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THE  
**CANADIAN THRESHERMAN & FARMER**  
 CANADA'S FARM MACHINERY MAGAZINE  
 WINNIPEG CANADA  
 APRIL, 1912

32/3  
27/3  
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The 20<sup>TH</sup> Century  
 Way  
 Plowing  
 Discing  
 Seeding  
 Harrowing  
 Harvesting  
 Threshing  
 Hauling the Crop  
 to Market.  
 By Mechanical Power.



E. H. Heath COMPANY PUBLISHERS  
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 OUR TENTH YEAR

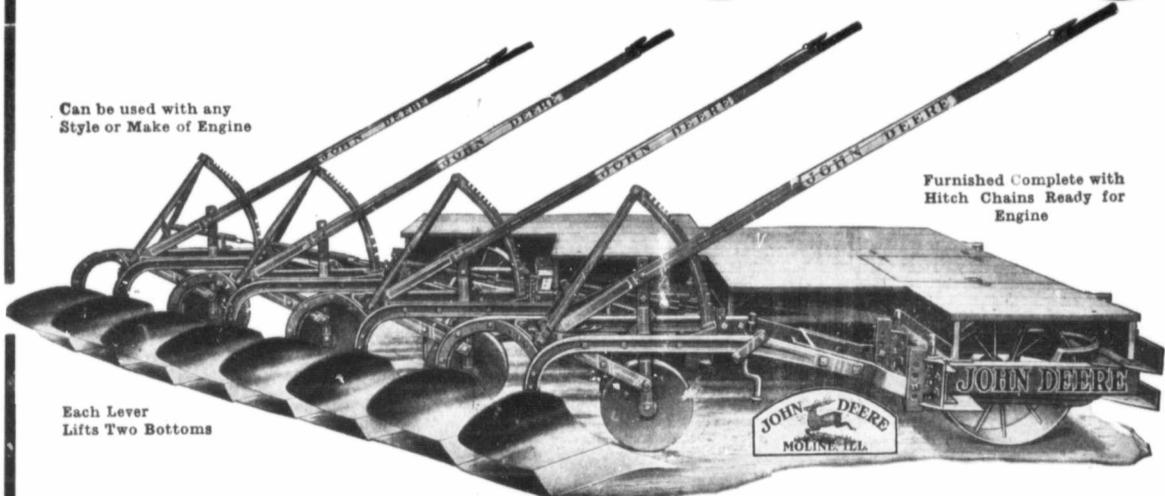
# Traction plowing is profitable

When Done With a

# John Deere Engine Gang

Can be used with any  
Style or Make of Engine

Furnished Complete with  
Hitch Chains Ready for  
Engine



Each Lever  
Lifts Two Bottoms

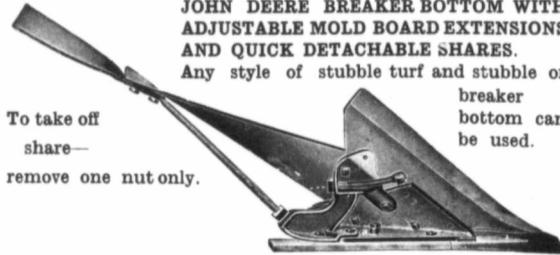
## MADE WITH 4, 6, 8, 10, 12 or 14 BOTTOMS

### ADVANTAGES OF THE TWO BOTTOM LIFT

The bottoms of the largest size of a John Deere Engine Gang can easily be handled by one man. They are built in pairs and each pair will rise over a hummock or dip into a depression without disturbing the others. This device gives ample spread between the clevises, preventing swinging and going round obstructions instead of over them. There are no crooked furrows and the plows cannot tip.

**JOHN DEERE BREAKER BOTTOM WITH  
ADJUSTABLE MOLD BOARD EXTENSIONS  
AND QUICK DETACHABLE SHARES.**

Any style of stubble turf and stubble or  
breaker  
bottom can  
be used.



To take off  
share—  
remove one nut only.



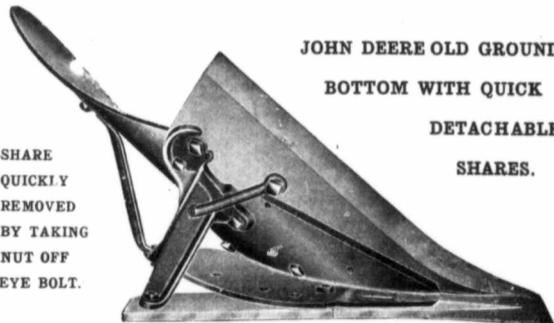
### The Screw Clevis

Each Clevis on a John Deere Engine Gang is provided with a screw adjustment that raises or lowers the beam points just the required amount and can be easily and quickly made while the plow is travelling. Screw Clevises give the plows exactly the right set. They are operated by an ordinary wrench, but a handy Socket wrench accompanies each plow

### Quick, Detachable Shares

Every John Deere Engine Plow is equipped with quick detachable shares that can be put on or taken off in a small fraction of the time required for ordinary shares. Only one nut to remove. An eye bolt attached to the shares passes through a hole in the bracket and one nut holds the share firmly in place. A lug on the share fits into a slot on the land side of the frog, holding the share rigid and true.

SHARE  
QUICKLY  
REMOVED  
BY TAKING  
NUT OFF  
EYE BOLT.



JOHN DEERE OLD GROUND  
BOTTOM WITH QUICK  
DETACHABLE  
SHARES.

WRITE FOR FREE ILLUSTRATED BOOKLET ON ENGINE PLOWING

# JOHN DEERE PLOW COMPANY, LTD.

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# FOR STONY, GRUBBY OR BRUSH LAND

HITCH YOUR TRACTOR TO A

## John Deere Jumbo Grub Breaker

THE ONLY PLOW OF THIS TYPE ON THE MARKET

**BUILT FOR HEAVY, STONY, GRUBBY, POPLAR or OTHER BRUSH LANDS**

There are many localities in the Northwest where areas are covered with grubs and where it is evident the clearing must be done with the engine. This means a plow of extraordinary strength. You have it in the **John Deere Jumbo Grub Breaker**.

It has all the strength, turns a 24 inch furrow, cuts off all roots to depth of furrow and throws them out so that it is easy to clear the land.

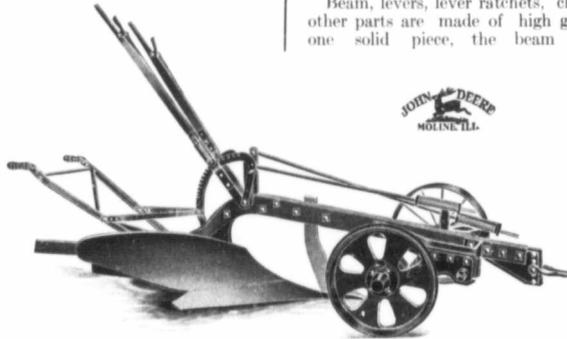
Most complete and economical method of clearing. All roots are cut off so deep sprouting cannot occur.

**ALL STEEL—OF ENORMOUS STRENGTH—SPECIALLY CONSTRUCTED BEAM—FORE CARRIAGE INSURES STEADY RUNNING.**

Beam, levers, lever ratchets, clevis wheels, axles, handles and all other parts are made of high grade steel. Instead of being in one solid piece, the beam is made of three heavy flat

steel bars bolted together. This makes a very strong beam and permits the two outside bars to be shaped so that one supports the mold board and the other the landside.

Two large, wide-tired wheels mounted on strong steel axles support front end of beam and steady the plow when at work. Axles operate with levers to regulate depth, level the plow and raise it out of the ground.



JOHN DEERE  
MOLINE, ILL.

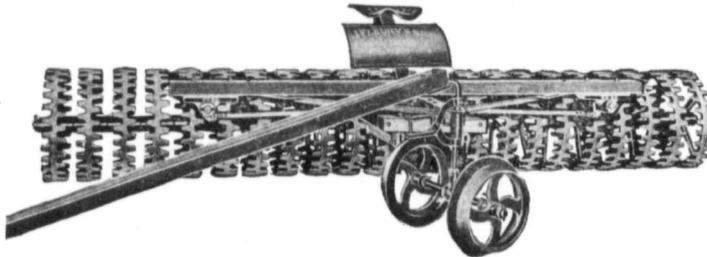
The Jumbo Breaker is so strong it will stand the pull of a high-powered engine without strain or breaking. The extra heavy standing cutter is held to beam by a strong clamp and is drilled at heel to receive share-point—a great protection to share. By referring to illustration you will see that by inverting clevis, a high hitch is obtained. The clevis as shown gives a medium or low hitch; inverted, it gives a medium or high hitch. Write us for further particulars of this wonderful clearing tool.

# The Fleury Pulverizer

An entirely new implement with new **ROLLER-BEARING TONGUE TRUCK** that relieves the horses of the jolting and killing drag of the ordinary pulverizer. The racking jolt from uneven ground through the old rigid poles, falls directly on the horses' necks. With the **FLEURY** it is entirely borne by the **FREE OSCILLATING TONGUE TRUCK** which accommodates itself to the slightest deviation of the implement.

**DUST PROOF  
ROLLER BEARINGS**

Take the place of the obsolete "friction" equipment of the two main axles and the **Two Draft Iron Bearings**. These are absolutely dust-proof by close-fitting washers secured to both ends of bearing case.



**CLEAN and TRUE  
AT EVERY POINT**

The castings in which the roller bearings revolve are accurately **BORED**, not cored, so that the bearings fit perfectly. In other makes the shafting "takes its chance" in the core of the casting which can never be uniform.

The Fleury Pulverizer and Packer with New Roller Bearing Tongue Truck. In sizes, 16, 22, 24, sections, with or without Tongue Truck. Any size can be supplied with Sub-Soil Wheels.

We use only the **FINEST REELED SHAFTING** in providing for the bearings of the **FLEURY PULVERIZER**. It is clean and true throughout its whole length as distinguished from the common and irregular cast-shafting of competitive machines. The effect of this at such a vital point of a pulverizer must be felt to be fully appreciated. The saving on draft is very great—not to speak of wear and tear on the machine. It means more work and better work with half the wear and sweat. It means durability in place of weight and wear.

WRITE FOR LITERATURE, PRICES AND TERMS

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TEN  
FOOT  
CUT

# JOHN DEERE DOUBLE-ACTION Engine Disc Harrow

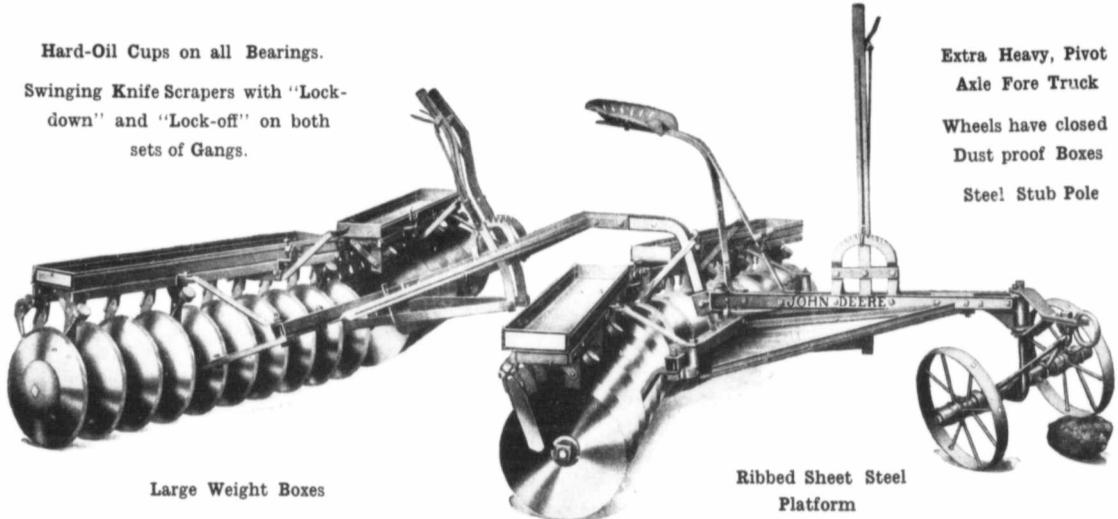
Hard-Oil Cups on all Bearings.

Swinging Knife Scrapers with "Lock-down" and "Lock-off" on both sets of Gangs.

Extra Heavy, Pivot Axle Fore Truck

Wheels have closed Dust proof Boxes

Steel Stub Pole



Large Weight Boxes

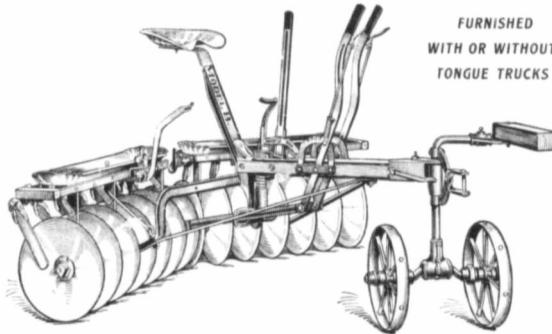
Ribbed Sheet Steel Platform

**Works the Soil Both Ways, Leaving it Perfectly Level**

The greatest moisture saving implement ever invented. Hitch it behind your engine gang plow and give the ground two thorough discings while it is freshly plowed. In this way before the clods have been baked and hardened by the sun, the soil will be settled and pressed down, making closer contact with the subsoil. Write at once for complete details of this great implement.

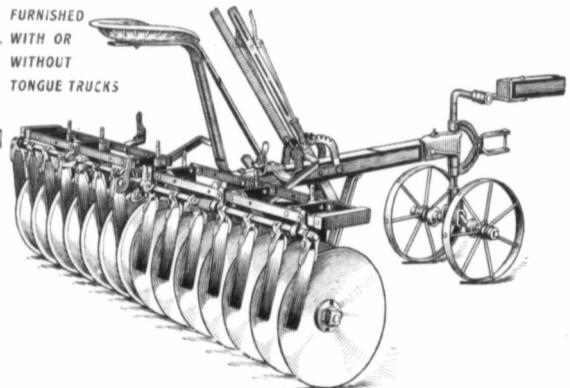
## Deere Model B Disc Harrow

## Deere Model K Disc Harrow



FURNISHED WITH OR WITHOUT TONGUE TRUCKS

FURNISHED WITH OR WITHOUT TONGUE TRUCKS



The only real flexible harrow. No implement of its kind has so justly won its way into the appreciation and confidence of the Western farmer as a harrow that pulverizes the soil evenly. It does not skip the rough places in the middle because the third lever with spring pressure yoke and controlled draw bars give perfect control of the discs. They can't push up in centre as with ordinary machines. Pull the lever and it locks automatically with discs working through dead furrows or over ridges, cultivating thoroughly.

A strong and thoroughly effective two-lever harrow, it is slightly lighter than "Model B" but possesses many of its points of superiority. Frame is made from a single piece of heavy steel. Frame bars, cross trees and braces are all steel, securely riveted and bolted together. Scrapers are of improved oscillating style and can be easily removed or replaced. Hard Maple, oil-soaked bearings are used. Disc blades of best quality steel, thoroughly polished and sharpened. Double angling levers ensure a convenient implement for lapping lands or hillside work.

WRITE FOR CATALOGUE

WRITE FOR CATALOGUE

Both of the above styles of Disc Harrows are excellent tools to pull behind a John Deere Engine Gang.

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**Makes 'em Last Longer and Look Better**

There is much more to shingle stains than the mere beauty they add to the building. Some people used to sneer about style when their neighbors stained their shingles with

**Stephens' Shingle Stains**

In a year or two, when their own unstained shingles began to curl and the roof began to leak and need repairing—while their neighbors' roofs were as smooth, tight and good as new—their sneers turned to sighs that they were not as wise.

Stephens' Shingle Stains not only add beauty to the house, but better still their creosote and preserving oils add life to the shingles, and make the roof last longer. Twenty soft, velvety, artistic colors, sold by leading dealers. Write today for free book of "Suggestions"—for paint users.

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**G.F. STEPHENS & CO. LIMITED**  
PAINT AND VARNISH MAKERS  
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BRANCH AT CALGARY

**THE GATE THAT SERVES YOU BEST**



**IS THE Peerless Extra Long Gate**

Gates should no longer be looked upon as mere holes in the fence where a bar or any makeshift of an obstruction sufficient to keep the stock will do. A good gate is as essential as a good fence.

Insecure gates are a menace to the lives of stock and crops and should be promptly replaced with Peerless Wire Mesh Gates.

These gates are built of the best materials. Have a frame-work of extra heavy pipe filled with the very best grade of wire mesh. The frames are electrically welded and are air tight so no water can get in and rust out. They are braced with one diagonal and a short horizontal brace and two vertical ones, thus making a very strong rigid gate which will not sag.

Frame strong. Mesh is heavily galvanized and will not chip, flake or rust.

Peerless Gates are strong, durable and satisfactory will look best, wear best, and serve you best. We especially recommend their use with Peerless Wire Fencing.

**Write for our Catalogue**

We also manufacture a large and reliable line of farm and poultry fencing, walk and ornamental gates and fencing.

Agents almost everywhere. **Want live agents in unoccupied territory**

**Banwell-Hazle Wire Fence Co.**  
Winnipeg, Man. Hamilton, Ont.

**FOR EVERY READER OF THIS MAGAZINE**

What do you think of this issue any way? We believe that you will agree with us that it is the best thing you have ever seen along this line. Into it we have put hours, days and weeks of thought and study and much midnight oil has been burned. As a digest of what was done along the lines of traction cultivation in Western Canada in 1911, this issue is a veritable handbook and no one who is in the business or who expects to follow it in the future should fail to read it carefully. When you, as a subscriber, have finished with your copy pass it on to a friend. By so doing you are helping the cause along.

**VALUABLE PRIZES OFFERED.**

In the several Traction Plowing Issues that we have issued in the past it has been our custom to place inscriptions under the illustrations showing the make of engine and plows. This issue contains some of the finest illustrations along this line that we have ever published and in this connection we are going to give our readers a chance to demonstrate their knowledge of the tractors and plows that are on the Canadian market.

Beginning on page 18 and following will be found a number of illustrations of tractors plowing, seeding, discing, etc. Under each illustration will be found a Figure Number. We want you to go over these illustrations carefully and see how many engines and plows you can pick out.

For the first and most nearly complete list we will give  
**A GLARE ACETYLENE HEADLIGHT**

all complete and ready to attach to any traction engine. Winner pays freight from Winnipeg.

For the second best list we will give an  
**INDISPENSABLE OIL PUMP.**

For the 3rd best we will give a complete  
**BELT LACING OUTFIT.**

It is understood that the winners pay carriage charges in each case.

For the next ten best answers we will give each a year's subscription to this magazine. If you are already a subscriber we will extend your subscription one year from date of expiration.

When sending in your answers rule off a sheet something like this

Fig. No.	Make of Engine	Make of Plow
	<i>Correct answers pencilled under pictures</i>	
	<i>H.H.</i>	<i>Jan 21/12</i>

**WE** want every one to get in on this. It is not a puzzle, but is simply a test of your knowledge of traction engines and traction plows. All answers must reach us before May 15th and the results will be published in our June issue. Address all answers to Contest Editor c-o E. H. Heath Co., Limited, and when letters are received we will use the post mark date in fixing the time at which they were sent.

**HITCH PRIZES DELAYED.**

Owing to the large number of traction hitch ideas that were received with our 1912 traction plowing letters, the editors have been unable to go over them and make the awards in time for announcement in this issue. These will be taken care of in our May Number.



Here's where it counts.  
**The Spark** is what your engine needs.

Get the reliable  
**XCELL DRY BATTERY**

Guaranteed high amperage and a long life

Absolutely dependable for steady and sure ignition

**MADE IN THE WEST THEY REACH YOU FRESH**

If your dealer cannot supply you write the factory,  
**CANADIAN CARBON COMPANY LIMITED. WINNIPEG.**

Do you hold certificates for **STOCK** That might better be converted into **CASH** to invest in other securities paying **DIVIDENDS?**

Send me a list of those stocks you hold and the price you desire to secure for them. I will endeavor to find a buyer.

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Member of Winnipeg Stock Exchange  
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One Thresherman's Settlement Book and the Canadian Thresherman and Farmer one year for **ONE DOLLAR**



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CANADA



# PLOWING

This is the all important problem at this season of the year and **TRACTION PLOWING** is the real key to the solution of the problem. For several years we have built the **SAWYER-MASSEY** side mount engines which have made a name that is famous for

**EASY STEAMING QUALITIES** THIS MEANS CHEAP POWER

**ECONOMY OF FUEL** This means a **SAVING** in **COAL**

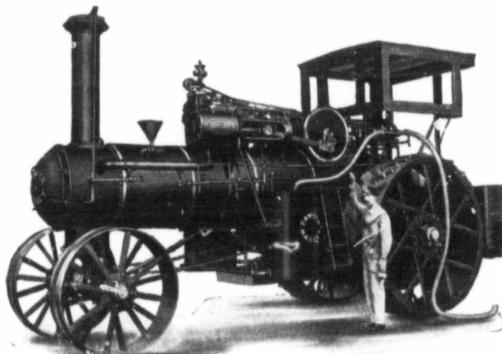
**LOW WATER CONSUMPTION** THIS MEANS A SAVING in MEN & TEAMS

**DURABILITY OF CONSTRUCTION** THIS MEANS SAVING in REPAIR BILL

Last but not least  
**RESULTS TO THE PURCHASER**

In An Engine Well Worth At All Times The Amount Invested Therein

NOT IN  
A  
COMBINE



NOT IN  
A  
COMBINE

Now, as changes occur in every line of business, so they do in the Machinery line, and our latest change is in our

## Sawyer-Massey Rear Mount Plowing Engine

This in no way discredits our side-mount engine which has given such excellent satisfaction in the past, but is now offered merely as another type in traction design. The engine is in every way the same as our famous side mount type and the **SAWYER-MASSEY EASY STEAMING BOILER** forms a part of each. The only difference is in the mounting of the boiler upon the traction.

**SAWYER-MASSEY REPUTATION** is back of both types of engines. It is left to you as a traction plowman and thresherman as to which type you want.

**REMEMBER** that Sawyer-Massey engines meet all the requirements of the **BOILER INSPECTION ACTS** of the **WESTERN PROVINCES**.



BRANCHES-WINNIPEG MAN. AND REGINA SASK.



A MAGAZINE  
FOR

THE FARM  
AND HOME



# THE CANADIAN THRESHERMAN AND FARMER

Vol. XVII.

WINNIPEG, CANADA, APRIL, 1912.

No. 4.

## Power Farming—What It Is

By E. F. W.

This is merely a general discussion and not a mass of figures. Figures are supposed to be facts, but in the case of "power farming" the basis for the figures changes with such rapidity that correct figures today are evidently wrong to-morrow.

"Power Farming" is a child born of necessity. It is an evolution, a development in agricultural procedure that is destined to work wonders. Designed at first for the purpose of cultivating lands that were too soft and wet for horse flesh, it has grown and developed into what promises to be a general method of soil tillage.

The "power farmer" is the real beginning of a new class of agriculturists. He will put farming upon a business basis. He must, otherwise his system becomes the occasion of considerable loss. "The man with the hoe" dealt with few economic problems. His was a problem of "toiling" and the "tilling" of the soil, as we know it today, was an unknown quantity. The "power farmer" deals in problems that require brains and

sound business judgment, and over the traction cultivation cesses and failures we must of necessity arrive at but one conclusion, and that is, that the man who operates his power equipment with a full knowledge of what he is about is against the man who plunges headlong into the game is the man who makes for success.

The world must be fed and so tremendous is the increase in population that it requires all the powers of production to keep pace with that vast "maw" that is clamoring for bread. If one

were to compare the world's wheat statistics of thirty years ago with those of 1911 it would almost seem



A "Cultivator" still used in the Scottish Highlands.

necessary that the price of wheat should have suffered a gradual decline during all the years. Such, however, is not the case, and it is almost a certainty that the trend of prices will be upward rather than downward.

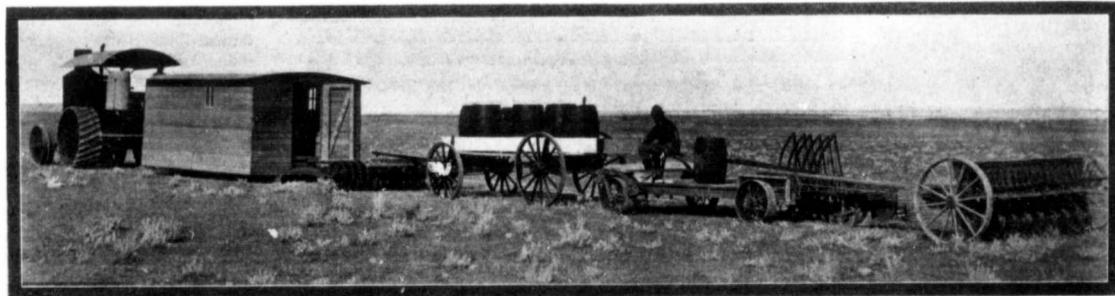
There is an ever increasing demand and to satisfy it there must be an ever increasing supply. To produce this supply in the old way by turning over from  $1\frac{1}{2}$  to 2 acres per day for each man's labor, was not only an impossibility but was far too

expensive, with the result that the tractor was pressed into service, producing results in the aggregate that are surpassing.

### WHAT IS A POWER FARMER?

The definition is simple. He is simply one who uses as much mechanical power on his farm as it is possible and practicable for him to use. It is, however, in the application of the definition where the trouble comes in.

Speaking for the North American Continent up to twelve or at the most fifteen years ago, such a thing as traction cultivation was not even thought of. Traction power on the farm had not yet found a means of application, field power being the only thing sought after. In reality it is only within the past five or six years that traction cultivation has received any studious attention on the part of the farmer, and so studious has it been during the past three years that the entire industrial world is sitting up and taking notice. At first it was "How many acres can I plow in a day?" Now, it is, "How much can I reduce the cost of raising a bushel of wheat, corn, oats,





flax, barley, etc?" One manufacturer voiced the phrase that "Kerosene would reduce the cost of raising a bushel of wheat ten cents," and the world said "Is it possible?" Such a thing as "cost of crop production" had not affected the farmer seriously. It couldn't very well, because there was really no basis upon which to calculate. The farmer raised his own stock of "power" horses, but for the life of him he couldn't tell what it really cost him to plow an acre of sod or old ground. Such a term as "horse power hour" was unknown, except to a few. It was a case of feed as much of the grain crop as necessary in order to fatten or keep in condition his live stock, and sell the rest. It looked easy to dip the half bushel measure into the well filled out bin and the maintenance of horse flesh was an item that seemed scarcely worthy of consideration.

Today, however, we speak of the cost of operating a tractor per "horse power hour," or, in other words, what is the charge made against the engine for every horse power delivered for a period of one hour, such items as interest, or investment, depreciation, repairs, fuel, operating help, lubricants, etc., being taken into consideration. It is a simple matter. There are just two main items that enter into the proposition. First: work done and second, cost of operation. This is all very well, in so far as it can be placed upon paper, but back of it all lies the real problems, the ability to master distinguishing the real "power farmer" from the unsuccessful makeshift.

In Western Canada today there are approximately 4,000 outfits that did traction plowing during the past season. These outfits will average easily 20 horse power at the draw bar, making the equivalent of 80,000 horses. Assuming that each horse power is good for one acre per day it means that 80,000 acres are being turned over every day that they work. Let us further assume that each acre is capable of producing 20 bus. of wheat, and it is but a simple matter of arithmetic to show that each day's work means 1,600,000 bus added to the wheat crop of Western Canada. Put it in figures, and it can be seen that the proposition is



not only a big one, but a vital one. Let us assume that it takes one man for every three horse team, and our 80,000 horses will require 26,500 men. With the engines representing the above horse power and allowing three men to each outfit, it will take only about 12,000 men to produce the same results in work done. The labor problem in Western Canada is a vital one,



The old Highland 12 feet Wooden Plow.

and anything that will help to solve it is worthy of serious consideration.

The importance of the tractor in Western Canada's future development cannot be estimated. With practically 200,000,000 acres of the best virgin prairie upon which the sun has ever shone yet to be broken, it will take something stronger and more speedy than horse flesh to handle the proposition. This is

the past by horses is pure drudgery. In the hurry and rush of spring work the horse must be pushed to the limit, with the result that a large amount of good horse flesh is soon relegated to the scrub class. Furthermore, on the large farm the number of horses required makes it necessary that a greater or less percentage of them be anything but standard bred, because of

attention. I was recently talking with a Saskatchewan farmer who farms two sections of land. He told me that before he purchased his tractor that he always wintered from 25 to 30 head of horses, and that a winter did not pass that he did not lose one or more. He said that it took practically all of one man's time to look after them, and that the amount of hay and oats consumed every winter was enormous. He now keeps but two teams, all mares, and as they are not compelled to do any real heavy work he raises from two to four colts every year. These colts soon grow into money, and as the dams are standard they command a good price. Some one has said that the tractor is the "Modern Farm Horse." It should be said that the tractor is making possible the "Modern Farm Horse." The tractor should cause no fear in the mind of the horse breeder, but rather he should see in it something that will furnish an outlet for his product. If the "scrub" should become a thing of the past, and the standard bred animal the rule on every farm, what a magnificent bunch of horseflesh we should have. Going a step further, there is another matter that demands attention with reference to this "power farming" proposition. The tractor, big in power and tireless, satisfies the man who wants to do big things and get his work done quickly. It is perhaps very satisfying to turn over 20 or 25 acres per day and pack it at the same time. Twenty acres means 400 bushels of wheat, or about \$350, and with this sum dangling before the eyes of the farmer he is apt to sacrifice quantity for quality in the work done. Western Canada is really man's last natural agricultural heritage. There is fertility enough here, if properly handled, to satisfy all future generations, but it can soon be riotously squandered through improper tillage. Every bushel of wheat taken from the soil robs it of some of its fertility, and this fertility must be returned in some manner or shape, or the farmer is playing a losing game. Nature is very rigid in her laws, and won't stand for having them transgressed. The fundamental of these, in so far as the farmer is concerned, is "you can't raise wheat and fertility on the same field in the same year."



The Highland Clath Chais.

no criticism upon the horse. He is just as important and demands a higher price today than he ever did, and may that day be far distant that would see him lose admiration and respect in the eyes of the farmer.

Right here lies a nice little subject for discussion that I can only touch upon in passing.

A large share of the work on the farm that has been done in

away from the horse the burden of the heavy farm work and that fewer but better farm horses will be kept by the average farmer. He will have only one or two teams, but they will be standard bred, sleek, fat horses, that any one would be proud to draw a rein over. Instead of having to care for a whole army of horses during the winter, only a team or two will demand his





Now, the tractor is not a producer of fertility to any great extent. The horse gets his fuel from the feed he eats, and returns a portion of it to the land in the shape of fertilizers. The tractor gets its fuel from the bowels of the earth in the shape of coal or oil, but nothing is returned.

This is a problem that the "power farmer" is called upon to face, and he might far better face it now than later when his soil is depleted of its fertility by too vigorous a system of cropping. "Power farming" should mean mixed farming. It should mean a well organized system of crop rotation, together with a generous use of the "fallow." It should mean a larger herd of cows and young cattle, and the barnyard should echo with the reverberant squeals of many members of the hog tribe. Sheep, in localities that are suited to them, are excellent weed exterminators, and yield incidentally a good profit. They are good things for the "power farmer" to look into.

I said that "power farming" was an evolution. I should have said that it is more or less of a revolution. It has come with such a rush that it has been rather hard for the farmer to adapt himself to all of the requirements that make for success. It has been no easy matter to change from a horse equipment to a tractor equipment, and a great many have jumped into the game without knowing the cards. The result has been that failures have been made.

Mr. Farmer, we will assume that you have decided to become a "power farmer." The first thing that you naturally will decide upon is the kind of an outfit you should buy. You of course have been a constant reader of the advertisements in the Canadian Thresherman and Farmer, and are more or less familiar with the various outfits that are upon the market. Some are of large size, some are of medium size, and others of small size. You, as a farmer, wouldn't engage a boy to do a man's work, nor a man to do a boy's work. The same thing applies in the case of a tractor. Study the requirements of your farm as regards the power needed, and buy accordingly. Don't, however, make the mistake of buying too close in this respect, as a little reserve power



in the case of the tractor is in reality necessary. Don't buy a big heavy tractor if the bulk of your land is wet or boggy, as you are liable to have trouble, and don't buy a small light machine and expect it to do the work that a larger one is designed for. The selection of a tractor is a thing that requires judgment and a knowledge of such machines.

next attached, and during the past year or two harvesters in gangs of 3, 4 or 5 have been quite successfully handled behind a single engine. Threshing, of course, has been handed down from the old days, but in order to complete the programme of work, the hauling of the crop to market by mechanical power should be given serious consideration. In Western Canada,

is possible during the year. Remember the interest charge upon your investment goes on just the same whether your engine is working or standing idle. This is true of your horse equipment, but it is with the idea of cutting down the cost of production that a change in methods is made, and it is poor policy to carry the overhead charges from one system into another.

Let us assume that a 1,000 acre tract is being farmed by mechanical power, and the following number of days' work would be perhaps a standard to work up to, assuming that the engine has a tractive capacity of between 25 and 30 horse power.

	DAYS
Plowing (spring) .....	10
Seeding, discing and harrowing .....	10
Breaking .....	15
Summer fallowing .....	8
Harvesting .....	8
Threshing .....	30
Road work, hauling, etc. ..	10
Total .....	91

The above figures are not given as actual, nor are they taken from any records of work performed. It is simply given as a reasonable amount of work on the part of the engine. Let us assume that the engine costs \$3,000, and that money is worth 6 per cent. The interest charge amounts to \$180, or about \$2.00 per day for each day's use. Twenty-five horses will cost easily, if they be good ones, \$4,500, so that the engine is not such an expensive proposition as some would have us believe. Tractors are made for work, and in order that they may make money for their owners, work must be gotten out of them.

The "power farmer" of to-day must know his business. He must know his tractor in such a way that it can be handled to the best advantage. Realizing this, a number of the tractor manufacturers today have inaugurated schools of traction engineering in order that the purchasers of their machines may become thoroughly familiar with their construction and operation. These schools, however, neglect one important feature, and that is instruction that deals with the economic side of power farming. This is just as essential as the care and operation of

Continued on page 117



Bean Setting. Dibbling for Wheat. Tipping the Bean Plow.

Remember that tractors are only made of iron and steel, and will only stand a load in proportion to their horse power. It is possible to carry an overload, but it is not good policy. I have known of engines that were pulling eight 14-inch bottoms, and the engine was exerting itself to the utmost. One or even two bottoms were dropped and the amount of work done was practically as great as when the

where our system of roads and bridges is only in the making, it is somewhat difficult to use the tractor for hauling and make any speed or headway, but when the farmers, through the tractor, begin to unanimously clamor for better highways and stronger highway bridges, good roads will come.

Now, Mr. Farmer, if you are going to enter the ranks of the "power farmer" you might just



Two Well Known Highland Implements the Toraigean and Cromann Moine.

eight were being pulled, and the engine was working under its normal and economical load, thus greatly adding to its life.

Tractors were first used by the "power farmer" for plowing only, but it soon became evident that if it were to be made a paying proposition its field of work must be enlarged. Packers, discs, drills and harrows were

as well make up your mind that you have got to play the game for all there is in it. If you are going to cut down your horse equipment you have got to cut it down in more fields than the plowing field. You must sow seeds, disc, harrow, harvest, thresh and, if possible, haul your grain to market. Keep your engine working as many days as





# The Engine Gang—What it is, Where it came from, What it means to "Western Canada"

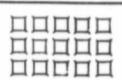


Fig. 1.—The earliest known system of traction cultivation.

It is an old saying but one that is as true as the history of man, that "Civilization begins and ends with the plow." If we were to

The history of the plow is the history of mankind. Its development was not rapid as was that of the internal combustion tractor but the results were sure and satisfying. In brief it was somewhat as follows:

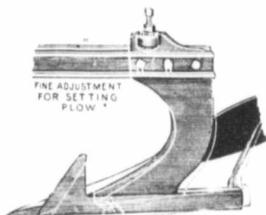


Fig. 2.—Cockshutt plow standard showing method of setting plow.

make a survey of the nations of the world to-day, we could accurately gauge their standing in the role of civilization by the status



Fig. 3.—Method of attaching Cockshutt engine teams to frame and device for aligning plows.

of the plows used by their farmers. The crooked stick farmer, the explov farmer, etc., up to the end of the scale, are each in his

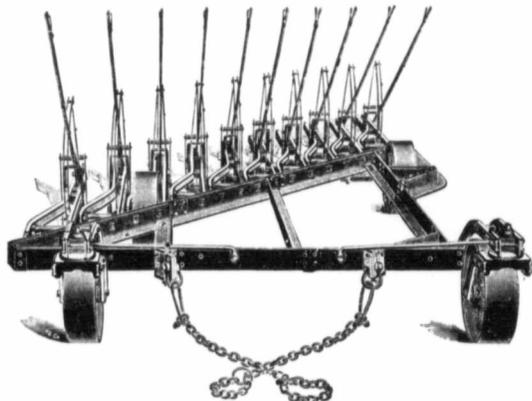


Fig. 4.—Cockshutt 10 bottom engine gang and method of hitching to engine. Platform has been removed.

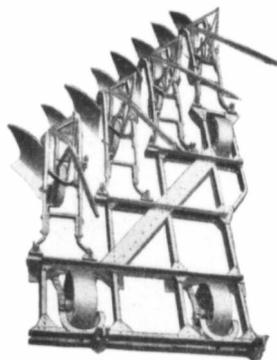


Fig. 5.—Steel frame of John Deere Engine gang.

The first plow was simply a form of hoe made from a crooked stick of the proper shape to penetrate and loosen the soil as it was drawn along. The power to draw the plow was furnished by man, but later, as animals were trained for draft and burden,

animal power was substituted and the plow was enlarged. The records of the ancient

Egyptians illustrate such a plow. At an early time the point of the plow was shod with iron, for it is recorded that about 1,100 years B.C. the Israelites, who were not skilled in the working of iron, "went down to the Philistines to sharpen every man his share and his coulter."

During the middle ages there was but little improvement over the crude Roman plow as describ-

ing his plows, making them very hard and durable. The plows of Howard and Ransome were provided with a bridle or clevis for regulating the width and depth of the furrow. These plows were exhibited and won prizes at the London and the Paris expositions of 1851 and 1855.

Before the Revolutionary War the plows used in America were much like the English and Scotch



Fig. 6.—Deere plows are arranged in pairs.

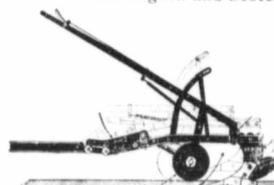


Fig. 9.—Self-levelling device of the Verity engine gang.

ed by Virgil. The first people to improve the Roman model were the Dutch, who found that a more perfect plow was needed to do satisfactory work in their soil. The early Dutch plow seems to have most of the fundamental ideas of the modern plow in that it was made with a curved moldboard, and was provided with a

plows of that period. Conditions were not favorable to the development of new machinery or tools. The plow used during the later colonial period was made by the village carpenter and ironed by the village smith with strips of iron. The beam, standard, handles, and moldboard were made of

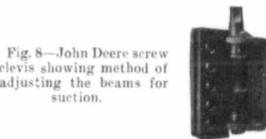


Fig. 8.—John Deere screw clevis showing method of adjusting the beams for suction.

beam and two handles. The Dutch plow was imported into Yorkshire, England, as early as 1730, and served as a model for the early English plows. P. P. Howard was one whose name may be mentioned among those instrumental in the development of the early English plow. Howard established a factory, which remains to this day.

James Small, of Scotland, was another who did much toward the improvement of the plow.

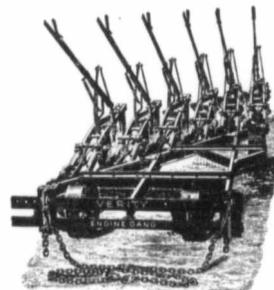


Fig. 10.—Six bottom Verity engine gang showing beam construction, position of hitch, etc. Platform is removed.

wood, and only the cutting edge and strips for the moldboard were made of iron.

Among those in America who

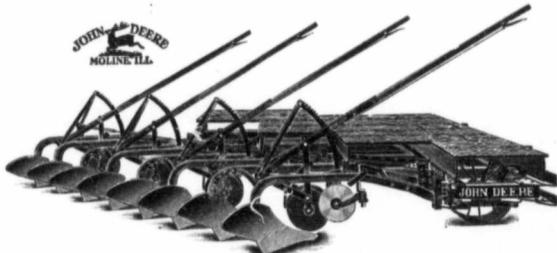


Fig. 8.—Eight bottom John Deere engine gang.

Small's plow was designed to turn the furrows smoothly and to operate with little draft.

Robert Ransome, of Ipswich, England, in 1785 constructed a plow with a share of cast iron. In 1803 Ransome succeeded in chill-

first gave thought to the improvement of the plow was Thomas Jefferson. While representing the United States in France he wrote: "Oxen plow here with collars and harness. The awkward figure of the mold board

leads one to consider what should be its form." Later he specified the shape of the plow by stating:

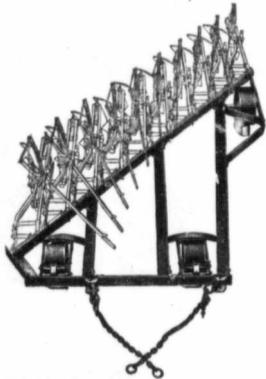


Fig. 11.—Top view showing frame construction of P. & O. plow.

"The offices of the moldboard were to receive the sod after the share has cut it, to raise it gradually, and to reverse it. The fore end of it should be as wide as the furrow, and a length suited to the construction of the plow."

Daniel Webster is another prominent American who, history relates, was interested in the development of the plow. He designed a very large and cumbersome plow for use upon his farm at Marshfield, Massachusetts. It was over 12 ft. long, turned a furrow of 18 inches wide and 12 inches or more deep, and required several men and yoke of oxen to operate it.

Charles Newbold, of Burlington, New Jersey, secured the first letters patent on a plow in 1797. Newbold's plow differed from others in that it was made almost entirely of iron. It is stated that

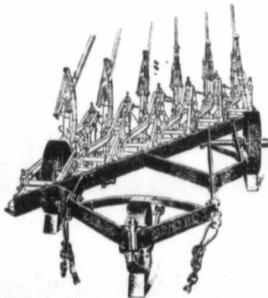


Fig. 12.—Frame of six furrow Mogul Gang Plow.

the farmers of the time rejected the plow upon the theory that so much iron drawn through the soil poisoned it, and not only retarded the growth of plants, but stimulated the growth of weeds.

Jethro Wood gave the American plow its proper shape. The moldboard was given such a curvature as to turn the furrow evenly and distribute the wear well. Although Wood's plow was a model for others which followed, he was unrewarded for his work, and finally died in want.

As farming moved farther west the early settlers found a new problem in the tough sods of the prairie. A special plow with a very long, sloping moldboard was found to be necessary in order to reduce friction and to turn the sod over smoothly. Owing to the firmness of the sod, it was found that curved rods might be substituted for the moldboard. Later, when the sod became reduced, it was found that the wooden and cast-iron plows used in the eas-

mitted the steel to be hardened without warping. It is very strong on account of the iron center, which will not become brittle.

In 1837 John Deere, at Grand Detour, Illinois, built a steel plow from an old saw which was much similar to Lane's first plow. In 1847 Deere moved to Moline, Illinois, and established a factory which still bears his name. William Parlin established a factory about the same time at Canton,

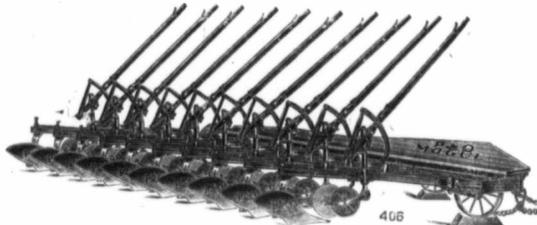


Fig. 13.—Side view of P. & O ten bottomengine gang.

tern portion of the country would not scour well. This difficulty led to the use of steel in the making of plows. Steel, having the property of taking an excellent polish, permitted the sticky soils to pass over a moldboard made of it where the other materials failed.

In about 1833, John Lane made a plow from steel cut from an old saw. Three strips of steel were used for the moldboard and one

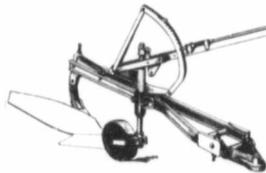


Fig. 14.—Detail of individual plow with raising lever, etc.

for the share, all of which were fastened to a "shin" or frame of iron. John Lane secured in 1863 a patent on soft-center steel, which is used almost universally at the present time in the making of tillage tools. It was found that plates made of steel were brittle and warped badly during tempering. Welding a plate of soft iron to a plate of steel was tried, and, although the iron supported the steel well when hardened, it warped very badly. The soft-center steel, which was formed by welding a heavy bar of iron between two bars of steel and rolling all down into plates, per-

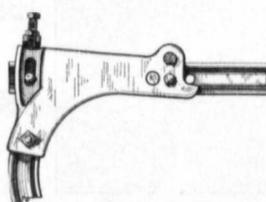


Fig. 15.—Method of fastening plow standard to beam.

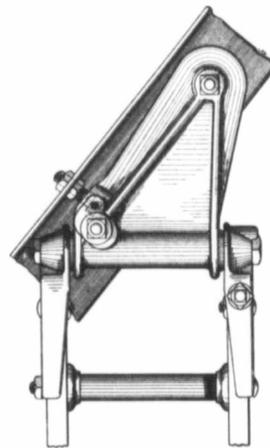


Fig. 16.—Casting to connect frame and beam, with anchor bolt to admit bottoms for parallelism.

which is also one of the largest in the country.

The development of the sulky or wheel plow has taken place only recently. F. S. Davenport invented the first successful sulky

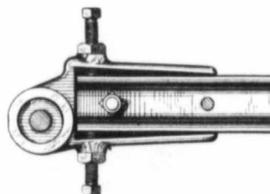


Fig. 17.—Beam coupling showing set screws to regulate "wing" of share.

plow, i.e., one permitting the operator to ride, February 9, 1864. A rolling coultter and a three-horse evener were added to this by Robert Newton, of Jerseyville, Illinois. But E. Goldswait had patented a fore carriage in 1851 and M. Furley a sulky plow with one base December 9, 1856. Much credit for the early

development of the sulky plow is due to Gilpin Moore, receiving a patent January 19, 1875, and W. L. Cassady, to whom a patent was granted May 2, 1876. Cassady first used a wheel for a land-side.

Canadian development in plows has been more recent, although plows have been made in this country for a number of years. The Scotch and English plows served largely as models until recently when the American patterns is so far as moldboard and beam construction are concerned have been closely followed and in some cases improved upon.

So much for the plow itself. It concerns us vitally, as a grain raising country, because without the modern plow in all its forms, we would be nothing but a primitive race struggling for bread. The raising of grain on a commercial basis would be an impossibility.

The Engine Gang

About eight years ago the West was awakened to the fact that a new factor had been introduced into soil cultivation. Here and there throughout the West were to be found steam engines pulling plows and in a small way tearing up the broad prairies. It was largely the farmer's own idea. He had no special equipment. His engine was not designed for traction work, and his plows were such as his horses had pulled. They were two and three bottom sulkeys, fastened together with chains, rods or cables, and as their weight was not adapted to the heavy soils of the Western prairies, it was largely a matter of cut and cover, and the work itself was inferior both in quantity and quality. To quote from a letter written by a Western Canadian farmer in 1905.

I have been running a steam plowing outfit for a little less than a year, and have so far plowed only sod or breaking, as we call it. At present our crew consists of eight men, engineer and man

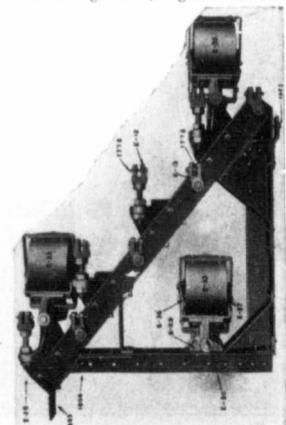


Fig. 18.—Section of frame of Oliver engine gang plow.



A COCKSHUTT PLOW IN JOVELLANOS, CUBA.

# THE COCKSHUTT ENGINE GANG



A COCKSHUTT PLOW IN WALDENBURG, ARK., U.S.A.

**The product of Canadian brains and Canadian workmen that  
The Plow that ma**

**by sheer force of merit made a World Wide Reputation  
de Canada famous**

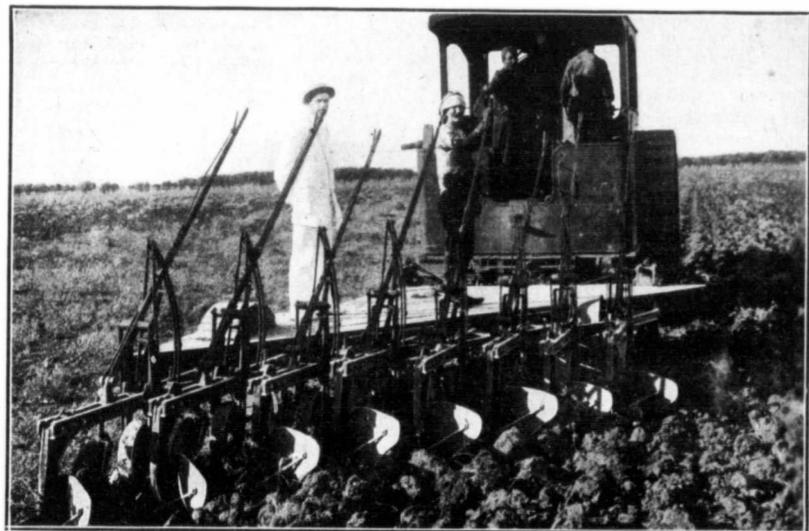
It revolutionized TRACTION plowing, making possible the present great development in large farming operations. It originated the INDEPENDENT PLOW principle whereby each Plow follows the inequalities of the surface, plowing a UNIFORM DEPTH and turning an EVEN FURROW. It is built for SERVICE; with a COCKSHUTT PLOW on behind your Engine you will not only be free from vexatious stops and cover the maximum amount of acreage, BUT THE WORK WILL BE DONE PROPERLY. In breaking, the sod will be turned over flat, so that the grass will rot, fertilizing

the soil instead of curing into hay, to hinder later operations. In stubble, the soil will be turned completely over and thoroughly pulverized, making a firm seed bed of uniform depth--the best conditions for an even stand of straw with a large head.

You need a Traction Plow this spring to take the place of fall plowing. The returns from the increased acreage will more than pay for the plow. Write for special booklet or call on our nearest Agent.

**These plows are sold in the open market wherever there is the demand and price and excel them in quality. Call and get our prices**

**they successfully meet the home competition of 7 or 8 other makes in which you will find compare favourably with any other.**

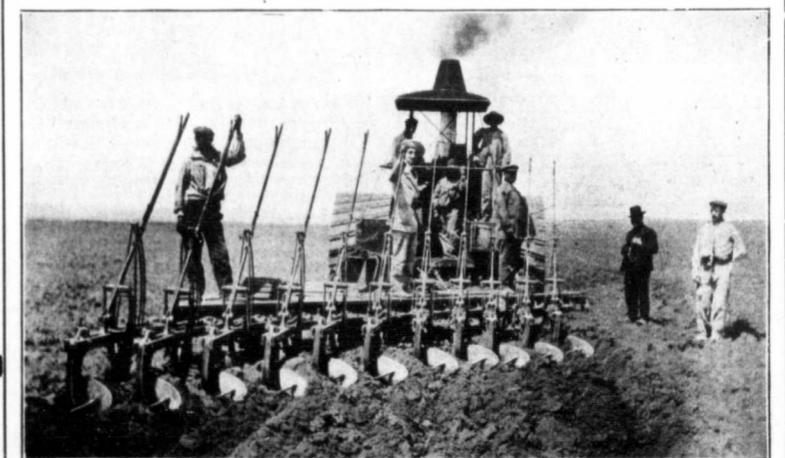


A COCKSHUTT PLOW IN BEYROUT, SYRIA.

## Cockshutt Plow Co. Ltd.

Branches: **Winnipeg, Calgary, Regina, Saskatoon**

Distributing Warehouses: **Brandon, Red Deer, Edmonton, Lethbridge, Portage-la-Prairie**



A COCKSHUTT PLOW IN LA RODA, SPAIN.

at wheel, two men on plows, tank man, cook, blacksmith and man hauling coal. We have to haul coal at present about four miles and keep a man and team at that job, four horses on water tank; we are hauling water at present two miles and it keeps four horses busy. We burn two ton of coal a day.  
We have a 28 h.p. steam engine and are pulling four plows, as it is very dry.

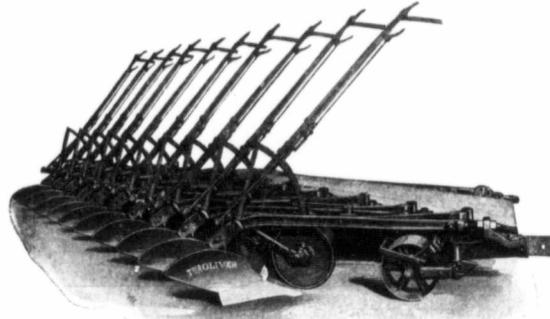


Fig. 19.—Side view of a two section Oliver engine gang. Observe hinged platform and bar vertexes of sections.

When ground is in good shape, we pull six plows, using the 2 bottom gang plows which are the best for this country.

With four plows we can plow about 10 acres a day in long days, and with six plows can turn over about 15 acres these days. It costs close to \$3 an acre to plow in good ground and in gravelly ground all the way from \$4 up, according to the amount of rocks.

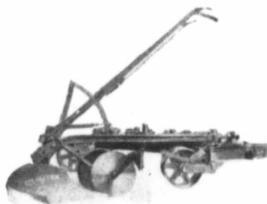


Fig. 20.—Each plow of the Oliver Gang is independent, with coulters, gauge wheel, lifting lever, etc.

The above is taken simply as a fair average of what was done at that time, and when compared with the work done today by a plowing outfit, it looks small indeed. This horse plow arrangement did not however last and by 1906 we find the traction plowmen turning their attention toward a new style of plow,

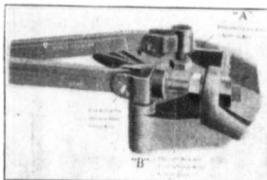


Fig. 21.—Attachment of beam to frame. Bolt is adjustable up and down to level the base. B regulates width between plows.

known as the "Stiff" engine gang. This consisted of four, five or six plows arranged on one frame. The frame was carried on wheels and it was thought that a real engine gang

had been at last perfected. It was, however, really no better than the old horse plow equipment. It had more weight which held it to the ground more securely, but in plowing uneven ground, it was worse than no-

thing, as it would not adapt itself to the "pot holes" and "hummocks" that are so prevalent in virgin prairie. About 1905, however, a new thing came to the plowing field in the shape of a real engine gang, and we give below a letter published in our September, 1906, issue, to show the result of the transition from the makeshift to the real engine gang.

When we came to Canada last spring we carefully thought over the question as to whether or not steam would be most profitable for plowing, and the more we studied the situation the more we thought that steam plowing was the

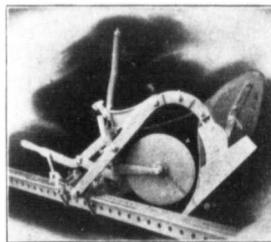


Fig. 2.—Spring trip used on Emerson moldboard engine plows. Point raised as high as frame.

thing for this vast new country now being opened up, for the minutes are golden in this short season.

The next thing to decide was what kind of an outfit to get. We consulted freely, and finally decided upon working steam plow. We started to work the first of May with more or less success for a time; then the plows began to yield under the heavy strain of breaking the virgin prairie. For almost two months we labored and tinkered with these plows in vain to make them work. They would clog between the beam and moldboard so tightly that it was nearly impossible to clean them. There is no use in discussing a painful subject, so we decided it would be economy to purchase a new set of plows. So, profiting by our past experience, we finally decided upon the Cockshutt steam plow of ten furrows, and it is needless to say that we are now more than pleased. We are plowing nothing but prairie at present, and at this time of the year it is quite a tough proposition on engines and plows, as the ground is so dry, but

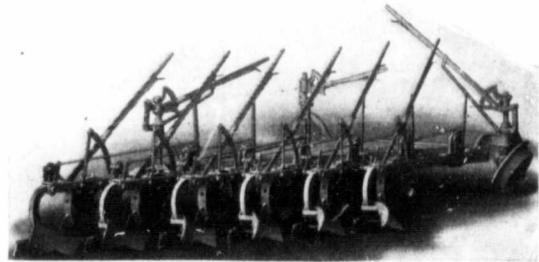


Fig. 23.—Six bottom Emerson independent plow. A lever for each plow and levers to regulate height of frame.

so far we are having fair success. Some time ago we decided to plow day and night, as we were so far behind because of the failure of our first set of plows. We equipped our outfit with lanterns, so that now the night force is doing almost as well as the day force, but of course, there are some drawbacks to rapid work and nice, principally, of course, the darkness. However, we are satisfied with the work thus far. The men work in twelve hour shifts, from seven to seven.

Now, in regard to the number of men employed, there are two with the engine and plows, engineer and steersman, and the tank man. Last, but not least, is the coal man, who, in this case, is a lad, who hauls two good loads which last night and day. The night force is the same as the day force. In regard to the teams used, there are two tank teams, and the coal team, making six horses, six men, and one lad all told, running day and night.

As near as we figure at the present moment, the cost of plowing is a little over \$2 per acre. In lighter soil than what we are working the cost would be quite a little less, but in this heavy soil breaking is a stiff proposition.

We have, on extra good days, plowed as high as 25 acres a day, but we consider 20 acres a good day's work, and would be content to average that day in and day out. With regard to the fuel, slack coal is what we are using. While it requires a little more work in keeping a fire, it is a very satisfactory coal for plowing, making but few clinkers.

Another essential thing in steam plowing is the extra wide wheels. It is, in our estimation, absolutely necessary, as after the spring rains the engine would sure go out of sight without the extensions with which ours is furnished.

Now, just a word regarding steam plowing in general. There are lots of perplexing questions and things coming up all the time to discourage the owner of a steam plowing outfit, and the work is hard on the man running it, but then the pleasure will certainly come when the broken prairie is changed into long unbroken fields of waving wheat. Don't let breakdowns discourage you, but get the repairs as soon as possible, and whatever you do keep your engine working. It is the idle moments with a gang of men idle that makes the balance go on the wrong side of the ledger.

The real engine gang had at last arrived, and the one who writes Western Canada's history must, if he be fair, chronicle the fact that engine plow has done as much or more than any other single factor towards the rapid development of the three prairie provinces. Much has been said and written regarding the tractor in this connection, and far be it from us to discount in any particular its good work, either past, present or future, but without the development of the tractor plow, the development of the tractor itself would not have been anywhere near as rapid as it has been. Mr. Farmer, have

you ever stopped to realize that you in conjunction with the plow manufacturers have worked out a proposition that has effected a veritable revolution in grain growing? He has built and you have bought. You have found



Fig. 24.—Top view of J. I. Case engine plow. Note the furrow wheel.

weaknesses and he has remedied them, but between you there has been given to the world an implement that is rivaled in importance only by the self binder. 1836 is the year that really marks the introduction of the first traction plow. In 1832, one, Thomas Heathcote, of Devonshire, England, perfected a system of cultivation that was new

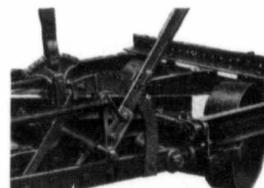


Fig. 25.—Attachment of plow beams to frame. The vertical eye bolt provides for wing adjustment and the horizontal for parallelism.

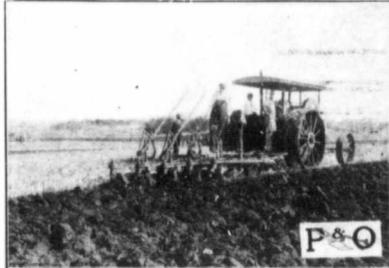
and rare. It might be said in passing, however, that in 1618 David Ramsey and Thomas Wildgosse patented an invention comprehending.



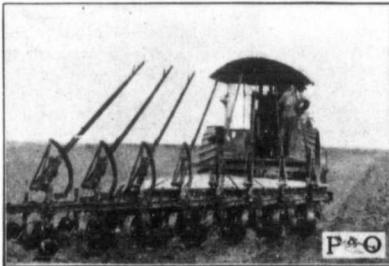
# Mogul Engine Gang Plows



Whenever you see an Engine Gang Plow with the levers pointing to the centre of the platform, it is a P. & O. Mogul. It is exclusive. No other plow is constructed in this way and it thus becomes an easily seen distinguishing mark of the greatest and most easily operated gang plow in the market.

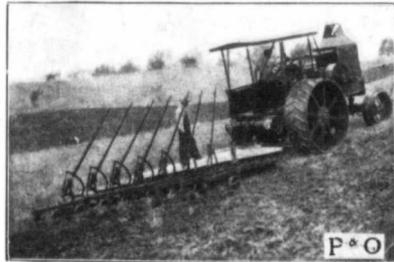


**Better Than We Ever Claimed They Are, and Every One of them Backed By An Unqualified Guarantee.**

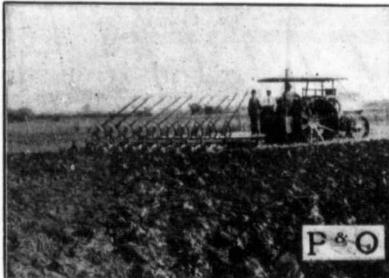


**The Whole World An Open Market.**

A few years ago the Engine Gang was unknown except in a limited area, and was used only on the big "Bonanza" farms. To-day the entire farming area of North America is an open market for them. Not one man in a hundred who needs an engine gang owns one. We make three styles, from three to twelve bottoms.



Send for our special catalog, "Traction Engine Plowing," it will **Help you to Decide which one You Need**



**The P. & O. Mogul Engine Gang Plow** is made in five sizes with 5, 6, 8, 10 and 12 bottoms, small enough for the ordinary farm, and large enough for the most extensive fields. The Mogul is protected by patents covering its exclusive features, chief among them being the bunching of the levers to the center of the platform; the self-casting gauge wheels; the break pins for stony ground; the method of regulating suction; the manner of lining up the bottoms, and others. All kinds of bottoms fit the one style of standards.



**Strongest and Simplest Engine Gang Made**

## Parlin & Crendorff Co. Canton, Ill.

International Harvester Co.  
of America  
Sole Agents for Canada.

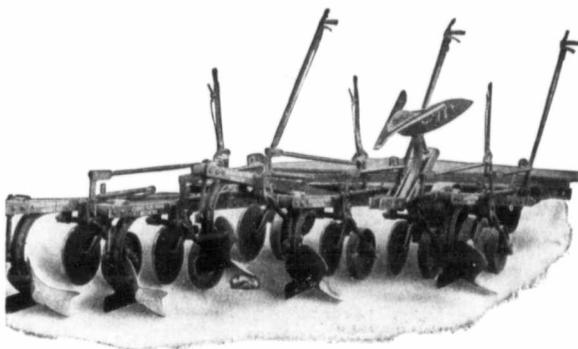


Fig. 26.—Rear view of six bottom plow showing one bottom turned back for travelling on the road, and another lifted up showing amount of vertical movement.

"Newe apte, or compendious formes or kindes of engines or instruments, and other profitable inuencions, wayes and meanes, for the good of our Commonwealth, as well as to plough grounde without horses or oxen and to enrich and make better and more fertill as well barren peate, salte and sea-sand, as inland and upland grounde, within our Kingdomes of England and Ireland and our Domynyon of Wales; as also to make boates for carriage of burthens and passengers runn upon the water as swifte in calmes and more saff in stormes than boates full-sayles in great wyndes."

It was left, however, to one Jos. Parker, in 1836, to construct a plow, which on being tried, performed admirably, this being the first time known at present of land having been plowed by steam. It has been said by many who saw this machinery

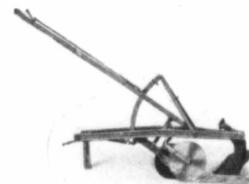


Fig. 27.—Arrangement of individual Big Dutchman gang.

at work that if these men had adapted their invention to plowing on ordinary land instead of to the reclamation and cultivation of bog lands they would have succeeded. As it was, however, after spending some \$60,000 they abandoned their scheme. The machinery consisted of an engine travelling along the headland one side of the field, and an anchor on the other, the method of working being somewhat on the lines shown in the illustration.

The early traction plows were all of the cable type, and these are still in use today in England and many foreign countries.

There are several outfits at work in California, and at present there are two in Canada.

In this country, however, with its broad fields and long furrows, the direct traction system has been found to be most satisfactory. About 1885 what was perhaps the first engine gang to be manufactured on the American continent was built by the Geiser Manufacturing Company, of Waynesboro, Pennsylvania. It was a real engine gang, but was slow in coming into use because of the fact that there were



Fig. 28.—Eight bottom Big Dutchman engine gang.

no engines really suitable for plowing purposes and as traction plowing was in more or less of an experimental stage at that time, the farmers hesitated to pay the price of an engine gang and then fall down.

The period between 1900 and 1905 is marked as the time when attention was really diverted towards the traction plow. This period marks the real beginning of development in the Northwest, which created a demand for larger farm tools, and where there is a demand it is generally always met. It is a rather difficult matter to trace the developments of the traction plow in anything like chronological order as the idea seemed to have been working in the minds of several people at about the same time. Reeves and Company and the Avery Company both brought out steam lift engine gangs about 1905 or 1906, and in 1905 the Cockshutt Plow Co. brought out their since famous engine gang. We wish to say a word or two about this gang before passing on as it really marks the beginning of traction cultivation in

Western Canada. The idea of this plow originated in the West. It was the natural result of an insistent demand. That it was not a mere theory is best evidenced by the fact that the Cockshutt engine gang of today is practically the same in general design that it was in 1905. At that time it was carried on skids instead of wheels, and certain parts have been improved and strengthened, but in general appearance it is the same implement. This merely shows that the men who first designed it knew the requirements of such a machine and built accordingly.

The next plow to make its appearance in Canada West was the John Deere engine gang. This came about 1907, although it had been in the experimental fields for some time previous. This plow differed from the Cockshutt in that two bottoms instead of one was and still is operated by one lever and curved steel standards were used instead of straight cast ones.

Both of these plows have been very successful in traction cultivation on both sides of the line, and have served the traction plowmen in Western Canada to the tune of thousands of plows. Others have followed in quick succession, but the majority have

wonder just how much of this decrease in cost is due to the traction plow. Certainly some credit is due on this score. It is an implement in itself and requires careful study and attention. The other day the writer was reading an article by W. T. Paull, of the Oliver Company, on "How the Plow Hitch Affects Draft;" and while the point itself might seem a minor one, the article itself was three or four pages long, going to show that the engine plow is a subject for serious study. It takes power today to handle these plows, and power, either oil or coal, is measured in terms of dollars and cents.

The traction plow has enabled the farmer to measure work done in teams of draw-bar pull. At the Winnipeg Motor Competition in 1911, six different makes of engine gangs were represented and the competition in low draw-bar pulls per plow was keen. Western Canada has as yet about 150,000,000 acres of virgin prairie to turn over, a very large portion of which will be handled by the traction plow. Its importance is, therefore, unquestioned. It, together with the tractor, must perform a large share of the work, and in the years to come the old land will more and more be subjected to the leavening influence of the properly operated traction plow.

It is with the idea of showing just what there is to this big factor in modern farming that we give our readers details of most of the engine gangs on the market today. Merits or demerits will not be discussed. It is for the reader to so thoroughly study the plow itself that he can choose the plow best suited to his purpose by a careful analyses of the various parts. For most of the illustrations we are greatly indebted to the American Thresherman, who have gone to considerable pains and expense to get them together.

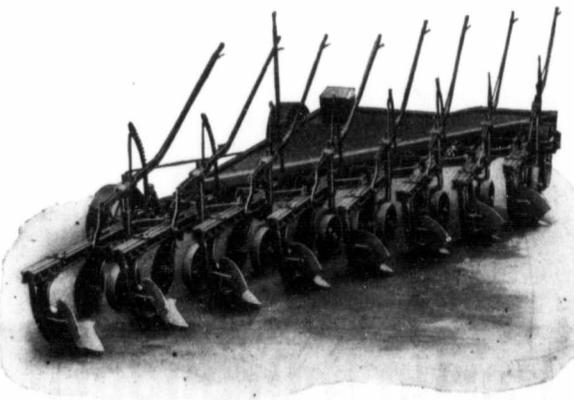


Fig. 29.—The Rumely engine gang plow.



# Little Dutchman One-Man Tractor Gang



Built with regular bottoms either old-ground or breaker for plowing up to eight inches in depth.

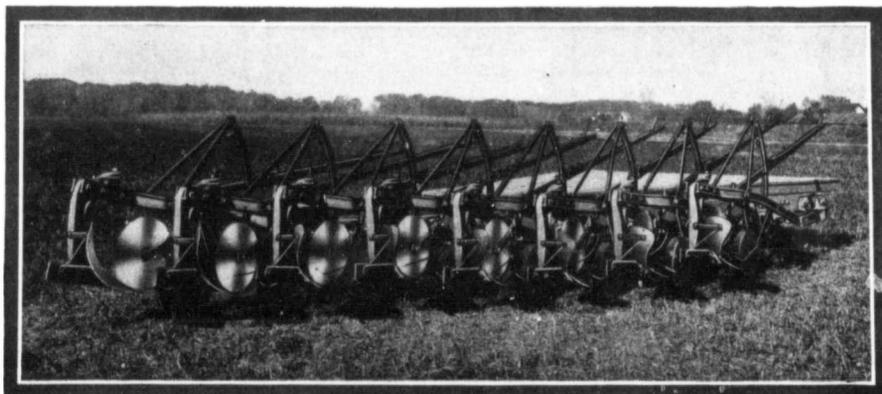


Also (as shown in cut) the Special Deep Furrow for plowing four to fourteen inches deep.

Built in 3 or 4 Bottom Gangs. May be coupled up with Tractor and used as 6, 7, 8, 9 or 12 Bottom Gangs. Observe Set-over Hitch with Tractor on solid ground, away from furrow.

# Big Dutchman Engine Gang

BUILT IN SIX, EIGHT, TEN, AND TWELVE BOTTOMS



Ample strength of frame and beams. Perfect control of each plow through individual lever and large closed gauge wheel. Each plow provided with individual adjustable bracket and large swivel coulter. Guaranteed soft center shares.

*Write for Booklet and Prices*

**Remember "Acme Shares Don't Break"**

MADE BY  
**MOLINE PLOW COMPANY**

MOLINE, ILLINOIS, U.S.A.

*Makers of the Famous Moline Plows and Other Flying Dutchman Farm Tools*

SOLD BY

**CANADIAN MOLINE PLOW COMPANY**

WINNIPEG, CANADA.



**Cockshutt Engine Gang.**

This plow is of the individual bottom type, that is, each bottom is controlled by its own lever. The plow frame is made up in the shape of a triangle,

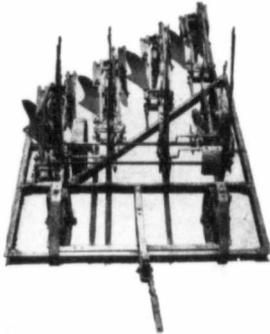


Fig. 30.—Top view of eight bottom La Crosse plow showing automatic lifting attachment and frame.

which is carried on four wheels in the case of the larger sizes, and upon three wheels in the case of the smaller sizes. The beams are two piece, the plow standard passing between them. It is built in the following sizes:

Six furrow frame for 4, 5 or 6 plows.

Eight furrow frame for 6, 7 or 8 plows.

Ten furrow frame for 8, 9 or 10 plows.

Twelve furrow frame for 10, 11 or 12 plows.

