threshing, a big saving can be made by using the racks with the carriers. One Hart Universal and driver will do as much work as two ordinary racks, two drivers and one field pitcher.

If you want to build the rack, we will furnish the hardware and parts.

Let us tell you how you can save from \$20.00 to \$35.00 a day.

WRITE TODAY FOR CATALOG AND FULL PARTICULARS, STATING KIND OF SEPARATOR AND FEEDER YOU USE.

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**Haug Bros. & Nellerhoe Co., Ltd.**  
 WINNIPEG, MAN., CAN. - - REGINA, SASK., CAN.  
 General Distributing Agents for Canada

OR

**Hart Grain Weigher Co.**  
 PEORIA, ILL., U.S.A.

You saw this advertisement in this magazine. Don't forget to say so when writing.

terioration is deliberately ignored by most farmers.

Yet it is one of the first principles in any sound business enterprise, to count up against depreciation, a definite tangible sum. No housewife, no farmer, no laborer on a salary can afford to forget this. And the only way that that "hole"—but only two in the hundred thousand families ever have the figures actually and accurately before them. If either man or woman with the best memory fails to forget, is by writing it down in a daily record, entering it on the books, "bookkeeping" it.

To determine the decreases in buildings about 3 per cent of a sane, non-speculative value, must be allowed. This prevents you from over-estimating your profits or underestimating your losses. Depreciation in machinery averages as high as 10 per cent a year. Feed and storage values are the market prices less the cost of transportation to the most active, nearby market. The same is true of live stock. The highest quotations must never be made.

Next in importance comes labor and cash records. All expenses, even to penny postal cards and other "trifling" (?) household items must not be omitted from expense accounts. Usually it will be found that about 20 per cent are personal, 25 per cent are household, and 55 per cent are farm or business expenses. Of the items kept in the books of well regulated homes nearly half are not farm items.

Receipts are from articles sold, salary received, live stock or timber sold, money obtained from old machinery, refuse, and the like, and possible increase in the ground. If the interest on a mortgage or other money used in buying the farm or home is \$500 or the rent is that much, this must be added to the expense or "out-go" side of the ledger. If the unpaid family labor is worth \$300 and the managerial ability of the mother and the owner are worth another \$400, this must also be placed among the expenses. To make any real profit, the income in this family would have to be more than \$120 annually or over \$25.00 a week, without considering all of the other necessary things such as food, clothing, fuel, schooling, furniture, bedding, insurance, and a hundred and one other requisites.

There is then every reason in the world, moral, mental, physical, and economical why the average, careless American should mend his ways and begin to take an inventory of his status. Whether you are a farmer, a salaried person, a laborer, or a shopkeeper, plain bookkeeping will go far towards showing the loops and leaks in your extravagant

Look for this label on every bag

It means best quality—tested quality—full measure and thorough satisfaction.

It is on every bag of

# CANADA Portland CEMENT

UNLESS you have facilities for testing cement, you must depend upon the manufacturer for Cement that is reliable—Every car of Canada Cement is thoroughly tested, and unless it passes every test it is not allowed to leave the mill.

You can depend upon Canada Cement. Be sure you get it.

Canada Cement Company Limited, Montreal

There is a Canada Cement dealer in your neighborhood. If you do not know him, ask us for his name.

Write our Information Bureau for a free copy of the 160 page book "What the Farmer Can Do With Concrete."



You saw this advertisement in this magazine. Don't forget to say so when writing.

## There is no String to this Pipe

It is absolutely FREE to subscribers who take advantage of this offer



A pipe that will last and one you will never be ashamed to smoke

**The Weekly Free Press and Prairie Farmer, Winnipeg  
The Canadian Thresherman and Farmer**  
Both including Pipe for the nominal sum of \$1.25

The lowest price at which these two papers will be offered this year is \$1.25. It makes no difference whether you take the pipe or not, the price is the same. While the supply of these pipes lasts they will be given away free to all who subscribe. Better get your order in early and be sure of a good smoke.

Weekly Free Press and Prairie Farmer, Winnipeg, Man. 1913.

Find enclosed \$1.25, for which send the "Weekly Free Press and Prairie Farmer" one year, and the "Canadian Thresherman and Farmer" one year, together with pipe to the following address:

Name .....

Town .....

Province ..... P.O. Box .....

You saw this advertisement in this magazine. Don't forget to say so when writing.

habits. I know a family that have thus been able to live better upon \$1500 a year, than they once did without any knowledge of where they stood with an income of \$5000. There must be many others of the same kind.

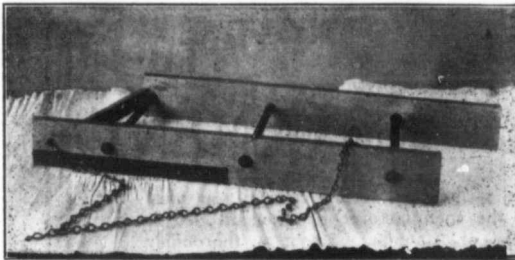
After all it is a matter of habit, slipshod, careless, and lack of accounting to yourself at each low descending sun, just where you are in financial and economic matters, is responsible more for the high cost of living than all of the

other "goats" and "bugaboos" together. A thorough knowledge of what you have, how much is available for one thing and another, and where it goes, is the royal road to wealth, or at least comfort. There is no other.



**Construction and Use of the King Road Drag**

Good roads are recognized as a valuable asset by every progressive community. The earth road is by far the most common type of highway in Western Canada. The farmers of Manitoba should want good roads for many reasons. Your farm will increase in value. You can grow more profitable crops as your transport



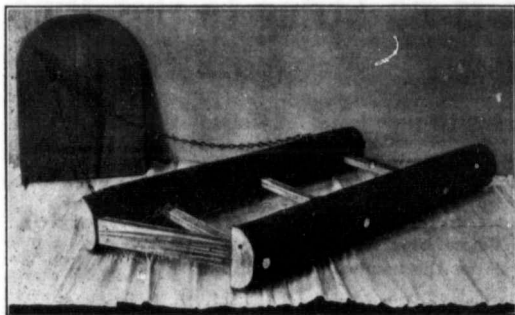
King Road Drag. Figure 7.

tation facilities will permit marketing any part of the year in much less time. Your cost of hauling will be less as larger loads can be hauled and the trips made in less time. You can market your crops when prices are the best in your vicinity. It is not an uncommon thing for grain to be worth a few cents per bushel more at one station than at another. You may be located at a distance from the point where the best price is given. If the road is good the

the King Road Drag. By correct use of this cheaply constructed implement the road can be put into good shape with just a little attention in dragging. Of course it is understood that the road must first be properly constructed as to cross-section and drainage.

**Construction of Drag.**—Figure 7 shows the construction of a plank drag, as commonly used in the prairie section. A very good substitute is a split log drag as shown in figures 8 and 9; but in many sections the plank drag is the easier constructed.

The plank drag is constructed of two 3-inch by 12-inch planks, or different dimensions might be used, reinforced by strips of 2-inch by 4-inch material. Any light strong material may be used. In the last drawing it is shown that the front plank is 7 feet 6 inches and the rear one 6 feet 6 inches long, and set 2 feet 6 inches apart. They are fastened together by four cross-sticks morticed to the planks, making a rigid drag. The edges of the planks are left sharp, and



King Road Drag. Figure 8.

extra distance is made shorter. You are brought closer to your school, your church, and your physician will be in closer touch with you. You will have better mail service, more social life, and the farm life will be bettered in many ways.

The earth road is the first road of a community as it is the cheapest. The absence in many parts of the province of rock, gravel or other road-building material will render its use necessary for many years. This kind of highway should, and can, be kept in good condition by use of

may be—and usually are—shod with an iron plate from 3 to 5 feet long, 4 inches wide, and ¼-inch thick. One edge of this may be sharp and the other dull and fastened by bolts on to the front plank at the cutting place. The holes for fastening may be so placed that this plate can readily be turned upside down. The condition of the road will determine whether the sharp or dull edge is to be left down. In some cases the edge of the plank may be used for a cutting face. A platform of 1-inch material placed on the cross-sticks will give the operator



**Roofing As Attractive in Price —As in Color**

You'll admit this roof looks attractive—in distinctive colors of red or green. But for most home builders its chief attraction lies in its remarkable economies. Let's begin with its first cost. NEPONSET Proslate Roofing costs less to buy than good shingles. Greatly reduces the cost of repairs. No shingles to split, crack or "curl up." Remember, the shingles of today aren't the shingles of 20 years ago. NEPONSET Proslate Roofing makes a water-tight blanket. And best of all, resists fire—is "spark-proof." Its protection from fire-hazard alone is worth all its cost. Its first cost is its only cost, too. Can you afford NOT to have NEPONSET Proslate Roofing on your roof?

**NEPONSET**

**Waterproof Building Products**

**Roofings** NEPONSET roofings are a fire protection, leak-proof and long lived. Anyone can lay them. NEPONSET Paroid Roofing is for general use. NEPONSET Proslate Roofing is an ornamental roofing for dwellings. Attractive colors.

**Building Papers** If NEPONSET Waterproof Building Papers are built into walls and floors, the building will be warmer, will cost less to heat and will last years longer. Recommended by architects, engineers and building owners everywhere.

**Wall Board** NEPONSET Wall Board is a scientific product which takes the place of lath and plaster; comes in sheets 12 inches wide. Remember, it is the only wall board with waterproofed surfaces that requires no further decoration. Anyone can put it up.

Are you going to build? Write for more facts about the products in which you are interested. Send for samples, free booklet and name of nearest NEPONSET dealer.

**BIRD & SON** Inc. 1705 663 Heintzman Bldg., Hamilton, Ont.  
[F. W. BIRD & SON] Montreal St. John, N. B. Winnipeg Vancouver

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**NEW 1914 PRICES**  
Effective August 1, 1913

Model T Runabout . . \$600  
Model T Touring Car . . 650  
Model T Town Car . . 900

With Full Equipment, f. o. b. Walkerville

**Ford Motor Company**  
of Canada, Limited  
Walkerville, Ontario

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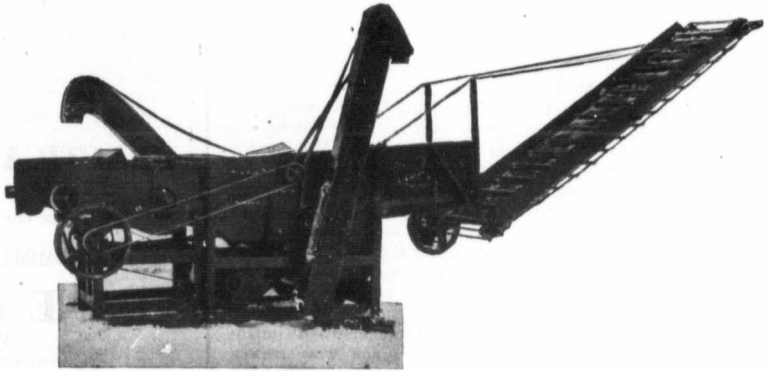
La Compagnie Desjardins Famous Small Threshing Machines  
 "THE CALL OF THE WEST" Sold by

A. STANLEY JONES :: North Battleford, Saskatchewan

General Sales Agent for Saskatchewan and Manitoba

Offices: "The Industrial Spur East" Phone 223 and 220

Prices from \$425.00 to \$680.00 including engine, separator and all belts, carriage paid to any point in SASKATCHEWAN. It can all be mounted on one good wagon complete. Capacity from 400 of wheat to 600 or 700, and of oats from 700 to 1500 and more according to size taken. The \$680.00 outfit will easily thresh 600 of wheat and as much as 1500 of oats if in average grain and fed properly, although only sold to thresh 600 to 800 of grain. If you have any size farm your usual threshing bill will be more than your payment on this machine. La Compagnie Desjardins have made these machines since 1864 and were the original makers of the Champion, but owing to the makers of other machines calling theirs Champions we have called ours by what it proved to be last year—



"THE CALL OF THE WEST"

We make every bit of it. Don't buy any other machine or any sort of small outfit till you have had my prices. Outfits on show in running order at North Battleford. Drop a card RIGHT NOW.

You saw this advertisement in this magazine. Don't forget to say so when writing.

a place to ride. A chain of 3/8-inch iron, one end of which is fastened to the rear cross-stick, the other end to the front plank, can be used as a hitch.

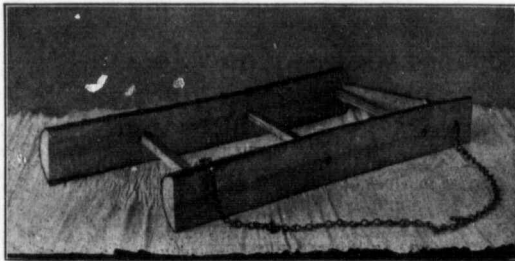
The exact style or form of drag to be used is not the most essential part of road dragging. Care must be taken in construction so as not to get the drag too heavy. It can easily be weighted

for a cost not exceeding three or four dollars on any farm.

**Object of Road Dragging.**—The road drag is intended to smooth the surface of the road when it is soft and muddy. Only a small amount is to be moved to the centre of the road. Sufficient crown should be given so that the water will not stand on the road, and all holes or depressions

road is kept in a very poor condition, and oftentimes impassable. The object of dragging is to fill these holes with earth,

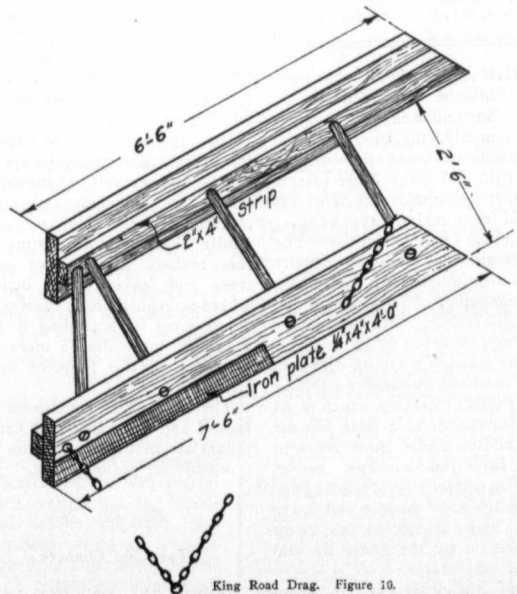
the surface of the road, a part dropping into the ruts, forcing out any standing water, and deposits enough earth in the centre



King Road Drag. Figure 9.

down. The effectiveness of road dragging depends on moving but a small amount of earth at a time, so the lighter the drag the better. This drag can, or should, be hauled at an angle of about 45 degrees on the road, and as it is light a change of position of the man on the platform will be more effective. As is readily seen, the construction is an easy matter, and can be done in a short time

should be covered. The heavy clay has been worked and re-worked by wheels and horses' hoofs so that it is almost impervious to water. Ruts or holes are former on the surface and are filled by water. On account of the impervious condition of the soil the water remains standing in these ruts. As long as water remains the soil cannot dry out, and the



King Road Drag. Figure 10.

taken from the high parts of the road, and to give the surface crown, or an oval shape.

**Effect of Dragging.**—The impervious soil is spread out over

of the road to give it an oval surface. The drying of the road is quicker and the surface becomes compact. The traffic assists much in compacting the

surface; and after a few draggings the surface is compact with slope towards the sides of the road so that the rain passes off into side ditches quickly and the roads are dry in a short time after a rain. Dragging after a fall rain, just before freezing, will leave a nice smooth surface for a winter road.

**How to Use a Drag.**—The length and position of the hitch, and the position of the driver on the drag must have consideration if the drag is to be successfully operated.

A close hitch has a tendency to lift the drag, thus it will not take hold on the earth that a long hitch will. A light drag and a long hitch is almost sufficient to a heavy drag and a close hitch. Ordinarily the drag should be drawn at an angle of about 45 degrees with the road. To draw earth toward the centre of the road, hitch close to the outside road side of the drag and stand also toward that end. If it is desired to only smooth the road and draw nothing toward the centre, the hitch and driver may both be shifted toward the centre of the drag. In a soft spot stand toward the back. On a hard spot let your weight come toward the front. To drop dirt into a low place, step from the ditch end of the drag and the dirt will slide along the plank and drop into the hole.



#### Catterpillars as Cause of Disease

By Dr. LEONARD KEENE HIRSHBERG,  
A.B., M.A., M.D. (Johns Hopkins)

**T**HE verdict of guilty has been unanimously rendered by an unbiased jury against the housefly, the mosquito, the pediculus or louse, the bedbug, the tick, and many other insects as the undoubted source of typhoid fever, malaria, typhus fever and many other infections. The appearance of summer usually goes arm in arm with the sudden manifestation of all kinds of disorders traceable to secondary carriers of one sort or another. Those terrifying scourges of loving mothers, summer complaint and cholera infantum, which gains in momentum as a fatal ailment of children under three years of age, from June to September as well as infantile paralysis or poliomyelitis as the pundits call it, are now under suspicion, as being passed on by the house fly and other creatures.

Only the other day, Dr. Rosenau of Harvard University arrayed a mass of convincing statistics to show that infantile paralysis—which attacks adults as often as it does children—in

all probability is spread by something alive that flourishes in the country and suburbs, where stables, trees, and open lots abound. A very persuasive list of statistics were theoretically proffered by Dr. Rosenau to drive home his suggestion. Not a reason could be proposed against them; not a same objection could be raised.

For it is an established observation that infantile paralysis increases during the late summer and early fall, is common in sparsely settled districts, and furthermore, never extends to persons in thickly habited, dirty districts. All of which comes independently of and simultaneously with the evident discovery of Dr. Jacobyn Van V. Manning of Brooklyn, who noting for the first time the fact that the great Louis Pasteur—the vigilant savior who saved the silkworm industry to the world, discovered bacteria, preventive vaccines for hydrophobia and other maladies, and many other race-saving things—had suffered with infantile paralysis and was stricken while investigating the silk making caterpillar, maintains now with a great show of plausibility that poliomyelitis is no doubt given to men and children by the caterpillar.

This is the first time that the caterpillar has been brought before the bar of pathology, as the source of a human ailment.

Dr. Manning calls attention to the observation of Pasteur that the silkworm or caterpillar by crawling over healthy caterpillars and scratching or rubbing them with their hooked feet, introduced the disease into the new grub. Another way they caused the malady was to soil the mulberry leaves with their offal which was later taken up by the well worms which then fell ill.

Now the prevalence of endemics of infantile paralysis are in places and periods when caterpillars are abundant and often sickly. The children and adults that become victims to this malady usually live near trees and leaves or in houses where caterpillars have been seen. There must be, according to Dr. Manning, more than a mere coincidence of this frequent association.

Therefore the conclusion is logical and necessary that caterpillars are in a great measure responsible for poliomyelitis.



#### Take No Chances

Brown had just received a telegram saying:

"Your mother-in-law is dead. Shall we bury or cremate her?"

"Take no chance," was the reply; "do both."

#### Mr. Engineer,

Do you know what it means to have an oil pump that is absolutely reliable in cold weather as well as hot?

One that you will not have to take apart and clean every time a little chaff or dirt happens to get into the oil?

One that has no ratchet wheel, pawls, etc., to get stuck and refuse to ratchet on a frosty morning?

One that will start feeding as soon as you start your engine, no matter if everything else about the engine is frozen up?

One that will pump the dope, cold as well as hot, thick as well as thin, dirty as well as clean, and do it 365 days in the year, regardless of climatic conditions?

If you would be interested in hearing more about an oiling device possessed of all the good qualities mentioned above with many other distinctive and very important features,

Write for Catalogue and full information concerning the

## PRACTICAL FORCE-FEED OIL PUMP

"THE GREAT COLD WEATHER LUBRICATOR"

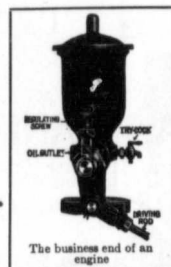
McCULLOUGH-MANUFACTURING CO., Minneapolis, Minn., U.S.A.

## CRANE & ORDWAY CO.

WINNIPEG, MAN.

Distributing Agents for Western Canada.

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## SILVER STAR ENGINE KEROSENE

— The best fuel for —

## OIL-BURNING ENGINES

Recommended by the Hart-Parr and Rumely Companies, and used by all Oil-Tractors in all Motor Contests, at Winnipeg Industrial Exhibition.

### PREMIER MOTOR GASOLINE STANDARD GAS ENGINE OIL POLARINE

Carried in Stock at 300 Tank and Warehouse Stations in Manitoba, Saskatchewan and Alberta

For prices at our Branch Stations nearest you, write to any office or

## THE IMPERIAL OIL COMPANY Limited

Main Office: Winnipeg

Regina, Moose Jaw, Saskatoon, Edmonton, Calgary, Lethbridge

Prices on Distillate Fuel Oil quoted on application

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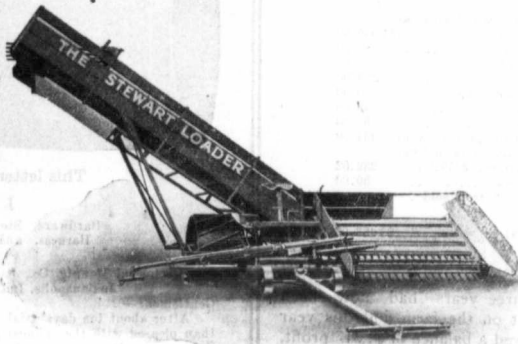


# One Harvest Hand Worth a Score

**THE STEWART SHEAF LOADER** will make you independent of the cost and worry of many hired hands and several teams in threshing your grain. Not only so but the **STEWART SHEAF LOADER** does the work better; it cleans up a field of stooks and loose grain cleaner than human hands could do it.

The Elizabeth Farm Co., at Tilley, Alta., wrote us last fall that their Loader saved them at least 8 men and 3 teams every day, which they valued at a total saving of \$34 to \$38 per day. Sifton Bros., Moose Jaw, Sask., state that 5 stook wagons with a Stewart Loader take the place of 10 without it. Morton S. Bell, Regina, says that the Loader saved him, last year, 7 to 9 men, for which he was paying wages ranging from \$3 to \$4 per day.

