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The CANADIAN THRESHERMAN AND FARMER

AUGUST · 1911

CANADA'S FARM
MACHINERY MAGAZINE

WINNIPEG
CANADA



We are entering upon a new epoch in the "History of Agriculture." The Man With the Hoe" is a Thing of the Past. The Power Farmer" has taken his place. The Farm Implement has come into its own and the Farm Tractor is making Ten Blades of Grass Grow where One Grew Before.

E.H. Heath COMPANY Limited Publishers



The Motor Contest and



A John Deere Engine Gang as it was pulled by the Flour City 40 h.p. Kerosene Tractor at the Winnipeg Motor Competition, July 12-22, 1911. The above engine won the Gold Medal in the Kerosene Class

Plowing is the most spectacular as it is the most important part of a motor competition. The competition is such that no plows are entered for medals, neither do they receive any, yet the work of the engine depends in no small degree upon the plow which it pulls. It takes FUEL and water to pull an engine gang, consequently the lighter the draft per plow the less fuel and water it takes per acre plowed.

JOHN DEERE ENGINE GANGS WERE PULLED BY 10 MEDAL WINNERS OUT OF A POSSIBLE 13 IN THE WINNIPEG MOTOR CONTEST. THESE WERE DIVIDED AS FOLLOWS: 4 GOLD MEDALS, 3 SILVER MEDALS AND 3 BRONZE MEDALS.

PRACTICALLY AS MANY JOHN DEERE ENGINE GANGS WERE PULLED IN THE WINNIPEG MOTOR COMPETITION AS ALL OTHER MAKES COMBINED, there being 7 different makes of engine gangs used. There is a reason.

The 1911 contest rules stated that only ONE MAN would be allowed on a plow. Now, in a plowing competition, frequent changes in depth are necessary, but as THE PLOWS ON JOHN DEERE ENGINE GANGS ARE ATTACHED IN

PAIRS, one man was able to handle the largest gang easily and to the complete satisfaction of the engine operator. One of the principal points in the quality of plowing, as judged in the contest, was the finish at the ends, and the arrangement of JOHN DEERE plows in pairs enabled one man to make a perfectly straight headland.

The above are important items in actual field work, saving time and labor, and while it is not necessary to change the depth so frequently as in a contest IT IS NECESSARY TO RAISE THE PLOWS FOR TURNING AND WITH A JOHN DEERE ENGINE GANG ONE MAN CAN DO THIS WITHOUT STOPPING THE ENGINE; besides which fact, the ends of the land are much more regular.

Much of the land at the Winnipeg Motor Contest was covered with thick tall grass, and it was very noticeable that JOHN DEERE ENGINE GANGS DID NOT CLOG OR CHOKE. THE AVERAGE TIME LOST ON ACCOUNT OF PLOWS WAS VIRTUALLY NOTHING. This was due to the fact that the CURVED BEAMS GAVE AN ABUNDANCE OF THROAT ROOM THROUGH WHICH TRASH COULD EASILY PASS.

YOU WANT THE BEST ENGINE GANG---THAT IS A JOHN DEERE

Write us for beautifully illustrated FREE booklet

JOHN DEERE PLOW CO. LTD.

Winnipeg Regina Calgary Saskatoon Edmonton Lethbridge

John Deere Engine Gangs



An eight-bottom 14 inch John Deere Engine Gang as pulled in the Motor Contest by the Gas Traction 30 (Winner of gold medal in Class C. Gasoline Engines).

Time is an all important thing in a motor competition. The saving of a few minutes may mean the winning of first place for the engine. JOHN DEERE ENGINE GANGS ARE TIME SAVERS—another reason why they were in the majority at the WINNIPEG MOTOR COMPETITION. TIME IS MONEY TO THE FARMER IN THE FIELD: that is why JOHN DEERE ENGINE GANGS ARE IN SUCH GENERAL USE AMONG ENGINE OWNERS.

The ADVANTAGES OF THE SCREW CLEVIS on John Deere Engine Gangs were fully brought out in this great test. The purpose of this little device is to give the plows the fine adjustment often needed. It is not necessary to stop the engine to do this: a turn or two with an ordinary wrench while the outfit is working throws the beam point of the plow needing adjustment up or down as required, giving it the best position to get needed results.

Some of the engines entered in the competition did con-

siderable plowing on ground adjoining the plowing field before the real test actually began. It is necessary in a test of this kind that all shares be absolutely sharp, and the double test made demonstrated in the most impressive manner the convenience and time saving qualities of JOHN DEERE QUICK DETACHABLE SHARES. It took but a few minutes to change a share, where as with the old style of bolted share the task is a long and tedious one.

JOHN DEERE ENGINE GANGS are built for engine work. You can hitch them to any style of tractor close up to the engine and maintain the line of draft.

THE FRAME HAS A BRIDGE-LIKE STEEL CONSTRUCTION, very light in proportion to its strength, and is devoid of all cumbersome and unnecessary castings.