Facilities are provided for adjustment both for setting and for lining the plow, the setting adjustment being a screw arrangement placed on the top of the standard (Fig. 2) and the alignment adjustment being taken care of where the beam fastens to the frame (Fig. 3). The general arrangement of beams, clevis, etc., as shown in Fig. 4.

**John Deere Engine Gang.**

This engine gang differed from most other engine gangs in a great many particulars. In the first place it is so arranged that each lever operates two bottoms. The construction of the frame is of the truss type, all parts being rivetted together. The front wheels are centered, and all three wheels are inside the frame. This allows the plow to turn very short and does not interfere with the engine. Fig. 5 shows this wheel arrangement, also method of frame construction. The assembling of the beams and bottoms in pairs is shown by Fig. 6.

The beams on John Deere engine gangs are of the curved type. This was adopted so as to provide clearance in trashy or foul ground. This form of beam may not be so rigid as the straight standard, but the wide space between the ends of the plow beams permits of a method of attachment that makes it very

rigid and takes care of the side thrust.

The beams are attached to the frames by means of a screw clevis (Fig. 7). By means of an ordinary wrench the beam points can be easily raised or lowered while the plow is in operation. Rolling coulters are provided which can be set in such a way as to jump the plow over any obstructions there may be in the ground. Quick detachable shares are used on Deere engine gangs, thus greatly facilitating the changing of shares.

The gang is hitched to the engine by means of chains. The chains are attached to the engine frame with clevises which can be shifted sidewise to suit any condition. John Deere engine gangs are made in 4, 6, 8, 10, 12 or 14 bottom sizes. A single bottom attachment may also be had whereby odd numbered combinations may be made such as 5, 7, 9, etc. Fig. 8 shows a side view of an 8 bottom John Deere engine gang.

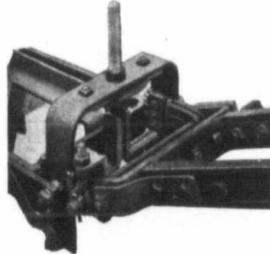


Fig. 31.—Adjustments for suction and width between bottoms.

**Verity Engine Gang.**

This gang is of the individual lever type. It has straight standards and double beam construction. The frame construction is of the bridge truss type, firmly riveted together, with the three wheels inside the frame. Each plow is adjusted by means of a "screw bolt" at the top of each standard. Alignment is taken care of by means of a screw adjustment at the front end of the left hand beam. "Winging" is prevented by means of a set screw on the front end of the right hand beam. One of the big features claimed for Verity engine gangs is the "self-leveling" device (Fig. 9). When changing the depth of furrow it is not necessary to adjust the plows in any way. The depth may be changed from one to eight inches by simply moving the lever. This applies to any or all of the bottoms. Large gang wheels, 16 inches in diameter, are provided, and rolling coulters are used. Verity engine gangs are made in 6, 8, 10, 12 and 14 bottom sizes, but the frame is so constructed that a one bottom attachment can be used when desired, thus making the gangs 5, 6, 7, 8, 9, 10, 11 or 12 bottoms. A good idea of the beam and

frame construction of Verity engine gangs can be gleaned from Fig. 10.

**P & O Engine Gang.**

The P & O engine gang is another of the individual bottom type. This gang has been built for a number of years. It is built in 5, 6, 8, 10 and 12 bottom sizes. The frame construction differs in the different sizes. Fig. 11 shows the construction of a ten bottom frame and Fig. 12 the construction of a 6 bottom frame. The front wheels on both styles are castored, and are so arranged that they run on a circular track. The frames are built of heavy channel iron braced and cross braced so as to give a very rigid effect. One feature of the P & O engine gang is the arrangement of the levers. Each bottom has its own lever, but they are each attached to a pivoted standard in such a manner that they can be bunched together, thus greatly facilitating their handling by the operator without being obliged to walk clean across the platform. The hitch is by chains that can be either crossed or hitched straight to the drawbar of the engine. Fig. 13 gives a very good idea of the construction of the P & O engine gang, better known as the "Mogul," also of the arrangement of the levers towards the centre. Fig. 14 gives an idea of the individual plow with hoisting lever, etc.; also the position of the gauge

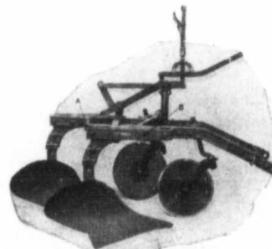


Fig. 32.—Details of La Crosse plow.

wheel. This gauge wheel is self-castering, which greatly aids in turning corners. The plow standards are attached to the beam by two bolts, as shown in Fig. 15, this beam being of a semi-carved type. In stony ground the bolts may be exchanged for

wood pins, which break when undue strain is put upon the point, thus saving shares and oftentime a twisted or broken beam.

The beams on the large size plows above eight bottoms are made in one size only, and of the same pattern, so that they are interchangeable. In the five and six bottom sizes the outside or right hand beam is designed to allow the traction wheel to run inside the frame. All other beams on the small plows are



Fig. 33.—Reeves engine plow with hand lever left.

inter-changeable, and may be used even on the larger sizes.

Fig. 16 shows the method of attaching the beam to the frame, and Fig. 17 shows the method of regulating the "wing" of the share. Gage stops are provided on the notched quadrant, and if the depth of plowing has been determined they may be set for any depth desired. All that is necessary to do in setting the plows in the ground is to pull back the latch and throw the lever upward. The levers are long, making the lifting of the plows from the ground an easy matter.

**Oliver Engine Gang.**

This engine gang is somewhat of a departure from most other makes, in that the larger sizes are made up of a combination of the smaller ones. The sections are made in either 3, 4, 5, or 6 bottoms, and for example an 8 bottom gang would be made up of a combination of 3 and a 5 bottom section.

Fig. 18 shows the frame arrangement for one section, also the extension on the front right hand corner of the section attached to it. The frame is triangular and is carried on 3 caster wheels, one in the rear and two in front. The levers are individual, likewise each beam has its own gauge wheel and coulter. The gauge wheels are made solid, the idea being to prevent their picking up mud in wet

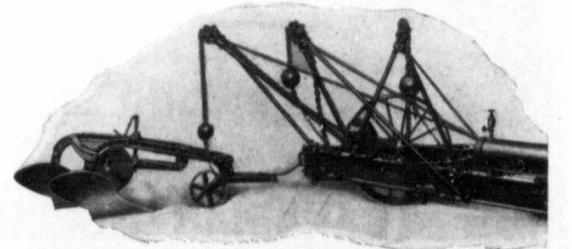


Fig. 34.—Steam cylinder and counter weights by which two plows are raised at one time.

# A NAME and its SUCCESSION

The J. I. Case Plow Works was founded a great many years ago by the man whose photograph is shown here. His highest aim was to produce plows and other tools of good design and exceptional quality for the American farmer



For more than a quarter of a century Pres. H. M. Wallis, son-in-law of the founder, has been advancing this standard of quality with every modern improvement called for in implement construction. The fact that the name J. I. Case on a plow, planter or tillage tool stands for quality, is ample proof of his success in the line of succession.



SECRETARY

These three young men, grandsons of J. I. Case, are the incorporators of the J. I. Case Company



ASSIST. SUPT.

An organization formed to aid the Sales Department of the J. I. Case Plow Works



EXPERIMENTAL DEPT.

## BEWARE OF RUMORS

We are an independent Company, not connected with any other in any way. J. I. Case founded this business years ago, and his heirs and family are still running it. No "Case" is connected, directly or indirectly, with any company other than ours.

Look for this every Genuine



Trade Mark on J. I. Case Engine Gang

## Points of Merit Not Found on Other Engine Gangs

Patents pending on same

- 1 REAR FURROW WHEEL—takes the side thrust and holds plow to straight-ahead position.
- 2 BUMPERS—insure exact spacing of all beams, and consequently, furrows of uniform width.
- 3 LINING UP CHAIN—binds rear furrow wheel to frame—a material aid in offsetting side thrust.
- 4 SUCK—just shorten or lengthen rear arm by means of two jam nuts, and you have any desired penetration.



- 5 One lever lifts two plows, but each beam is independent. This allows you to regulate depth of each plow and means a uniform job.
- 6 BREAKPIN—just a wooden plug; breaks when it ought to, never otherwise. Beams are hinged. You swing a plow up and change bottom or share with perfect ease.

## Now, Mr. Dealer,

The Engine Gang that is going to sell year after year must stand up to its work. The above points are not mere talking points—they are on our plow for business.

Plow made with 4, 6, 8, 10, 12 or 14 bottoms, breaker or stubble shapes.

Write for new circular No. 235B. We want your order

# J. I. CASE PLOW WORKS, Racine, Wis.

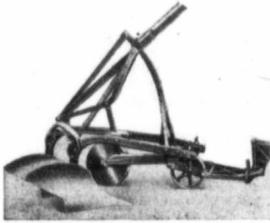


Fig. 35.—Reeves plows are assembled in pairs.

ground. Fig. 19 shows a built-up plow, the sections being joined by connecting rods from the apexes of the triangles, thus adding strength and solidity to the structure.

Fig. 20 gives the details of a complete beam and bottom, and Fig. 21 shows the method of adjusting the varying width between the plows and for leveling them. The gauge wheel is so arranged that somewhat of a power lift effect is accomplished. The suction of the points is regulated by sliding the standard forward or backward on the curved end of the plow beam. Slats are provided in the plow

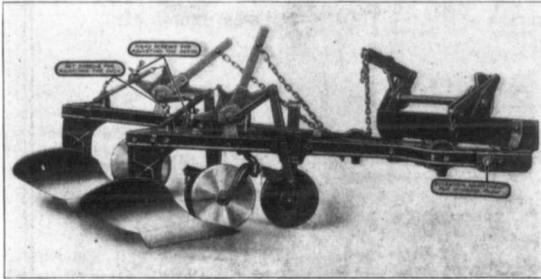


Fig. 36.—The Bartholomew power lift engine gang, showing arrangement of levers and chains in the automatic lift.

beam for this purpose. Each lever has two latches, one being convenient for raising and the other for lowering the plow. In letting the plows into the ground all that is necessary is to release the latch and give the lever a quick throw upward. A heavy coil spring is also provided to assist in raising the plows out of the ground.

#### Emerson Bantingham Engine Gang.

The Emerson engine gang is in many cases a departure from all other makes. It has been on the market for a considerable time and changes have been made at intervals as the engine plow proposition developed. Three different styles of Emerson plows are made at present, viz., the flexible section moldboard plow, the flexible section disc plow, and the independent beam plow with power lift. The first two types are similar, the only real difference being that discs are used on one and moldboards on

the other. The beams are attached to a long angle beam placed at quite a sharp angle to the direction of the furrow. This beam is supported on four wheels, two of which run in the furrow and are set at an angle in order to resist side draft, and two run on the land. The beams on the moldboard plows are hinged to the main beam, and are well arched so as to provide sufficient clearance in trashy ground.

Fig. 22 gives a good idea of the arrangement of the mould board plow beams on an Emerson mull board engine gang. An automatic spring tip is provided, which allows the plow bottoms to lift out of the ground when they strike a rock and automatically throws them back in again when the obstruction is passed. This provision makes the plow particularly adapted for stoney ground. The wheels that support the frame may be arranged or lowered by means of levers, thus raising or lowering the entire frame, and regulating the depth of the plows. The tensions of this plow are

front wheels are casted and all are arranged to be raised or lowered as in the regular engine plow. The right hand wheel runs in the furrow to off-set a tendency that all engine gangs have to run toward the land, each plow is provided with a gauge wheel that regulates the depth of the cut. The front wheel, which runs in the furrow, is made very heavy, and is set

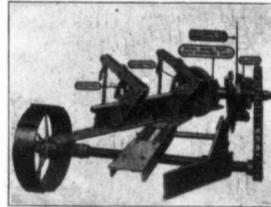


Fig. 37.—Details of the Bartholomew automatic plow lift. The wheel on left is driven, which operates square shaft on left through chain, clutch and bevel gears. The eccentrics on square shaft are set spirally.

at an angle, in order to eliminate as much as possible the side draft. Each plow is provided with a gauge wheel, which regulates the depth of the cut. These gauge wheels really form the basis of the power-lift proposition. With each wheel there is a heavy ratchet with a plunger so arranged that the operator can raise the bottom by pulling a lever which engages the ratchet in the wheel, this may either be done from the platform or cords or small cables may be attached in such a way that the engine operator can handle them from the engine platform, thus making the power-lift plow. The height of the front ends of the plow beams is regulated solely by raising or lowering the entire frame with the levers and ratchet with which each plow is provided. Spring buffers are placed between each plow, and the construction is such, that in case the plow cannot pass over an obstruction it may cling to one side without breaking or injuring the beam. The beams themselves are of the curve type, and are so arranged that a large amount of clearance is given in

order that the work in trashy ground may be facilitated. A general supply of levers is arranged on this plow, so that the unevenness of the ground may be taken care of at all times. The manufacturers of this gang have always been keenly alive to the needs of the traction engine, and manufacturing has turned out many very popular tools.

#### J. I. Case Engine Gang.

Fig. 24 shows a rear and top view of the J. I. Case engine gang, which merely illustrates the construction of the frame, the position of the wheels, levers, etc. The frame is of a triangular type, and is braced in such a way that a large amount of rigidity is provided. The frame is carried upon three wheels, the two front ones being casted, and all are inside of the frame, in order to facilitate turning. The beams are of the double construction type, and are furthermore a combination of the straight beams and the curve standard. This standard is arranged in such a way between

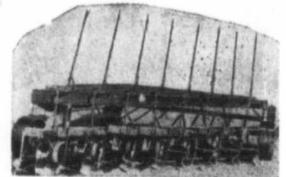


Fig. 38.—The Sioux Falls Engine Gang.

the two beams that when it strikes a stone or other obstruction a brake pin safety device is arranged in such a way that the pin breaks, and thus protects either the beam or the standard or the share. The plow is arranged in such a way that it is either of the single lever type, or of the one lever for two bottom type. The construction is such that two plows may be lifted with one lever, or each plow may be operated by a single lever, this being at the option of the operator. Buffers are placed between the plow beams to prevent side deflection

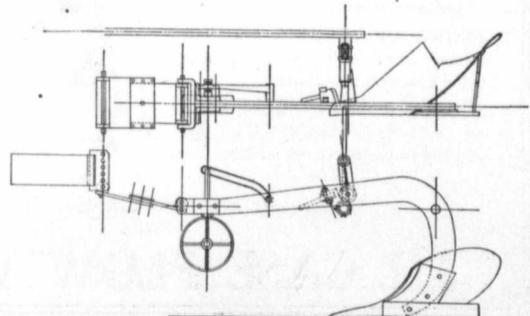


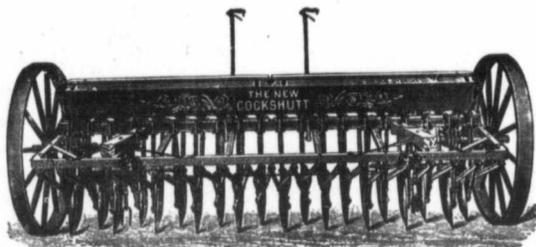
Fig. 39.—Drawing showing top view and side view of one plow of Geiser Engine Gang.

Fig. 23 shows a 6 bottom Emerson Independent R.S. engine gang. The construction on the frame of his plow is very much the same as that on the one previously mentioned, namely the mull board gang. The two

# You Need a DRILL to Plant Your Seed

## You Need a **COCKSHUTT DRILL** to do it Right

The reason the **Cockshutt Drill** is in demand everywhere is that it is built by experts who have made a close study of Western conditions, following the machine in all parts of the country and carefully testing out all improvements before putting them on the market. There are many exclusively **COCKSHUTT** structural features that add to the durability, lessen the draft and plant the seed under the most favorable conditions for germination. The difference in a **Good** and a **Bad Drill** is generally the difference in a **Paying** and **Non-paying** crop. One of the greatest problems the manufacturer of Drills had to solve was to produce a **Light** but **Rigid** frame that would not only carry the weight of the hopper full of grain, but also the pressure of the disks on uneven ground and always keep the feed runs in **perfect** alignment. This was formerly accomplished by means of truss rods, which were liable to get loose and spring out of place, but on the **COCKSHUTT Drill** it is accomplished by means of a rigid "I" Beam which, like a steel bridge girder, extends the **Full Width** of the Drill, taking all the stress and strains which the machine is subjected to in passing over uneven ground and keeping the feed runs and bearings in



perfect alignment. This substantial construction means not only "**Long Life**" to the Drill, but it does away with all springing and binding on the feed runs, bearings, etc. It also means **Lighter Draft** and **More Accurate Sowing**.

The wide zig-zag between the discs prevents all clogging in lumpy, wet or sticky soil. The bearings are in the concave side of the discs—no long hubs or interfering boots stick out to collect trash. Discs have Patent Dust-proof hard oil bearings. One oiling lasts a whole season, friction reduced to a minimum. Disc blades cut out all weeds and make a wide seed bed. The boot deposits the grain spread out in the bottom of the trench so as to allow more room for the spreading root fibres, thus ensuring a sturdy growth.

**Positive Force Feed**—sows all kinds of grain evenly and without bunching or damaging a kernel.

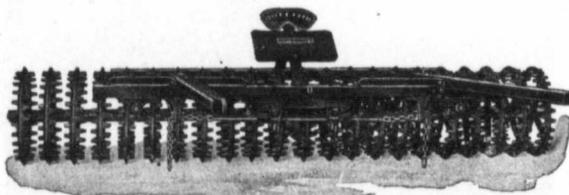
**COCKSHUTT Drills** are built to last long, draw light and produce paying crops.

That's why everybody wants them.

That's why **YOU** should have one.

# Cockshutt Flexible Pulverizer and Sub-Soil Packer

Those of your friends who are already using this high class implement will tell you that it is appreciated and valued, for it earns its price, and more besides, in the increased returns from **ONE** crop. The illustration shows the Pulverizer fitted with our **patented Combination V-Shaped Wheels**. This is but one of the Cockshutt improvements which keep our implements well ahead of all others. These wheels while passing over the field not only break up the lumps thoroughly, but form small channels which gather and retain the



moisture. The openings in the wheels will not become clogged if the ground is at all workable.

The land surface being left in a rough state, holds the dust and prevents blowing of the soil. All bearings on these machines are fitted with removable bushings, which may be cheaply replaced. The oiling devices are convenient, simple and thorough. Made in two sizes, 16 and 22 wheel.

**We also carry a line of 16 and 22 inch standard surface pulverizers, of the old and well-known type, as GOOD as ANY and BETTER than MOST.**

## Cockshutt Plow Company, Limited

BRANCHES:

Winnipeg

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DISTRIBUTING WAREHOUSES:

Red Deer

Lethbridge

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# TRACTION PLOWING

## AS TOLD BY THE MEN WHO DO IT

On this and the following pages will be found a number of letters from traction plowmen in Canada West, the originals of which are on file in our office. We have inserted the letters just as they came to us, and we will, therefore, not hold ourselves responsible for any of the opinions or criticisms contained therein. Should anyone disagree with the statements made, we would be pleased to offer them the use of our reading columns for the purpose of criticism, etc.—Editor.

### Some Good Work.

Replying to your letter, I would say that I have an I.H.C. 20 horse power engine with Moline six bottom plow. I purchased it last spring, and, although I had some trouble at first, found it a splendid outfit for general farm work.

It takes two men to handle it profitably, one to steer and look after the engine and one to look after the plows or any machine that may be used. We kept one horse with a rig to haul two barrels of water per day, which was plenty for cooling, except on very hot days.

In plowing stubble, I could pull six 15-inch plows, plowing shallow, but generally pulled five plows, and the harrows, which left the soil in a condition to retain the moisture. I found that four 15-inch breakers was a heavy load for the engine in our tough sod, just breaking deep enough to make a good job. The four breaking plows would hold the engine down to a slower speed than the six stubble plows, but I found that I could do more work and make a better job running plow with four breakers than if I ran faster with three.

In drilling I pull 15 feet of harrows close to the engine, behind this the packer, and behind that the drill. This made a splendid job of the seeding, when the land had already been harrowed behind the plows as the seed bed was firm and smooth before the seed was put in. A cross harrowing with the horses after this completed the job.

The time taken on the different work was about like this. Plowing and harrowing 1½ acres per hour. Breaking one acre per hour. Harrows, packer and drill 2½ acres per hour. Discs and harrows 2½ acres per hour. It is hard to give exact amount of gasoline used as it varies so much according to condition of land, but the average for any work except breaking would be about two gallons per hour, and for breaking 2½ to 3 gallons per hour. I plowed and drilled, etc., about 240



acres and broke about 325 acres last season. I could have done more but we were held up with an over-abundance of rain.

The gasoline tractor is used more than the steam tractor for breaking in our district. But most of the threshers use the steam engine, the impression

Wishing the Canadian Thresherman and Farmer success in the good work it is doing for the Western farmers, and hoping this may be of some help to anyone starting traction farming.

Yours truly,

J. Victor Hall.  
Paseweg, Sask.



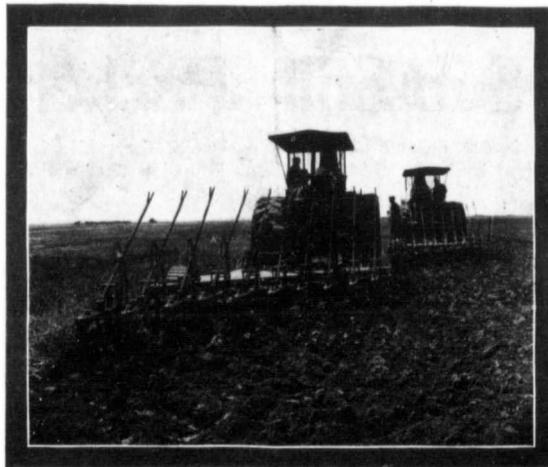
*Fourbanks-Moline Emerson Plow*

FIGURE 1 SEE PAGE 5

being that the gasoline engine won't give as steady a power. But any who have used the gasoline find it very satisfactory. My advice to anyone in this kind of a country where there are bluffs and sloughs is not to get too large an engine. The smaller engine is easier to handle on short lands, and will go over

### This Man Did Things.

In the spring of 1911, I purchased a 45-30 horse power gasoline tractor of the double opposed cylinder type. These engines are manufactured by the Goold, Shapley & Muir Co., of Brantford, Ont. This company was, I believe, one of the first to introduce this type as a plowing



*Rumley Oil-Pull Cocksbutt Plow*

FIGURE 2 SEE PAGE 5

wet places where the large outfit will get stuck. A portable blacksmith outfit is almost a necessity with a traction rig, as many valuable hours may be saved in sharpening shears, etc.

When breaking, I draw out two shears every morning. This gives a change of shears every second day, which is generally often enough except when breaking on stony land.

engine, and if we may judge by results, they have more than realized the expectations of their promoters.

During summer of 1910, I was unfortunate in losing a number of my most valuable horses, and as I am operating a large farm it became necessary, either to procure more horses or a tractor. I chose the latter for four very obvious reasons. First,

efficiency; second, economy; third, speed; fourth, labor. I did not expect the engine would relegate that noble animal, "The Horse," to the scrap heap. What I did expect was that on a large farm, the engine would prove an invaluable supplement to the horse, and such has been my experience. My farm can scarcely be termed an ideal place to demonstrate with a plowing outfit, for while we can get a half mile furrow in a number of fields, yet there are a number of smaller ones. I use the engine to plow the large fields and horses for the smaller ones. In this way I get the very best results. I am using an eight furrow Cocksbutt plow for stubble and six bottoms for breaking.

We are able to pull the eight bottoms and also a 16-wheel Cocksbutt sub-surface packer after the plow. This made a perfect seed bed and did not in any way overload the engine. We were able to plow and pack from 20 to 25 acres per day, using about two gallons of gasoline per acre, at a cost of 25c. per gallon. The soil is black loam with clay subsoil, and fairly stony. I must say that the work done by the plows was simply perfect, and different parties remarked that my breaking was the best they had ever seen done by a traction outfit. I consider the work done both in plowing and breaking to be cheaper and better than could possibly be done by horses.

My experience in threshing has not been as encouraging as in the other work, yet we are able to handle a 32-54 steel Case with all the attachments, and appeared to have plenty of power and very even speed.

As far as my judgment goes, I consider it is easier on the engine to plow than to thresh. I have plowed about 600 acres and done considerable roading, and yet my gear is almost as good as when I began work.

Now I don't wish my readers to run away with the idea that during this work we did not have our little troubles. We had lots of them, but of a very minor character, and intelligible on-



# The Great Originals

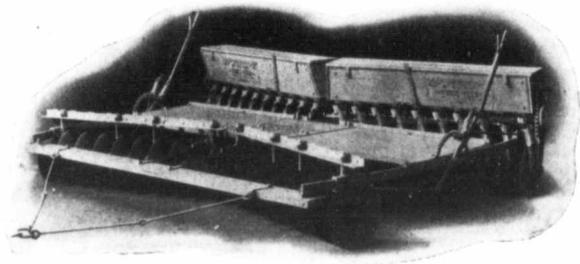
For

## Engine Power in Field Work

### New Emerson Engine Disc Harrow with Seed Attachment

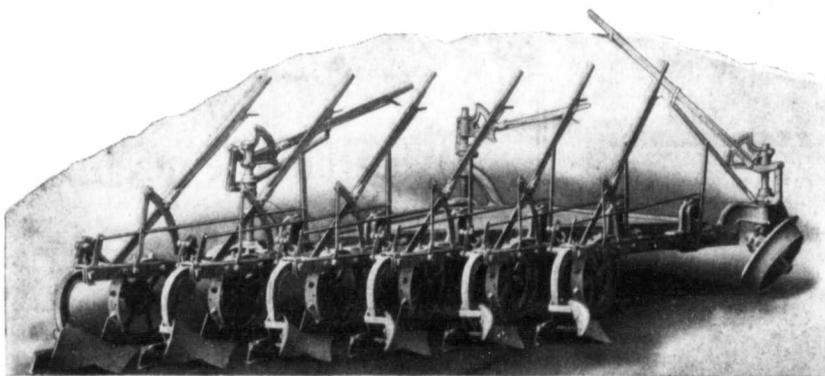
THIS HARROW is the most perfect soil pulverizer that has yet been designed for this purpose. Built in 2 sections with a large weight pan between. The front section is set so the discs throw out while the rear section discs throw in, thus pulverizing thoroughly, completely cutting the entire surface of the field and preparing your seed-bed with only one passing of the engine over the field. With all the discs set straight it makes a first-class sub-surface packer.

THE FORCE FEED SEEDER on rear harrow plants every seed grain uniformly at required depth. It handles seed as small as alfalfa and not a kernel is left on the surface or so near to it that rain or wind storm may afterwards expose it.



## The Emerson Engine Gang

The latest and the greatest Machines yet produced for perfect cultivation are the Emerson Engine Gang Independent Beam Plow with Automatic Power Lift, and the Emerson Engine Disc Harrow with Seeder Attachment. For extensive or intensive work, these implements provide an absolutely perfect seed-bed with perfectly uniform seeding at the proper germinating depth.



### Where the Emerson Plow Differs

It makes a continuous furrow from center of the field without a stop to turn corners, thus plowing a considerable distance while the ordinary plow is turning. There is no hauling across plowed land.

It is an Engine Plow carried on wheels with long distance axles, made in sections with patent flexible connections to conform to uneven surfaces. Turns either way, right or left, plowing all the time.

The Emerson Independent Beam Plow with Automatic Power Lift can be easily operated by a boy. Automatic lift operated by trip raises or lowers plow instantly as desired. Furrow wheel insures even width of furrows without attention. With flexible hitch the engine may vary the distance from last furrow while width at first furrow remains uniform. Gauge wheel on each bottom gauges depth. Pivoted beams allow each bottom to pass over or swing round obstructions. Suction is regulated by levers for shallow or deep plowing. Made in 3 sizes: 6, 8 and 10—14 inch bottoms for old land or prairie breaker. Change from one size to another as desired.

Either or both moldboards and discs for same frame at little additional cost. 16-inch bottoms are used regularly but 12 or 14 inch can be furnished if desired. 24 inch discs are used regularly but they may be had in 26 inch size.

Mr. Farmer: The "luck" or the fate of your 1912 crop lies in the SEED BED. Whatever your failures in the past, here is a chance to get the very best results your seed can make. These ingenious and inexpensive implements will not only save many dollars' worth of valuable seed but you will get the very highest percentage of crop from the seed used. Further: So perfectly does this harrow treat the soil that in many cases it will be found sufficient to plow the land only once in 3 years. A 25 H tractor will pull 2 of these harrows—each 10 ft. wide with 40 16-inch disc blades.

Write for complete information, to]

**TUDHOPE-ANDERSON COMPANY, Limited,** AGENTS FOR WESTERN CANADA

Warehouses at Winnipeg Regina Calgary Saskatoon  
Distributing Branches: Brandon, Yorkton, Edmonton, Lethbridge, Swift Current

ly to those who have had their first introduction into the mysteries of gasoline power. About nine-tenths of our trouble was with the ignition, and I fancy this is true to most beginners with gasoline. A great many have said that a gasoline engine is easier to manipulate than steam, but to be frank, I consider a gasoline engine much more complicated than steam, yet when it comes to plowing I

Trusting I have not taken up too much of your space, I have the honor to remain,

Yours truly,  
Jas. L. Thompson.  
Springdale Farm,  
Beulah, Man.

**A Good One.**

We enclose herewith a photograph of my farm horse. When we took this photograph, we were just finishing up the break-

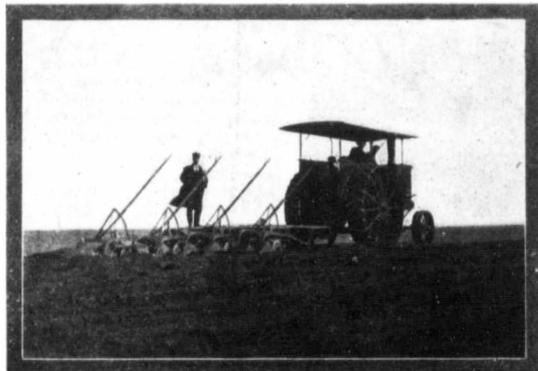


*Every instrument ad* *Each shutt plow*  
FIGURE 3 SEE PAGE 5

consider gasoline has steam "licked to a frazzel."

I consider the tractor is here to stay, and while we are merely on the threshold of what may very justly be termed the "gasoline age," yet no large farm can afford to be without its gasoline tractor. In addition to their unchallenged efficiency as a necessary implement, they are quietly performing a much nobler service to the farm and to the state by keeping the boy on the farm. In an age when the influx

ing of a 100 acre piece of timothy sod. This was my first job, and was done in the Red River Valley of North Dakota. My assistant is standing by the point wheel of the engine. I am standing further back, and my picture is blurred by the smoke of the engine. It has just been stopped and was hot. On the front of the cooling tank is a water tank taken from an old steam engine. This held water enough for several days' running. I moved six miles to this job, and was



*Aultman-Taylor* *John Deere plow*  
FIGURE 4 SEE PAGE 5

into the cities of our farmer's sons, who represent the best brain and sinew of our great country, has reached such appalling proportions, this latter point cannot be overlooked. Who knows but that in the near future this same tractor may go far to solve those great social and economic problems which at the present time are baffling the shrewdest brain of our most astute politicians.

back again exactly in a week. The engine is a 22 horse power Hart-Parr, and is one of the first plowing engines made by that company. I believe they were the first successful plowing engines put out. The plows used were two 3-furrow gangs sold with the engine and a 2-furrow John Deere New Ideal Gang.

On the job we used up about 300 gallons, wine measure, which would be about 250 imperial

# HAVE YOU TROUBLE

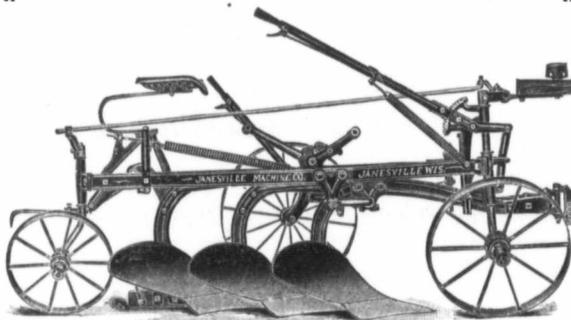
with your plowing outfit? Whatever your difficulty—even if you are absolutely stuck, we will take you out of the mud and place you beyond the possibility of foundering for all time to come with the

## JANESVILLE NORTHWESTERN GANG

We know by hard and costly experience what many Western Canadian farmers have to encounter in the stiff, unyielding gumbo soil common to great tracts of the North West Provinces. No ordinary plow can face it and make headway while doing good work.

# THIS GANG PLOW

will successfully tackle the toughest job any man will ever have to face on those lands. Its extra heavy beam and other structural points give it all the strength and a bit over.



## What does it mean ?

It means that where previously with an ordinary plow you were never done with worry from breakages and consequent loss of time and money, THE JANESVILLE PLOW will save you all that, and work quickly and smoothly through the stiffest gumbo in Western Canada.

THE JANESVILLE FOOT TRIP horse lift is found only on this plow. You simply trip the "lift" with your foot while riding or throw the hand wheel lever while walking and the horses will pull the plow bottoms into the ground at the start and out of the furrow at the end. In entering the ground the heel of the plow bottom is held up so that the point must go down first. In leaving the ground the heel of the bottom is held down so that the point must come out of the ground first. Write us for complete illustrated particulars. No "ad." can even outline what the JANESVILLE GANG PLOW means to the farmer.

MANUFACTURED BY

**The Janesville Machine Co.**

**The American Seeding Machine Co.**

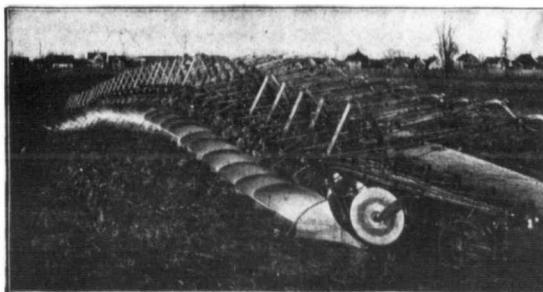
KING and JAMES STREETS, WINNIPEG  
CANADIAN SALES AGENTS

## The Name "Oliver" on Your Tractor Gangs

means that you have let other people do your plow experimenting for you. For fifty years, trained mechanics, skilled chemists, iron and steel experts, careful designers, and scientific authorities on draft have combined to make the plow which you hitch behind your tractor the last word which so far can be said about plows. This is your guarantee against trouble in the field, or slipshod plowing. Out in the prairie, miles from the blacksmith shop, with the plow slipping through the soil day after day like a greased knife, is when you appreciate the fifty years of improvement which gives you the present

### Canadian Made Oliver Plows

To the average person one plow looks like another, but to the operator one plow does not stand the strain like another, and to the engine or horse one plow does not pull like another. It takes field work to prove the plow, and the Oliver plant (the biggest plow works on British soil) at Hamilton, is proof that the Oliver has stood the test. The reason for this is in the Oliver standard of



quality as to what they put into their plows, and in the Oliver standard of mechanical construction.

Oliver plows are sold exclusively in Canada by the International Harvester Company of America. See the I H C local agent, or, write at once to the nearest branch house for full particulars on both horse and tractor-drawn plows.

Western Canadian Branches

#### INTERNATIONAL HARVESTER COMPANY OF AMERICA

(INCORPORATED)

AT

BRANDON, MAN.  
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REGINA, SASK.

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WEYBURN, SASK.

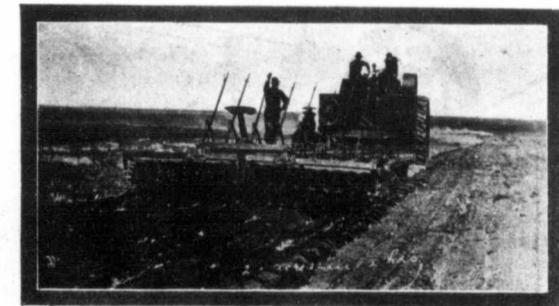
WINNIPEG, MAN.  
YORKTON, SASK.

gallons. The kerosene used cost me 11½c. per gallon. Gasoline was used to start with. That, I believe, cost me 14c. or 15c. per gallon. We used about ¼ gallon of Standard gas engine oil to oil the engine per acre; this cost me about 25c. per gallon. Besides this we used some hard oil. I estimate the oil cost altogether about 45c. per acre. I got \$1.75 per acre for this plowing, and figure I had close to a dollar per acre for the wear and tear and interest on the rig; which I am sure paid for it and left me a little profit.

Since I came to Canada I have not done a great deal of plowing and breaking. The first year I was here (1910) was so dry that breaking was next to impossible. In 1911 we had a very good breaking season. But as I had to do the seeding on my farm besides holding down a home-stead, it cut the season short. Besides this I was short of help. I broke 200 acres all alone. Part of this was very difficult breaking. In fact, so bad, that two

steam plowing outfits gave it up for a bad job. The first outfit broke quite a little, but

they broke the nicest part of the land and then quit, as they had not made enough to pay all the expenses. The second outfit, a brand new one, did not complete the first round. With the knowledge of the experience the others had had, I tackled the job not over confident of the re-



Case engine Cockshutt plow

FIGURE 5 SEE PAGE 5

sult, yet believing I could do something.

This particular piece of land (640 acres) had also been tried by parties using horse drawn plows. One of them, a neighbor of mine, told me I would not make any money there. Others said it was no use to try it. After starting on the work, I had several visitors, some of

those that had worked with horses there while the steamers were doing their big stunt. Two of these, at least, I remember making the remark that I was putting the steamers to shame. My reply was, "Oh, I have not done much," which was very true. I was using a 6-furrow gang which I had made out of

the two three furrow gangs sold with the engine. I had made it somewhat on the plan of the modern engine gang, with two beams together, and lifted with one lever. Before I went on to this job I had broken about a day at home, and had the plows adjusted so as to work nicely. But when I got into this ground things did not run very smooth-

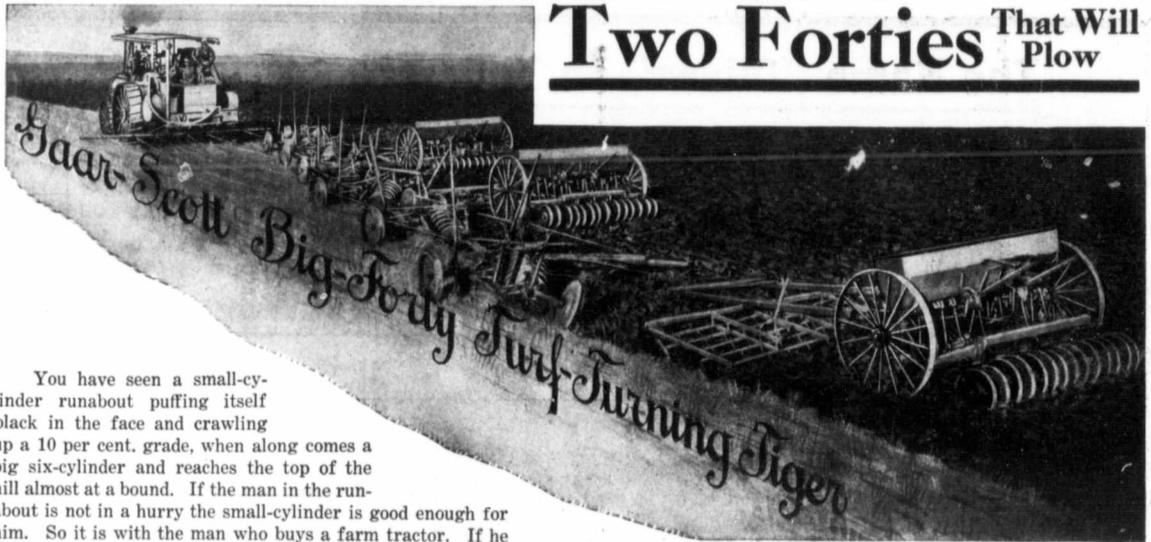
ly. The plows did not prove sufficiently strong to stand the strain they were put to in this kind of work. Rolling coulters would occasionally get broken or bent, and I came to the conclusion that for bad breaking they were a nuisance. The land was full of what is usually called buffalo wallows. This consists of spots of lower ground on which nothing grows and are level, but around the edges the ground rises abruptly about one foot. Around these spots was a gumbo soil, having an exceptionally heavy and tough sod. When the plows got onto these spots they would not stay in the ground unless very sharp. This made it necessary to give the plows a great deal of "suck." This is a term used to designate the tendency of plows to go deep into the ground.

When the plows got into the heavy sod around the bare spots they had so much suck that they would sometimes shear off ½inch bolts in the connection between the wheels and levers.

It would also sometimes bend parts. So it will be apparent that I had several stops and de-



# Two Forties That Will Plow



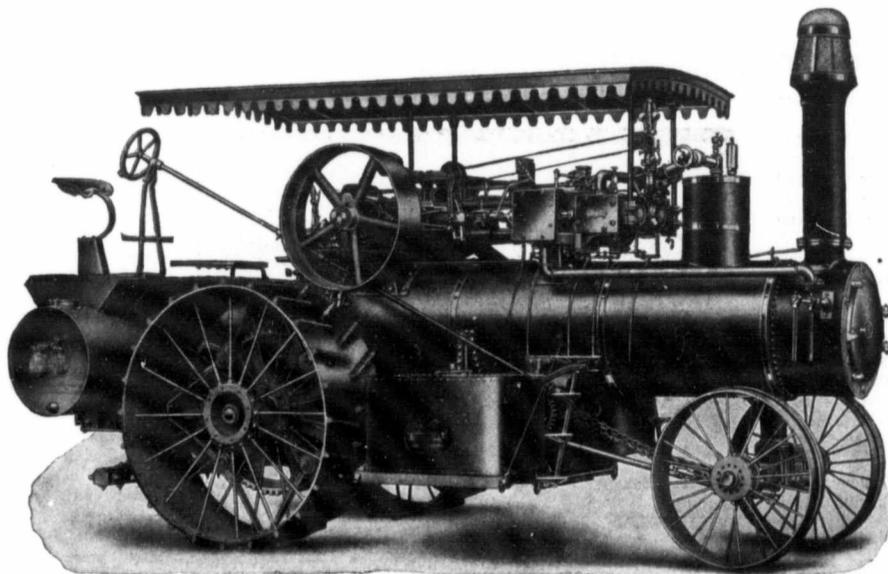
You have seen a small-cylinder runabout puffing itself black in the face and crawling up a 10 per cent. grade, when along comes a big six-cylinder and reaches the top of the hill almost at a bound. If the man in the runabout is not in a hurry the small-cylinder is good enough for him. So it is with the man who buys a farm tractor. If he doesn't care to do big plowing—no need to buy a Gaar-Scott Big Forty steam tractor, because it is built to plow your *limit*.

THRESHING  
**Tigerbilt**  
MACHINERY

Thousands WHO NEVER PLOWED WITH A TRACTOR will line up with the "progressives" in agriculture this spring and hundreds of orders booked for early delivery tell us that more men than ever before are going in for *big plowing*.

These early orders show another thing clearly: buyers are getting big engines—*big* like the Big Forty—*big* enough to pull all the plows they will ever want to pull—*big* enough to do this without waste in fuel and wear that comes from overloading.

George E. Sedore, at Colby, Kan., sent us the above photograph. It shows his Big Forty drawing discs, harrows and drills—a 25-foot strip—averaging 72 acres a day. This is capacity to the limit, isn't it? But, have you ever heard anything to compare with this persistent up-and-at-it-every-day endurance? "I have plowed now, counting sod, old ground, and stubble fields, a little more than 13,000 acres, and the boiler and engine parts look like they are good for thousands of acres more." At a low average saving of a dollar an acre compared with animal tillage this engine has already saved \$13,000. A smaller tractor might not show so great a saving. The cost of operating and attendance would be practically the same as for the large engine—fuel not a great deal less—the acreage tilled much smaller.



There is not another tractor like this under the sun except another Big Forty. It's different in its quick-steaming, well-made boiler; its four (double tandem compound) cylinders; its evenly balanced, strong crank shaft running in four journals; and the distinctive style of its rear-mounted traction gearing of steel and semi-steel.

We would rather demonstrate all this to you than merely tell it. We will do it if you give us the chance. Write now and rush the season; don't let the season rush you.

# Your Limit



This tractor is made for the man who has been waiting for something bigger, better and more powerful than has heretofore been achieved in the Gas Tractor world.

The four big cylinders  $7\frac{3}{4}'' \times 10''$  guarantee every pound of power claimed. The cylinders are generously jacketed to give abundant circulation wherever needed and especially over the cylinder head and the interchangeable valves. Some of these tractors have plowed 1200 acres or more without the necessity of touching any one of the valves. They cannot run dry, heat and cut with the most ordinary care.

The radiator is a distinctive type — nothing like it ever made. Any of its forty-eight independent, removable sections may be taken out for repairing or replacing and the engine kept running.

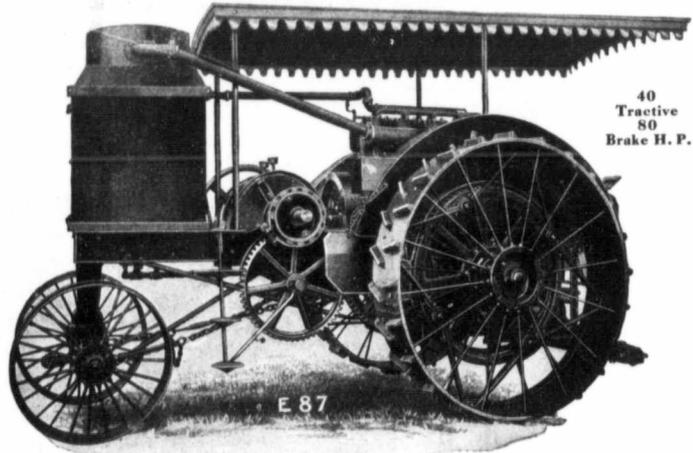
The strong frame is a unit structure (no cut-and-splice work) made from single-piece, heavy 9" steel channels — reinforced by  $\frac{3}{8}''$  steel plates the full width of channels braced by  $1\frac{1}{4}''$  steel truss rods — put together with bolts and lock nuts.

The heavy steel axle and large steel wheels are both provided with bushings. The transmission is direct, steady and positive, with the fewest parts and least friction.

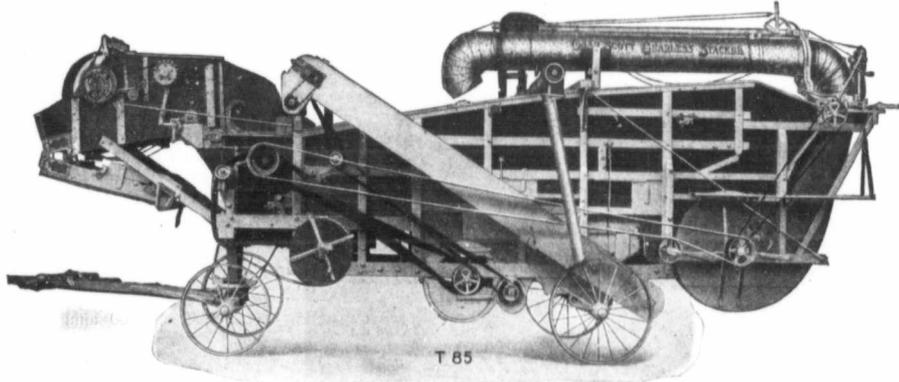
The double-disc clutch is operated by a single lever that controls both motions. It is a safe and efficient clutch of special design and fully protected by our own patent.

The popularity of these engines and the heavy demand for spring plowing keep our special Gas Engine Factory working night and day.

Send for new *Tigerpull* catalogue, just off the press.



40  
Tractive  
80  
Brake H. P.



T 85

## The 1912 Additions to the Threshing Tiger Family are Gaar-Scott Junior Separators

Sizes 20" x 40" — 24" x 44", both with large 16-bar cylinder — the largest cylinder ever put into a small thresher. This feature and proportionately large threshing and cleaning parts make them the only small-size big-capacity threshers on the market.

They are so light running that an 8 or 10 h. p. steam engine or a properly-rated 15 h. p. oil or gasoline engine will make them hum. With sufficient power they are good for three bushels of wheat a minute.

### Some New Stripes on the Threshing Tigers—Both Big and Little

A Steel Grain Pan.

Auger conveyors at both the tailings end and the cylinder end of the separator.

A generous increase in width of straw racks so that separation will not be crowded, no matter what kind of straw you are threshing.

Large 16-bar cylinder and new model extra-strength frame in every machine from the smallest to the largest.

These add to the long life of the Gaar-Scott separator; its capacity; and its "get-all-the-grain" qualities.

The Gaar-Scott 77th. Annual Catalog shows what three-quarters-of-a-century's efforts concentrated on perfecting mechanical threshing has accomplished. Write for it.

The Tiger Thresher Line is made complete by the OILTURN Motor — 30, 45 and 60 brake horse-power — stationary and portable — and the Gaar-Scott-Falk stationary and portable kerosene engines in smaller sizes — 3, 5, 10 and 15 h. p. — for small threshing and all belt-power work.

We have a new Catalog — just off the press — that tells about these safe, cheap, kerosene engines. Ask for it, too.

## The Gaar-Scott Tiger Line M. RUMELY COMPANY

3943 Rose Sreet, Regina, Sask.  
3943 Clay Street, Calgary, Alta.

3943 Fay Street, Winnipeg, Man.

3943 Scott Street, Saskatoon, Sask.  
3943 Edward Street, Toronto, Ont.



lays. If I had the regular engine gangs, I should have had very little trouble in this way.

After I had plowed for ten days it set in with rainy weather, filling all these pot holes with water, so I pulled home. Here I had nice land to break and things ran smoothly again. The price I got for the breaking was \$3.50, which was 50c. over the usual price. But that 50c. was well earned.

Towards the end it was getting too dry, so I could make only ten miles between sharpening shares. If the ground had been wetter I could have done much better. I estimate oil cost me fully one dollar per acre, and the wear and sharpening of shears amounted to about 35c. per acre.

Yours truly,

M. O. Arnegard.  
Whitla, Alta.

**Experience Necessary.**

In reply to your letter with regards to my experience in traction plowing, I wish to say that I have a Hart-Parr 22 traction and 45 break horse power engine. The land in this district is very heavy gumbo, and in consequence we pull five P & O 14-inch plows in breaking and six in stubble.

We have never done any seeding with the engine yet, but we keep eight horses for that purpose. We pull three sections of harrows behind the plows on summer fallow and stubble. We use from a barrel to a barrel and a half of fuel per day of engine kerosene, and find that we get a lot more power out of the engine when using kerosene than we do when using gasoline. We use about a barrel of water a day plowing, using the water to mix with the fuel as the engine is cooled with oil, so we don't have to use any for that. I believe it is very much harder on an engine plowing than it is threshing, because when an engine is plowing it is under a constant strain all the time, and then travelling it causes more wear on the gears, etc.

We got our engine in the fall of 1910, and I had never had any experience with one before that date so I went to town and we started home with it, but when we got about half a mile from town it stopped, and I



looked all over it to find out what was the matter, but of course I couldn't find out what was

the matter, so we phoned out to a neighbor who had had an engine for a season, and he came and adjusted it, and we never stopped again until we had gotten home, which was 14 miles. I have found out since

chines for the last 14 years, also five years at saw-mill work.

Our engine is a Gaar-Scott 33 horse power tandem compound—two live steam and two low pressure. I can use it as a four live steam, which gives it

reservoir. Of course, the municipality provides these.

Our plows are Cock-shutt 8-bottoms. We got these for a 25 horse power engine, but since then we got a 33 horse power.

We employ three men for plowing—fireman, tankman and a coal man. I, myself, run the engine and my brother runs the plows, looks after the shears and bolts and oiling parts, for we never stop only for water and coal, and that is every three miles of a run, for we carry 21 barrels of water and 1,250 lbs. of coal. Of course, we do not use all the coal and water, but, however, we have not enough water to run another mile.

We use four horses. One team draws coal and one team draws water. We draw coal from town seven miles distant. At times it is a little closer, and at other times it is up to ten miles. We draw one car of coal during winter months, so we can do our spring plowing and discing and seeding, and also have the other teams to help around the farm. We only use one team on our land, as we have a reservoir on our place, so the team has lots of time to bring coal and water to us while we were working.

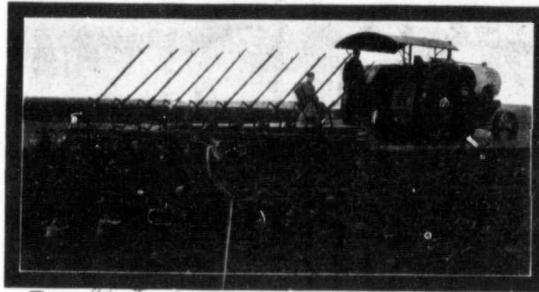
We use about 2,500 to 3,000 pounds per day's run—that is we run from 6.00 a.m. to 9.00 p.m., for we are out to make money, not for pleasure.

We pay our men \$50 a month and board; good wages and lots to do is our motto. Each man does his work. If he draws coal he must keep us going at a mile or ten miles. He may have two hours work today and 16 tomorrow. I never had a hard time to get help. I always can get lots of men in our neighborhood.

We use from six to eight tanks of water per day. Our tanks are all 16-barrel tanks, for we have good roads and no hills.

I do not consider it much harder on an engine plowing than threshing. One thing about plowing, do not be afraid of oil. Give it lots of it, for oil is cheaper than machinery. I have plowed two years with our engine, and I never had a leaky flue nor break of any account except some oil cups, which amounted to about \$2.

We plow from 25 to 28 acres per day with eight bottoms, and draw a packer behind them, as it pays to pack



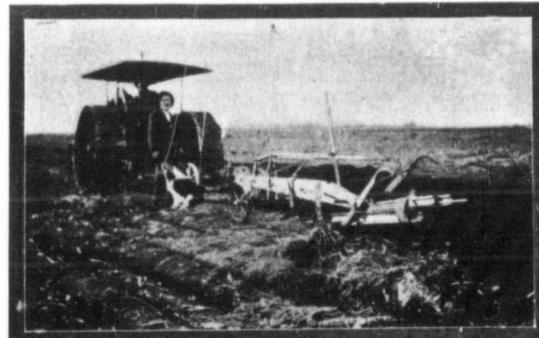
Twin City tractor Big Dutchman plow

FIGURE 6 SEE PAGE 5

that the longer a person is around a gas engine the more he can find out to operate about it, and the only way to learn how to operate one successfully is to get right on to the engine and

50 horse power, but only in emergency and mud holes, for perhaps 10 or 15 minutes at a time.

I, myself, think that steam is the best, for it is always ready



I.H.C. tractor John Deere Scotch Breaker

FIGURE 7 SEE PAGE 5

try to run it yourself from the start.

Hoping this letter will prove satisfactory, I remain,

Yours truly,

Edward Howlett.

Wilcox, Sask.

for you when you give it the fire and water. It is not like the gasoline, needing an expert every two or three days. We have one here that runs about three days each week, while a steam engine can be run any time.



Tichols + Shepard John Deere plow

FIGURE 8 SEE PAGE 5

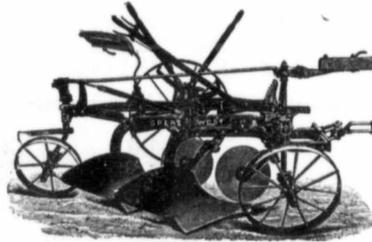
**Does Not Believe in the Oil Engine.**

Your letter regarding your plowing number at hand. I will give you some of my experiences to the best of my ability. I have been around threshing ma-

We have no water, but we have now five reservoirs in our municipality, so we are at farthest 2 1/2 miles from water. The snow in the spring gives us lots of water till freeze up and after, and it only costs about \$50 per



Cypress River, Man.  
 I have purchased a 12-inch "Great West" Gang Plow, which I have given a thorough test in both stubble and sod. I could not recommend this plow too highly. Does good work and has light draft in all kinds of soil. I am well satisfied.  
 (Sgd.) WM. J. TOWNSEND.



Frobisher, Sask.  
 The "Great West" 14-inch Gang Plow purchased from your agents here has given me entire satisfaction. It is strongly built, has light draft, and does first-class work in all kinds of plowing. I have tested it on some rough and stony ground and it fills the bill excellently.  
 (Sgd.) R. LINDSAY VANCE.

# "GREAT WEST" PLOWS

12 and 14 inch Gangs

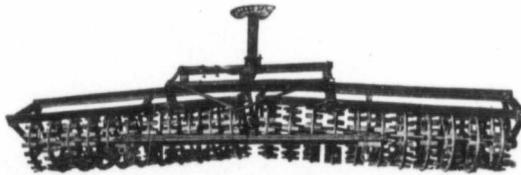
16 inch Sulky

**New 1912 Plow** High beams give ample clearance in long stubble and weeds. Set off draw clevis gives horses plenty of room. Dust proof bearings on wheels keeps the oil in and the dust out. Four point rest for beams. Beam bracing runs down into rear head. Supplied with either long or short Boards, and boards are so shaped that they clean perfectly in all soils.

# NEW 1912 PACKER

12 Foot

15 Foot



High oscillating frame, perfectly balanced on axles, eliminates all pole weight.

Axles and wheels revolve independently, ensuring light draft, and no wearing of the hub bearings.

Teulon, Man.  
 I wish to say that the "Great West" Gang which I purchased from you has given entire satisfaction, and I would certainly recommend it to anyone requiring a first-class plow.  
 (Sgd.) WILLIAM MUDD.



Rivers, Man.  
 The "Great West" Gang Plow I bought from your agent here gives me every satisfaction. It has light draft and cleans well. Am pleased to recommend it to intending buyers.  
 (Sgd.) FRANK FENWICK



**MASSEY-HARRIS CO.**  
 LIMITED

right after plowing. With horses you can make from two to four miles per ten hours more when it is packed than you could without it being packed, for your horses can walk easier.

We get 50 cents per acre for packing and \$4.50 per acre for plowing, making a total of \$5.00 per acre.

Our expense sheet would show about as follows:

Twenty-five acres at \$5 per acre plowed and packed, \$125.  
 2 men at \$2 per day . . . \$4.00  
 1 plowman at \$2.50 per day 2.50  
 1 engineer at \$7 per day 7.00  
 1 fireman at \$2.50 per day 2.50

2 teams at \$5 per day.. 5.00  
 2 gals cylinder oil . . . . 2.00  
 1 gal. machine oil . . . . .75  
 1 gal. hard oil . . . . . 25  
 Coal, "Crows Nest" . . . 10.00  
 ————  
 \$34.00  
 ————  
 To daily earnings . . . . 125.00  
 To expenses . . . . .34.00  
 ————  
 To profit for outfit . . . . \$91.00

Steam is used in our neighborhood most. There are only two gasoline outfits—an International Harvester 20 horse power, which draws three plows and a Fairbanks-Morse 25 horse power

which draws six plows. I have made one trip myself in 17 minutes with a 25 horse power Gaar-Scott Simple, and drew 6 plows, while the gasoline made it in 30 minutes. Of course, it was good and level, with no hummocks. We require from 5 to 6 horses for plowing in the land with a horse sulky plow, as this land is very heavy.

We draw packer, discs, harrow and drills. First we take the disc, harrows and drills, and the packer last. We have a hitch made of 8 x 8 timber, with wheels on the ends. A 6-inch steel plate is bolted to the 8 x 8, then 6 x 6 and wheel are be-

tween them just like a wagon in a way, but they are under the long 8 x 8. We also have a tongue well braced from both sides so it will be solid; it is about 8 feet long, and is attached to the drawbar, from which all this machinery is pulled. This truck hitch is about 16 feet long.

My way of using men is to give them good wages and lots to do and eat. Feed him well and treat him well and you will have a good outfit of men.

When threshing we run from six to eight. We breakfast at five, lunch at nine, dinner at twelve, lunch at five, supper at



8.30. We give them sandwiches and biscuits, and tea, cake, and pies, also coffee. Of

course you must change this menu every day; such as ham sandwiches and cheese sandwiches or beef sandwiches, so they do not get tired of one thing.

Of course, we never do give potatoes or hot meat at lunch time.

I always use noon for setting the machine, for it saves about 30 minutes. The fireman eats after we set, and when I start I fire myself till he comes back, and, if it is close, we are ready for work as soon as the hour is up. I am always at the throttle while running. An engineer has no business running around and talking to this and that man, etc. Your work is what you get your big pay for, for there are things you see in front of separator that the others don't see. Perhaps the separator man is oiling around the rear end and if you look after the things you can avoid lots of bad break downs and you can also look after your engine, for you can sit above all your machinery while threshing. Always see that your tanks are kept clean and the water not too low in the tender, and also look after your oils.

I think \$10 will give you a good assortment of bolts and nuts and washers. Also keep a ladel and Babbitt handy in case you might need it, and an extra feeder belt and dick belts, for they are the ones that go the quickest.

I always take all the insides of the separator apart in the fall before starting and look over everything that is likely to wear. If worn I replace them with new ones, as you will save money by so doing.

Yours truly,  
Netzel Bros.

**Believes in Having Own Blacksmith Outfit.**

Your enquiry regarding our experience in power plowing and other power work was received some time ago. Our experience in this line covers a period of two years, and we will relate the same the best we can.

In the early spring of 1910 we purchased a Hart-Parr oil tractor, 45 break, 22 tractive horse power, and also an eight bottom



John Deere engine gang. As we had some contracts to do packing and plowing, we got a heavy

corrugated packer to attach behind the plows. We built us a car on trucks, in which the crew slept and boarded. We would like to say that a car of some kind is a necessity with almost any plowing outfit, as it

\$4 per acre for plowing and packing and \$3.50 for plowing. Would like to say that we consider the packer well worth 50c. an acre.

We found at once that a great deal of the power depended on

commenced using this that our gearing wore smooth and didn't wear nearly so fast. Dope is not good as it collects the dirt and grit and holds it right on the gears.



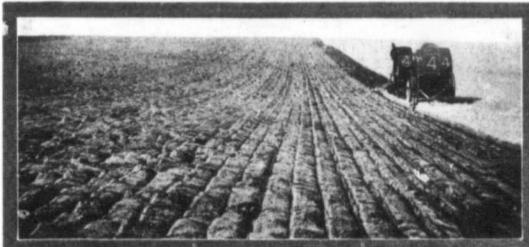
Big 4 (30) tractor J.I. Case plow

FIGURE 9 SEE PAGE 5

is impossible to be very near home all the time, and it pays to have the crew right on the job.

In the season of 1910 our crew consisted of three men. One of us ran the engine and

having the timer set right, also in using the right amount of fuel and water. Would like to say that anyone running an internal combustion engine on dry cells would find a great deal of difference in the power if they



Big 4 (30) tractor John Deere plow

FIGURE 10 SEE PAGE 5

tended the plows and one steered the engine. We hired one man to drive our team hauling oil, water, etc., and do other odd jobs which needed doing.

We commenced plowing about March 10th, and after we got

would get a magneto, as the magnets give a much stronger spark and it is the strong spark that makes the quick explosion, and that is what counts; also, use the very best cylinder oil that can be had. It will pay in



Sawyer-Massey John Deere plow

FIGURE 11 SEE PAGE 5

the plows adjusted and got a little used to the engine, everything went along fine. We did breaking from 4 to 4½ inches deep, and found that six plows and the packer made a good load for the engine. We received

the end. It also pays to have the gearing lubricated well, and we found that cheap castor oil was the best thing we could get for this purpose. It strings around on the gears and stays on. We noticed that after we

We aimed to keep the engine running most of the time during the day, and by changing off for our meals found that we could get in some good runs. We could run the engine for five hours without a stop when everything was working right.

We run very well for nearly three weeks, when the engine began to lose its power, so that it would not pull its load at all. We did everything we could think of, and still it would not run right, so one of us went for an expert. After a layoff of two days we got a man, and he found that the valves were leaking and needed re-grinding, also the pistons were so dirty that they leaked badly. On taking them out we found that carbon had collected under the rings so they could not work, and had worn some of them badly.

This was our first lesson, and it taught us to watch the compression of the engine very closely, and in heavy plowing, and using kerosene as fuel, to remove the pistons, about every eight or ten days and thoroughly clean them and also to be very careful that the valves were working right. After having a man out again to show us how to keep the platinum contact points on the spark coils set right, we didn't bother anybody or an expert any more.

We had two very bad breaks which we blamed the makers for. After a month's run, we broke the top half of the left cylinder and flange, where it bolts on the crank case entirely off. We had to send to the factory for a new cylinder, and were laid off three weeks waiting for it. We thought there was a flaw in the broken cylinder and so looked for no other trouble when we put the new one on. When we had worked about the same time we again broke the same cylinder in exactly the same way. This made us think something was wrong, and, after another layoff of a month, we got another cylinder, and when we put it on we found that the anchor beam which the rear end of the cylinder rests on was quarter of an inch lower than the end bolted on to the crank case. This made a strain on the front end of cylinder, which broke



# 33 Years' Engine Building Experience

## Backs This Great Oil Tractor



15-30 FAIRBANKS-MORSE OIL TRACTOR

The proper way to judge a tractor is by the engine that powers it.

The engine used in the construction of the Fairbanks-Morse Oil Tractor embodies the experience of more than a quarter of a century.

We had learned how to build engines before we tackled the tractor problem. Our task has been merely to apply the engine, already well known and widely used, to the conditions to be met in tractor practice.

The Fairbanks-Morse Oil Tractor measures fully up to the engine that drives it. It is a simple, easily controlled, powerfully constructed machine that runs smoothly and develops more than full rated power on KEROSENE, GASOLINE, NAPHTHA OR OILS AS LOW GRADE AS 39 DEGREES BAUME.

**WE GUARANTEE  
IT ABSOLUTELY**

**FARMERS ARE ALREADY FAMILIAR  
WITH THE ENGINE IN THIS TRACTOR**

**COUPON** C. T. 4-12.  
(Send it to our nearest office.)  
The **Canadian Fairbanks-Morse Co. Limited**  
Please send me catalogue describing  
your 15-30 H. P. Oil Tractor.  
Name .....  
Address .....

# THE Canadian Fairbanks-Morse Co. Limited

**Winnipeg                      Saskatoon                      Calgary**  
**Montreal   St. John      Ottawa   Toronto      Vancouver   Victoria**



it. We put a large shim between the cylinder and beam and had no further trouble with it.

We plowed some 1,200 acres in the season of 1910, and had it not been for so many breakdowns could have reported a much better record for this season.

It will be remembered, however, that the season of 1910 was very dry, which undoubtedly had much to do with it. To strike an average for the season, would put fuel consumption at 4 3/4 gallons of kerosene, 1/4 gallon of gasoline and 4 gallons of water to the acre.

Kerosene cost us 25 cents per gallon at Taber and gasoline 29 3/4 cents. Our expenses per acre were about as follows:

Fuel .....	\$1.05
Oils and greases .....	.15
Man, \$2 per day .....	.15
	-----
	\$1.35

Plow share, sharpening new shares .....	\$1.35
Repairs and blacksmith works; wages for team and boarding car expenses .....	1.25
	-----
	\$2.60

We had a few small breaks on plows, waggons, etc., and these with hardware sundries too numerous to mention brought our actual expenses to about \$2.00 per acre, and our wages and interest on our investment to come from the balance.

In the spring of 1911 we had our half section to disc and get in shape for seeding, so we got us a set of eight discs and 32 feet of drag harrows. For a hitch we got a six inch steel I beam 24 feet long. We bored four holes, one on each end and one 8 feet from each of these, and put clevises in them. We then bored three holes in the centre of the beam and bolted it solidly to the draw bar of the engine. Our discs were out-thrown and inthrow, and we intended to run them directly behind one another. That is, all out-throw discs in front and the in-throw ones behind them.

We put tongues 8 feet long respectively in the four out-throws and put a clevis in the end of each. These



we fastened to the clevis in the beam in this manner: Disc, with 8 feet tongue on

one end, disc with 4 feet tongue next, other disc with 8 feet tongue next, and disc with 4 feet tongue on the other end of the beam.

Now to the in-throw discs, we fastened 6 feet tongues all

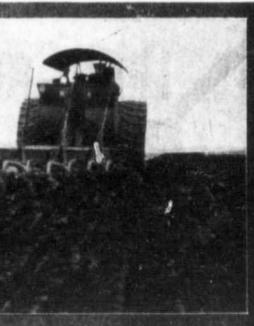


Reo's Engine JOHN DEER plow

around, and on the end of each tongue we bolted a piece of 1/2 in. by 2 in. iron. In the other end of each piece of iron we bored holes and bolted securely to the outthrow disc it was to

desired. You will find a sketch enclosed which will give a clearer idea of it.

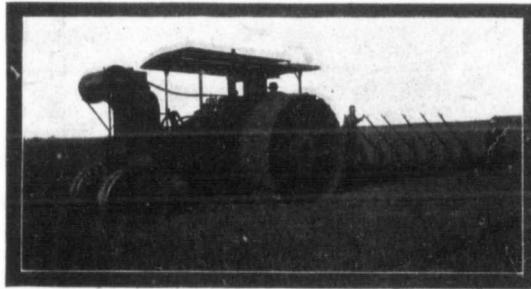
We had so much trouble in 1910 about getting our blacksmith work done that we decided to get an outfit of our own,



JOHN DEER plow

which enabled us to fix things as we wanted them. We disced and harrowed over 700 acres and had practically no trouble at all.

We hired a blacksmith at \$4

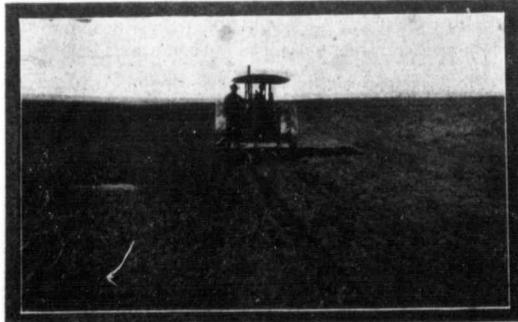


MINNEAPOLIS Tractor P. O. Plow

follow. We bolted the draw beams of the harrows together and, taking different length chains, fastened them to the rear discs.

This hitch is very simple, and we found it very effective also.

per day, and found that our blacksmith work cost us about the same as it did in 1910, but saved us a great many trips to town, and when anything went wrong it didn't take long to get it fixed, so we are sure it paid



I.H.C. tractor JOHN DEER plow

The way the outfit is arranged it does excellent work, and is easy to handle. One can turn as short as the engine will if desired. There could also be other things such, as drills, packers, etc., fastened to this hitch if

us to have our blacksmith outfit.

After we finished discing we plowed about 600 acres, and had no serious breakdowns. We never broke a spoke out of the drive wheels, and in 1910 we

broke about fifty of them. We made more money in 1911 than we did in 1910, notwithstanding we did not do nearly so much work.



On September 15th, we commenced threshing, and quit on December 22nd. Our separator was a Nichols & Shepard 36 x 60, and we found it a good load for the engine. We carried cook outfit and bunk car, and eleven stook teams and two spike pitchers, and when the weather permitted we threshed from 2,000 to 2,500 bushels per day, but as we had so much bad weather there was not many days that we did this.

After settling up we found that we had netted very little, and we doubted very much if any thresherman in this part of the country made anything last fall. We would like to say though that threshing is nowhere near as hard on an engine as plowing.

We are always interested in the many valuable articles in your magazine, and wish you every success.

Yours truly,  
Bennett Bros.  
Purple Springs, Alta.

**Had Some Trouble But is Staying by the Game.**

Yours received re traction plowing. I may just say last season was my first experience of tracting plowing. While last season was a poor wet season, we did fairly well, but not as well as we should have done, as our engine gave us quite a lot of trouble, a good deal more than the ordinary farmer would put up with.

I still have quarter interest in the one that we operated last season, but I have ordered a new one for this coming season.

I am perfectly satisfied that traction plowing, for all interested, is away ahead of horse plowing, yet I fully realize that the farmer cannot do away entirely with the old stand-by, horses. There is one thing, however, in the engine's favor. When the season's work is done, there is no further expense until the next season starts, and it is my firm belief that in a very few years that the larger farmers will be farming on a more extensive scale with probably quarter the horse help.