In this matter of cutting down expenses the Stewart Sheaf Loader is just as essential as The Self Feeder or Grain Weigher on the Separator, or even the Binder itself. The Loader will pitch your bundles. It picks up the sheaves and loose grain from the ground or stooks and elevates them into the bundle wagons. No stook pitchers are required, one man and four horses will operate The Loader, and from five to seven stook teams (depending on the size of the outfit) will



The Key to Harvest Profits—

All the Work in Half the Time

keep the separator going at full capacity. Moreover, it is not only a matter of saving on men and horseflesh, but the work is done better. There is no loose grain and scattered bundles left in the field. This is a valuable consideration from the farmer's standpoint, as grain saved is money saved. Any way you look at it the Stewart Sheaf Loader is a money-saver. It economizes on help and saves the grain. Benefits thresher and farmer alike.

## The Stewart Sheaf Loader Co. Ltd.

804 Trust and Loan Building, Winnipeg, Man.

You saw this advertisement in this magazine. Don't forget to say so when writing.

### Farm Problems

Continued from page 24

The total hog shipment for the year 1912 was only 76,000. A conservative estimate of the value of these hogs to the farmer is \$15.00 each or \$2,100,000 and the movement has only well begun. To give some idea of the rapid increase it might be well to quote the figures for July. During the month of July, 1913, 22,442 hogs were marketed; for the corresponding month of 1907 the marketings were only 1,330. Sheep also show a tremendous increase; so far the number of sheep marketed in July, 1913, is 15,842; the total marketings for July, 1912, were 11,039. In 1907, the total marketings of sheep for July were 868. The actual value of all live stock marketed out of the Province of Alberta in 1912 was \$15,000,000. With the rapid increase shown by the above figures a rough idea may be gathered of the enormous amount of money which has already come in and which will continue to come in from this source in 1913, and in spite of these increases the market demand is so great throughout the whole of Canada that there is little, if any, fear of any serious decline in prices.

These are just some jottings, by the way, for my readers of Farm Problems. I think they are worth considering.

### Three Years on a Farm

Continued from page 22

1,200 bushels for feed and seed. The cost of threshing was \$48. He now had a comfortable home, a good barn for his horses with the mow filled with hay from the sloughs and had feed and seed for next year. All that remained to be done the first year was to cut the year's supply of wood. His expenses for the year were as follows:

Seed oats .....	\$ 13.50	
Feed for horses .....	40.00	
Supplies for house .....	60.00	
Breaking .....	300.00	
Fence .....	133.40	
House and Barn .....	2,000.00	
Taxes .....	60.00	
Threshing .....	48.00	
Capital at start .....		3,000
<b>Total .....</b>	<b>2,654.90</b>	<b>3,000</b>
Balance on hand .....	\$345.10	

During the winter a plan of the farm was drawn up, considerable thought being placed on it because in work of this kind the fields should be so planned that ready access can be made to them from the buildings, thus saving time. Also tree planting around the buildings for windbreak purposes is very important. With the second spring the 120 acres of breaking were harrowed twice and sown to oats. Two and one half bushels per acre were sown, or 350 for the total area; this at 30 cents per bushel cost \$90 for seed. The twenty acres of stubble land were plowed and

packed and then sown to brome grass for a permanent pasture. This required 140 pounds, costing 10 cents per pound or \$14 for sowing the field. Twenty acres adjoining this field were broken up and thoroughly worked down. This was seeded with Western Rye grass at the rate of fifteen pounds per acre, and as the seed cost ten cents per pound it required 30 dollars worth of seed. As soon as the crop was in, the team was put to work breaking the remaining areable land. It required seventy days to break one hundred and forty acres. The wage for a man and a team of four horses was five dollars per day, therefore the breaking cost 350 dollars. The land was allowed to rot during haying time and then disced. By the middle of July haying began, the sloughs were dry and an abundant crop of hay had grown. This was cut and allowed to stay exposed to the sun for one day, when it was raked and coiled and then hauled to the barn, where it was placed in the loft over the horses. When this had been completed the breaking was disced twice then harrowed four times and allowed to stay in this condition over winter. During the summer the plan above was worked out in the farm. The only fencing done was the lane, around the buildings and the pasture and hay fields;

this cost 100 dollars. The wind break was planted later in the fall. About this time six milch cows were purchased at 40 dollars per head. These cows kept the family supplied with butter and groceries during the fall and winter months. An implement shed was erected costing 100 dollars, a hen house costing 150

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### Gas, Automobile and Traction Engineering



The young man who completes either one of these courses is sure of a job, with good pay. In the West there is a continual demand for young men with a technical knowledge of gas, traction engines and automobiles. Each course may be finished in three months. You can learn more about an engine at

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In three months than in that many years as an apprentice. Students work right in machine shop, traction engine house and auto garage. Repair and drive gas and steam engines and automobiles. Gas Engine Course may be taken with either the Traction Engine or Auto Course without extra tuition. Small tuition fees. Low cost of living. Largest garage and machine shops in the country. No entrance examinations. Send for catalogue. G. E. (INC.), Pres., Highland Park College, St. Louis, Mo.



dollars, and a small piggery costing about the same amount. Four brood sows were purchased costing 80 dollars for the four, and twenty-five hens costing 10 dollars. By this time the grain was ripe and cutting began, and as there were 120 acres no time was lost in getting it into the stook. The yield was 80 bushels per acre, or 9,600 bushels total. This was sold at 30 cents per bushel. Preserved 1,600 bushels for seed, but the 8,000 bushels brought 2,400 dollars. My threshing expenses were 320 dollars. Another year had now passed, the farm had now greatly improved in appearance and value, and above all it had the look of a home where you would find contentment and where prosperity was just beginning to unfold her wings. The year's expenses and profits or losses were as follows:

Seed oats .....	\$ 90	
Brome \$14, Rye \$30.....	44	
Breaking .....	350	
Fencing .....	100	
Cows \$240, pigs \$80, hens \$10.....	330	
Implement shed \$100, hen house \$150, piggery \$150 .....	400	
Threshing .....	320	
Man's wages .....	120	
Taxes .....	60	
Payment on farm \$480; with interest \$280 .....	760	
Running expenses .....	60	
Returns from Crop .....		\$2,400
	\$2,634	\$2,400
Loss of .....	\$234	

Thus at the end of the second year he was \$234 in debt, but he now had all building done and the farm from this time on could produce crop to pay the debt alone. The cows, pigs and poultry paid all living expenses.

The third spring four new horses were purchased at a cost of 500 dollars a team, harness costing 80 dollars and a new 14-inch gang plow costing 80 dollars. While the snow was still on the ground the seed grain was cleaned thoroughly and all implements made in good shape for the spring's work. As soon as possible after the frost was out of the ground seeding operations were started. The breaking was harrowed twice and seeded down with oats at the rate of two and one half bushels per acre. The old land was plowed and harrowed by using a harrow attached to the plow, then packed and sown with oats at 2 1/4 bushels per acre and harrowed across the seeder tracks. The herd had increased by six calves, thirty young pigs and one hundred chickens. The grounds around the house were finished off and the farm began to have a very tidy appearance. The produce kept the family supplied with all needed food and clothes, leaving a considerable balance which kept the farm expenses down. When the crop was threshed the yield was found to be good, the breaking yielding

80 bushels per acre and the older land 60; the total crop yielding 18,400 bushels, 16,000 bushels of which were sold, leaving 2,400 bushels for feed and seed. The year's accounts were as follows:

Horses, two teams at \$500 .....	\$1,000.00	
Harness .....	80.00	
Gang plow .....	80.00	
Seed .....	204.00	
Two men's wages .....	300.00	
Threshing .....	736.00	
Taxes .....	60.00	
Debt from previous year .....	234.00	
Payment on farm \$480, interest \$259.2 .....	232.02	
Expenses .....	50.00	
Value of crop sold .....		\$4,800
Total .....	\$3,483.00	\$4,800
Balance profit .....		\$1,317

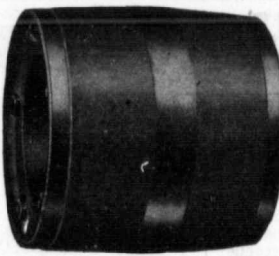
Three years had now been spent on the farm and this year showed a balance of \$1,317 profit, showing that things were so managed that money came into the owner's pocket and remained there instead of having to pay out every cent made to pay running expenses. An inventory taken shows that the farm had greatly increased in value and that large interest had been paid on the original investment.

Present value of farm \$25 per acre .....	\$8,000	
Implement and tools .....	800	
Stock, horses \$1,800, cattle \$360, pigs \$100 poultry \$50 .....	2,250	
Grain, feed and seed .....	400	
Cash in Bank .....	1,317	3,840
Mortgage on farm \$3,840 .....		
Capital at start \$3,000, stock implements .....		1,500
Total .....	\$12,767	\$5,340
Balance .....		\$7,427

Thus we see that starting with a capital of \$3,000 and stock and implements valued at \$1,500, there had been cleared during the three years \$7,427, or \$2,475.66 of a yearly profit. This shows what can be done by any man who is willing to stay with it and work the problem out. The argument may be made that not every man enjoys the capital to start as this one did. True, and yet we can point to men in every locality who started without a cent and made good, only it takes longer. In writing this article, which only covers three years' operations on a farm it was necessary to start him with some capital in order to show the running of a thoroughly established farm with all buildings erected, all stock purchased and the home made as it should be, a thorough home surrounded by beautiful grounds and one surrounded with all the comforts of life.

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Our Products are  
**MADE-IN-CANADA**  
and we are  
Independent of any Trust or Combine

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**If you knew the Rockwood Paper Cylinder Pulley as we do you would not hesitate a minute about buying one**

**This letter speaks for itself:**

J. A. SELL  
Hardware, Stoves, Tinware, Wagons, Harness, and Farming Implements.  
Brook, Indiana, Aug. 12, 1913

The Rockwood Manufg. Co., Indianapolis, Ind.

Gentlemen:—  
After about ten days' trial we are ready to say that we are more than pleased with the cylinder pulley you made for our 36 x 60 Huber Separator. It is a marvel for transmitting power. We can run with the slack belt, almost touching the ground, while the draw part of the belt will be in almost a straight line from cylinder to engine. And not a particle of slipping, although feeding the machine to its full capacity. We consider the price paid the best money we ever spent on our rig. We are, respectfully yours,  
J. A. Sell and Gerriek,  
Per J. A. Sell.

Remember the Rockwood Paper Drive Pulley is equally well adapted to use on other kinds of machinery or wherever hard belt pull is required—Send us your order at once if you want a pulley for this year's threshing

**The Rockwood Manufacturing Co.**  
1928 English Ave., Indianapolis, Ind., U.S.A.

You saw this advertisement in this magazine. Don't forget to say so when writing.

**To know how much you ship and how much you receive is only good business!**



**FAIRBANKS PITLESS SCALE**

will safeguard your interests by checking quantities in and out, ensuring you perfect justice both in selling and buying. We have a co-operative idea that it will pay you to investigate, whereby several farmers can buy one of these scales on a joint ownership basis and get full value out of the scale, yet only pay a trifling amount each. Write us for details of the plan and free catalogues.

**WE MANUFACTURE**  
Fairbanks-Morse Oil Tractors, 15-30, 20-40 and 30-60 H.P.  
Oil Engines, Portable and Stationary, 1 to 500 H.P., for all purposes.  
Marine Engines, 2 and 4 Cycle, 3/4 to 100 H.P.  
Binder Engines, adapted to all makes of Binders.  
Hand and Power Pumps for every purpose.  
Truck and Pitless Scales, specially designed for farm use.  
Electric Lighting Plants, suitable for country residences.

**The Canadian Fairbanks-Morse Co. LIMITED**  
WINNIPEG REGINA SASKATOON CALGARY  
Montreal, St. John, Ottawa, Toronto, Vancouver, Victoria

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## History of the Stewart Sheaf Loader

PLANT  
1910PLANT  
1913

WINNIPEG

MANITOBA

The Stewart Loader is a remarkable success and has had wonderful development, since it does away with the hard labor at threshing time, when that labor is difficult to get.

Stewart brothers, the inventors, were industrious farmers of Molesworth, Huron County, Ontario, and had also spent a number of years farming in Manitoba. They saw the great necessity of having a machine to pick up the grain and hay from the ground and place it on the wagon in order to do the work better and cheaper. They started to work quietly on their farm in Ontario, got out sample machines, tested them out, secured patents and perfected one machine. This one machine was shipped out and tested on a farm in the Balcarres (Saskatchewan) district during the full threshing season of 1910.

The Stewart Sheaf Loader Company was then formed and a small plant built in Winnipeg. Expert workmen were employed and fifty machines constructed, sold and operated in the threshing fields in 1911.

These fifty loaders worked so satisfactorily that every person who saw them loading grain were everywhere praising the work and pointing out the merits of the Stewart Loader. The plant was immediately enlarged, more skilled workmen employed, and five hundred machines placed on the market in 1912. The result was that as you went through the country you could hear every thresher say: "I must have a Stewart Loader next year." In the fall of 1912 the plant was again enlarged and a thousand machines are now being placed in the fields for 1913 threshing season.

The Company invites everyone to investigate this Stewart Loader. See it at work in the fields. While watching the Loader filling up the wagons, notice how clean the fields are since the loose grain is picked up. Next go to the house and hear what the pleased housewife has to say about it since she must provide for fewer men. Next write to the company at Winnipeg, or see their nearest agent, for if you want a Loader for this season we must have your order within the next few weeks.

You may wonder why this machine is so successful. The farmers, as well as the threshers, see the benefit of it. One prominent member of the Grain Growers' Association puts it that he has been farming in Western Canada for 29 years and this is the first year that he cannot see where the shocks stood the fall before. To the thresher it means that besides saving money in a crew it enables him to secure enough men and thus thresh to full capacity. The Stewart Loader is always there ready to work.

The greatest care possible is taken in the selection of material. Examine the frame; it is light but very strong, built of cold drawn seamless square tubing. The "Pick Up" is made up of high carbon cold drawn seamless round tubing noted in the steel world for its wonderful toughness and strength. All of the chains are malleable and each link riveted with steel pins. The malleable parts are carefully tested. All wood parts are tested for strength and defective parts discarded.

In each mechanical department each part is carefully inspected before passing on to the warehouse. Besides this, competent men are all the time erecting machines in the shop and testing them out to ensure the management that the work is being accurately done and that the machines will go out and do even better work than the season before.

The motto of the management is: "Give the farmers well built machines, of good material, and give them the service that they are entitled to."

You saw this advertisement in this magazine. Don't forget to say so when writing.

### DOMINION DEPARTMENT OF AGRICULTURE

Branch of the Dairy and Cold  
Storage Commissioner.

#### Successful Dairying

There are such excellent concrete examples now and again outcropping of men who prove that it pays to take up cow testing, that their records of success make stimulating reading for dairy farmers all over the Dominion.

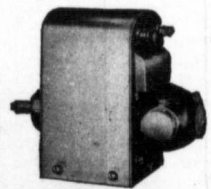
Here is a good sample of what one man at Cedar Hall, Que., in the Gaspé peninsula accomplished by carefully watching his fairly good cows and feeding them better. The first year his eight cows gave him 33,511 pounds of milk, an average of 4,188 pounds at a feed cost of \$32.50, netting a total profit of \$76.82, an average of \$9.60 profit per cow. Two of the best cows in the herd the

first year were lost accidentally, two heifers made up the herd to eight again; a pure-bred sire is kept.

The next year his eight cows gave him 41,408 pounds of milk, an average of 5,176 pounds, or 1,000 pounds of an increase per cow. The feed cost \$4.12 more per cow, but the total profit was \$177.29, or an average of \$22.16 per cow. This is an increase of one hundred and thirty per cent in the profit. It pays to give additional feed if the cows kept are of the type to make use of it profitably.

The forcible realities are these: The gross income from milk increased by 133.43 from the same number of cows, the profit far more than doubled, and the owner has received every encouragement to try for still better results. That is where a trial cow testing trip generally lands the herd owner.

## ELECTRIC LIGHT for Gas, Oil or Steam Tractors The Wells Generator



Will save you all the risks of exposed flames and lighted matches near explosive fuel and its vapor. Needs no cleaning and will not "blow out," and the power is taken from energy now wasted by your engine. It generates, stores, and delivers electric current to the storage battery; starts charging whenever the battery needs it and stops when the battery is full, automatically. When your tractor is not running, the battery still supplies light for a long time, and will light two lamps for 60 hours after the tractor has stopped running. Many who use our systems take their storage battery into the house or stable and thus have all the city advantages of electric lighting.

The only safe plan and all at absolutely no cost for operation.

Send a card today for complete details and prices.

**Western Motor Company** 305 Carlton Street  
WINNIPEG

You saw this advertisement in this magazine. Don't forget to say so when writing.

"Keen frost last night, Portley."

"Frost! I believe you, my boy, Why, this very morning I took out some water for my fowls.

Three minutes afterwards I heard a lot of chucking. Looked out of the window, and there they were, young beggars, sliding on it."





## MOGUL ENGINE PLOWS

5-6-8-10-12 Furrow Sizes

It is one thing to say that this or that plow is the best plow ever made.

It is quite another thing to put the plow in the field and submit it to those tests which bring out its strong or its weak points.

Nothing that we could say about the Mogul Plow would be half as convincing to you of its ability to make good as seeing it at work. We aren't afraid of any test to which you may subject it, nor to have you see it work in competition to any engine plow on earth.

That may be strong talk, but if you are sufficiently interested in engine plows to go where you can see a Mogul in action you will be convinced that it is also straight talk. Every Mogul Plow that leaves our factory carries with it our unqualified guarantee.

One of the most important characteristics of the Mogul is the consistency of its construction. Every part is equal to its duty. Its beams are in propor-

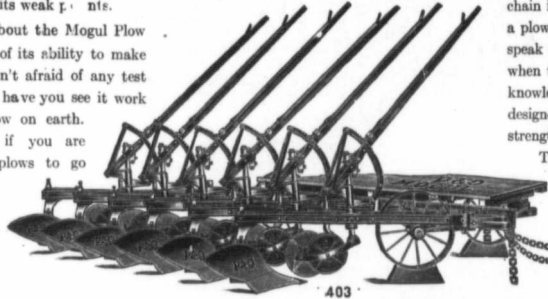
tion to the load on the bottoms. To build a plow with strong heavy bottoms and standard, and then attach them to weak flimsy beams would be folly. A chain is no stronger than its weakest link. Neither is a plow stronger than its weakest part. So when we speak of consistency of construction we mean that when the plow was built, its builder had a thorough knowledge of what every part must be able to do, and designed it to do that part allowing enough reserve strength to provide for all emergencies.

That's why the Mogul has always had A LITTLE STRENGTH TO SPARE.

That's why it has made good in every fair test, with other plows. That's why it is the plow which you should buy.

Write for catalog describing these plows.

Made by **PARLIN & ORENDORFF CO.**  
CANTON, ILL., U.S.A.



**International Harvester Corporation of Canada, Ltd.** Sales Agents for Canada

You saw this advertisement in this magazine. Don't forget to say so when writing.

### Ogilvie's New Mill at Medicine Hat

A few weeks ago the new 4,000 barrel flour mill of the Ogilvie Flour Mills Co. Ltd., started operation at Medicine Hat.

This immense mill started at the rate of 2,000 barrels per day, and it is expected that it will soon be running at full capacity if it is not doing so by the time this article appears.

The erection of this mill at Medicine Hat, marked another triumph in the success of the

Winnipeg, a million bushel elevator and large flour mill at Fort William, the new 4,000 barrel flour mill and 600,000 bushel elevator at Medicine Hat, twenty-five elevators in Western Saskatchewan and Southern Alberta to supply their Medicine Hat mill and one hundred and twenty ele-

of the towns and cities, for, after all, the success of the towns and cities depend upon the tilling of the soil.

Royal Household flour is the product on which the success of the Ogilvie Flour Mills Co. Ltd., is founded, and it is to be hoped that the demand for this flour will warrant the company in erecting still further extensions to their already large plants in the near future.



It was a local concert, and all the swells of the neighborhood had turned out. The second "turn" was Mr. Pipeclay Cramon, and he had a large number of songs for the edification of the company. But that was not all. Mr. Cramon was also of ample proportions.

"My dear," exclaimed one "fashionable" to her friend, "hasn't Mr. Pipeclay Cramon an extensive repertory?"

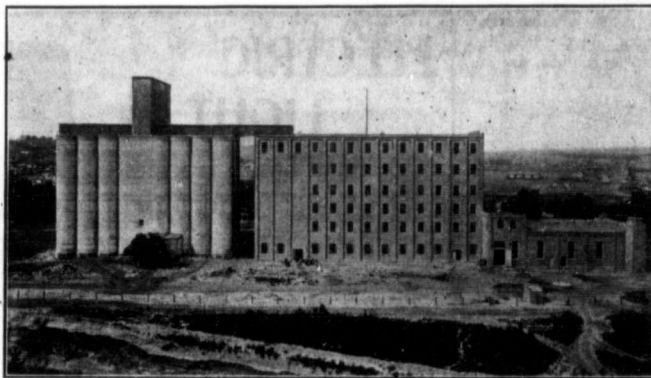
"Well, I shouldn't like to say that," said her friend, "but he certainly is getting rather fat!"



### What He Came For

Pater: "I wish Mary's young man would come round after supper."

Mater: "That's all he does come round after."



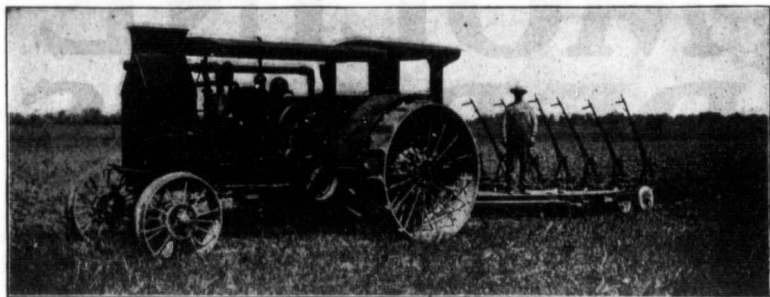
New Ogilvie Flour Mills and Elevators, Medicine Hat.