REMEMBER THE FACT THAT PRACTICALLY AS MANY JOHN DEERE ENGINE GANGS WERE USED IN THE RECENT MOTOR COMPETITION AS ALL OTHER MAKES COMBINED.

YOU WANT THE BEST ENGINE GANG---THAT IS A JOHN DEERE

Write us for beautifully illustrated FREE booklet

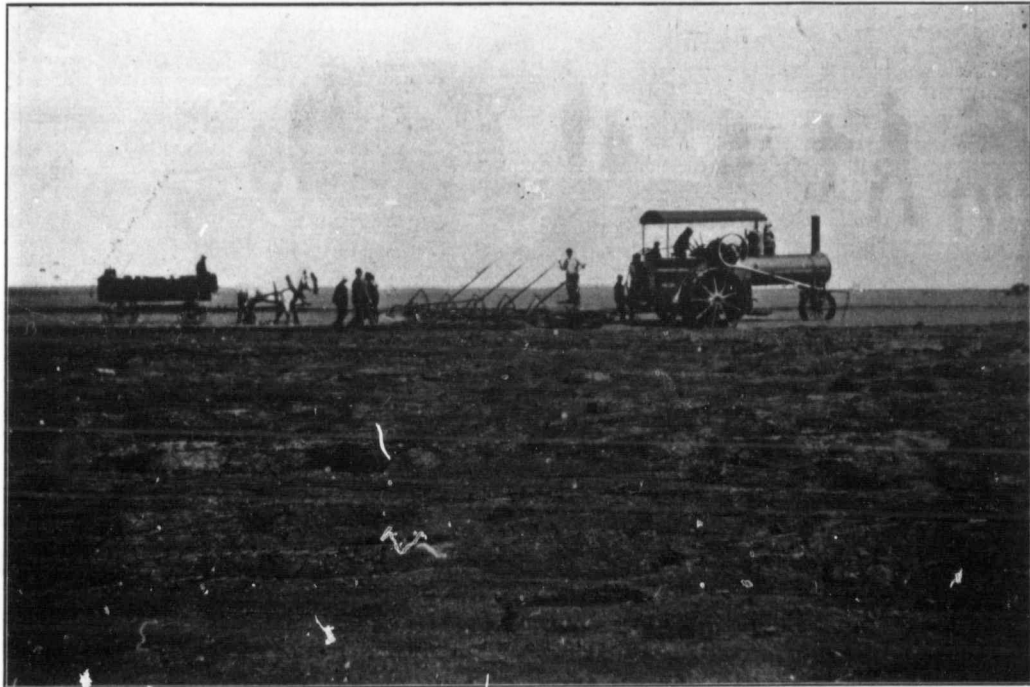
JOHN DEERE PLOW CO. LTD.

Winnipeg Regina Calgary Saskatoon Edmonton Lethbridge

John Deere Engine Gangs

WERE PULLED BY

10 Medal Winners out of a Possible 13 in the Motor Contest



The American-Abell 28 h.p. Steam Engine (Gold Medal Winner, Class F.) doing a nice piece of work with a John Deere Engine Gang

Winner of Gold Medal (Class B Gasoline Engines) pulled a 4-bottom John Deere Engine Gang
Winner of Gold Medal (Class C Gasoline Engines) pulled an 8-bottom John Deere Engine Gang
Winner of Gold Medal (Class D Kerosene Engines) pulled an 8-bottom John Deere Engine Gang
Winner of Gold Medal (Class F Steam Engines) pulled an 8-bottom John Deere Engine Gang
Winner of Silver Medal (Class C Gasoline Engines) pulled an 8-bottom John Deere Engine Gang
Winner of Silver Medal (Class D Kerosene Engines) pulled a 6-bottom John Deere Engine Gang
Winner of Silver Medal (Class G Steam Engines) pulled an 8-bottom John Deere Engine Gang
Winner of Bronze Medal (Class C Gasoline Engines) pulled a 6-bottom John Deere Engine Gang
Winner of Bronze Medal (Class D Kerosene Engines) pulled an 8-bottom John Deere Engine Gang
Winner of Bronze Medal (Class G Steam Engines) pulled an 8-bottom John Deere Engine Gang

That John Deere Engine Gangs are superior to other makes, for traction plowing is backed up by the fact that a number of our plows have been sold as a direct result of the competition. Some of the plows used in the contest were sold before they even left the plowing field.

The Farmers who come to a Motor Contest come to watch Plows as well as Engines.

THAT IS WHY THEY BOUGHT JOHN DEERE ENGINE GANGS

They saw them at work, and were satisfied with the results—results obtained under the most trying circumstances. You Want the Best Engine Gang — that is a JOHN DEERE.

JOHN DEERE PLOW COMPANY, LTD.

Winnipeg

Regina

Calgary

Saskatoon

Edmonton

Lethbridge

Light Draft John Deere Gang Plow

HOW TO SELECT A PLOW. THE RULE OF FOUR.

Plow quality does not improve with age.

An inferior plow does poorer work, is harder to pull, and costs more for repairs every year it is in use.

Because certain things about a plow cannot be changed for the better **after** you buy it, care and study **before** buying, is important.