We did nothing else except breaking, and was at it six months, and broke about 1,500 acres, deep plow-





# Sold On Approval

WHEN the manufacturer can afford to sell a farm tractor on approval, there's one thing certain--that he comes pretty near knowing that it will give satisfaction. He could give no more positive proof of his confidence in it. The Big Four "30" is the only tractor ever sold on approval. The farmer gives it a thorough trial in his own fields and does not pay a cent for it until he has proved to his own satisfaction that it will do what is claimed for it. That's a pretty good way to buy a tractor.

The Big Four "30" uses either gasoline or kerosene with wonderful economy and efficiency. It has won the Gold Medal in the World's Motor Competition at Winnipeg two years consecutively and has broken all world's farming records. Its self-steering device—an exclusive feature of

The Big Four "30" easily adds \$1,000 to its worth. In breaking or plowing, this self-steering device automatically guides the engine in a course absolutely parallel with the last furrow turned, so that the operator does not have to touch the steering wheel from one end of the furrow to the other.

Write for our new booklet, "Some 1911 Records." It tells you what other farmers actually did with The Big Four "30" during the Season of 1911. You want facts, not theories—this booklet gives them to you. Send for this Book NOW.



## Gas Traction Company,

First and Largest Builder in the World of Four Cylinder Farm Tractors

156 Princess St., Winnipeg, Man.

Canadian Factory, WINNIPEG.

General Office and Factory, Minneapolis, Minn., U. S. A.





ing. Our engine is a 30 x 60 Rumely Oil Pull, and our plow is an eight furrow 14-inch John

Deere.

Men employed: Engineer, plowman, and one man and team. Fuel used for deep breaking, 4 gallons of kerosene per acre and gasoline for starting purposes. The oil we used was Silver Star Re water, about one-third as much water as kerosene.

I think with an engine built for plowing, that it is harder on the engine than threshing.

Cost per acre gasoline, lubricating oil and all expenses, except natural wear, \$1.40 to \$1.50 per acre.

I have no experience whatever in pulling anything except the plow above-mentioned. There is no steam plowing done in this neighborhood.

I trust the foregoing is just what you want. If not, kindly let me know and I will try and have it rectified for you. I remain,

Yours truly,

James Foster.

Gladstone, Man.

Diary of a Day's Run.

As you will be issuing your annual traction plowing number of The Canadian Thresherman and Farmer, in which paper I always take great interest, I thought it might not be amiss if I would give my experience as a traction plowman for the benefit of some of your interested readers, who may be contemplating power plowing.

My outfit consists of a J. I. Case 25 horse power steam engine, fitted with a Gould balance valve, contractor's tank, and extension rims, pulling a Cockshutt eight furrow engine gang. As our soil is dry and heavy in the breaking season, we averaged about 28 acres per day. If the land were free from stone, we would find no trouble to average 35 acres per day, which amount we have on several occasions been able to reach and pass when conditions were favorable. For fuel we use Hillcrest or American steam coal, using 200 pounds of Hillcrest, or 150 pounds American steam coal per acre, and about 175 gallons of water per acre.

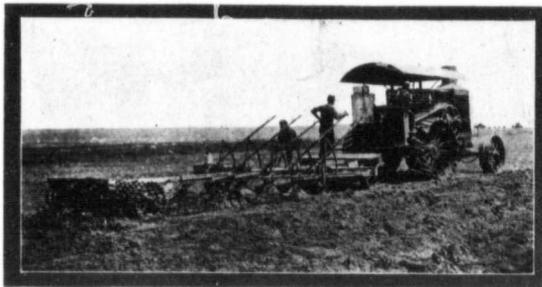
To operate this rig, we have an engineer, fireman and night watchman, and coal and water teams and cook.

To give

you some idea of our day's work, suppose you come along with us for a day. We have arrived the evening before at the job on which we are to start, and we now place the rig in charge of the nightwatchman,

miles per hour, besides the time required for taking on water and coal and oiling engine. We have lunch at 8.30 o'clock and 4.30 o'clock. Dinner at noon and supper at eight o'clock, or whatever time we get

the face of each driver. Apply the steam a little and the engine is on firm ground.



Hart-Parr tractor

FIGURE 15 SEE PAGE 5

Cockshutt plow

who gets to work, banks up the furnace fire, tightens up all nuts, and replaces any broken bolts. He also puts on a sharp set of shares, fills up all grease cups, cleans the flues and ash

to the end of the field, which might be a little before or after the time named. Our day's work being completed, we again give the rig over to the charge of the nightwatchman, who puts

When using this method, care should be taken by the engineer not to let the drivers go round too far, as the result would be to break the tank off. If we break a share or standard we have other ones at hand to replace the broken ones, and it only takes a few minutes to replace them, whereas if a man had to go to the end of the field, he might easily lose over half an hour. We find a crowbar a useful tool for a large number of purposes.

Our coal team makes one trip to town each day for coal, bringing back sharp shares and everything else required.

As regards cost per acre, I believe the more experience a man has, the cheaper he can do the work. The first season I ran the rig it cost \$3 per acre. Last year it cost \$2.50 per acre, and I believe that I can do the same work for \$2 this year.

During last season I broke 1,325 acres in 52 days, the best season's work done in this district by one rig. To make power plowing a success, the boss must understand everything about the rig. Keep some extra repairs on hand as time saved is money earned on a plowing rig.

I find that the only difference between plowing and threshing on an engine is the wear on gears and axles, which may be greatly eliminated by the liberal use of good oil and gear grease, good oil being one of the greatest remedies for keeping down heavy expense, as it frequently occurs that for the want of a little oil or grease a bearing or gear worth from \$5 to \$50 is completely ruined, and the heavy strain and jar to which the boiler is subjected to, owing to the unevenness of the ground, which may also be greatly reduced by careful driving over rough places.

With regard to whether the steam or oil tractor is the best, opinions differ, some men contending that steam gives the best satisfaction for breaking and oil for discing, drilling, harrowing, etc., while others say that the oil tractor is the best for all round farm work in this district. Each kind has about an equal share of admirers. For my part I think steam will be best until the oil tractor is a little more perfect, or



Sawyer-Massey

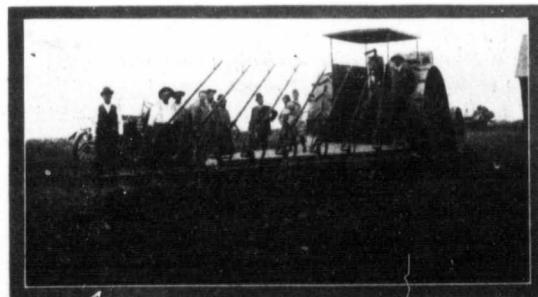
FIGURE 16 SEE PAGE 5

John Deere plow

pan, fills the bunkers with coal and the tender with water. At 3 o'clock he awakens the cook, who has the breakfast ready at 3.30 o'clock. By 4 o'clock the nightwatchman has steam up to the required pressure and all

everything in good order for the next day's work. At noon, while the crew are at dinner, the nightwatchman oils the engine and plow and attends to anything that requires attention.

In one of our coal boxes we



Flower City tractor

FIGURE 17 SEE PAGE 5

P.O. plow

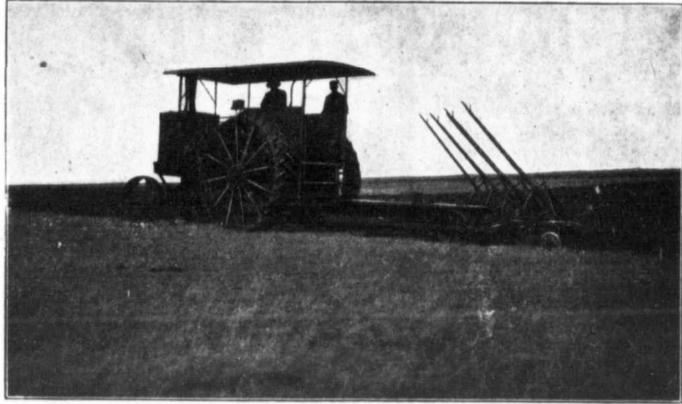
bearings of the engine and plows oiled, so that when the crew arrives everything is ready to start immediately. We generally travel about three miles per hour, and during the day's run we try to hold an average of two

carry extra shares, standards, two pieces of 6 x 6 timbers, two log chains, and a crowbar. If we have the misfortune to get the engine in a soft spot, and the drivers start to spin round, we chain a 6 x 6 timber across

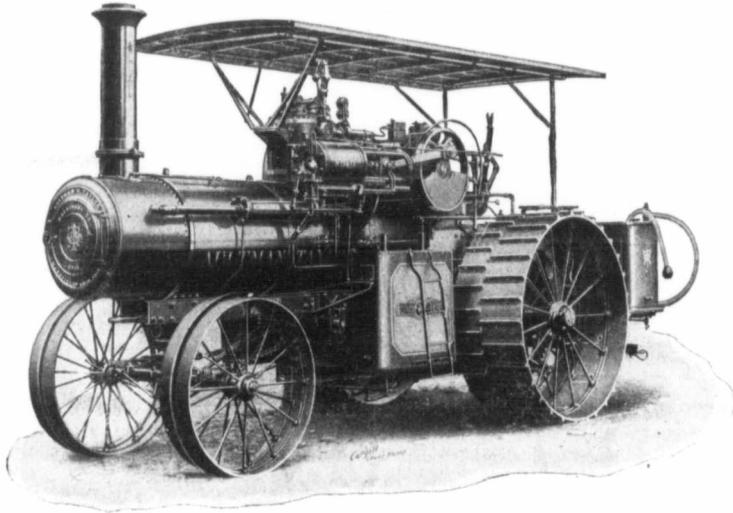


**A Line of Machinery which has stood the Test for Years and is to-day recognized by all progressive Threshermen as being the best that is built**

To do that Spring Breaking, you want a four cylinder "Aultman-Taylor." We are offering you something in the way of a gas tractor that has no equal. It is just the engine you want to reduce the cost of production. You will find it just as good for threshing, road grading, harvesting, seeding or harrowing as for plowing. Its especially high drivers and light weight enable it to do the work where heavier engines with smaller drivers are worthless. The Aultman-Taylor is started instantly with its Famous SELF STARTER, which not only saves annoyance and time, but saves **life** and **limb**. Remember the A. & T. has the only successful self-starting device. We could tell you lots of good points on this engine if space would permit. We ask you to investigate. Get into communication with us at once. We have something of interest for you. A postal card is all that is necessary.



Jno. Bell, Taber, Alta., Can. plowing with 30-60 Aultman-Taylor Gas Tractor

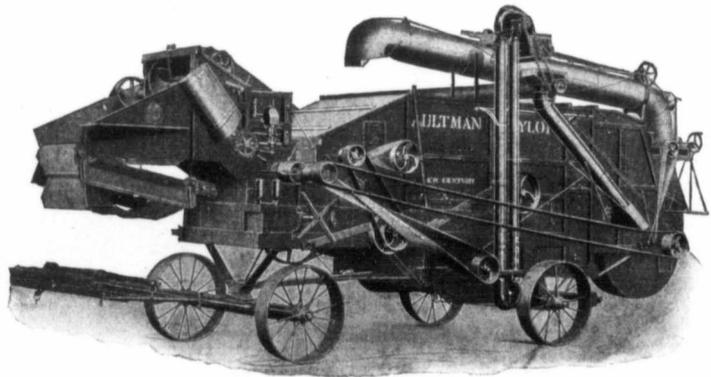


When purchasing a Steam Traction Engine, special attention should be given the manner of mounting engine and traction gearing to the boiler. In the "Aultman-Taylor," the engine and all traction gearing is mounted on an independent channel mounting. This is the proper method of construction and costs more, as everyone will concede, but it more than pays for itself in prolonging the life of the boiler.

Another feature to be given careful thought is the construction of a traction engine boiler. We feel safe in saying that in the "Aultman-Taylor" we are offering you the best traction engine boiler built. It has an exceptionally deep firebox, which prevents leaky flues and gives better combustion and more heating surface. Fire door and ash pit door openings are made by flanging the plates, thus eliminating the undesirable cast iron rings found in so many cheaply constructed boilers. These two points are liable to be overlooked when purchasing a traction engine, but they are of utmost importance and should not be overlooked.

**Our 1912 Catalogue just off the press. A postal card will bring you a Copy. Write to-day**

**The International Harvester Company of America, Canadian Sales Agents for "New Century" Separators.**



**The Aultman & Taylor Machinery Company**

**MANSFIELD, OHIO.**

**Sales Agencies: Minneapolis, Minn., Calgary, Alta., Regina, Sask., CANADA**



until men understand better how to operate them

As my experience is somewhat limited with regard to pulling discs, drills, harrows, etc., I will leave that subject for some one better qualified to give his experience.

Thanking you for taking up so much of your valuable space and time, and wishing your magazine every success, I remain,

Yours truly,  
Wm. S. Thompson.  
Wilkie, Sask.

**Some Trouble with the Wet, But Satisfied.**

Here's for the traction plowing number!

I have been trying to operate a 45 horse power Hart-Parr kesosene tractor with a six-bottom Cockshutt engine gang for two years, and my experience is about as rich with ups and downs as the next man's. I have had many break downs and "mired" downs, but the worst downs of all have been those without cause. To a novice a gas engine is generally down without cause, and this is why it is so hard to get them up again. It has kept me busy all the time, and I have had it busy some of the time. Thus assuring any gas-tractor-inclined brother that my path has been through plenty of thorns without roses, I shall relate the little accomplished in a few words.

In 1910 I broke about 900 acres, double discing and harrowing the same, pulling four 8-foot discs and 20 feet of harrows.

Last spring I began work by seeding the ground thus prepared, pulling two ten and one eleven foot drills, with 30 feet of harrow following the drills. With the seeding over I began breaking again, pulling a 7½ foot packer behind the plows, but on account of excessive rain, made slow progress. Day after day it was either too wet or too stormy to attempt anything, and much other time was lost digging and pulling out of the holes, so that I only broke about 700 acres, which was double discd and harrowed later.

On breaking I run night and day shifts, employing three men. It is also necessary to have a man and team about two half days per week to freight oil and water. In running I use about



two barrels each of kerosene and water, and five or ten gallons per

day of double shift. Counting nothing for depreciation of machinery, my breaking has cost about \$2.25 per acre.

As to threshing, the engine has driven a 34-inch Rumely and a 40-inch Case separator, both

correctly spaced they followed perfectly until the job was done. On making a round of three or four miles on a field no stop was necessary for filling up. From three to five minutes each half day was used for taking

instantly. On this A shaped frame a floor is laid which constitutes a truck where anything necessary for any kind of work may be carried.

I welcome every number of the Canadian Thresherman and Farmer, and especially the traction plowing number,

Yours truly,  
L. P. Schooling.  
Gleichen, Alta.

**Has Graduated into the Internal Combustion Class.**

During the summer of 1910 we ran a 32 horse power cross compound Reeves engine, pulling a ten bottom John Deere plow.

We ran for 63 working days, beginning June 14th and plowed 1,211 acres all through. During this time we were laid up for over a week with one break, besides others of less importance, which would bring our actual running time down to about 50 days.

We employed five men on the outfit, consisting of engineer, plowman, coal hauler, and two tank men. We hauled coal on an average of about nine miles, and found that it kept one man busy doing this and running errands. Our water haul averaged two miles or better, so we put on two teams and let one of the tankmen do the cooking. Our engineer did his own firing, as we had a steering device on the engine, which relieved him of all this work, except at ends or in rough places where the furrow was not good.

We used about 3,400 pounds of coal per day, using Pennsylvania coal, which cost here \$9.50. Eight or nine barrels of water would run one round of two miles.

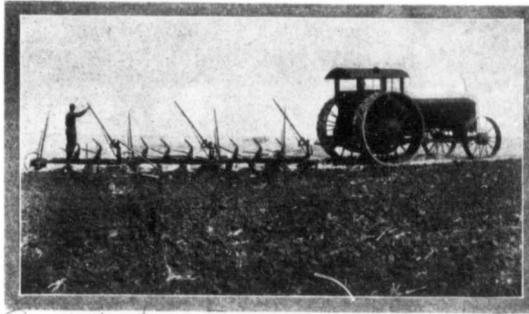
We kept very careful account of our expenses, and, counting in ourselves and teams at \$5 per day for man team, we found the cost per acre, not including repairs on machinery or depreciation, as follows:

Sundries, including sharpening shears, horse feed, etc. ....	\$123
Oils .....	51
Coal .....	667
Labor and teams .....	1,094
Board for five men .....	207

Total cost per acre ..... \$2,142

Late last fall we bought a 30 horse power Flour City gasoline tractor and an eight bottom John Deere plow.

We did very little except to get acquainted



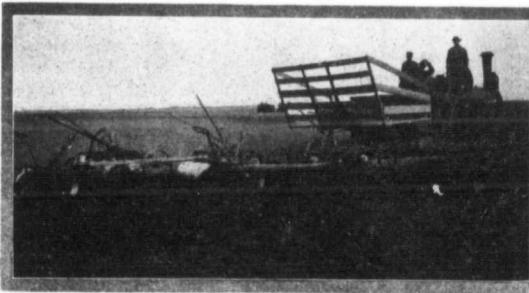
Pioneer tractor FIGURE 18 SEE PAGE 5 Emerson plow

of which it handled with ease. This is the lightest work my engine has done.

I prefer my tractor to horses on all the work to which it has been put. Breaking is killing on horses. The engine rolls

on grain, and this was the only necessary stop, and most of the time there was no stopping at all. Not only much ground was seeded in a day, but it was harrowed as well.

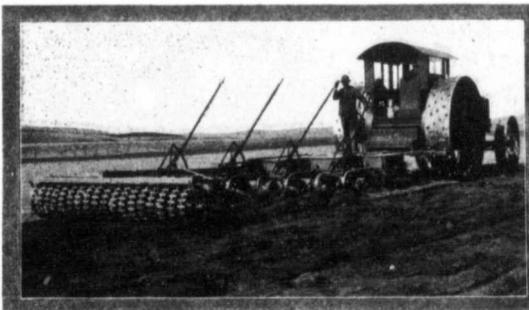
For all my hitches I use one



Case engine FIGURE 19 SEE PAGE 5 P.O. plow

along all day without turning, and all night if desired. When it comes to discing, I could not think of exchanging it for horses. It goes over the rough sod with even less strain than when breaking, making of it a soft

simple draw bar. It is 24 feet long, supported by two of my plow wheels directly under it, 3½ feet from each end. At the centre of the draw bar is a pole or tongue eight feet long firmly fastened at right angle. From

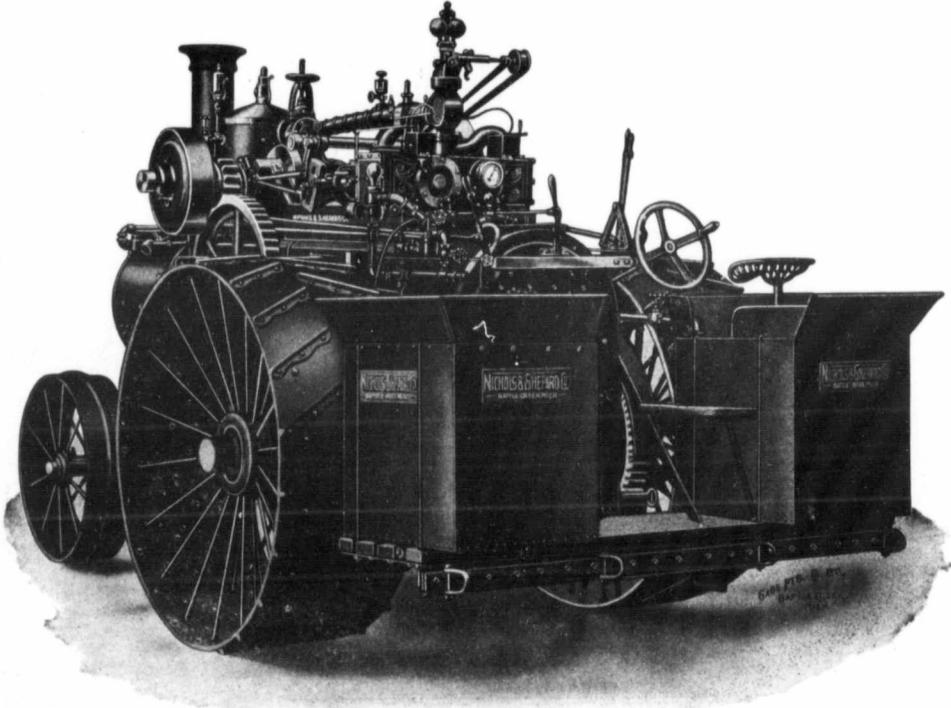


Pioneer tractor FIGURE 20 SEE PAGE 5 John Deere plow

cushion on which to travel, while the horse toils and stumbles along in the dust, meeting with an obstacle at almost every step. At seeding time last spring my engine was my best friend. Once the drills were cor-

near the free end of this pole on either side extends a strong brace back to within two feet of the end of the drawbar. By the free end of this pole all the machinery is coupled to or uncoupled from the engine almost

# The Nichols-Shepard Plow Engine is Different



NICHOLS-SHEPARD BIG DOUBLE CYLINDER PLOW ENGINE.

The Best Plow Engine is the Nichols & Shepard Double Cylinder.

It is the best Steam Tractor because it has two cylinders. There is always a push on the drive shaft.

It has the best boiler shell because it is full one-half inch thick, which cannot spring and loosen brackets like the old-fashioned thin plates.

It has large shafts and large boxes arranged for thorough lubrication.

It is side-mounted with only enough weight on the front wheels to hold them down and guide easily and enough on the rear wheels to enable it to carry the heaviest load.

It has a large reserve of power for all uses.

Every casting is either cast steel or semi-steel.

It has an indestructible traction wheel and a steel frame plow platform and draw bar that is the strongest made.

Ample capacity for carrying fuel and water.

Write for catalog and specifications.

## NICHOLS & SHEPARD CO., Battle Creek, Mich.

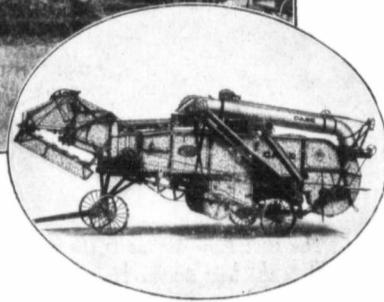
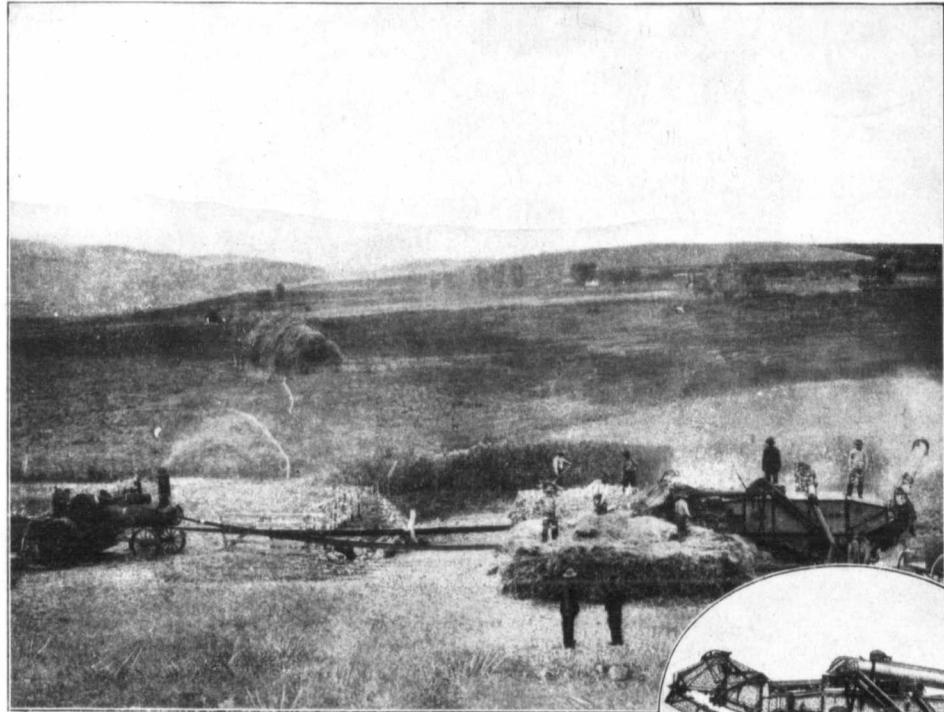
Sole Builders of the Red River Special line of Red River Special Threshers, Nichols & Shepard Traction Engines, Oil Gas Tractors, Universal Self Feeders, Stackers, Weighers and Supplies.

Regina, Sask.

Winnipeg, Man.

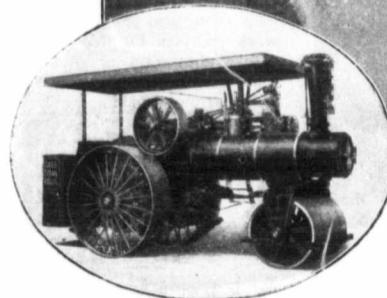
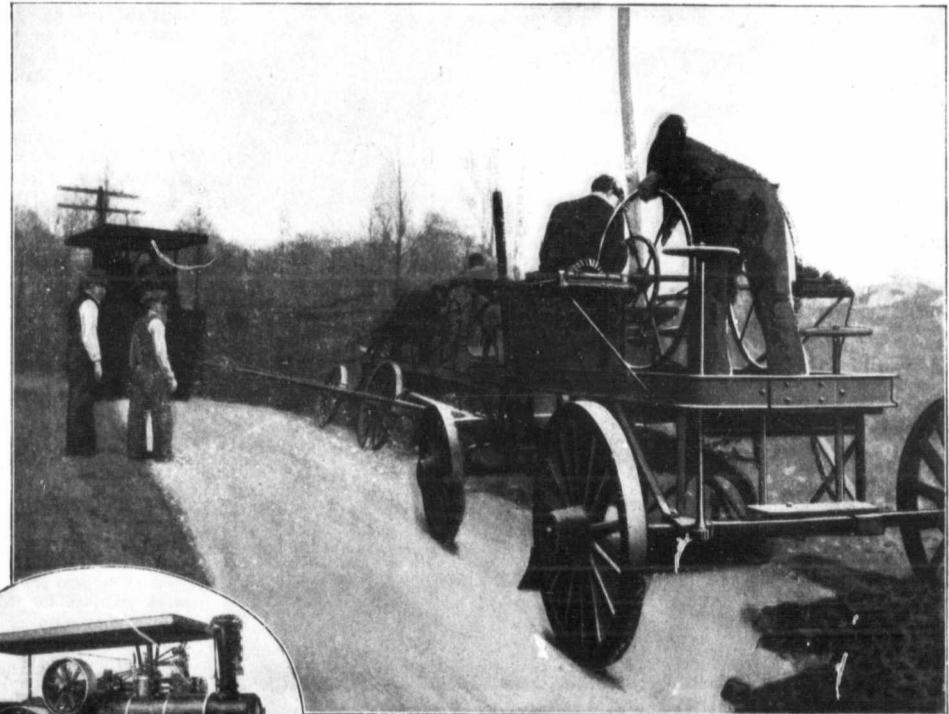
Calgary, Alta.

# They Do Things Extraordinarily Well-



Your Success or Failure as a Thresherman depends on how well you do your work. Threshing is just like any other business, it is the regular customers that make it a success. The only way to make regular customers is by good clean Threshing. Case Steel Separators are famous the world over for their perfect work. Money cannot buy another Separator that will thresh so fast, so clean and save the grain and please your customers like the Case Steel Separator—nor one so durable and so easily operated. The reputation that the Case Separators have made is the most valuable business asset any Thresherman can have, and the surest guarantee of success to the beginner. Every farmer and grain grower in the world is familiar with the fine work of the Case Separators. The man with a Case outfit is always given the preference. It is easy to make big profits with a Case outfit. Let us send you our new book, "Money Makers in the Field," and our 1912 Threshing Catalog. They'll tell you how it is done. Send for them to-day.

**J. I. CASE THRESHING**  
INCORP  
**RACINE, WIS**  
 CANADIAN BRANCHES, TORONTO,



The Case 1912 Catalog of Road Building Machinery is of absorbing interest to Contractors, Municipalities and County Authorities. No other one concern carries such a complete line of Road Building Machinery. The pick of the world's best labor-saving, time-saving Road Building Machinery is offered on the most liberal terms ever made by a responsible concern. Everything needed in building roads is listed at money-saving prices. Catalog describing the Case Municipal Tractor, Road Grader, Case Road Leveller, Road Rooter, Road Drag, Railway and Township Grading Plow, Wheeled Scraper, Drag Scraper, Rock Crusher, Mounted Water Tank and Sprinkling Attachment and 44 different types of Dump Wagons will be sent you promptly upon request. Write for it to-day.

**MACHINE COMPANY,**  
ORATED  
**CONSIN, U.S.A.**  
 WINNIPEG, REGINA & CALGARY



with the outfit before the freeze-up, so our experience will be of little value to you.

Might say that this engine is made to burn kerosene, also a different carburetor being furnished for this purpose.

Should judge that in our immediate neighborhood there are about two oil tractors for each steam tractor.

Yours truly,  
Walden & Trussel.

**Power Farming with Steam.**

As regards our experience at steam plowing, must say that last summer was our first attempt at anything of that kind.

We ran a Gaar-Scott 25 horse power cylinder traction engine and eight 14-inch Cockshutt plows. Last summer we broke about 400 acres, averaging from 15 to 20 acres a day in stony land. This, I think, is a good average, as during the early part of the summer we were held up by wet weather, often getting stuck in soft places.

We had four men on the outfit, an engineer who also fired, a man to steer, and a man to run the plows, also a man and team to haul water and coal.

We used about 6 to 8 13-barrel tanks of water a day, and about 2,200 pounds of Pennsylvania steam coal.

The plowing cost us about \$1.25 to \$1.50 per acre. Besides this, we put in over 400 acres of crop, using three 8-foot discs, and 10 sections of harrows, same amount of harrows being used behind drills.

We certainly think that plowing is harder on an engine than threshing, on account of the dust for one thing, and while plowing, all of the machinery is running and subjected to violent jars.

There are considerably more oil traction engines in this district than steam.

Below is cut of hitch we used for seeding. We are sending the photo with this letter.

Yours truly,  
J. H. MacDonald & Son.  
Chamberlain, Sask.

**Machine Plowing an Expensive Business.**

As requested, I will endeavor to give to the public my experience.

As to steam plowing, I am located about ten miles south-east of Calgary. I purchased 5 years ago from Reeves & Co. one



of their 32 horse power compound engines and also one of their 12 bottom steam lift plows, which I used until one year ago, then I purchased from Reeves & Co. one of their alto style 32

by using steam coal, or \$1.00 by using stove coal. It depends entirely upon who is doing the firing, as there is a great difference in firemen.

I would not advise anyone to

farming done much quicker and get their grain in much earlier. One must also have a



threshing machine to accompany his plowing outfit while he has the engine. He can thus do his threshing and get his grain in the granary, or on an early market, which oftentimes gives the best price for grain that can be obtained.

My experience in threshing with a large plowing engine, as to coal and water, especially coal, is that there is quite a waste while one is only pulling a 20 horse load threshing, the 20 horse engine will make a more satisfactory engine for threshing and do the work with less expense for fuel and reports.

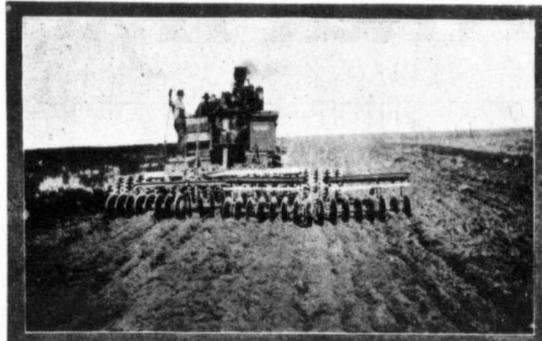
I have but little experience as to pulling discs, etc. I used a 30-foot beam, which I fastened to the engine with chains which I crossed from the hitch behind this beam. I fastened four discs with stub tongues, placing them ahead or behind each other so as to keep them all from interfering with each other in turning and another set following in the same manner on the half lap system, with tongues long enough to rest on a frame work provided for this purpose. Above the beam or hitch behind these discs I pulled two 15-foot harrows, making an outfit for double discing and harrowing of 30 feet. The harrows were fastened to the draw bar of the engine with a cable.

Yours truly,  
Charles W. Groke.  
Shepard, Alta.

**A Real Power Farmer.**

In the spring of 1911, I became the owner of an Ideal tractor, 20-28 brake horse power, made by Goold-Shapley & Muir, Brantford, and in many respects true to its name, though not without faults. I use it as a general farm engine, having put it to different jobs, such as hauling plows, harrowing, hauling grain to station, hauling granaries, threshing and grinding.

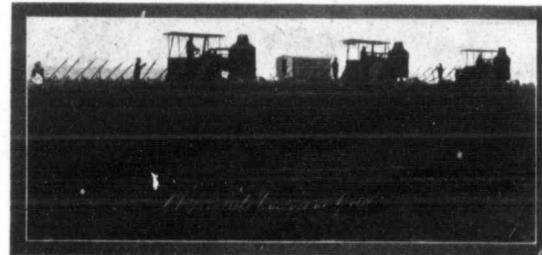
On the belt it is a dandy though I only had a small hand feed Geiser threshing machine but hope to get a larger one for another season, with self feeder and blower, as I think machinery cheaper than labor. On the grinder it does fine, except during the real cold weather, when it is hard to start on account



*Nichols & Shepard* FIGURE 21 SEE PAGE 5 *John Deere plow*

cross compound engines, especially built for plowing, which in my motor is the only engine for plowing on the market today. I also purchased from the Cockshutt people two of their

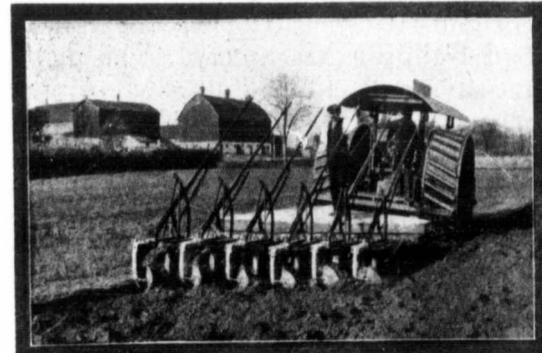
go into the steam plowing business as an investment. In the first place there are too many people who, over their capital to begin with, that is, when they get one of those big plowing outfits



*Rumley Oil Puller* FIGURE 22 SEE PAGE 5 *2 Rumley 1 Cockshutt plows*

engine plows one year, a 10 and 12 bottom. The past year I used the 12 bottom Cockshutt with the new engine, and the ten with the old engine, which they both handled very successfully. In

they expect to get rich quick; they do not, or are not directed to the facts by the machine agent what it costs to run this outfit. I myself have been face to face with this unhappy experience.



*Goold-Shapley & Muir tractor* FIGURE 23 SEE PAGE 5 *Massey Harris plow*

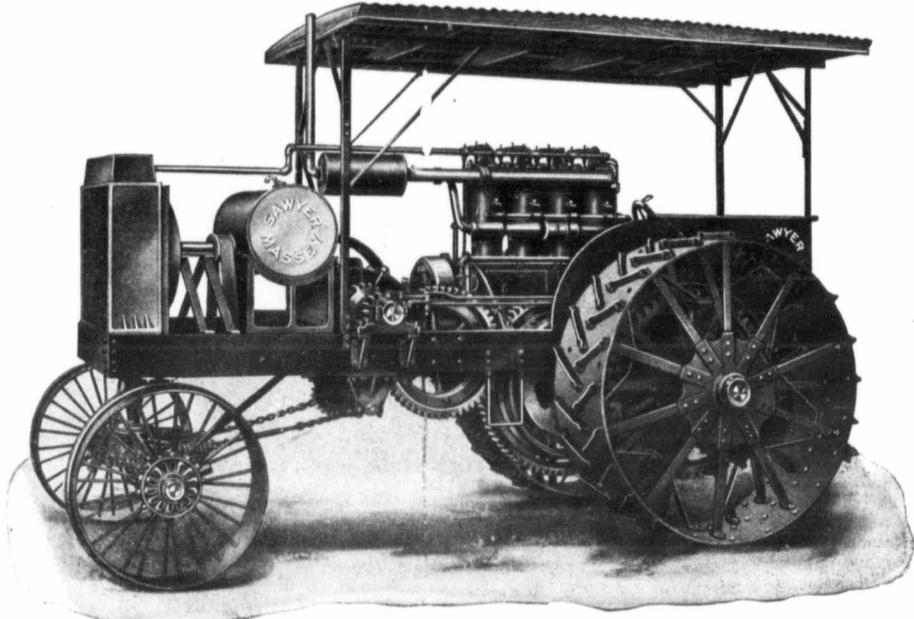
the past year the new outfit has turned over about 2,000 acres of soil. The best record we have for plowing is 100 acres of sod in 32 hours.

In the first place this machinery comes to us entirely too high, labor is high, living is high, repairs are very high. To get the best results from one of these outfits one must farm on a large scale. One can get their

It costs me 50 cents per acre

# GAS TRACTION PLOWING

The Cut tells the story. Did you ever see anything in the shape of a Gas Tractor that looked better to you than this? And it's better than it looks. Are you interested? If so, write for full information.



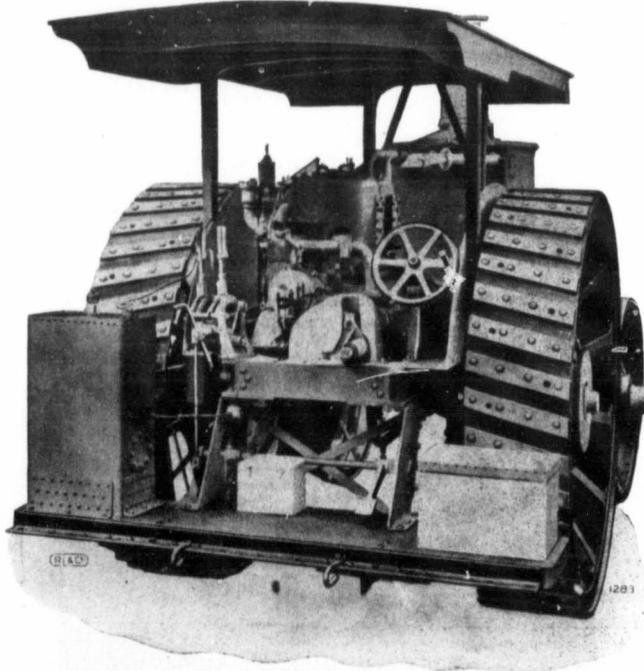
Sawyer-Massey 22-45 Gas Tractor

This represents the

**British  
Colonial  
Oil Tractor**

16-35 H. P.

It is in a class all by itself.



"British Colonial" 16-35 Tractor

We also sell larger size

**British  
Colonial  
Tractor**

32-70 H. P.

This motor is the wonder of all who have seen it, both for performances and quality of workmanship.

**NOT IN A COMBINE**  
**SAWYER-MASSEY Co.,** HEAD OFFICES AND FACTORIES **Hamilton, Canada**  
Branches: Winnipeg, Man. and Regina, Sask.



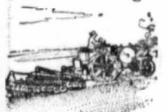
of frost and the gears get gummed up with the grease.

I have a Cockshtt Special engine gang of five furrows, and the two combined make a nice handy outfit for one man to handle by himself. I have plowed about 80 acres of stubble and the same amount of breaking, and in both the plows do nice work. I did not have breakers of my own but borrowed five from a neighbor, though I did not use five all the time, as the prairie I broke had been pastured a few years and was very dry. I did just as quick work with four.

I did not get this outfit to go out and to do a lot of work, but to take the place of a five horse team for summer plowing, etc., and to be able to do my own threshing and grinding, and I find them a fairly useful thing to have, so long as a man has a liking for them, and will battle with all the trials surrounding gasoline engines. I think they are far from perfection yet. But there is another thing we need, and that is that the gasoline engine should be sold on test and guaranteed to that test. That is one point I have had trouble with in my experience.

I have not kept any exact account of the cost in fuel, but calculate that breaking cost me around \$1.00 per acre, and stubble plowing 85c. to 90c. It all depends on the condition of the soil, whether wet or dry. I should have done more stubble plowing but had an accident on one cylinder, after plowing 30 acres. I had drained off the water as I expected, but one water cock had got choked, and I did not notice it, and when I went to start up again it had frozen and the front cylinder was split.

I had other troubles later which the firm put right. If only they will stay right, when put to constant test again. So far as I am concerned I like my outfit and think the size I have a real useful one man outfit. Of course every man might not handle it as I do myself. I only have half a section of land, and am working it into 40-acre fields, square, and fencing down a field to grass every year, and working up in rotation. I keep a stock of milk cows, and raise colts from my mares, and I can work this engine and plows within the fences just as good as a five horse team.



I did not

find the drag harrows so good to handle. I bolted a piece of hard wood to the draw bar and coupled the outside ends with wire to the front of engine, spacing the harrow to suit. I found too much side draft to suit my taste, but

and a 6 furrow Massey-Harris or Verity engine gang, and I think it is an ideal plow. I also have a 32 x 45 J. I. Case separator, which I also think is a first class machine.

This summer I ran the engine and plows myself and got along

line. I expect to put 800 acres in crop in the spring, and put in all I possibly can with the engine.



While threshing this fall, I ran both separator and engine, and I never lost an hour. I threshed from 800 bushels to 1,000 bus. per day. The straw was very long and the grain was not very good.

In a good year I think I could thresh from 1,000 to 1,300 bus.

I like my outfit fine, and can recommend it to anyone.

Yours truly,

Christian Mast.

Marquis, Sask.

**Has Had Trouble**

In reply to your kind letter, will say that I do not think that any thing that I can write will be of any use to anybody. I did write you a long letter, but by reading it over I made up my mind that it was N.G., so I will try to be as brief as possible.

Have been farming with an engine for the last six years, at first in South and North Dakota and last summer in Saskatchewan.

Have used three different engines: One gas engine and two steam, the gas engine being a Hart-Parr. I used it two seasons, and consider it a good engine, but like all other gas engines, they do not last for threshing; they are all right for threshing and other farming.

My present engine is a 40 C.C. horse power Advance, built at Battle Creek, Michigan, U.S.A. It is a very good engine, but like everything else, it is not perfect.

My plow is a Cockshtt with 12 14-inch bottoms.

It takes five men to operate the outfit: Engineer, fireman and plowman, one man to haul water and one coal. I have tried to run without a plowman, but it does not pay. It takes a good practical man to get the best results with an engine gang and it keeps him busy all the time.

It may be well to say that we have a large supply tank on skids at one end of the field and two tanks on wagons, so that all the man has to do is to drive up alongside of the large tank and pull the plug and let the tank empty itself while he hooks on the other tank wagon and starts off. This plan gives the water man more freedom to work and no water is wasted.

In this way we work only four



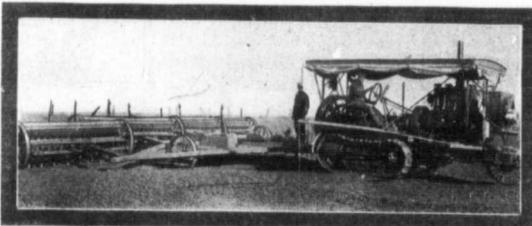
*I. H.C. tractor* **FIGURE 24** *John Deere plow* SEE PAGE 5

harrowed up 30 acres in good shape in about six hours. I shall very likely try harrowing after plows next summer, if able to do it.

There are other gasoline outfits as well as steam in this dis-

trict. Some did a fair amount of work but most of them seem to have some difficulties to face.

Traction plowing is much harder than threshing, besides it



*Holt Caterpillar tractor* **FIGURE 25** [SEE PAGE 5]

tract. Some did a fair amount of work but most of them seem to have some difficulties to face.

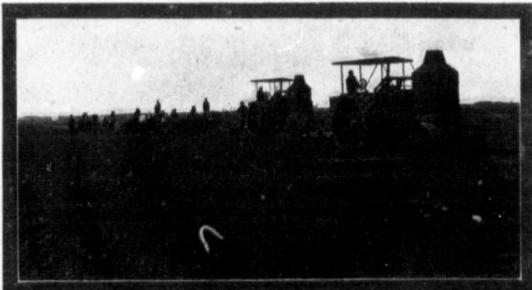
Yours truly,

Henry Thompson.

Fairlight, Sask.

takes from 8 to 10 gallons more gasoline per day.

Sorry to say I have had no experience in drawing discs or drills or harrows, etc., behind my



*Rumley Oil-Pull* **FIGURE 26** [SEE PAGE 5] *Cockshtt plows*

Intends to Farm with the Tractor.

I have a new Fairbanks-Morse gas tractor of 25 horse power

engine, but I expect to in the spring.

I would like to get all the information that I can along that

# Five "Flour City" Facts

**WON**  
**1908**  
**GOLD MEDAL**  
**1909**  
**GOLD MEDAL**  
**1911**  
**GOLD MEDAL**  
**GOLD MEDAL**  
**BRONZE MEDAL**



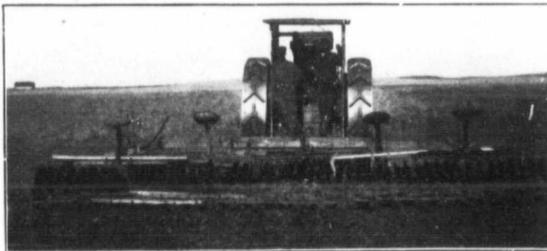
**WON**  
**1908**  
**GOLD MEDAL**  
**1909**  
**GOLD MEDAL**  
**1911**  
**GOLD MEDAL**  
**GOLD MEDAL**  
**BRONZE MEDAL**

## The GOLD MEDAL Winner

It was said in 1908 that the "FLOUR CITY" was the "KING OF FARM TRACTORS." It was put to the test with all comers of its kind and the GOLD MEDAL awarded to it confirmed what had already been affirmed. The record was maintained with the same honors in 1909 and finally, after the most severe grilling to which power machinery could be subjected against the strongest competition the world could offer, it went into the contest and came out with the unprecedented record of TWO GOLD MEDALS and ONE BRONZE TROPHY.

### THE "FLOUR CITY"

has a still greater record in its actual work on the farm than in the contest field. As a plowing engine it has gone in and kept at it when others have bogged in the soft gumbo till they were towed out.



### THE "FLOUR CITY"

is unrivalled when efficient power is wanted to handle the seed bed tools—whether for intensive or extensive farming. It is the **Cheapest power** you can employ on the farm today whether gasoline or kerosene is used.

That the Kerosene Carbureting System has placed the "FLOUR CITY" Tractor in a class by itself was demonstrated at the Winnipeg Contest of 1911 and every fresh record is a further confirmation of this fact. No single or double cylinder engine can deliver such perfect and sustained service in the belt while in fuel consumption (whether in belt work or plowing) it has no equal today.

### THE IDEAL TYPE

of a Gasoline-Kerosene Tractor built in 3 sizes: 20, 30 and 40 H.P. giving a latitude of power to meet the particular requirements of any size of farm. It is equally effective in burning Gasoline or Kerosene.



### THE IDEAL PRICE

for the power farmer who is after the very best and the most he can obtain for the least money. We make no impossible claims but we do affirm that this engine will plow more land at less cost than any other tractor built.

KINNARD-HAINES CO., MINNEAPOLIS, MINN.

Gentlemen,—Replying to your favor regarding the satisfaction our 30 H.P. FLOUR CITY Engine is giving, we can say it has been doing all that was looked for in work, and for cold weather we can start any day without lighting a match to warm up. People are surprised and it is finding great favor among prospective buyers.

HERBERT, SASK., Jan. 4th, 1912

Yours truly, BRUBACHER BROS.

Write for Catalogue and complete information about the "Flour City" Tractor.

**KINNARD-HAINES CO.**

828 44th Ave., North, MINNEAPOLIS, MINN.

**ONTARIO WIND ENGINE & PUMP CO.**

Toronto, Winnipeg and Calgary, Dom. Agts.



horses. We generally run from 12 to 15 hours a day, during which time we burn about 1,300

pounds of coal, sometimes more and sometimes less, but that is about the average.

That is the only advantage of having a large engine. It takes the same amount of help to run a small outfit as a big one, and the big engine don't use much more fuel than a small one.

We tried pretty nearly every kind of coal attainable in this territory, but we use mostly what is called Pennsylvania steam coal and briquets. We used mostly briquets, as they seemed to give the best satisfaction and cost about the same.

Of water, we use about 100 barrels a day (standard barrels 32 gallons wine measure to the barrel).

Traction plowing is as much harder on an engine as threshing is harder than standing idle in a wood shed.

Figuring everything operating expenses, repairs, board for men and interest, it cost me \$2 an acre to break prairie.

If by experience you mean how much trouble a man has had, or how many disc and drill poles one has broken turning around. If that is what you mean I certainly had my share before I was able to make a hitch that will turn around short both ways. But the last two years we have operated with great success two different kinds of hitches, one for pulling five drills, five discs and one large harrow, and one for pulling eight discs covering 32 feet and three drills covering 30 feet, with three harrows attached.

We also hitch roller drill drag and scrubber behind plows, but that is very simple.

The oil tractor is far in the lead in this locality as far as numbers go, which is all I shall say about them.

Yours truly,  
Tom Tallefson.  
Talmage, Sask.

**Brush Breaking Tedious.**

In answer to your request, I will write my experience in traction plowing. The locality that I operate in is very rough and bluffy for engine work, but we did a lot of rough rooty breaking that it would be hard work to be done with horses or oxen, all of which was very slow and tedious.



My engine is a Sawyer-Massey, but of a threshing type, and

not strong enough to plow with. It is a 25 horse power, and draws 6 to 7 Cockshutt plows. I have 8 to 12 acres per day in the rough land. My advice to anyone intend-

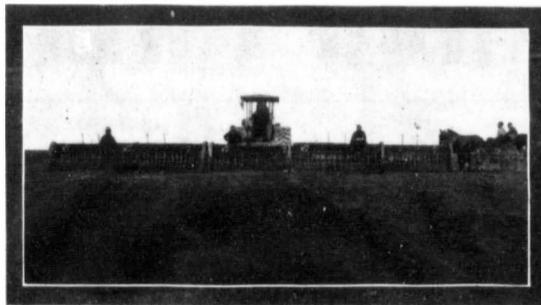
of times, plowing with our engine will get nearly all of them.



I consider plowing much harder on all parts of my engine than threshing, both on account of dirt and heavy work as I never have any breaks to speak of in threshing, but a good many in plowing. I have never used my engine putting in crops, and have had no experience with packers, discs, or drills behind it.

There are more oil tractors here than steam outfits. They are making poor headway here, a Hart-Parr being the only one near here that has come anywhere near doing what it ought to.

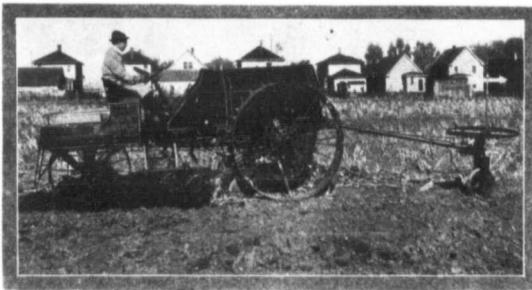
Yours truly,  
Chas. Persy.  
Waseca, Sask.



Rumley Oil-Pull tractor  
FIGURE 27 SEE PAGE 5

plowed as high as 20 acres per day on good smooth land, burning about 2 1/2 tons of coal and

ing to do traction work is to bear in mind that rough land is very hard on their engine and



Hackney Motor Plow  
FIGURE 28 SEE PAGE 5

using about 70 barrels of water per day. I employ four men and two

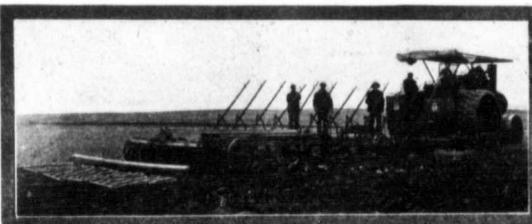
do not do any more than they are obliged to, especially at their own farms, as I would rather



Huber tractor  
FIGURE 28 SEE PAGE 5  
Melroe plow

teams at \$4.35 per acre an average for the work, but did not make much more than expenses

break two acres of smooth land than one of rough, as it has cost me \$4 per acre for every



Rumley  
FIGURE 30 SEE PAGE 5  
Cockshutt plow

at that, on account of it being rough and rooty, but we get a root broken quick that way even if it expensive. We break about

acre I have broke this season, but, of course, we have just cut off the scrub and plowed right through the roots a couple

**Traction Plowing with a 25 Draw-bar h.p. Gas Tractor.**

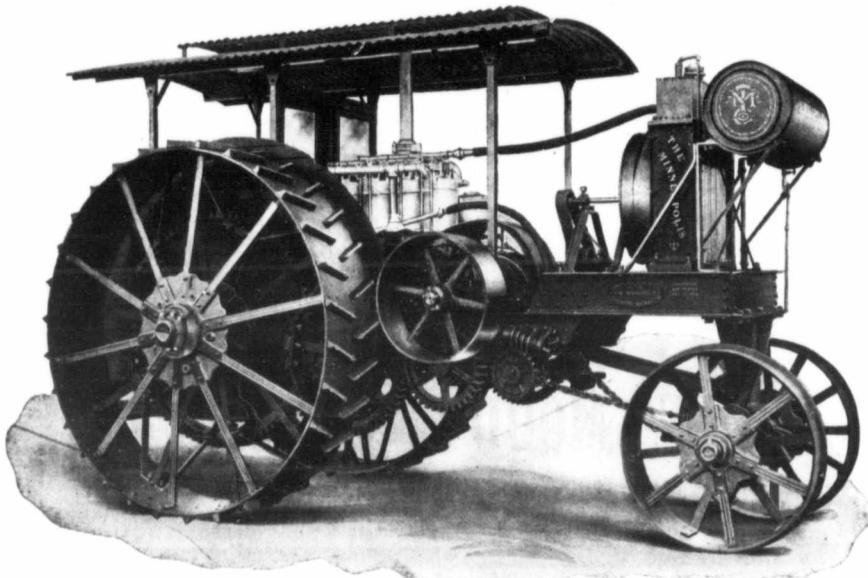
In breaking we pull an eight furrow six bottom Cockshutt gang and for stubble work we either use the extra two plows or haul a disc and drag. We use the steering device on this engine, and it is quite easy for one to run the outfit if it be necessary, but two is much better and quicker. Last season I had a 14 year old boy watching the steering device and turn the engine at the end, and I took care of the plows myself, and had good chance to look after the engine, not having to worry about it getting away from the furrow.

On fair breaking we use about 2 3/4 gallons of gasoline per acre, but I could not give that as an average if you counted from the gallons bought, for there is a great waste from leaky barrels and in the handling. You might place the average about three gallons per acre, or a little better with this class of an outfit. We do not need any horses. We use two to haul the gasoline about three trips to town every two weeks, and an occasional trip for shears and repairs and for water, but we can on a general rule get plenty on the ground we are working on, for we do not use very much—about one barrel a week, once the tank is filled.

We did a little discing with this engine, and doing the work of about 30 horses. We pulled six 16 discs and two 12 foot scrubbers. On this work we used about 30 gallons of



A REAL  
**PLOWING TRACTOR**  
**THE MINNEAPOLIS**



**The Minneapolis**  
**25 H.-P.**

is exactly what it looks— a machine capable of standing an enormous strain and of overcoming difficulties and obstacles that mere brute strength could never tackle.

It will go where a horse or any number of horses can travel and will do work which horse flesh would never get through except at ruinous cost.

Most reliable and serviceable 4 cylinder tractor built, it has no equal in value and in simplicity of construction. It is built of steel in every detail where cast iron can be superseded.

You cannot buy a more easily operated engine at any price.

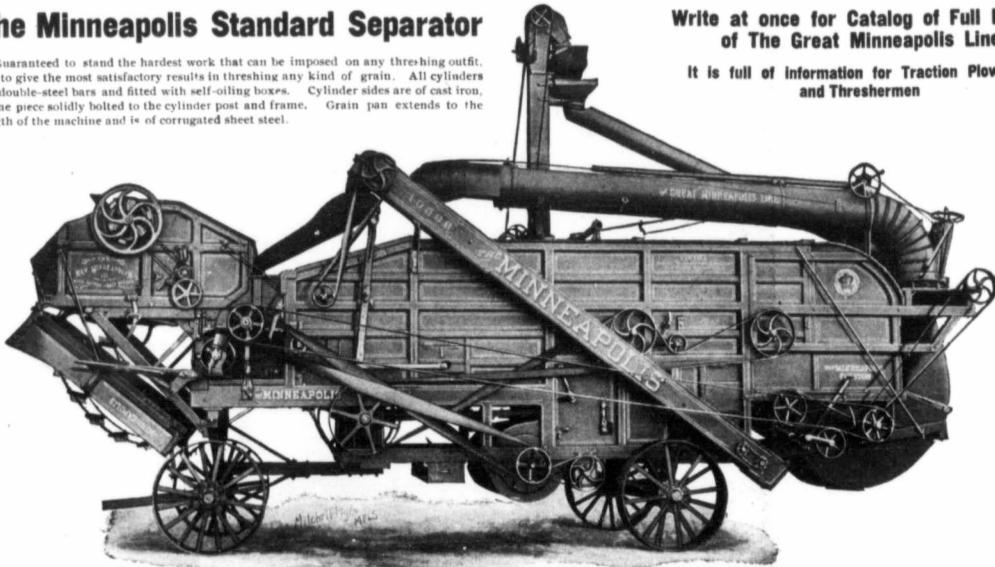
**PLOW, SEED, DISC, HARROW, BREAK, HARVEST, THRESH with a 'Minneapolis'**

**The Minneapolis Standard Separator**

Guaranteed to stand the hardest work that can be imposed on any threshing outfit, and to give the most satisfactory results in threshing any kind of grain. All cylinders are double-steel bars and fitted with self-oiling boxes. Cylinder sides are of cast iron, in one piece solidly bolted to the cylinder post and frame. Grain pan extends to the length of the machine and is of corrugated sheet steel.

Write at once for Catalog of Full Details of The Great Minneapolis Line

It is full of information for Traction Plowmen and Threshermen



**The "Michigan 40-Model K" 5 passenger touring car**

Finest machine on the market at a reasonable price for the Western Farmer. Write us for special descriptive catalog of this great automobile.

**GEO. E. DUIS CO.** Manufacturers' Agents **Winnipeg**  
 Office and Warehouse 753 Henry Ave. Box 456

# "FOR EVERY FARMER" A MOODY THRESHING MACHINE

In 1911 you did not have your threshing done on time. In 1912 be prepared by buying at once a 30-inch by 42-inch Moody Threshing Machine suitable for the individual farmer. Its capacity is from 600 to 1000 bushels a day, and an 8 to 10 horse power gasoline engine will operate it equipped with hand feed attachment, 16 foot folding stacker, tailings elevator and wagon loader. We supply for the machine 4 inch wooden trucks (extra strong), canvas cover to protect the machine when idle and all belts except the drive belt. It weighs 2500 pounds. All kinds of grain are threshed successfully by it. Write for prices and terms.

## THE MATTHEW MOODY & SONS CO.,

409-11 Nanton Building, Winnipeg, Man.

gasoline to every 50 acres. Later we took off the scrub bars and put on 30 feet of drag harrow. This was a little better, and we did not use quite as much gasoline for discing. I have a 20-foot draw-bar I bolt to the engine after taking off the short one for plowing, and bracing the ends to a second draw bar, placed in front of the rear wheels, which is only 10 feet long. Then I fasten the discs to the draw bar, using short tongues, having the centre one a little shorter than the outside ones. The front ones were set a little to the left and the other set a little to the right, so as to cut half of the first. The poles were supported with timbers tied to the first and also kept the chains from the discs and scrub bar from getting under the discs. All this would not be necessary if one had in-throw and out-throw discs that could be hitched in pairs.

For summerfallow we use the eight furrow frame with the six plows, one off from each side of the frame and fasten the disc and drag-harrow where the plow is taken off, and it does not fill up the last furrow. For pulling a drill with the discs or without I would use two tongues to each

drill, and of such length as would be necessary, fastening one end to the rear edge of the drill frame

bolt for each, and then bolting a 2 x 4 over the front cross frame, blocking far enough apart

It will be necessary to put a drop leg on the front end to clear the discs if your draw bar is as low as mine, and the drills are set one short and the other two long. This arrangement keeps the drill square with the draw bar, and it is quite flexible; discs or drag harrows may be fastened to this pole when convenient.

Yours truly,  
R. J. Dunn.

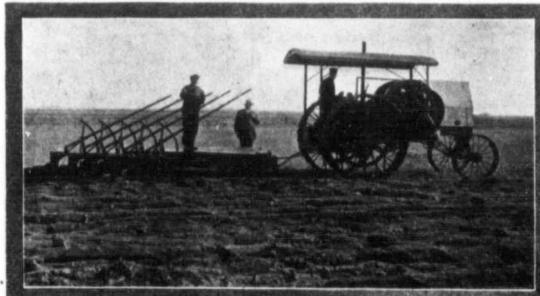
Bladworth, Sask.

P.S.—My estimate per acre plowing would be about \$1.00. Oil tractors are used principally in this locality. This is my idea of pulling drills and discs and drag harrows.

### First Year, But Good Work.

In reply to yours, in which you ask me to send you what information I can in regard to traction work, will say that our experience is very limited, this being our first year.

We have a Fairbanks-Morse 25 horse power gasoline engine. We got it last spring, about June 1st, but did not do much in June, as we were new at the job, and our engine was not in good shape, as we had to have the gear changed. It was geared too high, but

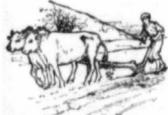


Fairbanks tractor Massey-Harris plow  
FIGURE 31 SEE PAGE 5



Hart-Parr tractor Cockshutt plow  
FIGURE 32 SEE PAGE 5

where the tongues fasten for to allow the tongues to work horse use, using one good stout freely.





# MAYTAG<sup>CO</sup> LTD



## There are a Number of Important Facts

that should be taken into consideration when making up your mind as to the Self-Feeder you are going to buy this year. If we were going to buy a Feeder, we believe the first thing we would investigate would be the standing of the Manufacturers. Next would be the history and reputation of the Feeder itself. A Feeder that will do good work in the United States where the grain is, as a rule not as heavy as it is here, and where a large percentage is simply "headed", might, and is quite likely to fall by the wayside here in Canada where the grain is all heavy and bound in bundles. For more than TEN YEARS the RUTH has been used in every section of Western Canada, and its reputation is as firmly established as is that of the Bank of England. Therefore, take no chances; why should you when it is not necessary. We can and do give you protection that no other Feeder Manufacturer can. We stand back of every statement we make in a legal, binding guarantee form. Our RUTH WARRANTY is not only published to the world, but is PRINTED RIGHT IN YOUR ORDER, so it is as much a part of your contract as is anything else that the order contains. Remember that there is

## A Three Year Warranty Given With Each

# RUTH FEEDER

### THE RUTH WARRANTY

"The RUTH Feeder is Warranted to Feed any make or size of Separator to its full capacity, with any kind of grain in any condition whatsoever, bound, loose, straight, tangled, stack burned, wet or dry, PILED ON THE CARRIER IN ANY WAY YOU PLEASE, without slugging the separator cylinder or loosening a spike, and to do a faster, cleaner and better job of feeding and to WEAR LONGER AND COST LESS FOR REPAIRS than any Feeder manufactured by any other Company in the World. We further Guarantee it to be made of the best material obtainable by the most skilful workmen, and if WITHIN THREE YEARS FROM DATE OF SALE (if our instructions are carried out) any part of the above described Feeder (except webs and belts) should break or in any way incapacitate the Feeder owing to defect in material or workmanship, and not on account of carelessness on the part of the user, we will replace such part or parts ABSOLUTELY FREE OF COST, on return of defective parts F. O. B. Winnipeg, Man."

## Repairs and Extras

While it is an undisputed fact that the RUTH FEEDER REQUIRES LESS REPAIRS THAN ANY OTHER FEEDER IN THE WORLD, an occasional piece is needed, and when the accident does happen it is wanted quick. We understand this and in order to make it more than ever to your interest to buy a RUTH, we are doing something that no other Feeder Company has ever done, and that is we will have a good stock of repairs this year and in all the years to come at central points throughout Canada. This year you can get them from

H. A. KNIGHT at REGINA, and A. E. GARDINER at SASKATOON, Sask.  
The W. S. COOPER Co. at CALGARY, and GEO. THOMAS & Co. at WEYBURN, Sask.

The above concerns will also carry a full stock of Ruth Feeders and will be in a position to fill your orders at all times.

## Do not forget that

Any Threshing Machine Company doing business in Canada can supply you with a RUTH Feeder, and we FURNISH THE ATTACHMENTS TO PUT THEM ON SO THAT THEY FIT PERFECTLY. When we say ANY Thresher Company, we had in mind more especially any of the following, as they have all bought the RUTH of us, and we are not only willing but anxious to fill all orders they may favor us with during the coming season.

Sawyer & Massey Co.  
International Harvester Co.  
Waterloo Manufacturing Co.

American Abell E. & T. Co.  
Haug Bros. & Nelermoe Co.  
Gaar, Scott & Co.  
Burridge Cooper Co.

Buffalo Pitts Co.  
Canadian Port Huron Co.  
The Rumely Co.  
Robert Bell E. & T. Co.

Geo. White Sons & Co.  
Nichols & Shepard Co.  
Reeves & Co.  
J. I. Case Threshing Mach. Co.

John Goodison Thresher Co.  
Aultman & Taylor  
Minneapolis Thr. Machine Co.  
W. S. Cooper Co.

REMEMBER, that should you buy a Separator of ANY COMPANY whose name DOES NOT appear above, that we can and will furnish the proper attachments to equip it with a RUTH FEEDER.



# MAYTAG



COMPANY, LIMITED

WINNIPEG MANITOBA

# Over The Great Threshing Field



20,000 Satisfied Users  
Endorse The

## GANDY THRESHER BELT as the STANDARD

Every Gandy Thresher Belt is guaranteed. If there is anything wrong with the material or workmanship the belt will be replaced or the money cheerfully refunded. The Gandy Thresher Belts adhere to the pulleys, and give good results under all circumstances. They are not affected by atmospheric changes, water, heat, dust, etc.

HOW TO KNOW

### THE GANDY THRESHER BELT

For your protection look for the three identifying marks

**First—THE GREEN EDGE** (one edge of every Gandy Thresher Belt is now painted green)

**Second—OUR TRADE MARK**, a coil of belt and a bale of cotton laid across it

**Third—THE BRAND—THE GANDY THRESHER BELT**—stamped at intervals throughout the belt's entire length

Remember there is but one **GANDY THRESHER BELT**, and this is the Gandy Belt made by The Gandy Belting Company of Baltimore, Md.

It is the the Thresher Belt that will save you money, as it has proven itself to be the most durable and economical belt for threshing purposes.

Return the attached coupon, samples, booklet and full information.

Complete stocks are carried by the leading Thresher Engine Manufacturers and Supply Houses throughout the country.

### THE GANDY BELTING Co.

733 W. Pratt Street,  
BALTIMORE, Md.

New York Office—  
88 90 READE STREET.



Clip and return this Coupon

Gentlemen—You may send me sample Booklet, etc.  
(Adv. C. T. 4.12)

Name \_\_\_\_\_  
Address \_\_\_\_\_  
State \_\_\_\_\_

since then it has given good satisfaction.

We broke about 600 acres and did some disking, but no threshing; we expect to thresh next fall.

We use a P & O 5-bottom gang and the amount of fuel varies very much. I think during the season, breaking would cost us close to \$1.00 an acre for gasoline, but we broke in some very heavy land. On lighter land and good weather it would take much less. We use gasoline altogether, and the \$1.00 includes machine oil.

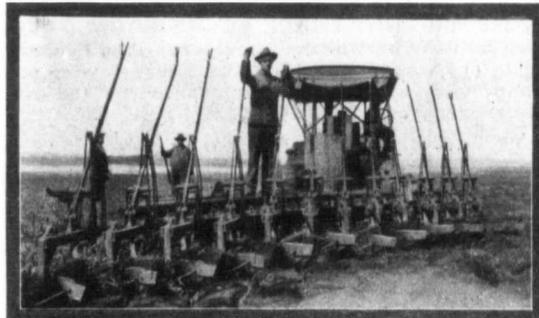
I think breaking is harder on an engine than threshing. Two men run the outfit in breaking and one in discing.

We draw two discs and one 12-foot scrubber, loaded with stone, and harrow.

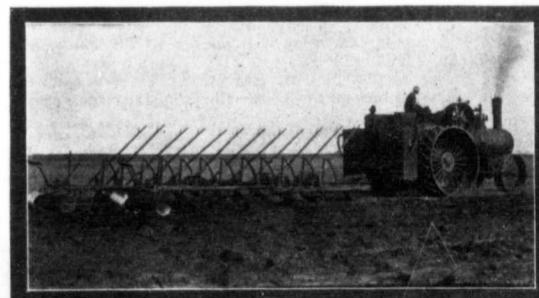
I have not had much experience with different hitches, I simply take a stick about 8 feet long and fasten a disc to each end and put a chain from each end of the scrubber to centre of engine (this scrubber is well loaded), also chain from harrow to engine. This doesn't load quite to full capacity, but gave good results.



The oil tractor is used almost entirely in this district. We



Holt Caterpillar tractor Big Dutchman plow  
FIGURE 33 SEE PAGE 5



J. I. Case Cockshutt plow  
FIGURE 34 SEE PAGE 5

use about two barrels of water a day. Yours respectfully,  
Michael Craney,  
Kindersley, Sask.

Uses Engine for Pulling Trees.  
We own a Hart-Parr 45 brake horse power 22 tractive

horse power tractor. This is the second season it has been worked. About 1,500 acres were plowed with it last season and 1,000 acres this season. It has been used for plowing only.

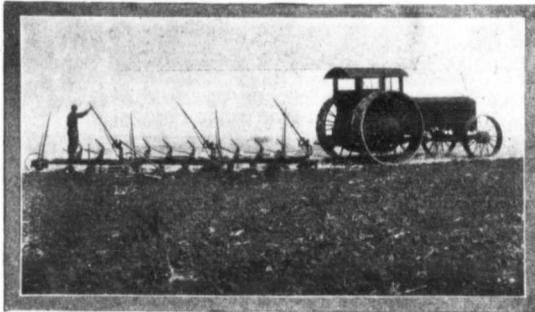
In stubble plowing we pull an eight bottom John Deere engine gang, plowing up to six inches in depth. In shallow breaking we pull six bottoms. We also pulled a John Deere 24 inch brush plow up to 9 inches in depth, but the ground was so wet when we were plowing with it that we were down in the mud as often as plowing.

We began plowing May 2nd, and plowed 120 acres in one week, when the rainy season began. During about six weeks of rainy weather whenever we tried plowing we stuck in the mud. The wave drive cleats on the driver filled with mud, and it was almost impossible to get the engine out. So we had corks made to put on the drivers in such a case. We bored holes in the rim of the wheel. The corks were blocks of hard wood 6 x 6 and 15 inches long. One side was shaped to fit between two cleats and a hole was drilled through it of the same diameter as the one in the wheel. A bolt fastens



# THE ONE AND ONLY PIONEER "30"

The exceptional character and extraordinary work of this famous Gas Tractor has created a sensation in power machinery circles, even where sensational performances have become a matter almost of daily recurrence. After years of unparalleled success in the South and the complete conquest of the American Market, the "Pioneer 30" offers its unique services to the Canadian West.