This mill which is one of the largest in the British Empire, is also the most complete, comprising as it does in its construction and equipment, every modern device which will add to its efficiency in producing flour of the highest grade.

Ogilvie Flour Mills Co. Ltd. Only a comparatively short time ago their only plant was a 300 barrel mill located in Winnipeg. At the present time they have a 3,000 barrel flour mill, a 750 barrel mill for producing oatmeal and rolled oats and a mammoth elevator at

vators in Manitoba and Saskatchewan to supply their Winnipeg and Fort William mills.

The Ogilvie Flour Mills Co. Ltd., have done much towards the development of not only the farming districts of the West but have assisted materially in the growth



## Use This Competent Combination



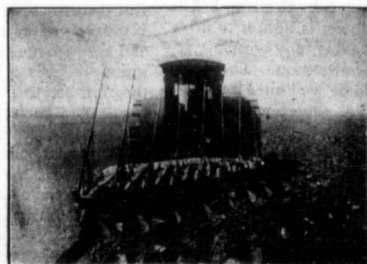
**A**S LONG as you practise the art of farming you will have to plow. Every year you must turn the soil over. Every year you have before you the prospect of this slow, laborious work, unless you apply modern methods, cut down your plowing time to the minimum, and increase your farming efficiency—unless, in short, you

**Plow with an IHC Oil Tractor and a Gang Plow**

The plowing scenes pictured here show you a most admirable plowing combination, as hundreds of Canadian farmers testify.

## I H C Oil Tractors

have displaced the horse not only in rapid plowing, but they are at work in Canada in an almost endless round of duties twelve months in the year. Use them for hauling, road making, harvesting, seeding, etc., and to run stationary machines of any description by belt power. They are made in all sizes from 12 to 60 horse power, to operate on both kerosene and gasoline.



See the local agent about I H C Tractors.

Write the nearest branch house for full information

## International Harvester Company of Canada, Limited

WESTERN BRANCH HOUSES

At Brandon, Man.; Calgary, Alta.; Edmonton, Alta.; Estevan, Sask.; Lethbridge, Alta.; North Battleford, Sask.; Regina, Sask.; Saskatoon, Sask.; Winnipeg, Man.; Yorkton, Sask.

THESE MACHINES ARE BUILT AT HAMILTON, ONT.



# MOLINE REPAIRS



We carry a complete stock of repairs for Moline Plows and other Flying Dutchman Tools, Mandt Wagons, Monitor Drills, Adriance Harvesting Machinery, Etc.

Orders for Shears and Repairs will have our prompt attention.



## John Watson

Manufacturing Company

Winnipeg - Man.



### The Grain Separator

Continued from page 20

as to make a good pile. Blowers with bevel gearing require to be nicely adjusted or the gearing will cut out. If the gearing does not mesh perfectly square they cut, no matter how much oil is used. When they get out of square they should be lined up and babbitted. They can be made to mesh the proper depth by adjusting the boxings by means of set screws located for the purpose. The gearless blower is lighter to drive and not having any gearing requires less attention. The bearings should be well oiled and kept adjusted so there will be no jumping.

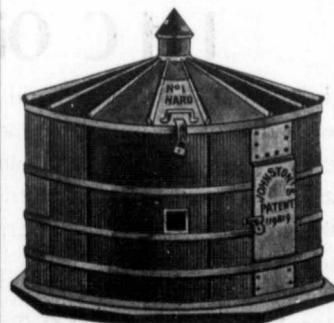
**Bagger.** The bagger needs very little attention. Occasionally the cups or cleats for elevating the grain become loose. They should be examined once or twice every season and if any loose ones are found rivet them up tight. If they come off a smashup in the bagger is likely to be the result.

**Setting.** In setting a separator it should be set level both ways to get the best results. This can easily be done by making holes for the wheels to drop in, or else pick a level piece of ground to set on. If the machine is low on one side there is a tendency for the chaff and grain to gather to the low side. The result being a dirty job, poor separation and a waste

of grain. Some men like to set the machine high behind, others low behind. No doubt this has an effect on the slope of the sieves, but the machine should be adjusted so it will do its best work setting level as it is generally easier to set level every time than to set on an angle.

**Waste Grain.** It is impossible to thresh grain and save every kernel in all kinds and conditions of grain. There is no machine on the market yet that is perfection. But there are many machines that if properly operated do good work and save a large percentage of the grain. It is a poor policy for the thrasher to pretend or promise to do a perfect job because if the farmer is careful to examine he is almost sure to find grain, then there is apt to be trouble. The amount of waste grain is very misleading. If a farmer holds his shovel for a minute or so and catches a few grains he imagines half of the crop is going into the straw pile. If he saw a stream of wheat going over the shoe such as runs from one drill sprout in seeding time he might think two-thirds of the crop was gone sure, but on a moment's thought that it takes ten hours of good driving to run two bushels of wheat out of the one spout and at that rate he was probably losing two bushels out of fifteen or eighteen hundred which is not such a terrible loss considering

## Keeps Your Grain For One Cent Per Bushel Per Year



Johnstone Steel Granary Capacity 1050 bushels

Under the new Banking Act farmers can secure loans on their grain only when it is properly stored.

Johnstone's Steel Granary is the solution

Thousands now in use on Western farms. It is positively the best Portable Granary on the market. It is the only Steel Granary built with a rigid frame that cannot be blown down, or pulled out of shape.

It is covered with sheets of Corrugated Galvanized Iron with vertical locked joints, making it impossible for Flax Seed or other Grains to escape.

It is reinforced on the outside with iron bands to keep the sides from bulging when filled with grain.

It has a large door, with inside door, making it an easily matter to handle grain, as well as being useful for other purposes, when empty.

The roof is made in sections interlocking that are very easy put on and cannot blow off.

This granary can be set up by anyone who can handle a hammer and wrench.

The granary has a chute on side for emptying, and a manhole on roof for filling.

The Johnstone Granary will keep your Grain sound and dry and keep it all, even to flax.

Price \$80.00 with a liberal discount for cash

Write for CATALOG

The Johnstone Steel Granary Co.

MAY ST.

WINNIPEG



the amount of work and the difficult process of separation. When there is reason to believe that the separator is wasting more grain than is necessary, first determine whether the grain is being carried over in the straw or in the chaff. If the grain is going over the shoe with the chaff make sure the sieves are properly adjusted and that the wind is not stronger than enough to keep the sieve clean. If there is more chaff than the shoe can handle and the grain threshes easy, take out some teeth and try it. If threshed grain is going over in the straw it is perhaps caused by slugging the cylinder or by feeding down to a low speed. The machine must be fed even and steady, using good teeth and only enough to thresh the grain from the head with as little chopped straw as possible. Sometimes when the teeth are old and in poor condition heads pass through the cylinder without being threshed and are threshed by the blower, then the machine gets the blame for poor separation, when the real cause is old worn out teeth.



#### PLOWING LETTERS

Continued from page 14

##### Horse Cannot Be Displaced

In answer to your letter of the 16th, asking for my experience with power plowing, etc., I will attempt to give some of our experiences, but my experience in traction cultivation is somewhat limited, as we have only had one summer at it.

Last spring I purchased a 30-60 Hart-Parr engine, and an eight bottom Cocksbutt engine gang with breaker bottoms. We selected the Hart-Parr engine because it was a two cylinder one, and was oil cooled. I consider a two cylinder engine much better for threshing than a 4 cylinder one, and the oil cooled is a great saving of time and labor in cold weather.

With this engine we drew eight plows and a set of harrows with ease. At first we only had the regular 24-inch wheels, but as the ground was very wet last spring, we were forced to put on extension rims, which I consider a great help in any kind of stubble work.

In the early spring, the ground was very wet, and we had a lot of trouble with soft-places, but in spite of the bad spring, we were able to plow and harrow 500 acres in time for crop. Part of this was custom work, which we did for \$1.75 per acre.

We found that our engine used from 2½ to three gallons of kerosene per acre, which cost us 17½ cents per gallon, but I consider that in good clean land 2½

gallons per acre would be about a regular thing.

Our land was very stony, which caused some delay, and accounted for the large amount of fuel used.

After seeding, we commenced to break, and this is where the engine shines. The engineer always has good footing, and there is no dust to bother. We broke 300 acres on an average of 3 gallons of kerosene per acre. In plowing we averaged about 20 acres per day, and 15 acres when breaking. The Cocksbutt plow is a good one, and is very strong, but still we had quite a few break-ages on account of the stones, and I think there is room for a valuable patent in the shape of a safety hitch.

Our crew consisted of the engineer and plowman. I had a large wagon tank that holds 300 gallons of kerosene and 75 of gasoline, which I had to get filled once a week. I consider that power farmers could save a lot of money if they would all get wagon tanks, and insist on the oil coming in tank cars instead of barrels. The barrel system is both wasteful and expensive.

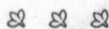
Last fall I used my engine for threshing, and drove a 40 x 62 Case separator which it handled very well. Our crew consisted of eight teams, and five pitchers, and sometimes we had an extra man at the machine to help unload.

I consider the gas engine to be much better than the steam for an all-round farm power. It is easier handled, and will do the work quite as well. Our engine gave us very little trouble, and the engineer spent quite a lot of his time helping to unload the wagons.

I do not think that motive power will ever displace the horse, but I do consider it a very valuable asset on any farm of say a section or more of land. In this country where the seasons are so short, the work has to be done in a very short space of time, so it is almost impossible to keep men and horses enough to do it, but with an engine two men can easily do the work of four or five horse outfits.

Hoping that these few rambling remarks will be of some interest to your readers, I am,

Yours truly,  
F. A. Sirett.

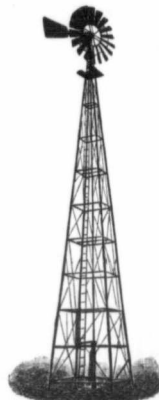
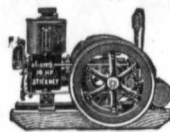


#### No Story

"Say," said the city editor to the young reporter, "what about the story of Vere de Vere wedding that I sent you for yesterday?"

"Oh," replied the cub, "I went up to the church and we all waited, but I didn't get a story. The bridegroom didn't show up."

## Ontario Wind Engine & Pump Company's LINES ARE SUPREME



### There is Nothing in Chance or Number 13

In buying the O. W. E. & P. Co's. lines you will get an engine in the Stickney or Chapman that will start at Zero; a Wind-mill, the Toronto, with 30 per cent more material in its legs to stand the gale; a Grinder that has the accuracy and efficiency of a flour mill; A Well Drill without gears, friction driven, with sand pump line speed of from 400 to 500 feet per minute, and you can give Luck and No. 13 a shrug and a laugh.

If your dealer does not handle our lines, write the  
**Ontario Wind Engine & Pump Co., Ltd.**

AT

MONTREAL TORONTO WINNIPEG OR CALGARY

You saw this advertisement in this magazine. Don't forget to say so when writing.

## The "MEADOWS" ALL STEEL PORTABLE GRAIN ELEVATOR



Both elevator and receiving hopper are entirely of steel and only the best of heavy sheet steel is used.

The Hopper is absolutely grain tight and has a large capacity. It is the only successful feeder ever devised for a small grain elevator. Both top and bottom ends of Elevator are solid castings heavily ribbed. The top casting has 4-inch slot for adjustment of chains, making it possible to take up 8 inches of chain, so that it will never be necessary to take out a link on account of wear.

Top and Bottom Sections are both 9 feet long. Middle Sections 4 and 8 feet long. The Sections are coupled together with cast coupling and the Elevator can be easily and quickly taken apart by removing 4 bolts and can be put together just as easily and as quickly. The Capacity is practically unlimited—the greater the speed and Horse Power the greater the capacity. The "Meadows" is positively the

BEST SINGLE LEGGED STEEL ELEVATOR BUILT.

**HENRY RUSTAD, 325 WILLIAM AVENUE, WINNIPEG**

You saw this advertisement in this magazine. Don't forget to say so when writing.



# NO. 1 HARD

Winnipeg, Sept. 2, 1913.

The last month of the 1912 crop year, August, brought steady firm prices for old crop, but as it became manifest that the West would garner the biggest crop of high grade wheat in her history, the October option sagged heavily. Held several cents above export basis, while the United States and Russia were underselling us in Europe, our October option suffered the greatest decline of all, but the excellence of the grade of such a vast volume now about assured, offsets the decline in price. Besides it is a crop rather easier to handle than the usual, and the weather has certainly been almost ideal. With the movement ten days to two weeks ahead of that of last year, it is likely that fifteen to twenty million bushels more grain will be got out of the country before navigation closes, and this should help out the money stringency. The great improvement in lake terminal facilities, giving up to some 40 million bushels space at Fort William and Port Arthur will also help in quick handling.

Farmers are ready sellers just now for September delivery, endeavoring to catch premiums. It is to be regretted that more of our wheat was not already sold for export in October—the amount so far is said to be trifling—for then we might have had a keener demand with better premiums. Many progressive farmers take note that just now they can sell their new grain and if they wish to remain in the market for higher prices, can buy May wheat at only two or three cents more. Assuredly, counting shrinkage on grain, interest on money, etc., wheat cannot be held at home for that spread or at terminals for five times that spread. The foreign situation is a little stronger just now than a few days back. In the United States it is conceded that the corn yield has been greatly diminished by drought. This has helped wheat. American farmers have been fair sellers of wheat, but are now letting up. All European markets are nervous and higher these two days past on bad weather on the Continent, a feeling of uneasiness over the Russian crop, and scarcity of offerings from the Argentine. However, it is unlikely that any great advance will be recorded, as our

wheat will now be offered freely and only sustained buying power can digest the tremendous load the market will have to take care of.

Canadian inspections for the crop year ending August 31st, 1913, were phenomenal:

Wheat .....	141,715,125 bus.
Oats .....	59,763,600 "
Barley .....	14,833,000 "
Flax seed .....	22,081,500 "

The carry over of wheat in store at terminals is rather smaller than a year ago. Prices of new crop start off six to ten cents lower than a year ago.

The Board of Grain Commissioners for Canada have just announced that the sample market cannot be established until December 15th next, so that the bulk of this crop will still be sold on grade.

Other years much grain had been worked for export by this time, hence exporters urgently requiring grain, have frequently had to pay big premiums, at their own loss, to get cash grain: this year the situation is different, little having been sold ahead, hence premiums for new crop are small and will likely disappear earlier. The recent depression in October option seems to have been sufficient to start some export business, and prices should not now decline any more as long as Europe will buy, or until the crop movement becomes heavier. The new grain to hand is generally of excellent grade and weight.

### Coarse Grains

The drop in corn in the U.S.A. following general rains, as well as the harvesting of a good crop of oats in Western Ontario, brought a decline in oats. However, a rally has set in due to further damage to the oat crop in the United States, coupled with the belief that our oats are very cheap when it looks like the duty against our oats going to be shortly reduced. Our own oat crop is a big one, but farmers should not hurry to market their oats, for better prices seem likely. It must be remembered that wheat is six to ten cents cheaper, oats six to seven cents cheaper, and barley nine to ten cents lower than a year ago, largely because of money stringency. Barley seems altogether too

WE beg to announce that we are prepared to SERVE the Grain Growers and Grain Dealers of Canada in the capacity of

### COMMISSION MERCHANTS

—ON—

### THE WINNIPEG EXCHANGE

It is our aim to render expert service along this line. We are devoting all of our energies to giving prompt and most careful attention to business entrusted to us by our clients. We shall also be prepared to assist in

### FINANCING THE GRAIN

### MOVEMENT

by extending credit to responsible dealers and shippers. We hope, by fair dealing, honest methods and hard work to merit a part of the patronage of those who consign grain to the Winnipeg Market.

Yours for service

### Benson-Newhouse-Stabeck Co. Ltd.

By E. R. ANDERSON, Secy.

GRAIN EXCHANGE BLDG.

**DIRECTORS:**  
 O. T. NEWHOUSE, Pres. H. N. STABECK, Vice-Pres.  
 E. R. ANDERSON, Secy. P. O. HEIDE, Treas.  
 F. O. GOLD B. F. BENSON F. O. ORTH

## Donald Morrison & Co.

ESTABLISHED 1904

### GRAIN COMMISSION

### 725° Grain Exchange,

WINNIPEG.

WE handle Wheat, Oats, Flax and Barley on commission, obtaining best possible grades and prices. Our work is prompt, accurate and reliable. Let us handle YOUR shipments this season. Daily or weekly market letter on application.

References, Bank of Toronto, Northern Crown Bank and Commercial Agencies.

# FREE

Daily Market Letter and Sample Grain Bags. Send us your name and address and we will put you on our mailing list —its free. Let us keep you posted on market prices for grain. Personal attention given to selling and grading of all cars. Our Car Tracing and Claim Departments work in our Clients interests. We have every facility for prompt service and we get best results for shippers. Send a day for a supply of sample bags and deal with a firm whose business has been built up by satisfied customers.

### Central Grain Company, Limited

Commission Merchants  
 Grain Exchange Winnipeg, Man.

Paid up Capital, \$100,000

References: Any Bank  
 or Commercial Agency

You saw this advertisement in this magazine. Don't forget to see when writing.

This THE Farm Power Magazine of Western Canada. That's why you will find in IT the advertisements of RELIABLE Manufacturers who make the best Farm Power Machinery.

low, but the malting demand has scarcely come yet and this grain should do better. This new grain is also a nice sample. Farmers can very well consign barley and sell after arrival.

Flax had a marked advance in August, as we always predicted, after the bulk of it was out of the farmers' hands. It will probably hold around present figures or a little better for a week or so, until some new crop comes ahead, when the market will likely depend upon the volume of the movement. The crop is much smaller than that of last year, both in the United States and in Western Canada.



**For Experiment's Sake**

Mushrooms are a favorite dish with a certain professor, whose son is an ardent and clever botanist. The other day the younger man brought home some of the edible fungi, and asked his mother to have them cooked for his father's supper. When the professor saw the laden dish, he was very pleased.

"What, are these all for me?" he asked, not wishing to appear greedy.

"But his son would not have a single one."

Next morning the professor found his son hanging about on the landing outside his bed-room door.

"Hallo, father! And how do you feel this morning?" asked the son.

"Very well indeed, my dear boy."

"Sleep all right? Didn't have any pains through the night?"

"Of course not. I slept like a top. Why?"

"Hurrah, hurrah!" cried the enthusiast. "Then I have discovered another species which are not poisonous!"

## The Only One!

Don't Dump Your Grain on the Market Now

**HOLD IT FOR A DECENT PRICE**

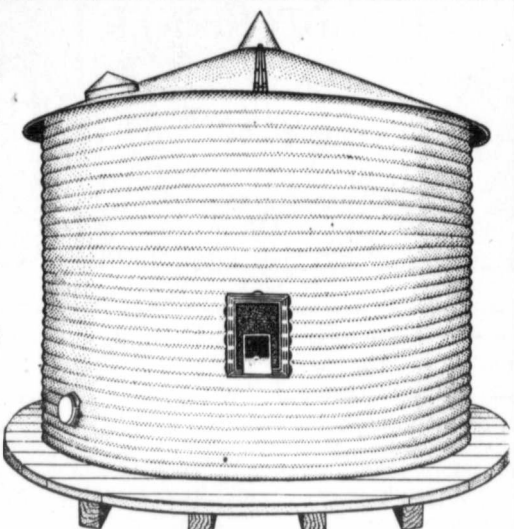
Store it in our—

### Patented Galvanized Granary

These Granaries have been on the market seven years, and have satisfied thousands of customers.

Write today for full Particulars and Prices

**WINNIPEG CEILING & ROOFING CO., Limited**  
P.O. BOX 2186a. Manufacturers of Sheet Metal Products WINNIPEG, MAN.




You saw this advertisement in this magazine. Don't forget to say so when writing.

USE

## WHITE ROSE GASOLINE

More Power Less Carbon

**THICK, SWOLLEN GLANDS** that make a horse Wheeze. Roar, have Thick Wind or Choke-down, can be reduced with



**ABSORBINE**

also any Bunch or Swelling. No blister, no hair gone, and horse kept at work. Concentrated—only a few drops required at an application. \$2 per bottle delivered.

Book 3 K free.

ABSORBINE, JR., antiseptic liniment for mankind, reduces Cysts, Wens, Painful, Knotted Varicose Veins, Ulcers. \$1 and \$2 a bottle at dealers or delivered. Book "Evidence" free.

W. F. YOUNG, F.D.E. 113 Lyman's Bldg., Montreal, Can. Also furnished by Martin Hole & Wynne Co., Winnipeg; The National Drug and Chemical Co., Winnipeg and Calgary; and Henderson Bros. Co., Ltd., Vancouver.

Mention this magazine when writing advertisers

Telephones—Main 46 and Main 3570

## GOOD PREMIUMS FOR

### :: QUICK SHIPMENT ::

As usual, the early shipments of new crop will bring good premiums. We thank our numerous shippers for the generous patronage we have been favored with the past year. With an increased office staff and a well established standing in the Trade, we are in a better position to give you a good service and get you highest prices.

Phone or wire us for bids before billing away your grain. **IT WILL PAY YOU WELL TO DO SO.**

## BLACKBURN & MILLS

(A. M. Blackburn) (D. K. Mills)

**531 Grain Exchange Winnipeg, Man.**

Licensed Reference: The Royal Bank of Canada Bonded

You saw this advertisement in this magazine. Don't forget to say so when writing.

This is **THE** Farm and Home Magazine of Western Canada. That's why you will find in **IT** the advertisements of manufacturers who make **RELIABLE** things for the Farm and Home.

## FARMERS! SHIP YOUR GRAIN

TO THE

### CANADIAN ELEVATOR CO. LTD.

GRAIN COMMISSION MERCHANTS, WINNIPEG

It is as much our business to give satisfaction as to secure grain shipments. We watch the grading of each car and allow liberal advances on all bills of lading.

You saw this advertisement in this magazine. Don't forget to say so when writing.

## ENDLESS STITCHED CANVAS BELTS



T 10. Our "Reliable" Belts are the heaviest and most durable offered. They are made on full weight 32-oz. duck. They are filled with pure linseed oil, pressed with the new and improved hydraulic machine process, making the belt exceptionally pliable and durable. They are impervious to heat, cold, steam, gas or acid fumes. All belts will stretch some. The "Reliable" will stretch but little. It is made on a special weave of duck of proper width for each size belt, giving a proper salvage and even strain on both edges. You will find our "Reliable" Drive Belts the best and most durable and pliable you ever used.

100 ft., 7 in. x 4-ply.....	\$26.00	120 ft., 8 in. x 4-ply.....	\$36.00
120 ft., 7 in. x 4-ply.....	\$32.00	120 ft., 8 in. x 5-ply.....	\$42.00
100 ft., 8 in. x 4-ply.....	\$30.00	150 ft., 7 in. x 4-ply.....	\$39.00
100 ft., 8 in. x 5-ply.....	\$35.00	150 ft., 7 in. x 5-ply.....	\$45.00
120 ft., 7 in. x 4-ply.....	\$29.00	150 ft., 8 in. x 4-ply.....	\$43.00
120 ft., 7 in. x 5-ply.....	\$37.00	150 ft., 8 in. x 5-ply.....	\$49.00

Catalog of Full Line of Thresher Supplies sent to your address free

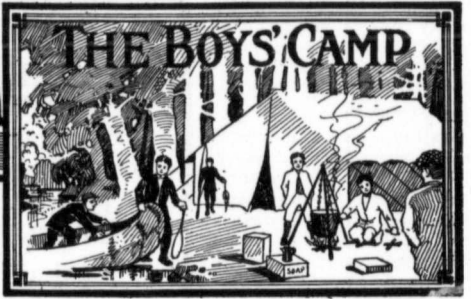
## C. S. Judson Co., Ltd.,

181 Market St. WINNIPEG, Man.

Full Price List on all kinds of Oils sent free on request. **WRITE TODAY**

You saw this advertisement in this magazine. Don't forget to say so when writing.





**Girls' Cozy Corner**

**STAR WISHES**  
 By Anne Sykes Schutze

A little girl sat up one night,  
 To watch the first star overhead,  
 And when she saw its tiny light,  
 These are the words she said:  
 "Star light! Star bright!  
 First star seen tonight;  
 Wish I may, wish I might,  
 Have the wish I wish tonight.  
 I wish to have another day,  
 And then I'll play, and play, and play!"

A little owl sat up till day,  
 To watch the last star overhead,  
 And when he saw it fade away,  
 These are the words he said:  
 "Star light! Star bright!  
 First star seen tonight;  
 Wish I may, wish I might,  
 Have the wish I wish tonight.  
 Another night—a dark one, too,  
 When I can fly, and cry, 'Whooh!  
 whooh!'"

**THE STORY OF FRED'S BIG SISTER**

"I don't go much on sisters," Rodney Black was heard to remark, "but I could stand a dozen like Fred's; she's O. K. Lucky dog that Fred Wilkins."  
 "Same here," Tim Welsh added. "She's better posted on fish bait and baseball than Fred is himself, and as to cookies—Oh, my!"

Fred Wilkins' house was the most popular resort for the boys of the neighborhood, but Fred said good naturedly, "I'm not chalking up any credit to myself for it; it's all Sue's."

There never was a girl like her for making mouth-watering tarts and turnovers, doughnuts and cookies, and she knew enough of a boys appetite to make them by the gross and the bushel, instead of paltry dozens and pints. As to skill in bandaging and caring for torn and bruised fingers and toes, even the doctors, so the boys said, had to take a back seat for Sister Sue. Yet, after all, her crowning talent was the wonderful way she had of patching and darning a ragged tear in coat or trousers, so that even one's own mother couldn't discover it.

"Say, she's going to have a birthday next Wednesday," confided one of the boys to the others. "Let's do the handsome thing and get her a present. She's always loading us up with good things, and doing things for us generally."

The group of boys hilariously agreed, and it was decided to ask Fred to learn from Sister Sue what she most desired as a gift. Fred agreed and promised to report promptly. But two days passed and Fred kept away from the other boys, or gave unsatisfactory answers when approached. Finally the boys cornered him.

"Well you see," he said shamefacedly; "Sue ain't like other girls, always wanting things. If it was Bess, now, she'd tell a dozen things she would want in one breath."

"Well, it isn't Bess, it's Sue," cried Will Davis. "What does Sue want?"

Fred took a long breath. "Well, you see," he began again, "she couldn't know I was quizzing her for anybody

but myself, and she said—phaw. I ain't going to tell you," he broke off impatiently; "it isn't any of your business anyway."

The boys grew indignant. "Well," said a voice, "I guess it is our business. If you think it is going to cost too much—we're not a stingy lot. We're ready to do it up fine. Out with it, Fred!"

Fred straightened up at that, with a "do or die" expression on his face. "May be you'll wish I hadn't. It's something that'll cost like fun, but I said I'd report and I'm a man of my word, so here goes. She just said, 'Frederich Jacks Wilkins, if you want to give me a birthday present that I'd like better than anything else, you take a sheet of blank paper and write on it an iron-clad promise that you'll stop smoking cigarettes, and sign it.' That's all I could get out of her."

Fred said afterwards when he told Sue about it: "You would have sliced up the silence that fell over the bunch of boys with my jack-knife." Every boy of them had known that Fred's sister Sue had no use for cigarettes, and they had always been careful to keep them out of her sight. "It was Fred who finally spoke again.

"Well, I didn't suppose you'd like it a bit better than I did, but you made me tell."

"Say, are you going to give Sue what she asked for?" spoke up a boy, shyly.

Fred's face flushed, but his voice had a manly ring, as he promptly answered: "You just better believe that I am. She's too good a sister to disappoint."

"That's what I say," blurted out Tom Folk. "It would please her mightily to have all us boys do the same thing too. Let's do it. All in favor say 'Aye!'"

"Aye, aye," was the firm but quiet response from every boy.

"There's one of the boy's wants to see you, Sue, out in the yard," said Fred Wilkins to his sister on the morning of her birthday. "He won't come in."

She smilingly accommodated herself to a boy's whim and hurried out into the yard, where she found Rodney Black. He handed her an envelope, bulky and broad: "From us boys just to start off your birthday cheerful," he told her.

Fred lingered around when Sue opened the envelope and read the promise written in many boyish hands to stop smoking, and heard a fervent, girlish, "Bless their hearts. How did they ever know how much I wanted them to do this very thing!"

She wouldn't have been a girl if she hadn't been wonderfully pleased at the mammoth box of bon-bons that came later, labeled in a boyish hand: "Bought with the money we didn't spend on cigs." But she always insisted that, delicious as it was, it wasn't to be mentioned in the same breath with the present that came in the envelope.

**Our Mail Bag**

Stavely, Alta., April 20, 1913.

Dear Cousin Doris: This is my first letter to your Club. My father has a large farm, we have quite a few horses and sixty-eight head of sheep. I go to school every day, I am in the fourth grade. My teacher's name is Miss Richardson. I have no brothers and one

sister going to school, besides myself. I like to go to school very much. We have grammar, history, geography, arithmetic, spelling and reading. I think my letter is pretty long, but I hope the Club every success. Yours truly,  
 Jessie Lyall.

Hardisty, Alta.

Dear Cousin Doris—This is my first letter to your club. My father takes the Canadian Threshierman and Farmer. I enjoy reading the letters very much. I have one sister, her name is Emma. One day my sister, mother and I went out picking cranberries. When we got through picking berries we were coming home and I said I was hungry and began eating our lunch. My sister got the horse where she was tied in the bush. She left her standing while we ate our lunch and she went home. My sister and I had to walk after her which was three miles. If we ran the horse would trot, and if we walked she would walk. She got home first and went to the river and got a drink. Then she stood still and let us catch her. Then Emma rode her back to get mother and the cart. I went in the house and went to sleep. Hoping to see my letter in print. Yours sincerely,  
 Iva McIntyre Box 428.

Tompkins, Sask., May 24, 1913.

Dear Cousin Doris—May I join your Girl's Cozy Corner? I am a little girl twelve years old and live on a farm with my parents, brothers and sisters. I drive three miles to school every day. My father takes the Threshierman and Farmer. I thought perhaps I would be lucky enough to receive a prize if I would write a letter like the other girls do. I am fond of reading a good book.

This is the twenty-fourth of May and we "mother, sister, auntie and I" are all alone. The rest are away to a picnic in a neighboring town.

I notice that some of the cousins can bake and sew. All I can do is sew dollies clothes and play with Nellie "my little king Spaniel dog." I am very fond of playing the piano. I can play quite a number of pieces now.

We have a little pony named Jip. I can ride her all over the prairie. Well cousins I think I shall have to close now, wishing you every success with your club. Someone please correspond with me as I like to answer letters very much. Bye Bye, A loving cousin,  
 Edna McEwen.  
 Box 75

Ethel Bennett.

Dear Cousin Doris: This is my first letter to the Girls' Cozy Corner and I do hope it escapes the W.P.B. My father has taken the Canadian Threshierman and Farmer for two years and thinks it a very valuable paper. We have two horses and two mules. One of the mules is a kicker, she is just about like Si Slocum's Maudie mule and her name is Maud. One of the horses got his foot badly cut in the wire fence about a week ago and we cannot work him. We were all very sorry as he is a great pet. My father keeps a number of hogs and he gave my little sister Alta and I each a little pig, and we put them in a pen by themselves so we can take better care of them. Alta's pig died so I gave her a share of mine. We have had no school since last October but it is going to start again the 12th of May. My little sis-

ter and brother and myself will drive to school, it is 3 miles. We have a very lazy little Pinto pony to drive.

I will tell you how we went gathering choke cherries. One day my mother, oldest sister and sister Alta and myself hitched up an old horse to an old rattle trap of a buggy and went to the river, but when we got there we found we could not go down the hill as our harness had no hold backs on so we unhitched the horse and my oldest sister and mother took the buggy and hauled it and I led the horse down the hill. We then hitched the horse up again and drove to where the berries were. After filling all of our pails we went home a distance of a mile and a half and got home in time to have fried chicken for supper. I have a little niece, she is 10 weeks old and weighs 13½ lbs. we all think she is a dandy, her name is Berna. I was 11 years old the 19th of April.  
 Florence Sheppard.

**Canadian Boys' Camp**

The Hero Of Our Subscription Contest.



Walter Brown, Drinkwater, Sask. is one of our real western hustlers. He came out top dog in our 1913 Subscription Contest and wins the gasoline engine. If any of our boys or girls are desirous of entering for the new contest ending May 1914—let them send in their names at once and we will give them full particulars as to prizes and conditions.

**A SPECIAL PRIZE**  
 A prize book will be given to the boy who sends in the best description of his experience of the work on the farm during seeding time.

If I was Nothin' but a Girl.  
M. B. Ramsey.

am sure I always could be good  
I was nothin' but a girl,  
I'd never git my clo'es tore then,  
for let my hair git out o' curl,  
but boys! shucks! they can't waste  
their time  
thinkin' 'bout their hair an' clo'es;  
They care fer things besides their looks,  
an' that's what makes 'em boys, I s'pose.

If I was nothin' but a girl  
I'd do the things they told me to,  
wipe dishes an' to sweep the floor,  
'cause they don't have much else to do,  
they think it's wrong to play "fer  
keeps."

an' turn air-sets, an' climb, an' run  
an' holler like an Injun does—  
Why girls don't know how to have fun!

Sometimes my folks don't like it much;  
They say I make such awful noise,  
But gran'ma, she jes' smiles an' says,  
"O, never mind—boys will be boys."  
I do lots o' times fergit my prayers;  
My mother says to pray brings joy;  
But when I do I don't fergit  
to thank the Lord 'cause I'm a boy.

Correspondence

Avebury, Sask.

Dear Cousin Doris:—As my brother  
takes the Canadian Thresherman, I  
thought I would write as the boys are  
getting behind.

We are ranchers having one hundred  
and sixty head of cattle and forty  
horses. I am a lover of out door sports.  
I can ride a broncho, throw a rope,  
skate, trap and hunt. I shot a jump-  
ing deer this year. I have trapped one  
hundred and twenty muskrats and four  
coyotes this winter. I have a good  
saddle pony and two wolf hounds.

We have had some pretty cold weath-  
er this winter so I haven't done much  
work. (Just hawl hay and read books).

Well I will close or my letter is liable  
to come in contact with the W. P. B.  
I would like boys and girls of my  
age (15), to write to me. I will try to  
answer all who write. I will sign my-  
self, Cowboy.

A. H. Smythe, Avebury, Sask.

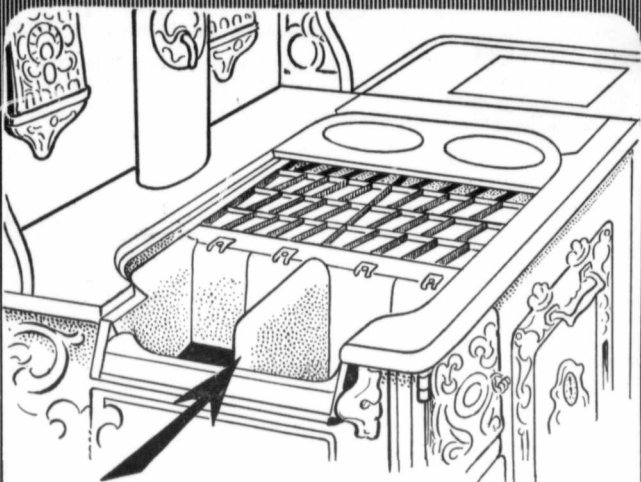
Goodlands, Man, May 19, 1913.

Dear Cousin Doris:—This is my first  
letter to your club, I take the Canadian  
Thresherman and Farmer myself, and  
like it very much, I think it is a pretty  
good paper. I read the letters of the  
boys and girls, so I thought I would write  
a few lines. I go to school every day.  
I am in grade eight. Our studies are:  
bookkeeping, history, geography, writ-  
ing, drawing, reading, arithmetic, spell-  
ing, agriculture, composition and  
grammar. We are living in the village.  
We have a farm but my brother runs it.  
I have one brother and three sisters. I  
am fourteen years' old and would like  
to correspond with anyone of my own  
age. Hoping to see my letter in print,  
and to get a book. Wishing the club  
every success, I remain,  
George Murray.

A Real Good Party Game

Older girls and boys can have a most  
entertaining time at a Vegetable Party.  
When the guests have assembled, give  
each one a piece of cardboard orna-  
mented with pictures of colored vege-  
tables cut from a seed catalogue, and  
bearing the following puzzles. The guests  
must find out what vegetable is meant  
in each case and write the answer oppo-  
site the puzzle.

- A painful projection.—Corn.
- Hard to get out of.—Maise (mazz).
- What vegetable should see a great deal,  
and why?—Potatoes; they have so many  
eyes.
- A basement and one word of the alpha-  
bet.—Celery (cellar-y).
- Worn by a Chinaman, and to weigh  
down.—Cucumber (queue-cumber).
- A letter.—Pea (P).
- A cooking utensil and eight ciphers.—  
Potato (pot-8-o).
- A vehicle and a lifetime.—Cabbage  
(cab-age).



The illustration shows the Sask-alta fire-pot  
divided into two sections by a division plate.  
Double duplex grates are supplied so that each  
half of the fire-pot has it's own pair of grates.  
This is a great saver of coal when you do light  
cooking in the summer — only half the amount  
of coal is burned. You should see this and  
many other exclusive patented features before  
selecting your new range.

728

# McClary's Sask-alta Range

Sask-alta  
Ranges are  
sold everywhere  
by good dealers  
who back up  
our guarantee  
on this splendid  
range—  
McClary's

London  
Toronto  
Montreal  
Winnipeg  
Vancouver  
St. John  
Hamilton  
Calgary  
Saskatoon  
Edmonton

A musical division.—Beet (beat).  
Allow twenty minutes for this contest,  
and at the end of that time read the  
correct answers and award a prize for  
the most correct list. Also, while the  
guests have pencil and paper, let them  
vote for the most cleverly costumed per-  
son, and award a prize to the most pop-  
ular.  
Now give your guests vegetables of  
some kind, either turnips, potatoes, car-  
rots, or something on that order, and a  
knife apiece. Tell them that they have  
twenty-five minutes in which to whittle  
some article from the vegetable they  
hold. When the time is up, give a prize  
for the most original or the best exe-  
cuted object.

## 2 IN 1

### SHOE POLISH

10 CTZ

Gives a Quick, Brilliant Polish That Lasts

Easier to Use Better for the Shoes

No Turpentine



## Womans' Department.

Conducted by PEARL RICHMOND HAMILTON

A HOUSEHOLD FORUM FOR THE DISCUSSION OF EVERYTHING THAT PERTAINS TO THE HOME



### THE WOMANHOOD OF MAN

By JOHN WALLACE CRAWFORD

There is gold in every fiber  
Of the Womanhood of Man;  
It has ebbed and flowed in blood and  
tears  
Since this old world began,  
From the veins and souls of heroes  
And of heroines, since the day  
When woman wept and Jesus died  
To wash our sins away.

I am just an optimistic,  
Reckless, broncho sort of chap;  
Though I stand for peace and justice  
I am always in a scrap,  
But my ancestors were fighters  
Since red warfare first began,  
And my only saving grace is  
In the Womanhood of Man.

I have prospected for treasure  
In the gold lands of the West,  
I have driven many a tunnel  
In the mountain's rugged breast,  
And I've found each little leader  
From bedrock to surface pan  
Was a mother-loaded magnet  
From the Womanhood of Man.

I have sunk down to the bedrock  
In a wayward brother's soul,  
When the whispered name of "Mother"  
Caused the God-sent tears to roll  
From a seeming barren desert  
Down the cheeks, all bronzed with tan;  
It was God's assay for "colors"  
In the Womanhood of Man.

I have tested modest manhood  
In the fiery furt of war,  
I have analyzed the metal  
In the blood of many a scar,  
And have found the lion-hearted,  
Whole-souled hero of the clan  
Was the optimistic product  
Of the Womanhood of Man.

If you want to find the metal  
That is twenty karats fine,  
You must prospect on the surface  
Ere you sink to strike the mine,  
But you'll find it in the tailings  
If you'll test them with the pan—  
Find the gold of strenuous manhood  
In the Womanhood of Man.

I would rather "face the music"  
When the wild Apaches yell,  
Rather face the hell of battle  
Amid storms of shot and shell,  
Than suppress the tears of gladness,  
Or of sadness, while I can  
Realize they are the essence  
Of the Womanhood of Man.

'Tis the womanhood of manhood  
That is always reaching out;  
It has been my lone companion  
While on many a dangerous scout,  
And wherever fate may place me  
I shall do the best I can,  
To be worthy of the manhood  
Of the Womanhood of Man.

### MIKE THE FAITHFUL—AND MARY

#### Chapter I.

Mike is on hand fifteen minutes before the other men come to their work. When the foreman arrives Mike is at his post. He does not stand around till the last second before seven, but he begins his work as soon as he reaches the rectangular box of lime beside the sand pile. One by one as the other men reach the lot on which a new house is

being built, each greets Mike with a "Hello!" or "Good morning!"

One morning as the foreman came to the unfinished foundation, he noticed the men idly lounging about. They had struck for more pay—all but Mike, who was faithfully shoveling sand into the box with a spade. Mike never strikes. Every man accordingly scattered in the four directions, refusing to work for twenty cents an hour—every man but Mike. For five days he and the foreman worked as best they could until the arrival of another force of men—a noisy crowd they were, offering free advice on every phase of work. But the man who mixed the lime never spoke unless questioned.

Saturday afternoon the bricklayers, carpenters, and teamsters stopped work for their weekly half holiday—all but the man who mixed the sand and lime. Just before twelve the foreman placed his hand on Mike's shoulder.

"Do you want to work this afternoon, my man?"

Mike stood up straight and answered in broken English. "Yes."

The foreman then directed him to tidy up the sand and brick and boards, and leave everything in good condition in case of rain.

Mike listened and said nothing. The foreman turned to go, knowing that further words were unnecessary as Mike would do his duty. All the long, hot afternoon Mike worked faithfully alone, sifting sand, piling brick, and sorting out lumber. He took no advantage of his employer's time—he needed no watching—he was not a robber of time.

But he was watched, though he was unconscious of the fact. On a back veranda of the house just opposite the lot where Mike worked, a man recovering from an illness became interested in the honest man at the rectangular box. Every morning—every afternoon, he watched Mike's faithfulness and admired him more and more as the weeks passed. Finally one morning as his strength began to return he limped over to the sand pile near the mortar mixer, and asked him a few questions—one of which was his home address.

The next day a well dressed woman—the wife of the veranda man—knocked at the door of a neat, white cottage, back of a well cultivated garden of flowers. A tidy girl of perhaps sixteen years of age came to the door and her rosy cheeks dimpled as she invited the stranger into the house. The mother came in from the garden, and wiping the perspiration off her face with her gingham apron spoke to the visitor somewhat bewilderingly.

"I have, or rather we—my husband and I—have become much interested in your husband. His faithful attention to his work has excited our admiration and for this reason we wondered about his home life—in fact, we are anxious to see if we may help in a way the children of a man who in our estimation is unusually worthy."

The stranger finished her remarks with an anxious expression of interest as to just how her explanation might be received.

For a moment there was no answer, then, the muscles about her mouth tightened.

"Gud—ver gud Mesus, me work—man work—all work—home—no help—mine girl, she like work now too—she want make de moneys—me don't know."

This then, was the wish of the daughter. The spirit of independence so common to the sixteen-year-old girl in Canada had begun to germinate in the character of the ambitious foreign girl.

This ambition is contagious in our new country, for we seem to inhale restlessness in the very air we breathe.

The pulse throbs in obedience to the heart's message—"spend—spend—spend—go—go—go—dress—dress—dress"—and Mary had caught the chronic malady from her associates, some of whom were factory girls, others clerks and many were domestics and nurse girls in a more prosperous section of the city.

The stranger held out her hand to the anxious mother:

"I shall think over Mary's ambition—we shall consider what is best for her."

Both mother and daughter watched "the lady" walk down the ashy path, open the gate and step into her limousine. The mother wiped her face again—this time the apron was very near the eyes. I am not so sure but that there was more moisture from tear ducts than from perspiratory glands.