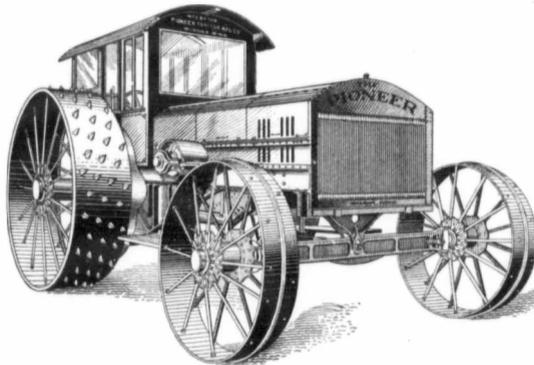
## SIX EXCLUSIVE SUPERIORITIES OF THE PIONEER "30"

1. It is absolutely vibrationless. You know how this compares with any other engine you have seen operating in Canada.
2. All gears—including the big drive gears are entirely enclosed in dust-proof cases and run in oil baths. Compare this with the open gear construction of similar engines.
3. All working parts, including the motor, are completely covered and protected from flying dirt. Consider this while you contemplate the open construction of all other gas tractors.
4. The Pioneer "30" has three forward speeds like an automobile. All transmission gears are machine cut from solid steel, with a speed radius of from one to six miles an hour. Compare these points with (1) the crude irregular, heavy-cast-gears of other machines and (2) the single 2-mile-an-hour speed which is usual in competitive tractors.
5. The power is taken directly at the side of the motor fly-wheel between 2 long bearings and is transmitted to the drive wheel in a straight line. By this means the trouble and loss of power common to bevel transmission gears is avoided.
6. An operator's cab which can be entirely enclosed is provided—away from the heat of the motor, with a comfortable upholstered seat, back and arm-rest. All levers are easily reached from this seat. The Pioneer is as easy to operate as an automobile.

### THE Pioneer "30"

IS PRE-EMINENTLY THE TRACTOR FOR THE HEAVY AND CONTINUOUS 24-HOURS-A-DAY WORK OF WESTERN CANADA.

STICKS AT NOTHING — READY WITHOUT NOTICE.



### THE Pioneer "30"

HAS NO EQUAL IN EUROPE OR AMERICA AS A PLOWING ENGINE, FOR ANY KIND OR QUANTITY OF FIELD WORK, BELT SERVICE OR ROAD-MAKING. AS A FREIGHTER IT IS POSITIVELY INCOMPARABLE.

Mr. Farmer: as your success in 1912 and all that follows it will depend so much on the power you use, we beg of you not to speculate with it. Get a CERTAINTY and put an end to all the loss and heart-ache of handling someone's "experiment." We give you the most complete guarantee with the Pioneer. For value and economic service there is nothing near it.

Cut out and mail this coupon for complete details and illustrations of the Pioneer's many exclusive features.

PIONEER TRACTOR CO., LIMITED.  
Offices, Calgary, Alta.

Kindly mail me your free Illustrated Pamphlets and Booklet of testimonial letters.

Name .....

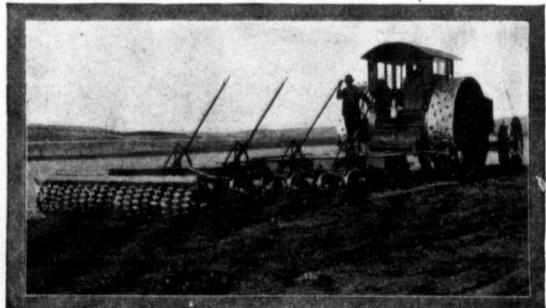
Post Office .....

Province .....

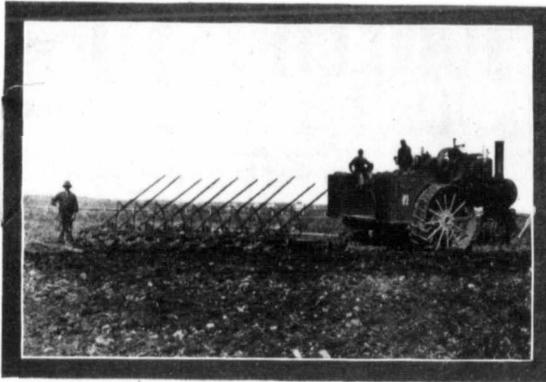
Farm ..... Acres

C.T. 4

## PIONEER Tractor Co. Limited CALGARY, ALTA.



the cork to the wheel. When the engine gets down in the mud we put a couple of corks on each driver, put a team is all that is required to attend the outfit and they are not working all the time. We use about 60 gallons of



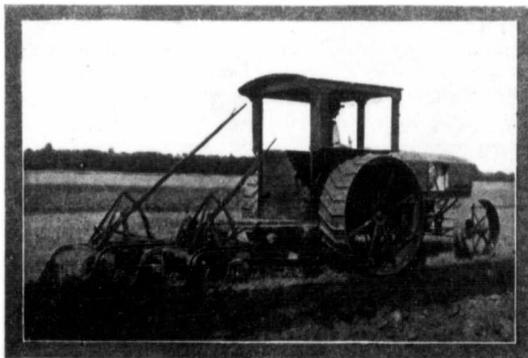
American-Abell FIGURE 35 SEE PAGE 5 Cockshutt plow

couple of fence posts in front of each wheel, and when the corks strike the fence posts, they lift the engine right out. We have kerosene for a day's work of 25 acres plowing. This fuel costs 12½ cents per gallon, which figures out at 30 cents per acre for fuel.



I.H.C. Tractor FIGURE 36 SEE PAGE 5 Cockshutt plow

had the engine in three feet deep and always got her out easily by this method. This engine is oil cooled and the only water we use is that which we fed with the kerosene. Three men run the outfit in One barrel of water will do



Universal Tractor FIGURE 37 SEE PAGE 5 John Deere plow

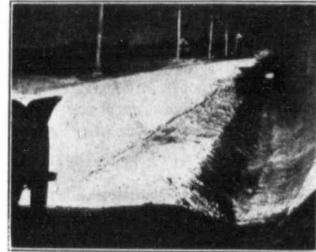
plowing, one man takes care of engine, one attends to plows, and another hauls fuel and water and gets the meals. One about two days, but the consumption of water depends on the state of the weather and the amount of the load on the

## ELECTRIC LIGHT FOR YOUR TRACTOR

**Push a button and it's done.**

No delay. No wading in the dirt to adjust a nd trim dirty & spluttering lights.

Costs nothing to operate.



**Clean, Safe and Steady**

No tools to tinker with. Motor does all the work. Nothing like it in Lighting Systems.

Nothing so inexpensive.

Actual Photo—not retouched

### ELECTRIC LIGHTING SYSTEM.

This is entirely automatic, and absolutely guaranteed. Electric dynamo connected to engine or motor charges a storage battery, which furnishes all current for ignition, also for one or more powerful headlights which throw a light at least half a mile ahead, and for two rear lamps to show that the plows are working right. Just push a button! We can attach to any gasoline, oil or steam driven machine made.

### ACETYLENE GAS LIGHTING SYSTEM.

This consists of as many lamps as you require, operated by gas generated in an automatic pressure tank, the carbide for which can be purchased anywhere, at a very low operating cost. No pressure charging required.

### ELECTRIC OR GAS LAMPS AND FIXTURES.

We can quote lowest prices on lamps for either system, and for full equipment. Write us now for complete information.

We are the only firm installing these systems; but the outfits we send are so simple that any tractor operator can attach them.

### WAYNE GASOLINE AND OIL STORAGE SYSTEMS

We can supply you with any type of storage system for your gasoline and oil, also with a gasoline tank to mount on your own waggon.

## Western Motor Co.

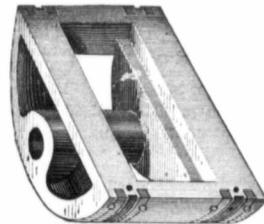
52½ Princess Street, Winnipeg.

Phone Garry 2370

## WHEN YOU GET WISE TO THE SITUATION

**YOU'LL KNOW** it doesn't pay to run an engine with a common D slide valve, and waste from 18 to 30% of your power, waste your coal, water and oil, and wear out your valve gear, besides carry a higher pressure on your boiler than you should.

**YOU'LL KNOW** all about valves if you send for our 8th annual catalog. It tells you **WHY** and in



good plain English. Write us to-day for the book. No room here to tell the whole story, the book does that, but get this one big fact fixed in your mind: we guarantee that the Gould Balance Valve will give you from 18 to 30% more power, or save you from 15 to 25% of fuel and water.

If we don't do it you'll get your money back.

## Gould Balance Valve Co.

KELLOGG, IOWA, U.S.A.

# HOLT Caterpillar

TRADE MARK REGISTERED IN U.S. PATENT OFFICE

## The Ideal Agricultural Tractor

This is the only Gasoline Tractor built which is genuinely different and notably better than any other. The Caterpillar tractive device is the only distinctive advance in construction since the gas tractor was first produced and it gives this engine **GREATER PULL — GREATER ADAPTABILITY — NO PACKING OF SOIL**. The Caterpillar lays its own steel track and runs on it like a locomotive. This track gives from 2000 to 4000 square inches of bearing surface, depending on the width of track. The weight of engine is evenly distributed over this whole surface, giving it the lightest bearing per square inch and the most powerful tractive grip of any engine built.

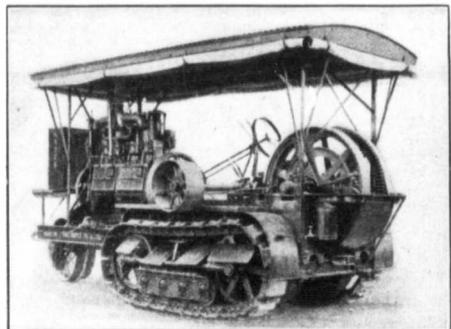
The Caterpillar is always ready for work when work is ready. Can be used anywhere, on hard or soft ground. It can't be mired down and has no wheels to slip in wet land or loose and sandy soils. Practicable for plowing in early spring or late fall, whenever plows can be used, regardless of soil or weather conditions. Doesn't pack plowed ground and can be used for seeding, harrowing and harvesting. Crosses ditches, turns in its own length, flexible and easy to handle. **Burns Distillate, which is 25 per cent cheaper than kerosene.**

Read this from Jafet Lindberg, "The Man Who Found Nome": The Holt Mfg Co., Spokane —San Francisco, Cal., Feb. 1, 1912. Gentlemen: The CATERPILLAR purchased from you a year ago shipped to Nome, Alaska, has given perfect satisfaction. We have used the engine in connection with our mining operations and for plowing tundra preparatory to ground sluicing. In these tests the engine was found much more economical than horses.

Very truly yours,  
By JAFET LINDBERG, Pres.

PIONEER MINING CO.

**The Holt Manufacturing Co., Limited,**  
Calgary, Alberta



60-H. P. Holt Caterpillar Gas Tractor which does the work of 35 horses. Side view showing Caterpillar track, spring mounting and power pulley.



60-H. P. Holt Caterpillar Gas Tractor breaking at Namaka Farm, Namaka, Alberta, Canada. Pulling 10 14-inch engine gang and packer.

**THE HOLT MFG CO., Ltd., Calgary, Alta.**

Please mail me free Caterpillar literature.

Name \_\_\_\_\_  
Address \_\_\_\_\_

engine. The hotter the weather and the heavier the load the more water is used.

We have not done any threshing with the engine, but would imagine that plowing is harder on an engine than threshing. It wears the gears, and the engine is shaken and loosened up by travelling over rough uneven ground.

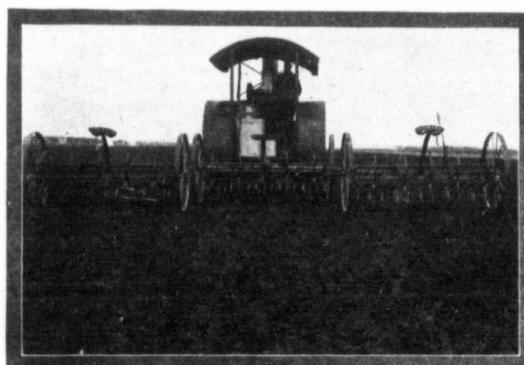
Our average day's plowing in the long days of summer was 25 acres. Here 's an estimate:

Engineer .....	\$4.00
Man to tend plows .....	2.50
Man and team .....	5.00
60 gallons of kerosene at 12½ cents .....	7.50
Other oils .....	.75

Total cost for plowing 25 acres .....	\$19.75
Cost per acre .....	\$0.79

Have had no experience pulling discs, harrows, drills, etc., with the engine, but have pulled trees with it. We have a big chain 25 feet long which we use. We give it a turn around a tree and so on till it is all used up,

fastening it at the last one. Start the engine up and it takes them out by the root a half dozen at



Holt-Parr tractor FIGURE 38 SEE PAGE 5



Nicola's & Shepard Reeves plow FIGURE 39 SEE PAGE 5

a time. We have taken out oaks by the root which were eight and ten inches through the trunk. This is a good way of clearing land which is covered with trees.

The oil tractor is the most popular in this district, as there are only two or three steam plowing outfits around here and about a dozen gasoline outfits.

It is a difficult matter to get water for a steam engine here, as the only place to get it is at the Red River, the farmers farther out having only ponds for their own use.

Wishing you every success, I remain,

Yours truly,  
J. R. McNair.  
Morris, Man.

### Likes His Outfit.

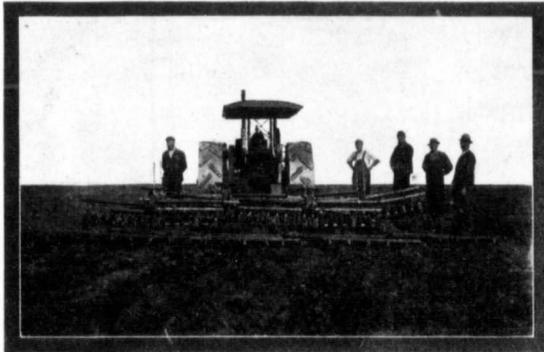
Last year was my first experience with traction engine work on the farm, so that, perhaps, my experience is somewhat limited compared with many other readers of your valuable magazine.

The traction engine has become almost necessary on reasonably large farms to take the heavy end of farmwork in order to get



a large area of well cultivated land into crop. The traction engine is the coming modern farm horse.

to buy a car of steam coal in the winter and haul it out while sleighing was good. Having but one team of horses, I found this



*I.H.C. tractor* FIGURE 40 SEE PAGE 5

Having a great deal of work to do on the land last year, I decided to buy a 25 horse power George White & Sons Co. steam

absolutely necessary. By the time land was ready to be plowed the car of coal was in a convenient place at the end of



*Geiser tractor* FIGURE 41 SEE PAGE 5 *P.O. plow*

engine, one that could be used efficiently for both plowing and traction work, as well as for threshing, and also with that

the field. We had very little water to haul; we placed the tank pump beside the slough and pumped direct into the engine

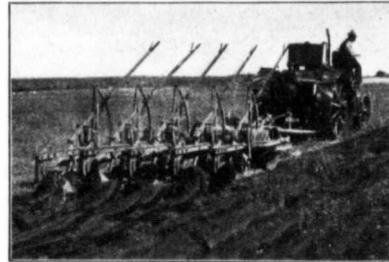


*Goold-Shapley & Muir tractor* FIGURE 42 SEE PAGE 5

an 8 furrow Cockshutt engine gang plow. As I was situated at that time about 23 miles from a railroad, I found it necessary

tanks. In that way, three men and one team handled the outfit quite easily. This year the railroad is much closer, only

## THIS IS ONE OF OUR GASOLINE TRACTORS



IT IS THE GENERAL PURPOSE FARM MOTOR

These models range from 8 to 50 h.p. All are fitted with three speeds—two, three and a half, and six miles per hour. These machines are very reliable and easy to operate. They have strength combined with lightness as only the best steel is used. Send for catalogue of this genuine English machine and book your order for early delivery without delay.

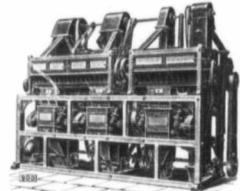
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Farmers! Grain Merchants! Etc.

Why pay exorbitant prices for your flour, bran and shorts when you can mill your own wheat?

Send for particulars of **The Best Self-Contained Flour Mill In the World**

It produces 300 pounds of fine flour per hour in three distinct qualities. It can be erected in any shed or barn. It is the best English make, the best material and best workmanship only used in manufacture.



## The 70 B. H. P. Ruston, Proctor Tractor

This tractor is undoubtedly the finest in Canada. It has two cylinders, two entirely independent systems of ignition absolutely reliable lubrication, every part accessible, oil cooling centrifugal pump for circulating the oil, weight 11½ tons, forward speed 2½ miles per hour, reverse 1¼ M.P.H. automatic spring drawbar.



We are agents for the following large English firms whose machinery is always the best, they have a world wide reputation.

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**E. R. & F. TURNERS LTD., IPSWICH, ENGLAND.** Manufacturers of flour mills from the smallest to the largest size ever made, grinding mills for seed, grain, sugar, spices and all purposes. Oil engines for every power requirement, crushing mills of all descriptions.

**SANDERSON & GIPKINS, BEDFORD, ENGLAND.** General purpose farm Motors.

**HUMBER LTD., COVENTRY, ENGLAND.** Motor Cars and Motor Bicycles. English Commercial Vehicle Firms. Motor Buses, Motor Delivery Vans, and Motor Lorries.

We also supply 20 B.H.P. "EARL" Farm Motor, Threshing machines and belts and anything else you may require in the gasoline engine world. No enquiry for machinery is too small or too big for us.

**The British-Canadian Agricultural Tractors, Ltd.**

Head Office: SASKATOON, SASK., and at Calgary, Alberta, and London, England.

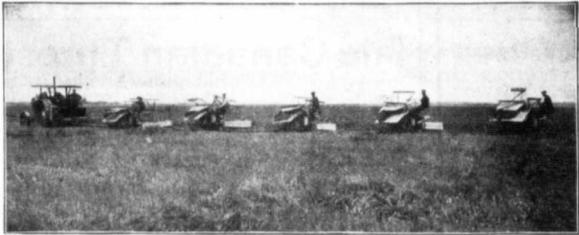
## It is Not the Cost; It is the Up-keep Which Counts

There are two guiding principles which should determine the decision of every prospective tractor purchaser. Where these principles are looked into carefully, tested, proved, and established by facts, tractor owners have become tractor enthusiasts.

Each man before he buys should ask two questions. First, "Which tractor will do my work for me cheapest?" Second, "Which tractor will cost least to keep in perfect repair?" It is because these questions have been asked and answered so many times that the

### I H C TRACTORS, TITAN AND MOGUL, HAVE BECOME THE ESTABLISHED STANDARD FOR THE CANADIAN TRACTOR TRADE

In buying a tractor it is neither necessary to speculate nor to take anybody's word for anything. Actual figures have proved actual achievement. For instance, in one demonstration, an I H C tractor plowed an acre for 31½¢ using gasoline at 20¢ per gallon, and for 29 3-10¢, using kerosene at 12¢ per gallon. In the short-season wheat countries **speed is a factor**. I H C tractors hold the world's record for amount of ground plowed in a given time.



Here is a statement from a prominent Canadian firm, Larsou Bros. & Hinch, of Grassy Lake, Alta., about the cost of keeping I H C engines in repair. "The tractors we delivered were three 45's, four 20's, and five 25's, and we may state here that we have never had a bit of trouble with any of them. We think that the I H C tractor can go out and do the work with any of them, and those we have sold require less repairs than any other make of engine sold in this district."

I H C engines are made in every style, from 1 to 50-H.P. general purpose engines, horizontal and vertical, stationary and portable. Tractors 12, 15, 20, 25 and 45 horse power. Have you seen an I H C engine catalogue? It is an education in itself on internal combustion engines. Write the nearest branch house for a list of the best year-round money-makers and labor savers in the market—I H C gasoline engines.

Western Canadian Branches

### International Harvester Company of America Incorporated

At

Brandon, Man.	Lethbridge, Alta.	Weyburn, Sask.
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	Saskatoon, Sask.	

about one-third the distance of last year, so the fuel question will be greatly simplified. Though I bought an 8 furrow plow I took off two plows, leaving 6, and put a packer on in place of the other plows. I think the value of a packer directly behind an engine plow can hardly be estimated. It takes the furrow right away while it is moist and pliable.

I expect this spring to do my discing and seeding with engine; first 2 disc harrows in-throw and out-throw directly behind the engine, then the packer, the drill following the packer and drag harrows following the drill. This is not a full load for that size of an engine, but I do not consider it wise to force an engine, steam or gasoline, to full capacity, and if an engine runs with an overload very long, it shortens life of engine to large extent.

There are about as many gasoline engines in this part of the country as there are steam, some favor one, some the other. The gasoline finds favor because they require fewer men and teams to operate; but if you inquire further and ask which is the



*Rumley Oil-Puller* *Massey-Harris plows*  
FIGURE 43 SEE PAGE 5



*Universal tractor* *Cockshutt plow*  
FIGURE 44 SEE PAGE 5

surest and most reliable, almost without exception the answer is in favor of the steam engine. For threshing purposes, steam engine is the most popular.

Threshing is much easier on the engine than plowing. I would rather let my engine thresh two days against one day's plowing.

Yours truly,  
H. Lowick.

Roseray, Sask.

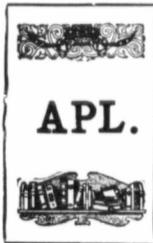
### Feeding Oats Does Not Look so Expensive as Buying Oil.

In a recent letter you ask for my experience in traction plowing, and, as the owner of an outfit in this district, and in as few words as possible, I will endeavor to give it to you.

Our engine is an Ohio gas tractor of 45 h.p., and we pull a Cockshutt gang with six bottoms in breaking and seven on stubble, which does not overload the engine.

In threshing we drive a 34 x 56 Rumely Ideal separator, and get good satisfaction out of it. Our experience is hardly one of use to anyone intending to go into traction plowing as a contractor, as we do no work that





## The Canadian Thresherman and Farmer

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TREASURER

"Everything begins and ends with the soil."



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**T**HERE CAN BE NO CONTROVERSY about the social principle of "Give and Take."

It is a universal law on which hangs every vital element in human relationship. Some of us are wonderfully skilled in the art of ledger-deman and can so cleverly manipulate the unseen as well as tangible commonplaces that we appear to the uninitiated to have been entrusted with supernatural endowments. But after all, even the little dots in the front seats are alive to the humbug. They know as well as the aged patriarch by their side that no man ever really took a jack rabbit out of a plug hat unless it had previously been placed in the hat.

**IT IS NO LESS A POSITIVE FACT** that if you take vitality or substance from anything that Nature has made, it must be returned in kind, or some sort of restitution made if the eternal fitness and balance of things is to be maintained. This is the commonest platitude we could well employ and yet there is no self-evident ruling of Nature that is so persistently violated by men. They not only "take it out of themselves", but with fatal persistency wage a perpetual warfare on every point of

their environment that can be exploited at the call of their insatiable greed.

**THE GENERAL PRACTICE OF AGRICULTURE** in Western Canada offers a remarkable example at the present moment of just what this means. Dr. Samuel Johnson, with his usual sagacity of thought and language laid down the axiom: "Agriculture not only gives riches to a Nation, but the only riches she can call her own!" The Farmer is truly the "man of the hour." The crops support the railroads, run the ships, make markets for the minerals, and are the very life-blood of the cities. With such a weight of responsibility on him, then, how is he discharging his obligations to Society? What guarantee is he giving that in tacitly undertaking to "Replenish the earth and subdue it" he will be faithful to his trust?

**AS A POWER FARMING JOURNAL**, it is hardly to be expected that the "Canadian Thresherman and Farmer" will also specialise on the other side of the farm—the raising of live-stock. Some of its contemporaries are doing fine work in this direction. "The Thresherman" is heart and soul with them in all that they claim for the necessity of mixed farming. The advantages of mixed farming over a purely grain-growing routine, we say without qualification cannot be computed, and we have neither the space nor the patience to express our pity for the whining imbecile who affirms that stock raising in the West "Don't pay".

**GAS ENGINES WON'T RAISE PURE BRED STOCK.** We know that, but even in the face of the circumstance that this "Power Cultivation" issue of our Magazine is devoted specially to the subject of the land by Power Machinery, we say: "Woe betide the short-sighted plowman who neglects to carry with him the means whereby he can 'Replenish' the earth by returning in some measure that substance of which he has denuded it by his extensive grain cropping."

**THE MAN AT THE THROTTLE VALVE** or the gas engineer with his 14 bottom gang plow, double disc harrow and gigantic "seeder", all in tandem, is nevertheless taking a magnificent part in Western Agriculture which admits of not one single depreciatory word. His unique place in the Cultivation of the Western prairie is as yet barely appreciated, but it will be felt in all its force before many crop seasons have passed to their account. With his 'big wholesale line' he is stealing a march on what would otherwise be a rate of progress that could never hope to keep pace with the fast increasing population, at every point where the living things of civilized life have to be fed.

**HE IS INCREASING THE LAND VALUE** in every furrow he turns, but when he has helped himself to all that he may legitimately appropriate from this wonderful mine of wealth he will remember that, unassisted, this source of supply is not inexhaustible. He will "replenish"—naturally or by artificial means, but no sane man will spend even a fraction of his earnings on fertilizing compounds when he can feed his land by the means that kind Nature has provided and which can never be improved upon by the concoctions of any patent medicine quack.

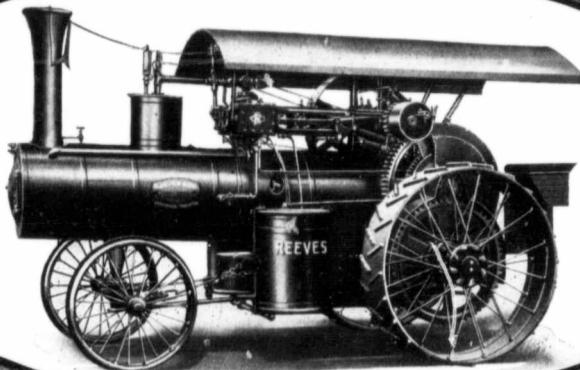
**RAISING WELL-BRED STOCK PAYS**, but in rearing scrub-cattle by chance, there is neither glory nor profit. In passing, our friend J. D. McGregor, of Brandon, paid \$1150, at Perth Spring Show the other day for an Aberdeen-Angus Heifer! He didn't do it for fun, but because he *knew* it would pay to buy the animal at that money and bring it to Western Canada. If the big power-farmer is not disposed to build barns as well as granaries, he will do well in his own interest to split up his sections and sell out to those who will do the work intensively and proceed to tap the virgin sod elsewhere. It has got to come to that in time, but this is no reflection on the big power farmer. He is on the level of his day and is taking a place in agricultural progress that could not be filled by any other agent known to this generation. We thank him in anticipation now, and the whole country will one day arise to bless him.

### 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 K. 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."

REEVES

CANADIAN  
BRANCH:



REGINA,  
SASK.

## Durability and Good Working Qualities in a Threshing Outfit Assure Profit to the Owner

Profit is what appeals to the buyer of threshing machinery, and when the qualities necessary to the greatest profit can be found in one machine, that is the one you should buy, even though, as is likely to be the case, the price is larger than on other machines. The following letter is right to the point and tells the experience of an operator of Reeves machinery:

*Reeves & Co., Columbus, Ind.*

*Fullerton, N. D., May 29, 1911.*

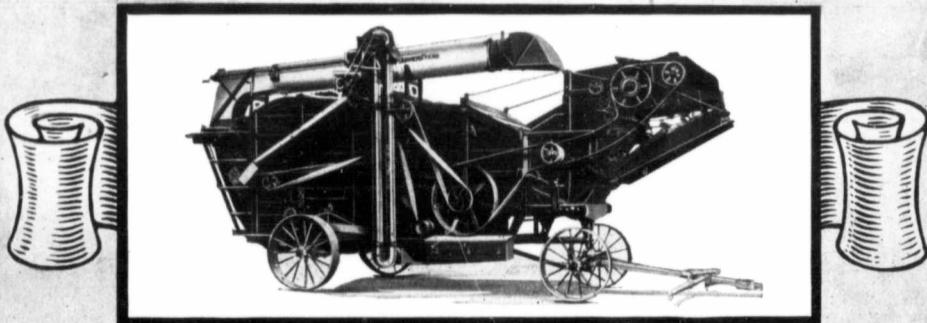
*Dear Sirs:—Have you on hand lower pan for 40x60 separator No. 1052 bought in 1900? If you have, let me know and send price. This is the first repairs I have had to buy in eleven falls. I run this separator six falls in Illinois and five falls in Dakota, and it is still in first-class shape excepting this pan, and today, with a new pan, I will put it up along side any new separator and do a better job. I also am using most of the belts that come with it.*

*Respectfully,*

*R. F. D. No. 2, Box 25.*

*Myron McKeague, Fullerton, North Dakota.*

The Reeves Double Cylinder Engine and the Reeves Compound Separator make an outfit that will prove profitable to you, satisfactory to your patrons, and with reasonable care, will last a life time.



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REEVES

Conducted by  
Professor  
P. S. Rose

## Practical Talks to Threshermen

Talk No.  
LVI.

### LESSON LVI.

It is always interesting to learn how men have struggled to achieve success. The stories of difficulties met and overcome, of failures, of disappointments and of ultimate success in the field of invention are not less interesting than stories of war and of adventure, but fewer of them are told. Successful inventors are busy men and few of them care to write, consequently stories of how they worked and the sacrifices they have made are very scarce. Some one said in our hearing recently: "It is too bad somebody doesn't write a book, not about what experiments succeeded, but what failed." If such a book were written the world would be richer by a great deal, but curiously enough we never care to know about the failures until we act-



Mr. F. H. Marshall, Darlington, Indiana, Inventor of the First Successful Self-feeder.

ually try to do the same thing ourselves, and then we realize that they tell much more than the success and a record kept of them would be of untold value to the next laborer in the same field. If we only had such records in our libraries to guide us—records of the failures in every line that men have investigated, all tabulated and indexed, the world would progress faster because we would not have to thresh over old straw. Undoubtedly most of the inventive energy of the world is expended in doing what some one else has either done or proven can't be done. Even the professional scientist is careless about publishing an account of his failures even if he ultimately succeeds, and if he does not succeed, his pride will keep his lips closed and his pen idle.

It is always easy to see why a certain thing does not work after you have tried it out. The things that do work right seem so perfectly natural we always wonder why no one ever thought of them before, but the explanation is easy—people are not often gifted with the constructive imagination, the ability to step out into the unknown and think another step forward. When the job is completed and success achieved we look at the completed work and know it is right, because things that are right look right, as a rule.

Very few stories have been written about the invention of the grain thresher, or of any of its parts although many of those inventors are still alive. We are very much pleased, therefore, to publish the experience of Mr. F. H. Marshall, of Darlington, Indiana, who was one of the first successful inventors of the self-feeder. He not only tells of his success, but tells about a number of things that were tried and found wanting, and these are not the least interesting parts of the narrative.

"I will endeavor to give you my experience with band cutters and feeders for threshing machines. It is so long since I have given the matter any thought and as many of my papers relating to the same have been lost or destroyed, I will have to depend principally on my memory. In the first place, it might be well for me to give a few reasons why I became interested in a self feeder. In 1882, the farmers and the threshers in this locality were considerably troubled in getting sufficient help during the threshing season and especially help that had had experience in cutting bands. So the idea occurred to me, why not make a pitch fork that will cut bands and let the men who pitch the bundles cut the bands?"

"After thinking the matter over for a time, I concluded I could make a knife to cut bands and attach it to an ordinary pitch fork. I first made a small wooden model of what I thought would do the work and it looked so good that I applied for a patent. But after I had a full sized cutter made and tried it, I found it was not practical, not because it would not cut bands, but because it was very awkward to operate, and would cut the bands usually at the wrong time. I gave it up as a failure,

but not until I had sold half an interest in my patent for enough to let me out whole with regard to the time and expense I had devoted to it. Patent was issued March 23rd, 1883.

"In the meantime the thought occurred to me, why not make a machine that will cut the bands and do the feeding too, and take the place of three men instead of two? My first model was soon completed, and while it lacked much of being perfect, the fact remains that I have never changed the fundamental principles of design, and there is not a self feeder on the market today that does not use some or all of those same principles. After getting the model completed I could see no reason why a full sized machine would not work equally well on a separator, and proceeded to have it patented. Having had some experience in the patent business I concluded to let my brother, J. A. Marshall, furnish the money and take a half interest with me. Before we could get through we had obtained two patents on a band cutter and feeder. The first one was issued January, 29th, 1884, number 292,667, and the second on December 9th, 1884, number 309,074. We also obtained a Canadian patent, but never did anything with it. After we had made our first application in 1883, we concluded to make a full sized machine and give it a test. As neither of us owned a threshing outfit, we had to arrange with the different threshermen in this locality to let us try it on their separators.

"Mr. Ed. Greist was the first thresherman to grant us the privilege, and we were not very long in making the test. We had not provided for making any changes in the speed of any part of the feeder, and found that it was speeded too high, therefore all we could do was to take it off and make the necessary changes. By the time we could get it ready for another test the threshing season was nearly over, and it had been reported over the country that our feeder was a complete failure. We were not to be discouraged, however, by idle gossip, and immediately arranged with John Dukes, who ran a threshing outfit east of Colfax, to let us make the second test on his separator at his home. Mr. Dukes was very nice to us in giving us all the time we

wanted in attaching the feeder and making the test, and did all he could to assist us. We were again doomed to disappointment. The feeder worked fine for about half an hour, when all at once it came to a dead stop. It took some time to locate the trouble and we found that a change in the feeding device would be necessary to overcome it. By this time the season was so far advanced that we were obliged to wait another year to continue our experiments.

"In order to give the reader a better understanding of our troubles it will be necessary to present at this point a short description of our feeder. The main frame or bundle carrier was six feet long and thirty-two inches wide on the outside. Our band cutters were round knives or discs with continuous cutting edges which revolved at about 300 revolutions per minute. Our feeding device consisted of five reciprocating vibrating pans, operated by revolving shafts with a separate eccentric for each pan. Up to the time we made the second test we had placed the eccentric shaft next to the threshing cylinder and let the outer ends of the feeding pans slide on an iron rod under the front of the bundle carrier, but in attaching the feeder we placed the feeding pans above the feed board in the yoke of the separator in order to prevent the loose grain and straw that sifted through between the feed pans from falling to the ground and this was what caused the trouble in our second test.

"The eccentric shaft revolved toward the threshing cylinder, and this caused the eccentrics to rake all of the shatterings back under the feeding pans, thus stopping the machine. It is perhaps safe to say that nine out of every ten people who have seen our machine were by this time convinced we could never make it work successfully, but we were far from being discouraged. In 1884 we arranged with Birch Brothers, at Crawfordsville, Indiana, to furnish us with the necessary castings and do the machine work for us. We had discovered we could make several minor changes in the feeder without changing the principles, the most important of which was the changing of the position of the eccentric shaft by placing it at the outer end of the feeding pans and allowing the

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AS WELL AS OURS



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other end to slide on the feed board. We also changed the raddle carrier for a canvas carrier, made sliding boxes for the outer roller so the slack in the bundle carrier could be taken up without having to stop the feeder and arranged for three different speeds for the bundle carrier. We felt that our 1884 self-feeder was about perfect and arranged to put out two or more that year. Only two were built, and we found a little later on that they were all we cared to look after that season.

"The changes above mentioned corrected the first troubles, but we discovered after running a few hours that we had other difficulties to overcome. Our band cutting knives were only twelve inches in diameter and by placing the centre of the shaft so that the knives would come within five inches of the bundle carrier, we found it was set too close to the carrier for the different sized bundles. We also found that the knives got so dull after a few hours run that they would not cut the bands. We could easily sharpen the knives but could not raise the shaft any higher without getting the knives too high, so we decided, as the discs or round knives were rather expensive, we would try a set of curved knives sixteen inches long with sickle edges. We found the new knives were all right and that we could raise the cutter shaft high enough for all practical purposes, but in order to keep it from wrapping in damp straw we had to put the round knives on with the curved ones.

"By this time we had most of the mechanical difficulties overcome, but our troubles did not end here. The machine did not find favor among the farmers, and every man who expected to get good wages for feeding a threshing machine condemned our feeder. We did not have a centre board on our carrier, but depended entirely upon the pitchers to pitch the bundles straight. They were not very long in finding that they could pitch the bundles crosswise and cause trouble, and many of them seemed to delight in doing it. To overcome that trouble we put a half inch iron rod lengthwise over the centre of the carrier and high enough to keep the bundles straight, but it was not very successful; if placed high enough to answer the purpose bundles were apt to go under it crosswise and when a bundle was pitched hard against it there was enough spring in the rod to throw the bundle off the carrier. After finding the rod did not accomplish the purpose, we substituted a 16-inch centre board, and then the pitch-

ers growled. They complained that the space between the centre board and the sides of the carrier was too narrow, but we insisted that it be used and that the pitchers exercise greater care. We finally won out, and it is still a feature on all feeders.

"Our experience with both feeders was about the same and while we were pleased with the progress we had made we did not insist on either of the feeders being kept on during the entire threshing season. One or two weeks of worry and anxiety was about all we cared to stand in one season. We had the satisfaction of knowing, however, that the feeder was beginning to make friends. Both the threshermen and the farmers saw that it would not only eventually be made to work but that it would save them the expense of two men during the threshing season.

"We succeeded so well in 1884 that we concluded we could put out six or eight feeders the next year and branch out farther from home. I attached four feeders in Fountain county and got them started in good shape early in the season of 1885, and felt I would not have much trouble with them, but I was again doomed to disappointment as two of them did not run over a week or ten days before they were taken off.

"About this time I began to learn something about human nature. Much of the grain was in bad condition and hard to feed without slugging the cylinder occasionally, even with hand feeding, and many times I saw hand feeders slug the cylinder hard enough to throw off the drive belt. Whenever the self feeder did any slugging there was a great howl about it, and yet it never at any time slugged hard enough to throw off the drive belt. I was fortunate in getting two of the self feeders into good hands. One with Mark Furr and the other with Howard & Whitesell, and both of these ran through the threshing season and gave very good satisfaction."

The account of Mr. Marshall's experiences will be concluded in the May issue.

Most of us set a higher standard for our neighbors than we do for ourselves.

\*\*\*\*\*  
Colored glass came from Egypt. The Egyptians carried the art to great perfection apparently before history begins to tell of it.

\*\*\*\*\*  
What the corn heard with its own ears, the potato saw with its own eyes.

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Manufactured in England from the Highest Grade Cotton Duck to specifications called for by the Western Canadian market. Perfect satisfaction guaranteed. We are the sole importers and carry a large stock.

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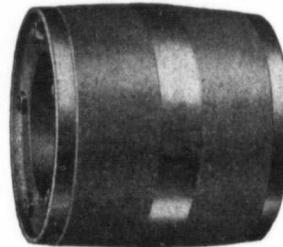
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**The Thresherman's Question Drawer**

Answers to Correspondents

**Q. L.G. 1.** What is the trouble with a Marsh steam pump when the steam blows through the exhaust continuously, while the pump is running? The cylinder rings on the steam end are in good condition, and the pump has always been well supplied with cylinder oil. This makes the third Marsh pump I have had, and they have all acted in the same manner after about 20 days use.

**2.** What is the best method to use to stop the leaking of stay bolts where it is inconvenient to take off the boiler jacket to get at the outside ends?

**3.** What causes the sight feed glasses in a Swift lubricator to break when good gaskets are used on both sides of the glass? I have had three or four glasses break in one day.

**4.** Which is the better to use in a separator when threshing tough oats, two full sets of concaves set up close to the cylinder or one full set and every other tooth removed in the other set?

**A. 1.** It is evident that the steam valve of your Marsh pump leaks. Just why it should do so we are unable to state. It may be that the ring in the small piston valve is stuck or it may be that there is a groove in the walls of the valve chamber which allows steam to blow through. The writer has used these pumps a good deal, but has never experienced the difficulty you mention. The usual difficulty experienced in handling these pumps arises from lack of proper lubrication. It is quite certain that steam cannot blow through into the exhaust continuously unless something is wrong with the central portion of the valve.

**2.** We know of no easy way to repair leaking stay bolts. The only method we can suggest is to take off the boiler jacket and rivet the heads of the bolts over.

**3.** Most people screw up the packing nut of Swift lubricator glasses too tightly when cold and when the injector warms up, the glasses break. By using good gaskets and by not screwing the nut on any tighter than one can easily do it by hand there will be little danger of breaking.

**4.** We would advise using a full concave in front, then a blank and then another concave. Set the concaves up quite close and increase the speed of your engine. There are many conditions one will encounter in

threshing, and no general rule can be laid down by which all of them may be solved. Threshing is peculiarly a business in which the operator must exercise his best judgment.

**Q. J.D.** Will an injector work any better if a feed pipe is made to enter the boiler near the water line or at the bottom of the boiler where the injector will have to work against the pressure of the water above?

**A.** It would be of no particular advantage to have the feed pipe from your injector enter near the top of the boiler. In any event the injector must overcome boiler pressure and the added pressure due to the weight of water above the opening of the pipe which enters at the bottom of the boiler cannot under any circumstances amount to more than a pound or two.

**Q. C.B.B.** If a boiler will stand one hundred sixty pounds will it stand one hundred thirty pounds of steam?

**A.** One never can tell just what a boiler will stand. In testing a boiler it is usually tested with cold water pressure at fifty per cent more than it is expected to stand under steam pressure. Steam pressure is no harder on a boiler than cold water, but it is argued if a boiler will safely stand one hundred fifty pounds cold water pressure it ought to stand one hundred pounds of steam.

**Q. J.C. (1)** Please inform me what I can put in boiler feed water that will prevent it from foaming and depositing a hard scale on the inside of the boiler? It not only limes up the boiler but the injector also.

**(2)** Also inform me what causes grain to go over in the straw. I have set the machine low in front, but it does not seem to help any. Grain goes over in the straw, but never on the sieves.

**A. (1)** There are so many different chemical substances in various feed waters that we find it impossible to prescribe a universal remedy that is safe to use. There are some boiler compound companies that do this, but the best of them require a sample of the water, and then prescribe the compound after making an analysis. A good chemist can tell what will correct bad water after he has made a careful analysis but there is no assurance that a water even from the same well or same stream will always contain the same scale making elements. Consequently it is impossible to pre-

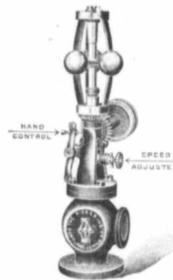
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scribe any general remedy. Waters containing sodium sulphate or sodium carbonate which are found through large portions of the West cannot be treated with anything that will prevent them from foaming. The only treatment we have ever found that was satisfactory is to clean the boiler out frequently, and after that blow out a certain portion of the water each day. In this way the percentage of alkali and other solids can be kept at the lowest point, and little difficulty will be experienced in operating the boiler.

2. If grain goes over in the straw, and is not blown off from the sieves, one of two things must happen. Either the cylinder does not get the grain out of the heads, or else the blanket of straw is not shaken up as it should be in going over the racks. In that case the racks are probably travelling too slowly, which would indicate that some of the belts are too slack. If the grain is not threshed out of the heads it indicates that the concaves are not set correctly, that there are too few teeth, or that the cylinder runs too slowly.

Q. R.G. (1) Is there any way to test lubricating oils with acid to tell the quality of them? What kind of acid is used?

(2) Which is the better to use on the piston rod and valve rod of a traction engine rubber or hemp packing?

(3) Is there liable to be any scale in a boiler where the feed water has a little sulphur in it, or will the sulphur keep the scale cut out?

(4) What would you advise using in a boiler to remove scale?

A. (1) There is no acid test for lubricating oils. Oils are tested in a number of ways, but acid does not enter into the operation. The usual method of a viscosimeter, the flashing point by heating in a closed vessel, and the amount of acidity by a chemical test. There is no easy general rule for testing oils, which any man in the field can use.

(2) We recommend patent ring packing for both the piston rod and valve stem. This ring packing consists of rubber and hemp which is made in the right form to fill the space between the rod and the walls of the packing box.

(3) The action of sulphur in feed water under certain conditions is to form sulphurous acid, which may or may not attack the scale, depending upon what it contains. It is always sure to cause pitting and corrosion of the boiler.

(4) We ordinarily do not make any recommendations in regard to using boiler compounds. In clean-



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For your Plowing Engines, Road Rollers, etc.

Works high 215 to 225 lbs. steam on 3 ft. lift, temp. water 74 deg.

Starts low 35 lbs. on 3 ft. lift water 74 deg.

Handles hot water 125 deg. at 100 to 125 lbs. steam.

“ ” “ 115 “ ” 140 lbs. steam.

“ ” “ 104 “ ” 160 “ ”

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works as follows:

Start low 30 to 22 lbs. steam on 3 ft. lift.

Work high 165 to 170 lbs. steam on 3 ft. lift.

Lift water 20 to 34 ft. on 60 to 80 lbs. steam.

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ONE MAN is easily able to do perfect work. Has complete control of engine at all times. Can fill oil and grease cups and keep grease cups screwed down, tighten all loose nuts while travelling

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on the starting gear is sufficient to make the engine respond to any desired movement. Leverage is so arranged, the least pressure is completely effective.

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When a plowing engine is used without a steering device, the strain on the man standing at the starting wheel steering at the furrow and guiding his engine for from 12 to 15 hours a day, can only be realised by one who has actually had this experience. At very little cost with this device you can overcome this, reduce your wages bill, and vastly increase the efficiency of your engine. Built for “Rumely” “I H C.” “Flour City” “Fairbanks” “Hart-Parrr” and all other well known tractors.

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ing the boiler the best thing to use is a scraper. Sometimes you can obtain good results by using kerosene or even cylinder oil. Of the two we prefer kerosene to soften the scales. After softening it should be washed out with water.

Q. E.J.P. (1) Can you give me a formula for a good liquid belt dressing?

(2) Can you give me a recipe for making cement for applying on neat's-foot oil?

(3) What do you recommend to prevent scale from forming in steam boilers?

A. (1) The best belt dressing we are acquainted with is neat's-foot oil. All harness oils have neat's-foot oil for their base. You can add a little lamp black to

the oil to give it color if desired. Neat's-foot oil keeps the belts soft and pliable, but does not make them soggy like a mineral oil.

(2) We do not know of any cement suitable for gluing canvas to metal pulleys.

(3) We are asked every few days to recommend some boiler compound. We have always re-



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Go Hand in Hand as Pre-eminently the Best. Ask the fellow that has one

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fused to do so, because there is no compound made, suitable for all the various kinds of feed water. What will be suitable for one feed eater will not work for another. Correcting any feed water is a nice chemical problem, and one that should be handled by a chemist. Most of the boiler compound concerns that advertise to analyse the water, and then send you the proper compound, merely dump the sample into a sewer, and send you their stock compound. Probably the best all round boiler compounds are the sodium phosphate compounds. They will correct any feed water containing their lime or magnesia, but will have no effect upon some of the alkali waters. They are rather expensive to use, but are perhaps as cheap as any in the long run. If there is considerable carbonate of lime in the water soda ash will be found helpful.

**Q. G.S. 1.** Which is preferable, a thirty-eight inch boiler and a given number of flues, or a thirty-six inch boiler with the same number of flues in it and of the same length?

2. Which boiler could be used for an engine in traction plowing that would have the lowest steam pressure and still do its work?

3. Which will give more power with the same steam pressure, and which is more economical in the

use of steam, a cylinder of seven inch bore and twelve inch stroke, or a cylinder of seven inch bore and thirteen inch stroke?

4. Could a steam engine of the double cylinder type be operated with less steam pressure than the single cylinder engine, or could the double be operated at one hundred or one hundred twenty-five pounds where the single is one hundred forty or one hundred sixty pounds in plowing?

5. Does it injure the strength and endurance of the boiler to have water tanks placed on the sides, front or on top of the boiler in front of the firebox with bolts and brackets? Would it be better for the boiler if this weight could be taken care of in the rear with properly constructed fuel bunkers?

6. Which produces the most power and is best for the machine, a small faced fly wheel of the same diameter travelling 250 r. p. m. or a fly wheel of the same diameter with a wider face travelling at 225 r. p. m.?

7. Which would be the more proper height for a plowing engine, traction wheels of seventy-three, seventy-four or seventy-six inches in diameter?

**A. 1.** A thirty-six inch boiler is slightly stronger than a thirty-eight inch boiler, the same thickness of metal and the same style of riveting being used in both. Aside from this feature, the large boiler shell will give a little larger

space between the flues and make it easier to keep the boiler clean. In some places this is very essential. In others where the water is good it doesn't make much difference. If the tubes are close together the thickness of the sheet of water between flues will be considerably less with a thirty-six inch boiler and it will be easier to get up steam. You will notice that there are arguments for and against either size, and conditions alter cases.

2. The small difference in the size of the two boilers makes one practically as strong as the other, and we see no difference in the desirability of the two boilers. Either one would have to be run at practically the same steam pressure.

3. The economy of an engine and the steam pressure at which it will work to best advantage is not dependent upon bore and stroke alone. In fact the bore and stroke are minor considerations in matters of economy, the type of valve gear, the quality of the steam, the insulation of boiler and engine, the point of cut-off and the design of the steam passages, are all much more important factors in the matter of economy.

4. You can use the same steam pressure in a double cylinder engine which you use in a single cylinder. A double cylinder engine as constructed and used on the traction engines will require somewhat more steam to do a

given amount of work than a single cylinder engine. It has the advantage, however, of providing more uniform torque at the crank shaft, being a little easier for the operator to handle and consequently more desirable in many kinds of work. Its advantages are that it takes more fuel and more water to do a given amount of work. Men who have become skilled in the use of single cylinder engines prefer them to the double cylinder on account of economy.

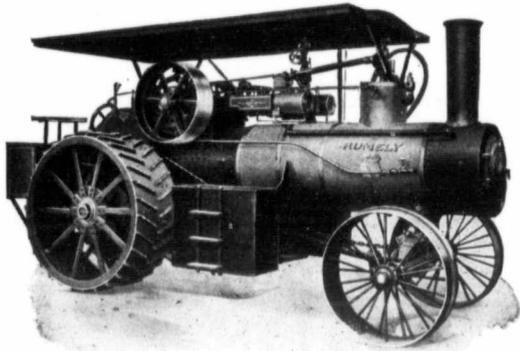
5. Any additional weight adds just that much strain to the boiler and it is better engineering to design the boiler to furnish steam only and not to act as a carryall. The principal objection we see to water tanks is the matter of brackets. The bolts passing through a boiler shell weaken it slightly and make one more place for corrosion to attack the metal. The weight and the strain of the water tanks are minor considerations.

6. A fly wheel does not produce any power at all. It merely balances the machine.

7. Traction engine builders have been building larger and larger wheels until some of them are upwards of seven feet high. It is found these larger wheels are an advantage in that the engine travels more easily and smoothly over the rough roads.



POWER FARMING MACHINERY  
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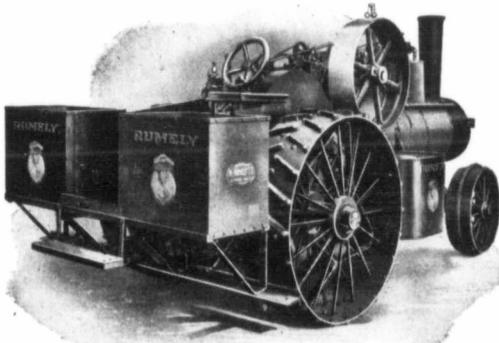


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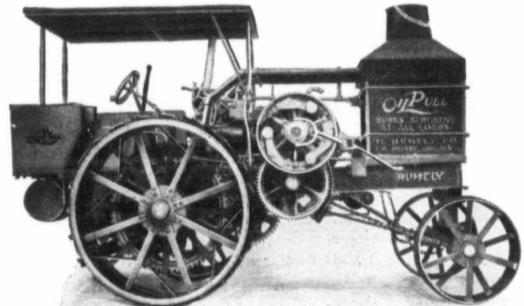
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Three Generations. Will Serve YOU.

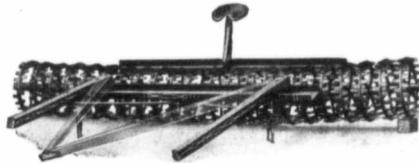


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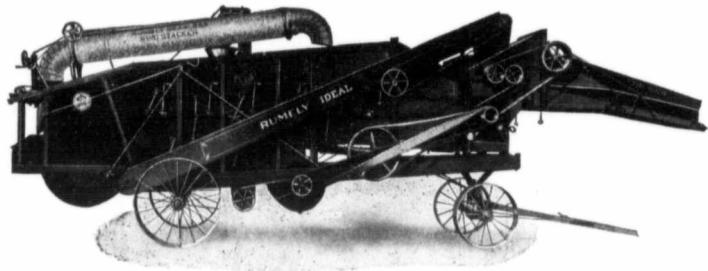
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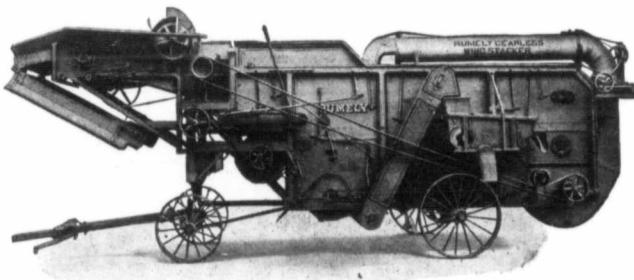
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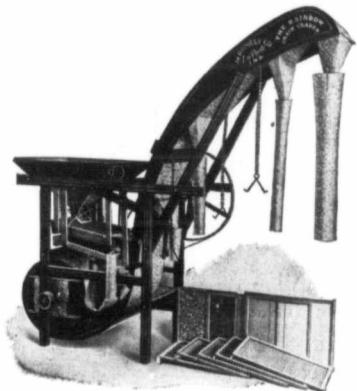
1941 Rose St. Regina, Sask. 1941 Edward St. Toronto, Ont.  
1941 Fay St. Winnipeg Man.  
1941 Scott St. Saskatoon, Sask. 1941 Clay St. Calgary, Alta.



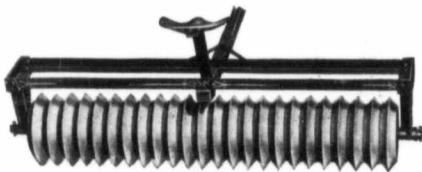
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### Selecting a Farm Horse.

If you have decided to start out on a horse-buying expedition on your own responsibility, remember, first, the old maxim that a good horse is never a bad color. It is as difficult to find two horses alike as it is two men. Think for a moment yourself. Have you even seen, anywhere, a perfectly matched pair of horses? I do not affirm that you have not, for such a thing is possible, just about as possible as to find a matched pair of men or women.

There is a better chance to get good cross matches, and it is better to have them crossed than to have a pair that do not mate. You cannot buy a horse as you would a bit of silk, and the matcher of these goods who has haunted a bargain counter would find a thousand chances to one against even a reasonable success in this line.

Also, in buying a horse, don't ask the opinion of your wife, your aunt, or your grandmother, nor your friends—that is, if you are in danger of accepting such advice. If you select a horse, the soundest and of the best conformation, and show him to a dozen of your friends, each and everyone would have a different opinion, though they are probably as ignorant as yourself. Perhaps one happens to own a good horse he picked up by chance, and thinks wisdom on this question will die with him. Now, if you are not conversant with the anatomy of a horse, you had better not try to buy him on your own judgment, unless you are purchasing from a responsible breeder or a well-known dealer who has a reputation to uphold.

But if you are an enthusiastic buyer on your own account, perhaps you may be given a few hints that will be of assistance.

After you select the horse which you think has captured your fancy, it is best to have him brought out for a careful examination. If free from defects he is most likely to retain your good opinion. Be sure that he is cool, and not in a heated condition; remember that the horse is subject to every ailment that flesh is heir to, that he has temperament, disposition, in-

dividuality, and needs to be very carefully bought. The first thing you look at his foot—no foot, no horse. It should be on the concave order, with a deep sole and not too narrow. This denotes breeding. Rub your hand down his fore legs, examine for splints; if on the bone they will never hurt him, but if on the tendons, drop him like a hot potato, no matter how small the splint. To save time and trouble have him jogged quietly down the floor and, look for lameness, and see if his style of going suits you. Now examine his coronets for sidebones, take a look at his eyes and that very closely. Stand in front of him and see that he has a full chest; glance between his fore legs at his spavin joints. Run your hand over his kidneys and press hard as you do so. Pass behind him and see that he stands square. Examine for curbs—a curb will never hurt a horse after he is six years old. Feel his hocks for incipient spavins, or bruises on the top of his hocks, which require a satisfactory explanation from the owner. Don't forget to look for thoroughpins and bog spavins. Look carefully at his hips, that they are both alike. I would never buy an interfering horse, or a horse that shows symptoms of it.

In the matter of age, a four year old is not preferable. I would rather buy a horse at eight or ten than five, as he is then in his prime, and his habits are all developed. If the horse has arrived at that age and maintained his soundness, you can rely upon his being a good horse. See that your intended purchase is well ribbed up; long-backed, narrow gutted horses are bad feeders and doers, and cannot stand their work. See, also, that he has plenty of neck, good, high shoulders and sloping back. Then, proceeding, ask the holder of the horse to walk quietly into his flank both ways, turning him swiftly; then back him while you look carefully for symptoms of spring halt or cramps. If, up to this, the horse has borne inspection favorably, put a man on his back and gallop him as fast as he will go to test his wind for a whistling sound. If all right, have him

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## Get My New portable GRANARY

**"SEE how handy my new granary is. You place four or five of them around your quarter section. This saves time in harvest hauling to stacks."**

**"Then my granaries come in to hold your grain from each stack. My granary keeps grain clean, dry and unheated. No musty grain, no losses from rats or vermin. When ready haul direct to the elevator from the granaries."**

**"I make several sizes of this handy granary. You can get 150, 200, 300, 400, 500, 600 and 1000, full measure guaranteed Imperial Bushel sizes (not small U.S. bushels) and you set up any Pedlar Granary in half a day. Remember you can move it easily any time. My Granary saves big money by cutting down teaming and keeping the grain right."**




**"See how the man at the left can shovel grain in from the threshing machine, if it has no leg-spout to deliver grain direct through the manhole on the roof. The other man is bagging grain. Granaries are had with door-section or plain, as desired. My new Granary is just right for saving cost. It pays for itself in a year. It comes in sections—low freight cost. A boy can set up. Write for my descriptive booklet." 700**

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put in harness to see if he has any vice. Stable habits, such as weaving, wind-sucking, cribbing and halter pulling, must be left to the veracity of the seller's word, as they are only to be detected when the horse is standing quietly in the stable. If he fills the bill, buy him, for good horses are scarce.

After you get him home use him kindly for a few weeks. Don't use the whip. Make a friend of him. Horses should be treated as intelligent beings. They are like men in the amount of courage they can muster up. Some are the veriest cowards, and others are possessed of a rade-devil spirit.

Horse-science has proven that a clipped horse properly cared for is, even in the coldest weather, if in constant use, far more comfortable than those which are allowed to retain their full coat of hair. Man requires such work of the horse as to sweat him severely if his coat be long, and indeed, it has been found so burdensome to a horse that when driven for any distance he would blow quite seriously, whereas after being clipped he could go without discomfort. If the long coat could be kept dry it would not be so objectionable, but as soon as it becomes saturated with sweat it is a menace to health. It is necessary, of course, after the removal of the long coat, to provide double allowance of clothing, and avoid standing still out of doors without a blanket after using for any length of time. Properly cared for, however, the danger of a clipped horse taking cold is much less than when the hair is long and wet with perspiration.

A man who loves his horse looking carefully to feeding and watering, seldom has a sick one. It is the careless feeder whose horses often have colic and like disorders from improper and irregular feeding, which in other stock might give no bad results. Musty hay, oats and corn are not fit for food. Bedding should be supplied in abundance and not allowed to lie in lumps or in an uneven manner, but kept constantly shaken up. The bed should be raised along the side of the stall, wet parts and droppings removed and repaced with dry straw. This treatment, with disinfectants, will make the stable wholesome.

Don't send your horse to the blacksmith to have his feet cut down to make them look small. Many horses have been ruined by the smith cutting the foot to fit the shoe, rather than making the shoe fit the feet. Leave him plenty of sole; never let the knife be put into it, the rasp being far preferable.

**Story of a Stingy Husband.**

In a lively article the current number of Farm and Fireside, on the relations between husbands and wives on the subject of home finances, there are several interesting reports of actual cases.

Following is a report of a stingy husband:

"A girl I knew in my youth was married after a short acquaintance to a scholarly professional man. He had been brought up under hard conditions in a strenuous school of poverty. She was the daughter of wealth and had never been denied a reasonable wish. Her husband was what is called a good provider. He bought amply for the table, and was not averse to having plenty of fuel and sufficient house-furnishings to keep his home comfortable and dignified. He simply declined to let Betty buy so much as five cents' worth of anything. He did not wish her to have accounts at shops, nor did she desire them. When she wanted to buy anything for herself or the children, he accompanied her, superintended her purchases, examined every pair of stockings and every yard of muslin, and frowned upon ruching and trimmings as needless, drawing out his well-filled pocketbook and paying the bill with a flourish when the shopping had been done to his satisfaction. She never had any money in her possession except when her mother sent it to her as a gift, and when this was done, she took excellent care to keep Reuben in ignorance. Once the good man, for in some ways he was good, was compelled to leave home for a few days. He carefully counted the amount that his wife would spend during his absence. Then he lost his train and had to wait over another day. Coming home, he asked her for the cash and put it back in his own pocket for the next twenty-four hours."

**Bees Now Used to Sting People as a Cure for Rheumatism.**

In the current issue of Farm and Fireside is an account of the use of bee-stings as a cure for rheumatism. This cure has been thoroughly examined by some of the great Eastern medical colleges and endorsed by them as scientific. The essence of the cure lies in the formic acid which bees inject into the blood. Following is a brief extract from the article:

"One sting will not cure your rheumatism, neither will two or three, but if you let one bee sting you every day, your rheumatism will soon disappear. That's what some prominent physicians say who are watch-

# DE LAVAL CREAM SEPARATORS

## No Excuse for any Cow Owner Being Without One

There is no reason why any cow owner who sells cream or makes butter should be without a cream separator and there is no excuse why he should not have the best separator.

Any creameryman or experienced dairyman will tell you that a good cream separator will give you a great deal more and a great deal better butter than you can make with any gravity setting system, and equally, of course, more and better cream, if you are selling cream.

The DE LAVAL is acknowledged by creamerymen and the best posted dairymen the world over to be the "World's Standard" and the one and only separator that always accomplishes the best results possible and always gives satisfaction.

You cannot make the excuse that you can't afford to buy a De Laval, because it will not only save its cost over any gravity setting in six months and any other separator in a year but is sold either for cash or on such liberal terms that it will actually pay for itself.

A little investigation will prove to you that the truth of the matter is that you really can't afford to make cream or butter without the use of a DE LAVAL cream separator.

The nearest De Laval local agent will be glad to demonstrate this to your own satisfaction, or you may write to us direct.

**THE DE LAVAL SEPARATOR CO.**  
14 Princess St., Winnipeg. 173 William St., Montreal.



# You'll have NO MORE SMUT

if you use The Automatic Grain Pickler

The hopper delivers the grain to a turbine placed in the lower hopper causing the turbine to revolve quickly. The liquid passes from tank on right into the turbine where it is forced out through openings in bottom outer edge on to the grains.



Not a grain can escape complete and final treatment, and it is done at the rate of 135 bushels an hour. Equally successful with wheat, oats, barley, flax, etc. Price with an absolute guaranty is only \$17 for a 100 bushel machine. Machine to stand Bluestone.

**NOTICE!** So great has been the demand for this Machine, the supply for 1912 is now running short. Farmers who are not possessed of a Pickler that REALLY KILLS THE SMUT GERM, should order an "Automatic" at once.

Write for complete information. Agents Wanted.  
**THE DOMINION SPECIALTY WORKS**  
Freight prepaid to any point in Canada.  
820 Union Bank - Winnipeg - Canada.

*Domestic Specialty Works, Winnipeg, Manitoba, Canada. Please send me details of the various models of the Automatic Grain Pickler advertised in this issue of The Canadian Farmer. Name \_\_\_\_\_ Post Office \_\_\_\_\_*

ing an interesting experiment in Cincinnati, Ohio.

"John Renner, of Cincinnati, long a sufferer from rheumatism, is taking the bee-sting cure. At the time this is being written he has already taken two weeks of the treatment, about seventeen stings, and he likes it. At first hardly able to hobble about with the aid of a cane, Renner can now walk almost as sprightly as any person. It is estimated by physicians that the poison injected into his system by the stinging bees has made the marked change in his chronic condition.

"Only a few cases are on record where bees were used to cure rheumatism. Mr. Fred. W. Muth, became interested in bee culture through his having rheumatism. Now he has bees and no rheumatism.

"Physicians who are watching this interesting experiment say that the formic acid which makes the sting of the bee so sharp and painful for the moment is the agent which nullifies the dreadful rheumatic pains. Sharp and painful as the stings are, it is a pain of relief compared to the dull and incessant pain of the rheumatism, declares Renner, the patient.

"In the novel treatment the patient visits the apiary twice each week, taking from three to five stings at each visit. After the system is once inoculated with the formic acid of the bee-stings, the person becomes immune to rheumatic attacks."

**Boys Often Leave the Farm Because Fathers Don't Let Them Have Any Real Money.**

In the current issue of Farm and Fireside, a contributor tells a number of stories showing why boys leave the farm.

Following is one of the cases reported:

"Just the other day I met a stalwart young fellow whose every appearance would indicate he was a 'son of the soil.' Six years ago he left the old home. At that time he had very little education, but by steady, industrious labor he has 'won out,' and today he is a promising young lawyer. He told me that the first year he left the farm he obtained employment in a machine-shop at what seemed to his mind a large sum of money, \$12 per week. He worked hard for nearly three months, when one day he received a telegram from his father, asking him to return at once. Having left a delicate little mother, he rushed home with all haste, fearing to find some great trouble at the end of his journey. His father met him at the station and calmly explained that his hired man

had left and he could not get his hay in alone. My young hero, not daunted in the least, pointed out to his father that he had given up his position to return home and asked what pay he was to receive for his work. The father promised a certain small sum. After two months' hard work the son asked for money to buy a suit of clothes, which was given him. At the end of the season, when the young man wanted a final settlement, he was put of from time to time, and at last went away to the city with an empty pocket and heartfelt of resentment."

**A Little Bug Costs New York State \$3,000,000 a Year.**

In an article in the current issue of Farm and Fireside, a contributor tells of how to rid apple trees of the codlin moth, and in conclusion says:

"And how much do you suppose New York State alone pays every year for the privilege of having these insects live happy lives in their apple crop? This has been estimated at \$3,000,000 per year; and if New York pays this much for having wormy apples, think of the cost yearly to the whole United States! And all this great loss is entirely unnecessary. If the boys of the farm would take hold of the matter, they might save enough fruit in this way to pay their expenses at some agricultural college."

**Aid to Thoroughbred Stallions.**

The policy initiated in 1911 by the Department of Agriculture with reference to the granting of aid, under certain conditions, to the owners of thoroughbred stallions is generally meeting with approval and is accomplishing, in part at least, the objects sought when the policy was undertaken. Amongst other things, owing to the rigid conditions imposed, it is encouraging those maintaining really high class horses and is serving to organize the system of breeding followed in the different communities where thoroughbred stallions are located. The stimulus given, in this manner, to the use of thoroughbred blood will, it is believed, lead to an improvement in the light horse stock of the country. Thoroughbred stallions, if really good individuals, may be expected to exert such an influence in the development of Canadian horses for saddle and harness use, as is greatly needed and to be desired. The premium placed upon quality, soundness and prepotency, through the grants awarded by the department is serving to check the use of unsuitable sires and is tending to conserve a type of

**For \$65.00 You Can Save 1,000 Bushels of Wheat**



**Be Independent of the Railways**

If they are blocked and cannot supply cars to take your grain—you don't need to care, if you have your own granary.

You can secure a Corrugated Steel Granary built to fit and shipped to you all ready to be put together by yourself for \$65.00, f.o.b. Winnipeg. Just think of it. These granaries are fire, lightning, rust, and weather proof, Gophers cannot get into them; also they are portable and can be taken down and moved to any place you wish.

WRITE TO-DAY FOR FULL PARTICULARS

**THE METALLIC ROOFING CO. Limited**

MANUFACTURERS Head Office, TORONTO  
792 NOTRE DAME AVE., WINNIPEG AGENTS IN PRINCIPAL CITIES

**Buy Western Nursery Stock**

of tried and tested varieties known to be suited to our climate and conditions.

OUR STOCK IS ALL GROWN IN THE WEST.

We have Special Bargains to offer. Write for Catalogue.

**THE A. MITCHELL NURSERY CO. LIMITED**  
Coaldale and Lacombe.

HEAD OFFICE COALDALE, ALBERTA.

Insist on Getting the

**LEADER**



Wire Woven Fence

The Leader fence is the strongest and best fence you can buy at any price. Its strongest part is its lock which not only grips the lateral wire to the stay, but the ends of the lock are curved in such a manner that the lock practically interlocks itself. This gives it a double grip and makes the Leader fence twice as strong as the ordinary. Thousands of farmers and ranchers throughout the West have proven this. There are many designs of Leader woven fence, both in standard, heavy and medium weight.

Write to-day for catalogue showing different styles of fence and gates for horses, cattle, hogs, etc.

**Manitoba Anchor Wire Fence Co. Ltd.**

850 Henry Avenue

WINNIPEG

# Oh! Mr. Farmer! We want just Ten Minutes of your time. Let's have a little chat about this Better Farming Proposition

Our service will help you solve this problem—it is the most practical assistance which has ever been available for the farmers of this country. The money cost is nominal, the terms will be arranged to suit your convenience and you will never miss the time required for study and correspondence.

The biggest and most successful farm experts have placed their knowledge at the disposal of our organization. You will find their names elsewhere in this advertisement. We could not secure the services of these men until we satisfied them beyond the shadow of a doubt that our institution was financially sound and was conducted by men of sound reputation and reliable business methods.

Isn't this the best guarantee that the School of Scientific Farming is O. K.?

Every member of our Board of Directors is a man of sound reputation; every man is a pronounced success in his own particular line.

### GET OUR NEW PAPER "BETTER FARMING" FREE

We have just started publishing a little paper for our students and those who are interested in our service. It is known as "Better Farming."

Clip the coupon below and we will send it to you absolutely free of charge for the next three months. Most of the material in it is being furnished by our own students, your fellow farmers. We believe that you will find it interesting, and we know that you will be astonished at the wide-spread interest which the farmers are showing in this "Better Farming" movement inaugurated by our School.

Please send your paper "Better Farming" three months free of charge to

Name.....  
Address.....

### YOUR INSTRUCTORS

- Professor S. A. Bedford, Manitoba Agricultural College.
- Professor Thomas Shaw, Minnesota Experimental Station.
- Professor H. L. Bolley, Dean, North Dakota Agricultural College.
- Norman M. Ross, Chief of Forestry Division Indian Head, Sask.
- James Murray, Wheatlands, Ltd., St. Field, Alta.

- R. E. Drennan, Pioneer Stock Farm, Canora, Sask.
- W. H. Fairfield, Lethbridge Experimental Farm.
- Professor C. H. Lee, Manitoba Agricultural College.
- Professor W. H. Day, Guelph Agricultural College.
- Arch. Mitchell, Weed Expert, Coadale, Alta.
- Professor E. C. Elford, Macdonald Agricultural College.
- Professor E. M. Dolve, North Dakota Agricultural College.
- Professor C. I. Guinness, North Dakota Agricultural College.
- E. F. Coke, B. S. A., Supt. Educational Department.

### WE HAVE MOVED INTO NEW QUARTERS

The growth of the school has been so rapid that we have just made our third move since we began business eighteen months ago. We have secured large and beautifully lighted quarters in the Bell Block, one of the most centrally located office buildings in Winnipeg. We have taken a long lease of these premises, and trust that they will be our permanent home for many years to come. Every student of our School, as well as every farmer in Western Canada who is interested in "Better Farming" is extended a hearty invitation to visit us while in the city.

## Correspondence School of Scientific Farming of Western Canada Limited

4th FLOOR, BELL BLOCK - - WINNIPEG, MAN.