Mary went into her room adjoining the "room-for-everything" and brushed her hair in front of the mirror. Both hastened to the stove as they saw father open the door and look in surprise at the uncovered supper table. Father's meals were seldom late.

#### Chapter II.

"Yes, Mary would be more safe if she worked in the country. There the environment is clean and wholesome, and she would do well to make her own way there."

The man on the veranda watched Mike at the rectangular box as he hoed lime back and forth.

"Why not ask the housekeeper on our farm if she would like more help?"

"That is just the thing!"

"Perhaps Mary will object!" This conversation took place on the veranda—both man and wife were so interested that they were nervously excited.

"The fresh air in the country, the companionship in the house, and the work itself should be just what Mary needs." The wife explained thoughtfully as she studied Mike while he sifted a fresh supply of sand ready for the next mixture of lime.

"Mary is like her father in disposition and manner, so her mother tells me. What a splendid help she will be and how much to her advantage to be away from the temptations of the city!" The wife agreed to this remark and the conversation ended with a determination to make their plans known to Mary's father and mother the next day.

One week later Mary arrived at the station near the farm where she had engaged to work. A tall man, dressed better than the others on the platform stepped up near the car steps and lifted his hat as he reached for her traveling bag. He introduced himself as the "hired man" at the Smith farm. Since the arrival of a strange girl at this station was unusual he felt that he was not mistaken in the girl.

Mary blushed a sixteen-year-old blush, for this was an unexpected surprise and she felt immediately, that the "hired man" would contribute a pleasant feature to her new experience.

To confess frankly, Mary was not at first pleased with the idea of working in the country. It required much persuasion on the part of the parents and their new friends to induce Mary to go to the farm.

But the appearance of the "hired man," the carriage waiting for her and the fresh, clean country air, all thrilled her with a new pleasure.

As he helped her step into the carriage,

Mary felt as if she had been lifted into another world—so strange and wonderful did everything appear. The ride—the new acquaintance, the approach to the farm home, all filled her with bright anticipation.

"I'm glad you have come here to work, for it is lonely in this community, with so few girls. I had planned to leave, but since you are here I believe I shall stay," the "hired man" remarked kindly as they walked along the path toward the house. Mary shyly looked up at this compliment, their eyes met, and a marvelous confusion of blushes and dimples played on her cheeks as the farmer's wife opened the door to welcome her.

(To be Continued.)

### Mothers' Corner

#### Thou Dost But Lend

By Cora Lapham Hazard.

Give thou with lavish hand ungrudgingly  
Thy choicest seed into the sullen soil.  
Thou dost but lend; it smiling will repay  
A thousandfold thy bounty and thy toil.

Give thou unto the world unstintingly,  
As sower dost, of thought and deed thy best.  
Thou dost but lend; for back to thine own life  
They will return, and thine own heart be blest.

#### Thé Vision

By Calvin Dill Wilson.]

Lo, the earth was a ball of flame; and then,  
Said Doubt, It can never be home for men.  
When the dark was on the face of the deep,  
Said Fear, Life never can burst from sleep.  
When vaporous, heavy, and dense was air,  
'Twas fair Hope itself that was trembling there.  
Ne'er here can be path for bird's swift wing;  
Here never of love will a woman sing;  
No, never can life and beauty be  
'Midst these tall waves and this wild tumbling sea.

But order and harvests and peace have come;  
The grass grows green; man has found a home.  
And still men shrink from the end of the scheme,  
And say higher hopes are only a dream.  
The lesson of chaos, on to this sod,  
Is trust—for the dreamer of dreams is God.

Let the father make a friend of his boy from babyhood, and that boy will not at the age of twenty suddenly loom before him as a problem that is as annoying as it is difficult of solution.

It pays wives and mothers and sons and daughters to be careful of the morning toilet. The first impression is likely to be lasting; so greet every one in the morning looking fresh, sweet, and attractive.



"We make careful thought for the stranger  
And have smiles for the sometime guest,  
But oft for our own  
The careless groan,  
Though we loved our own the best."

I wish we might have more letters from mothers telling about their experiences with children. It would help inexperienced mothers so much, especially those who live too far from doctors.

The Care of Babies.

Dear Editor.—I am wondering why the sisters do not write on the care of children. There are many young mothers in this new country, and a few hints from experienced mothers might prove very helpful.

You ask a young mother what and how she feeds her baby, perhaps a year old, and quite likely she will say "Eight ounces of milk diluted with two of water." Her utensils are kept with the most scrupulous care, the child fed with strict regularity, and still he is continually troubled with constipation, and while not exactly ill, he is far from well.

Why does he not thrive better? No, he is not over-fed. He is under watered. The milk should be diluted fully one-half. The load must have an adequate vehicle. My baby, now sixteen months old, takes nearly one teacup of milk to a feed, but it is diluted with water to make nearly a pint, fed, of course, blood warm; it is not safe to give cold food except in the smallest quantities under two years. Besides, he drinks 1/4 to 1-3 cup of cold water several times during the day. He has some plain, solid food with his meals two or three times a day, bread, crackers, johnny cake, or some plain cereal with out hulls. He has no oatmeal, no vegetables, no sweets, but the moment the abundance of water is neglected there is trouble.

It is not the fats but the solids which clog the digestion. In all foods irritation must be avoided. But first, last and always quantities of water must be given to insure health. It has been said that a baby suffers for a "barrel" of water before it is old enough to ask for it. Of course, it makes more trouble and many more napkins to wash, but it makes rosy cheeks and abounding vitality. This is my experience with four unusually fat, rosy children.

If the baby is taken ill don't neglect the water; it is all the more necessary then. In colds, during the feverish period give cold water and after that passes, if the child relishes it, hot water. In measles and all dangerous fevers, give the cold water, but feed it with a teaspoon. A dozen spoonfuls every fifteen or twenty minutes will often keep a fever below the danger point. In any acute stomach trouble caused by indiscretion in diet or hot weather, give half an hour or so after vomiting, a cup of some cereal substitute for coffee, hot, without milk or sugar. Water is what is needed, but plain hot water is sometimes nauseating, while the slight bitterness of the coffee substitute is most acceptable, and besides, it has a small food value. Then give nothing until the usual time between meals has elapsed, when give the same drink again. By time for the next meal after that the stomach will be rested and the same drink with milk and a very little sugar will be all-sufficient. If possible, give no solid food until the following day.

If this treatment is applied promptly the bowels being moved if there is the slightest need, the first vomiting spell will probably be the last. When teething, feed cold water with a spoon. You will be surprised to see how eagerly the baby will take it, and how much he will want. It cools the gums, and fed in this way no quantity will do harm. The only harm water can do is to chill the stomach, which it will not do unless taken quickly in quantities.

The baby is not hungry every time he cries.

He may need dry clothing, or perhaps he is sleepy, or tired of remaining in one position.

He may have already had too much food, and his small stomach is aching from an overload that it finds hard to digest.

Or he may be dressed too tightly, even

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From every shipment of wheat delivered at our mills we take a ten pound sample. We grind this into flour. Bread is baked from the flour.

We find that some samples make more bread and better bread than others. So we keep the shipment from which the more and better bread comes. The others we sell.

You save money by using flour that bears this name. And you get better bread.

## PURITY

"More Bread and Better Bread" and  
"Better Pastry Too"

521

You saw this advertisement in this magazine. Don't forget to say so when writing.

in this enlightened day, and his clothing may need loosening.

Look after all these things, and when he is comfortable he will be quiet until his regular feeding time. That is, if he is fed with any regularity. He should be fed once in two hours during the day until he is two months old, when the intervals between his meals may be gradually lengthened. Take him through the night without feeding if possible, or give him one meal. If he is restless give him a spoonful or two of water, not too cold, and attend to his clothing. It is better to provide a separate bed beside the mother's bed, than to take him in with her. A large clothes-basket with a thick, soft, home-made mattress will do nicely at first, placed on two chairs beside the bed.

The little knitted wool shirts should be provided, which cling closely enough to the body for warmth and over this the little petticoats, made without bands, slip fashion, and gowns.

The best diaper material is cotton flannel of a light weight and loose weave. Too many cannot be provided—four dozen at least—that plenty of clean, dry ones be always on hand to save the helpless little one the torture of damp clothing. And with this number washing will be required every day or two, if baby is kept comfortable, clean and sweet and free from chaffing.

Hold the diaper in place by pinning the shirt in with it, both front and back. When stockings are put on draw them up over the diaper, which hold closely in around the leg and pin stocking and diaper together inside the leg above the knee. Thus held in place the spectacle of a toddler with a diaper about his feet will never be seen, and the little legs will always be fully covered and warm.

When a baby gets chaffed from continual changing of napkins try burnt flour instead of powder. Put flour in a pie plate and stand on back of stove and continually stir it with pliable knife until a golden brown. It has cured three of my babies when they were very sore. If your child has convulsions put a silver spoon in his mouth and keep it open long enough to put salt in its mouth. It will relax at once.

For croup, sore throat, whooping-cough, or pneumonia, when quick and immediate action is necessary, don't be afraid to give the child one half-teaspoon coal oil, to remove the phlegm. I have tried it with good results.

For constipation give plenty of orange juice, a spoonful two or three times a day and every two or three days give a teaspoon of pure olive oil.

For sour stomach, just a little soda in the baby's milk. Never put damp clothing on him, sick or well, for this always leads to bowel trouble.

To be dry, the clothing should hang in a dry room two or three days after ironing; one cannot be sure of feeling the cloth, for our hands are not very sensitive, but a child's body is.

Warm the garments even in cool fall days before putting them on him; a few degrees of cold will cause the blood to leave the surface and a slight chill is to be avoided.

Do not let the light shine in the eyes and keep the head a little higher than the body.

If the feet are cold, keep them wrapped in warm flannels, changing as they are cooled. Hot irons, bags of salt, and such applications as are used for older people may burn the little sufferer before we know it.

Improper dirt and cold are the two greatest enemies of babyhood; both easily controlled if we watch his plate when he begins taking solid food. Cloth in dry, light garments and keep him in a well-ventilated room when indoors and when the weather permits give him a daily outing.

Wishing this department much success,  
I am,

An Experienced Mother.

eighteen years of age. She was ill only four days with pneumonia. When I read Mrs. Hunt's letter my heart ached for her, and I wanted to meet her personally to tell her that as editor of this department I wish I might be inspired with a message of sympathy that would bring a gleam of hope and peace into her lonely heart.

The Higher Power knows where the richest melodies of our lives are and what trials are necessary to bring them out.

"There are times when a word—just a friendly word,

Makes the heart of a sad woman strong;

For it tells someone cares for a comrade's weal,

And helps as we journey along."

MANITOU

As a report of the June meeting of the Manitou H. E. S. was not sent to your paper I will combine it with the July report.

The meeting was held in the usual place—the Opera House on June 21st. After opening, reading of minutes, correspondence, etc., several matters were brought up for discussion.

Among others, plans for raising money for the rest room. It was decided that each member take 25c. and see how much she could make of it before a given date. Some of the ladies gave an ice cream social and was enjoyed by all who attended.

It was decided to serve meals on the first of July. Plans were made for preparing an exhibit for the Winnipeg Industrial Exhibition.

On May 30th, Miss Kennedy of the M. A. C. gave us a demonstration on home decoration. The agricultural train was quite as interesting as former years and has lost none of its attractiveness, and many were out on the 25th of June to visit it. The H. E. S. was very much in evidence.

The July meeting was looked forward to with interest as was shown by the large attendance. The committee in charge of the serving of meals on the first of July reported the sum of \$98 to be applied to the fund in aid of the rest room to be opened before the winter sets in.

Reports from the Exhibit proved quite

### Home Economics

The secretary of the Benito H. E. S., Mrs. M. Hunt, writes me the reason of her delay in sending in reports and I am sure our members should know, as a word of sympathy would lighten her sorrow. During the month of March she and Mr. Hunt were called upon to part with their daughter—a girl of

satisfactory, the H. E. S. capturing first for societies, while Mrs. Rowe took eight firsts and two seconds; Mrs. Brown two firsts; Mrs. Falls, three firsts and two seconds. I enclose a clipping from the town paper. After the business was completed two young gentlemen gave a demonstration of aluminum ware, showing the advantages in it over granite ware. They also gave us samples of cooking done in the aluminum. A good many orders were taken in the town after the demonstration. The meeting closed with the national anthem. There will be no August meeting as we have decided to take a holiday.

The following clipping refers to the Manitou H. E. S. We congratulate them on their great success at the Winnipeg Industrial Exhibition.

The following are additional prizes awarded H. E. members at Winnipeg Industrial Exhibition, the first list appearing being incomplete. Mrs. W. H. Falls won firsts for each of the following:—Knitted mittens, silk quilt and biscuits and seconds for fruit cake and initialed towels. Mrs. C. H. Brown was awarded firsts for bread and a morning dress. Mrs. W. J. Rowe won eight firsts and two second prizes. The society carried off the \$15 prize, the first prize offered for a collection of embroidery, also the \$5 second prize for knitted and crocheted laces. The bread which took first prize was made from wheat grown on the farm of F. A. Brown, milled at Manitou and baked in a pan bought from R. J. Chalmers 23 years ago. This is certainly home economics. Miss McKinnon, La Riviere H. E. S., won four firsts and five second prizes in the following:—Firsts, Black and white drawing, pen and ink; China decoration, 1 piece, realistic; Painting on satin, canvas or silk; Quilt, cotton patch-work. Seconds, Display hand embroidery; Display hand made laces, painting in oil; Crochet lace; Homemade bread. This is a very creditable showing for the H. E. S. of Manitou and La Riviere.

#### CARMAN

One of the best attended meetings of the Dufferin Home Economics Society was held at the home of the president, north of town on July 23. Plans for a rest room were discussed and a committee appointed to see about a suitable place and we hope before cold weather to establish a rest room in Carman for the farmers' wives.

Mrs. Forster of Vancouver and her small daughter favored the ladies with several musical selections.

At the close of the meeting the hostess served ice cream and cake.

This meeting was so generally enjoyed that we are planning to hold an August meeting in the park.

#### WAWANESA

Our August meeting met at Mrs. Wm. Bertram's, Methven. Three new members were added making our membership now forty.

A committee was appointed to look into the matter of beautifying the cemetery.

"Why I am a Homemaker," a paper by Mrs. J. Sterling Bladworth was read by Mrs. Batty.

Mrs. Dent, our president, gave a very instructive paper on "Canadian Authors," after which a lively discussion took place.

Miss Storey sang in a very pleasing manner.

Mrs. Iliffe recited "The Right Age to Marry," and sang "Sweet Bed of Spring"; both were loudly applauded. Mrs. Iliffe is our vice-president and we are very sorry to report that she is leaving shortly, her husband having secured a position on St. John's College staff, Winnipeg.

A paper on jelly making was also given by Mrs. McPhail. We are looking forward to a demonstration in "Home Cooking" in a couple of months.

#### BIRTLE

Our Home Economics Society enjoyed very much the demonstration on "Methods in Cooking" which we had from Mrs. Salisbury of the Extension Department, Manitoba College. Though many of the methods were familiar to most of those present, there were helpful hints for all and the sampling of the various articles made was not the least enjoyable part of the meeting. After the discussion of business at our last monthly meeting, we had a demonstration of hat renovating by Mrs. Deerlove, which was interesting, and then a most helpful paper on "Literature for Children," by Mrs. Manning, giving us a list of books suitable for children at various ages. Our Society has promised to furnish a rest-room in the town where the women may have a comfortable place to wait when necessary, and get a cup of tea at a small charge. The attendance at our meeting averages 35.

#### MINNEDOSA

The July meeting of the Minnedosa Home Economics was held in the Rest Room on July 31. After the opening of the meeting the president announced that there would be a sale of home produce and cookery on August 9th, the proceeds to go to the Rest Room funds.

There was some discussion about the Minnedosa Fair, which had been held the week before and various suggestions were made as to improvements that might be put in force next year. There was a good deal of business at this meeting, as the June meeting had been entirely social. When the business had been dealt with the president opened the "Question Drawer," which was the topic arranged for this month.

There was plenty of discussion over the questions, of which there were a variety, and all, I think, were satisfactorily answered. Some of the questions were: How best to preserve blueberries and Saskatoons; the keeping of butter during the summer; improving the attendance at meetings; best method of making tomato pickle; making plain currant buns; the uses of separated milk; raising geese; making baking powder biscuits; is there a bye-law to prevent young boys going to the pool-room? This last was felt to be very necessary and the enforcement of such a law would be a great benefit to the town.

The meeting closed with the National anthem.

#### EMERSON

The Emerson H. E. S. had a well attended meeting in May. Rev. J. Pate delivered an interesting address on "Woman in Public Life," and Miss A. McRae gave a paper on the "Truth about Woman Suffrage." Miss Kennedy visited our society and all thoroughly enjoyed her address on Home Decoration. This is twice we have had the pleasure of listening to Miss Kennedy in Emerson at our H. E. S. and we hope she may come again.

We are spending about forty dollars on prizes at our Summer Fair, and are anticipating the sight of a well-filled corner of sewing, embroidery, cooking, flowers and juvenile work.

Plans have been made for a picnic at the home of our president, Mrs. McRae. This will be reported later.

#### OAK LAKE

Although such a busy season, we had a good attendance at our August meeting. The members were pleased to receive the copy of the February Convention.

The ladies served light lunches at noon and tea-hour on Fair Day in our meeting-room, with good success.

The August program was very interesting, Mrs. W. Adair opening a discussion on "Washing and Ironing." It was easy to see how near to a woman's heart is the weekly wash and its success. Many and varied were the methods given, and real good feeling pervaded the discussion, even though some of the older housekeepers were shocked to think that some of the ladies ac-

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usually hung their clothes on the line without the boiling process. Some were very chary, too, in accepting the new way of washing blankets, by the cold water method. However we live to learn and the easiest way, provided it is good, is surely best.

Dr. Wright then gave us a very practical talk of the care of the child after the stage of infancy to school age. A resolution was passed in the meeting approving of the attitude taken by the Trustees at their recent District Convention in regard to Medical Inspection of our schools.

We then enjoyed some music by our local talent and had tea and spent a very sociable hour together.

May we have some of the ideas on "Washing and Ironing," that were discussed at your meeting? I am sure they would help our members.

#### FOR US TO CONSIDER

One of the best evidences that the conditions of life and work on the farm need to be improved is the number of people who leave the farm for the city. I am always pleased to receive letters from wives and girls stating their preference for farm life. The migration to the city not only creates a shortage of labor for the work on the farm but it crowds occupations in the city that are already too full. The professions are too crowded. Farms cultivated thoroughly would be a great economic advantage to our country.

There are two reasons why people move from the country to the city—for better educational advantages and to escape the monotony of rural life—that is, they wish for the social advantages and recreations of the city. In order to solve this problem, the natural desire for social and intellectual opportunities and for recreation and amusement must be met in the country. A new interest is being felt in rural life. Agriculture has undergone rapid changes within the last generation. The advance in the value of land, the introduction of new forms of farm machinery, and most important, the application of science to the raising of crops and stock as advanced by our agricultural colleges have revolutionized farming. Special trains, demonstrating better farming and better home-making have traversed our country teaching scientific methods. Lecturers have visited communities to encourage the spread of information and the development of enthusiasm in agriculture. Grain judging and stock judging and contests are being held all over until new varieties of grains have been introduced, improved methods of cultivation have been discovered and the care of animals is becoming a science—that interests both men and women.

Every month we read of women who are successful farmers. In this agricultural country there is a vast field of opportunity financially for women in the cultivation of land, stock raising, gardening and poultry-raising. In North Carolina, two hundred and thirty girls have organized a business venture the object of which is canning fruits and vegetables. Three clubs in every county are included in the organization. In each county a woman supervises the work. She asks such girls as wish to join the canning clubs. Each girl must agree to take a part of an acre of land to raise on it vegetables or fruit for canning. The planting, cultivating, and gathering she is expected to do herself. Directories for cultivation are sent out by the government. The county director visits the gardens and advises the girls. "To make the best better," is their method. One fourteen year old girl canned enough to help pay her way through school. The thought that a girl is producing something that will bring her in money of her own is a spurting incentive. As the government by demonstrators teaches them how to can properly the girls have a desire to improve other home work. This develops self reliance in girls—also contentment.

The rural population constitutes the high vitality class of a country, and this is the reason the city likes to draw

upon the country for its supply of brain and energy. If the rural population concentrate its energy in the country, we cannot comprehend the results of agricultural possibilities in Canada. But farmers' wives and daughters often break down or age prematurely. This is due to a lack of balance in the life of the farm. It is not so much the work that kills as the continuity of the work unrelieved by periods of rest and recreation. One correspondent informed me that in a community where she nursed, Eaton's catalogue was the important book of the home and on Sunday afternoons it was much in evidence.

George H. Betts says: "Educational facilities must be improved for rural children, and their education better adapted to farm life. Greater opportunities must be provided for recreation and social intercourse for both old and young. The programme of farm work must be arranged to allow reasonable time for rest and recreation. Books, pictures, lectures, concerts, entertainments must be as accessible to the farm as to the town. These conditions must be met in rural communities, not because of the dictum of any person, but because they are the fundamental demand of human nature and must be considered."

#### RECIPES

##### Preserving Rhubarb

To preserve rhubarb so that it may be ready for use at any time during the winter, wash the rhubarb, and cut it into small pieces as though for stewing, being careful to remove all the strings. Then pack the uncooked rhubarb into regulation preserve jars, filling them to the top, and adding cold water until the jars will hold no more. Seal them tightly, and put them in a cool, dark place. Rhubarb preserved in this manner may be kept green and fresh all winter.—Mrs. J. V. W., Hagfoes, Sweden.

##### Preserving Vegetables for Winter Use.

If you will take freshly gathered green corn on the cob or carefully shelled peas or beans, and dip them in boiling water, then dry them in a room in which there is a free circulation of air, they will not only keep until far into the winter but will retain all their freshness and flavor. Corn preserved in this fashion can easily be served, still on the cob, as a surprise dish at the Christmas dinner. This is an old family secret, and I have never known of a case in which it failed to give satisfaction.

##### Cucumber Catsup.

Take one dozen large (not quite ripe) cucumbers, pare, take out seeds, and let them lie in cold water half an hour; grate, place in bag and drain six hours. Then grate one or more small onions (may be omitted if the flavor is not liked) and add to the drained cucumbers salt and pepper to taste, and vinegar to make as thin as before draining. Bottle and cork closely.

##### Tomato Catsup.

One gallon strained tomatoes, four tablespoons salt; simmer two and one-half hours, then add one-half teaspoon black pepper, one teaspoon mustard, one-half teaspoon allspice, one-quarter teaspoon cayenne pepper; one-quarter teaspoon cloves, one-half teaspoon cinnamon, one pint vinegar, one cup white sugar; simmer one hour; bottle cold.

##### Apple Catsup.

Peel and quarter one dozen sound, tart apples, stew them until tender in as little water as possible, press them through a sieve. To a quart of apples add one cup of sugar, one teaspoonful pepper, one of cloves, one of mustard, two of cinnamon, and two medium sized onions chopped very fine. Stir all together, adding one tablespoonful of salt, one pint of vinegar. Place over fire and boil one hour, bottle while hot; seal. It should be as thick as tomato catsup.

## Write for the 1914 DINGWALL CATALOGUE

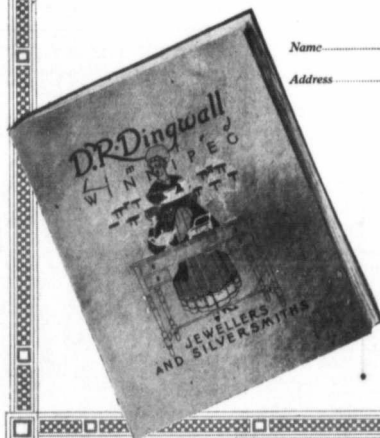
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Here is one of many Recipes:—

### DELICIOUS APPLE PIES

1 dozen tart Apples  
One-half Cup of *Crown Brand Corn Syrup*  
Two Teaspoons of Ground Cinnamon  
Three Ounces Butter  
Three Tablespoons sifted Flour  
Peel, core and slice the apples. Line three deep pie plates with good pie paste. Fill them up with the apples. Pour the syrup over the apples. Then the butter in small bits. Sprinkle the cinnamon and flour over them, and cover over with a top crust. Bake 40 minutes. The result will be delicious and juicy pies.

And here's another:—

### PUDDING SAUCE

One-half Cup of *Crown Brand Corn Syrup*  
One-half Cup of Water  
1 Tablespoon *Benson's Prepared Corn*  
1 Tablespoon Lemon Extract or Vanilla  
Put water and syrup over fire, and when boiling add the Cornstarch mixed in a little cold water. Cook until it has the thickness of Cream. When done add extract. Serve cold. Very nice for Blanc-Mange or Farina pudding.

Write for Recipe Book right now

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A good way to cut squash is to cut it into thin slices, dip into egg powder with cracker dust and fry in boiling lard. It fries very crisp and makes a delightful substitute for meat now and then.

#### Sliced Cucumber Pickles.

One hundred cucumbers (size of a twenty-five cent piece), one dozen onions, one coffee cup salt, one-fourth pound black mustard seed, one-fourth pound celery seed, one coffee cup olive oil, three tablespoons brown sugar. Slice cucumbers and onions; sprinkle salt through them; let stand over night; drain in the morning. Add mustard, celery seed, sugar and olive oil, mixing well. Put in glass jars and cover with good cider vinegar, cold. Should stand several weeks. Very good.

#### Pickled Onions.

Select small, silver-skinned onions, remove with a knife all the outer skins so that each onion will be perfectly white and clean. Put them into a brine that will float an egg, for three days. Bring vinegar to boiling point, add a little mace and whole red pepper, and pour it, hot over the onions, well drained from brine.

#### Pickled Carrots.

Slice and boil tender. Spread with butter, salt and pepper and a little vinegar; the same as for beets.

#### My Mother's Favorite Pickle.

One quart raw cabbage and one quart boiled beets, two cups sugar, one tablespoon salt, one teaspoon black pepper, one-quarter teaspoon red pepper, one cup grated horseradish. Cover with cold vinegar, put in cans.

#### Sour Pickles.

Pickled Beets.—(1) Wash them, and be careful not to pick the outside skin or they will lose their beautiful color; put them into boiling water, simmer gently until three-quarters done (about one and one-half hours), take out and cool; then peel, and cut into slices one-half inch thick. Take vinegar enough to cover, add two ounces allspice, and two ounces whole pepper to each gallon, and boil five minutes; when cold, pour it on the beets, and cover closely. They can be used in a week. (2) Another way is to take four or five medium-sized beets, boil them soft, put in cold water, rub off the skins, wipe dry, cut in pieces, and chop finely in the chopping bowl; add, while chopping, an even teaspoon of salt and sugar, a saltspoon each of mustard and pepper; pack into a salad dish or bowl; cover with cold vinegar, and let it stand until the next day before serving.

Carrots may be pickled in the same manner. Few people know how good carrots are when pickled.

Artichokes.—Take a strong brine and boil the artichokes in it two or three minutes; then drain them on a sieve, and put in jars when cold. Boil some nutmeg mace and ginger in enough vinegar to cover; pour it on hot and seal the jars.

Beans.—String the beans and boil until tender, putting a little salt in the water; then drain in a colander, and when cold put in jars; add one tablespoon of horseradish, sprinkle with cayenne pepper lightly, and cover with good cider vinegar.

Pickled Cabbage.—Slice the cabbage fine, and cover with boiling water; drain off the water when cold. Season with red and black pepper in equal parts, salt, cinnamon and cloves, and grated horseradish. Cover with strong vinegar.

Pickled Cauliflower.—Break the heads into small pieces, and boil in salt and water ten or fifteen minutes; then drain carefully, and place in jars when cold; tie white mustard, cloves, allspice and pepper in a bag, put it in vinegar and scald; take the vinegar from the stove, take out the bag and to each quart add one-half cup sugar, and one tablespoon of mustard; pour it over the cauliflower, and cover tightly.

Celery Pickles.—Take one-half gallon of chopped celery, the same of chopped white cabbage, four ounces white mustard seed, one-half ounce ginger root, two tablespoons salt, one-half ounce

turmeric, one-third cup sugar, three-quarters gallon cider vinegar; let all simmer gently until celery and cabbage are tender; then put in jars.

Cherry Pickles.—Take large, ripe cherries, leave the stems on, and put them whole into cans, filling them only two-thirds full; take good cider vinegar, fill the cans with it cold, and seal without heating.

Salting Cucumbers.—Wash them, and put first a layer of salt, then a layer of cucumbers, and so on alternately until the jar is full, having salt on top and keeping all down with a weight. They will keep this way two or three years. For use, freshen them by soaking in water for two or three days, changing the water daily. Scald vinegar, to which is added spices, and a little sugar if desired, and pour this hot over the cucumbers, under the weight, and the scum that arises may be removed by taking off the cloth and rinsing it. Horseradish tops or cabbage leaves placed under the cloth will prevent molding.

#### PATTERN DEPARTMENT

Any of these patterns supplied by the Pattern Department of the E. H. Heath Co., for 10c., or stamps. Please order by number and state the month in which pattern appeared.



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Designed for Flouncing or Bordered Material.

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¾ yd. of material 21 in. wide ¼ yd. 44 for No. 1, with 2½ yds. of ruffling; 2½ yds. of embroidery or lace 5 in. wide for No. 2 with 1 yd. of ruffling.

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With Long or Short Sleeves. 616 Embroidery Design.

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The above patterns will be mailed to any address by the Fashion Department of this paper, on receipt of ten cents for each.

## FIVE ROSES COOK BOOK



## "Five Roses Flour"

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## Five Roses Cook Book

BREAD, PASTRY, ETC.

just published is an authority that will simplify the duties of the housewife, and that no well regulated household should be without. It is a manual of good recipes, dealing with almost every article of food in which flour is used. To this most useful book 2,000 successful users of FIVE ROSES FLOUR throughout Canada have contributed, and every recipe is defined in clear and simple language that can be readily understood and easily applied.

The book itself is a model of typographical neatness, printed on superior paper, with contents arranged in a most convenient manner. The pages, of which there are 144, are brightened with a judicious assortment of illustrations from black and white sketches, and have a most complete index. The book is bound neatly and strongly, and has good lasting qualities.

All the contributions were unsolicited and constitute a remarkable tribute to the excellency and the Dominion wide popularity of FIVE ROSES FLOUR.

It is the wish of the **Lake of the Woods Milling Company** that as far as possible the Cook Book should find its way into every Western home. The supply, however, is necessarily limited, and it will be well to lose no time in sending in requests. In order to facilitate the distribution and to handle the correspondence promptly and efficiently the attached coupon must be properly filled out and 10 cents in silver or stamps duly enclosed for postage, and the address should be

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LAKE OF THE WOODS  
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Women's Clubs

President MacLean of the University of Manitoba in an address to the Women's Canadian Club said in referring to the important influence of women's clubs, that he saw no reason why the Women's Canadian Club should not become a permanent factor for the improvement of social conditions in Winnipeg, Manitoba and the Dominion. In the United States he had come much in contact with women's clubs, and although," he said, "I have seen occasional instances of what seemed to me mis-

directed and mistaken effort on the part of individual clubs, I do not recall a single instance of serious mistake or failure on the part of the State Federation.  
 "Their activities had included everything from travelling libraries, physical and art education, education of defective children, enforcement of pure food laws, etc. When a conclusion was reached they were right or in the right direction. Could any political party claim similar achievement? This comparison was not quite fair to the latter, as government by authority and its acts become law. The other government by influence, in advocating measures revealed their weakness or strength. A better comparison would be with commercial clubs or boards of

trade, but even here the honor went to the women.  
 "When we see," went on the speaker, "what these non-partisan, non-governmental organizations of men and women have done in initiating and paving the way for effective legislation it is easy to believe that the historian of the future will view these instances of social co-operation as the most important and characteristic feature of the history of our time."  
 "In order to understand the facility of American and Canadian club women for co-operative and constructive effort it must be remembered that these women were descendants of pioneers. The pioneer women, isolated and lonely, had learned to think both in the abstract and the concrete and to face and solve

problems. She was the civilization centre of the home. The inventive skill of American and Canadian workmen had been noted but it had also the inheritance of their sisters to an even greater degree. It was simply the inherited skill from pioneer ancestors who practised invention in a period when the highest premium was placed on ingenuity, constructiveness and adaptability of means to the end. Even the poetry was home made. The daughter of a woman, who spread a table in the wilderness, could solve the problem of feeding the city's poor. Perhaps the main difference between club movements here and across the water was due to this previous preparation and traditions and mental attributes of those who had undertaken the work.



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**SAMUEL HOPKINS ADAMS**  
 AUTHOR OF **AVERAGE JONES ETC.**  
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(Continued from page 73, August Issue)

"Wisdom lurks behind your screen. Work is the answer."

"Good or bad, it's the only thing. Which kind is yours?"

"Presently you shall sit in judgment. Meantime, suppose you account for yourself."

Chester Kent stretched himself luxuriously. "A distinguished secretary of state has remarked that all the news worth telling on any subject can be transmitted by wire for twenty-five cents. The short and simple annals of the poor in my case can be recorded within that limit. 'Postgraduate science. Agricultural Department job. Lectures. Invention. Judiciary Department expert. Signed, Chester Kent.' Ten words—count them—ten."

"Interesting, but unsatisfying," retorted his friend. "Can't you expand a bit? I suppose you haven't any dark secret in your life?"

"No secret, dark or light," sighed the other. "The newspapers won't let me have."

"Eh? Won't let you? Am I to infer that you've become a famous person? Pardon the ignorance of expatriation. Have you discovered a new disease, or formulated a new theory of life, or become a golf champion, or a senator, or a freak aviator, or invented perpetual motion? Do you possess titles, honors and ribboned decorations? Ought I to bat my brow against the floor in addressing you? What are you, anyway?"

"What I told you, an expert in the service of the Department of Justice."

"On the scientific side?"

"Why—yes, generally speaking. I like to flatter myself that my pursuit is scientific."

"Pursuit? What do you pursue?"

"Men and motives."

Sedgwick's intellectual eyes widened. "Wait," he said, "something occurs to me, an article in a French journal about a wonderful new American expert in criminology, who knows all there is to know, and takes only the most abstruse cases. I recall now that the article called him 'le Professeur Chêtre Kennat.' That would be about as near as they would come to your name."

"It's a good deal nearer than

that infernal French journalist whom Wiley brought to my table at the Idlers' Club got to the facts," stated Kent.

"Then you are the Professor Kent! But look here! The Frenchman made you out a most superior species of highfalutin detective, working along lines peculiarly your own—"

"Rot!" interjected Kent. "The only lines a detective can work along successfully are the lines laid down for him by the man he is after."

"Sounds more reasonable than romantic," admitted the artist. "Come now, Kent, open up and tell me something about yourself."

"Only last month a magazine put that request in writing, and accompanied it with an offer of twenty-five hundred dollars—which I didn't accept. However, as I may wish to ask you a number of leading questions later, I'll answer yours now. You remember I got into trouble my senior year with the college authorities, by proving that typhoid epidemic direct against a forgotten defect in the sewer system. It nearly cost me my diploma; but it helped me, too, later, for a scientist in the Department of Agriculture at Washington learned of it, and sent for me after graduation. He talked to me about the work that a man with the true investigation instinct—which he thought I had—could do, by employing his abilities along strictly scientific lines; and he mapped out for me a three year's postgraduate course, which I had just about enough money to take. While I specialized on botany, entomology, and bacteriology, I picked up a working knowledge of other branches; chemistry, toxicology, geology, mineralogy, physiology, and most of the natural sciences, having been blessed with an eager and catholic curiosity about the world we live in.

Once in the Department, I found myself with a sort of roving commission. I worked under such men as Wiley, Howard, and Merriam, and learned from them something of the infinite and scrupulous patience that truly original scientific achievement demands. At first my duties were largely those of minor research. Then, by accident largely, I

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chanced upon the plot to bull the cotton market by introducing the boll weevil into the unfested cotton area, and checked that. Soon afterward I was put on the 'deodorized meat' enterprise, and succeeded in discovering the scheme whereby it was hoped to sell spoiled meat for good. You might have heard of those cases; but you would hardly have learned of the success in which I really take a pride, the cultivation of a running wild grape to destroy Rhus Toxicodendron, the common poison ivy. What spare time I had I devoted to experimenting along mechanical lines, and patented an invention that has been profitable. Some time ago the Department of Justice borrowed me on a few cases with a scientific bearing, and more recently offered me incidental work with them on such favorable terms that I resigned my other position. The terms include liberal vacations, one of which I am now taking. And here I am! Is that sufficient?"

"Hardly. All this suggests the arts of peace. What about your forty-horse-power kick? You don't practice that for drawing-room exhibitions, I take it?"

"Sometimes," confessed the scientist, "I have found myself at close quarters with persons of

dubious character. The fact is, that an ingenious plot to get rid of a very old friend, Doctor Lucius Carter, the botanist, drew me into the criminal line, and since then, that phase of investigation has seemed fairly to obtrude itself on me, officially and unofficially. Even up here where I hoped to enjoy a month's rest—"Do you know," he said, breaking off, "that you have a most interesting inset of ocean currents hereabouts?"

"Of course, Lonesome Cove. But kindly finish that 'even up here' I recollect your saying that you were waiting for me. Haven't traced any scientific crime to my door, have you?"

"Let me forget my work for a little while," pleaded his visitor, "and look at yours."

Sedgwick rose. "Come upstairs," he said, and led the way to the big, bare, bright studio.

From the threshold Chester Kent delivered an opinion, after one approving survey. "You really work, I see."

"I really do. Where do you see it, though?"

"All over the place. No draperies or fripperies or fopperies of any here. The barer the room, the more work done in it."

He walked over to a curious contrivance: resembling a small

hand-press, examined it, surveyed the empty easel, against which were leaning, face in, a number of pictures, all of a size, and turned half a dozen of them over, ranging them and stepping back for examination. Standing before them, he whistled a long passage from La Bohème, and had started to rewhistle it in another key, when the artist broke in with some impatience.

"Well?"

"Good work," pronounced Kent quietly, and in some subtle way to their hearer the fact that the man who spoke them knew.

"It's the best there is in me, at least," said Sedgwick.

Kent went slowly around the walls, keenly examining, silently appraising. There were landscapes, genre bits, studies of the ocean in its various moods, flashes of pagan imaginings, nature studies; a wonderful picture of wild geese settling from a flight; a no less striking sketch of a mink, startled as he crept to drink among the sedges; a group of country children at hop-scotch on the sands; all the varied subjects handled with a deftness of truth and drawing, and colored with a clear softness, quite individual.

"Have you found or founded a new system of coloring?" asked

Kent, as he moved among the little masterpieces. No; don't tell me." He touched one of the surfaces delicately. "It's not paint, and it's not pastel. Oh, I see! They're all of one size—of course." He glanced at the heavy mechanism near the easel. "They're color prints."

Sedgwick nodded. "Monotypes," said he. "I paint on copper, make one impress, and then—phut!—a sponge across the copper makes each one an original."

"You certainly obtain your effects."

"The printing seems to refine the color. For instance, moonlight on white water, a thing I've never been able to approach either in straight oils or water. See here."

From behind a cloth he drew a square, and set it on the easel. Kent whistled again, casual fragments of light and heavy opera intermingled with considerable twitches of his ear.

"It's the first one I've given a name, to," said Sedgwick. "I call it The Rough Rider."

A full moon, brilliant amid blown cloud-rack, lighted up the vast procession of billows charging in upon a near coast. In the foreground a corpse, the face bent far up and back from the

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Send Dimensions of building and we will estimate the Cost.

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spar to which it was lashed, rode with wild abandon headlong at the onlooker, on the crest of a roaring surge. The rest was infinite clarity of distance and desolation.

"The Rough Rider!" murmured Kent; then with a change of tone, "For sale?"

"I don't know," hesitated the artist. "Fact is, I like that about well enough to keep."

"I'll give you five hundred dollars for it."

"Five hundred! Man alive! A hundred is the most I've ever got for any of my prints!"

"The offer stands."

"But, see here, Kent, can you afford it? Government salaries don't make men rich, do they?"

"Oh, I'm rich enough," said the other, impatiently. "I told you I'd made inventions. And I can certainly afford to buy it better than you can afford to keep it here."

"What's that?" asked the painter, surprised.

Kent represented his final sentence, with slow emphasis. "Do you understand what I mean?" he asked, looking flatly into Sedgwick's eyes.

"No, not in the least. Another suggestion of mystery. Do you always deal in this sort of thing?"

"Very seldom. However, if you don't understand so much the better. When did you finish this picture?"

"Yesterday."  
"H-m! Has anyone else seen it?"

"That old fraud of a plumber, Elder Dennett, saw me working on it yesterday, when he was doing some repairing here, and remarked that it gave him the creeps."

"Dennett? Well, then, that's all up," said Kent, as if speaking to himself. "There's a streak of superstition in all these New Englanders. He'd be sure to interpret it as a confession before the fact. However, Elder Dennett left this morning for a trip to Cadystown. That's so much to the good."

"He may have left for a trip to Hadestown for all I care," stated Sedgwick with conviction. "What's it all about, anyway?"

"I'll tell you, as soon as I've mulled it over a little. Just let me cool my mind down with some of your pictures." He turned to the wall border again, and faced another picture out. "What's this? You seem to be something of a dab in black and white, too."

"Oh, that's an imaginary face," said Sedgwick, carelessly.

"Imaginary face studied from various angles," commented Kent. "It's a very lovely face, and the most wistful I've ever seen. A fairy, prisoned on earth by cock-crow, might wear some such ex-

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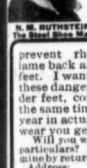
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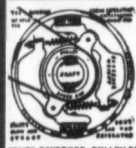


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Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead or a farm of at least 80 acres solely owned and occupied by him or by his father, mother, son, daughter, brother or sister.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price \$3.00 per acre. Duties—Must reside six months in each of six months in each of three years, cultivate fifty acres and erect a house worth \$300.00.

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W. W. CORY, Deputy of the Minister of the Interior N.B.—Unauthorized publication of this advertisement will not be paid for.

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presion of sturred wondering purity, I fancy."

"Poetry as well as mystery! Kent, you grow and expand on acquaintance."

"There is poetry in your study of that imaginary fay. Imaginary! Um-hum!" continued Kent drily, as he stooped to the floor. "I suppose this is an imaginary hairpin, too."

"My Chinaman—" began Sedgwick quickly, when the other caught him up.

"Don't be uneasy. I'm not going to commit the bêtise of asking you she is."

"If you did, I give you my word of honor I couldn't tell you. I only wish I knew!"

There was silence between them for a moment; then the painter broke out with the air of one who takes a resolution:

"See here, Kent! You're a sort of detective, aren't you?"

"I've been called so."

"And you like my picture of 'The Rough Rider'?"

"Five hundred dollars' worth." "You can have that and any other picture in my studio, except this one," he indicated the canvas with the faces, "if you'll find out for me who she is."

"That might be done. We shall see. But frankly, Sedgwick, there's a matter of more importance—"

"Importance? Good heavens, man! There's nothing so important in this world!"

"Oh, is it as bad as that?" A heavy knock sounded from below, followed by the Chinaman's voice, intermingled with boyish accents demanding Sedgwick in the name of the Western Union Telegraph Company.

"Send him up," ordered Sedgwick, and the boy arrived; but not before Kent had quietly removed "The Rough Rider" from its place of exhibit.

"Special from the village," announced young Mercury. "Sign here."

After the signature had been duly set down, and the signer had read his message with knit brows, the urchin lingered, big with news.

"Say, heard about the body on the beach?"

Kent turned quickly, to see Sedgwick's face. It was interested, but unmoved as he replied:

"No. Where was it found?" "Lonesome Cove. Woman. Dressed swell. Washed up on a grating last night or this morning."

"It's curious how they all come in here, isn't it?" said the artist to Kent. "This is the third this summer."

"And it's a corkerino!" said the boy. "Sheriff's on the case. Body was all chained up, they say."