Then you have the guarantee of our students, farmers like yourself, scattered all over the Canadian West. They not only know that we are a safe and satisfactory business concern for the farmer to deal with, but they know by actual experience that our service has been of real value, worth to them many times the amount of its original cost.

Here are some recent letters, every one of them unsolicited. Some of them are perhaps from farmers in your own district, or from farmers you know. Write them, write some of the professors associated with us, investigate in every possible way and when you are satisfied that we can help you, clip the coupon in the corner and we will send you enrolment blank for your signature.

### WE HAVE HUNDREDS OF TESTIMONIALS, BUT SPEAK TO A STUDENT YOURSELF

As you will see from the date line of these letters, every one of the letters below has been received within the last few weeks.

Strome, Alta., Feb. 12, 1912.

I want to finish my course by spring, if I can. I think it would be cheap at double the price you ask for it.

J. J. SCHLUTTENHOFER.

Hanson, Sask., Feb. 10, 1912.

I was under the impression last summer that your School was some "get-rich-quick" scheme, but after seeing your lessons I am quite satisfied that you are giving full value, many times over, for the money invested.

FRANK WALKER.

Puffer, Alta., Mar. 3, 1912.

I consider that your course means more to the average Western farmer than the whole of the Dominion Department of Agriculture and agricultural journals combined. It is true we need them all, but there are many things in the bulletins and agricultural journals that we could not understand without the knowledge which your course gives us.

WM. A. BLACK.

Macoun, Sask., Feb. 1, 1912.

In regard to myself would say that I am more than satisfied with the course. I can now understand why there are so many poor crops raised and can read the farm papers more intelligently.

R. A. DOW.

Canora, Sask., Jan. 16, 1912.

I have now every confidence in your course, and I think that the School could not have employed better men if they had tried. Every letter and every criticism of the lessons that you send in is worth very much to me, and I am so glad that you are careful and take such pains to make everything so plain. I feel that I have a good friend to help me out and advise or assist.

As you know, I had no faith in correspondence Schools before I started this course, but if you remember, through your insisting that I take it up I finally did so, and let me say that it is a grand, good work.

GEO. F. WRIGHT.

Please send me enrolment blank and full particulars regarding prices and terms.

Name.....

Address.....

C. T. ....

thoroughbred, the utility of which is beyond question.

While as perhaps should be stated, it is not the intention of the Department to encourage the breeding of thoroughbred horses or to develop a type in light horses approximating closely to that of the thoroughbred, there is no question but that a strong infusion of thoroughbred blood in the light legged mares of the country will be of inestimable value in improving the quality of the stock got from them by stallions of the various light harness breeds.

Believing himself to be justified, therefore, in further prosecuting the policy begun last year, the Hon. Martin Burrell, Minister of Agriculture, has authorized the continuance of the grant, to be available for all thoroughbred stallions, standing for public service during the season of 1912, which comply with the conditions imposed by the Department.

The conditions under which assistance will be given are as follows:

(1) All horses on account of which aid is given by the De-

partment must be registered in the Thoroughbred Stud Book of the Canadian National Live Stock Records.

(2) Horses shall be of good size, quality, and conformation, and shall be free from all hereditary unsoundness; these conditions to be ensured by submission annually to a thorough, careful examination either at the hands of the Veterinary Director General or such other member of the veterinary staff of the Department, or other person as the Minister may from time to time appoint for this purpose.

(3) Horses so approved shall be duly and properly advertised to stand for service of mares, under the ordinary and general conditions usual in the districts in which they are to be kept, at an annual service fee (except in the case of thoroughbred mares) of not more than \$10.00 to insure such service fee to become due and payable only when mares prove to be in foal.

Any person, firm or corporation owning or controlling any thoroughbred stallion in regard to which all of the conditions above set forth shall have been

duly and properly fulfilled, shall, on production of satisfactory evidence thereof and of the fact that a reasonable number of mares other than thoroughbred mares, have been served during the season, be entitled to receive at the close of each such season the sum \$250 from the funds of the Live Stock Branch. If, in the event of a horse dying or becoming incapacitated for service during the season, an approved substitute is immediately placed in the same district, the Minister may, after due consideration of the circumstances, authorize the payment of the subsidy above mentioned.

The necessary forms will be furnished on application to the Veterinary Director General and Live Stock Commissioner, Department of Agriculture, Ottawa.

### Around the Farm.

By E. C. M.

What shall it profit a man if he save on a fanning mill and lose a good stand?

Few things, perhaps, can be named, that would result in a greater saving of time and money if introduced on thou-

sands of farms than a fanning mill.

Fanning mills pay. Of course they do. It's not because they don't that so many of us go along year after year without one. We can't get away from the appearance of the thing. It looks so foolish to pay out good money for a fanning mill, just to clean and grade the little seed we use. Perhaps it does, but it will not look foolish if you forget about the few bushels of seed you will plant, and remember only the number of bushels you want to get off that ten, twenty of thirty acre field.

A good even stand makes a man feel mighty well pleased with himself and with the world. It produces an optimistic outlook for crops and country. It makes you a good natured man around the house and a smiling neighbor to the fellow down the road.

So that, even were there no actual money value concerned in the results from the use of a fanning mill I believe the general effect on a man's temperament is well worth the price.

But there is more to it than that. "As ye sow, so shall ye

reap," said the Good Book, and good farmers echo the sentiment and follow it up with a practical application.

Don't think I am one of those who think that problem is always solved when we answer the question, "Does It Pay?" We can carry this idea too far. Some men think that life is moneymaking and moneymaking, life. It's a bad thing for the family when the farmer gets this notion; and what is a bad thing for a farmer's family, is an infinitely worse one for the farmer himself.

There are other things in life, especially on the farm, and while we need business methods in our farming, they will not compensate us for the loss of other things.

Sometimes I am inclined to think the country is business-mad. Nowadays men do not stop so long to think as to whether a transaction is right or wrong, just or unjust, as to consider whether it is "good business" or "bad business," the good and bad, not meaning the right or wrong of it, but whether it will win or lose money.

This idea isn't confined to trusts either. A neighbor of mine bought a cow the other day: just a grade. He paid a good grade price for it and trusted to the honesty of the owner when he declared it to be one of the finest milkers in the country. It was, if you consider the money he got for it as milk and his pocketbook the pail.

Considered as a dairy animal it was a pure bred scrub and the driest scrub you ever saw; a much drier thing than many of our prohibition dry districts.

If you had asked this farmer regarding the transaction, he would have said, it was a piece of "good" business as he jingled the dollars in his pocket. And that is just what the members of these trusts say when they "put over" similar deals on a larger scale.

This may be "good" business from one point of view, but the sooner we get rid of this kind of "good" business whether it be practiced by farmer or trust magnate the better for all of us.

Some of us I guess think honesty wasn't meant for business and in our dealings use it, with as much fitness as Willie did his napkin. "You must always use your napkin, Willie," said his mother one day. "I am using it mother," he answered, "I've got the dog tied to the leg of the table with it."

Very few weeks left now, for the little things that can be done in doors, that will mean no delay to you when spring work commences.

Are the tools bright and clean? Do they need a dose of grind-

stone to put them in prime condition? A little attention paid to them now will make your work easier and better when you use them.

Last chance, too, to repair any damage done by the strong winds of winter, ere the plowing commences. Gates are off hinges, bits of fence need repairing, there is a leak here and there in the out-buildings, some boards in the walk have given way. It is with a feeling of relief that these little things are done and in good condition. Don't neglect them. "A stitch in time saves nine."

Experience has taught many the wisdom of making sure that the seed oats are clean and free from smut. The following plan is a sure one. At the drug store, buy half a pound of formalin and put in 30 gallons (wine measure) of water. The seed should be spread out on the barn floor, and sprinkled with the solution, until it is thoroughly damp. Then gather it together in a pile, cover it with sacking or some material, and leave it in this condition from two to twelve hours until the solution acts. Then spread it out and dry it, or sow at once. From 100 to 150 bushels of oats can be treated with 30 gallons (wine measure) of the solution.

Considering the labor involved the planting of trees for timber pays. They require very little attention and grow steadily while you eat and sleep. Perhaps you have a piece of ground which is not tillable. This is the very place for timber. Plow the ground and set out the trees suitable to your locality. They will furnish you much wood and the folks who will enjoy the forest of a half century old, will rise up and call you blessed.

Tools are often lost in the field, when carried loose on the machine. When hitching up the plow or rake or harrow or any farm tool, it is a good plan to fasten the wrench to the plow with a wire. Then the tool is always ready for use and it can not be forgotten when you drive on.

The man who contemplates plowing before the ground is thoroughly dried out, need not expect the good returns from his crop that will come if he plants when the soil has gotten over its clayey condition.

The lighter type of farm horse so commonly used on Eastern farms formerly is being replaced by the draft mare. She can perform more farm work with less effort and can add to the owner's income if bred to a mate of like breed. By sticking to one breed and type, the owner can be reasonably sure of the sale of the draft colts.

It would pay to grade up

Every  
User



Boosts  
Safe-Lock

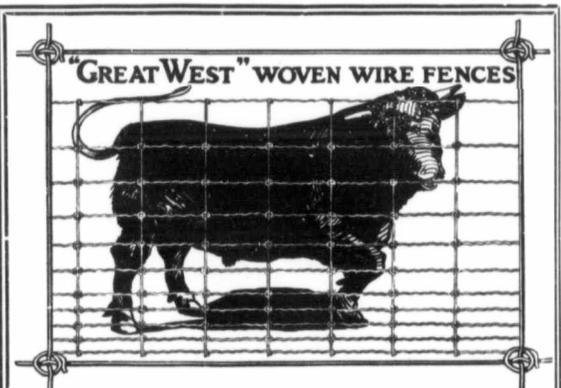
The above cut shows how the "Safe-Lock" is locked. If the stay is bent it locks across another wire and only tightens the lock.

Also note there are no kinks in the running wires, therefore no weak places, but every wire has a wave or coil that allows for contraction and expansion in different weather extremes.

If you need a fence at all you need the strongest and best one you can get, and that one is the "Safe-Lock." Every farmer who has used it is highly pleased and is a booster for "Safe-Lock." If you hear your neighbor say he has the best fence on earth, you will know it is "Safe-Lock."

Drop us a card for our illustrated catalogue and get in the swim. Everybody is asking for them.

**The Safe Lock Fence Co.**  
Brandon — Man.



**"GREAT WEST" WIRE FENCING**

is manufactured from the heaviest and best hard drawn Bessemer Spring Steel Wire, heavily galvanized and guaranteed to be full gauge. Our aim is to supply something of extraordinary strength, and we are making our fences of good strong wire throughout. This enables you to save half your posts and the cost of setting the same.

For every dollar spent on "Great West" Wire Fencing you will get a dollar's value, and be more than paid by results.

**LET US PROVE IT**

Send for our Illustrated Catalogue and the name of your nearest dealer.

**GREAT WEST WIRE FENCE CO., Limited, - WINNIPEG**

Calgary Office: Care Reynolds & Jackson, P.O. Box 2063.

Edmonton Office: Care Race, Hunt & Giddy, cor. 5th and Columbia Ave.

**WHO GIVES THE BEST SERVICE?**

TRY

**HANSEN GRAIN COMPANY**

Grain Exchange, Winnipeg

THEN JUDGE

Write for Our Weekly Market Letters

farm horses as well as pigs and cows. It is advisable to pay more for good draft mares, and breed them to draft stallions rather than to attempt to grade up our horses by breeding our small mares to large stallions. The latter method is a gradual and slow one, while the former is a sure one, if we can have reasonable success in getting the colts through the first months of their lives.

Seed and preparation of soil are the two important items determining the yields of crops. Rental value of the land, harvesting and threshing usually have very little to do with the yield of the crop. In grain crops the preparation of the soil and the seed usually amounts to between \$2 and \$3 an acre. Oftentimes a little additional effort and care in seed selection or in the preparation of the soil, costing perhaps \$1 to \$2, will increase the yield a great deal more than that amount.

In order to have agriculture in public schools, we must solve three problems. The public must want the subject taught; that is, there must be a campaign of interest. We must have a set of teachers prepared to teach the subject. We must have a body of subject matter prepared for them to teach. Public sentiment is growing very rapidly, but it is the duty of each to help increase it.

The bill for harness on the ordinary farm, grows to a goodly sum in the course of a few years. The life of harness can be lengthened materially if properly cared for. The greatest factor is to have a good clean place to hang it. To prolong the life of the harness it is necessary to oil it several times during the year. All the dirt should be kept out.

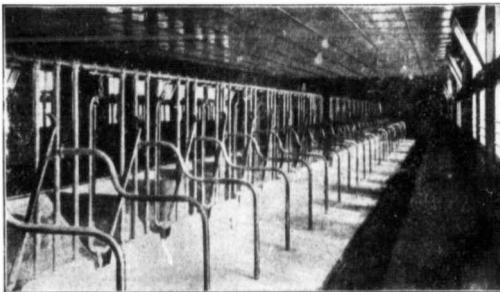
Do you sometimes go to the barn in the morning to find the harness an inch deep in stable manure? A secure place on which to hang the harness will avoid this. When you are tired and come to the barn at the close of a day in the fields, you want everything handy.

**The Potato.**

The potato, which is commonly called the Irish potato, was first introduced into Europe between the years of 1580 and 1585. The Spaniards were the first to bring it to English shores. It is commonly believed that the plant is a native of Chile, where a wild plant which resembles it very much is still found growing wild.

While bread is commonly called the "staff of life," certainly the potato may be called the "assistant staff of life." Very few meals are set before any family that do not include pota-

## Sanitary Dairy Barns are a Necessity



for the health of your stock and the purity of your dairy products.

**Our Cities Take Action**

Already the city of Winnipeg has passed stringent laws requiring that milk be produced in sanitary stables and has established a system of inspection; other Western cities are establishing a system of dairy barn inspection and are preparing similar legislation. Don't wait until some dairy inspector gets after you. Build your stables sanitary now, make them healthy and comfortable for your cows.

**Your Cows will Produce More**

Your cows will be more comfortable in BT stalls than with any other form of tie. They will be in less danger of being injured. Steel stalls do not obstruct the light or air; they give the stable a bright, clean appearance. Cows tied in BT stalls remain clean and cows that are clean and housed in a bright sanitary stable are bound to do better.

### You Can Put In Your Stable Yourself

if you use BT equipment. You have no expensive carpenters to hire, no lumber to buy and get sized and dressed. No delay. BT stalls come ready to set up and in two hours you could set up 20 stalls ready for the floor.

Our book on stable construction "HOW TO BUILD A DAIRY BARN" gives complete information as to how to equip a stable. It also gives the best layout, the proper measurements for mangers, cattle-stand, gutters, etc., the proper arrangements for feed storage, feed-chutes, ventilation and light. **THIS BOOK IS FREE.** Write us and we will send you a copy along with full information on BT stalls.

**WRITE TODAY USE THE COUPON**  
**BEATTY BROS., Box 1215A BRANDON, MAN.**  
 Kindly send me free your book "HOW TO BUILD A DAIRY BARN" and your catalogue on stalls.  
 How many cows have you?.....  
 Are you building?.....  
 Or remodeling?.....  
 If so when?.....  
 Will you need a hay track or a Litter Carrier?.....  
 Name.....  
 Address.....

**THE GOVERNMENT USES BT EQUIPMENT.**

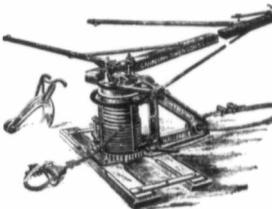
Last year the Dominion and several of the Provincial Governments built some 20 barns in different parts of Canada and in every case BT equipment was used. BT goods must have merit as price was no consideration in their choice.

A barn is a permanent investment. Don't undertake building one without getting all the latest information.

Send for our free book "HOW TO BUILD A DAIRY BARN". It tells how to build your barn right.

**Beatty Bros. Box 1215A Brandon, Man.**  
 We also make Hay Tools and Litter Carriers

## Stump, Tree & Bush Pullers



We have them made expressly for the North West trade. Now, it doesn't matter what kind of clearing you have to do, whether stumps, standing bush or burnt scrub of any kind, including willows.

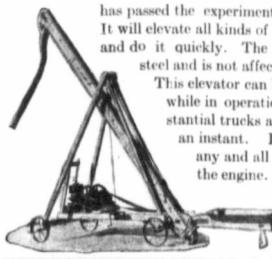
We sell these on a positive guarantee that they will clear the ground faster and cheaper than anything else made.

### A Real Power Washer

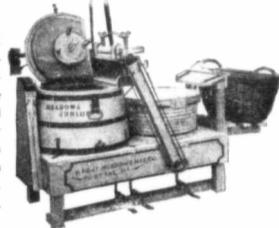
for engine or electric power. Does the washing and wringing in a few moments and does it better than human hands.

Mr. Man! 95% of all machinery and utensils that you have bought has been something to assist you and to make your work easier and faster. Now, what are you going to do for your wife?

#### Our Portable Grain Elevator



has passed the experimental stage long ago. It will elevate all kinds of grain, wet or dry and do it quickly. The elevator part is all steel and is not affected by the weather. This elevator can be raised or lowered while in operation. Built on substantial trucks and can be moved in an instant. Is ready for work at any and all times. Simply start the engine.



We issue special catalogues and literature on the articles which we manufacture and sell. Write for printed matter on the articles you are interested in.

**CANADIAN SWENSONS LIMITED**  
 410D Chambers of Commerce Building, WINNIPEG

atoes in some form or other.

Not only has the production of potatoes grown in vast proportions, but the consumption has kept abreast with it. The annual yield in North America is over three hundred million bus., and nets the growers about one hundred million dollars each year. The natural law of trade—supply and demand—indicates that potatoes are to remain at the high average price for an indefinite period. The rapid increase in population makes a profitable market certain.

These facts about the increasing population and the widely extended use of potatoes should serve to indicate the farmers to give more attention to this crop. To make the largest profits the following five principle operations must be studied; the planting, the cultivating, spraying, digging and the marketing.

**The Soil.**

Because potatoes have been grown on every kind of soil it is not an indication that it is best adapted to all sorts of soils. In fact experience proves that

potatoes do best on a rich sandy loam which is well drained and well supplied with vegetable matter.

Land which is a little more stiff may be improved for potato growing by the use of green manures and drainage. Fertilizers and green manuring also prepares lighter soils for potato growing. Ground which has recently been cleared is very well suited for the potato crop. On old land the success of the crop depends very largely upon the other crops which have preceded it in the rotation. Potatoes should never be planted on the same plot more than two years in succession. A rotation which has been very successfully followed is as follows: Fall wheat, in which clover is seeded in spring; 2nd year, clover, plowed under in fall or winter; 3rd year, potatoes. Of course, in localities where the clover crop is uncertain, this rotation cannot be used. Corn after sod frequently precedes potatoes, and this is regarded as a good rotation.

**Preparing the Soil.**

In preparing the soil for potato crops, it must be remembered that the same system would not do for all soils. It can be said though that the plowing should be deep—not too deep to bring too much of the sub-soil. The depth should be gradually increased from year to year. Whether to plow in the fall or spring is a question which must be decided by the individual. Fall plowing serves the purpose of ridding the field of injurious insects. Potatoes use up large amounts of plant food. For this reason lands upon which they are to be grown must be liberally manured. Barn yard manure supplies nitrogen, phosphoric acid and potash, and also improves the physical condition of the land. If applied in such a manner to come in direct contact with the potato it produces conditions favorable to disease, and for this reason it has been found good practice to supply the manure to the corn or grass crop of the previous years. When it becomes necessary to apply manure directly to the potato crop, care should be taken to have it well rotted. If commercial fertilizers are used, a mixture containing nitrogen in the form of nitrate of soda and phosphoric acid as a super-phosphate, and potash as a sulphate has been found successful. In this mixture the potash should be in the largest quantity.

Selection of varieties must be left to the individual grower. There are many standard varieties upon the market and it will pay the grower best to make a selection from one of these varieties and not "dabble" too

much with the newer creations.

**Planting.**

The time of planting is another problem which depends very much upon the judgment of the individual. When potatoes are grown for early market they should be planted as early as possible. A general rule to follow is to plant at the time when the potato will be least affected by drought. The late variety should be planted in time to ripen before the early frost.

Manufacturers are now placing upon the market at very reasonable prices mechanical planters which do rapid and successful work at a great saving to the farmer.

It is estimated that when more than five acres of potatoes are planted it will pay the farmer to own a mechanical planter. In communities where each individual grower does not plant enough potatoes to make it profitable for him to own a planter, it has been found very successful to have one owned by the community. In other localities one man has invested in a planter and has done the work for his neighbors under contract.

All experiments as to the proper depth to plant potatoes go to show that it is not advisable to plant them in less than four inches deep. There is one objection to very deep planting, and that is the increased labor in harvesting and the small stand if weather conditions are not favorable.

The distance apart for planting potatoes must depend upon the fertility of the soil, the variety planted, and the number of eyes on each piece. With good varieties with from two to three strong eyes on each piece, it has been found a good rule to plant from 15 to 18 inches in rows three feet apart.

**Cultivation.**

Cultivation should begin with the first cultivation consists in a week after the planting time, stirring the soil with a weeder or smoothing harrow. This process should be repeated in a week or ten days until the size of the plants will not permit. The object is to prevent the soil from crusting and to exterminate the weeds before they have well started. The horse cultivator can next be used; the first cultivation may be quite deep. After this it should be shallow so as not to injure the roots which feed in the top soil. If this process of cultivation is done thoroughly, there will be little necessity of hand hoeing.

**Diseases.**

On account of the importance of fighting the diseases of potatoes, the results from the Department of Agriculture have

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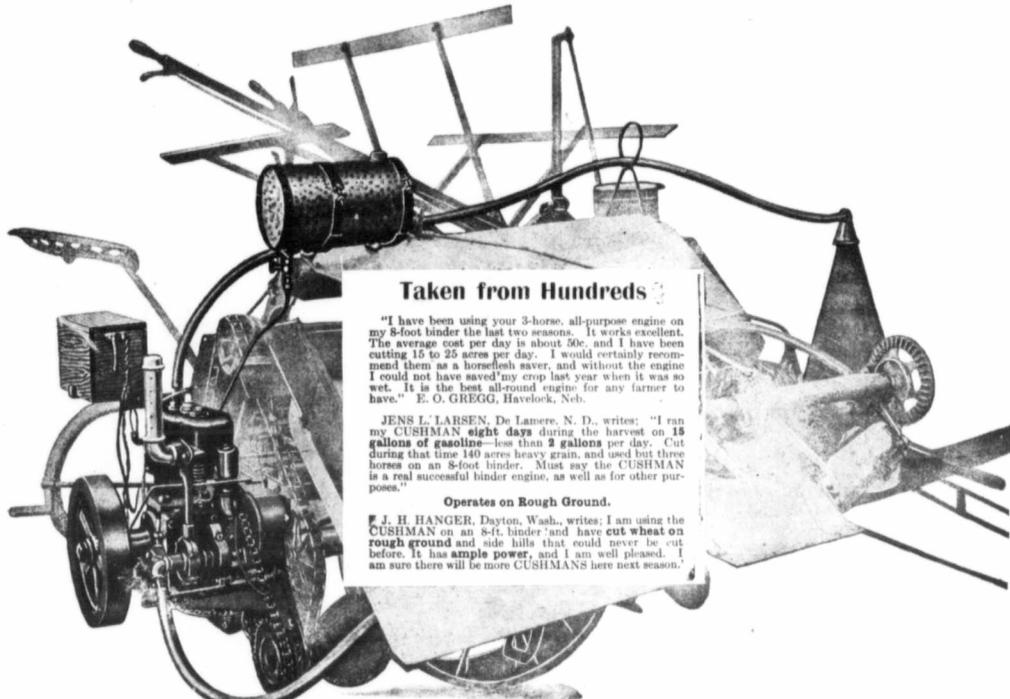
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# THE FARM CUSHMAN BINDER ENGINE



### Taken from Hundreds

"I have been using your 3-horse, all-purpose engine on my 8-foot binder the last two seasons. It works excellent. The average cost per day is about 50c, and I have been cutting 15 to 25 acres per day. I would certainly recommend them as a horseless saver, and without the engine I could not have saved my crop last year when it was so wet. It is the best all-round engine for any farmer to have." E. O. GREGG, Havelock, Neb.

JENS L. LARSEN, De Lamar, N. D., writes: "I ran my CUSHMAN eight days during the harvest on 15 gallons of gasoline—less than 2 gallons per day. Cut during that time 140 acres heavy grain, and used but three horses on an 8-foot binder. Must say the CUSHMAN is a real successful binder engine, as well as for other purposes."

#### Operates on Rough Ground.

J. H. HANGER, Dayton, Wash., writes: "I am using the CUSHMAN on an 8-ft. binder and have cut wheat on rough ground and side hills that could never be cut before. It has ample power, and I am well pleased. I am sure there will be more CUSHMANS here next season."

WEIGHS ONLY 165 LBS. AND FRICTION CLUTCH PULLEY 14 LBS.

**Drives Machinery of any Binder in Heavy Grain, Horses merely Pull Binder**

Direct Attached with direct chain drive, the "Farm Cushman" saves one team and will cut from 5 to 10 acres more per day on top of this saving in horse-flesh. Indispensable in wet or soft ground where bull-wheel cuts or slips. Saves all the grain. A screen cooling tank on tongue balances engine and allows full power by this forced water-cooling system all day without overheating. Every detail perfected. No expert or blacksmith needed.

**The final cure for wet season trouble and delay**

Write for full details and ask us about the little "IRON HIRED MAN"—the Farm Cushman All Purpose Engine.

**Lightest and The Very Best Engine Built for the Farmer**

**Cushman Motor Works,**  
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been referred to in the following paragraphs.

**Potato Leaf Blight, or Early Blight.**—This disease is widespread and destructive. It is confined to the leaves and green stems, and appears about the time the tubers begin to form, but may be noticed earlier if the growth of the plants has been checked in any way. The first indication of its presence is the appearance on the leaves of grayish brown spots, which soon become hard and brittle. The disease progresses rather slowly, the spots gradually becoming larger, especially along the edges of the leaflets. At the end of ten days to two weeks half of the leaf surface may be brown, withered and brittle, while the rest of it is yellowish green color. Three weeks or a month may elapse before all the leaves succumb. The stems in the meantime remain green, but they too finally perish through lack of nourishment. The tubers stop growing almost as soon as the

leaves are attacked, and as a result the crop is practically worthless.

**Treatment.**—Early blight may be held in check by the application of the fungicide Bordeaux mixture. This is prepared and applied as follows: Pour into a fifty gallon barrel twenty-five gallons of clean water; then weigh out six pounds of crushed bluestone, or copper sulphate, and after tying it in a piece of coarse sacking suspend the package just beneath the surface of the water by means of a string tied to a stick across the top of the barrel. In another suitable vessel, such as a tub or half barrel, slack 4 pounds of fresh lime. Slack the lime carefully by pouring on small quantities of water at a time, the object being to obtain a smooth, creamy liquid, free from grit. When the lime is slacked add sufficient water to make 25 gallons. As soon as the bluestone is dissolved, which will require an hour or more, pour the lime

milk and bluestone solutions together, using a separate barrel for the purpose, and stirring constantly to effect a thorough mixture. It sometimes happens that sufficient lime is not added, and as a result the foliage may be injured. To be certain that the mixture is safe, hold a steel knife blade in it for two or three minutes, and if the polished surface of the blade shows a copper-colored tinge add more lime, but if it stays bright the mixture is safe to use. Application of the mixture should begin when the plants are 4 to 6 inches high, and should be repeated at intervals of 12 to 14 days until five or six treatments have been made. By adding 8 ounces of Paris green to each barrel of Bordeaux mixture a combined fungicide and insecticide is obtained, and this will prevent the attacks of the Colorado potato beetle, the flea beetle and other insects. Before adding the Paris green it should be mixed with a small quantity of water, and

when a thin paste is obtained this should be thoroughly stirred into the barrel of Bordeaux solution.

The success attending the application of the Bordeaux mixture depends in large measure upon the thoroughness with which it is applied. To reach all parts of the plants above ground with a fine spray requires a good force pump and a suitable nozzle.

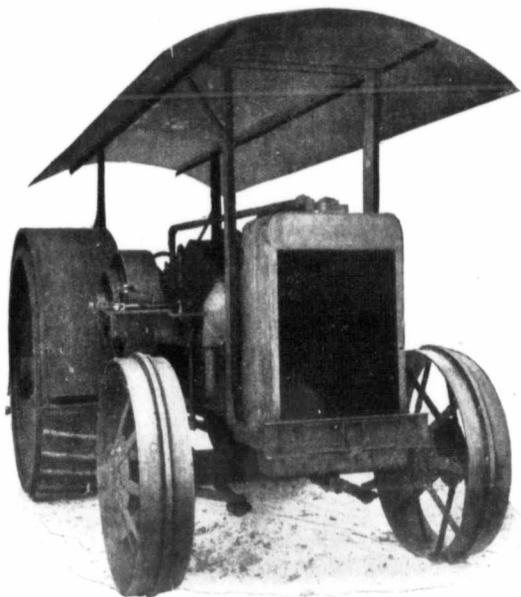
**Potato Blight, Late Blight, or Rot.**—This disease attacks the leaves, stems and tubers. Generally the first noticeable effect upon the leaves is the sudden appearance of brownish or blackish areas, which soon become soft and foul smelling. So sudden is the appearance of the disease in some cases the fields which one day look green and healthy may within the next day or two become blackened as though swept by fire. The rapid spread of the disease, which is caused by a parasitic fungus, is dependent in large measure upon

Continued on page 98

# 1912 Model 'IDEAL' Tractor

Has the best engine that can be produced. Cooling system of the automobile type, requiring little water, yet thoroughly efficient. Power is transmitted in such a manner as to obtain best results. Fuel tanks of sufficient capacity for a full day's work. Steering device unequalled. The "IDEAL" is strictly a "one man tractor." Everything within easy reach of the operator.

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**BRANTFORD - - WINNIPEG - - CALGARY**

### New Manager for the Canadian Rumely Company.

The illustration below is very well known to the threshermen of Canada and lest some of the new comers might not be acquainted with the party we would state that it is that of Mr. J. F. McIntyre, who has recently been placed in charge of the Canadian Rumely Company at Toronto.

Mr. McIntyre has passed through all stages of the thresh-



Mr. J. F. McIntyre, Mgr., M. Rumely Co., Toronto.

ing business, accepting positions from that of collector and salesman to manager. Mr. McIntyre was for a number of years with the J. I. Case Threshing Machine Company, leaving that concern to take a position with the M. Rumely Company, as branch house

manager at Winnipeg. This position he held until recently, when he was transferred to Toronto, to look after the Rumely Company's interests in that place.

It is needless to say that Mr. McIntyre will be missed from the city, not only by the implement dealers, owing to the fact that "every man was his friend." That which is a loss to the Winnipeg implement circles will be a gain to the implement business of Toronto.

We wish for him every success, and we know that his push and energy will command it.

**FLAX SEED FOR SALE**—Absolutely free from Mustard and Wild Flax. First Crop from New Land. Address, Joseph Littell, Sperting, Man.

Some people contrive to get hold of the prickly side of everything, to run against all the sharp corners and disagreeable things. Half the strength spent in grumbling would often set things right. No one finds the world quite as they would like it.

\* \* \* \*

Nothing so adds to the treasures of the mind and increases its power as its own thinking. Learn to think for yourself. It is all very well to hear and to read the wisdom of others; but one should

not let this take the place of one's own thought. Many persons are like cisterns; they are good to hold the thoughts of others; but, when the time comes that they are forced to rely on themselves, they have no power to do so. The

outside supply is cut off, and the cistern runs dry. But if one, like a river, is constantly fed by one's own springs, then, as the learning of others comes to him, it unites with his own waters, and the stream widens and deepens.



Capacity 55 (Wine Gallons)  
 Price \$10 each.  
 F.O.B. Winnipeg.  
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You can buy your oil and gasoline 1 cent per gallon cheaper if you have your own

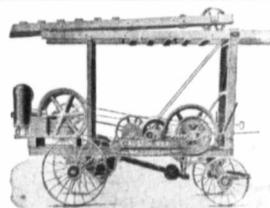
## Steel Barrels

Made of 16 gauge steel, galvanized inside and out. Won't rust, won't leak, won't wear out. **LAST A LIFE TIME.** Pay for themselves over and over in the saving of leakage, evaporation and loss from fire. Openings in head and side to insure perfect drainage. We carry stock in Winnipeg and have a large supply on hand. Can make immediate shipment.

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# The Man and His Plow

**E**XPERIENCE works with the strength born of past successes and failures. Experience does things well—not hastily. The experience of W. T. M. Brunnermer is back of the RUMELY Engine Gang Plow. We cannot separate the plow from the man, nor speak of its most striking features without including his skill—perhaps the greatest feature of all.

William Brunnermer first of all studied the plow from behind. There he learned the full value of two things—ease of draft and smooth, steady running. One, two, three, and then a fourth plow company used his experience to produce corn listers of the kind that farmers liked. Then, over twenty years ago, he became what is today—a designer and an active maker of plows.

Twenty seasons in the field taught him how to make his plow bottom run true and light. Twenty seasons in the factory taught him how to build for durability and strength. Then, early in 1910, M. RUMELY COMPANY sought him out and placed in his hands the future of its engine plow.

Brunnermer built a RUMELY plow—tried it in the Kankakee Marsh, and built another. Another and a better, stronger one followed, for the *oxen* and the sod of the marsh were two stubbornly opposed forces. At the Winnipeg Motor Contest that year his newest engine gang swept the field as the lightest in dynamometer-registered draft. The bulk of opinion gave it the palm, too, for smooth, uniform work.

But Mr. Brunnermer saw defects unnoted by the average eye. He built again, and added new laurels at Winnipeg in 1911. Two-score RUMELY plows scattered over a wide territory proved their durability, ease of handling and simplicity. Then Brunnermer was satisfied to build for 1912, and here we picture him and the result.

Brunnermer built for strength and compactness—a strong angle-steel frame with plows coupled close, and singly (flexibly) hitched, one lever to a bottom. He built a roomy platform for the operator, and swiveled two frame wheels so the plow could be steered by a lever around any turn the tractor might negotiate. He used steel where steel was feasible—malleable and gray iron where lightness had to be sacrificed to practicability. All parts were made interchangeable, and the strong, double, high-carbon-steel beams were made straight so *any* blacksmith could hammer them back to correct shape, if ever sprung.

He put on interchangeable standards to which either breaker or stubble bottoms could be attached—used large coulters and large, wide depth wheels with chilled hubs. Proper lubrication was considered early and provided for.

But the *Big Idea* harks back to the long days behind the oxen—the discovery of the true set and balance of the plow. Brunnermer found the *center of resistance* at all depths—for all soils—and provided the necessary adjustment. *Then he removed the suction and threw away the landslide!*

His plow runs true—cuts smoothly, without constantly stubbing its nose—without crowding and tearing the bank—without wasting power in useless friction. No landslide and a four-inch off-set to each beam give great, almost non-chokable, throat room.

The principle is correct—the design excellent—the materials of high quality—but back of all this is Brunnermer's skill—his personal attention to the building of this plow—and the RUMELY reputation for honest and tried products.

Let us send you a more detailed description of the plow. It is made in 4, 5, 6, 8 and 10-bottom sizes, with both stubble and breaker bottoms. Send *now* before the season advances further.

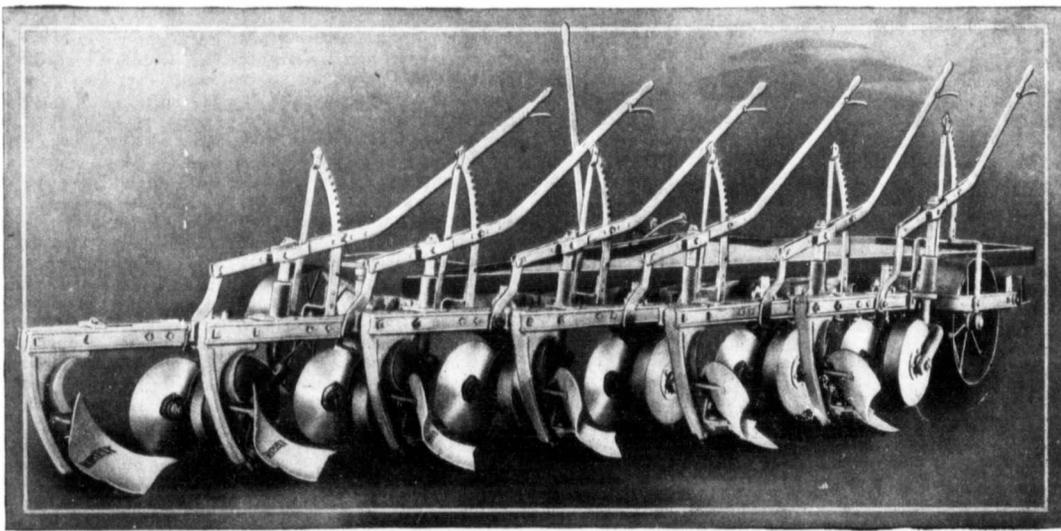


W. T. M. BRUNNERMER  
Designer and Master Builder

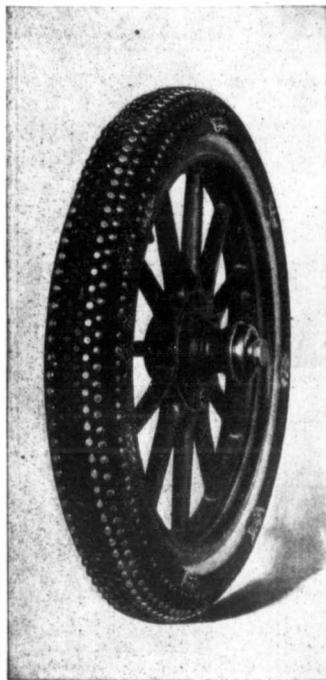
*From a personal letter of  
W. T. M. Brunnermer:*

"In the year 1875 I broke wild sod in Kansas on a homestead 75 miles from a railroad. My team was a yoke of oxen. They and the homestead were all I had. To save my oxen I had to make my plow run light, and to make a crop I had to make my plow do good work. Since the season of 1887 I have been designing plows, planters, cultivators, and various other farm tools, but when I want to set a plow to run light and do good work, I simply follow the education I gained with the ox team in Kansas."

**M. Rumely Co.,** 1942 Rose St. Regina, Sask. 1942 Edward St. Toronto, Ont.  
1942 Fay St. Winnipeg Man.  
1942 Scott St. Saskatoon, Sask. 1942 Clay St. Calgary, Alta.



Rear View Rumely 6-Bottom Engine Gang Plow



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They prevent cuts from glass, stones, scrap iron, etc.

They prevent punctures from nails, etc., that damage the tire shoes and frequently destroy the tubes.

They prevent the oil on oiled roads from getting onto the rubber and rotting it.

They prevent the small cuts and wounds which do not reach the tube, but allow dirt and moisture to get in and rot the fabric causing blow-outs.

They prevent skidding which scuffs off the rubber and often causes serious accidents.

With Woodworth Treads you can feel prepared for any roads, nothing can injure your tires, and your non-skids are always on, ready for slippery roads.

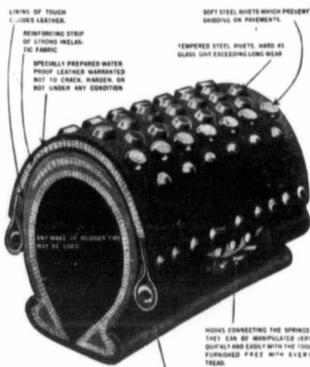
Remember that Woodworth Treads cannot become loose to chafe and heat the tires.

Do not confuse Woodworth Treads with protectors fastened to the rim or stuck to the tire which generally cause more damage than they prevent. We guarantee Woodworth Treads not to injure the tires in any way if used according to our instructions.

Sold by John Millen & Son, and the Russell Motor Car Co. at all their branches and by first-class dealers everywhere or sent prepaid from the factory on receipt of price.

Send for 1912 Catalog and Booklet telling how to preserve your Tires.

**LEATHER TIRE GOODS CO., Niagara Falls, ONTARIO**



The movement in favor of direct legislation, or the initiative and referendum, as it is popularly called, has made wonderful progress on this continent during the recent years. The rapidity with which this reform movement has been taken up by thinking men is without parallel in modern times. The reason for that is no doubt due to the fact, in the first place, that the proposals themselves are so simple and so readily understood that no great amount of thought is necessary for the person of average intelligence to comprehend the entire proposition. Secondly, to a people who have lived under a system of representative government, direct legislation at once appeals to them as the natural working out of such system to its logical conclusion.

The movement for direct legislation began in the United States in the early nineties, and already the principle has been embodied in legislation in about one quarter of the states, while about half of the remaining states have the question pending in a more or less acute form. At this rate of progress the principle of direct legislation promises to be recognized nearly all over the United States within a very few years.

In Canada, the movement did not take definite shape until

## DIRECT LEGISLATION

Contributed on request by D. W. Buchanan.

within the past few years. About two years ago the first society, having for its object the spreading of these principles, was formed in Winnipeg. So rapidly, however, has the work gone ahead that already throughout the three prairie provinces the supporters of the movement have made their presence felt everywhere. In the legislature of Alberta the principle of direct legislation was adopted by a unanimous vote of the house during its recent session, so that it is likely Alberta will be the first province in Canada to embody these principles in practical legislation. In the Saskatchewan legislature the question has also been favorably discussed from a non-partisan basis, and there appears every reason to believe that Saskatchewan will soon pass a law providing for the introduction of the initiative and referendum. In Manitoba the supporters of the movement have not received the same encouragement from the political leaders that has been shown in the other two prairie provinces, due to the fact that, at least, some members of

the local government are apparently hostile to the principle of direct legislation. One of the political parties in Manitoba, however, has adopted the principle, and the feeling in favor of this reform is so strong throughout the country, that it is simply a matter of time when it will come into effect here. The other provinces of Canada are rather behind the prairie provinces in prosecuting this movement, but it is sure to become a live issue throughout all Canada within a very few years. Independent leaders of thought all over the country are quickly taking up the question and declaring in its favor. Many societies and organizations have unanimously endorsed the principle. These include the Grain Growers and other organizations of farmers throughout the prairie provinces, practically all labor organizations and all societies representing the unprivileged mass of the common people. So far, direct legislation has not become a disputed question on party lines in any part of Canada.

The world is indebted to the

little Republic of Switzerland for inaugurating and teaching this great advance in democratic government. Switzerland suffered severely from the evils which sometimes accompany representative government. That country, 50 or 60 years ago, was almost completely under the domination of class rule. Oppression gave rise to rioting and even civil war. Political jobbery was rife. Subsidies to railways and other corporations in opposition to the popular will, led the people to believe that it was necessary to exercise close control over their politicians at all times, if the representative system of government was to prove lasting and successful. Leading Swiss reformers advocated the initiative and referendum as the means of purifying their political institutions and establishing a government which would be carried on in the interest of the people, rather than in the interest of the politicians and corporations. One by one the provinces or cantons adopted the principle of direct legislation. In 1874 the federal government of Switzerland adopted the referendum, and a few years later put the initiative also into effect. The result of these steps forward in democracy in Switzerland has been gratifying beyond measure. Switzerland is now admittedly

the best governed country in the world. Students of political and economic conditions have gone from Great Britain and the United States to study the situation in Switzerland, and as a result we now have many books printed in English detailing the wonderful results of direct legislation in the little Swiss republic. Among the enumerated results of the establishment of direct legislation in Switzerland are the following: The elimination of illiteracy, through the building up of the best system of education in the world; the complete destruction of the lobby, with its attendant jobbery and corruption. This is accomplished through the referendum, which gives the people the whip hand over corrupt politicians. Blind partizanship has given place to an intelligent interest in public matters. All public questions are considered on their merit, and not as party questions, to be blindly accepted or rejected according to party leanings. Monopolies have been wiped out. Railways, telegraphs, telephones, express business and other similar utilities have been assumed by the government with complete success. Rates for these services have been reduced from 50 to 75 per cent below the charges demanded while these utilities were in the hands of private corporations. A system of direct taxation, which has enormously reduced the cost of government to the great mass of the common people, has been put into effect. The natural resources of the country are husbanded in a way that it is a surprise to visitors from most other countries. The efficiency of government has been enormously increased, while the cost has decreased in proportion to the increase in efficiency. "Public business is done promptly and well," says one of the English writers. What a commentary this is on the slipshod way in which public business is transacted in Canada and the United States. With the cheapest postal rates in the world, the Swiss Republic makes a profit on its postal business, simply owing to the general efficiency with which all public business is conducted. All mail and express matter is delivered everywhere throughout the country. In short, Switzerland has a government of the people for the people and by the people. It is a case of the people owning the government—not the government owning the people, as is the effect under our representative system. Everything runs like clockwork. Jobbery and extravagance are unknown, taxes are low, politics have ceased to be a trade or a species of trickery. The public good is the end sought.

# Pure Red Fife Wheat!

## Registered Certificate

Manitoba wheat growers should not be stampeded by the cry for "Marquis." Dr. Saunders, the breeder of Marquis Wheat, does not claim for it superiority over Pure Red Fife for all parts of the West.

### RED FIFE Remains the Time-Tried Standard of Quality

The grower of Pure Red Fife Wheat has bright prospects ahead. It will be wanted for seed. Our stock is Pure Red Fife, specially recommended by the Canadian Seed Growers' Association. Certificate with every 100 lbs. The sample is very fine. Fully described and priced in our catalogue.

# New Flax For Seed

## Premost, Pedigree No. 25

Two Weeks Earlier than Common Flax. Heavy Yielder. Practically Wiltproof.

Premost Flax has every quality desirable for the West. ripens and ensures a crop when the common variety fails. Premost Flax The Western growing season is too short to gamble with late varieties.

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The higher cost of seed is as nothing compared with the increase in QUANTITY and QUALITY of yield. Our stock is the genuine. Being the first Seed House in Canada to introduce this variety, we have a special interest in supplying it TRUE. Sow 1/2-bushel per acre. Price \$4.00 per bushel, bags included.

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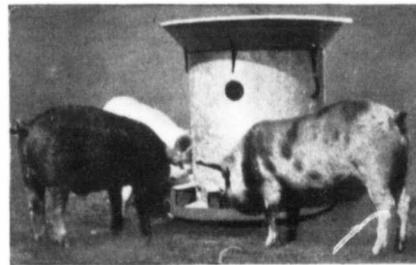
## Steele, Briggs Seed Co., Ltd.

WINNIPEG - CANADA

"It all depends on what you sow!"

Those who wish to further investigate the result of the popular initiative and referendum in Switzerland are referred to the writings of Sir Francis Adams, Hon. Boyd Winchester, United States Ambassador to Switzerland, Karl Burkli, W. D. McCrackan, J. W. Sullivan, and other works on the same subject, which may be had through the book trade.

What direct legislation has done for Switzerland, it would undoubtedly do for us. It is right in line with the drift of public sentiment, and the general advance of our civilization. Our system of representative government is at best but an evolution which has served its day in its present form. It is ridiculous to say that with the spread of knowledge and the education of the masses, the people should not exercise more direct control over the political powers that be. There is every reason to believe that the initiative and referendum would produce the same general result in Canada that they have in Switzerland, because the results apparent there are the very



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The Brandon Creamery and Supply Co., Brandon, Man.

Brookfield, Desford, Man Feb. 19, 1912

Gentlemen:—I wish to say that we have been pleased and satisfied with your business methods, and we wish you all success during the year 1912. Thanking you for interesting calendar.

Yours most sincerely, (Signed) E. Glover.

There is money in shipping cream and it will be greatly to your interest to write us. There is no more central point than Brandon and no other place in the West with better shipping facilities. The best place to market your cream is

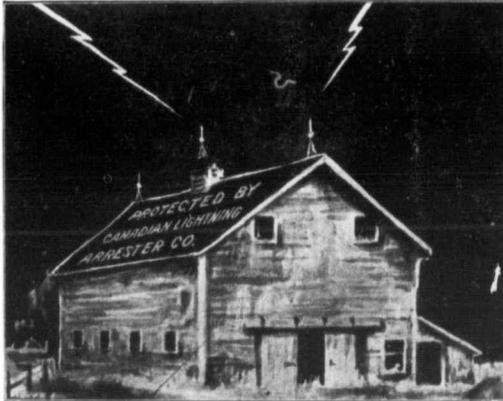
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The initial cost is trifling and is practically the last expense as there are no "maintenance charges." The Copper Cable is no less valuable at the end of twenty years' exposure as it was on the day it was installed on the building. Don't delay in covering yourself against a risk that is NEVER ABSENT.

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**Canadian Lightning Arrester and Electrical Co., Ltd. 197 Main Street WINNIPEG**

things we would naturally expect, reasoning from cause to effect. Results have followed in their natural order; and just as greater watchfulness will bring greater efficiency, so will a larger measure of control over our public affairs by the people bring about improved political conditions. The initiative and referendum represent the natural evolution of the representative system of government. Direct legislation is the key which will open the door to other needed reforms in our representative system, such as the recall, proportional representation, and other reforms which are sure to speedily follow its introduction.

Briefly, direct legislation would simply result in applying ordinary business principles to the conduct of public business—the people's business. By the initiative, the people would have the right to initiate legislation. Instead of humbly petitioning our rulers (or our servants as they like to call themselves about election time) as we do now when we wish them to consider any measure, we would simply command them to do certain things, and if we had the necessary number of signers, they would be obliged to do it. By the referendum, the people would have the right to pronounce upon any law before it went into effect. By the recall

we would have the right to dismiss any popularly elected office holder or representative when he ceased to carry out the will of the people. All this is simply a move in the direction of greater control over the public business on the part of the people. The only people who really need fear direct legislation are the political bosses; those who enter politics for personal gain, and the privileged interests who work the politicians for their own benefit. The political boss will be put out of business, the scheming politician will be unable to deliver the goods, in a case of jobbery, and the privileged interests will have to deal with the public in the final reckoning. The people will be on top, where they ought to be and where they must be before they will get justice and efficient government.

**As Others See It.**

"Once I was working on a picture of the Whirlpool Rapids," says a well-known painter, a friend of the artist Inness, "and Inness came in early one morning to see it. On my return from luncheon I found him hard at work on my canvas. 'I can't help it!' he cried; 'I had to come in and show you how to paint that picture'—and he did, as his beautiful and poetic mind saw it. He

worked several hours, and finally said: 'There, that's the way it should be done!' It was a grand Inness, but a very poor me. And this shows what poor critics of one another's work artists are. They cannot judge from the painter's individual standpoint, but only from their own—as they themselves would paint the subject. The older a painter grows, the more absorbed he is in his own work, and the less he cares for others'—unless it may be one of the grand old masters, beyond criticism in work and reticence. Remember how Michael Angelo said: 'Titian would be great if he only knew how to draw.'

"Mr. Inness had just sold a picture—and the fortunate possessor was looking at it in his studio with him. 'What is that thing up by the barn, Mr. Inness?'

"Why, what do you think it looks like?'

"Well, it seems to me like a wheelbarrow.'

"Bully for you! That's just what I thought it was myself.'

"There's the true impressionist for you!

"At another time a purchaser asked him: 'Where is that scene laid?'

"Do you mean where did I paint it?'

"Yes, what part of New England?'

"Why, man, that's a picture;

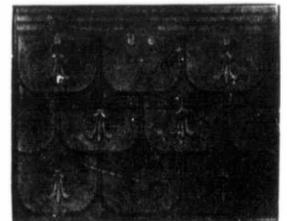
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**WINNIPEG - MAN.**

that's no illustration for a guide-book.'

"Mr. Inness was much influenced in his work by the weather. I have seen him start on a landscape in the morning, impressed with the mist he saw lying upon the land, and which yet rested over the city. But as the fog rolled away, and the sun came out, his canvas grew fresh and green, finally ending, like the day, in a brilliant sunset. I have seen that not once only, but several times."

**About Money.**

Nothing in the world is quite so interesting as money. A few millionaires have told their less fortunate brethren that wealth is a source of endless trouble, but the world hasn't given up the search for more. Here are a few interesting facts concerning it:

The most ancient coins are of electrum, four parts of gold to one of silver.

Before the days of coined money the Greeks used copper nails as currency.

Herodotus says that Croesus was the first sovereign to make coins of gold.

Julius Caesar was the first man to engrave his own image on a coin.

The United States silver three-cent piece was first coined in 1851.

The English mint was established by Athelstane about 928.

The first coining machine was invented by Bruchner in 1553.

The notes used by the Bank of England cost exactly one cent each.

The first colonial coinage was minted in Massachusetts in 1652.

The American cents of 1787 bore the motto "Mind Your Business."

The first American coins were made in England in 1812 for the Virginia Company.

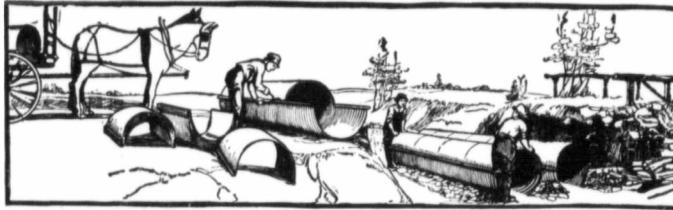
In 1631 the invention of milling the edges of coins, to prevent clipping, was introduced.

Down to the Norman Conquest the Britons had "living money" and "dead money"; the former being slaves and cattle, the latter metal.

The bronze cent and two cent pieces were first coined in 1684, and the nickel half-dime in 1866.

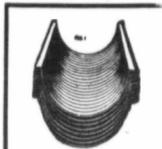
English coin was first made a

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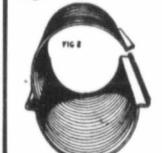


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These nested bundles are carried to the job by wagon



and fit together like this—



when they are firmly clamped by this three-ply flange. After that you simply can't break down the culvert.



Equip your ditches like this. Saves wagon, team and load.

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- ST. JOHN, N.B. 42-46 Prince William St.
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- QUEBEC 127 Rue du Post
- PORT ARTHUR 45 Cumberland St.
- HALIFAX 18 Prince St.
- REGINA 76 Lombard St.
- WINNIPEG 111-113 Bay St.
- TORONTO 76 Lombard St.
- MONTREAL 321-3 Craig St.
- OTTAWA 423 Sussex St.
- VICTORIA 434 Kingston St.
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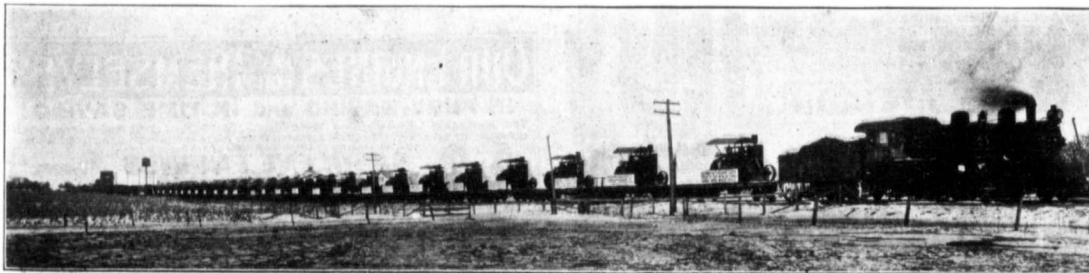
legal tender in 1216. Before this rents were paid in produce.

Paper money was first issued by the notorious John Law. His issues exceeded six hundred million dollars.

There is not a more charming class of women than the elderly unwedded, those single and in-

dependent matrons who possess the requisite taste and leisure to become intellectual. Their sympathies are not narrowed, focussed, and absorbed, and they can afford to be broad and generous in their friendships; their lives are passed beyond the touch of these infinitesimal and wrinking cares which, though sweetest and most important of all to the mar-

ried woman herself, really narrow while they intensify, concentrate, and deepen her sympathies and interests. Important and never-ending anxieties are inseparable from domestic life, and the carrying of this precious, though wearing and wearying burden, is the price which she gladly pays for the attainment of woman's highest and happiest attainments.



A train load of 45 Hart-Parr Tractors recently shipped to Saskatoon from Charles City, Iowa

## Course in Gas Engineering

Conducted By D. O. BARRETT.

This Course consists of a series of practical talks on the theory and practice of the gas, gasoline and oil engine. They will be simple, illustrated when necessary, and of such a nature that the gas engine owner may easily adapt them to his daily engine work.

### LESSON XVII.

In the past two lessons descriptions and cuts were given of the various tractors competing at Winnipeg during the last motor contest. To the man who is about to buy a tractor this is all very interesting, but, at the same time, somewhat confusing. At the contest there was hardly a tractor but what won something, from gold medal down, or else received the greatest number of points in the scoring of some classification. However, to the prospective buyer they all ran equally well, perhaps, but what he more particularly wishes to know is which type is the more dependable and durable. He wishes a machine in which the repair bill shall be kept down to a reasonable minimum, the fuel consumption for the class of work being done shall not be excessive; one in which the intricacies of starting and operating, if such they may be called, shall be easily mastered, and, lastly, one which may be depended upon to operate 24 hours a day, if called upon to do so. Since the greatest field for the gas tractor at the present time and the one which it has made its influence most felt is that of plowing, they must be considered from this standpoint.

For this class of work the tractor is subjected to the severest strains, as oftentimes they are loaded to the limit and operated day in and day out, straining each part to the uttermost and giving each bearing a load which will certainly test its wearing qualities. Then again, during dry weather the dust from the plowing or harrowing is carried into all the bearings exposed, into the gearing, etc., cutting and abrading the same. Lubrication in such cases often seems to only aid in the general distribution of the evil.

#### Types of Engines.

Taking up the various types of engines which are found upon the market at the present time, we might make the following classification:

##### One Cylinder.

Horizontal.

##### Two Cylinder.

Duplex, horizontal.

Opposed, horizontal.

Vertical, lengthwise of frame.

Vertical, crosswise of frame.

##### Three Cylinder.

Vertical, lengthwise of frame.

Vertical, crosswise of frame.

##### Four Cylinder.

Double opposed, horizontal.

Cylinders side-by-side, horizontal.

Tandem duplex, horizontal.

Vertical, lengthwise of frame.

Vertical, crosswise of frame.

##### Six Cylinder.

Vertical, lengthwise of frame.

A further classification might be made as regards the two-cycle and four-cycle types, as there are several tractors of the former type now being marketed. However, we shall only confine ourselves to the four-cycle type, as this has been proved the most successful for general use. Before making any final comparisons of the engines it is first necessary to look into some of the other controlling factors.

##### Governing.

Hit-and-miss.

Throttling.

The hit-and-miss method of governing is found upon the single cylinder, the two cylinder opposed and the duplex types, though the throttling system is also used on these as well as upon the multiple cylinders.

The former system has the advantage of being slightly simpler and less liable to confuse the ordinary operator as the governing mechanism has only to do with the parts operating the exhaust valve. The exhaust valve is simply held open on the idle strokes. In some engines the mechanism operating the igniter is also cut out at the same time as the exhaust valve, thus preventing wear, and saving batteries.

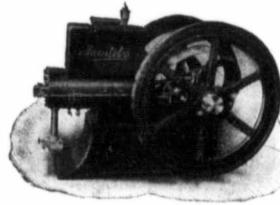
The throttling system acts directly upon the charge of mixture entering the cylinders. The usual method is to insert a butterfly valve or a sliding plate in the pipe leading from the mixer or carburetor to the engine cylinder. The movement of this, of course, varies the amount of charge entering the cylinder, in turn varying the compression. An effort is made to keep the mixture of constant quality, though this is not strictly possible.

The hit-and-miss engine maintains a constant mixture and constant compression, and for that reason is the more economical at light loads, as each charge that is fired is of equal intensity with all the others. At the motor contest, the greatest economy on the two hour and the plowing tests was shown by engines governed by the throttling system.

For engines operating upon kerosene fuel the throttling sys-

## The Manitoba Gasoline Engines

are Great Labor Savers on the Farm



They are always ready for work, in winter as well as summer, are not affected by cold weather as every engine is Hopper Cooled. No large separate water tank with small connecting pipes and circulating pump to freeze up or leak.

Have a perfect Cold Weather Automatic Mixer that requires no priming to start.

The Gasoline Supply tank is carried in the base below the intake valve. No possible chance of Flooding the Engine, Leakage or Waste, as with gravity feed engines.

The hopper, cylinder and base are all cast separate; in case of an accident can be repaired at very small cost. Quite different to those that have these parts cast all together; the latter method cheapens the first cost but not the last.

All small wearing parts are cast hardened tool steel (never wear out). Has automatic battery and fuel cut out which insures long life to the batteries and economy in fuel consumption.

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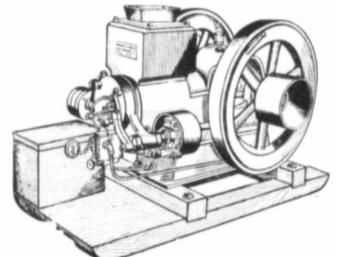
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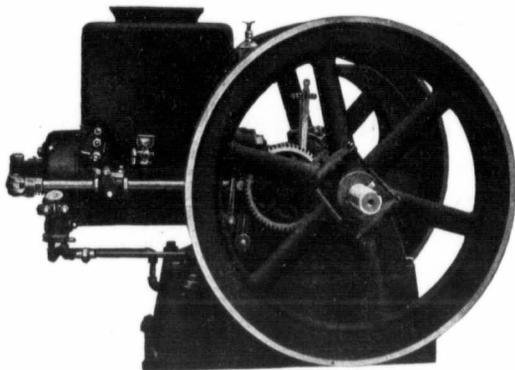
1 1/2 to 3 1/2 H.P. Single Cylinder

4 to 25 H.P. Two Cylinders

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tem seems to work to better advantage, as it maintains the engine at a higher heat, which is necessary for the proper vaporization of this fuel. However, one of the first successful tractors upon the market was hit-and-miss governed and used kerosene successfully. Needless to say, the throttling engine is the steadier, and for belt work where a close speed regulation is desired is the more suitable.

#### Ignition.

##### Low Tension.

- Make-and-break, batteries.
- Make-and-break, magneto, rotating.
- Make-and-break, magneto, non-rotating.

##### High Tension.

- Spark coil, batteries.
- Spark coil, magneto.
- Magneto, rotating.
- Magneto, non-rotating.

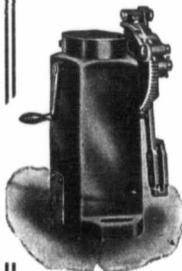
The form of ignition usually found on the single cylinder machines is the low-tension make-and-break, with batteries for starting or even operating, and a magneto or direct current generator for use after throwing out the batteries. There is also a type of magneto directly connected to the make-and-break mechanism in such a manner that the same tripping mechanism operates both, giving the magneto armature a portion of a revolution at high speed sufficient to produce the ignition

current. With this type of magneto no batteries are required, as the intensity of the spark is not dependent upon the speed.

With the higher speed multiple cylinder engines, the rotative speed is too great for the make-and-break, and a spark plug is used in the cylinders, the current being produced in a spark coil operated either by batteries or magneto, at least with batteries for starting. Then there is the high tension magneto which does not require a coil, the current generated being of sufficient intensity to produce the required spark. An auxiliary system is provided with batteries and coil for starting. The last type mentioned is similar to the non-rotating low-tension magneto, with the exception that the current generated is high-tension and transmitted to the spark plug, giving, of course, only a single spark. The tripping mechanism is directly in the magneto alone.

The low tension systems are the more easily understood by the uninitiated, and are less likely to electrical trouble, these being mostly mechanical and more readily located by the average man. However, the various parts are subject to wear, this tending to change the time at which ignition occurs. With the high tension system the troubles likely to occur are pure-

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ly electrical, but there are practically no wearing parts, so that the life is greater. Short circuits are more liable to occur as the current will readily jump to any metallic part unless the wires leading to the spark plug are heavily insulated and protected. With judicious care, however, this danger is a small item.

Practically all the four cylinder machines are now being supplied with magnetos. These machines are a piece of high grade mechanism and are properly adjusted at the factory, and are enclosed so as to be dust proof, and if left alone will give good service. It is not often that any trouble will occur at the magneto, and the novice should not try to remedy it, if it be a fact, or he will find that his troubles will start in earnest.

The non-rotating magnetos, or those employing a tripping mechanism to produce a quick movement of the armature are not suitable for speeds much above 300 revolutions per minute.

**Cooling Mediums.**

For keeping the engine at a proper temperature we find two mediums employed, water and oil. Some of those employing water use a closed circulating system, having a fan to produce a current of air through the radiator. This system maintains a constant supply of water and avoids replenishment, though, of course, there is a slight loss of power in driving the fan. Others employ an open tank, or screen cooler, as it is called. The water is carried from the engine jacket to the top of the cooling tank and allowed to run down over a screen, exposing a large surface to the air, and causing considerable to evaporate which, of course, must again be supplied.

With either system a pump is used to circulate the water.

Where oil is used, the system is closed as the oil does not evaporate at the ordinary temperatures encountered, and, it so, would be somewhat expensive. The draft through the radiator is usually obtained by enclosing the same and passing the exhaust from the engine out through the top. A circulating pump is, of course, used.

One of the disadvantages of water for cooling is that it will freeze during the cold weather, bursting pipes or jacket. The water must be carefully drained each time the rig is allowed to stand. It may, however, be cheaply obtained, and should a leak occur from any cause, there is no loss entailed.

There is no waste where oil is used, with the exception of possible leaks or an accident. The initial cost is considerable, as the system will hold a goodly number of gallons. In the extreme cold weather the oil will congeal in the pipes and radiator, being too stiff to circulate until warmed.

The use of oil maintains a higher working temperature, which is the more efficient for the engine.

**Engines.**

Coming back again to the engines themselves, we find that there are practically two classes as regards the power delivered. First, up to about 35 b.h.p.; second, from 45 to about 70 b.h.p.; though there are several that will deliver considerable more than this.

The single cylinder engine is limited by reason of its weight to the first class. There are also several two and four cylinder engines in this class. The single cylinder machines are naturally the heavier, weighing from 14,000 to 17,000 pounds, while the lighter rigs run from 5,000 to 10,000 pounds. The question of weight is the main talking point which is used against the single cylinder, but to those who have seen it used or have used it themselves, most of the logic of this is lost, as it is mainly a fancied evil. Of course, it is necessary to have slightly wider drivers, and, in soft soils, to use extension rims. The four cylinder engine of this size runs at such high speed that its life is certainly not as great as that of the slower speed engine. For belt work the multiple cylinder engine will give a smaller speed variation, but the single cylinder is perfectly satisfactory for thresh. At the contest the steady running engine was a two cylinder opposed. For plowing the single cylinder engine will take its load, even if an overload, and operate continu-

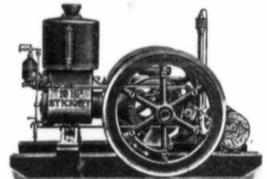
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We build the Canadian Air Motor—the Windmill that will do your work BETTER, CHEAPER and EASIER. Expert knowledge of the makers and best materials have carried them to the highest point of perfection: a windmill that has held its own—ALWAYS—under any conditions. It is a money saver in every way, the low cost of installation is the LAST expense of a LONG life time, for you get your POWER for NOTHING from mother Nature.

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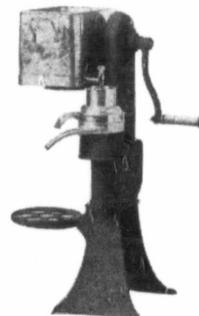
**ONTARIO WIND ENGINE & PUMP CO., LTD.**

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There is only one method by which you can make the keeping of milk cattle pay and that is by using a machine that will take the last possible ounce of butter fat from the cream. You can positively do it with a

**"STANDARD" Canadian Made Cream Separator**

This is by far and away the simplest, most conveniently built separator before the dairy public to-day. A child can operate it without serious effort and the dairyman who handles it himself will never find it a backaching job. The supply can is only 3 feet 2 inches from floor and the handle is placed to avoid stooping at an awkward angle. Gears are completely encased and run in a continuous bath of clean oil. In recent contests made with well known and much advertised Cream Separators, the

**Standard won Highest Honors**

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CANADIAN AGENTS **WATERLOO GASOLINE ENGINE CO.** Waterloo, Iowa. THE QUALITY LINE

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ously, generally having the ordinary unskilled labor. As far as the cost of operating, there is very little difference. The depreciation, however, will be greater in the four cylinder, due to the greater number of parts and the higher speed.

One well known rig has the cranks set opposite, which gives a standing balance, but when in operation, and this is more noticeable at light loads, there is a torque generated by the alternate reciprocation of the pistons which tends to turn the frame, and hence produces considerable vibration. The cranks being at 180 deg. brings the explosions one-half revolution, or one-quarter cycle apart, the next explosion following at 540 deg.

The general practice seems to be to get the cranks together; that is, on the same side of the crankshaft, and counterbalance each. This brings the explosions at 180 deg., and gives a better balanced engine. With either type, when operated on the hit-and-miss system, it is impossible to govern the engine without two explosions taking place, so that the speed variation will be even greater than that of the single cylinder.

The four cylinder engine has more parts, and these are necessarily lighter, so that there is greater danger from wear and

breakage. The vertical multiple cylinder engine is also much harder to get at in making adjustments or repairs to connecting rods or crankshafts. Where this style of engine is placed lengthwise of the frame there is nothing to determine its location nor its length, as the other parts may be made to suit. The engine may thus be located at the most advantageous point, that is, to bring the proper percentage of weight on the rear axle. The crankshaft bearings may be made sufficiently long, and a bearing placed between each cylinder. Placing the engine crosswise of the frame, either vertically or horizontally, limits the length of the engine, as it is desirous of keeping down the overall width of the rig. These shafts usually have but three bearings, and are some-

what shorter than when the engine is placed lengthwise.

Of course, it is impossible to judge properly the qualities of

a tractor by the engine alone, and next month we shall look into some of the features of the various transmissions and frames.



**A Fast Worker**  
 It takes less than a minute to take the slack out of your drive belt when using a "Barth" Jack. It works fast. Ask your Thresher Supply House for this Jack and write us for catalogue.  
**BARTH MFG. CO.**  
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Builds a film that is lasting. It is the only oil that contains Defocculated Graphite. This graphite is not available in powder form. Oildag is put up in condensed form for mixing with 1, 5, 10 or 40 Imperial gallons of oil. You mix it with the oil you use regularly. As all Acheson-graphite sold as a lubricant is of highest purity, and Defocculated Graphite is of molecular fineness, it is plain that Oildag has no equal as a lubricant to be used in place of plain oil, that drips, drips and drips away without affording enduring benefits.

To secure the greatest efficiency from either gas or steam engines, the cylinders should be lubricated with Oildag.

Oildag and Gredag are lubricants that afford cumulative benefits.

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Gredag is the only grease containing Dis-integrated Acheson-Graphite. It will easily do twice the work of plain grease, because it forms a film that has wonderful endurance. The smoother that you can make surfaces that come in contact the less will be the need of lubrication, for friction will be reduced.

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Ask your dealer or write for more particulars

**Acheson Oildag Company**  
 SARNIA, ONTARIO

## Questions and Answers For Gas Engine Operators

This is a department for gas engine operators similar to that which we have so successfully carried on for the past few years for those interested in steam. We invite your questions and will give them our best attention. Just tell us your troubles or ask us about any point upon which you desire information. We have secured the services of a competent expert who can handle gas engine queries intelligently and to the complete satisfaction of all concerned.

**Q. D. J. C.** (1) Are throttling governors and speed regulators of any benefit to a gasoline engine for general farm work?

(2) Which gives the best satisfaction: oil, water or air cooled engines in a 12 horse power and larger for general farm work?

**A.** (1) The tendency in the past has been to make farm engines as simple as possible, and, therefore, few of them have been equipped with the devices you mention. For a wide variety of work requiring considerable and quick changes of speed while running, there would be an advantage in having a throttling governor and speed regulator. An engine so equipped would govern a little closer if made well than a hit and miss governor. Aside from these considerations the ordinary hit and miss governed engine proves very satisfactory.