"I'm sure they need you at the

WINCHESTER



MODEL 1912 20 GAUGE Light Weight Hammerless Repeating Shotgun

This new Winchester is the lightest, strongest and handsomest repeating shotgun made. It weighs only about 5 3/4 pounds, yet it has surpassing strength, as all the metal parts are made of Nickel Steel, having about 50,000 pounds more tensile strength to the square inch than ordinary steel. The receiver is free from screws and unsightly pins to collect rust and dirt and work loose, and its solid breech, closed at the rear, makes it extremely safe. It operates and works with an ease and smoothness not found in similar guns of other makes. It is simple to load and unload, easy to take down, being separated into two parts quickly without tools. For pattern and penetration, it is fully up to the established Winchester standard of shooting quality, which has no superior.

Ask your dealer to show you one, or send to Winchester Repeating Arms Co., New Haven, Conn., for illustrated circular.

A 20 GAUGE GUN FROM BUTT TO MUZZLE.

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Insure success by a business training. Get it in the best Business College—the College that has made the greatest success of its business. This is the Success Business College, with schools at Winnipeg, Regina, Moose Jaw, Weyburn, Calgary, Lethbridge and Vancouver. We use 309 typewriters. Send to the nearest school for free prospectus, beautifully illustrated. Don't put it off. Act now!

Guaranteed Investments are the Best

Safe as GOVERNMENT BONDS and more profitable. Our Booklet explains fully. Send for it.

STEWART & WALKER, LTD. 202 Sterling Bank Winnipeg

COUPON Messrs. STEWART & WALKER, Limited Sterling Bank Building, Winnipeg, Man. Gentlemen—Kindly send me Booklet on Investments. Yours truly, Name Address



## Well Drilling Machines

Over 20 styles, for drilling either deep or shallow wells in any kind of soil on wheels or on gines or horse powers. Strong, simple, durable. Any mechanic can operate them. Send for catalog.

**WILLIAMS BROS.,**  
TELACA, N. Y.

Mention this magazine when writing advertisers.

## Imperial Bank

OF CANADA  
Established 1876

Capital Authorized .....	\$10,000,000
Capital Paid Up .....	6,925,000
Reserve and Undivided Profits .....	8,100,000
Total Assets .....	73,000,000

**BRANCHES IN WESTERN CANADA**

Provinces of Manitoba

Brandon	Portage la Prairie	Winnipeg
---------	--------------------	----------

Province of Saskatchewan

Belgonia	Broadview	North Battleford
Rosheron	Fort Qu'Appelle	Prince Albert
Saskatoon	Moose Jaw	Regina
Wilkie	Negeau	Wynyard


Province of Alberta

Athabaska Landing	Edmonton	Strathcona
Banff	Lethbridge	Wetaskiwin
Calgary	Red Deer	Rediff
Rocky Mountain Hse.	Medicine Hat	Millet

**SAVINGS DEPARTMENTS AT ALL BRANCHES**

Interest allowed on Current Rates  
Drafts and Letters of Credit issued available in all parts of the world.  
Winnipeg Branch  
N. G. LESLIE, Manager.

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with steel roller bearings, easy to push and so pull, cannot be thrown off the track—opens by same stayson. Write for descriptive circular and prices. Estimates always given to right party who will buy in quantity.

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THE OLD RELIABLE

Easiest to operate  
Bores Faster  
Most Durable

Improved Up-to-date Drilling Machines

Manufactured by  
**Cherokee Mfg. Co., Dept. A, Cherokee, Iowa.**

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### WELL DRILLING

GUS PECH  
FOUNDRY AND  
MANUFACTURING  
COMPANY

Manufacturers of the  
Celebrated  
**MONITOR WELL  
AUGERS AND  
DRILLS**

Write for prices  
and illustrated  
Catalogue.

I. E. MARS, IOWA  
U.S.A.  
Branch House—  
REGINA, SASK.

Mention this magazine when writing advertisers.

office to help circulate the news, my son," said Kent. "And I'll bet you this quarter, payable in advance, that you can't get back in half an hour on your wheel."

With a grin the boy took the coin. "I got yer," he said, and was off.

"And now, Sedgwick," said Kent decisively, "if I'm to help you, suppose you tell me all that you know about the woman who called on you last evening?"

"Last evening? Ah, that wasn't the girl of the picture. It's an interminable six days since I've seen her."

"No; I know it wasn't she, having seen your picture, and since then your visitor of last night. The question is, who was it?"

"Wait! How did you know that a woman came here last night?"

"From common gossip."  
"And where have you seen her since?"

"On the beach, at Lonesome Cove."

"Lonesome Cove," repeated Sedgwick mechanically. Then with a startled glance: "Not the dead woman!"

Kent nodded, watching him closely. For a space of four heart-beats—one very slow, and three very quick—there was silence between them. Kent broke it.

"Do you see now the wisdom of frankness?"

"You mean that I shall be accused of having a hand in her death?"

"Strongly suspected, at least."

"On what basis?"

"You are the last person known to have seen her alive."

"Surely that isn't enough?"

"Not of itself. There's a bruise back of your right ear."

Involuntarily Sedgwick's hand went to the spot.

"Who gave it to you?" pursued Kent.

"You know it all without my telling you," cried Sedgwick. "But I never saw the woman before in my life, Kent—I give you my word of honor! She came and went, but who she is or why she came or where she went I have no more idea than you have. Perhaps not nearly so much."

"There you are wrong. I'm depending on you to tell me about her."

"Not if my life hung on it. And how could her being found drowned on the beach be connected with me?"

"I didn't say that she was found drowned on the beach."

"You did! No; pardon me. It was the messenger boy. But you said that her body was found in Lonesome Cove."

"That is quite a different matter."

"She wasn't drowned?"

## UNION BANK OF CANADA

Established 1865

### Head Office Winnipeg

Paid-up Capital ..... \$5,000,000  
Reserve and Undivided Profits 3,875,000  
Total Assets, over ..... 70,000,000  
Hon. President - - WM. PRICE

PRESIDENT - JOHN GALT

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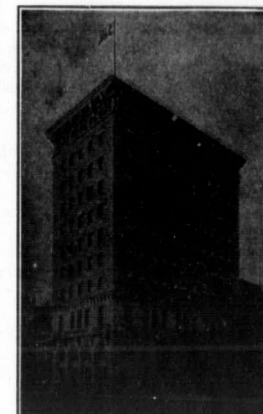
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This Bank, having over 300 branches in Canada, extending from the Atlantic to the Pacific Coast, offers excellent facilities for the transaction of every description of banking business. It has correspondents in all cities of importance throughout Canada, the United States, the Continent of Europe, and the British Colonies.

Collections made in all parts of the Dominion, and returns promptly remitted at lowest rates of exchange.



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SPECIAL ATTENTION GIVEN TO FARMERS' BUSINESS

Grain Drafts Negotiated.

Interest Allowed on Deposits.

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Alberta—Airdrie, Alix, Brooks, Bushaw, Bassano, Edson, Haddock, Hiramora, Bowden, Bow Island, Brooks, Calgary, Carbon, Cardston, Carleton Place, Carstairs, Claresholm, Cochrane, Consort, Cowley, Didsbury, Edmonton, Fort Saskatchewan, Grande Prairie, Grassy Lake, High River, Hillcrest, Inisfail, Irvine, Lacombe, Langdon, Lethbridge, Macleod, Medicine Hat, Okotoks, Fairburg, Pincher Creek, Seven Persons, Strathmore, Sealwell, Three Hills, Wainwright.

British Columbia—Enderby, Hazelton, Nanaimo, New Hazelton, Prince Rupert, Telkwa, Vancouver, Vernon, Victoria.  
Winnipeg Branch, D. M. NEEVE, Manager.      F. E. WILSON, Asst.-Manga ger.  
F. J. BOULTON, Manager Portage Ave. Branch, corner Garry (adjoining Post Office)

# CAEW

# "BAT"



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THE ROCK CITY TOBACCO CO. LIMITED - QUEBEC.

Be Sure of Your  
Separator Oil

## STANDARD Hand Separator Oil

Standard Hand Separator Oil is the perfect lubricant for cream separators. Reduces friction and jarring to a minimum, so that greatest cream yield is insured.

Never gums, rusts or corrodes. Lengthens the life of the separator.

One gallon cans. All dealers.

**THE IMPERIAL OIL CO., Limited**

Main Office: WINNIPEG  
Regina, Moose Jaw, Saskatoon, Calgary, Edmonton,  
Lethbridge, Vancouver.

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**USE** *Advance Pump Governors on all your pumps now!*

Adjusted to fit any pump  
Warranted two years  
Price, \$3.75 each



See it lift! **YOUR MONEY BACK** if not exactly as represented

They carry all the weight and do the lifting. Windmills run in lightest breeze; also gas or steam. Expense reduced one-half. Exclusive territory to salesman. Some clear \$80.00 weekly. Apply early.

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Industrial Bureau, Winnipeg

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Thirty-six years' experience in brewing

**Drewry's Redwood Lager**

tells the story of its popularity

**TRY IT**

Mention this magazine when writing advertisers

**CHEW MAPLE SUGAR TOBACCO**

MILD, SWEET, MELLOW AND JUICY

Manufactured by **ROCK CITY TOBACCO CO.**

Quebec, Winnipeg

**SALESMEN WANTED!**

Do You Want a Good Position Paying From \$1,000 to \$3,000 a Year and Expenses? There are hundreds of such positions now open. No former experience as a salesman required to get one of them. If you want to enter the world's best paying profession our Free Employment Bureau will secure you a position where you can earn good wages while you are learning Practical Salesmanship. Write today for full particulars, list of good openings and testimonials letters from hundreds of our students for whom we have recently secured good positions paying from \$100.00 to \$500.00 a month and expenses. Address Nearest office, Dept. 285 National Salesmen's Training Association, Chicago, New York, Kansas City, San Francisco, Toronto.

"I should be very much surprised if the autopsy showed any water in the lungs."  
"But the boy said that the body was lashed to a grating, and that there were chains on it. Is that true?"  
"It was lashed to a grating, and manacled."  
"Manacled? What a ghastly mystery!" Sedgwick dropped his chin in meditation. "If she wasn't drowned, then she was murdered and thrown overboard from a boat. Is that it?"  
Chester Kent smiled inscrutably. "Suppose you let me do the questioning a while. You can give no clue whatsoever to the identity of your yesterday's visitor?"

There was the slightest possible hesitation before the artist replied, "None at all."  
"If I find it difficult to believe that, what will the villagers think of it when Elder Dennett returns from Cadystown and tells his story, as he is sure to do?"  
"Does Dennett know the woman?"  
"No; but it isn't his fault that he doesn't. He did his best in the interviewing line when he met her on her way to your place."  
"She wasn't on her way to my place," objected Sedgwick.  
"Dennett got the notion that she was. Accordingly, with the true home-bred delicacy of our fine old New England stock, he hid behind a bush and watched."  
"Did he overhear our conversation?"

"He was too far away. He saw the attack on you. Now, just fit together these significant bits of fact. The body of a woman, dead by violence, is found on the beach not far from here. The last person, as far as is known, to have seen her alive is yourself. She called on you, and there was a colloquy, apparently vehement, between you, culminating in the assault upon you. She hurried away. One might well guess that later you followed her to her death."  
"I did follow her," said Sedgwick in a low tone.  
"For what purpose?"  
"To find out who she was."  
"Which you didn't succeed in doing?"

"She was too quick for me. The blow of the rock had made me giddy, and she got away among the thickets."  
"That's a pity. One more point of suspicion. Dennett, you say, saw your picture, 'The Rough Rider.' He will tell everyone about it, you may be sure."  
"What of it?"  
"The strange coincidence of the subject, and the apparent manner of the unknown's death."  
"People will hardly suspect that I killed her and set her

**REMINGTON UMC METALLIC CARTRIDGES**



Whether your arm is a Remington or any other standard make, whatever its calibre and the load you need, you want Remington-UMC metallics—not because they are necessarily stamped with the same name as your firearm, but because they give more accurate results.

This company has been making ammunition for fifty years. We produce metallics for every standard make of arm—and every Remington-UMC cartridge is tested in the arm for which it is made.

May we send you a booklet explaining simply many of the technical points of ammunition manufacture. Your name and address on a post card will bring it by return mail.

**Remington Arms-Union Metallic Cartridge Co., Windsor, Ontario**

You saw this advertisement in this magazine. Don't forget to say so when writing.

**CHALLENGE GOLLARS**

**THE ACME OF COMFORT**  
is assured to every wearer of "CHALLENGE" Collars and Cuffs



They have the same dull finish, texture and fit as the best linen collar, and won't wilt or crack. "Challenge" Collars can be cleaned with a rub from a wet cloth. Always smart—always dressy. If your dealer doesn't sell "Challenge" Brand, send us 25c for collar or 50c for pair of cuffs. You'll be delighted. New style book sent free on request.

**THE ARLINGTON COLLAR CO. OF CANADA LTD.**  
64-66 Fraser Ave., Toronto, Can. P-16

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**CANADIAN NORTHERN RAILWAY**

**SUMMER SERVICE OVER THE GREAT LAKES**

TO

**Eastern Canada and United States**

**VIA DULUTH**  
The Longest Trip on the Largest and Finest Steamers on the Lakes. One day longer at the same cost. Leave Winnipeg daily, 6 p.m. and 7.40 a.m.; arrive Duluth 8.25 a.m. and 10.40 p.m. All Rail connection via Chicago or the "Soo."

**VIA PORT ARTHUR**  
Connects all Steamer Lines. Train runs down to the dock. All Docks and Hotels adjacent to Canadian Northern Station. Leaves Winnipeg daily, 6 p.m.

**PATRONIZE THE POPULAR TRAINS**  
The Alberta Express, between Winnipeg, Saskatoon and Edmonton. The Capital Cities Express, between Winnipeg, Brandon, Regina, Saskatoon, Prince Albert.

**REDUCED FARE SUMMER EXCURSIONS**  
For full information apply to any Canadian Northern Agent, or write **R. CREELMAN, General Passenger Agent, Winnipeg.**

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**Family Group Photos a Specialty**

AT

**STEELE & CO., LTD.**

MAIN ST. AND BANNATYNE AVE. WINNIPEG

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**Warranted to Give Satisfaction.**  
**Gombault's**  
**Caustic Balsam**



**Has Imitators But No Competitors.**  
 A Safe, Speedy and Positive Cure for  
 Curb, Splint, Sweeney, Capped Hock,  
 Strained Tendons, Founder, Wind  
 Falls, and all lameness from Spavin,  
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 Cures all skin diseases or Parasites,  
 Thrush, Eithetia. Removes all  
 Bunches from Horses or Cattle.  
 As a Human Remedy for Rheumatism,  
 Sprains, Sore Throat, Sec. it is invaluable.  
 Every bottle of Caustic Balsam sold is  
 warranted to give satisfaction. Price \$1.50  
 per bottle. Sold by druggists, or sent by  
 express, charges paid, with full directions for  
 its use. If need for descriptive circulars,  
 testimonials, etc. Address  
 The Lawrence-Williams Co., Toronto, Ont.

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**\$1500 to \$5000 Per Year**

have been made by hundreds of people operating the "American" Drilling Machines. 40 years' experience. 59 regular styles and sizes and the output of the world's largest manufacturers of this kind of machinery make "AMERICAN" MACHINES STANDARD Made in types for every kind of earth and rock drilling or mine prospecting, equipped with any power, or operated with your traction engine. Our new 1913 Catalog Free.

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General Office and Works:  
**AURORA**  
 ILL., U.S.A.

Chicago Office:  
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Write for booklet, circulars, terms, etc.  
**FETHERSTONHAUGH & CO.**  
 FRED. B. FETHERSTONHAUGH, F. C. M. E.  
 GERALD S. ROXBURGH, R. A. Sc.  
 Portage Avenue, WINNIPEG.  
 209-10 Bank of Nova Scotia

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Leads them all. It's the Best Dollar Tobacco sold anywhere.

**JOHN ERZINGER**  
 McIntyre Bldg. - 293 Portage Ave.  
 Phone 69 Phone 2677

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adrift for a model, I suppose," said the artist bitterly; "particularly as Dennett can tell them that the picture was finished before her death."

"Not that; but there will be plenty of witchhangers among the Yankee populace, ready to believe that a fiend inspired both picture and murder in your mind. Why, the very fact of your being an artist would be prima facie evidence of a compact with the devil, to some people. And you must admit a certain diabolical ghastliness in that painting."

"Evidently some devil of ill fate is mixing up in my affairs. What's your advice in the matter?"

"Tell me the truth, the whole truth, and nothing but the truth," suggested Chester Kent.

"Easily done. The question is whether you'll believe it."

"If I hadn't felt pretty sure of your innocence, I shouldn't have opened the case to you as I've done. I'll believe the truth if you tell it, and tell it all."

"Very well. I was sitting on my wall when the woman came down the road. I noticed her first when she stopped to look back, and her absurd elegance of dress, expensive and ill fitting, attracted my closer attention. She was carrying a bundle, wrapped in strong paper. It seemed to be heavy, for she shifted it from hand to hand. When she came near, I spoke to her—"

"You spoke to her first?"

"Well, we spoke simultaneously."

"Why should you speak to her, if she was a stranger to you?"

"See here, Kent! You'll have to let me tell this in my own way, if I'm to tell it at all."

"So long as you do tell it. What did she say to you?"

"She asked me the time."

"Casually?"

"Not as if she were making it a pretext to open a conversation, if that is what you mean."

"It is."

"Certainly it wasn't that. She seemed anxious to know. In fact, I think she used the word 'exact'; 'the exact time,' she said."

"Presumably she was on her way to an appointment, then?"

"Very likely. When I told her, she seemed relieved; I might even say relaxed. As if from the strain of nervous haste, you know."

"Good. And then?"

"She thanked me, and asked if I were Mr. Sedgwick. I answered that I was, and suggested that she made good by completing the introduction."

"She wasn't a woman of your own class, then?"

Sedgwick looked puzzled.

**Mackenzie, Brown, Thom & McMorran**  
**Mackenzie, Brown, MacDonald & Bastedo**  
 Barristers, Solicitors, &c.  
 Regina, Saskatchewan, Canada

Norman MacKenzie, K.C. Hon. George W. Brown Douglas J. Thom  
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**The Occidental Fire Insurance Co.**  
 Head Office: WAWANESA, MAN.

A. NAISMITH, President R. M. MATHESON, Vice-President  
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Subscribed Capital \$500,000.00  
 Security to Policy-holders 640,817.29

**Full Deposit with Dominion Government**  
**Agents wanted in unrepresented districts**

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Alex. Naismith, Pres. S.H. Henderson, Vice-Pres. C. D. Kerr, Treasurer

**The WAWANESA MUTUAL INSURANCE COMPANY**  
 HEAD OFFICE: WAWANESA, MAN.  
 A. F. KEMPTON, Secretary-Manager

Amount of Insurance in force Dec. 31st, 1912 \$54,606,660.00  
 Assets over Liabilities \$587,537.67

THE NUMBER OF FARMERS INSURED, 31st Dec. 1912, 23,261

The Largest Farmers Mutual Fire Insurance Company in Canada. Agents wanted in unrepresented districts

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**INSURANCE—INSURANCE**  
 FRED W. PACE F. J. HARRISON P. GRANT MILLAR  
**PACE, HARRISON & MILLAR**  
 Keowayden Building Portage Ave. East

General Agents:

NATIONAL FIRE INSURANCE COMPANY of Hartford, Conn. Assets Exceed \$12,000,000.00	GENERAL FIRE ASSURANCE COMPANY of Paris, France. Assets Exceed 7,500,000.00
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Adjustment and payment of losses arranged from our office. Liberal contracts to live agents. WRITE FOR AGENCY.

You saw this advertisement in this magazine. Don't forget to say so when writing.

**National Trust Company, Ltd.**  
 TORONTO, WINNIPEG, EDMONTON, MONTREAL, REGINA, SASKATOON  
 Capital and Reserve, \$2,900,000.00

The strain and worry of managing Estates will all be borne for you by this Company.

A PRIVATE Executor may die or become incapable of acting before the completion of the Trust. A Trust Company is PERMANENT and will survive the longest Trusts.

This Company's financial strength and expert staff ensure responsible and capable administration.

We act as Trustee, Executor, Administrator, Guardian, Liquidator, Assignee, Financial Agent

**SAFE DEPOSIT VAULTS SAVINGS DEPARTMENT MONEY TO LOAN**

**D. H. COOPER, Manager, Winnipeg Branch, 323-326 Main Street.**  
**C. Y. STAINER, Secretary.**

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**Farmer or Business Man**

**\$1,000 to \$1,500 for Your Spare Time This Winter**

We want a man of influence in each locality to introduce our special representative to the people in his neighborhood. For your service we can pay you well. We pay all expenses and send our representative to work with you. On application we will send you the names of farmers and business men who have made from \$1,000 to \$3,500 this last winter co-operating with us. Write us direct and verify our statements. YOU CAN DO AS WELL. Let us send you full information about this exceptional offer by return mail. State whether you are a farmer or business man and how long you have lived in the community.

**ADDRESS C. W. T. BOX 3164**  
**c/o Canadian Thresherman & Farmer**  
**WINNIPEG, MAN.**

You saw this advertisement in this magazine. Don't forget to say so when writing.





WESTERN CANADIAN IMPLEMENT DIRECTORY

EXPLANATION.—First find the Implement Wanted and the Number opposite will be the Number of the Concern, in the first column, that handles it.