(2) For single cylinder engines above 10 horse power, air cooling is not very satisfactory. For small engines it works very well indeed. It reduces the weight of the outfit materially, and there is no water to freeze or replenish. For large cylinders, either oil cooling or water cooling must be resorted to. Oil surface requires more radiating surface, it makes greater weight, and costs more at first. It has the advantage of not freezing at low temperatures, and requires very little replenishing.

**Q. I. P. D.** I have been having trouble with my 30 horse power gasoline engine, and would like to ask a few questions concerning it.

(1) If you get a good spark from the battery to the spark plug on the cylinder, and you do not get an explosion, what is the cause, if the spark plug is good?

(2) If the spark does not go through the plug when its very cold, what is the cause?

(3) What is the best thing to do to start the engine in winter? Would it do to pour gasoline over the engine and burn it?

(4) Does gasoline freeze?

(5) If my batteries are good and I cannot get a spark from the batteries to the magneto, what is the cause? Batteries show from 18 to 22 amperes.

**A.** (1) In all probability the mixture in the cylinder is at fault, although you can never

be certain that you are getting a spark at the plug without removing plug and laying on some part of the engine, at the same time making contact. When an engine has been run and then allowed to stand, the moisture in the cylinder will condense and gather on the walls and plug. This freezing on the plug will short circuit same, and no spark will be produced.

(3) One of the best methods for starting in extremely cold weather is to pour several pails of hot water into the water jacket and allow it to stand for several minutes, allowing to draw again before there is any chance of freezing. The gasoline for firing should also be warmed in some hot water. A deal depends upon the design of the engine as to the advisability of heating the mixer or cylinder by external means. The writer saw one engine which exploded while the owner was holding a torch underneath the mixer, resulting in about \$3,000 damage. It is possible on some engines to apply heat with safety to the mixer than warming the gasoline supply. It should, however, be done with care.

(4) The freezing up of gasoline pumps and pipes in winter is not caused by the freezing of the gasoline, but of the water contained in it. It is a good plan to strain all gasoline through chamois skin, which will effectually remove all water.

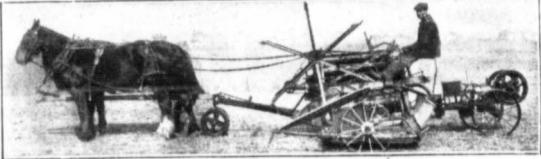
(5) Do not understand the question, but presume you mean coil instead of magneto. Look over the coil and see that contact points are clean, and that the adjustment is correct, also that batteries and coil are properly connected.

**Q. W. H. O.** In running machinery with a gas engine by belt is there a limit to the number of feet you should have? I have a four horse power gas engine, making 350 revolutions. Am running thresher, and would like to know what number of feet of belting would be right.

**A.** There is no general rule covering length of belt that should be used. If the best is very short it is more apt to slip than if it is long. The weight of a long belt increases the amount of friction. For a five or six horse power engine a thirty or forty foot belt would be plenty long enough.

## GILSON ENGINE HARVESTER ATTACHMENT

HAILED AS THE GREATEST INVENTION SINCE THE SELF BINDER



A trailing attachment with universal joint and friction clutch. Standard GILSON "GOES LIKE SIXTY" air cooled engine, useful the year round. Extra weight rests on truck wheels. No strain or vibration on binder. Saves grain, horses and time. You can cut on any kind of ground, no matter how wet or rough. Fits any style of binder.

Write for detailed description

RENFREW MACHINERY Co. Limited, Enderton Block, WINNIPEG.

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The BAKER PISTON VALVE is entering its fifth season upon the market, and has proved a success wherever rightly placed upon an engine.

They are now in use in nearly every Province and State in Canada and the United States, and are considered by all mechanics and engineers as having the finest and most successful Steam Tight Expansion Ring on the market. The Baker Balanced Valve can be placed on any kind of engine using a slide valve.

READ WHAT THEY SAY ABOUT THE BAKER BALANCED VALVE.

Baker Valve Comp., Minneapolis, Minn.

Gentlemen.—Just got back from John Hunters, at Hecla, S.D., which is about 49 miles from here. Tried the valves. The results are: (Advance 30 h.p. Cross Comp.) old valve 175 to 185 pounds steam pulling 8 Avery Plows in sod; Baker Valve 135 pounds for same load, and on less coal too.

The Advance Company sent a good expert with me to witness test, and he was surprised.

Yours truly, R. H. RISTAU,

Lakota, N. D. June 10, 1911.

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**BAKER VALVE COMPANY, 100 James St. East  
Winnipeg, Man.**

## DESMOND MODEL "U"

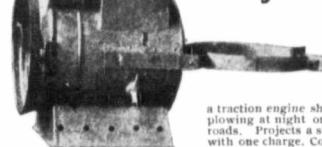
Look at the cut. Note the two piece body with the union nut. This is the secret of the model "U"—a feature which is fully protected by us and which can not be had from any other company. By loosening the union nut you can connect the upper and lower parts of the injector at any angle to each other that you may desire without in the least affecting its working qualities. In other words, you can make the one injector a right and left, a left and right, a front and back, a back and front, or any other style best suited to your needs. And yet the flexible feature of the Desmond Model "U" is only one of its superior features. It not only does everything any other injector will do but, owing to its extreme simplicity, does them better. Its range is greater—it will handle hotter water—it will lift a greater distance, and it has a drip cock. Its tubes are all screwed into the body and can not fall out.



CATALOG FREE FOR THE ASKING

**DESMOND-STEPHAN M'FG. COMPANY, Urbana, Ohio**  
Crane & Ordway Co., Winnipeg, Sales Agents for Canada

## Acetylene Headlight



For Traction Engines

Complete in one apparatus. The latest and best on the market. All the light you want whenever you want it. Wind-proof. Jar-proof. Every man who operates a traction engine should have one. Indispensable for plowing at night or moving over rough fields or bad roads. Projects a strong light 300 feet. Runs ten hours with one charge. Costs 1 cent an hour. Write for Catalog

**American Acetylene Stove Co., 516 Masonic Temple, Minneapolis, Minn.**  
CHAPIN CO., CALGARY, Agents for Alberta.

**THE ENGINE GANG**

Continued from page 20

of the plows, and they are placed well backward toward the plow bottoms, which serves to prevent winging of the beam. The usual gauge wheel in lifting levers is provided, the common gauge wheel being provided for each kind of bottom, while adjustments for suction, winging, etc., are easily effected by means of the long threaded eye bolts where the beam joins the frame shown. This is clearly illustrated in Fig. 25. The horizontal bolts provide for wing adjustments, and the vertical for suction.

Fig. 26 gives a rear view of the plow and the arrangement of the bottoms and levers.

**The Big Dutchman Engine Gang.**

This engine gang, which is made by the Moline Plow Co., is very much similar to either the P & O or the Cockshutt type of engine gang, it is however an exceedingly simple gang of heavy construction, made to withstand the most severe strain of the traction engine. It is built in 6, 8, 10 and 12 bottom sizes. The frame is triangular, and mounted on three wheels, the front two being casters. Each plow is provided with an individual lever in a large closed gauge wheel, also with an individual adjustable bracket and a swivel coultter. The arrangement of the individual bottom also of the coultter and gauge wheel may be seen by Fig. 27.

The plow beams are made double, with wide support when they are attached to the frame. The coultter and gauge wheel are placed between the hands of the plow beams, and the latter is placed as near the plow point as possible. This gives a large amount of clearit, and makes it a very effective plow in trashy ground. The gauge wheel is supported by means of a steel yoke which slopes sharply towards the point of the beam, thus presenting to some extent the accumulation of trash ahead of the plow, the bolt and nut at the top of the standard afford a means of adjusting the plow for suction.

Fig. 28 shows a complete Big Dutchman engine gang.

**The Rumely Engine Gang.**

This is another triangular frame plow of the independent beam type. The frame is braced and cross braced in such a way as to afford very rigid construction. The two front wheels, which are placed on the outside of the frame, are casters, likewise the rear wheel. A connection is made between the outside land wheel and the rear wheel which travels upon the land in such a way that they



*The* **Twin City All-Steel "40"**

**The Masterpiece of the Master Designer**

MR. McVICKER is the recognized authority in this country on gas tractors. He has supervised the designing of almost every gas tractor of note on the market. We employed Mr. McVicker to design the Twin City "40." We placed at his disposal our large corps of expert engineers and master mechanics. We revealed to him the secrets that have made our transmission machinery and our engines famous from coast to coast. He combined the fruits of his own long experience with gas tractors, with those of our own experience of twenty-five years in the manufacture of engines, transmission machinery and structural steel.

Working together we produced a gas tractor that is a marvel of strength, power, simplicity and reliability, a gas tractor that is as near perfection as it is possible to get, a gas tractor that will last, that will hold together under the heavy strains, that will do the utmost work at the smallest cost. The Twin City "40" is the lightest gas tractor of its horse power on the market. It has all the power of the heavier and clumsier machines, more power, in fact in actual work; it will really develop from 43 to 46 horse power at the drawbar.

**Backed by a Real Guarantee**

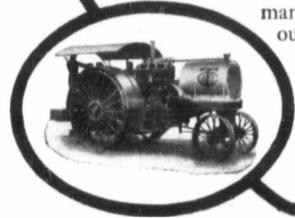
The Twin City "40" All-Steel Gas Tractor is absolutely guaranteed by its manufacturers, a \$1,250,000 corporation, which has for twenty-four years maintained a reputation for square dealing, living up to its claims and backing up its guarantees. This guarantee covers everything that enters into the manufacture of our tractors, as every piece that enters into their construction, including motor, is manufactured in our own plant.

**Free Information About Tractors**

Let us figure out how much a tractor can save you. Let us compare the cost of tilling your farm by the old method, with the cost of tilling it with the Twin City "40." Write us fully stating the size of your farm, the number of horses you have, and the number of men you hire. We will advise you honestly whether or not you can use a gas tractor with profit. If you are already convinced that you do need a gas tractor, that it will save you money, and enable you to make more money, or if you have a gas tractor that is not doing satisfactory work, we want you to write and let us tell you more about the Twin City "40" All-Steel. We'll tell you also where there is an agent near you who can show you our tractor, point out its strong points, give you an actual demonstration, so that you can see for yourself that everything we claim for our tractors is true. Thousands of farmers are investigating this first big improvement in gas tractors.

All-Steel Frame  
Built Like a  
Bridge.

Ask for Catalog No. H



**Minneapolis  
Steel & Machinery Co.  
Minneapolis, Minn.**



can be operated by a lever. This lever is arranged in such a way that the plowman can guide the plow to follow the track of the engine through a gate or in turning. In straight plowing this lever is locked from winging to prevent an accident to the plowman, and to make the plow follow the engine accurately. Each beam is double, but ahead of the gauge wheel they are brought very close together, being separated only by two iron boxes. This arrangement and the standard makes practically a solid beam. An upright cast iron buffer, separate each beam from that of the next bottom, thus keeping them in

harmony by allowing them ample vertical play. Cast iron standards are used and the mold board and share are bolted to a cast iron frog. The standard is bolted to this frog, and the former is secured to the steel beams by three large bolts. Two of these three bolts work in slaughtered holes, allowing the set screw on top of the beam to regulate the suction at the point of the plow. The feature of this engine gang is that it has no land-slide, and the design is such that the plow will follow a perfectly straight furrow, without any tendency on the part of the plows to crowd to the land through mold board friction. The

plows are perfectly straight on the bottom and on the land side, having none of the suction ordinarily found at this point.

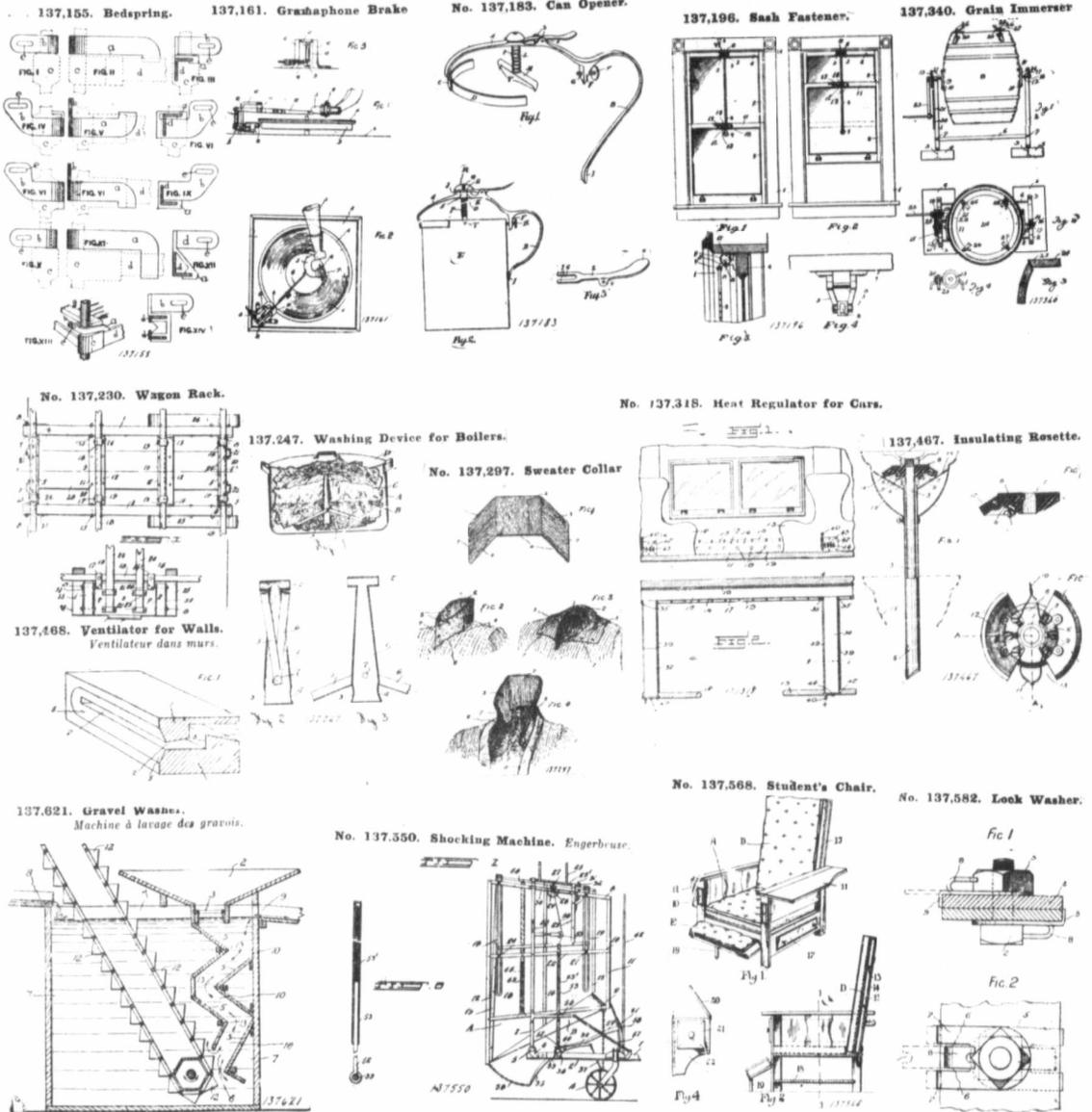
Fig. 29 is an idea of a 10 bottom Rumely engine gang. These gangs are made in 4, 6, 8 and 10 bottom sizes.

**The La Crosse Engine Gang.**

This is another plow of the power-lift type, and it is designed primarily as a one-man outfit. To that end it is provided with an automatic plow lift, which is put in operation by a rope, attaching from the plow to the engine platform by means of which it throws in a

Continued on page 110

Western Canadian Patents specially compiled and arranged by G. S. Roxburgh of Fetherstonhaugh & Co., Winnipeg.



137155—P. Creighton, Saskatoon, Sask.—The invention relates to a bed spring, and the object of the invention is to construct an improved bed spring, having head and foot straining beams only, these beams carrying the usual wires and being attached to the post at the foot or head of the bedstead by brackets. The brackets comprise each a slotted arm carrying a bed screw attached to the straining beam, and a side arm turned inwardly at its end, and carrying an outwardly bearing shoe or clutch engaging with the side rail of the bed.

137161—J. Bingham, Revelstoke, B.C.—The invention relates to improvements in gramophones, and it comprises a lever pivotally mounted on the gramophone brake, the longer arm of which is adjustable lengthwise and extends over the record disc in a position where its free end will be engaged and depressed by the under side of the hollow arm which car-

ries the sound producing box, means whereby the arm of the lever will until the longer arm is depressed retain the brake out of connection and a spring connected to the brake lever acting to apply the brake.

137183—S. T. E. Flower, Stewart, B.C.—This invention relates to an improved form of can opener and the object of the invention is to supply a device whereby a hermetically sealed can can be punctured readily. It consists of a supporting member supplied at the sides with a handle and means for releasably connecting the supporting member to the can. The supporting member carries a spring pressed post provided with a puncturing bar, and is equipped also with a lever whereby the post can be retracted when desired.

137196—W. Hunnabie, Fernie, B.C.—The invention relates to a sash fastener, and the object of the invention is to supply a device whereby the bottom

sash can be suspended and locked in any desired position. It consists in a suspending bar carried by a suitable bracket located on the top sash, which bar is received in a member associated with the top rail of the bottom sash. A pivoted latch is also carried by the bottom sash and engages with the bar.

137230—G. W. Sparrowhawk, Yarrow, Sask.—The invention relates to a wagon rack, and the object of the invention is to supply a strong wagon rack which can be easily taken apart or put together, and it comprises side, end and intermediate members releasably bolted together, cross beams releasably secured to the end, and intermediate members and upright posts releasably secured to the members.

137247—H. B. Smith, Winnipeg, Man.—The invention relates to a washing device to be used with boilers, and the object of the invention is to provide a

circulation in the boiler through the clothes contained therein, and it comprises a tube having an open top at bottom, and extending legs carried by the tube, and designed to hold the same upright in the boiler, and clear of the bottom thereof.

137297—J. W. Curran, Vancouver, B.C.—An improved knitted collar for sweater or similar garment comprising a substantially rectangular body portion and sides oppositely rack knitted whereby the concave edge of the collar corresponds approximately to the concave edge of the development of the neck opening of the garment to which it is secured.

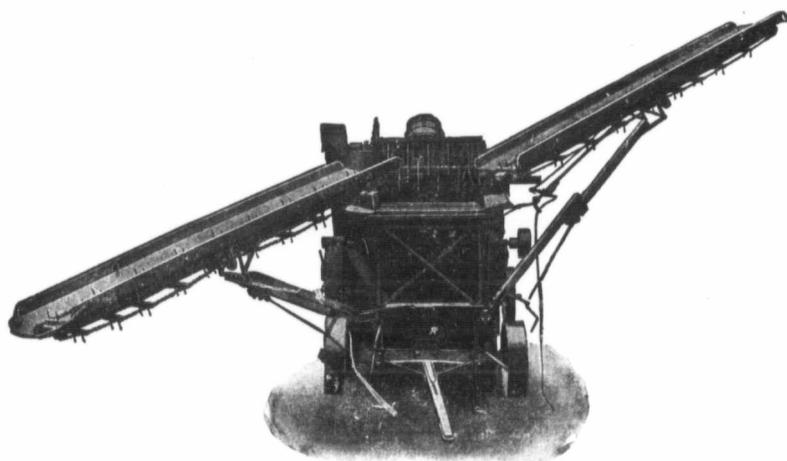
137318—L. R. A. Jenes, Winnipeg, Man.—The invention relates to a heat regulator for cars, and the object of the invention is to improve the construction of a car so that the same can be more uniformly heated than at present

THE  
**"Garden City" Feeder**  
*The King Of The Field*

WE take great pleasure in announcing to the Threshermen of Canada that we have formed a company for the distribution of this famous feeder, with main office and ware rooms at **Regina**, and branch houses at **Winnipeg** and **Saskatoon**, where a full stock of feeders and extras will be kept at all times.

This places the **Famous Garden City Feeder** within the reach of all who desire a **Perfect Feeding Device** to attach to their threshing machines, and we are sure the Threshermen of Canada will appreciate our efforts to supply them with the feeder that has proved to be the **very best** ever placed upon the market of the United States. The feeder that has caused a **sensation** among progressive Threshermen wherever it has been introduced.

We offer this feeder for sale upon **Liberal** terms and at **Right Prices** subject to the following **Iron Clad Warrant**.

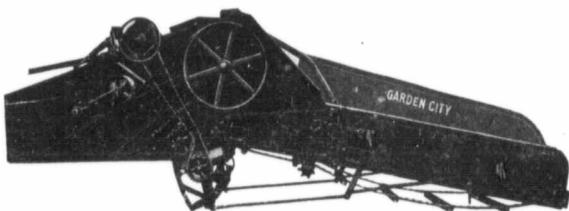


We positively warrant The Garden City Feeder, to feed any separator of any size to its full capacity with any kind of grain in any condition without breaking any concaves or spikes, allowing any uncut bundles to enter between the cylinder and concaves, causing any burned belts or winding of the retarder or band cutter, or delivering any bundles to the cylinder crossways: regardless of how the grain is piled upon the carrier.

**NOTICE—EVERY CLAIM WE MAKE CAN BE TRIED OUT ON YOUR OWN MACHINE NO "IF'S, OR ANDS," ABOUT IT. NO CATCH WORDS, NO JOKERS, JUST PLAIN TALK THAT ALL CAN UNDERSTAND.**

If you have the **Big** jobs and want to get **Done** and save the grain, and **save all of it**, you cannot afford to waste your time with any old so called feeder that is a feeder in **name only**, it will pay you to try a **Garden City Feeder** and if it fails to **make good** the claims of our warrant, the trial will **not cost you a penny**.

It will pay **you** to investigate the merits of this feeder. If you cannot call and make a **personal examination** the next best thing is to send for a catalog that will give you some valuable information on the feeder question, things you **should know** if you are not fully posted, **things that will interest you**.



If you are buying a **new separator**, be **sure** to have it equipped with a **Garden City Feeder**, any of the Thresher Manufacturers can get one for you if **you insist** upon having **it** and **no other**.

If you need a **wing feeder** we have that also, the same high class machine, backed by the same **iron clad warrant** that we give with every feeder sold.

We will be **pleased** to have **you** call and get acquainted with our sales force, when in town make **our place your headquarters**, you will find a **cordial welcome**. Our catalog is **free**.

**The Garden City Feeder Co. Ltd.**  
**Regina, Sask.**



# SIGNS OF PROGRESS

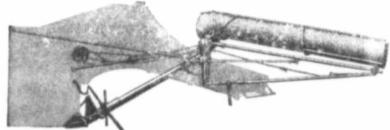
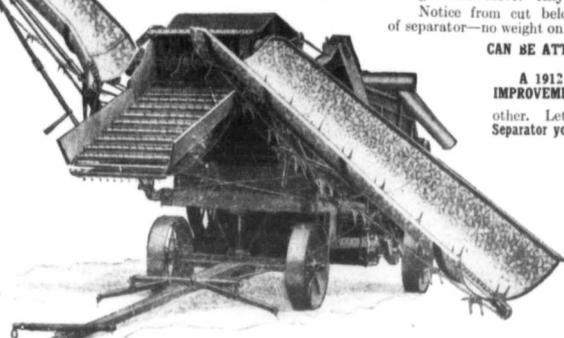
## HART-BROWN WING CARRIER

**We Will Furnish Half Your Threshing Crew. How?**

By furnishing you devices that will do half the field work of threshing. By using the Hart-Brown Wing Carriers and Hart Universal Thresher Racks you save half the bundle wagons and drivers and all of your field pitchers, and feed your machine better than it was ever fed before. F. A. Snook, Cupar, Sask., writes: "I am more than pleased with your Wing Carrier and Thresher Racks. They are all you claim for them, great savers of grain and labor. Anyone who has ever used them would not do without." Notice from cut below the Carrier is supported by main sills and main frame of separator—no weight on feeder.

**CAN BE ATTACHED TO ANY SEPARATOR WITH ANY FEEDER**

**A 1912 IMPROVEMENT** Each Wing is provided with an adjustable friction clutch which prevents breakage and allows either Wing to be thrown in or out of gear independently of the other. Let us tell you about the other new improvements. State kind of Separator you use.



POSTAL BRINGS 1912 CATALOG STATE KIND OF SEPARATOR YOU USE

**HART GRAIN WEIGHER CO., PEORIA, ILL., U.S.**

137340—A. J. McLeod, Moose Jaw, Sask. A grain immersing machine, the object of which is to provide an inexpensive, easily operated and efficient device for treating grain. It comprises a set of standards supported rotatably, a barrel having a removable top. The barrel is

rotated by means of gearing operated by a suitable handle.

137467—N. Lang, Vancouver, B.C.—The object of the invention is to provide a rosette which will effectively insulate an electric lamp attachment, and

it comprises a body of insulating material centrally perforated to receive the lamp support, and provided with terminal plates and binding screws, the axis of the binding screws being inclined outwardly from the axis of the lamp suspension rod.

137550—J. Alderson, Winnipeg, Man.—The invention relates to a shocking machine, and the object of the invention is to improve the construction of the usual basket which receives the sheaves in a manner which will allow it to deposit the shock so that it will remain upright on the ground when the machine advances. A further object is to supply the basket with an automatic attachment which will return to its original position after a shock has been dumped.

137468—R. F. Lawrence, Victoria, B.C.—The invention relates to a ventilator for walls, and the object of the invention is to provide a new form of brick which will allow ventilation through a wall. The brick is formed with a ventilating aperture through it, comprising a passage tapered from the smaller dimension on the outside of the wall to a larger dimension on the inside of the wall, there being an obstructing shoulder located about midway of the passage.

137568 — C. M. Conklin, Saskatoon, Sask.—The invention relates to a morris or students chair, and the object of the invention is to supply a chair with drawer spaces, folding arms and foot rest. The arms, back and bottom of the chair are formed hollow so as to receive drawers, and the arms are supplied with wings which can be raised or lowered as desired. The foot piece is hinged to the front of the chair, and is supplied with a suitable strut to hold it in the raised position.

137582 — W. N. Hutchinson, Victoria, B.C.—The invention has for its object the construction of a lock washer, which will effectively prevent the nut from turning, and it comprises a thin perforated metallic sheet having a rectangular extension on one side, which extension is slit on lines parallel to a line radial to the bolt aperture, the ends of the two outer portions being turned down, and the central portion doubled over in the opposite direction and toward the bolt aperture.

137621—W. C. Weeks, Vancouver, B.C.—The invention relates to a device for washing gravel, and the object of the invention is to provide a simply constructed machine which will effectively clean gravel. It comprises a tank into which flowing water is delivered, a hopper mounted on the tank, a grating across the lower end of the hopper, said grating delivering in a zig-zag passage to the bottom of the tank, and an overflow toward the upper part of the zig-zag passage adjacent to the hopper.

### HOW MOSE PLEADED "NOT GUILTY"

By E. C. Sawyer.

One day last winter I chanced to attend circuit court, in a country town, in Mississippi. From the number of negroes, who packed the court-room and crowded around the doors, I inferred that something of unusual interest to the "cullud" population was about to transpire.

Within the bar, on the prisoner's seat, an old negro man leaned eagerly forward, as his attorney argued his plea, "not guilty," before the jury. "Who, gentlemen of the jury, has sworn that he saw this man commit this theft? We have broken every link in the weak chain of circumstantial evidence with which the state had tried to entangle him. Why, his neighbor, Tom Jones, swore that he sold him the meat which was found in the defendant's house, and that he shot the hog because it was wild. It is true that Colonel Smith swore that one of his hogs disappeared about December 23rd, and that about fifty yards from a certain stump, he found blood and then

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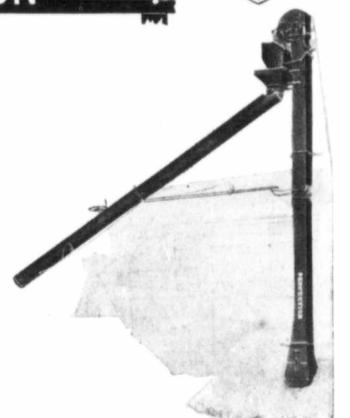
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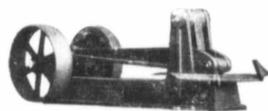
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followed a trail of blood from that spot to this defendant's cabin. But what of that? This defendant told you—and his wife and brother swore the same—that that was the blood of a coon which he had shot and carried home the day before Smith lost his hog. Give him justice as you would do if he were a white man. He cannot help being black. The leopard cannot change his spots nor the Ethiopian his skin.' For twenty years he has been a minister of the gospel. Let him remain free to break the bread of life to Israel." As the lawyer sat down, the women, who had been weaving back and forth for some minutes, commenced to shout:

"Bless de Lawd!"  
"Dar, now!"  
"You's our Joshry, Brer Mose!"

The sheriff had to threaten to clear the court room before order was restored.

There was perfect silence as the district attorney arose and said:

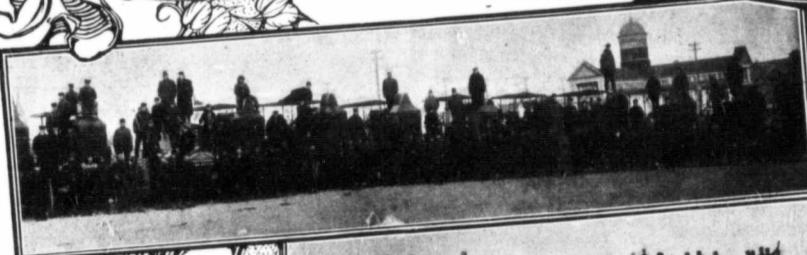
"Gentlemen of the jury, in closing this case for the state, I only desire to bring a picture to your minds." Here the prisoner adjusted his brass-rimmed spectacles as if to see the picture, and his manner showed that he was determined to let nothing escape him. "The twenty-third of last December found Mose Bradley without meat. His son was coming to spend Christmas with him. He could not kill the fatted calf—he had none to kill. But Mose did not worry, for only half a

mile away in 'Marse Thompson's woods were some fat hogs. An hour before sunset he was kneeling behind a large stump in these woods, with his rifle pointing toward a hog, that at some distance away was rooting among the leaves." The lawyer with a cane to represent a rifle, knelt behind a chair to mimic the negro's motions. After some minutes of moving from right to left, now raising, now lowering his cane, the attorney took aim for a moment and then fired. At the sound, the darkey, who had been smiling and apparently oblivious to everything else, exclaimed, "Dat's des de way I done it, boss!"

The laugh that followed, brought Mose to a realization of what he had done, and as I walked away from the bar, I heard him mutter, "Nigger got no show, nohow."

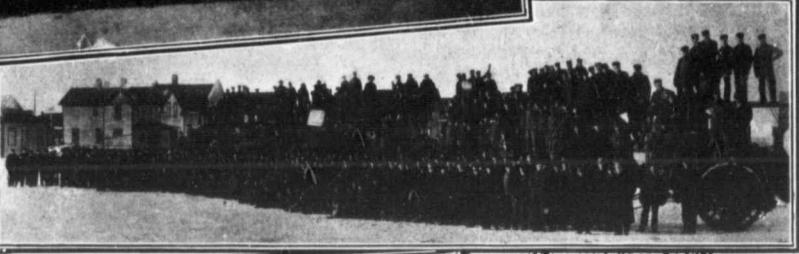
The less you leave your children when you die the more they will have twenty years afterwards. Wealth inherited should be the incentive to exertion. Instead of that, "it is the title-deeds to sloth." The only money that does a man good is what he earns himself. A ready-made fortune, like ready-made clothes, seldom fits the man who comes in possession. Ambition, stimulated by hope and a half-filled purse, has a power that will triumph over all difficulties, beginning with the rich man's contumely, and leaving off with the envious man's malice.

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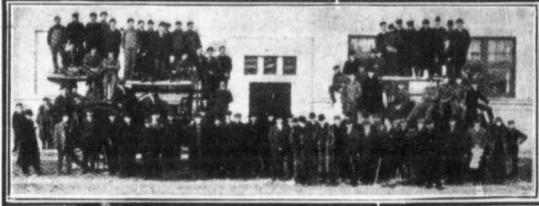
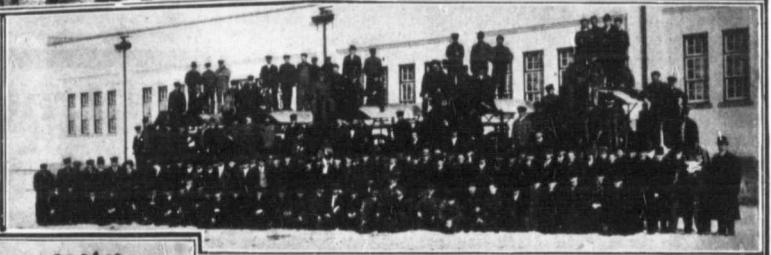
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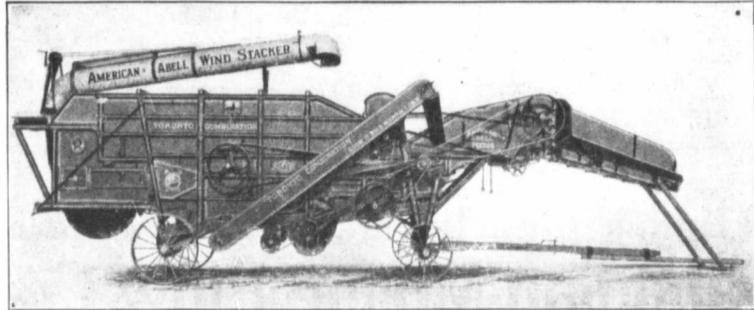
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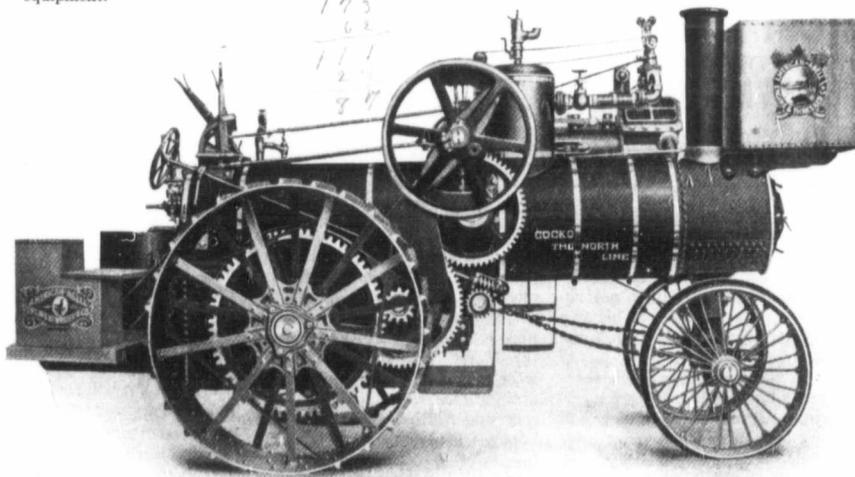
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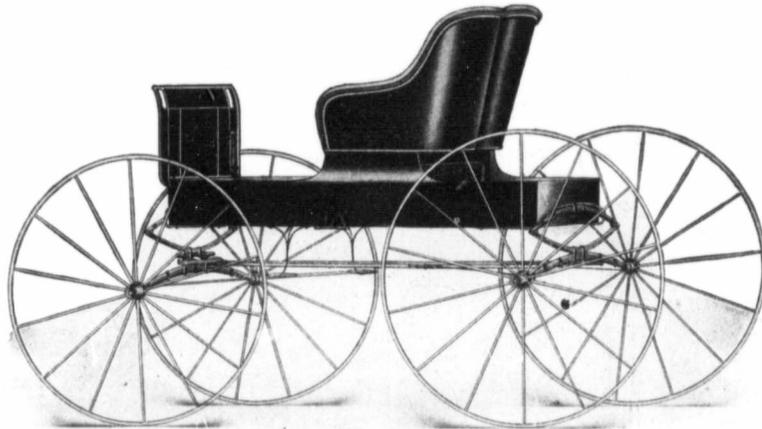
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The following problem has been submitted for us to work out:—Given a half-section of land in Manitoba, Saskatchewan, or Alberta, with twenty acres broken, lay out a three years' program as to the cultivation and equipment of this half section.

So many and varied are the conditions affecting the solution of this proposition that to maintain the superiority of any one outline would indeed be rash. We merely append a possible program which under the conditions we cite appears to us workable.

The climatic and soil conditions found in different localities make it impossible to lay down an inexorable rule for cultivation. The question of equipment, too, is of greatest moment to the average man starting a half-section as finances demand a compromise between a complete efficient outfit and a judicious expenditure for necessities only.

Another factor which determines to a great extent the program to be followed in the temperment of the individual failure is the sure reward of indolence while with average luck success will be directly proportional to the energy expended.

To expound our solution of the problem, necessarily redundant with figures, dry detail and assumption, in a readable way let

### THE HALF SECTION FARM

By P. M. ABEL.

us take a supposition case. A young man, strong and healthy and willing to do as much hard work as endurance and reason will permit, has on hand five thousand dollars. It is not necessary to assume this as his own as interest will be charged on the sum.

In the past few years there seems to be an increasing tendency for the incomer with money to buy land in an improved district while those with smaller means resort to homesteading to make a start. The land agent plays a part in this but the chief reason is a desire to drop into a snug berth, where the hard work had been done and the discomfort suffered by others. We see no reason why a man with a small capital cannot profitably invest in a good homestead and pre-emption a reasonable distance from existing railway lines. The inconvenience endured is more than offset by the ridiculously low price of the land. The duties imposed by the government are scarcely noticeable to the settler earnestly desirous of making a home for himself, and possibly

the girl he left behind. Intelligence, industry and optimism will bear just as good fruit on a homestead as a high-priced farm conveniently near the lights of a city.

Let us then locate our half section in the new country north of the Grand Trunk Railway and west of Saskatoon. South of this drought has played havoc with crop and northward frost is the bogey. Proximity to a railway line is of great import. Let us strike a fair average between the boom townsite and the forty mile journey from a village. The presence of stone in any quantity is the bane of a beginner. Clearing the land of rocks entails an endless amount of manual labor at the time of year when it can be least spared and thus seriously retard development. Wood in small quantities is more beneficial than otherwise and as it is generally scattered through the country we are speaking of let us assume that our half section has on it approximately ten acres of bluff.

The initial expenditure for equipment is so large as to

startle the person who finds his purse emptying and no corresponding return appearing. The first item on the bill lightens his finances by twelve hundred dollars. Five serviceable horses, reasonably young, must be bought. Western horses are a safer purchase than stock brought to the country. Unacclimatized animals may cause a hitch in the program by disease or death. Harness requires another hundred dollars and a wagon will eat up ninety more. The lumber for a small stable with six double stalls and a loft will cost two hundred and fifty dollars.

The importance of a big first season's work cannot be too greatly emphasized. With this end in view it is advisable to haul lumber in the spring before the snow is well off the ground. As the stable needs no excavating, building operations could commence before the frost was out of the ground. The stable should be so planned that in the future additions could be easily made.

During the first few days much hardship may be encountered. A wagon box is no soft bed and late snowstorms require a little determination to endure but screw your courage to the sticking point and you cannot fail.

With the sides and roof of the stable finished the new pro-

prietor may feel like a king enthroned. His household goods but lately the sport of every random gale now adorn the box stall. After sleeping through a spring rain in a wagon box the stable is as alluring as a palace, his utensils and tools hanging on the wall, the result of his last hundred dollar expenditure, smile down in contentment; even the alarm clock sings cheerfully.

If the land is not ready for working by the time the stable is completed, lumber should be hauled for the shack. Before the next winter sets in odd half days must be devoted to the erection of a more imposing domicile than a box stall. A little mechanical skill and one hundred and twenty dollars will build a shack twelve by sixteen feet.

Four hundred bushels of feed oats must be bought and enough hay to last until some can be cut.

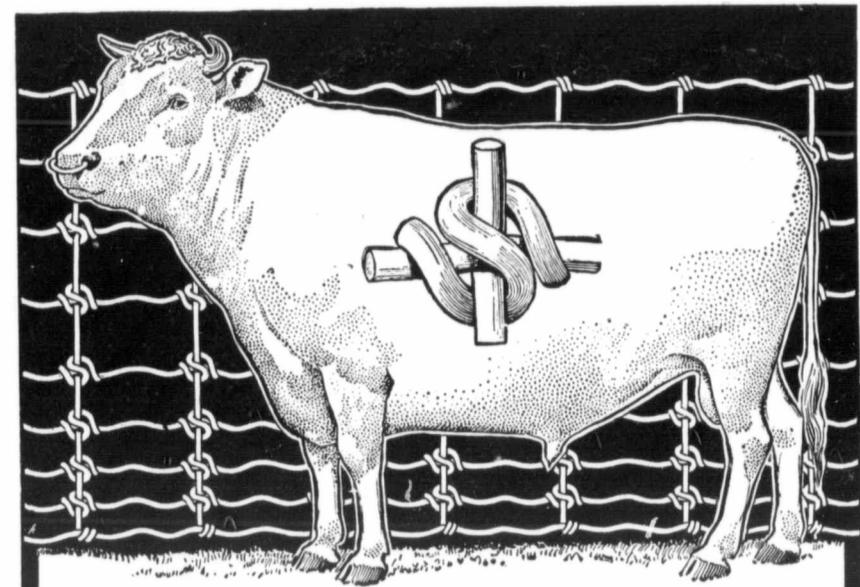
In new districts prairie fires rage unchecked and no wooden structure is safe without a plowed break, therefore, at the earliest convenience the first load of implements is brought home.

With twenty acres of breaking to sow, it will be necessary to buy a disk and drag harrow. Where neighbors are scarce and all the farms in the making, it is likely that a seed drill must be purchased, although this is not advisable if one can be borrowed. If the land has not been touched since the initial operation of breaking it will be greatly benefited by three or four diskings. Thorough harrowing will not come amiss if the season proves dry.

Good, clean seed grain should be purchased. If fifteen acres be sown to oats and the remainder to wheat, feed and seed for the following crop will be obtained and purchasing large quantities of expensive seed thus obviated. In an average year the sowing of this small crop will be accomplished before the first of May.

While the ground is still moist breaking operations should be pushed with all possible speed. Five horses and a twelve inch gang should turn over fifteen acres a week, leaving a good margin for inclement weather and necessitated stops. Thus by the middle of June one hundred acres should be black.

Just here the importance of a rotation of crop may be emphasized. If the farm is broken up into three equal fields of one hundred acres apiece and no two fields broken up in the same year, the succession of cropping established lends itself favorably to a great variety of rotations. It might be possible to have an engine break the whole farm up the first summer and the immediate returns pay well on the money invested but no systematic rotation



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could be followed. The land would require an inordinate amount of work one year with a corresponding slack period at some other time. We consider that a three-year rotation of wheat, wheat or oats, and summerfallow will give the greatest returns for the same amount of work as any other practical rotation that could be followed by a man starting a new place. Nor does a rotation including so much grain need an apology. The business of a man who sinks five thousand dollars in a hazard of this sort is to make money, make lots of it, and make it quick. In no other way can this be done so well as by growing cash crops and making the land produce to the limit. With intelligent cultivation the detrimental effects of over-cropping will not be noticed to any appreciable extent. Eventually this rotation will have to be discarded and another substituted that includes grass and possibly a cultivated crop.

By the time that our hundred acres have been broken the land will be rapidly drying. Slough

water will be scarce and the hole dug to supply the house water is rapidly drying. Now is the opportune time to dig a shallow well ten to fifteen feet deep near the lowest slough on the place convenient to the buildings. Above all select a spot that does not receive all the stable drainage. Soil is an excellent strainer for purifying water but filthy liquids in time contaminate any medium of filtration, percolate through unchanged and typhoid is the result.

The fireguard that was broken, backset and sown to a few vegetables, now needs a little encouragement. This crop will not yield great results but serves as a makeshift.

The horses may be given a rest while twenty acres of pasture is fenced off and the house made habitable. By this time wild hay is ready to cut. Slough hay yields the best returns but it is generally conceded that good prairie wool makes the best horse feed. Twenty-five or thirty loads will be none too much.

The hay once in the plow

should be started again. Commencing with the first broken sod the whole field should be again plowed or backset. A month may be spent at this occupation before the small crop is ready for harvest.

Whenever two men go together in starting on a place much money may be saved in the matter of lending implements and help. Especially is this noticeable when for a small crop like twenty acres it becomes necessary to buy a full outfit of expensive machinery. It is safe to assume that in this rapidly filling country our protégé has made at least one friend, who for the loan of seeder, disks and help will in turn supply a binder for the harvesting of our twenty acre crop.

Cutting, stooking and fire-guarding such a small area would cause but a brief interruption of four or five days in the task of backsetting which, if diligently pursued, should be finished by the third week in September at the latest.

Difficulty is often experienced in new localities to secure a

threshing outfit before November. If no machine is in sight by the time the backsetting is finished it would be advisable to stack the grain.

If the site of the well gives promises of a permanent supply of water a well-boring outfit should be secured and the well lowered forty or fifty feet more. The stubble may be disked or not, depending upon how long the land remains workable in the fall. If the hundred acres of backsetting is prepared for the seeder the next spring's work should take no longer than in the year just past.

Before the threshers arrive a portable granary should be built so that the seed for the following year could be conveniently and safely stored during the winter. Threshing operations for such a small crop would not consume a whole day.

As winter sets in the horses may be allowed to run during the day. While the country is new, and the bluffs contain trees, the whole winter should be spent in cutting all the wood that can be secured. In sparsely wooded countries it is only a matter of a few years before the bush is denuded.

The trials of bachelorhood are many, and if a cow is bought culinary feats hitherto undreamed of may be accomplished. For companionship during the winter we would strongly urge chumming up with some other fellow in the same position as our embryo land king. Man is a social animal. Two can cheer each other wonderfully by their very presence during the long winter nights when fortune seems to have departed. Unending blizzards and biting frost work easily upon the lonely imagination. The fear of accident and the dread of loneliness easily increases. The oppressive silence that crushes in ever closer has undermined many a man. We do not hold this out as the certain fate of any man that lives alone nor are we advertising a matrimonial bureau, but hardship likes company, and two persons, perhaps musically inclined, can while away pleasantly many a long evening.

The approach of spring should find the implements all in working order, the horses toughened up, and the seed cleaned. If the original twenty acres and twenty more of the back-setting be put in oats, we will be supplied with feed for years, seed and a generous quantity of oat sheaves.

The remaining eighty acres we advise sowing to wheat.

The spring work will only last about a week or ten days, after which the program will be nearly the same as the previous year. Another hundred acres should be broken, hay put up, and one hun-

dred and twenty acres to harvest. For these last it will become necessary to hire help, while the size of the crop makes the purchase of a binder imperative.

In all probability there will be no time to touch the land already cropped. Working up the breaking will require the whole fall. As we expect 30 bushels per acre at least from the wheat and 40 bushels per acre from the oats, another granary will be needed to hold the crop. We can afford to draw ten or twelve loads of sheaves into the stable loft this year.

Among the purchases this year would be a farming mill, blacksmith's outfit, binder and pigs, besides the cost of maintenance of our rapidly growing establishment.

As five horses cannot possibly handle the work for the third year another four horse outfit should be bought. If possible procure mares. They may be given the rests if rests there must be, and in turn they will prove a profitable source of revenue if properly handled. Good mares are not easily gotten, but it pays to give a long price for a good breeding animal; use the best sires to raise a horse that will fetch a high price on the market. The spring work the third year will consist of sowing the backsetting to wheat plowing and seeding forty acres in oats and discing the remaining eighty acres for wheat. A farm hand will have to be employed the whole summer. A good man is worth a large price but reliability is a quality that means much to our beginner.

The four horse outfit can handle a sixteen in. sulky at least in breaking. The two outfits should succeed in breaking the remainder of the farm up this summer, and preparing all the land for crop, except what is to be spring plowed or summer-fallowed. One binder can handle all the crop if horses are available for running long hours. It is a good policy to have the stokers follow the binders closely for fear of continued rainfall. Stinting of labor in this season of the year is poor economy. Two additional granaries may be needed to hold the crop if the yield is good.

At the end of the third year our farmer will be prosperous. His original five thousand dollars will have diminished, but the live stock around him will more than make up for the loss. Besides this, his land will have increased in value from five hundred dollars a half section to fifteen or twenty dollars an acre. More than this, his farm is now a paying proposition; the day of big expenditure and small return is past. Implements have been bought, and expenses have considerably narrowed. Colts and calves begin to make appearance, and touches of

# TRAHERN PUMPS

HAVE FOUND A HOME IN  
**Western  
Canada**

Write for Catalog & Prices

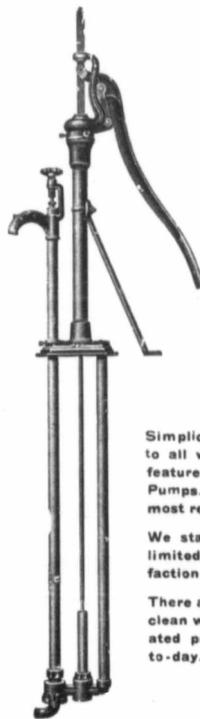


Fig. 27



Fig. 173

### NOTE

Simplicity and accessibility to all working parts is the feature of all "Trahern" Pumps. Valves are all of the most reliable type.

We stand back of an unlimited guarantee of satisfaction in anything we sell.

There are no such practical, clean working, easily operated pumps on the market to-day.



Fig. 404

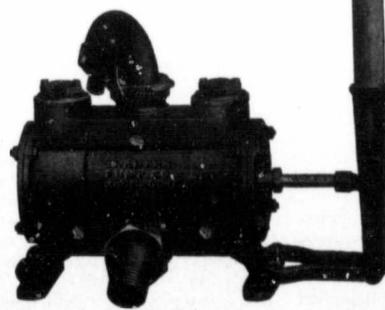


Fig. 200

## CRANE & ORDWAY CO.

LOMBARD STREET, WINNIPEG, MAN.  
WESTERN DISTRIBUTORS

horticulture are noticeable in a windbreak flower garden and a generous display of vegetables.

A more commodious dwelling will in time replace the shack, the windmill and gasoline engine will do the chores.

Farming in the West has past the experimental stage nor is the prairie the temporary abode of the fortune hunter who flits to warmer climes when success is reached.

A half section farm intelligently cultivated will yield a comfortable living.

**FARM DEPARTMENT**

Continued from page 71

certain conditions of moisture and heat. A daily mean or normal temperature of from 72 degrees F. to 74 degrees F. for any considerable time, accompanied by moist weather, furnishes the best conditions for the spread of the parasite. On the other hand, if the daily mean or normal temperature exceeds 77 degrees for a few days, the development of the disease is checked. This fact explains why the fungus seldom occurs to any serious extent in sections where the mean or normal temperature exceeds 77 deg. for any length of time, and probably why it appears later than the disease discussed under the former heading. The tubers affected with the disease show depressed, dark-colored areas on the surface, while within are blotches and streaks of a brownish or blackish color. Other diseases may produce similar effects, so that in this case the changes are not so characteristic as those shown by the leaves. For many years it was believed that most of the injury to the potato was due to this disease, but recent investigations have shown that view to be erroneous.

**Treatment.**—The same treatment as recommended for early blight should be followed here, and will be found to prevent the blighting of the tops and rotting of the tubers. In regions where late blight is known to occur, care should be taken to begin the application of the Bordeaux mixture before the attacks of the fungus. In all this work it must be constantly kept in mind that the main object is prevention rather than cure. Benefit will undoubtedly result if only clean, healthy potatoes are used as seed. Decayed and discolored tubers should be fed to the hogs, as it is poor policy to plant them.

**Potato Scab.**—Scab is one of the most widespread diseases affecting the potato. Injuries of various kinds may produce a roughened surface, but it is safe to say that most of what is known as scab is due to the

**We  
make  
our own  
wire**

# Frost Fence

Covers  
Canada.

**A  
product  
purely  
Canadian**

**Looks as neat when Erected as it  
does in the Picture.**

**Cut below shows one of the many styles of FROST Fence. All FROST Fence is made from FROST Wire, which is drawn true to gauge, carefully tempered to the proper hardness and thoroughly galvanized in our own mills by expert workmen who have had years of experience in wire making.**

**Note our neat and doubly secure lock. It is the finishing touch to our perfect fence. "FROST Fence sells best where best known." Send for our catalogue. It goes to the heart of the fence question.**

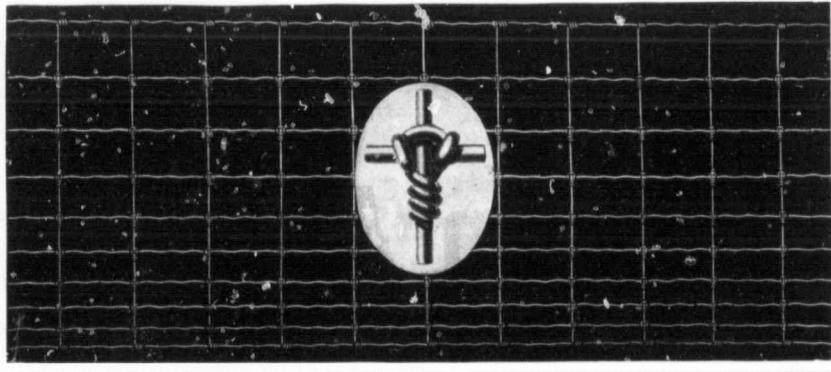
FREE For Two Minutes of Your Time.

We need good live agents in every district. If not already represented in your locality, we will send you FREE a large handsome document with your name interwoven in it, on condition that you send us the name of some responsible man willing to act as our agent and who will send us some business this season. There's prestige and money in our agency. Why not handle it yourself?

**The Frost Agency is a "Live Wire Proposition."**

## The Manitoba Frost Wire Fence Co., Limited

Winnipeg, Man. Hamilton, Ont.



attacks of a minute parasite fungus.

**Treatment.**—Potato scab may be successfully controlled by treating the seed previous to planting. Two fungicides are used for the purpose, namely, corrosive sublimate solution and formalin solution. To prepare the first, dissolve 2½ ounces of corrosive sublimate or bichloride of mercury, in about 2 gallons of hot water and after ten or twelve hours dilute with clear water so that the whole quantity makes 15 gallons. Corrosive sublimate is a poison, and must, therefore, not be placed where it can fall into the hands of children or irresponsible persons. To prepare the formalin solution mix 8 fluid ounces of commercial formalin (otherwise known as 40 per cent. formic aldehyde) with 15 gallons of water.

To treat the potatoes with the corrosive sublimate solution, immerse them for an hour and a half in the liquid and then

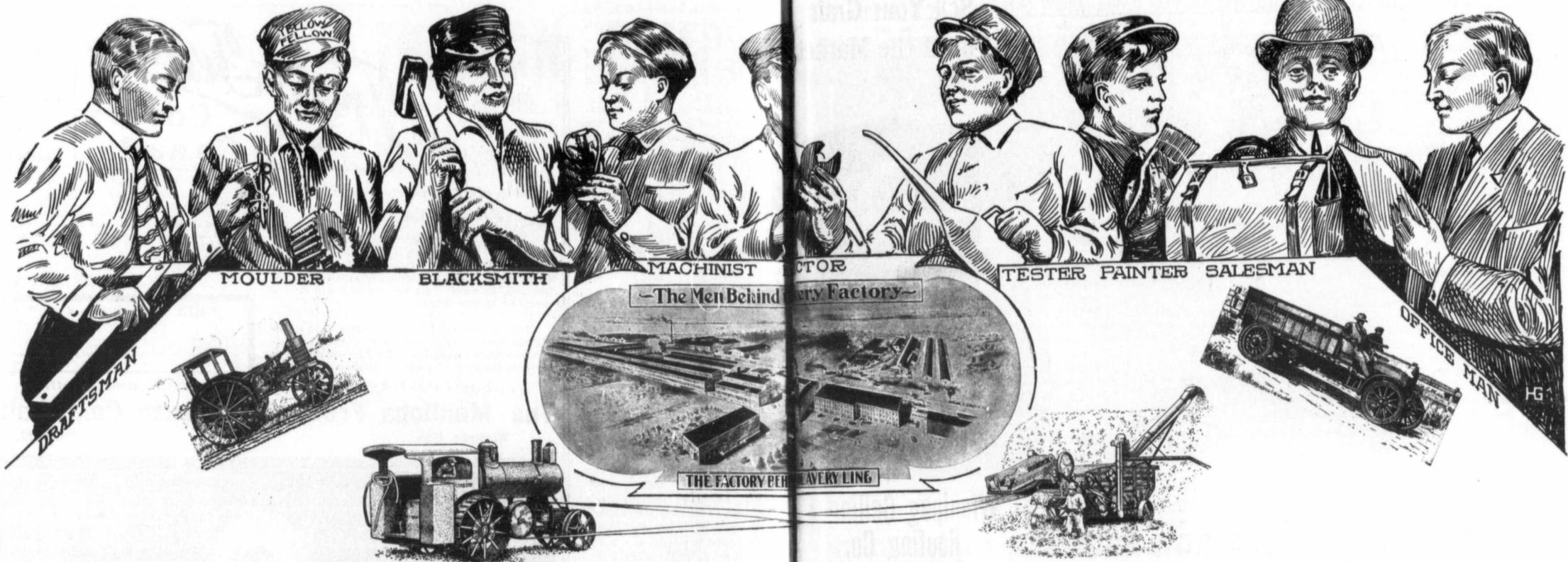
spread out to dry. Finally cut and plant in the usual manner. A large barrel is a convenient receptacle for the solution. The potatoes may be placed in a coarse sack and suspended in the liquid, care being taken to wash the tubers before dipping, provided they are very dirty. All treated tubers should be planted in order to avoid danger from the poison upon them.

It has been shown that the formalin is fully as effective against scab as the corrosive sublimate solution, and as it is far less dangerous it will probably come into general use. In treating seed with this preparation, the whole potato should be soaked for two hours in the solution already described. After soaking, the potatoes may be dried, cut, and planted in the usual way, care being taken not to allow them to become contaminated by coming in contact with bags, boxes, or tins where scabby potatoes have been kept.

In practice it is found that 15 gallons of either of the foregoing solutions will be sufficient to treat 20 to 25 bushels of potatoes, taking ordinary precautions, of course, not to waste too much of the fluid as each lot of tubers is dipped.

**Tip Burn, Leaf Burn, or Scald.**—This disease of the leaves occurs in many parts of the country and is often confused with early blight. The tips and edges of the leaves turn brown and these discolored areas soon become hard and brittle.

The burning or scalding may occur at any time, and as a rule is the result of unfavorable conditions surrounding the plant. Long-continued cloudy and damp weather followed by several hot and bright days is very apt to result in the burning of the foliage. This is especially the case on soils carrying a comparatively small percentage of moisture. When the weather is cloudy and damp the tissues of



# Seven Avery Principles and Seven Avery Facts

HERE ARE SEVEN PRINCIPLES ON WHICH WE BELIEVE A BUSINESS SHOULD BE BUILT AND SEVEN FACTS WHICH SHOW THE WAY IN WHICH THE AVERY COMPANY IS MEASURING UP TO THESE PRINCIPLES.

## The Seven Principles:

- FIRST—We believe that a company should clearly understand the true reason for its existence—which is to serve well those who look to it to supply their needs—and should labor conscientiously for the accomplishment of these ends.
- SECOND—That only honest materials and honest workmanship should enter into the products of the company.
- THIRD—That a spirit of progress should constantly lead to the origination and adoption of improvements in design, based upon the efforts of special designers and the suggestions of users.
- FOURTH—That public demonstrations should be made by which prospective buyers may judge as to the work which the company's products will do.
- FIFTH—That the claims presented before the sale is made should form a guarantee that would follow the goods into the field in the hands of the purchaser.
- SIXTH—That the goods should be produced at a minimum of expense and sold at only a reasonable profit.
- SEVENTH—That customers should be treated squarely and courteously and their wants given prompt and careful attention.

## The Seven Facts:

- FIRST—The Men and Officers of the Avery Company understand that their work is to build machines that will enable men to do Threshing, Farming and Hauling in a better and easier way, and purpose to do their work well.
- SECOND—The materials entering into the construction of Avery machines are high grade for the purposes required of them and the work of manufacture is honestly done.
- THIRD—Avery originality and progress in design is clearly shown by the fact that the Avery Company builds the Only "Under-mounted" Steam Traction Engine, the Simplest Gas Traction Engine built, the only Combination Gas Farm Wagon and General Power Machine, and the Avery "Yellow-Fellow-Grain Saver" Separator.
- FOURTH—Avery Engines have been entered in every important Motor Contest ever held in America and the records of their work are open to all. We have furthermore voluntarily made public Field Tests on Avery Separators and detailed reports of these tests are given in our printed matter.
- FIFTH—Avery Engines and Separators are backed up by the Strongest Guarantees ever given with such machinery by any manufacturer and these Guarantees are printed right in the order blank.
- SIXTH—The equipment of the Avery Factory is such that Avery machines can be produced at a minimum cost considering their quality and only a fair and reasonable per cent is added for profit.
- SEVENTH—It is our purpose to treat customers fairly and courteously and give prompt attention to their wants. We invite you to call upon us or write and judge of this by our manner of dealing with your requests.

The growth of the Avery Company and the increasing sale of Avery machinery is evidence as to the manner in which these principles are being followed, and the way in which they are appreciated by users. Your inquiry for information about Avery Machinery whether in writing or in person will be dealt with on the basis of these principles. Large 1912 catalog with natural color field scenes sent on request.

**Avery Company, 675 Iowa St., Peoria, Ill.**

**HAUG BROS. & NELLERMÖE CO. LTD.**  
 WINNIPEG REGINA CALGARY Western Canadian Distributors

the potato became gorged with water and this has a tendency to weaken them. If the sun appears bright and hot when the leaves are in this condition, there is a rapid evaporation of the moisture stored up in their cells. The evaporation may be faster than the supply furnished by the roots, and if this continues for any length of time the weaker and more tender parts first collapse, then die, and finally turn brown and dry up. Tip burn may also occur as the result of protracted dry weather.

**Treatment.**—Little of a specific nature can be said on the treatment of this trouble. Numerous factors are involved in the matter, so that only general statements are possible. Every effort should be made to keep the plants in good growing condition, for if they become checked through lack of proper food of cultivation or both, they are more apt to burn. It is a fact that where the Bordeaux mixture is used for other diseases, burn is less apt to occur, and this furnishes another instance of the remarkable properties of the fungicide. Briefly, therefore, the plants should be kept as vigorous as possible by good cultivation, plenty of available food and the application of Bordeaux mixture, as recommended for early blight.

**Arsenical Poisoning of Potato Leaves.**—In many sections where Paris green in water is applied to potatoes injuries are produced which can not be distinguished from early blight by an ordinary examination. It frequently happens, therefore, that farmers are led to believe that their potatoes are affected with early blight and other diseases when the trouble has been brought on by themselves through the improper use of Paris green. Injuries resulting from the use of this substance are very apt to occur where flea beetles have eaten the foliage. The arsenic attacks the tissues at such points, and as a result more or less circular brown spots are produced, having for their centres the holes eaten out by the flea beetles. By combining the Paris green with Bordeaux mixture, as already described, these injuries may be wholly avoided.

**The Secret of Ample Power Success in Farming.**

The farmer, perhaps more than any other business man, must do his work at the proper time, and get it done quickly. The breaking, the plowing, the seeding, the harvesting and the threshing—each must be done at a certain time—often within a few days, while weather conditions are most favorable.

It is in just this particular that the modern gas tractor is worth so much to the farmer. Its greatest value lies not in enabling him to do his work at a much lower cost than that of doing it with horses, but in enabling him to do it when soil and weather conditions are most favorable, and to get through with it quickly, while they continue so. Horses can only do so much, and the farmer can work them only so many hours a day. He can work his tractor 24 hours a day if he wants to, plowing 50 to 75 acres every 24 hours, and keeping it up day after day without fear of tiring his engine or wearing it out.

Interesting testimony regarding the value of the gas tractor is given by Fred Engen, one of the most successful farmers of Saskatchewan. Mr. Engen operates three farms, one of 2,300 acres at Goose Lake, one of 1,800 acres at Saskatoon, and one of 640 acres at Langham. All the work on these farms is done with six gas tractors. Last year 70,000 bushels of flax, 30,000 bushels of wheat and 6,000 bushels of oats were raised on these three farms.

"The trouble with the Western farmer is that he has not enough power," said Mr. Engen, in a recent interview; "every farmer cannot have sufficient power to handle large quantities

**Sell Your Grain ON THE Top of the Market**

You can do this if you are able to keep your grain in condition and hold it till it is time to sell. Our



**Portable Corrugated Granary**

is the most complete success in grain storage you can have on the farm. **Fireproof, Cheap, Durable** Write at once for our literature on how to combat the car shortage and make the best on the market.

**Winnipeg Ceiling & Roofing Co.** P. O. Box 2186C Winnipeg, Man.

**THE STEWART SHEAF LOADER**

Is as necessary to the Thresher as the Binder is to the Farmer

**SAVES WORK TIME MEN MONEY**

**SATISFIED Customers All Over The West**



**SIMPLE DURABLE EFFICIENT**

**IT SAVES GRAIN**

**IT CLEANS THE FIELD**

The Stewart Sheaf Loader at Work. Illustration shows proper kind of Basket Rack to use **DOES ITS WORK PERFECTLY**

Stewart Sheaf Loader Co. Winnipeg, Man. Hamiota, Oct. 5

Dear Sirs: Enclosed find cheque in full payment of machine bought from you, and would say that in my opinion this is the greatest labor-saving machine on the market. It saves me four pitchers and two teams, and I would recommend it to any thresher. (Signed) **DAVID WHYTE**

**WRITE FOR ILLUSTRATED CIRCULARS AND FULL PARTICULARS Built in the West for Western Conditions**

Price \$500 f.o.b. Winnipeg. \$100 cash with order, balance October 15th, 1912. Discount for all cash. Write for full details.

**Stewart Sheaf Loader Co. Ltd. 715 McIntyre Block, Winnipeg**

Reference—Traders' Bank, Winnipeg

**TESTIMONIALS**

I have used the Stook Loader sold by the Stewart Sheaf Loader Co. and find it works perfectly. It saves me at least twenty dollars a day and I recommend it to all threshers. (Signed) **W. SETTER**, Russell, Man., Sept. 30th, 1911.

Stewart Sheaf Loader Co., Strassburg, Sask., Nov. 13th, 1911. Dear Sirs: Enclosed you will find cheque for \$300, balance due on Sheaf Loader, and I may say we are more than satisfied with the Loader. It has saved us money outside of paying for itself, and I can honestly recommend it to every Thresherman. **STAFFIN BROS.**

**Our Young Trees this Spring are the Finest we have ever had and we can give Exceptionally Good Value**



A BEAUTIFUL EFFECT FROM JUDICIAL PLANTING OF HERBACEOUS AND PERENNIAL PLANTS  
 THE KIND OF GARDEN YOU OUGHT TO HAVE  
 A little labor and money will give you just such a delightful garden

**HARDY NORTHERN GROWN TREES AND FRUITS.**

We have to offer growing in our Nursery a million of:—

- Russian Golden Willow, 3 ft. per 100. \$5.00
- Russian Golden Willow, 6-8ft., per 100. \$10.00
- Russian Laurel Willow, 2-3 ft., per 100. \$5.00
- Russian Poplar, 2-3 ft., per 100. \$5.00
- Russian Poplar, 5-6 ft., per 100. \$10.00
- Maple Trees, 6-7 ft., per 100. \$20.00
- Maple Trees, 5-6 ft., per 100. \$10.00
- Maple Seedlings, per 100. \$1.00
- Gooseberry and Currant Bushes, 3 yr. old per dozen. \$2.00
- Raspberry Plants, per 100. \$6.00
- Rhubarb Roots, large, per dozen. \$2.00
- Evergreens, Paeonies, Lilacs and all Hardy Shrubs and Plants.

**PURE, CLEAN, RELIABLE SEEDS.**  
 The Very Best.  
**CHOICE VEGETABLE AND FLOWER SEEDS.**

- Alfalfa, Montana grown, per 100 lbs. \$25.00
- Western Rye Grass, per 100 lbs. \$13.00
- Brome Grass, per 100 lbs. \$13.00
- Millet, per 100 lbs. \$ 5.25
- Turnips, Purple Top Swede, per lb. \$ .30
- Turnips, Yellow Perfection, per lb. \$ .30
- Mangels, Mammoth Long Red, per lb. \$ .45
- Timothy, Clover, Fodder Corn, Peas, Vetches.

**RELIABLE LAWN GRASS SEED** is the quickest grown and makes the best and greenest Lawn. No other mixture can equal it. 40 cents per pound.

**Emerald Isle Lawn Grass** a mixture which has been in use for many years. 25 cents per lb.

**SEED POTATOES WILL BE SCARCE THIS SPRING.** We have 8,000 bushels of the Best Early Varieties. Write for Prices.

We are **SPECIAL AGENTS FOR THE WORLD-FAMED SEEDS OF MESSRS SUTTON & SONS,** Reading, Eng., whose guaranteed seed in their original sealed packets are proving good in this climate. Try their seeds of **Choice VEGETABLES, Dainty FLOWERS, and Productive FIELD ROOTS.**

250 ACRES IN NURSERY TO LARGE GREENHOUSES filled with Choice Plants

**PATMORE NURSERY CO. BRANDON, MAN, SASKATOON, SASK,**

Send for our New 1912 Catalogue Established 883

of land, but I would rather farm ten acres and save the crop, than farm 10,000 acres and lose it. If a farmer has four horses and a quarter section he should cultivate not 160 acres, but 50 acres. Every farmer must make his power and his operations correspond. He must always have a surplus of power."

"In this country there are many farmers who do not have their work done at the right time. They are always behind. Last spring there were farmers plowing in May for flax. Flax was sown late in June in the hope that it might be harvested safely. The result was seen last fall in Saskatchewan, where there were many fields that were not threshed. The fact was that there were six weeks of ideal weather for threshing. Had there been more power all the threshing could have been done.

"Farming methods are continually becoming more simplified," continued Mr. Engen. "The introduction of a gas tractor and other labor saving machines has made farming on a large scale much cheaper than it could be done with animal power; indeed, the tractor has alone made farming on a big scale practicable.

"We do practically all the work on our farm with six gas

tractors. Two men with a 30 horse power gas tractor can plow, pack and harrow 30 to 40 acres a day, whereas with 30 horses you would spend about six hours out of the 24 in taking care of them. Those six hours we now employ working in the fields. There is no manual labor required, to speak of, in the operation of the gas tractor.

"When seeding time comes, we hitch five or six drills back of the engine and sow on an average 200 acres a day with one such outfit. At harvest time we pull six binders behind one engine. Later on, the gas tractor furnishes an admirable even power to thresh with.

"As compared with a steam tractor, I much prefer the gas outfit. One man is able to start it and take care of it, whereas in nearly all the districts in this country the steam engine needs two water tanks to go along with it. It requires also an engineer, a fire man and straw wagons."

**Most Important Farm Implement.**

The most important farm implement is the lead pencil. Without some form of accounts, one cannot know what is really doing. One cannot know where the profits or the losses are. The time required in keeping

accounts will be but a few minutes a day. In many cases the returns will be more for these few minutes than for the rest of the day's work.

The keeping of accounts does not require any elaborate system. It can be made quite simple. One way is to get a note book, and set aside two pages that face for each thing that one is to keep account with. For instance, the pigs, cows, chickens, the different fields, the banker, the merchant, etc.

On the left hand page, or debit side, put down whatever goes

to that party. If it be the cows, put down the feed they get, the fodder, in short whatever you spend on them. If it is the banker or merchant, put down whatever you turn over to them as money, eggs, butter, etc.

On the right hand page, or credit side, put down whatever you get from the different parties. If it is the cows, put down the money value of the milk, butter, or cream that they give. If it is the banker or merchant, put down the money, groceries, hardware, or whatever you get from them.

**WATCHES GIVEN AWAY**

**EVERY BOY AND GIRL NEEDS A WATCH BOTH HANDSOME PRESENTS FREE**



**BOYS** This watch is a dandy. Regulation man's size and weight. Your father would be proud to carry it. Stem wind and set. Arabic-dial. A good Timekeeper. Guaranteed.

**GIRLS** You won't envy any lady in your neighborhood if you have one of our lady's watches—small, neat shape, n/w model, stem wind and set; highly finished, milled edge, arabic dial, thoroughly charming timepiece. Guaranteed good Timekeeper.

Now it's very easy to get one of these beautiful timepieces. Just write us to send you \$4.00 worth of our quick selling Easter and Assorted Post Cards and sell them to your friends at \$ for five. Your friends all buy Post Cards somewhere, why not ask them to buy from you.

Then when you have sold them—send us the money and we will promptly send you one of the watches. It's very easy, just try it once.

L.C. writes "I have found them very easy to sell." R.G. writes "I have sold all the cards you sent me, so I think I will try another lot." J.B. writes "I sold them all in a few days." So you see others can easily do it—why not you?

We are sending presents to Boys and Girls all over Canada every week. Be sure to write to-day. Don't forget you have nothing to pay. Watches delivered free to destination.

**OVERLAND MERCHANTISE CO., Dept. 22 TORONTO**

# HAIL INSURANCE

No calamity is more regular in its visits to Western Canada than the hail-storm. Many farmers will get hailed out in 1912. You are as likely to be one of the victims as any man who will have a standing crop. But you need not be a loser to the extent of a dollar. No man gets or deserves so little sympathy in his ill luck as the man who neglects to insure his crop against hail. Every new season demonstrates that no district is hail proof.

## What We Have to Offer

We originated the plan of a Classification of Risks and Guaranteed Rates of Premiums, introduced it in Western Canada 12 years ago, and with it blazed the trail to successful and satisfactory Hail Insurance. Like the prairie trails in unsettled districts, the going was bad in places and in certain seasons. We had to overcome a deep and widespread prejudice caused by the unsatisfactory results of other plans, but believing that we were headed in the right direction, we persistently followed the line laid out, made from time to time such improvements as our experience suggested, strengthened our organization and equipment to meet the demands of a constantly increasing patronage, and now have a broad, smooth road, safe-guarded at all danger points on which we handled last year (1911) more hail insurance than was covered by all our competitors combined.

Our competitors find the trail we have made comparatively easy to travel, but they do not know the danger points as we know them, and none have our record to commend them to the insuring public.

## OUR RECORD

IN 12 YEARS WE HAVE NOT ASKED A CLAIMANT FOR INDEMNITY TO ACCEPT A SETTLEMENT ONE DOLLAR LESS THAN THE AMOUNT AT WHICH HIS CLAIM WAS ADJUSTED, AND HAVE FOUND IT NECESSARY TO ADJUST BY ARBITRATION LESS THAN ONE IN EACH THOUSAND OF CLAIMS PAID.

What we have said here can be verified by enquiry of those who are acquainted with the history of Hail Insurance in Western Canada, and the only recognition we ask for what we may have done to put this much-needed protection against loss on a sound business foundation is the continued confidence and patronage of our friends and their kind recommendation to others who may not know us.

We introduce several new features this year that will please our patrons.

**THE CENTRAL CANADA INSURANCE CO.**

Brandon Manitoba

**THE SASKATCHEWAN INSURANCE CO.**

Regina, Saskatchewan.

**THE ALBERTA-CANADIAN INSURANCE CO.**

Edmonton, Alta.

# Insurance Agencies, Limited

**General Agents**

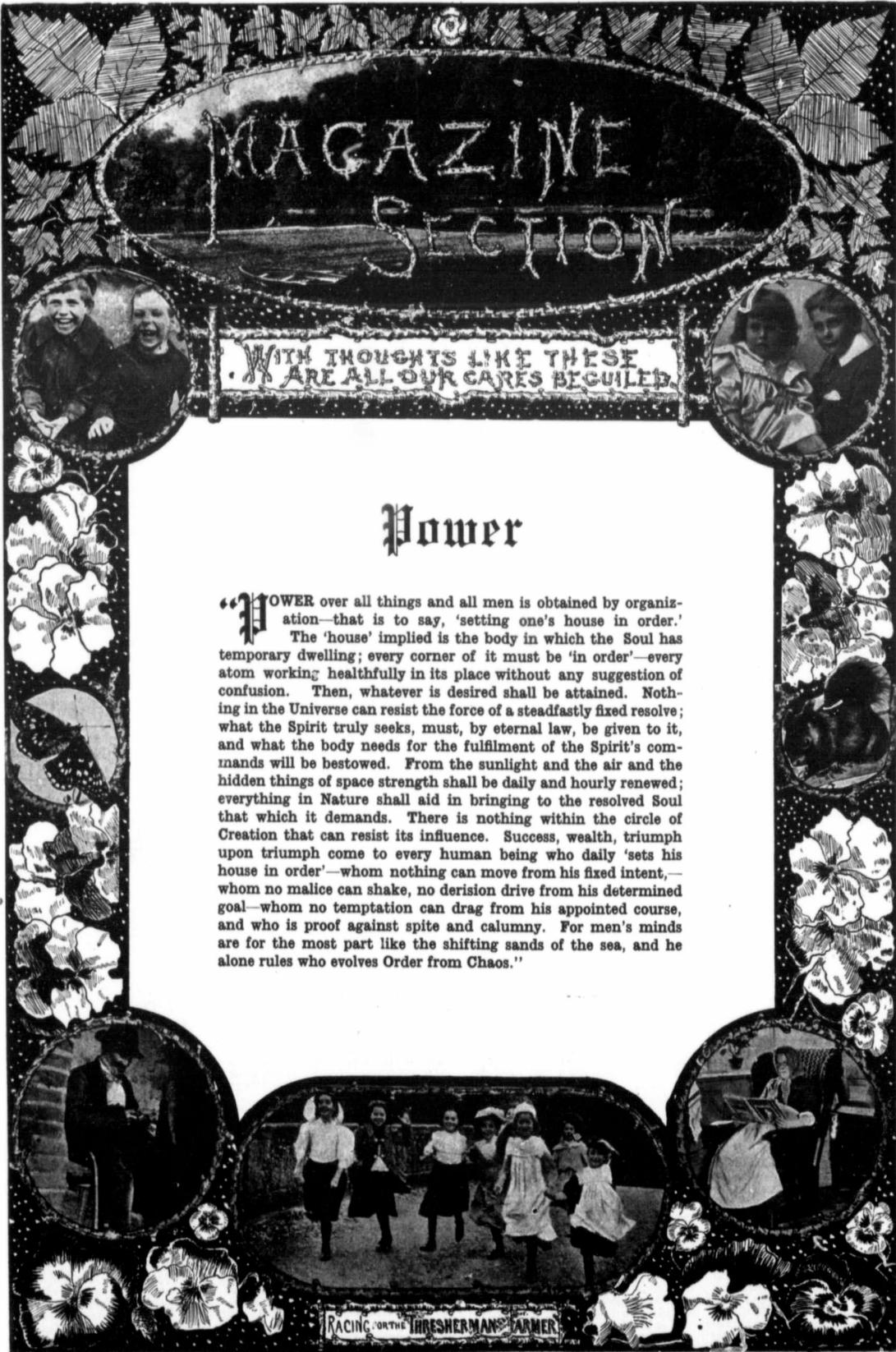
BRANDON, MAN.  
WINNIPEG, MAN.

REGINA, SASK.  
SASKATOON, SASK.

EDMONTON, ALTA.  
CALGARY, ALTA.

And more than 1000 local agencies in the three provinces.

JOS. CORNELL, General Manager.



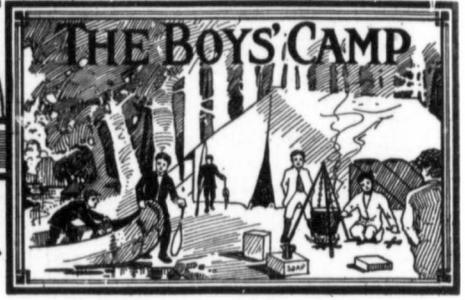
# MAGAZINE SECTION

WITH THOUGHTS LIKE THESE ARE ALL OUR CARES BEGUILED.

## Power

POWER over all things and all men is obtained by organization—that is to say, 'setting one's house in order.' The 'house' implied is the body in which the Soul has temporary dwelling; every corner of it must be 'in order'—every atom working healthfully in its place without any suggestion of confusion. Then, whatever is desired shall be attained. Nothing in the Universe can resist the force of a steadfastly fixed resolve; what the Spirit truly seeks, must, by eternal law, be given to it, and what the body needs for the fulfilment of the Spirit's commands will be bestowed. From the sunlight and the air and the hidden things of space strength shall be daily and hourly renewed; everything in Nature shall aid in bringing to the resolved Soul that which it demands. There is nothing within the circle of Creation that can resist its influence. Success, wealth, triumph upon triumph come to every human being who daily 'sets his house in order'—whom nothing can move from his fixed intent,—whom no malice can shake, no derision drive from his determined goal—whom no temptation can drag from his appointed course, and who is proof against spite and calumny. For men's minds are for the most part like the shifting sands of the sea, and he alone rules who evolves Order from Chaos."

RACING FOR THE THRESHERMAN & FARMER



**The Girls' Cozy Corner**

**EASTER GREETINGS.**

First Child  
 "A glad, happy Easter!" Who wished it, pray tell?  
 A dear little chicken just out of the shell.  
 Second Child  
 "A glad, happy Easter!" Who wished it this time?  
 A lily whose bell rang a soft Easter chime.  
 Third Child  
 "A glad, happy Easter!" the moth seemed to say,  
 Just loosed from his dark winter cradle to-day.  
 All (together)  
 From all of these glad, happy greetings it's clear  
 That April is back again. Easter is here!

**Great, wide World.**

Great, wide, beautiful, wonderful world,  
 With the wonderful water around you curled,  
 And the wonderful grass upon your breast—  
 World, you are beautifully drest.  
 The wonderful air is over me;  
 And the wonderful wind is shaking the tree;  
 It walks on the water, and whirrs the mills,  
 And talks to itself on the top of the hills.  
 You friendly earth, how far do you go,  
 With the wheat fields that nod and the rivers that flow,  
 With cities and gardens and cliffs and isles,  
 And people upon you for thousands of miles?  
 Ah, you are so great and I am so small,  
 I tremble to think of you, world, at all,  
 And yet, when I said my prayers to-day,  
 A whisper inside me seemed to say—  
 "You are more than the earth, though you are such a dot;  
 You can love and think, and the earth cannot!"

Dear Girls of the Cozy Corner:—  
 You are writing beautiful letters. I am proud of you. I am wondering what you are planning to do this summer. Why not have a fair in your community in which only the work of boys and girls under seventeen years of age will be exhibited? You can exhibit needlework and cooking and samples of washing and ironing; you could also exhibit plants, vegetables and flowers. Now if you whisper this idea to the President of the Home Economics Society or of the Home Makers' Club in your community I am sure she will help you. She and her society might conduct the fair. Ask her about it and then write me about her answer. Wishing you all success, I am,  
 Sincerely, Cousin Doris.

Borland Grove, Baldur, Man. Feb. 17  
 Dear Cousin Doris:—This is my first letter to the Cozy Corner. I like reading the other letters very much, so I thought I would write, too. Well, cousins, it is coming spring again, but the snow has not all gone yet. I have one brother and three sisters. One sister is teaching school, one is at home and Margaret and

go to school; then my brother helps Papa on the farm. We have thirty-five cattle and sixteen horses. I have one dear little kitten named Tufty Toes. I got the name from a book. Last summer I had a wee pet lamb. We called him Tom. He was very comical and could kick his legs sideways. But one day when I came from school I could not find my little white ba ba high nor low, and I soon found out that he was sold to the butcher. So now the only pet I have is Tufty Toes, my kitty. I have read quite a few books, some of them are called "The Watchers of the Trails," "Beautiful Joe," "Black Beauty," "Around the Campfires" and quite a few more. I am ten years old now and will be eleven on the 4th of March. Will you please excuse my bad writing, as my pencil is dull. I am hoping to win a prize as it will be the first time and I also hope to see my letter in print. How are Cousin Doris and her little girl? Wishing your club every success. I still remain your cousin  
 Katherine Straug.

Tompkins, Sask. Feb. 14

Dear Cousin Doris:—Will you please admit a stranger into your Cozy Corner. I have been the pleased reader of the Girls' Cozy Corner for two years and could never pick up enough courage to write and win a prize. I would certainly like a book as I am very fond of reading. Well what's the use of talking about a prize when I haven't the least idea of receiving one. The weather up here is certainly beautiful. I like to ride horse-back very well and now and again I get up the cows for my brothers. There is no rink in Tompkins yet as the place is not very large. I also like to cook and do house work. But among everything there is nothing I like so well as to read, that is if the book is interesting. How is Cousin Doris' little girl? I wish you would get her picture put in the Cozy Corner. I live on a farm three and one half miles from town. There is a large coulee between here and town. The only enjoyment we have around here is going to parties. I have been to about fifteen parties this winter. Well I think I have written enough for now. I will close hoping to win a prize. I remain your loving cousin, Beulah McEwen. Age 15  
 Montecalla Farm.

Sonya, Ont.

Dear Cousin Doris:—This is my second letter to the Cozy Corner. I didn't see my first letter in print. My father takes The Canadian Threshman and Farmer and I like to read the letters which the girls write. I notice that some of the girls can cook and sew. I can't cook but I can sew. I am making a quilt. I go to school every day and I am in the 6th grade. I live across the road from the school and always did. I started to school when I was five years old. For pets I have a little brown pug dog and a grey and white kitten. I also have two dolls, Princess Patricia and Queen Mary. I will enclose you some conundrums at the end of my letter. I would like to be a member of the C.C. I remain Hilda Squires. Age 9 years.

Q. Why are the birds melancholy in the morning?  
 A. Because their little bills are all over dew (dew).  
 Q. What letter in the Dutch alphabet will name an English lady of title?  
 A. A Dutch S.  
 Q. When is a greedy man most like a ghost?  
 A. When he's a goblin'.

Lumsden Sask.  
 Dear Cousin Doris:—My father has just started to take the Canadian Threshman and Farmer. I live in the Girls' Cozy Corner. I have two dogs and one cat. Their names are Gip and Collie and I have not got a name for the cat. We live on a farm and have a lot of cattle and horses. I have one brother and he is away at school in Kingston. I have a little pony and I ride to school in the summer and drive in the winter. I will close this time.—Agnes Carse.

Dinton, Alta. Jan. 28

Dear Cousin Doris:—This is my first letter to your club. I like to read your nice letters. I live on a farm. I go to school in the summer and here we live three and one half miles from school. I like to go to Sunday School but we have a long way from Sunday School so I don't get to go very often. I have 9 cats, and I have a colt. I call it Dixie. I will close hoping to see my letter in print. Yours truly, Blue Bell.

Cut-Knife, Feb. 11, 1912.

Dear Cousin Doris:—This is my second letter to your corner. It has been nearly a year since I wrote. I received my prize book in good condition, and thought it a very nice book. Among the books I have read are "Polly, the New Fashioned Girl," "Black Beauty," "Gulliver's Travels," "Little Nell" and many others. I am in Grade VI at school. My studies are: Reading, grammar, history, spelling, drawing, writing and geography and arithmetic.

It has been quite cold here but the weather has turned out warmer now. The snow is quite deep in some places. My brother is running a pool room in Cut-Knife, our new town. There is a hardware store, a livery stable, a restaurant, two stores, a pool room, a lumber yard, an implement store, and a Chinese laundry shop in the town.

Very bad colds are going around the neighbors this winter. Mamma is very sick. Here are some riddles: Nebuchenezar, the King of the Jews, spell that with four letters and I will give you my shoes. A riddle, a riddle, a farmer's fido, alive at both ends and dead in the middle. What is it?  
 Ans.—1. T-h-a-t. 2. A plow.  
 I remain your cousin, Janet Munsell.

Perdue, Sask., Jan. 28th, 1912.

Dear Cousin Doris:—This is my first letter to the Girls' Cozy Corner. My father takes the Canadian Threshman and Farmer and I enjoy reading all the letters in the Girls' Cozy Corner. We live five miles from Perdue and forty miles from Saskatoon. I have read many books, some of them are, "Beautiful Joe," "David Copperfield," "Little Women," "Indian Legends," "The Iron Star," and many others. We have twelve horses and nine head of cattle. Some times I herd the cattle in the summer and fall. We have a grey pony and a dear little colt; his name is Jerry. He will be one year old on the fifteenth of May.

I have for pets, a dog and two cats. I have three sisters but no brothers. My eldest sister and myself are going to try our entrance next year. I am twelve years old and am in the Eighth Grade. I hope my letter will escape W. P. B. I am afraid my letter will be too long, so I will close, but will write again if you will allow me to. I remain, Your loving cousin, Elva Porter.

Young, Sask.  
 Dear Cousin Doris:—This is my first letter to the Girls' Cozy Corner. I have read quite a few letters of the girls in The Canadian Threshman and Farmer. I was born in Toronto, Ontario, and was only five years old when we came out. I am nine years old now. I enjoy reading the letters very much. I would like to be one of the members of The Girls' Cozy Corner. I remain, Yours truly,  
 Margaret C. Brothie.

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**The Canadian Boys' Camp**

**The Open Road.**

By John Vance Cheney.  
 Nature is mother to you, boy,  
 She teaches you by night and day,  
 She shoes your feet with strength and joy,  
 She journeys with you on the way.  
 No film, as yet, no blur to blind,  
 Clear-eyed, you take the better part;  
 Comrade you are of sun and wind  
 The summer warmth is at your heart.  
 When you are man, O litting youth,  
 Why not as lightly, with no load,  
 Still student, go to school to truth,  
 Singing along the open road?

**Success With Fish.**  
 By Blanche E. Wade.

I knew a man who managed once a fine aquarium.  
 And asked for hints on his success, and so he gave me some.  
 "I keep my shad in shadow, and my sunfish in the sun.  
 My trigger-fish most carefully I fix upon a gun.  
 The bass in baskets you will find and jellyfish preserved in jars will never, never mold.  
 I keep the skate on ice, of course; my perch on perches perch,  
 And when the day is fine, I send the angel-fish to church.  
 I file away my filefish so I know just where they are;  
 My swordfish in a scabbard lies, and thus escapes a mar.  
 My sea-horse and my barnacle are always in the stable,  
 And signs like these I keep in sight as well as I am able:  
 "Please do not stir the sturgeon up, and do not poke the pike;  
 And kindly do not maim the limpet by a careless strike.  
 Pray, do not whale the gentle whale, nor rock the rockfish small,  
 And do not fly the flying-fish; it would not do at all.  
 Please do not muss the mussels up, nor saw the sawfish slim;  
 And do not smoke the pipefish—it would make an end of him.  
 Please do not light my lamprey. These are just the hints you wish.  
 Because I follow them myself, I have success with fish."

**Dear Campers:—**

We are anxious to promote interest in the Boy Scout movement in this Camp. Will the scouts write to us and tell us something about their work? We want our boys to be familiar with this splendid patriotic organization, and perhaps some of our scouts will tell the other boys about their experience. Wishing all of the campers prosperity, I am sincerely,  
 Cousin Doris.

**Tiverton, Ont.**

**Dear Cousin Doris:—**This is my first letter to the Camp, so I do not expect it to be of very much account.

I am going to give the boys a plan of a thrashing machine that a chum and myself made and it gave us some fun.

First take some inch boards and make a box 4 feet long, 9 ins wide and 12 ins high, build it so you can put it together and put the machinery inside. For a cylinder use a round piece of wood (I used an old roller of a binder), and cut it just 9 ins long, then put 6 or 8 rows of nails, with the heads off, for teeth; then put another roller behind this one with just two rows of teeth a little longer than the others. This helps to throw the grain down. For concaves, put two rows of nails in the end of the feed board and let it extend down below the cylinder. For separating the grain from the straw, I use a half inch board full of holes and a slat carrier running inclined a little to the back; then I had a fan under it to catch the grain. I had carriers for the back instead of a blower, because it is easier to make. Now in case this is not quite plain enough I will try and draw it.  
 C. Drummer.  
 C. Drummer.  
 C. Drummer.



**Which is his**  
**T**HERE'S no mistaking the expression of a man whose farm is well "improved." He looks as prosperous as he feels.  
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for such improvements. It is neat, harmonizing with its surroundings in the country. Everlasting, it cannot be injured by fire, frost, wind or lightning. Age—instead of causing it to decay—actually makes it stronger.  
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 It is better to put a few holes in it, too, as a few grains will go over the other one.  
 Now to drive it I used an old bicycle turned upside down and fastened to a frame. I took the tires off and drove it with a rope.  
 We threshed beans with it, and had lots of fun.  
 If it is not too long I would like the boys to see it, that is if you think they could manage to make anything out of it.  
 In closing I wish all the Campers good luck.—Yours very truly, Fred McPhail.

**Holdfast, Sask.**

**Dear Campers:—**This is my first letter to your club. I like to read the boys' camp. I am 12 years old. We live one and a half miles from town. We have 13 horses, three cows and 2 calves; also 2 gasoline engines, and one separator. I can run the engine. I would like to see my letter in print. I will close. Wishing the Club every success, I remain, yours truly,—Oskar Walker.

**Carmel Station, Sask.**

**Dear Cousin Doris:—**This is my first letter to the Club. My father takes the Canadian Thresherman and Farmer. We came from England six years ago in April. We like this country very much. We have a nice little dog. His name is Rover; he is very clever, and will sit up and beg for bread. I am 12 years old. A lot of people did not get threshed this year. Well, I think this is all I have to say, — Ida Winifred Davies.

**Carmel Station, Sask.**

**Dear Cousin Doris:—**This is my first letter to your Club. I do not go to school now as the school does not run in the winter. I read the letters of the girls' cozy corner. We came from England six years ago. Our school

is a mile and a half away. I like reading very much, although I have not read many books. I was ten years old last August. I have three sisters and two brothers. I am fond of drawing, but can not do it very well. I will close now. Hoping to see my letter in print, I am, your cousin, — Hilda M. Davies.

**Portage la Prairie, Man.**  
 January 20, 1912

To Boys' Camp:—This is the first time I have written for about a year. I had a fine time at New Year, but not at Christmas. I was sick all Christmas week and just better on New Year's day. Santa Claus was very good to me, and he was awful good to my sister. My mother has gone to the south of Manitoba for a visit and will be back in a few weeks. My brother shot two rabbits this winter. I was with him when he shot the first one. We had our dog hunting for them in the bush and he chased one in a little hollowed out space in the snow. My brother fired and hit him in the head. The next day he went out and climbed up a tree, and he shot a rabbit right underneath the spine, and it was alive when he got it. One day a neighbor's boy came down with his 22 Stevens rifle, called Little Scout, to hunt rabbits. He did not get any, neither did my brother. My brother's rifle is a 22 Savage. They were going to make a test whose would hit a tin 200 yards away. The tin was an advertisement of Proir Brothers. My brother's rifle hit it, but the other boy's rifle did not carry that far. Hoping to see my letter in print, I remain, your truly,—Willie Bradley.

I am a boy of thirteen years old. I am going to school and like it very much. I am in Grade Eight. I belong to only one Club, the Prairie Chickens Club and I would like to join your Club too. That will be as my letter is getting long. Wishing the Club every success and I think I will win a prize. Master Euclide Desautels.

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# Womans' Department

Conducted by PEARL RICHMOND HAMILTON

A HOUSEHOLD FORUM FOR THE DISCUSSION OF EVERYTHING THAT PERTAINS TO THE HOME



## HOME DEPARTMENT

Conducted by Edith Charlton Salisbury

### A lesson from the Farmers' Meeting.

Dear Martha,—While on a visit to the east some time ago I had a new and pleasurable experience of which I want to tell you, for the good I derived from that experience may be helpful to some other farm woman.

I was invited to attend the annual meeting of one of the flourishing farmers' institutes in Ontario. This was quite a new experience for me, for in the section of the West where I live the women have not generally learned the value of such meetings. But if I have any influence in my home community there will be a different story to tell before many months have gone by. I do not know of any organization in any locality that has better opportunities for home improvement and human development than a society which concerns itself directly with affairs of the home. But that is another story and cannot be told now for it is of this particular meeting I would write.

The program was long but filled with helpful suggestions for the farmer and the farmer's family, concerning every conceivable method and plan for making more money on the farm, and making more work too. I thought after a particularly full paper had been read on how to realize many dollars a year by just saving all the little scraps of everything—except energy and personal rest. Of these there seemed to be great expenditure.

Then came a change in the program—prepared especially for the women-folk—a talk on amusements on the farm. As the speaker was announced several men took their hats and went to the back of the hall to talk "haws," or some other subject dearer to their hearts than home amusements. But others remained, perhaps to hear "how a woman could talk and what she has to say anyway." Most of the latter found the subject interesting enough to hold their attention and keep them in their seats until the subject was given to the meeting for discussion.

The speaker was a farmer's wife and she evidently talked from her own experience. What I noticed about her first, and wondered about most, was the quiet, confident, unhurried manner of this woman who talked on amusements. It had been whispered about that this farmer's wife was as busy as any woman in the hall. She had her chickens, her flowers and her vegetable garden, beside her household included cooking for "hands." She also had several young children with whom she "actually takes time to play," someone said of her. Then, too, she distinctly said as she talked about "varying work with play and taking time to enjoy life" that she made it her daily practice to stop her work long enough to "look at something beautiful say something pleasant and think kindly of someone outside her home. Why, if it is nothing more than a puzzle game with five-year-old Robbie or a story telling hour with the children after supper, I insist upon having a little bit of play every day," the bright-eyed woman said with a laugh.

"Puzzle games with Robbie and stories with all the children!" I listened as in a dream. How could she find time for such things, how did she have the heart

for them anyway, after a hard day's work? I could think of a dozen things any farmer's wife could do any hour of the day or night, rather than play games with the children.

### Family Reading Circles.

There were numerous suggestions for amusements in the farm home. The speaker outlined several. She advised the family reading circle—some one reading aloud from a good book while the rest of the family listened with fingers idle or with hands employed with the needle. She suggested several games in which all the family, from Grandpa to five-year-old Robbie could join and then she made a plea for more music, or rather, better music on the farm. "It seems to me," the speaker said, "we sing everywhere but at home. There is a piano or organ in almost every home, but it is generally the most useless bit of furniture in the house. The mother used to play in her girlhood days before her marriage; the oldest daughter took lessons when she was in school; even the oldest boy played simple airs before he was twelve, but none of them touch the instrument or lift a tune now-a-days. Work, work, too much work! they all give as their excuse for not doing so, and it seems never to occur to them that they have closed one big avenue for pleasure in their home. "Everybody is expected to sing in church. We sing in school, we sing in picnics and all sorts of social gatherings. We sing at weddings and we even sing through our tears when the death angel visits us. We sing anywhere and almost anytime but in the family circle. There our mouths are closed; even the whistle is reserved for out of doors. There is too little, far too little, music in the home."

I went home from that meeting with my heart full of emotion and my mind full of plans. What the farmer's wife had said about amusements seemed good to me and I resolved to put some of the suggestions into practice in my own home.

But alas and alas! Have you ever tried a reform in your own home, especially if that home is upon a farm? The farmer wraps his dearly beloved habits about him like a fur coat in winter; his children think the old way is good enough for the old Lome, but they mentally vow to do differently in their own homes. The farmer's wife may be a second edition of her husband or she may be anxious to try a different way, if she meets with any encouragement.

Amusements on the farm! Games in the family circle! I know the idea will not be popular in many homes. I found it a difficult task to introduce the change into my family, but I found also that the effort was worth while, for much good was accomplished. Different members of the family found that there is time for everything, even a little relaxation in a busy country home, and they began to take the relaxation in the way that best suited them. The desire to prove in your own home that "all work and no play makes Jack a dull boy," is worth while and I hope that many of the women readers of The Canadian Thresherman and Farmer will make the effort.

Try Blind Man's Bluff for a Change. Evenings are long during the winter months and chores and supper are generally out of the way early. Get out a checker board, the dominoes, or any one of a hundred other simple games that may come to mind. Hunt up all the old familiar melodies you used to sing and start everybody singing. There are many songs that anyone knows, make them popular again, before trying the

newer airs. Then there are so many good magazines and books that are doubly enjoyable when read aloud, and you know there is no better way to develop a taste for good literature than by reading aloud in the family circle. I am not sure it would not be a good beginning to have a rollicking game of blind-man's bluff some night to get every one in a good humor, get better acquainted, and create a desire for more.

Sometimes it seems that life upon a farm is such a serious business affair, a continual hurry from week to week, and month to month, that the members of the family are hardly acquainted with each other. Their conversation is carried on in terms of work, and work seems to be the only subject they have in common. This is not an entirely satisfactory basis for friendship, which may be one reason why brothers and sisters on the farm, when they grow into men and women and have homes and interests of their own, find a lack of real friendship with each other and find their paths of life diverging far apart.

There is still another reason for having amusements, or relaxation of some sort in the home, and it is because a fair share of work and a fair share of play is one of the rules of good health. And that is really what we are all working for, or should be, to have stronger, healthier bodies, clearer minds and happy dispositions for our own well-being and for the good of those around us. Haven't you seen people whose faces look as if they had never been guilty of a smile? Their mouths turn down at the corners, and that pulls down their cheeks and makes their eyes down-cast and lustreless. By and by their whole figure droops and becomes listless. A laugh or two might straighten it up.

So just for the good it will do you all, play a little in the farm home. It will give pleasure and bring happiness to some one, for,

"The sound of a sigh doesn't carry well, But the lift of a laugh rings far."

Your Country Sister.

### Music in Country Homes.

A few days ago the girls in the home economics department of Manitoba Agricultural College were discussing whether music is as essential in the country home as in the city. One young lady had some good suggestions to give on the subject, which I pass on to members of the Home Economics Societies throughout the Province. She said:

"There are many reasons why music is as essential in the country as in the city, and is, I think even more of a necessity, because those who live in the city can attend lectures, theatres, concerts, etc., almost at will, while in the country where the homes are more or less isolated, one has to depend largely upon one's own resources for forms of amusement, of which music is one of the chief.

"Many will say there is not time for the study of music in the country home and yet there seems to be time to go to a dance as often as opportunity affords. And why is the dance so popular a pastime in the country? Is it that there is any special benefit to be derived from such? I think you will agree with me there is not, but that we attend merely as seekers of pleasure.

"Now why not substitute one evening a week for the study of music? I might suggest here that the services of a first-class teacher be secured whose duty would be to devote one or more evenings to the life and works of one great master during which vocal or instrumental selections suitable to the occasion could be

rendered. For after all, it not merely pleasure we are seeking, but that which tends to elevate, bearing in mind that the forms of amusement we indulge in have a great deal to do with the moulding of our character and also that of those about us. This is true especially in the home.

### The Troublesome Fly.

Another day these same students were discussing the health conditions in country homes. Among the dangers to good health which were mentioned the one which received especial attention was the common house fly, which all people who live in the country realize is one of the greatest pests of the summer. The young women were firm in the opinion that more could be done than is done in most country homes to get rid of the troublesome flies which are not merely a great nuisance but a direct carrier of disease. They are pledged to wage warfare on the fly in their homes this summer, and in order that others may assist them in like endeavors I give you what one girl wrote on this subject:

"The house fly is known the world over as one of the worst pests we have to deal with. While being a great nuisance by eternally getting into food, they are also a source of grave danger in the carrying of contagion from one place to another. To successfully combat this insect, it is necessary for us to study closely its life history. Flies, like all living things, have two great occupations. First to look after themselves and secondly to provide for their young. In caring for their young, flies must deposit their eggs where conditions are favorable for the

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**PURITY FLOUR**

development of the young fly—larvae or maggots as it is generally called. These conditions are much the same as those necessary for the growth of all bacteria, namely, warmth and dampness. The female fly lays hundreds of eggs in the season, which very often hatch in less than a day's time and are called the larvae at this stage. They grow for about a week, when the pupa, or resting stage, is reached and this takes about the same length of time. At the expiration of ten to fourteen days from this period they are full grown flies and ready in their turn for egg laying. In this way it can be readily seen how this insect multiplies so rapidly. Flies get their food from various sources and this is where they do the most harm. Prof. McIntire, of the Normal school, says: "Flies are among nature's best scavengers swarming about the boxes and barrels into which has been placed the refuse of the house. It is here and also in the careless attention to box closets that flies become contaminated and then perhaps the next time they feed it will be upon food intended for human beings. When this is the case we need not wonder the typhoid fever stays about. In fly season we cannot be too careful to keep all foods properly covered. Also to keep all garbage well covered, or better still, to remove it entirely and exercise great cleanliness about the premises. Were this done our beautiful summer season would be robbed of one of its greatest horrors."

**AN EASTER HYMN.**

By Richard Le Gallienne

Spake the Lord Christ—"I will arise:"  
It seemed a saying void and vain—  
How shall a dead man rise again?  
Vain as our tears, vain as our cries;  
Not one of all the little band  
That loveu Him this might understand.

"I will arise," Lord Jesus said—  
Hearken, amid the morning dew,  
Mary, a voice that calleth you!  
Then Mary turned her golden head,  
And le' there shining at her side  
Her master they had crucified.

At dawn, to this dim sepulchre,  
Mary, remembering that far day,  
When at his feet the spilenard lay,  
Came, bringing balm and spice and myrrh:  
To her the grave had made reply:  
"He is not here—He cannot die."

Praetor and priest in vain conspire,  
Jerusalem and Rome in vain  
Torture the god with mortal pain,  
To quench that seed of living fire;  
But light that had in heaven its birth  
Can never be put out on earth.

"I will arise"—across the years,  
Even as to Mary that grey morn,  
To us that gentle voice is borne:  
"I will arise."—He that hath cars  
O ponder well this mystic word:  
Let not the Master speak unheard.

No soul descended deep in hell,  
The child of sorrow, sin and death,  
The Immortal Spirit suffereth  
To see corruption; though it fell  
From loftiest station in the skies,  
It still to heaven again must rise.

No dream of faith, no seed of love,  
No lonely action nobly done,  
But is as stable as the sun,  
And fed and watered from above:  
From nether base to stary cope  
Nature's two laws are Faith and Hope.

Safe in the care of heavenly powers,  
The good we dreamed but might not do,  
Lost beauty, magically new,  
Sa'! spring as surely as the flowers,  
When, mid the sobbing of the rain,  
The heart of April beats again.

Celestial spirit that doth roll  
The heart's sepulchral stone aw-y,  
Be this our resurrection day,  
To sing the Easter of the soul—  
O gentle Master of the Wise,  
Teach us to say: "I will arise."

**HOME ECONOMICS.**

Next month we hope to have reports on all of the societies in Manitoba. This department has to go to press by the fifteenth of every month and the reports that come in late will be printed next month. We are very much pleased

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**"LET MOONEY DO IT"**

with the reports sent in. Every report will help other societies. We wish every home Economics society in the Province splendid success.

P. R. H.

**MANITOU.**

The regular monthly meeting of the H. E. S. was held Saturday, Feb. 26th. The Pres., Mrs. C. H. Brown, was in the chair. There was a large attendance to hear reports from the convention. Mrs. E. J. Moore gave a very full and comprehensive account of the meetings held at the Agricultural College. There is one society that has a larger membership than Manitou by one—that is Virden which has 114, while Manitou had 113 at the time the annual report was read, but since seven new members have been added, four being enrolled Saturday.

The president announced that the Canadian Thresherman and Farmer would be sent free to each member provided an account of each meeting was furnished the magazine. Mrs. Pearl Richmond Hamilton's paper on "Co-operation the Key of Success" was read to the society. Mrs. Hamilton edits the Woman's page of the Canadian Thresherman and Farmer. The society is looking forward to a visit from Mrs. McClung in June when she will give an address on some live topic of interest to women. Refreshments were served and meeting closed with National Anthem.

Clara G. Rowe, Sec.

**VIRDEN.**

Rest Rooms Help the Business of the Town.

A very splendid meeting was held on Saturday. About eighty members were

present. Our secretary's report of the convention, which was very interesting, was read and also a paper on "Our Health and How to Maintain It." We had visitors from Oak Lake and Reston, who visited us with the idea of forming societies. One at Oak Lake has already been formed. We also decided to meet the train and visit the emigration hall to do what we could to help the women coming into the country. If we want a million for Manitoba, there is work for us all.

Our reading and rest rooms now are proving such a boon to the people, especially those from the country. Our lady in charge served 185 cups of tea last month besides light lunches to girls in the stores and the same to men on Saturday evening who were too far away to go home easily. It really seems so much more than it sounds, as members are made warm and more comfortable for the long drives home. In this way, too, people are becoming better acquainted with each other and it is good for the business in town as well. This week some of the women in the country south are giving a box social in aid of it.—Signed by President, Mrs. Dayton.

**NEEPAWA.**

Neepawa, March 22, 1912. The Canadian Thresherman and Farmer. The regular monthly meeting of Neepawa H.E.S. was held Sat., March 16, at 3.30 at the home of Mrs. J. P. Shannon. In response to the quarterly roll call most of the members gave some Easter thought or idea, and Mrs. W. G. Harrison gave a short recitation that was much appreciated.

It was decided for the present to continue to meet in the homes and each hostess might choose her own method of entertaining. Music, recitations, refreshments or the regular program only as best suited her convenience.

The paper for the day "Food Values," was read by Mrs. R. Hamilton, of which I enclose a short synopsis.

Yours truly,

Mrs. J. H. Howden, Sec.-Treas.

**Food Value.**

Food is the fuel which supplies the heat necessary to produce power to work and the amount of food necessary is determined by the amount of work to be done. The oxidation of food in the body tissues produces heat and the energy to carry on the internal and external work. The internal work requires a large percent of the available power.

Food value is measured by a calorimeter. Each degree of heat is called a calorie, which is the amount of heat required to raise 1 lb. water 4° F.

The white of an egg and a lump of sugar yield 16.4 cal., while a thimbleful of olive oil yields 37.2 cal. 2 glasses of milk yield 322 cal., and 1 lb. butter 3559 cal. 1 lb. butter equals 3 lbs. cheese or 5 lbs. beef as an energy producer but beef and cheese are superior building material. Protein and carbohydrates yield their heat more quickly than fats, as they are more easily assimilated, but fats produce twice the amount of heat, as they contain so much carbon.

Age, sex, occupation, climate, physique, and condition of system must be considered in selection of food and good judgment exercised.

The average man at average work

daily exhausts 3000 cal. of energy and this may be balanced by 4½ oz. protein, 18 oz. carbohydrates and 2 oz. fat.

Besides fuel value, digestibility, absorbability, the demand of the palate, the satisfying power of food, and the amount of waste must be considered. The constituents of a mixed diet are more easily absorbed. The use and source of five classes of foodstuffs are:

Proteids, the tissue builders, necessary for their nitrogen, are obtained from the albumen in egg, fibrin in meat, casein in milk and cheese, legumen in peas, beans and lentils, and gluten in wheat. Fats, heat producers because of their carbon, are of animal and vegetable origin, ex. butter, cream, olive oil, etc.

Carbohydrates, starches and sugars, heat producers obtained from cereals and vegetables, are easily assimilated.

Mineral matter, obtained from vegetables and fruits, are necessary for bones, blood and nerves.

Water is all parts of the body, being two-thirds of its weight. The greatest error in diet is neglect to take sufficient. Tea, coffee and cocoa are nerve stimulants, but should be used moderately. Health would be better if instead of so much meat the diet consisted of eggs, milk, vegetables and fruit.

**SWAN LAKE.**

**Playground for Children.**

The meeting of the Home Economics on Saturday, March 2nd, was one of the most interesting which has ever been held in Swan Lake. The time was passed in listening to the reports of the delegates who had attended the Convention at Winnipeg and all the members were unanimous in their praise of the full, clear and interesting account of the proceedings, which was furnished by the President, Mrs. G. B. Gordon, and by Miss Jennie Couch. We regret that our limited space will not allow us to give anything like a full report, but it was most noticeable that all the speakers at the Convention held the same ideals before their audience, and that they emphasized the fact that it is the home life and the home training which will make our future citizens a credit to ourselves and to our nation and that it is therefore in the women that the chief responsibility of the future lies. They are not only the mothers of the nation but, to a great extent, the makers of the nation since it is to their training that the children will respond for good or evil, when they are called upon to take their place in the struggle of life in later years.

Compulsory education was another question which was discussed and there again, woman's influence was shown to be almost paramount, it is a child's right that he or she shall be properly educated and while they are too young to insist on the right for themselves it is the mother's duty to see that they have all the advantages to be gained by a good education.

The need of making the farm life and the farm home more attractive to both boys and girls was strongly urged; it is obviously unfair to expect one's own children to work for nothing when strangers demand and get good wages. It was pointed out too, that work on the farm was too long and too monotonous for both women and children with insufficient breaks for rest and recreation, with the inevitable result that the children become dissatisfied and left to seek the greater attractions of a city life and the mothers were often too weary to benefit thoroughly by rest and recreation when the chance came to take them.

And it was to these Home Economics Societies and their wide influence, that those interested in the best happiness of the home life were looking for the best help and encouragement; in small country towns and farming districts the Economics Society was often the only neutral ground upon which everyone can meet and the hours spent at these meetings should therefore be full of help and cheer to all attending; each should be encouraged to take her share in the proceedings and should be made to feel that she was an essential part to the success of the Society; for so only by helping others to overcome their difficulties and brightening up the dark places in the paths of our neighbors can we hope to attain to all that is best and most helpful in life.

The idea of our society this year is to

take charge of, and beautify the cemetery, and try to have an enclosed play ground for the school children.

K. H. Langridge, Lit. Sec.

**AN AMBITIOUS NEW SOCIETY.**  
**Oak Lake.**

The Oak Lake Economic Society which was organized several weeks ago, had its first regular meeting on Saturday afternoon, March 16. The town and surrounding country were well represented, showing the interest which is already being taken in the society.

Two helpful addresses were given. The first dealt with the object and aims of the society; the second was a description of Ladies' Day at the Brandon Winter Fair.

The members decided to establish a rest room in our town for the benefit of strangers or anyone who wished to take advantage of it. It is hoped this will prove as great a success as it has in some towns of Manitoba.

It was decided, also, that the Society would give an "At Home," to be just as interesting as possible. It was thought that this would be a splendid way to get everyone interested, both men and women. The ladies will spare no pains to make this "At Home" a great success, and so show that they are determined to have a good, lively, helpful economic society in this town. With the energetic President, Mrs. W. C. Burns, and capable board of directors, we are sure we can do good work.

**ONE OF WESTERN CANADA'S PROGRESSIVE WOMEN**

The following paper was read by Mrs. Genevieve Lipsett Skinner at the Home Economics Convention held at the Manitoba Agricultural College. Mrs. Genevieve Lipsett Skinner writes for the Canadian Courier, Toronto Saturday Night and is also on the editorial staff of the Winnipeg Telegram. She is in close touch with the women of Western Canada and especially with the women of Manitoba. During the past year she visited one hundred and forty-two towns in the Tuberculosis campaign, organizing tag day for the Ninette Sanatorium. Mrs. Skinner is also the promoter of the well known Sunshine Society that has accomplished so much good in relieving the needy and suffering poor in the city of Winnipeg as well as throughout the entire West. Following is her paper.

**Woman's Part in Developing Our Province.**

Women are the backbone of Western Canada. I hold such a high regard for my own sex as I see its members on the western prairies that it is hardly safe for me to be trusted with a subject so closely allied to my heart's work.

The majority of you women came from comfortable homes in the East or in the older countries. You found the cities and towns rough, uncouth camps, and the homesteads isolated. Women have shouldered the heaviest of the burden always, and the development and prosperity of Manitoba are the monuments you have erected as a proof of your splendid devotion.

Nearly every book devoted to sociology tells us that the home is the basis of all civilization. Then it follows that without you women there would have been no civilization in Western Canada. You have reared and are rearing your children in the fear of the Lord. You have inculcated the higher ideals of living into the men and children. You have lent your aid to every cause that tended to improve the spiritual or material welfare of your men folk.

In the majority of cases you have done the hardest of the work, and yet you have received no recognition, and you do not even enjoy dower rights in the land you have earned. We have many selfish men on the western prairies, many who believe that woman is the helpmate of man so long as there are menial tasks to be performed and heavy burdens to bear—but those same men deny the right of partnership when there is money to be spent or a holiday to be enjoyed. I am reminded of a man I knew when teaching in the country. He was strong on flattery but mighty light on work. When the potatoes had to be dug and picked in the autumn, he always discovered that he owed several neighbors a day's work. He would start in the morning, with a smile on his face, never

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**Patronize Those Who Patronize This Magazine**

forgetting to fondle his wife and urge her not to touch the potatoes, he would be home next week. But all day she and her seven-year-old boy dug and picked, knowing that if a winter blizzard caught the tubers unawares—the family would be deprived of its principal means of sustenance.

The women of Manitoba have done their part and more. Women have saved the Church of England in Western Canada from extinction. This is a strong statement, but it was made by Rev. R. C. Johnston, who for a quarter of a century was in the most intimate touch with the work of the women's auxiliary. Undoubtedly, if we could get the high dignitaries of other denominations to express their candid opinions without fear or favor, they would give our sex the credit for fostering of religion as a civilizing agency.

Manitoba is still in the pioneer stage. The men have little time to devote to encouragement of art, music, literature. All that has been accomplished in this line can be credited to women. It remains with them to foster a love of the arts.

Women are behind almost every movement for the improvement of the public welfare. They embrace a cause because it will benefit the community. Take, for instance, my own experience, when organizing tag day for the Ninette Sanitarium last year. One hundred and forty-two towns were visited and in one hundred and forty out of that number the tag day campaign was conducted by busy women. Their co-operation made it possible to continue the fight against the white plague in this province.

As an example of the ability of women to manage public institutions, the children's hospital in this city is an excellent one. That women do more than their part, is the highest tribute anyone can pay to them.

Note.—Since this went to press, Mrs. Skinner has been appointed by the Dominion Government to lecture in the British Isles. She is now in England. We all wish her success.

Correspondence

One of our readers in Saskatchewan writes me that she does the Irish Crochet lace of the best quality, which she would like to sell. Her work includes neckwear, collar and cuff sets, medallions for blouses, underwear and other pieces. If any of our readers would like to communicate with her, I will send the address upon application.

P. R. H.

Dear Editor,—As I saw my last letter in the Canadian Thresherman and Farmer of Feb. 12th, I thought I would write again. I am delighted to think that our page is going to have a fashion department as well; I am sure all the readers will appreciate it. I am going to send a recipe for a cheap fruit cake. I have made it several times so I hope it will be useful to some one. Three cups of sugar (soft brown the best), ½ cup butter, three eggs, 2 cups sour milk, 2 teaspoons soda, a little salt, flour enough to make it as stiff as pound cake, cloves, cinnamon and nutmeg to taste, 1 lb. of raisins, 1 cup of currants, ¼ lb. of citron, juice of one orange. This makes a very large cake; one-half the rule fills an ordinary pan. This is called old-fashioned plum cake and is very good.

I felt very sorry for the woman who lost her little baby when it was three months old. My little girl is very healthy, she will soon be eighteen months old. I think it is such a nice idea dear P. R. H. about wanting the Mother's Corner to be like a sunbeam on a dull day. I expect I must stop writing now so this one will certainly find its way to the waste paper basket. With best wishes to all the Mothers who love the Mother's Corner, I will sign myself the same as before.

Another Farmer's Wife, Sask.

May we not have more letters from our readers like the above? I wish some of our readers would write us about their experiences in gardening, poultry raising and house work. Your experiences will help others who need your help. I am especially anxious for letters on the care of children. Our young wives in

Western Canada need letters on these subjects. Let us make this department a power among the women of Western Canada. Mutual helpfulness is our motto. P. R. H.

Mother's Corner

The artist sketches on canvas  
And the sculptor models in clay,  
But the mother paints on immortal souls,  
And moulds for eternal day.

LULLABY.

By. L. J. Dickinson.

Sleep, little flower, and tace thy rest,  
Pillowed securely on mother's breast;  
Angels to guard thee, and mother to love,  
Dear little flower, from gardens above.

Sleep, little flower, thy soft hands pressed  
Close to the pain in thy mother's breast.  
May they reach to soothe in the years  
to be  
The great world's heart, as they now  
soothe me.

Sleep, little flower, thou dost not know  
These tender feet must a man's way go.  
Yet mother can bear it, for God is love,  
And life shall lead to His gardens above.

So sleep, little flower, and be at rest,  
Pillowed all pure on thy mother's breast.  
God holds the future, and mother will  
love,  
Sleep, little flower, from gardens above.

THE NEED OF NURSES.

Since this department has been sending the article "Helps for Expectant Mothers," to the wives throughout the West, there has come such a demand for the article that the editor of this department has felt very sad over the tragedies that are taking place in the homes of our country—tragedies that are bound to affect seriously the life of our nation because the mothers in isolated places are suffering for lack of care during confinement. Since the mothers in our pioneer country are giving to Canada their most valuable assets—boys and girls, it is highly important that something be done to provide nurses to care for these mothers; families are being left motherless in alarming numbers. Money is spent by the government to provide a better grade of wheat; the government protects the interests of stock raising on the farm; are not the cradles of our land of more importance? Letters come to me from expectant mothers who live twelve, fifteen, twenty, forty and fifty miles from a doctor. They have other children in the home who should not be left motherless, and as they cannot have the care of either a doctor or a nurse during confinement, these mothers approach the time with fear and dread. This alone affects the new born children. There is a crying need for nurses, and when I read a letter from a mother stating that there will be no one to attend to her except her husband, my heart aches for the mothers who are braving death in their service to their home and country. Such vitally important work as the care of mothers and infants should be entrusted to trained women only.

Now the government is more interested in the cradles of our land than in any other asset, and I am sure if their attention be called to the condition, the men in office will give it prompt attention. A matter of such vital importance to the future prosperity will appeal to them because they have the interests of the people at heart. If the country could be divided into sections and a nurse or nurses be stationed in each section to care for the wives of that section, during confinement, there would be few motherless children, and the wives would be free from the fear and dread of approaching confinement. It would mean that more children would be born and more good immigrants would settle here. I know for a fact this very condition prevents many good families from settling in the isolated places. Some of our women interested in newspapers and magazines are taking this matter up to present to the government and we want the co-operation of our readers. We want statistics and we want letters stating examples of the loss of life because of neglect at this critical time. May I have many letters on this subject? Let

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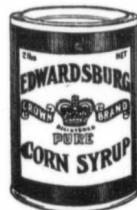
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me know if you sympathize with the movement. We shall publish no names, so you need have no fear of writing, but join with us in the work of protecting and saving the lives of our Motherhood, and may our Heavenly Father guide us in this vital movement.

Pearl Richmond Hamilton.

The article Helps for Expectant Mothers will be sent free to any wife who writes to this department for it.

Keep the child's feet dry and warm and keep his legs warm. I saw a child this week with head wrapped and throat and neck warmly dressed, and his little thin shoes were wet—he had no rubbers on, and yet his mother wondered why he had a cold.

#### OBEDIENCE.

One mother tells us: "I was at a loss for a long time to know what to do to make my child obey me, but at last I hit upon a plan which has worked very well. I never tell her to stop doing something when I can think of something else to suggest. Instead of telling her to stop, I call her attention to a bird, perhaps, or some other object of interest out-of-doors, or I show her a picture, or suggest a game, and I accomplish my object without strife or friction. On the other hand when I want her to do some particular thing, I do not command, but suggest to her cheerfully that she, herself, would like to do that. It is seldom necessary now to compel her to obedience. I find, too, that the word 'don't' is not needed so often in dealing with my other children as I used to think it was. If they are making too much noise, or doing any of the hundred and one things children are prone to do, that are of little consequence but are better left undone, I do not order them to stop. I mention, instead, something which I know will interest them, and soon we are having a jolly little talk, the objectionable play or noise stopped. Of course it is often necessary to reprove them, but most of us are too free with our commands. Let us give fewer, and then see that those we do give are obeyed."

"The best gift to a baby is a healthy father and mother—physically healthy, mentally healthy, and morally healthy. Such a gift is not to be found every day, but is rather to be chosen than great riches."

#### HICCOUGH.

A spasmodic contraction of the diaphragm and the breathing muscles is what is known as hiccough. It is caused by sour stomach, gas, food that doesn't digest, or an overloaded stomach. This contraction of muscles makes the child uncomfortable and can usually be stopped by taking a full breath and holding it as long as possible. This gives the nerves a little time to regain control of the muscles. Nine swallows of cold water taken without breathing will usually stop it. A lump of sugar slowly melted in the mouth will stop the trouble.

#### REMEDY FOR COLD.

An excellent soothing, warming and clearing agent in cases of severe cold, either of the head or chest, is found in a combination of honey, ginger and camphor. Take a tablespoonful of strained honey and mix into it about a quarter of a teaspoonful of ground ginger (or less, according to strength), with a few drops of camphor; not enough to make the dose unpleasant. The camphor will relieve the feeling of stiffness almost immediately, while the ginger warms and the honey heals, thereby arresting the harassing cough.

#### MILK AND BABIES.

The baby's milk should be about one-third cream; to make it like breast milk, add two cups of boiled water to each cup of milk, and enough white sugar to make it as sweet as breast milk. Milk sugar is better than any other kind, but it is hard to get this in a perfectly pure state. Should this mixture prove too rich, add more boiled water to the mixture until you find just what strength the baby's stomach can best digest.

When the baby is about a month old barley water should be used in place of

plain water. To make this, use two tablespoonfuls of pearl barley to four cups of cold water; boil this down to two cups, which will take about an hour, then strain through a close cloth. To make this water, put a pinch of salt and sweeten to the taste of breast milk, then add a cupful of cow's milk, scalded and treated as above. Begin feeding this strength, and slowly use more milk and less barley water, until at six months of age the child is getting two-thirds milk.

Do not keep the baby's milk warm by putting it on the back of the stove, under the pillow, or in a thermos bottle, for it may make the baby sick. The formula for mixing the milk may vary according to the baby's needs, and in any case a physician should sanction it after an examination. If the baby is to have his rights, comfort and health as he grows up, his parents, and more particularly his mother, must spare no pains in learning how to care for him.

The greatest good a mother can do her baby is to nurse it during the first year herself; ten bottle-fed babies die to every one that is breast-fed. This is an astounding figure, but it is fully borne out by all statistics. But remember that the mother's condition, both of mind and body, will affect the child. Worry, anger, illness or overwork on the mother's part are as harmful as improper food or lack of cleanliness.

Should your baby fall ill, in spite of your care, call the doctor, and keep soothing syrups out of the house. This is another case in point, of being successful in spite of one's self; most of the mothers who had brought up babies so successfully by using these syrups, and all the mothers whose babies had not lived to be brought up, were no doubt greatly surprised at the recent exposure which proved that nearly every one of these syrups was a curse. Do not drug the baby!

The simpler the bottle and nipple used, the better for the baby. You can obtain beautiful nursing bottles, with all kinds of nice, long rubber tubes, patent contrivances, and labor-saving devices; but there is no royal road to baby-nursing. About half the babies that die in the cities every year, and a good percentage of those in the country, could be saved by proper nursing care.

#### UNION FOR MOTHER PROTECTION.

One of German's greatest women—Dr. Helen Stoecker—is leader of a remarkable movement in Germany which aims at the protection of mothers and infants. Dr. Helen Stoecker is organizer of a movement known as "Union for mother-protection"—an organization that is influencing legislation; it is saving thousands of children. Dr. Stoecker is bringing within reach the ideal that every citizeness who gives birth to a child shall be acclaimed as a patriotic heroine, and as such honored, rewarded, and cared for by a grateful nation. She has placed Germany first among the nations in the care of its babies. "She is preparing to urge the 13th German Reichstag to raise motherhood to a higher level, and embody in practical legislation the saying that the hand which rocks the cradle rules the world."

Dr. Stoecker's legislative program has been twice before the Reichstag, and a small part of it is already law. This is the provision under the insurance acts that all women employed in factories shall get sick insurance pensions for six weeks at the birth of each child. This represents great progress, but the Stoecker movement goes further. It requires that the insurance benefits be extended to all mothers of the agricultural, servant, and home worker class. This, however, is only the starting point. It demands further compulsory rest for all mothers for six weeks before and six weeks after childbirth. Wilhelm II. favors this demand. It is 20 years since he told the "international congress for workers' protection" that "the prohibition against mothers working is essential to the raising of the race." Another backer is the ex-minister of the interior, Count Posadowsky. The bund further demands that instead of mere insurance pensions mothers shall receive an equivalent to their full wages during the 12 weeks, that they shall get free medical attendance and medicines, and also an allowance for six months after the birth.

At present Germany has a movement under way for women serving in the

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imperial army. An interviewer lately applied for Dr. Stoecker's opinion. He got the answer: "The best way for women to help the army is to rear up healthy boys to serve in it."

**ABOUT WOMEN.**

Selma Lagerlof, the great Swedish author, says: "Women must enter all fields if the State is ever to be beloved like the home. Our little master-work, the home, was our creation with the help of man. The greatmaster-work, the State, will be perfected by man when in all seriousness he takes woman as his helper."

Some American women, who have more dollars than brains or common sense, are wearing diamonds on the heels of their boots. Another of their number has a cat that wears a crown and a necklace studded with diamonds. Let us hope that none of their class will immigrate to Canada. We want women who mother children and not cats.

The Princess du Polignac, through the Academic Committee of the Royal Society of Literature in England, offers for the next four years an annual prize of £100 to be awarded to the book published in the year preceding that shows the most promise that the author will sustain the reputation of English literature.

Chang Paoli, the young girl who opened the gates of the city of Nanking, thus enabling the revolutionaries force to obtain control of the city, is known as the Chinese "Joan of Arc."

"Let me kiss those tears away!" he begged, tenderly.

She fell in his arms, and he was busy for the next few minutes. And yet the tears flowed on.

"Can nothing stop them?" he asked, breathlessly sad.

"No," she murmured, "it is the hay fever, you know. But go on with the treatment."

**That's the Question.**

Wife—Billy, dear, I stitched up the hole in your trouse's pocket last night after you had gone to bed. Now, am I not a thoughtful little wife?

Husband—H'm! How did you know there was a hole in my pocket?

Little Willie—What is a lawyer, pa?

Pa—A lawyer, my son, is a man who induces two other men to strip for a fight and then runs off with their clothes.—Fun.

**The Difference.**

"I think you said, Rastus, that you had a brother in the mining business in the West?"

"Yeh, boss, that's right."

"What kind of mining—gold mining, silver mining, copper mining?"

"No sah, none o' those; ralsomining."

—Home talk.

**Recipes**

**Smoking Hams and Bacon.**—All pieces selected for smoking should be well dried before being exposed to smoke. Fasten through each piece a loop of stout twine, by which to suspend it, and before hanging, sprinkle each piece well on the flesh side with fine black pepper, or a mixture of equal parts of red and black pepper, as this insures a fine flavor in the meat. Hang the meat upon sticks or hook, keeping the pieces from actually touching, and smoke gradually for about five weeks. This is best done by smoking for a few days cautiously, taking care that the meat does not become heated. Then expose in the fresh air for a day or two, and again renew the smoking process. When nearly brown enough smoke but half a day at a time. The actual process may be finished up in one week, with constant care to see that the meat does not heat, and by keeping the smoke on all day till night. The more it is smoked, however, the better it will keep, and retain its flavor, but it should not be made black. It is best to re-arrange the pieces frequently to insure a uniform exposure. In a fire-proof smoke-house, the fire may be placed within, in the centre,

using a few live coals, smothering them with green hickory or birch chips. Pine or pitch-bearing woods should not be used as these impart a disagreeable flavor to the meat. Sawdust and corn-cobs are sometimes utilized, but no blaze should be allowed, and a sprinkler should be kept at hand to control the fire at need. If there is no smoke-house, very good results may be obtained with a bottomless barrel, the meat being suspended from the top by cross sticks, with a cover and coarse sacking to closely cover all. The fire should be placed in a depression dug beneath the barrel, which should rest on a flat stone, placed across the hole, leaving an opening for the smoke inside the barrel, and a slight opening from which to attend the fire. Cloudy and damp days are best for smoking.

**Some Vegetable Dishes.**

Not perhaps generally known, but none the less worthy of notice, are the following recipes for serving vegetables, neither of which is extravagant. Cauliflower with tomato sauce is an agreeable change from the usual method, and requires the preparation of a sauce from one pint of strained stewed tomatoes, thickened with a tablespoonful of flour. When hot, add half a cup of cream or milk, bring gradually to boiling point, and pour over the cooked cauliflower. For Ladies' Cabbage, boil one firm white cabbage, and cut up very fine. Add to it a beaten egg, a tablespoonful melted butter, seasoning, a very little milk, stir well, and put in a pie dish. Cover with bread crumbs, and bake covered for thirty minutes. Remove cover and brown.

**Shrewsbury Buns.**

**Ingredients.**—One tablespoonful of caraway seeds, one cupful of cleaned currants, a little nutmeg, the grated rind of about half a lemon, two eggs, one quart of milk, a good tablespoonful of butter, two pounds (eight cupfuls) of flour, half a cupful of sugar and one more egg for brushing the tops; one cake of yeast. Make the milk lukewarm and break into it the yeast. Make a hole in the middle of the flour and pour in the milk and yeast. Stir, and set in a warm place for one hour. Then stir in the other ingredients and let it rise again. See that the oven is hot and then form the dough into small buns on a floured board. Place them in a buttered baking-pan. Beat up the egg kept for this purpose, brush them over with it, cover, and set in a warm place for another half hour. Bake in a hot oven.

**Lemon Pie.**

Line a platter with crust made as follows: One cup flour, two heaping tablespoonfuls lard, salt, work together with a knife; add four tablespoonfuls cold water; use hands as little as possible. **Filling:** Two eggs, beaten, one cup sugar, one lemon; grate the rind and squeeze in all the juice and most of the pulp; two tablespoonfuls melted butter, one-third cup cold water; bake in a quick oven; when done, spread over the top the whites of two eggs, beaten stiff, with one-third cup sugar; set back in oven just long enough to brown slightly.

**Dumplings.**

Two cups of flour, four teaspoonfuls baking-powder, two-thirds cup milk or a little more if needed, one-half teaspoonful salt, two teaspoonfuls butter. Mix and sift the dry ingredients. Work in the butter with the tips of the fingers, add milk gradually, roll out to a thickness of one-half inch and cut with biscuit butter. In some countries it is customary to season the dumplings themselves with herbs, etc., or to stuff them with bread crumbs fried in butter instead of depending upon the gravy to season them. A good way to cook dumplings is to put them in a hot water steamer over a kettle of but water. They should cook from twelve to fifteen minutes. If it is necessary to cook them with the stew, enough liquid should be removed so that they may be placed upon the meat and vegetables.

Sometimes the dough is baked and served as biscuits, over which the stew is poured. If the stew is made with chicken or veal it is generally termed a fricassee.



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## THE MISSING WORD

A STRANGE STORY OF OVER-SMARTNESS

Mr. Grueback entered the Dragon and nodded grimly to his friend and ally, Mr. Standish.

"'Arf a pint o' beer in a pint tankard!" said Mr. Grueback to the landlady.

This was his invariable order, based on the great philosophic truth that while it is impossible to get more than half a pint into a half-pint tankard yet there were glorious possibilities when it was drawn in a pint tankard.

There was a pause for a moment or two whilst Mr. Grueback remonstrated with the landlady, till the good woman, in despair, gave another pull of the beer-engine over the tankard.

Then Mr. Grueback looked round the company and said:

"Well, well, so we've seen the last of Ezekiel Sellers-to-day."

"Ay," grunted Mr. Standish; "An' 'e won't 'ave left much behind 'im!"

"Not 'im," replied Mr. Grueback. "'E was one o' them open-anded fellers—easy come, easy go. Why, 'e brought Widder Tomkins' parcels free o' charge from the market for twenty year, an' when I asked 'im what 'e did it for, all 'e could say was that she was a widder."

"Can't 'ave been right in 'is 'ead," commented Mr. Standish. "Well, I s'pose Jim Sellers'll soon be droppin' in after the funeral tea, an' then we shall 'ear what 'is uncle's left."

As he spoke Mr. James Sellers entered the bar.

"Ay, Jim, we was talkin' about your poor uncle. There's a main lot o' your family berried i' the churchyard now. I s'pose 'e's left your aunt pretty comfortable?"

Jim Sellers shook his head.

"No; 'e got a good bit for 'is business when 'e sold it two year since, but 'e must 'ave spent it. 'E was one of the most free-anded men I ever come across was old uncle. 'E'd stand any man a drink. The old lady'll 'ave what they can get from sellin' the cottage an' the bits o' furniture, and the contents of the tool-shed in the garden, but that's all."

"Dear, dear!" said Mr. Grueback. "Well, there's two sorts o' men i' this world—they 'oo stands drinks, an' them 'oo 'as drinks stook 'em. The first sort never dies rich; the second often does."

"You'll die rich, Mr. Grueback," said Mr. Sellers emphatically.

"I hope so, Jim, I do indeed!"

replied that gentleman simply.

"Poor old uncle!" continued Mr. Sellers. "'E'd somethin' on 'is mind after 'e'd that stroke as finished 'im. 'E couldn't speak; but the last time I saw 'im 'e made signs for a bit o' paper an' a pencil. 'E jus' scribbled a word or two, an' then 'e dropped the pencil. I've often wondered what 'e was a-drivin' at. Look 'ere—this is the paper!"

Mr. Standish took it and read the faintly pencilled words.

"Back of the ch—"

"Pity 'e didn't finish it. 'E seemed bothered about it. P'raps 'e wanted to be berried at the back o' the church."

Mr. Grueback glanced at the paper.

"That'd be it, Jim, or else 'is mind was a-wanderin'."

"Off 'is 'ead," said Mr. Standish.

"Ay, I s'pose that's what it was. Well, good night! I am off to bed early. We're goin' to sell off everythin' at once, an' I've got to get over to Purley first thing in the mornin' to see the auctioneer an' arrange for bills to be printed."

After Mr. Sellers had gone out the two friends lapsed into silence. When Mr. Grueback looked up from his beer he found Mr. Standish watching him.

"Well," said Mr. Grueback, "I must be goin'. 'Ave a drink with me, old feller?"

"I'll 'ave the drink," said Mr. Standish; "but I ain't goin' to be put off like that. Do you understand?"

"I don't understand nothin'," said Mr. Grueback solemnly.

"I see your face when you read that paper," whispered Mr. Standish. "Now are we to be partners in this, or are we not?"

"You're greedy, that's what you are!" replied the indignant Grueback.

"It doesn't matter what I am. I'm goin' shares, or I let on to Jim Sellers."

"I never see the likes o' you, William Standish. When a feller 's a chance to make a bit you allers shove your ugly face in."

"Now let my face be. We're goin' shares. You don't want me biddin' against you at the auction, do you?"

Mr. Grueback groaned.

"Well, if it 'as to be 'alves it 'as. We ought to get 'old of 'is rubbisy furniture cheap enough."

"Furniture! What do you

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- 1 pkt. Parsley... Curled.
- 1 pkt. Parsnip... Long, White.
- 1 pkt. Radish... Early Round Red.
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50 Cents.

want furniture for? Didn't the paper say 'Back of the ch—'?

It's as clear as daylight to me—is money's in a box at the back o' the chimney."

"No; 'e'll 'ave put it all i' notes an' 'id it in the back of a chair. Did you mean to buy the cottage?"

"Ay. It's all tumble-down, but it'll let easy."

"Look 'ere, Grueback, let's make sure of it! You buys the furniture, an' I buys the cottage, an' we go 'alves with what we finds."

"It ain't fair. You wants the cottage, an' I don't want the furniture."

"Well, I'm takin' the biggest share o' the risk. The cottage'll cost a lot more to buy than their bits o' sticks."

It was only after half an hour's

wrangling that the terms of partnership were settled.

Then Mr. Grueback grinned broadly.

"It'll be all of two 'undred pound. Tom Nokes told me 'e gave 'im two 'undred an' fifty tor 'is carrier's business."

"Good thing for us Mrs. Sellers is a bit weak i' the 'ead, so that the old man never telled 'er nothin' about 'is money matters. If she'd known what money 'e 'ad, they'd 'ave pulled the blessed 'ouse down to find it."

"It's a pity old Ezekiel Sellers were so free-'anded," said Mr. Grueback mournfully.

"Why?"

"There'd 'ave been more for us. It makes me jus' mad to think 'ow 'e's goin' up an' down for forty years wastin' money—our

"It don't bear thinkin' about," replied Mr. Standish.

A few days later the company at the Dragon were contemplating a large auction bill fresh from the printers. It stated, in the language peculiar to auctioneers, that on the 15th inst. Messrs. Pilbury and Tubbs would sell that desirable freehold cottage, the property of Mr. Ezekiel Sellers, deceased, also a quantity of valuable antique household furniture, and a great variety of miscellaneous valuables.

"Ah" said Mr. Standish, surveying the bill, "I'm thinkin' of biddin' for that cottage myself! Not as I wants it. Still, I should like to do somethin' for that poor old widdler Sellers."

"It shows a good 'eart," commented Mr. Grueback. "Now, cottage property ain't my line; but

I could do with a bit o' furniture. There ain't much worth 'avin'. Still, I may buy a few things. After all, it's a dooty to 'elp a old neighbour in distress."

On the day of the sale Mr. Grueback and Mr. Standish were early on the scene. After minutely inspecting the house, they looked at each other cheerfully.

"There's no one been foolin' round that chimney lately," said Mr. Standish. "Soot on the back of it's arf a inch thick."

"An' I can see they 'aven't been foolin' with the chairs."

"Well, 'ere comes the auctioneer. 'Oo's that little dark man with Jim Sellers?"

"Don't know 'im. 'Appen 'e's a furniture dealer."

Jim Sellers, deep in converse with the stranger, passed them. They overheard him say, "When

I puts my 'and to my ear you bid." "Grueback," whispered Mr. Standish, "that rogue of a Sellers is on the same game."

"The rascal!" ejaculated Mr. Grueback. "Robbin' 'is own aunt! But 'e's no money to stand against us. We can do 'im easy."

"Gentlemen," said the auctioneer, when his clerk had read the conditions of sale, "I have great pleasure in submitting to you this highly desirable freehold cottage. It contains practically every convenience. It is only a hundred yards from a never-failing pump, it is picturesque in the extreme, and surrounded by a delightful garden, and has a bright outlook on the main road. But I need not dwell on it; you know for yourselves what its merits are. Now what shall I start this delightful property at? Will someone, just to make a beginning, make the nominal bid of £100?"

"Thirty!" said Mr. Standish; and someone in the crowd laughed.

Jim Sellers' hand went up to his ear.

"Thirty-five!" said the little dark man.

"Forty!" cried Mr. Standish. Rapidly the bidding rose, till it reached a hundred pounds, and the auctioneer was sorely put to it to conceal his surprise.

"'Undred an' ten!" shouted Mr. Standish, jumping ten pounds at a bid to frighten the opposition.

Jim Sellers' hand went to his ear, and the little man bid £120.

"'Undred-an'-thirty!" said the angry Standish.

"'Hundred - and - fifty!" replied the stranger.

"It's against you, Mr. Standish," said the auctioneer.

There was a pause for a moment—the hammer was nearly falling—then Mr. Standish gurgled rather than spoke.

"'Undred-an'-sixty?"

"Any advance on that, gentlemen? No? Going — going — gone! Mr. Standish, I congratulate you on your purchase."

"It's dear—horrid dear!" whispered Mr. Standish to his partner. "Ought to 'ave got it at eighty pound any day; but when I see Jim Sellers' friend was biddin' I knew I was all right."

"Now gentlemen," said the auctioneer, "we'll proceed to the furniture. Lot 1 is a highly desirable and commodious antique armchair. What shall we say for it?"

"Ten shillings!" cried the stranger eagerly, in response to a motion from Jim Sellers.

Mr. Grueback's teeth set. "Jim's like us," he whispered. "E ain't sure where the money is." "Ere, Mr. Auctioneer, a pound!"

The little man stuck to his bidding; and it was only at seven pounds ten shillings that Mr. Grueback purchased the antique

armchair with two exceedingly shaky legs.

"Lot 2!" cried the auctioneer. "Another armchair, equally desirable."