- 1-AULTMAN & TAYLOR MACHINERY CO., Regina, Calgary, Saskatoon.
2-BEATTY BROS., Brandon.
3-BELL ROBT ENGINE & TRESHER CO., Winnipeg.
4-BRANDON PUMP & WIND MILL WORKS, Brandon.
5-BRITISH CANADIAN AGRICULTURAL TRACTORS, Saskatoon.
6-BUFFALO PITTS CO., Moose Jaw.
7-BURRIDGE-COOPER CO., Winnipeg.
71-Canadian Armstrong Quam Co., Saskatoon.
72-Canadian Corrugated Pipe Co., Fortage la Prairie.
73-CANADIAN CUSHMAN CO., Winnipeg.
8-CANADIAN FAIRBANKS CO., Winnipeg, Calgary, Saskatoon, Vancouver.
9-CANADIAN HOLT CO., Calgary.
10-CANADIAN MOLINE PLOW CO., Winnipeg.
11-CANADIAN RUBBER CO., Winnipeg, Vancouver.
12-CANADIAN STOVER CO., Brandon.
13-CANADIAN SWENSONS CO., Winnipeg.
14-CASE, J. I. T. M. Co., Winnipeg, Regina, Calgary, Saskatoon.
15-COCKSHUTT PLOW CO., Winnipeg, Regina, Calgary, Edmonton.
16-CRANE & ORDWAY, Winnipeg.
17-DEERE, JNO. PLOW CO., Winnipeg, Regina, Calgary, Edmonton, Saskatoon, Lethbridge.
18-DE LAVAL SEPARATOR CO., Winnipeg.
19-DOMINION SPECIALTY CO., Winnipeg.
20-DUIS GEO. & CO., Winnipeg.
201-EMERSON BRANTINGHAM IMPLEMENT CO., Winnipeg, Regina, Calgary, Saskatoon.
21-EMPIRE CREAM SEPARATOR CO., Winnipeg.
214-GARDEN CITY FEEDER CO., Regina.
22-GAS TRACTION CO., Winnipeg, Saskatoon, Calgary.
23-GENERAL SUPPLY CO., Winnipeg.
24-GOODYEAR TIRE & RUBBER CO., Winnipeg, Regina, Calgary.
244-GOULD, SHAPLEY & MUIR, Winnipeg, Regina.
25-GRAY-CAMPBELL CO., Winnipeg, Brandon, Moose Jaw, Calgary.
26-HACKNEY MFG. CO., Winnipeg.
26-HAUG BROS. & NELLEMOE CO., Winnipeg, Calgary, Regina.
27-FARMER IMPLEMENT CO., Winnipeg.
28-HART PARR CO., P. la Prairie, Regina, Calgary, Saskatoon.
29-HERO IMPLEMENT CO., Winnipeg.
30-HUBER MFG. CO., Winnipeg.
30-INT. HARVESTER CO., Winnipeg, Regina, Calgary, Edmonton, Saskatoon, Brandon.
31-LISTER R. A. & CO., Winnipeg.
32-LUDEN HARDWARE & SPECIALTY CO., Winnipeg.
33-ANTOBA ENGINES LTD., Brandon.
34-MASSEY-HARRIS CO., Winnipeg, Regina, Calgary, Edmonton, Saskatoon.
35-MAYTAG CO., Winnipeg.
36-MCLAUGHLIN CARRIAGE CO., Winnipeg.
37-MEAR ALEX., Winnipeg.
38-MELOTT CREAM SEPARATOR CO., Winnipeg.
39-MINNEAPOLIS STEEL AND MACH. CO., Regina.
40-MINNEAPOLIS THRESHING MACHINE CO., Winnipeg, Regina, Calgary.
40-MOODY MATHEW & SONS, Winnipeg.
41-NEEPAWA MFG CO., Neepawa.
42-NICHOLS & SHEPARD CO., Regina, Winnipeg.
43-ARMSTRONG MANUFACTURING CO., Saskatoon.
44-PETRY MFG. CO., Winnipeg, Regina, Calgary, Vancouver, Edmonton.
45-PIONEER TRACTOR CO., Calgary.
46-RAYMOND MFG. CO., Winnipeg.
47-REEVES & CO., Regina.
48-RENFREW MACH. CO., Saskatoon.
49-RIESBURY PUMP CO. LTD., Brandon.
50-RIMELY M. CO., Winnipeg, Calgary, Saskatoon, Regina.

- 51-SAWYER & MASSEY CO., LTD., Brandon.
52-SHARPLES SEPARATOR CO., Winnipeg.
53-STEVENS BRUSH CUTTER CO., Didsbury.
54-STEWART SHEAF LOADER CO., Winnipeg.
55-TUDHOPE-ANDERSON CO., Scientific, Regina, Calgary.
56-VIRDEN MFG. CO., Virden.
7-VULCAN IRON WORKS, Winnipeg.
WATERLOO MFG. CO., P. la Prairie, Regina.
60-WATSON JNO MFG. CO., Winnipeg.
61-WESTERN FOUNDRY CO., Saskatoon.
62-WESTERN STEEL & IRON CO., Winnipeg.
63-WHITE, GEO. & SONS, Brandon.
634-WINNIPEG CEILING & ROOFING CO., Winnipeg.
64-WINNIPEG RUBBER CO., Winnipeg.
ARMSTRONG BUGGIES AND CUTTERS.
Barrie Buggies and Cutters.
Munro-Edwards Co.
Brockville Buggies and Cutters.
Domion Carriages (Transfer Agents).
Emerson.
Gray Buggies and Cutters.
H. Laval.
Henry Buggies.
McLaughlin Buggies and Cutters.
Munro-McIntosh Buggies & Cutters.
Reinder Buggies.
Tudhope Buggies and Cutters.
BLUE BELL.
Champion.
Daily Maid.
De Laval.
Empire.
Magnet.
Massey-Harris.
Melotte.
National.
Renfrew Standard.
Standard.
CULTIVATORS AND STUMP PULLERS.
Climax Stiff Tooth Cultivators.
Cockshutt Cultivator.
Deere No. 2 Cultivator.
Deering Cultivator.
Eik (2 Horse) Cultivator.
Emerson.
Flury's Cultivator.
Frost & Wood Scuffer.
Hilborn Stump Puller.
K. A. (2 Horse) Cultivator.
McCormick Cultivator.
Minneapolis Corn Cultivator.
Paris Scuffer.
Sylvester Cultivator.
Vitye Cultivator.
DISC AND DRAG HARROWS.
Ajax Drag.
Bluel Drill.
Boss Drag.
Canadian Moline Boss Drag.
Canton Disc.
Canton L. Disc and Drag.
Cyclone Wheel Disc.
Cockshutt Disc and Drag.
Cockshutt Lever and Clip.
Deer Disc and Drag.
Deere King Boss Drag.
Deere Steel Boss.
Deering Disc Harrow.
Defiance Jr. Disc.
Economy Disc.
Emerson Disc and Drag.
Evans Disc.
Flury's Drag.
Flury's Drag.
Flury's Clipped Drag.
Fuller's Horse and Cultivator.
Grand Detour Drag and Disc.
Hoover Wheel Disc.
Horton's Flexible Drag and Lever.
Massey-Harris Disc and Drag.
McCormick Disc.
Frost & Wood Disc and Lever.
Nixon Disc and Drag.
Royal Disc and Drag.
Superior Wheel Disc.
Universal Drags.
Universal Trags.
Watson Drag.
Watson Drag and Disc.
Windor Disc.
FRED AND ENRIAGE CUTTERS AND PULVERS.
Cockshutt Feed Cutters.
Cockshutt Pulper.
Crown.
Deere.
Emerson.
McCormick.
McCormick Mower & Hay Rake.
Norox Mowers & Rake.
Rever Hay Rake.
Stewart Sheaf Loader.
Success Hay Loader.
Tiger Sheaf Rake.

- FEED GRINDERS.
Brandon.
Challenge.
Cyclone.
Tracy.
Diamond.
Flury's.
Gould Shapley & Muir.
Manitoba.
Maple Leaf.
O'Brien.
Shover Ideal.
Yesset.
Victor.
Watson's Ideal.
HORSE POWERS AND JACKS, SAW MILLS, WOOD SAWS AND TREAD POWERS.
Caters Wood Saws and Jacks.
Cockshutt Horse Power.
Flury's Horse Power and Jacks.
Flury's Wood Saws and Tread Powers.
Gar Scott Saw Mills.
Gaiser Saw Mills and Horse Powers.
Gould Shapley & Muir Wood Saws.
Horse Powers, Tread Powers Bevel Jacks.
LAND ROLLERS AND PULVERIZERS.
Acme Pulverizers.
Canton Land Roller.
Cassidy Packer.
Campbell Sub-Surface Packer.
Cockshutt Land Roller.
Cockshutt Pulverizer.
Cockshutt Combined Pulverizer and Sub-Soil Packer.
Emerson Roll Pulverizer.
Flury's Pulverizer.
Fullton's Sub-Surface Packer.
Hilborn Land Roller.
Hilborn Pulverizer.
Moline Pulverizer.
Verity Land Roller.
Verity Pulverizer.
Watson's Pulverizer.
Watson's Land Roller.
Western.
MANTLE SPREADER AND LITTER CARRIERS.
B. T.
Crown King.
Crown King.
Emerson Low Down.
Hawkeye.
Kemp.
Mandl.
London.
Massey-Harris.
National.
Success.
GANG PLOWS, ETC.
Canton.
Case, J. L. Engine Gang.
Canton Mogul Engine Gang.
Cockshutt.
Cockshutt Engine Gang.
Deere.
Deere Engine Gang.
Emerson.
Emerson Engine Gang.
Gaiser Engine Gang.
Grand Detour.
Janesville Gang.
Deere Engine Gang.
Moline.
Moline Engine Gang.
O'Brien.
Poling Engine Gang.
Reeves Engine Gang.
Radford Grading & Rooter Plows.
Verity.
PORTABLE GRAIN ELEVATORS.
Canadian Corrugated Pipe Co.
Cyclone.
Gopher.
North Star.
Jaggart.
Wainwright.
Wisard.
POTATO AND BEET MACHINERY.
Aspinwall Potato Planters and Sprayers.
Aspinwall Asorters and Cutters.
Tools.
Dowden Potato Harvester.
Egan Potato Sprayer.
Evans Potato Planter.
Eureka Potato Planter.
Hoover Potato Digget.
Moline Knecker Potato Digget.
Splitstoe Sprayer.
RIDING ATTACHMENTS, BARROW CARRIERS, HARROWS AND HAND CARTS.
Cockshutt Hay Barrow.
Cockshutt Harrow Cart.
Deere Harrow Cart.
New Deel Hay Barrow.
Emerson Harrow Cart.
Flury's Wheel Barrow.
Fuller & Johnston Harrow.
Kramer Rotary Harrow.
Naylor Harrow Attach.
P. & O. Harrow Cart.
P. & O. Hand Cart.
Racine Rotary Harrow.
Reeves High Harrow Cart.
Verity Wheel Barrow.
Watson's Wheel Barrow.
ROAD SCRAPERS AND ROAD MACHINES.
Cockshutt Scrapers.
Good Roads Machinery.
Indiana Road Machines.
Russell Elevator.
Standard Reversible Grader.
Toronto Pressed Soil Scrapers.
Sawyer & Massey Reversible Grader.
SEEDING MACHINES.
Cockshutt.
Deering.
Frost and Wood Champion.
Hoover.
Kentucky.
Massey-Harris.
McCormick.
Monitor.
Superior.
Sylvester.
Van Brunt.
THRESHING MACHINERY, SELF FEEDERS, WIND STACKERS AND ATTACHMENTS.
Advance.
American.
Blitzman & Taylor.
Case, J. L.
Caddy Steering Device.
Dakota Weigher (Ask Any Thresher Co.).
Dreadnought Engine Guide.
Gaiser.
Goodson.
Garden City Feeder.
Hawkeye Feeder.
Hartley Weigher.
Huber (Gas Tractor).
Moose.
Brown Wing Carrier (Ask any Thresher Co.).
Woodward.
Neepawa.
Nichols & Shepard.
Perfection.
Peoria Weigher.
Perfection Weigher (Ask any Thresher Co.).
Pickering Governors (Ask any Thresher Co.).
Rumely.
Ruth Feeder.
Sawyer & Massey.
Waterloo.
Watrous.
Woodward.
White Geo. & Sons.
White Wings Feeder.
THRESHERS' SUPPLIES.
Brown Wing Carrier (Ask Any Thresher Co.).
Canadian Fairbanks.
Canadian Rubber.
Crane Ordway.
Desmond Stephan.
General Supply Co.
Goodson's Fire & Ice.
Thresher Supplies Carried in Western Canada by all the Thresher Co's.
Madison Kipp Lubricators.
Manist Oil Pumps.
Maytag Co.
Moline.
Moline Oil Pumps.
Penberthy Injector & Brass Goods.
Perfection.
Thresher Companies.
Wainwright Rubber.
WAGONS AND SLEIGHS.
Adams Farm Trucks.
Adams Lorries & Heavy Team Gears.
Adams Wagons & Sleighs.
Anderson Metal Wheel Trucks.
Avery Wagons & Grain Trucks.
Baby Wagons.
Canadian Crescent Wagon.
Chatham Wagon.
Columbia Metal Wagon.
Columbus Wagon.
Davenport Wagon.
Electric Steel Wheel Trucks.
Fish Bow, (Racine) Wagon.
Genius T. G. Mandl Wagon.
Grand Detour.
Gray Light Farm.
Hamilton Wagon.
Hamburg American Wagon.
Metal Wheel Truck.
Millburg Wagon.
New Deel Wagons & Sleighs.
New Deel Hay Truck.
New Moline Wagon.
Northern Street Metal Wheel Truck.
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Petrolia Wagons & Sleighs.
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WELL DRILLING MACHINERY.
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Sparta.
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WIND MILLS, TANKS AND PUMPS.
Caters Pumps.
Caters Star Windmill.
Canadian Air Motor.
Chicago Armstrong.
Florence Pump.
Gold Shapley & Muir Wind Mills.
Hawkeye.
Hayes Pumps.
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Munro Pumps.
Manitoba Tanks.
Ontario Pumps.
Reesbury Pumps.

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Hayes Pumps.
Londen Pumps.
Munro Pumps.
Manitoba Tanks.
Ontario Pumps.
Reesbury Pumps.

# HART-PARR PLOWING OUTFITS INCREASE FARM PROFITS

SHREWD business farmers are using Hart-Parr Oil Tractors more and more for motive power, especially during the plowing season. A few years back the horse was king; today the Hart-Parr reigns supreme. This difference in farming methods reflects itself in the tractor farmer's increased bank account, when he finally markets his crop. Fall plowing with a 27 B.H.P.

## HART-PARR OIL TRACTOR

and 4-furrow "Self Lift" Plow (See cut) returns the biggest profits for the time, labor and money invested. Why? Because it does the work better, quicker and cheaper than horses.

**Better**—because it has the power to pull the plows full depth over the entire field, and do it just at the right time. Plowing your entire field to an average depth of 6 to 8 inches, brings up more plant life and conserves more moisture than when the land is merely scratched on the surface, plowing with horses. With ample power to do timely plowing, you can kill all weeds, insects, bugs, etc., before they do any damage, and thus retain all the soil fertility for future crops.

**Quicker**—because this Hart-Parr will turn over 10 to 15 acres every 10 hours. Work steadily, 24 hours each day, if necessary, without a rest, even in hottest weather or heaviest soil.

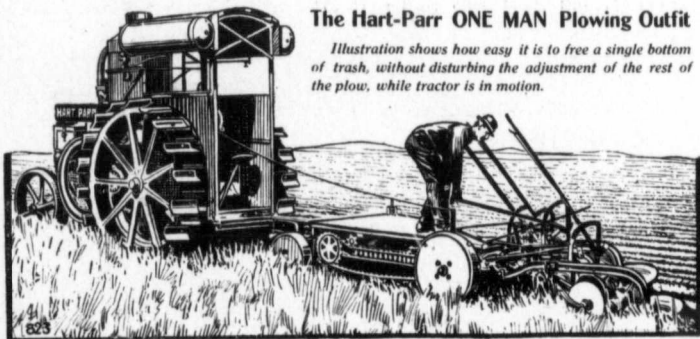
**Cheaper**—because this Hart-Parr replaces 12 good

horses, and does away with all fussy, disagreeable barn chores. Then, too, it burns CHEAPEST KEROSENE for fuel at all loads and in all climates. When idle, it costs nothing for up-keep. Moreover, it is a real "One-Man Outfit." You operate the tractor and plow right from the engine platform. You save the plowman's wages and board.

But that's not all. It's a dandy, general purpose outfit for 100 to 320 acre farms. You can use this same tractor for your rush spring work—do all your disking and seeding with it; use it for harvesting and threshing; build good roads and haul with it; run silo fillers and other belt driven machinery with it. It's a time and money saver at every turn.

### The Hart-Parr ONE MAN Plowing Outfit

Illustration shows how easy it is to free a single bottom of trash, without disturbing the adjustment of the rest of the plow, while tractor is in motion.



Hart-Parr Oil Tractors and "Self Lift" Plows are built in sizes for every farm, large or small. Consult us on your particular power requirements.

Write today for catalog, special circulars describing the little Hart-Parr "27" and "Self Lift" Plows, and ask for literature on power farming costs.

### Hart-Parr Company

30 Main St., Portage la Prairie, Man.  
57 West 23rd St., Saskatoon, Sask.  
1616 8th Ave., Regina, Sask.  
The Chapin Co., 325 8th Ave. W., Calgary, Alta.

### Superior and Original Features of Design Found only in the Small, Light Hart-Parr Tractor and "Self Lift" Plow

**Tractor** Lightest weight, yet greatest strength. No dead weight to drag around and waste power. Fewest parts—only 300. All others have 800 to 1500. Main frame is a strong, one-piece casting. Entire frame consists of only four pieces. Drive wheels with wonderful wave form lugs, are solid steel castings—not built up or pieced. Driver lugs give 31 per cent. greater surface contact than any other. Drivers can be equipped with Hart-Parr "Hold Fast" extension lugs, the lugs with a bull dog grip in soft soil. Especially designed carburetor which operates sensitively and efficiently on cheapest KEROSENE—heavy load, light load or no load. Motor oil cooled, insuring perfect operation in hottest or coldest weather.

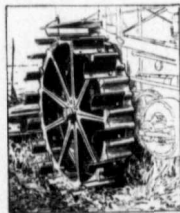


Illustration shows how Hart-Parr "Hold Fast" Lugs grip the ground and pull out straight away without tarring up the soil.

**Plow** is one-third lighter than any other and has one-third less parts. Combined automatic and hand lift attachments. To raise or lower bottoms, merely pull a rope attached to the clutch lever and the bottoms lift automatically. Any individual bottom may be raised with the hand lift attachment without disturbing the adjustment of the rest of the plow. Special spring beam coupler enables plows to skid around or pass over obstructions and prevents breakage. Furrow wheel keeps plow right in furrow.

You can't afford to overlook these money-saving features in a tractor and plow. Investigate our line before purchasing any kind of an outfit.



# CASE

Won all

& SWEEPSTAKES

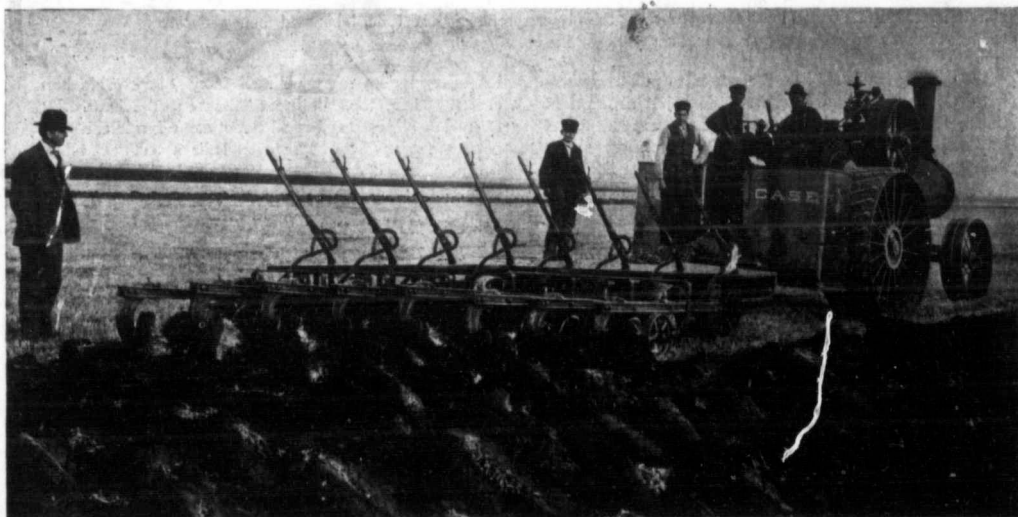


# GOLD MEDALS

HONORS AWARDED

# to PLOWS

in 1913 Winnipeg Plowing Contest



SCORE SHEET ON PLOWS

Entrant's Name	No. of Bottoms	Draft	Evenness of Draft	Lay of Furrow Slice	Ease of Adjustment and Manipulation	In and Out at Ends	Stops	Straightness of Furrow	Even Cut	Total Score
Case	6	30.25	7	5	8	3	5	4.5	7	69.75
	6	26.9	10	7	9	3.5	5	2	7	70.4
Case	10	34.5	6	4	6	2	5	2	4	65.5
	10	34.9	12	8	5	5	5	4	8	80.9

You, interested in modern farming methods, give a moment to this fact. It is valuable to you, because in this, the only test of its kind in America, the judges, in awarding gold medals in both heavy and light duty classes, found that these Case entries out-classed all competitors. The fact that these plows won medals in both classes under such conditions as are exacted at Winnipeg, establishes beyond question the superiority of the Case-Sattley Tractor Gang Plow. We offer you here with the substantiation of our statement—the proof of this most minute test.

What, for instance, do you demand of a plow? Look in the accompanying table, compare the scores of the Case entries with those of their nearest competitors. The superior qualities of Case-Sattley plows, as here demonstrated, are exactly those qualities which every plowman demands.

They are the same qualities you need in every field you plow. If it is a heavy duty plow, the Case-Sattley 6, 8, or 10 bottom gang plow fills your requirements. If it is a light weight the new Automatic Lift tractor gang plow in 4 and 6 bottoms meets your demands. The figures of Winnipeg do not describe to you our exclusive features of design, such as the spring hitch, automatic dodge, the improved break pin and other qualities not found in other gang plows. Our catalog describes these details in full, it is yours for a post card.

Start in this fall to do tractor gang plowing. Compare your cost sheet with that of horses. You will be glad you made the change.

May we give you further information?

## J.I. CASE THRESHING MACHINE CO. INC.

741-791 State St. RACINE, WIS., U.S.A.

Canadian Branches, Toronto, Winnipeg, Saskatoon, Regina and Calgary