Again the stranger started the bidding, and again Mr. Grueback, after a struggle, triumphed over him. Rumours spread through the crowd that all the Sellers' furniture was antique and valuable, and would fetch a mint of money in London. Other speculators joined in, and articles fetched absurd prices. There were four armchairs in the sale, and Mr. Grueback bought them all. Then he found that the stranger, while ignoring tables, fenders, and sofas, seemed anxious to buy the ordinary chairs. Again Mr. Grueback defeated him.

At last the auction was over, and the auctioneer confided to his clerk that in his professional career he had never come across such a set of mugs.

People were coming and going all the day to take their purchases away, and it was late in the evening before Mr. Standish and Mr. Grueback could settle to their work of investigation.

"Look 'ere," said Mr. Grueback, "you get that chimney back out while I opens up the backs o' these chairs."

"You do it in this room before me," replied Mr. Standish.

"'Course I'm goin' to do it in this room. D'ye think I'd let you 'unt for money alone? You'd never find none for me, not you."

So whilst Mr. Grueback carefully investigated the padding of the chairs, his partner proceeded to loosen the bricks at the back of the chimney. Once he uttered a hurried exclamation, and the eager Grueback darted across the room.

"'Arf a brick come down an' grazed my 'ead," explained Mr. Standish.

Without wasting breath in sympathy, Mr. Grueback returned to his chairs. At last, after an hour or so's work, every chair had been ripped up, and a huge cavity yawned at the back of the chimney.

Mr. Grueback ceased work, and glared fiercely at his partner.

"'Ere, Standish, 'and over what you've found!"

"That's nice. While I've been a-workin' 'ard you've been a-slipin' notes into your pockets. Turn 'em out, Abel Grueback, or I'll give you one with this 'ammer you'll remember!"

Amazed at his partner's fury, Mr. Grueback took refuge behind an armchair.

"'Ere, no violence, Standish! What's the good o' turnin on me when you've got the money there?"

"Me got the money, you lying thief!"

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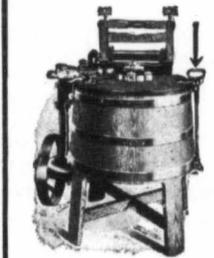
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G43. This Coat is made of All-wool English Serge, in a neat design, distinctly up-to-date. The colors are black and navy, the dye being there to stay. The back of the coat is semi-fitting and the seams are raised. The front is single-breasted and fastens with three buttons. The collar is plain tailored and the revers are overlaid with black satin, and the cuffs are finished with a stitched tab of self material, ornamented with flaps and buttons. There are patch pockets with flaps and buttons. All seams are well bound inside; the coat is lined across the shoulders, and finished with French facings. Sizes 32 to 42 bust. Length 54 inches. Price, delivered . . .

**\$10.00**

G92. This is a Neatly Tailored Suit, noticeable anywhere for its simple grace and dignity. The coat is semi-fitting back and front and lined with grey satin. The collar has large pointed revers and finished with piping of narrow striped fabric. The sleeves are tailored, with cuffs that match the collar. The pockets are stitched in obliquely. The skirt has the new wide front panel, and the fold below the knee line is ornamented at the front seams with little buttons. It has a full length back panel, which fastens to the left. Sizes, bust 32 to 42; waist 22 to 29. Length 38 to 42. Price, delivered . . .

**\$11.75**

**N.B.** Whether you order fifty cents' or fifty dollars' worth, we pay all delivery charges to your nearest station or post office on everything mentioned in this Catalogue.



G 92

**THE ROBERT SIMPSON COMPANY LIMITED TORONTO**

Before Mr. Standish could finish a choice summary of Mr. Grueback's character a thundering knock came at the door.

"Don't go," said Mr. Standish. Mr. Grueback glanced timidly at his companion and said: "I'll just see 'oo it is; they needn't come in."

But directly he unbolted the door it was violently thrust open, and Jim Sellers walked in.

"Hallo, 'ere you are! Thought I should find you 'ere lookin' at

your property. What, breakin' up the 'appy 'ome already! Shouldn't take any more bricks out o' that chimney if I was you, Mr. Standish, or you'll 'ave it comin' down on your 'ead. But I've come to tell you a bit o' news."

"Tell it us, then, an' get out!" grunted Mr. Standish.

"Well, my old aunt she thanks you for your kindness in biddin' so 'igh for all 'er things. She'll be all right now. She's goin' to

live with my mother on the interest of 'er money, an', 'aving no other relations, when she pegs out it'll all come to me. Five 'undred pound's a nice bit o' money."

"Five 'undred!" said Mr. Grueback. "Why, that sale didn't fetch more than 'alf that!"

"Ah, but 'ere's the bit o' news I meant tellin' you! Only last night I thought what them words old uncle wrote meant. P'raps you remembers them—'Back of the ch—' It come to me all at

once—'back of the china cupboard.' I took it down, an' there was 'id two 'undred an' fifty pound in notes. So I 'know you'll be glad to 'ear the old lady's all right. There's folk in this village says you're a couple of 'ard-fisted, flint-faced old rogues; but I knows better. You showed yourselves in your true light when you come out and bought things you didn't want, just to be helpin' the widow."

## Fun From Over The Line

### At Napoleon's Tomb.

Henry Vignaud, secretary of the American embassy at Paris, enjoys telling of an American who was being shown the tomb of Napoleon. As the loquacious guide referred to the various points of interest in connection with the tomb, the American paid the greatest attention to that all was said.

"This immense sarcophagus," declaimed the guide, "weighs forty tons. Inside of that, sir, is a steel receptacle weighing twelve tons, and inside of that is a leaden casket, hermetically sealed, weighing over two tons. Inside of that rests a mahogany coffin containing the remains of the great man."

For a moment the American was silent, as if in deep meditation. Then he said:

"It seems to me that you've got him all right. If he ever gets out, cable me at my expense."—Success.

### Ancient, but it Goes.

Feebles (about to be operated upon for appendicitis)—Doctor before you begin I wish you would send and have our pastor, the Rev. Mr. Blank, come over.

Dr. Sawem—Certainly, if you wish it, but—ah—  
Feebles—I'd like to be opened with prayer.—Exchange.

### Riley's Rye Patch.

Whitcomb Riley was looking over a fence on his farm at a field of rye, when a neighbor who was driving by stopped his horse and asked:

"Hullo Mr. Riley, how's your rye doing?"

"Fine, fine," replied the poet.  
"How much do you expect to clear to the acre?"

"Oh, about four gallons," answered Mr. Riley, soberly.—Success.

### In a Shoe Store.

"Have you felt slippers, sir?" she said. The boy clerk blushed and scratched his head.

Then, smiling back, he found his tongue: "I felt 'em often when I was young."  
Boston Herald.

### The Pipe That Failed.

This story is told about ex-Senator J. S. Clark, of Calais, Me.:—One day, while awaiting his turn in a barber-shop in Calais, he was talking with a friend, and

was so deeply interested in the conversation that he allowed his pipe to go out several times. Each time he would ask Melvin Noble, a local practical joker, for a match.

About the time he wanted the fifth match, Noble said: "I don't begrudge you the matches, Jed, but I think it would be cheaper for you to put a grate in your pipe and burn coal."—Boston Herald.

### The Other Side.

"Did you ever get into Brown's confinement?"

"Oh, yes; it was costly, too."

"What was costly?"

"To get out."—Yonkers Herald.

### Advice from Artemus Ward.

A certain Southern railroad was in a wretched condition, and the trains were consequently run at a phenomenally low rate of speed. When the conductor was punching his ticket Artemus Ward, who was one of the passengers, remarked:

"Does this railroad company allow passengers to give it advice if they do so in a respectful manner?"

The conductor replied in gruff tones that he guessed so.

"Well, Artemus went on, "it occurred to me that it would be well to detach the cowcatcher from the front of the engine and hitch it to the rear of the train; for, you see, we are not liable to overtake a cow, and what's to prevent a cow from strolling into this car and biting a passenger?"—Boston Herald.

### Tips for Authors.

An author wrote a little book.

Which started quite a quarrel:

The folk who read it frowned on it

And said it was immoral.

They bade him write a proper screed.

He said that he would try it;

He did. They found no fault with it.

And neither did they buy it.  
Washington Evening Star.

### Lost.

Legends of the most absent-minded savant are legion, but the following, told of a well-known Ph.D. of this city, perhaps touches the climax:

One of the charwomen in the temple of learning with which he is associated choked on a pin she had put in her mouth as she went about her work. Rushing up to Professor Blank's sanctum she burst in the door without the formality of a knock.

"Professor, oh, professor!" she panted, "I've swallowed a pin."

"Never mind," returned the professor, feeling absently about the edges of his lapel without raising his eyes from the book before him, "here's another one you can have."—New York Times.

### His Impolite Query.

"Women claim that the way to get on with a man is to give him plenty of nicely cooked food."

"Well, answered Mr. Sirius Barker, irritably, "why don't some of them try it?"—Washington Star.

### About Bells and Money.

A thousand men can go to work at seven o'clock in the morning without the ringing of a bell, and why is it that three hundred people cannot assemble in a church without a previous ding-donging lasting half an hour?—Detroit Free Press.

Why man, it's because they go out at seven o'clock to get money. Put a twenty dollar gold piece in each, new every Sunday, and you will sell your bell for old metal.—Louisville Courier-Journal.

### Her Guess.

Mrs. Ascum—I hear the men talking about a "temporary business slump." I wonder what that means.

Mrs. Wise—I think it simply means that they're cooking up an excuse to give their wives less money.—Philadelphia Press.



## COLUMBIA

UNRIVALLED



**\$39, \$58, \$80, Etc.**

**THE 1912 MODEL HORNLESS**

Latest and best. Wonderfully loud and perfect tone.

**WHY PAY \$100?** We want you to compare.

Look for the famous Watch Case Concert Grand Reproducer and other Columbia Patents.

THESE PRICES INCLUDE A LIBERAL SUPPLY OF GENUINE COLUMBIA RECORDS, OF YOUR OWN CHOICE

**\$29, \$58, \$75, Etc.**

for those who still like the

**HORN STYLE OF TALKING MACHINE**

Special Bargains in Cylinder Machines and Records

Old machines taken in exchange

**TERMS: From \$5.00 Down and \$3.00 Monthly.**

The Disc Style is the best. Out of every thousand machines we sold last year, when we were selling all makes, 934 were disc, and of these 887 were Columbia Disc.

Nordica, Constantino, Bonci, Garden, Alice Neilson, Cavaleri, Bispham, etc., sing for the Columbia only.

30,000 Records in Stock, including all your favorite Songs, etc.

Double disc records, two different selections, 85c. Imported English, Irish and Scotch records now ready. Once try the new Columbia records and you'll never buy any other makes. Perfect surface, finest tone, longest life guaranteed.

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CANADA'S BIGGEST PIANO AND GRAPHOPHONE HOUSE



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The **KANT KRACK** Coated Linen Collar is an ordinary linen collar, but it is waterproof, coated by a patented process which does not alter its appearance of a linen collar.

You can clean it yourself in a few seconds by rubbing over the surface with a damp cloth or sponge.

Always clean, always ready to wear, always new in appearance, and no laundry bills.

**Two features which no other collar possesses**

It's flexible tips in the front prevent cracking of the folds. The slit in the back makes it easy to button and relieves all the pressure from the neck.

"These Collars are just the thing for the Boys."

Buy one at your dealers to-day, or send, stating size and style with 25c. to **PARSONS & PARSONS CANADIAN CO., 106 Main St., Hamilton, Ont.**

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The "ONWARD" Automatic Hand Power Vacuum Cleaner, complete with 10ft. length hose—nickel plated tube—No. 2 cleaning tool—is represented by nothing else of the kind on the market. It is made of malleable iron and steel, easy to carry and easy to operate.

A brief advertisement cannot do justice to any of its many superlative points.

Use coupon at bottom and we will send complete details of a household necessity that will be an infinite saving in labor and money to any one using it.

Guaranteed for a year against all defects. A last a life-time with ordinary care.



It Gets All The Dirt.

**PRICE ONLY \$25**

Moncrieff & Endress, Scott Block, Winnipeg.

Please send me full illustrated particulars of HAND VACUUM CLEANER as advertised in the Canadian Thresherman and Farmer.

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**MARQUIS WHEAT.** Stock very low. Price on application. Free from noxious weed seed.

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**FLAX.** Garton's selected Primost. Common.

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Write for Catalogue and Prices. Special quotations on contract lots of Pedigreed seed grains.

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# Spring Catalogue?

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Manitoba

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SEND THIS COUPON FOR IT TO-DAY

The Hudson's Bay Co., Winnipeg, Canada

Please send me by mail post paid a copy of your New Spring and Summer Catalogue.

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Post Office.....

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### JUVENILE WISDOM

#### A Strategist.

A little girl in Cleveland was playing with her trinkets on the parlor floor while an older sister with much persistency was drumming on the piano.

"Play louder, Eloria," spoke up the child.

The girl at the keys felt flattered, and with an elated smile, asked, "So you like to hear me play, do you, darling?"

"No, I don't," came the unexpected and emphatic reply. "I wanted you to play louder so papa would tell you to stop."

#### Neglected Johnny.

One evening, at the circus, a small boy was gazing entranced at the trapeze performers, when a gentleman who sat

next to him said, "Well, Johnny, do you wish you could do that?" The little fellow's eyes danced, but he shook his head mournfully.

"Yes, I guess I do!" he exclaimed, "but my mother always makes me go to school, and never will let me learn anything."

#### Misunderstood.

The American small boy's mamma sent him to Kindergarten in the Canadian city where he was visiting. All the exercises delighted him, but closing day sent him home in excitement. "They sang, mother, and played games, and then everyone stood up and sang "For God's sake, save the King."

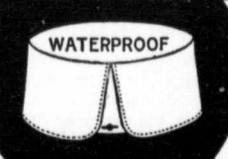
#### A Forbidden Dainty.

Edith is being trained in the way she should go. She is sometimes rebellious, and the day she was five she returned from her outing in the country

with renewed determination.

"Mamma," she began, breathlessly, "nurse took me to see real cows; and what do you think—they were chewing gum!"

## CHALLENGE



**Save you money**

Stop all laundry troubles. "Challenge" Collars can be cleaned with a rub from a wet cloth—smart and dressy always. The correct dull finish and texture of the best linen.

If your dealer hasn't "Challenge" Brand write us enclosing money. 25c. for collars, 50c. per pair for cuffs. We will supply you. Send for new style book.

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8140

## 'GOLLARS

## Be Ready to Kill the Gophers



ANTON MICKELSON  
President

Don't you feel sorry you didn't use Kill-Em-Quick Gopher Poison this year? It would have meant 2 to 5 bushels more grain per acre! Will the gophers, squirrels, pocket gophers, field mice and prairie dogs steal \$100 worth of your grain every 40 acres sowed? Kill them before they do any damage and you'll

### Save \$100 on 40 Acres

Be ready! Get a package of Kill-Em-Quick from your druggist and use it according to directions. Every dead gopher means 10 cents extra profit for you. A 75 cent box of Kill-Em-Quick kills 5000 gophers. It is guaranteed.

### Mickelson's Kill-Em-Quick Gopher Poison

has a peculiar odor and taste that is attractive to gophers. One poisoned grain kills a gopher stone dead.

### Write Me a Postal

Ask me any questions about gophers. I've made a 10 year study of them. Write me now or ask your druggist for genuine Kill-Em-Quick—or send me his name with your order. I'll ship direct postage prepaid. Write for free book now.

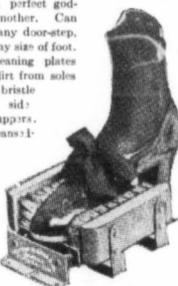
Anton Mickelson, Pres., Mickelson Kill-Em-Quick Company, Dept. C  
Winnipeg, Manitoba, Canada.



## A Clean Floor!

Grab's Foot Scraper saves half the labor of sweeping, the cost and inconvenience of the doormat and—especially where there are children—is a perfect god-send to the mother. Can be fixed to any door-step, adjusted to any size of foot. Ten steel cleaning plates take all the dirt from soles and stiff bristle brushes at side clean the uppers. It is easily cleaned!

Mud falls between the plates and can be swept away with one flick of the broom.



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Please send me one of the GRAB FOOT SCRAPERs as advertised in Canadian Thresherman and Farmer, for which I enclose \$1.00

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clutch. The power for lifting the plows is derived from the left rear wheel, on the plow frame (Fig. 30). Attached to the shaft which does the lifting are a number of fingers, set finely, which engage with a cam shaft at the proper instant and lift each pair of bottoms. In arriving at the end of the land, the right hand plows lift first and then the next two, and so on, thus all the plows leave the ground on the same line. They may be dropped back automatically, or by means of the hand levers. These latter are conveniently arranged and can easily be reached by the plow operator; it is not considered advisable to use the power lever. The frame, it will be noticed, is carried on four wheels instead of three, instead of casters as the usual. The two front wheels are linked together as the front wheels of an automobile, the plow is steered in the same manner.

Fig. 31 shows how the plow beams are connected with the frame, and the provision that is made for both vertical and side adjustment by means of the screw in the centre, and the eye-bolts at the side.

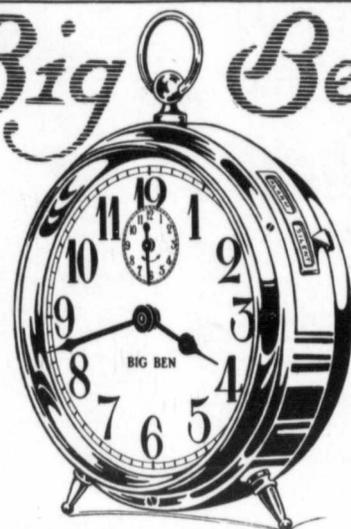
Fig. 32 shows details of the levers, gauge wheel and coupler. The plow pin may be inserted at B, which will share off in case the plow points strike an obstruction.

### Reeves & Co. Engine Gang.

The power plow proposition owes a great deal to Reeves & Co., of Columbia, Indiana, not only because of the fact that they were among the very first successful builders of the steam plowing engine, but also that they were among first to recognize the fact that an engine gang was an absolute necessity in a complete traction plowing outfit. The plow was known as a flexible frame engine gang, and was provided with a steam lift for each section of the plow. The frame of this plow was entirely different from any of the engine plows that succeeded it. The steam lift arrangement was accomplished by means of steam cylinders, garricks and counter weight, these being shown very clearly in Fig. 33. Two bottoms were arranged on each beam, and the whole outfit worked very well when operated by steam engine, but when the gas tractor came into prominence it was found that this plow had no decided advantage, consequently Reeves & Co. put upon the market a plow with hand lift levers. This type of plow is shown in Fig. 34.

As in the steam lift plow, the bottoms are arranged in pairs, and attached to the frame by means of a spring safety releasing device, which, when the plow

# Big Ben



To sleep late's pleasant, now and then,  
Make it Sunday morn—says Big Ben

Big Ben is an alarm clock that's on the job every minute of the day. He rings on time, he runs on time, he stays on time.

He weighs three times as much as the average alarm clock, he rings three times as loud, he lasts three times as long.

He has a great big dial you can easily read in the dim morning light—a cheerful, deep toned voice that will wake you on your sleepiest mornings—large, strong winding keys that are a

pleasure to wind—selective alarm calls that ring just when you want and either way you want, steadily for five minutes or intermittently for ten.

He's punctual, lasting, handsome and the best insurance against oversleep that's ever been heard of. His work doesn't end with the morning call, he's a good reliable time keeper for all day use and he's good looking enough for any surroundings.

5,000 Canadian dealers have already adopted him. His price is \$1.00 anywhere.—A community of clockmakers stands back of him. *Wentworth, La Salle, Illinois.*—If you cannot find him at your dealer's, a money order sent to them will bring him to you duty charges prepaid.

## "BIG BEN"

Sent on receipt of price \$3.00 Established 1875

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JEWELLERS

Special Agents, 420 Main St., Winnipeg

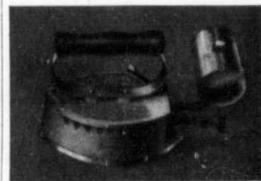
## The "HELPMATE" Gasoline Sad Iron

is a real God-send and positive "Helpmate" to the busy housewife. It is self-heating and will do any ironing in half the time the old way takes. Will burn steady for about 2½ hours on one filling of ½ pint of gasoline and can be regulated to any desired heat. Finished in full nickel and is very sightly.

### Anywhere!

You can do your ironing anywhere—outside under the shade of a tree, on the porch, or in the house. No electric wires or gas hose to be tied down to. It cannot possibly explode and is perfectly safe in every way.

Write for details.



### Anytime!

You are independent of all interruption from some one else requiring the use of gas or electricity at same time. It can be ignited or extinguished at any moment. We guarantee perfect satisfaction and will replace any proved defect.

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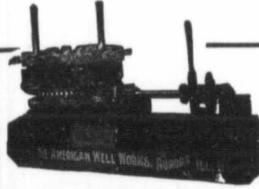
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 The original and the  
 only thing for driving cream  
 separators with gasoline en-  
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 than all others combined.  
 Costs no more than other  
 friction clutch pulleys.

THE GOVERNOR PULLEY CO., 310 S. 3RD ST., MINNEAPOLIS

strikes a stone or hidden stump, will release automatically before any damage is done, as dropping two of the plows. The depth of the furrow is regulated by the gauge wheel, which is placed between the plow beams, thus using one gauge wheel for each pair of plows. The attachment to the frame is by means of a pivoted arrangement, which provides for a free vertical movement, thus allowing them to follow the inequalities of the ground. The horizontal arrangement is also provided, which aids in turning the corner. There is a small gauge wheel, or what should really be called a carrying wheel, at the end of the beams, to regulate the suction, similar to the old style walking plows. This, together with the gauge wheel, regulates the depth of cut for each pair of bottom. Both the carrying and gauge wheel are provided with babbitted hubs, so that when worn out they may be easily renewed. The frame is carried on three wheels, wide base, and able to carry not only the plows but the operator, also a coal bunker and an extra water tank. The plow frame is attached to the engine by a pivoted connection to the centre of the drawbar, which provided for easy turning, even with the plows in the harrow. These plows are built in seven sizes; the 4 and 6 bottom plows have a solid frame, while the 8, 10, 12 and 14 bottom plows have the regulation jointed frame. With their system of flexible connection (Fig. 35), two or more plows may be dropped as the condition of the ground requires, adjustments are provided for winging the plow, that is for the side adjustments for leveling the plows in fair. The cuts can be varied between the limits of one and a half to twelve inches.

**The Avery Lift Plow.**

We have already given a detailed description of the Cockshutt plow. This plow has been handled in the United States for the past three or four years by the Avery Company, of Peoria, Ill. To the inventive genius of Mr. J. B. Barthomoleu must be given the credit of the automatic lift device which has been added to the Cockshutt plow, and which also adds greatly to the efficiency of the outfit. This device is clearly shown in Figs. 36 and 37. It will be seen that the lift is by means of a can shaft arrangement driven from the gauge wheel. Driven from the left hand rear wheel on the plow wheel. A clutch is provided which is operated by a rope, extending from the plow to the engine platform. On the can shaft there are a number of cans set firmly, one for each plow, and there is a shaft devolved,



**The Howard Watch**

**S**OMETIMES you see a prosperous looking passenger inquire the time, and you wonder why he does not take out his own watch to compare with the conductor's.

The HOWARD is the closest rating watch in the world. It is the only American watch ever awarded a certificate of the first class by the International Observatory, Geneva.

A HOWARD Watch is worth all it costs to any man of accurate habit and orderly mind.

It is not that he has no watch—but because he is ashamed of the time he is carrying. He has no confidence that it is anywhere near correct and he tries to save his dignity by not making a comparison.

What do you think of the type of man who will carry a cheap and uncertain timepiece because it does not have to be seen?

It is quite different with the HOWARD owner. He is ready to match time with all comers.

The price of each watch is fixed at the factory and a printed ticket attached—from the 17-jewel (double roller) in a Crescent Extra or Boss Extra gold-filled case at \$40, to the 23-jewel at \$150—and the EDWARD HOWARD model at \$250.

You can buy HOWARD Watches all over Canada. Find the HOWARD jeweler in your town. Not every jeweler can sell you a HOWARD. The jeweler who can is a representative merchant—a good man to know.

Send us your name on a postal card and we will send you—free—the little HOWARD Book, full of valuable information for the watch buyer.

**E. HOWARD WATCH WORKS**

Dept. No. 222 Boston, Mass., U. S. A.  
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**HOWARD WATCHES**  
 FOR SALE BY  
**ANDREW AND COMPANY, LIMITED**  
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 ESTABLISHED 1875

**The Continued Prominence**  
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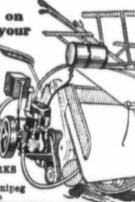
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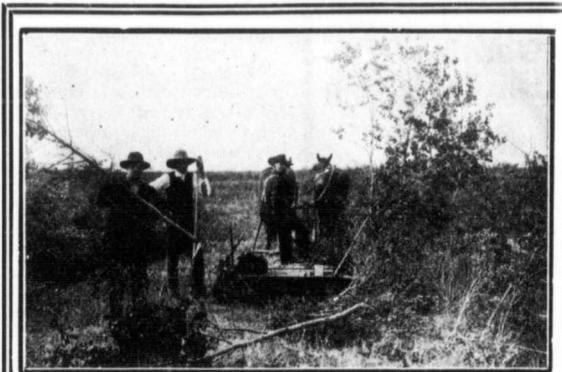
these cans which carry chains on their limb, whose other ends are attached each to the corresponding plow bottom, lift the plows out of the ground. The plows begin lifting at the right side of the frame, and all leave the ground at the same time. They are set back into the ground automatically in the same manner, or if desired the hand levers may be used. The whole device is simple, strong and flexible. The rapid growth of the internal combustion tractor is creating a demand for the power lift plow. Steering devices are being attached to a great many engines, but in order to make the outfit such that one man can run it, it is almost necessary that a power lift arrangement be placed upon the plow in some manner. This is not so true in breaking, as it is really necessary to have a man on the plow, but when it comes to old ground, it greatly facilitates the outfit if one man can handle both engine and the plow.

**The Sioux Plow.**

This is another plow of the independent type, that differs in some particulars from those we have described. The principal difference is that the plow platform is raised considerably above the plows themselves. The levers are not very long, but the double fulcrum arrangement makes the lifting of the plows very easy. The wheels are rather higher than those used on most other engine gangs, and the plows can be raised sufficiently high so that it is not necessary to take off one or more bottoms when reducing the load, as the plow can be raised high enough to avoid catching on any trash or obstructions that may occur. The usual adjustments are provided to give the plow perfect alignment, and Fig. 38 illustrates this plow.

**The Geiser Plow.**

This is one of the oldest engine gangs on the market. When it first came into use it was equipped with a steam lifting device. The frame of this plow is triangular, the beams are curved. The front part of the frame is secured to rear beam carried on the rear of the engine, and consequently the engine supports the front end of the beam, while the rear portion is supported by a small beam in the front end of each plow beam and by a large wheel on the rear left hand corner. This wheel is connected to suitable linkage and chains with the steering chain of the engine, whereby it is turned sufficiently to follow the tracks of the engine. Two steam cylinders are provided, each of which lifts half of the plows when steam is turned on. A latch is provided to



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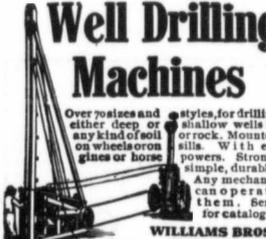
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hold them up. The plow beams are made of one piece, and buffers are provided between them in order to prevent winging.

Fig. 39 will give a good general idea of the construction of this plow.

The following of the engine gang proposition today is about as difficult as the following of the internal combustion tractor, in so far as development is concerned. A few years ago it was possible to count the number of engine gangs on the fingers of one hand, but today, new ones are constantly being placed on the market; and it must not be understood that the above descriptions are in any way exhausted in so far as the merits of the plow are concerned, or as to number of plows upon the market today. We, however, have tried to give illustrations in descriptions of a few, or we might say, the majority of those that have been successfully tried and have proven their worth.

The engine gang proposition today is largely one of judgment on the part of operator. Some prefer the individual type, some prefer the two bottoms to one lever type, and others prefer the power lift type. Each has its strong points, and each has its merits, and are worthy of consideration.

As to the power lift type, it is as yet hard to say just what will develop along this line. If the development in the next two or three years is as rapid as it has been along the lines of the engine gangs itself, we may look for some very good things. There is no gainsaying the fact that "the engine gang is destined to play an all important part in the traction cultivation proposition," and every farmer who is looking toward power farming should study the engine gang proposition just as carefully as he studied the engine. They must go hand in hand, and as a chain is no stronger than its weakest link, the plowing outfit will be no stronger than either your plow or your engine.

What are the requirements of traction plowing? Place yourself thoroughly with what an engine plow could do, or at least what you think it ought to do, then study the engine gangs that are upon the market, and arrive at your own conclusions.

### POWER FARMING. WHAT IT IS.

Continued from page 9

the tractors themselves, and if "power farming" is ever to attain the real success that it deserves it must be built up along sound economic lines.

Western Canada is the greatest field in the world for "power farming" today. We have large

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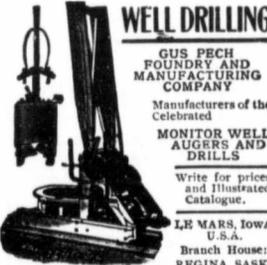
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areas to be cultivated, sown and harvested, and the grain threshed in a very limited season. We have also the quality of the work done to be taken into account.

Let me venture to say that few men who have followed it closely will dispute the fact that mechanical power meets both these requirements.

That there are differences of opinion as to the benefits derivable from the employment of mechanical power in connection with the cultivation of the soil is but natural, and many instances have already arisen. Some men say steam is a decided success, others say it is all right under certain conditions, whilst we have those pronouncing power farming to be an utter failure. Now there are reasons and doubtless tangible ones, for these varied conclusions. What are they? These could only be discovered after a careful study of each particular case. Let me say, however, that the results obtained, in most cases, depends as much, if not more so, upon the individual entering upon this new system of cultivation than upon anything else.

Mechanical traction cultivation is like any other operation—a business means to an end—in which by good management one man succeeds whilst the other collapses, and strange to say when expressing an opinion the man who says power plowing is a success may be the one to fall first; he does not really know, he is superficial in his investigation, whilst the other may be doing well but does not credit himself with the full benefits he is deriving, looking merely at the actual work done and the cost thereof.

Generally speaking, I am pleased to say that mechanical traction cultivation, as in other countries, is proving beneficial in Western Canada.

Amongst the advantages derivable from mechanical traction may be cited the following: The work can be done at the right season of the year; better tillage; expedition, thorough aeration of the soil and consequently better crops; greater economy of time and labor, and ability to reclaim land which otherwise it would be most difficult to cultivate.

The aeration of the soil is one of the principal objects of cultivation, and the rapid motion of a mechanically driven implement tears and breaks up the land, so that it remains in a loose and rough state; the atmosphere acting upon the subsoil permanently raises the temperature, pulverises the whole by degrees and thoroughly prepares it for the reception of the seed—the



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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 on a farm of at least 80 acres solely owned and occupied by him or by his father, mother, son, daughter, brother or sister.

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A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may enter for a purchased homestead in certain districts. Price \$3.00 per acre. Duties—Must reside six months in each of three years, cultivate fifty acres and erect a house worth \$300.00.

W. W. CORY

Secretary of the Minister of the Interior

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drainage is improved and the roots of plants can much more readily penetrate the subsoil.

In estimating the expense of mechanical power cultivation, few justly appreciate the great change it effects in the character of the soil and subsoil, both as regards drainage and the cost of after tillage.

Whenever traction cultivating machinery has been regularly used for a number of years it has been found that both engines and implements now necessary to keep the land in an efficient state of cultivation are smaller and lighter than those originally required, and fewer operations are necessary in consequence, not only of the improved quality of the soil but also because when land is broken up by steam at the proper season of the year little or no mechanical pulverization is required.

Unlike most other machinery, a cultivating outfit is required to work under varying conditions and often under circumstances where nothing whatever has been done to assist in its introduction. The general formation, the conditions and requirements of the country, the nature of the soil, the size and arrangement of the farm and the capital available are all items which may demand modification in the construction of the machinery and especially is this the case with the implement.

There is just one more item that I would like to touch upon and then I am through, and that is, suitable implements for traction work. The engine gang came as a necessity, but the manufacturers of farm machinery has been slow to realize the needs of the "power farmer" in the way of special drills, discs, packers, suitable for tractor use. Some have made steps along this line, but the "power farmer" is still obliged to shift largely for himself in this respect. Suitable hitches that will serve as a connecting link between the engine and various implements so as to make a compact load that can be handled with a minimum of power are also in demand. Some progress has been made along this line, but greater things are still required. The farmers themselves have been obliged to construct their own hitches, and they have accomplished a great deal, but in "power farming" time is money, and it is almost necessary that proper equipment be provided for the "power farmer."

The Alpha of "power farming" has only been reached. The Omega is still in the distance. The bridging of this gap will furnish ample opportunity for development and a wide field for experience.

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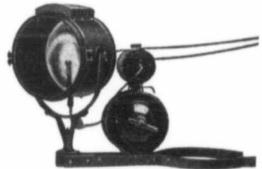
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1-30x50 Goddison separator, all attachments... \$300.00

1-30x60 American Abell, all attachments... \$325.00

1-30x56 Felbach separator, all attachments... \$300.00

2-32x56 Great West Separator, all attachments... \$200.00

1-30x56 Great West Separator, all attachments... \$200.00

2-White Challenge separators, thoroughly rebuilt, all attachments, each... \$900.00

Write us re new goods—We have the best.

GAS ENGINEER wants position on Hart-Par or Rumpy Oil Pull. Thoroughly experienced. Not a correspondent throttle puller! J. H. Nugent, Gravelbourg, Sask.

STEAM ENGINEER wants position plowing season 1912, Saskatchewan Province. Strictly temperate. References. State make and size engine. Wages. Chas. L. Simpson, Box 834, Regina.

FOR SALE—Two portable steam engines, 12 and 16 H.P., also two separators, 30 Bell City and 36 Sawyer Massey, all in good shape, \$150 each. Must be sold. G. T. Grant, Ituna, Sask.

LICENSED ENGINEER MACHINIST (not a throttle puller) would like a plowing or threshing engine this season. State wages. Apply Box C. K., care of The Canadian Thresherman and Farmer, Winnipeg.

25 H. P. FAIRBANKS-MORSE Gasoline-Kerosene Engine. Worked only 12 days. Suitable for plowing. Also 32-50 Galloway Separator with Feeder, Ragger and Blower. Price for all (including 8 barrel Gasoline Tank) \$3500. Terms to suit. Wm. Paterson, Wawanesa, Man.

FOR SALE—One 26 H. P. S. M. Traction Engine, in first class shape. Box 76, Tuxford, Sask.

ENGINEER WANTED to operate 30 H. P. Rumpy Oil Pull. Must understand repair work. Apply, stating wages wanted. H. W. Palas, Spirling, Man.

CHOPPING OUTFIT FOR SALE. A 15 H. P. Stationary International Gasoline Engine 12 inch plate chopper, elevators, belting, pulleys and scales. Apply Box 137, Camrose, Alta.

FOR SALE—40 H. P. P. Flour City engine and 10 plow John Deere gang. Price and terms on application to Lock box 127, Elbow, Sask.

EXPERIENCED ENGINEER wishes job on steam plowing outfit for coming season and will also run during threshing season. Apply stating wages, to D. McDonald, Red Jacket, Sask.

WANTED Position on steam plowing outfit for the season of 1912 as engineer and oblige. Yours truly, R. H. Hargest, McLean, Sask.

WANTED Position by licensed steam engineer to start for spring work. Year experience in Steam Traction Engineering. Can furnish references. Apply J. Jacobson, Kelliker, Sask.

HOW TO START YOUR GAS ENGINE in the coldest weather first clip. No hot water, (save time). Formula 50c. P.S. For your information, this formula is a liquid, very high explosive, will vaporize in coldest weather. I use it myself at all times in bold weather. J. W. BARON 2112 Louise, Brandon.

WANTED—Position as engineer on steam tractor, breaking or plowing, sober, industrious and responsible, fifteen years experience on traction engines. Emergency repairing performed, satisfaction guaranteed, references furnished. O. T. O., 1, Heyvene, North Dakota.

FOR SALE OR EXCHANGE FOR AUTOMOBILE OR HORSES One 18 F. P. John Abell Simple Traction Engine McDonalds and McCrindle, Glen Ewen, Sask

FIREMAN wants position on Steam Plowing or Threshing engine preferably in Sask. In replying please state wages and probable length of run. Geo. Melike, Hanché P. O., Que.

WANTED—Position as engineer on Hart-Par considerable experience, state wages. Apply J. H. Nugent, Caron, Sask.

FOR SALE—One J. I. Case, 20 H.P. Traction Engine, only used a short time in good shape; one 32x54 J. I. Case steel separator in good shape, will sell outfit for \$1800.00. Will take stock in part payment or will trade it on a gasoline tractor. Apply Box 10, Lauder, Man.

BE AN ENGINEER—The Heath School of Traction Engineering (by correspondence) offers you a thoroughly practical course in Traction and Stationary Steam Engineering for spare time home study. Send for prospectus and full information to E. H. Heath Co., Limited, Winnipeg.

FOR SALE—One Gould Balance Valve, Yellow or 25 H. P. Gaar-Scott engine. J. Reynolds, 22 Grass, Sask.

FOR SALE—30 H. P. Flour City gasoline traction engine, price \$2400.00, plowed 400 acres. As good as new. For terms, etc., write to Glennie & Rodger, Macdonald, Man.

FOR SALE—Hawkeye Band Cutter and Self Feeder used one season. Size 36 inch. First fifty dollars takes it. G. W. Vincent, Cor. Arlington and Ellice, Winnipeg.

WANTED—Engine gang six or eight bottoms must be in good repair. Box 70, Morse, Sask.

FOR SALE—Case 25 H. P. engine, fitted with contractor's tank and coal bunkers. Engine was refueled this fall and a new cylinder and steam chest put on. It is in 1st class running order. Also case separator, 44 x 66, in good repair, \$1600 buys this outfit, or will sell separate. This is a bargain. Apply J. T. Taylor, 775 Corydon Ave., Winnipeg

FOR SALE—One 33-inch Waterloo Feeder used 24 days. Cor. Heinrichs, Box 13, Leeder, Farm, Man.

FOR SALE—Lots in 34 and 35 St. James, close to several large manufacturing industries. Price \$250.00 each. Easy terms. Box 3079, Winnipeg.

FOR SALE—We have a few lots left in Transcona Gateway, the best buying in the district. Prices \$6.00 to \$10.00 per foot. Hurry if interested. Box 3079 Winnipeg.

FOR SALE—Five acre improved fruit ranch on the Okanagan Lake, B.C. For sale or exchange for Winnipeg property. Box 3079, Winnipeg.

WANTED—Position as Engineer on a steam traction outfit. Fully experienced. Can furnish references. Address J. E. Peatch, Clava, Man.

WANTED—Gasoline Traction engineer for "Flour City 40." Must have had traction experience. References required. Good pay. Also want woman cook for cottage; also man for garden and dairy. W. H. Pawson, Jr., Coaldale, Alta.

ENGINEER WANTS POSITION on plowing engine in Sask. or Alberta. Had 4 years experience. Can do own repairing. Graduate of the Heath School of Engineering. State wages. Chas. B. McMain, Summerberry, Sask.

TWENTY HORSE GAS ENGINE, Separator, five furrow plow, stubble and breaker bottoms, twenty-five shares. First class running order, Three thousand takes lot. Apply "Thresherman" Care Can. Thresherman and Farmer, Winnipeg.

TWO MECHANICS, experienced in Gasoline Tractors, desire positions running Rumely, International, etc. Both have worked with Rumely and International Companies, understanding thoroughly the construction and maintenance of tractors. Communicate with Geo. Hart, 707 S. Sooville Ave., Oak Park, Ill.

FOR SALE—Threshing machine, also engine gang plow. For particulars apply to W. L. Barker, Box 1714 Calgary.

WANTED—Catalogues of Steam and Gasoline Threshing and Plowing Outfits. Address G. H. Lewis, Coxy Nook, Sask.

FOR SALE—Massey-Harris warehouse in good town near Saskatoon. Agency guaranteed to first class man. Apply care of Canadian Thresherman and Farmer.

"A SNAP"—FOR SALE—John Deere engine gang, 8 breaker bottoms, 1910 make, in first class condition, broke 300 acres. Apply to Neil Wright, Box 155, Wellwood, Man.

FOR SALE OR TRADE FOR GOOD LAND—One 35 H.P. Double Cylinder Steam Engine with 10 Bottom Cockshut Plow. All in first class shape. Elisee Clertson, Warren, Man.

WANTED—Position on steam plowing outfit, firing preferred, experienced. Frank Campbell, Marquette, Man.

FOR SALE—Imported English Bull Dog, "Lucky Barge," big winner, Winnipeg Winter Show 1911—Cheap. M. Cochran, Imperial Bk. Winnipeg.

WANTED—Position as Engineer on steam traction outfit for threshing or would take both ends. Can do own repairing. Nine years experience. Best of references and certificate for Am. strictly temperate. Address E. F. Sharpe, Maple View Out.

WANTED TO BUY Steam Traction Engine about 20 H. P. Address W. W. Kennedy, Magyar, Sask.

GAS ENGINEER desires position with reliable farmer, April to November; operating engine. Box 171, Lumsden, Sask.

ENGINEER WANTS POSITION on ploughing outfit, for coming season. Holds engine class certificate, four seasons' experience. Strictly temperate. Apply to R. McGhie, Caron, Sask.

WANTED—Position on plowing engine for summer as fireman. Am holder of diploma from Heath School of Engineering, by correspondence, and could run engine if necessary. Would prefer to work in Saskatchewan. Apply stating wages to H. E. McMahon, Box 11, Kinsey, Sask.

FOR SALE—Avery 1911 model 30 h.p. Alberta special under-mounted engine, equipped for ploughing. Cockshut engine gang 8 bottom. Both run 8 days. Also new 36 x 60 Avery separator, with feeder and blower. All for \$3,800.00 cash. No trade considered. Davy C. Purfurst, St. Paul Minnesota

160 ACRE FARM FOR SALE OR TRADE—For Traction Plowing outfit, Land is quarter mile from town of Ladysmith, Man. Andrew Deata, Hanlan, Man.

FOR SALE—Small separator complete with all attachments. \$400 cash. Box 13, Welby, Sask.

WANTED—Gasoline Traction Separator, and Plows, one or all. Write giving Make, Size, Age, Price and terms to Box 81, Daysland, Alta.

WANTED—Gasoline-Kerosene tractor. Write giving make, size, age, price and terms. Box 24, Colony, Sask.

Table with 2 columns: Description and Price. Includes items like 15 Horse Case Simple Portable Engine, 15 Horse Case Compound Portable Engine, etc.

EXPERIENCED Licensed Engineer and Traction Plowman wants position for the coming season. Eight years practical experience in steam traction work. Will consider position in Man, Sask., or Alta. Charles Rondeau, Saint Leon, Man.

WANTED—By holder of second class certificate position as engineer; have also good knowledge of gasoline engines. Address care of Box 158 Orbow, Sask.

FOR SALE SECOND-HAND AND REBUILT MACHINERY. Two 25 H. P. Simple J. I. Case engine. One 15 H. P. Simple J. I. Case engine. One 15 H. P. Compound J. I. Case engine. One 32x54 Wood Case separator. One 28x50 steel Case separator, with wind stacker, self feeder and weigher. J. I. CASE THRESHING MACHINE CO., Calgary, Alberta.

BARGAINS

1-32 H.P. Port Huron engine, rebuilt and in first class shape. 1-American-Abell 20 H. P. engine, rebuilt. 1-Minneapolis Separator 44x72, rebuilt. With all connections. 1-32x54 Avery Separator complete, just complete. 1-30x60 Avery Separator to be rebuilt. 2-Avery 20 H. P. double undermounted engines. 1-30 H. P. North-west engine, not rebuilt, cheap. 1-J. I. Case steel, 42x60 separator complete with all attachments. 1-28x50 Avery separator, will be rebuilt in time for next fall's work. If you are interested in second hand goods, please write and let us know what you want as we are making deals almost every day, and feel sure that we can fix you out with almost anything you want, either in new or second hand goods. HAUG BROS. & WELLS, KRMOR Co. Ltd WINNIPEG.

FOR SALE

QUARTER SECTION, 6 MILES NORTHWEST from Grays, Man., \$16 per acre. 20 per cent cash, balance 4 years, at 6 per cent.

160 ACRES CLOSE TO PARKMAN, SASK 40 acres broken, \$16 per acre, \$1100 cash.

ONE HUNDRED AND SIXTY ACRES Prairie near Manson, Man., \$15 per acre; 1/4 cash 1, 2 and 3 years.

TWO HUNDRED AND FORTY ACRES, improved, first class land, near Woodlands, Man. \$25 per acre; 1/4 cash.

240 ACRES IMPROVED NEAR CULROSS Man. A splendid little farm over 200 acre under cultivation \$32.00 per acre easy terms.

THREE HUNDRED AND TWENTY acre improved farm, near Holland, Man., \$18.50 per acre. \$7.50 per acre cash.

THREE HUNDRED & TWENTY ACRES prairie, adjoining the village of Frances, Sask. This is a fine parcel of land, and selling at \$20 per acre it taken before the 25th of Feb. \$1,000 cash balance to suit at 6 per cent. A great snap.

THREE HUNDRED AND TWENTY ACRES prairie close to Castor, Alta., at a snap price of \$18 per acre, if sold quickly.

SIX HUNDRED AND FORTY ACRES prairie, near Woodlands, Man., \$15 per acre. Terms. It's a snap.

SIX HUNDRED AND FORTY ACRES prairie close to Makaroff, Man., \$20 per acre; 1/4 cash. A first class buy.

SIX HUNDRED AND FORTY ACRES prairie, near Makaroff, Man., \$15 per acre. Terms. Sure a snap.

EIGHT HUNDRED ACRES, WITH COMPLETE equipment stock and implements. Close to Cranford, Man., \$20 per acre; 20 per cent cash, balance arranged to suit purchaser.

NINE HUNDRED AND SIXTY ACRE IMPROVED farm, within a nice driving distance of Brandon, Man. A beauty spot and one of the best cared for and finest places as regards fowl weeds, buildings, etc., in the province. This place is worth \$45 an acre, but for quick sale and on account of the terms will take \$30 per acre. Just the place for a homesteeker.

NINE HUNDRED AND SIXTY ACRE IMPROVED farm, 30 minutes drive from Yorkton, Sask. The greater part of it is under cultivation and there are two sets of farm buildings, besides other convenient facilities. Which we can better tell you about. \$45,000. 20 per cent cash.

SIXTEEN HUNDRED ACRE IMPROVED farm in southwestern Manitoba, all under cultivation and ready for crop. This is a beautiful farm, with fair buildings and on the railroad, having a siding and elevator on the premises. Will sell, with or without stock and implements, which is sufficient and complete in every respect. Without stock, etc., \$32 per acre, \$14,000 cash; with stock, etc., \$37.50, \$18,000 cash, balance to be arranged suitably. If you investigate this you will agree with us that it's a great bargain. Free information.

OLSEN & ARMSTRONG, 51 MERCHANTS BANK. Phone Main 434.

FOR SALE

We have on hand at present a very full line of Rebuilt and Second-hand Engines and Separators which we are offering at attractive prices. Write us fully what you are thinking of buying, when we shall be pleased to tell you what we have and quote prices. All our rebuilt goods are sold under same guarantee as new ones and of course are carefully repaired and look exactly like new. If you write us at once we are sure to have the size you almost want. We also have a thoroughly Rebuilt Saw Mill Outfit consisting of 25 H. P. Saw Mill Engine and Portable Saw Mill with carriage and track complete. Can hardly be distinguished from new goods. Will be sold at a bargain. SAWYER-MASSEY COMPANY, LIMITED Winnipeg, Man.

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EXPLANATION.—First find the Implement Wanted and the Number opposite will be the Number of the Concern, in the first column, that handles it.

A—ALBERTA PORT HURON CO., Calgary, Alta.
1—AMERICAN—ABELL ENGINE & THRESHER CO., Winnipeg, Calgary and Edmonton.
2—AMERICAN SEEDING MACHINE CO., Winnipeg.
3—BAILEY SUPPLY CO., Winnipeg.
4—BEEMAN MFG. CO., Winnipeg.
5—BELL B. & SONS, Winnipeg.
6—BELL ROBT. ENGINE & THRESHER CO., Winnipeg.
7—BRANDON MACHINE WORKS, Brandon.
8—BRANDON PUMP & WINDMILL WORKS, Brandon.
9—BRANDON & ROBERTSON, Brandon.
10—BURRIDGE-COOPER CO., Winnipeg.
11—CANADIAN FAIRBANKS CO., Winnipeg, Calgary, Saskatoon, Vancouver.
12—CANADIAN MOLINE PLOW Co., Winnipeg.
13—CANADIAN PORT HURON CO., Winnipeg.
14—CANADIAN RUBBER CO., Winnipeg, Vancouver.
15—CANADIAN STOVER CO., Brandon.
16—CANADIAN STOVER CO., Brandon.
17—CARRERY IRON & WOOD WORKS, Carberry.
18—CARRERY STACKER CO., Carberry.
19—CASE T. M. CO., Winnipeg, Regina, Calgary.
20—CHAPIN CO., Calgary.
21—COCKSHUTT FLOW CO., Winnipeg, Regina, Calgary, Edmonton.
22—CRANE & ORDWAY, Winnipeg.
23—DEERE, JOHN PLOW CO., Winnipeg, Regina, Calgary, Edmonton, Saskatoon.
24—DE LAVAL SEPARATOR CO., Winnipeg.
25—DE LAVAL SEPARATOR CO., Winnipeg.
26—DOMINION SPECIALTY CO., Winnipeg.
27—EMPIRE CREAM SEPARATOR CO., Winnipeg.
28—CLARK, SCOTT & CO., Winnipeg, Regina, Calgary.
29—GAS TRACTION CO., Winnipeg.
30—GOODYEAR TIRE & RUBBER CO., Winnipeg, Regina, Calgary.
31—GRAY-CAMPBELL CO., Winnipeg, Brandon, Moose Jaw, Calgary.
32—HAMILTON PULVERIZER CO., Winnipeg.
33—HAUG BROS. & NELLERMOE, Winnipeg and Calgary.
34—HARMER IMPLEMENT CO., Winnipeg.
35—HART-FARR CO., Portage la Prairie.
36—HERO IMPLEMENT CO., Winnipeg.
37—INTERNATIONAL HARVESTER CO., Winnipeg, Regina, Calgary, Edmonton, Saskatoon, Brandon.
38—LUDEN HOWE & SPECIALTY CO., Winnipeg.
39—MANITOBA HAYES PUMP CO. LTD., Morden.
40—MANITOBA IRON WORKS, Winnipeg.
41—MANITOBA WINDMILL & PUMP CO., Brandon.
42—MASSEY-HARRIS CO., Winnipeg, Regina, Calgary, Edmonton, Saskatoon.
43—MAW, JOE & CO. LTD., Winnipeg.
44—McKENZIE, A. E., Brandon.
45—McLAUGHLIN CARRIAGE CO., Winnipeg.
46—McRAE, ALEX., Winnipeg.
47—MELOTTE CREAM SEPARATOR CO., Winnipeg.
48—NEEPAWA MFG. CO., Neepawa.
49—NICHOLS & SHEPARD CO., Regina, Winnipeg.
50—NORTHWEST THRESHER CO., Brandon.
51—ONTARIO WIND ENGINE & PUMP CO., Winnipeg.
52—PARIS PLOW CO., Winnipeg.
53—PARSONS-HAWKEYE MFG. CO., Winnipeg.
54—PETRIE MFG. CO., Winnipeg, Calgary, Vancouver.
55—RAYMOND MFG. CO., Winnipeg.
56—REEVES & CO., Regina.
57—RENNIE, W.M. SEED CO., Winnipeg.
58—REBURY PUMP CO., LTD., Brandon.
59—RUMELY, M. CO., Winnipeg, Calgary, Saskatoon, Regina.
60—SAWYER & MASSEY CO., LTD., Winnipeg.
61—SHARPLES SEPARATOR CO., Winnipeg.
62—STEELE-BRIGGS SEED CO., Winnipeg.
63—STEWART & NELSON CO., LTD., Brandon.

62—STEVENS, JOHN & CO., Winnipeg.
63—STUART, JAMES, ELECTRIC CO., Winnipeg.
64—SUB-SURFACE PACKER CO., Winnipeg.
65—SYLVESTER MFG. CO., Brandon.
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67—VIRDEN MFG. CO., Virden.
68—VULCAN IRON WORKS, Winnipeg.
69—WATERLOO MFG. CO., Winnipeg, Regina.
70—WATERLOO ENGINE WORKS, Winnipeg.
71—WATSON, JNO. MFG. CO., Winnipeg.
72—WHITE, GEO. & SONS, Brandon.
73—WINNIPEG RUBBER CO., Winnipeg.
74—WINNIPEG THRESHING MACHINE CO.
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Henry Buggies.
McLain Buggies and Cutters.
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Hilborn Stump Puller.
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Sylvester Cultivator.
Yule Cultivator.
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Rox Drag.
Canadian Moline Row Drag.
Canton Disc.
Case, J. L. Disc and Drag.
Cyclone Wheel Disc.
Cockshutt Disc and Drag.
Cockshutt Lever and Chip.
Cormick Disc.
Deere King Row Drag.
Deere Steel Row.
Deering Disc and Drag.
Defiance Jr., Disc.
Economy Disc.
Emerson Disc and Drag.
Evans Disc.
Fleur's Steel Channel Drag.
Fleur's Clipped Drag.
Fleur's Disc.
Fuller & Johnson.
Grand Detour Drag and Disc.
Hoover Wheel Disc.
International Diamond and Lever.
Massey-Harris Disc and Drag.
McCormick Disc.
Moline Flexible Drag and Lever.
Noxon Disc and Drag.
Paris Disc and Drag.
Scotch Diamond Drag.
Superior Wheel Disc.
Universal Traction Trucks for Disc Harrows.
Watson Discs.
Wilkinson Drag and Disc.
Windsor Disc.
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Cockshutt Pulper.
Fleur's Feed Cutter.
Massey-Harris Feed Cutter.
Paris Feed Cutter.
Watson's Feed Pulper.
Wilkinson's Feed Cutter.
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Challenger.
Cyclone.
Daisy.
Fleur's.

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Manitoba.
Maple Leaf.
Scientific.
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Thoms.
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International (Traction).
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Helgeson & Smut Machine.
Hero Fanning Mill.
Hero Pickler.
Superior Fanning Mill.
Webber Grain Cleaner.
Wonder Fanning Mill.
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Deering.
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Massey-Harris.
McCormick.
Noxon.
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Bradley Hay Press.
Buffalo Hay Press.
Canton Hay Press.
Champion Hay Press.
Champion Mower.
Champion Side Delivery Rake.
Dain Hay Press.
Dain Side Delivery Rake.
Deere Hay Loader.
Deering Hay Stack.
Deering Sweep and Hay Rake.
Deering Mower.
Frost and Wood Mower.
Tetter.
Frost & Wood Champion Hay Loader.
International Hay Press.
International Hay Stack.
International Sweep Rake.
International Hay Press.
Jenkins Sweep Rake.
Keystone Hay Loader.
Keystone Side Delivery Rake.
Louden Hay Tools.
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Massey-Harris Hay Press.
Massey-Harris Hay Tedder and Loader.
McCormick Hay Press.
McCormick Hay Stack.
McCormick Mower.
Noxon Mower and Rakes.
Rock Island Hay Loader.
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HORSE POWERS AND JACKS, SAW MILLS, WOOD SAWS AND TREAD POWERS.
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Fairbanks Wood Saws.
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Fleur's Wood Saws and Tread Powers.
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Good, Shapley & Muir Wood Saws.
Horse Powers, Tread Powers, Bevel Jacks.

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Deer Land Roller.
Verity Land Roller.
Hamilton Pulverizer.
Hilborn Pulverizer.
Moline Parallel Pulverizer.
Verity Land Roller.
Verity Pulverizer.
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Watson's Land Roller.
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National.
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Cockshutt.
Deere.
Deere Engine Gang.
Emerson.
Geiser Engine Gang.
Janville Engine.
Massey-Harris Engine Gang.
Moline.
Moline Engine Gang.
Paris.
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Egan Potato Sprayer.
Evans Potato Planter.
Eureka Potato Planter.
Hillock Potato Digger.
Hoover Potato Digger.
Iron Age Potato Planter.
Iron Age Potato Digger and Sprayer.
Moline Knecker Potato Digger.
Stilpeter Sprayer.
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Cockshutt Harrow Cart.
Deere Harrow Cart.
Eclipse High Harrow Cart.
Emerson Harrow Cart.
Fleur's Wheelbarrow.
Fuller & Johnson Harrow Cart.
Kramer Rotary Harrow, Man. 21.
Naylor Harrow Attachment.
Paris Wheelbarrow.
Paris Harrow.
P. & O. Hand Cart.
Racine Rotary Harrow.
Success Harrow Cart.
Verity Wheelbarrow.
Watson's Wheelbarrow.
Wilkinson.
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Good Roads Machinery.
Indiana Road Machines.
Russell Elevating Grader.
Standard Reversible Grader.
Toronto Pressed Steel Scrapers.
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Deering.
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Impress.
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McCormick.
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THRESHING MACHINERY, SELF-FEEDERS, WIND STACKERS AND ATTACHMENTS.
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Buffalo Pitts.
Cascaiden.
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Geiser.
Goodison.
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Hartley Weigher.
Minneapolis.
Monarch Feeder.
Pocota Weigher.
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Reeves.
Rich Feeder.
Rumely.
Ruth Feeder.
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Waterous.
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Crane & Ordway.
Desmond Stephens.
H.T. Helgeson.
Threshers' Supplies carried in West.
Madison-Kipp.
Manuel Oil Pumps.
Ohio Injector Co.—Ask any Thresher Co.
Parsons Hawkeye Mfg. Co.
Penberthy Injectors and Brass Goods.
Handled by all Leading Jobbers.
Tasgar.
Goodyear Tire & Rubber Co.
John Stevens.
Winnipeg Rubber.
WAGONS AND SLEIGHS.
Adams Farm Trucks.
Adams' Lorries and Heavy Teaming Tools.
Adams Wagons and Sleighs.
Anderson Metal Wheel Trucks.
Avery Wagons and Grain Trucks.
Bain Wagons and Sleighs.
Canadian Crescent Wagon.
Chatham Wagon.
Cockshutt Metal Wheel Trucks.
Columbus Wagon.
Davenport Wagon.
Deering Metal Wheel Trucks.
Fish Bros. (Racine) Wagons.
Genuine T. G. Mandt Wagon.
Grand Detour.
Gray Light Farm Sleigh.
Hamilton Wagon.
Hambury American Wagon.
Metal Wheel Trucks.
Milburn Wagon.
New Deal Wagons and Sleighs.
New Deal Farm Trucks.
New Moline Wagon.
Northern Chief Metal Wheel Trucks.
Old Dominion Wagons and Sleighs.
Petrolia Wagons and Sleighs.
Rushford Wagon.
Stone and Gravel Spreading Wag.
T.G. Mandt Sleighs.
Webber Wagon.
W.C. Hickman Wagons and Sleighs.
Winona Wagon.
WELL DRILLING MACHINERY.
Austin.
Brandon.
Kelly & Tannyhill.
Sparta.
Standard.
WINDMILLS, TANKS AND PUMPS.
Caters Pumps.
Caters Star Windmill.
Canadian Air Motor.
Chicago Aeromotor.
Florence Pump.
Good, Shapley & Muir-Windmill.
Impress.
London Pumps.
Manitoba Pumps and Windmills.
Manitoba Tanks.
Myers Pumps.
Ontario Pumps.
Relaxer Pumps.

# RUSH SPRING WORK with a HART-PARR

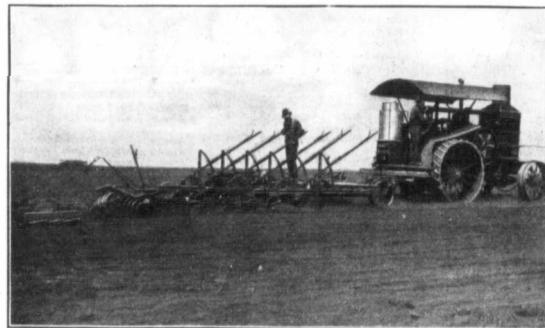
## Here's Irrefutable Proof that it's the Tractor for you

### Horses too Slow to Race with Weather Conditions

Prevent a repetition of some of your past season's disappointments—money losses. Horses seem like snails compared with the rapid pace of a Hart-Parr. It fairly eats up work with giant strides. It covers so much ground with little fuss or expense—plows deep or shallow—pulls steadily 6 to 10 plows—covers from 20 to 30 acres in 10 hours—hustles night and day—Always eager to make money for you—never slow, no matter how hot or cold the weather. Do your spring plowing and seeding in double quick time. Then watch the snail's pace at which your neighbors work. Your crop will be anywhere from 20 to 50 per cent larger than usual, paying for the tractor in a few seasons. Bad weather may threaten. With a Hart-Parr you have the best chance to beat in the race, plowing, harrowing, seeding in one or two operations. With horses it's a forlorn hope—you're handicapped. Where horses can't budge a plow in frosty ground, a Hart-Parr marches along unrestrained. Thus you can get onto your ground earlier than those who depend on horses. Don't risk—don't take a chance—be on the safe, the profitable side.



60 H. P. plowing 15 to 20 acres a day—6 in. deep. Just the engine for corn belt farmers.



60 B. H. P. breaking outfit used in Canadian Northwest. Horses can't equal this work.



Here a 60 B. H. P. is breaking ground for flax. Note pulverized condition of newly broken ground.

### Deep, Quick Plowing Turns Up Dollars

Increases of 20, 40 and 50 per cent are frequently reported by users of Hart-Parr Scientific farm management has proven that early deep plowing will release mold plant food, make a finer seed bed with closer soil particles, provide better ventilation and give plant roots a greater reservoir for moisture than the former surface plowing.

This discovery has been made profitable for large farms only since Hart-Parr Tractors were introduced. It has been practiced intensively in Europe over very limited areas with a small pointed one-horse subsoil plow. But now farmers everywhere work till from 250 to 3000 acres can plow as deeply as wisdom directs.

The steady—all day—all night—never tiring—uniform pull of a Hart-Parr Tractor has revolutionized America's western farming practices. The proofs below are selected from a fistfull of letters from our files received in 1911. Send for our December testimonial folder where many letters are reported.

# HART-PARR OIL TRACTORS

## Here Are the Proofs

### Broke 1,300 Acres. Threshed 80 Days. Repair Expense \$25.00

Mitchelltown, Sask. Jan. 3rd, 1912.  
Dear Sirs:—I purchased one of your engines a 22-45 last spring (1911). I unloaded and took delivery of the engine myself, and took it out forty Miles south.  
We hauled six plows breaking all season turning over eleven hundred acres. This we broke out. In addition to this we broke two hundred acres for ourselves.  
We started threshing on Sept. 18th and threshed steady outside of two days' delay waiting for belt, until the 27th of December.  
We have done all this with a repair expense of under \$25.00, and most of that was due to using poor cylinder oil.  
Our engine has given every satisfaction, and I would have no hesitation in recommending a Hart-Parr Engine to intending purchasers.  
Yours truly, (Sgd.) H. A. MITCHELL & SONS.

### Not a cent for Repairs. Plowed all Summer. Threshed all Fall

Moose Jaw, Sask. Jan. 23rd, 1912.  
Dear Sirs:—I purchased one of your 15-30 Hart-Parr Engines last spring, 1911.  
I plowed all season with this and then ran a 30-50 Separator all Fall.  
My repair expense was not one cent.  
I would recommend this engine to any prospective purchaser as a handy farm Tractor.  
Yours truly, (Sgd.) GEO. BEATTIE.

### Broke 500 Acres. Repair Bill \$1.00

Morse, Sask. Jan. 31st, 1912.  
Dear Sirs:—The engine which I bought from you last summer has given me complete satisfaction in every particular.  
I broke something over five hundred acres and did the work easily and well. The only expense I had for repairs was \$1.00, and I am recommending this engine to my neighbors as the most simple, durable and powerful engine in the market.  
Yours truly, (Sgd.) M. L. LEITCH

### Broke 950 Acres. Blame themselves for Expended \$2400. Engine Good as Ever

Decker, Sask. Dec. 28th, 1911.  
Dear Sirs:—I purchased one of your 22-45 Hart-Parr Engines in the winter of 1911.  
I plowed 950 acres with this engine during the season of 1911, and threshed through all the Fall until the present time.  
I hauled 5 and 6 furrows in breaking during the whole breaking season, this was according to conditions of breaking. My repair expense has been reasonable and nearly all the expense was because of our own mistakes.  
We have been threshing through the coldest weather, and the engine gave us no trouble.  
I would most certainly recommend the Hart-Parr Engine as a general farm engine.  
Yours truly, (Sgd.) F. S. WILBERN.

### Threshed 35 deg. below zero. \$5.00 Repair Bill in 4 Years. \$3.50 Expense for Repairs

Lajord, Sask. Jan. 31st, 1912.  
Dear Sirs:—In the spring of 1907 I bought of your company one of your 45 Brake H. P. Tractor. I have used it successfully every year. I have plowed on an average 300 acres a year, and in the Fall I used it to run a 32 1/2 Separator and usually had about 40 days' work.  
During the whole threshing season I never lost an hour on account of the engine, although we threshed during the very cold weather, one time it was 35 degrees below zero.  
We had a repair expense of \$3.50 only.  
I am very well pleased with my engine and am sizing up the work of other makes of engines. I would most certainly recommend any purchaser taking a Hart-Parr.  
WM. GALLOWAY, JR.

### Ready for first piece of good weather

Boharm, Sask. Jan. 23, 1911.  
Dear Sirs:—The engine we bought from you last season gave us first class satisfaction. We had no trouble or delay of any kind. We have had repairs to buy. We think it is all right. We have only done our own work with this engine. Our idea is to get our work done just when we want it.  
Yours truly, A. & T. GETTY.

### Economy of Operation and Superior Construction

It develops power equal to gasoline at two-thirds to one-half its price. A Hart-Parr uses the cheapest fuel. It holds down the quantity consumed to a low average through its efficient injection system fully explained in our new 52-page catalog. Every possible ounce of power is exerted on the piston at the right time.  
Superior construction has always kept the Hart-Parr in a class all its own. From the day of its conception to February 1912 this tractor has been the trail blazer for others. But they never can catch up. Every new idea, every plan to give you better service is the result of 1912 ideas seasoned by nine years of progress—field experience.  
This wide awake policy has developed an unrivaled engine, with fewest parts, all accessible and replaceable; a simple engine that any intelligent, mechanically-minded man can soon understand and operate successfully; an engine whose bearings, shafts, hubs, wheels—all working parts—are steel built to withstand the never ending shocks, vibration and strain incident to field, road and belting. It will do more work with less cost for repairs than any tractor.

### This Man now owns 7 Hart-Parr Tractors

Perece, Tex. Jan. 27, 1912.  
Dear Sirs:—In August 1909 I purchased one of your engines and used same in threshing rice crop and it did its work very satisfactorily. After threshing we tried it in breaking black, waxy sod land and the work done was so satisfactory that I purchased three more engines for Nov. and Dec. delivery. Worked them all winter in breaking land and preparing the ground for a seed bed in the spring and in the fall of 1910 used all four for the engines in threshing with good results. In Dec. 1910 I purchased another engine of the same make, and now in 1912 have just placed an order for two more.  
For our work, both in plowing and threshing I think the Hart-Parr engines are the best on the market today, and would recommend anyone wanting a Gas tractor for farm work, to investigate them thoroughly before placing an order elsewhere. Respectfully yours,  
A. P. BORDEN.

### Makes Horses laugh & grow fat

Loreburn, Sask. Jan. 18, 1911.  
Dear Sirs:—We purchased one of your 45-60 BHP gasoline engines last spring and must say that it has met our highest expectations, and are well satisfied with the work we find it is capable of doing. We can heartily recommend it to any one desiring to purchase an engine.  
It is a money maker and a labor saver. It makes horses laugh and grow fat.  
The Hart-Parr engine will generate as much power from a cheap grade of kerosene as from gasoline, thereby greatly reducing the expense. It will run all day practically without a stop. We used it threshing this last fall and it was a decided success. We used a 32x2 separator, but we want to use a 36x60 separator next fall, as we are sure it will handle it without over exertion. It has many advantages over the steam engine. Yours for success,  
G. H. & E. K. POTTS.

A brand new catalog—52 pages—fresh from the printer is yours for the request. It clearly describes the Hart-Parr—tells why you should own it—gives details of construction—demonstrates by illustrations and drawings the superior construction. Send for it and our other literature showing the wonderful possibilities, economy and profit in farming with a Hart-Parr Tractor.  
We make four sizes—one will surely fit your farm.

### Hart-Parr Service Follows Hart-Parr Tractors Everywhere

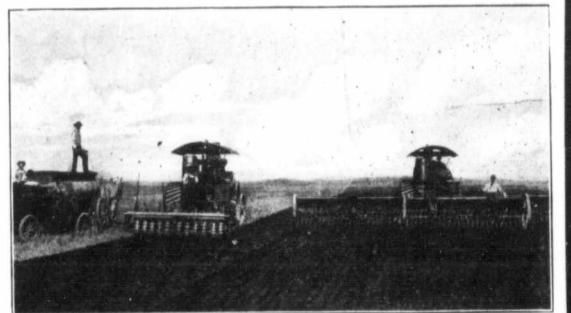
Our customers' interests come first. Our relations have just begun when you order. We are friends—practical advisers—undoubtedly because one Hart-Parr is so profitable that it sells another.  
You want supplies quick. Hart-Parr Service lays them down at your station in double-quick time. Why? Because we have complete supply stocks located at 20 central points easily reached by mail, phone or telegraph. This service is one of our greatest friendship makers. Don't buy any engine that cannot give immediate action on repair parts. Otherwise your rush season work will be held up.  
Low Priced Repairs.—You can buy all the parts—a complete Hart-Parr disassembled engine—for less than the complete assembled engine. We aim to make only a small profit on repair parts. Others consider it one of the most lucrative departments of their business. We will send list for comparison if you ask for it.

### HERE ARE OUR QUICK SERVICE CENTERS:

- |                    |                          |                     |
|--------------------|--------------------------|---------------------|
| Aberdeen, S. D.    | Calgary, Alta.           | Des Moines, Iowa.   |
| Madison, S. D.     | Portage La Prairie, Man. | Minneapolis, Minn.  |
| Denver, Colo.      | Regina, Sask.            | Los Angeles, Calif. |
| Fargo, N. D.       | Saskatoon, Sask.         | Palo Alto, Calif.   |
| Grand Forks, N. D. | Wichita, Kans.           | Idaho Falls, Idaho. |
| Lincoln, Nebr.     | Bozeman, Mont.           | Sioux City, Ia.     |
| Peoria, Ill.       | Great Falls, Mont.       |                     |



30 H. P. crushing corn stalks, double discing and drilling 10 feet wide, all at same time.



The farmer in the auto in 1909 bought two 60 H.P. Hart-Parrs. Two more were added in 1911. Comment unnecessary.



Threshermen praise the Hart-Parr for its steady power delivery giving the separator a uniform, smooth motion.

**HART-PARR CO., 30 Main Street, Portage-la-Prairie, Man. SASKATOON, SASK.**  
The Chapin Company, Calgary, Agents for Alberta

# A Leap Year Proposal



"Oh George, I'd dearly love to have a Case Automobile. It will be so useful for you in getting around. And think of the nice trips we can make and how easy it will make it for us to visit the Children. The Case is not expensive to maintain. You know Neighbor Williams drove his Case Car last year with no expense for repairs and he says it is cheaper than horses. I propose we get one."

**J.I. CASE THRESHING MACHINE COMPANY**

INCORPORATED

**RACINE, WISCONSIN, U.S.A.**

CANADIAN BRANCHES, TORONTO, WINNIPEG, REGINA & CALGARY