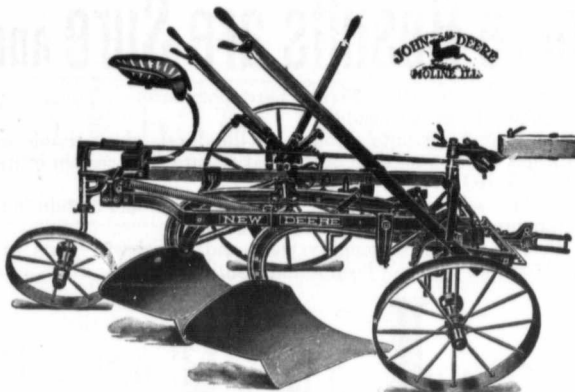
Judging the real worth of a plow is not difficult if four things are kept in mind.

First—Quality of work.

Second—Ease of management.

Third—Lightness of draft.

Fourth—Strength and durability.



WHY THESE FOUR QUALITIES ARE THE TEST.

First—Nothing takes the place of good work. Unless a plow does perfect work you cannot afford to own it, no matter what the price.

Second—Have regard for your own comfort—that pays. Get a plow that is easy to ride, and that can be operated with little effort on your part.

Third—Never work horses harder than necessary. Horseflesh and horsefeed cost money. An extra one-eighth horse-power added to the draft will cost you the price of a plow—very soon.

Fourth—Repairs are expensive a good plow lasts longer than a poor one.

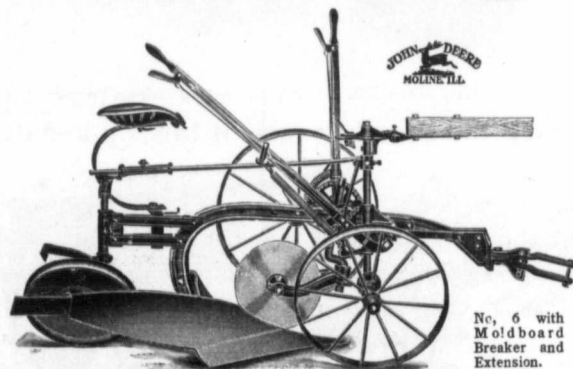
The Light Draft New Deere—Why it Pulls Easy

Consider five things when judging the draft of a plow. **First**—the shape of the bottom. **Second**—Material out of which it is made. **Third**—Equal weight on all the wheels. **Fourth**—Proper adjustments. **Fifth**—Staunchness of the plow.

WRITE FOR LITERATURE, PRICES AND TERMS.

John Deere Stag No. 6

Strongest
Sulky
Plow
Ever
Made



Built
Especially
for
Canadian
Farmers

No. 6 with
Moldboard
Breaker and
Extension.

GOOD FOR ANY KIND OF PLOWING

Canada has considerable soil that is unusually difficult to work. It requires a plow of exceptional strength. If you have such a soil, you need a John Deere Stag No. 6 because it will stand up under the severe strain. You can hitch all the horses necessary to do any kind of plowing to a Stag No. 6 with perfect assurance that it will stay by you.

All brackets, clevis jaws, braces, etc., are hot-riveted to beam so they will not work loose.

Beam is the same size and strength as used on an engine plow.

Other parts are correspondingly strong.

In fact, the Stag No. 6 is the strongest sulky plow to be had.

If you don't have difficult plowing to do, the Stag No. 6 is a good plow to buy anyway, because it will last much longer than any ordinary sulky. It is light in draft, too. No plow pulls easier or does better work.

Ask Your John Deere Dealer for a Stag No. 6, Circular Free on Request.

JOHN DEERE PLOW COMPANY, LTD.

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Get Your Dollars Working—Invest Your Money Where Results are Sure and Certain

75 years have we been building and selling Steam Threshing Outfits. To-day we have the largest and best equipped Threshing Machine Plant in Canada.

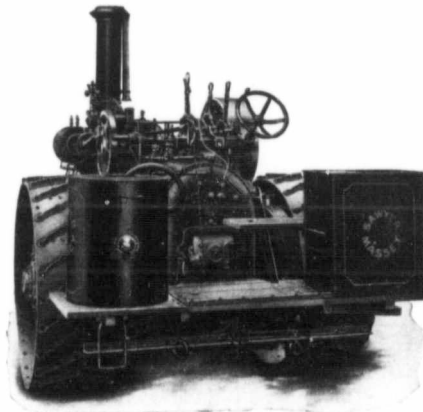
We have Branches and Shipping Points throughout the West which enable us to give quick and careful attention to all your needs. You need an outfit that is sure and certain in its work. All we need to say is "ASK THE MAN WHO OWNS ONE."

You want an outfit that has behind it a factory that is also sure and certain in its work—one glance at our Engines and Separators proves the efficiency of our Factory.

You want an outfit that has been thoroughly tried and tested—75 years in business proves that Sawyer-Massey Threshing Machines have not been found wanting.

Large and
Handy
Water Tanks

Safety Chains
Used Instead
of Rub-Irons
on Boiler

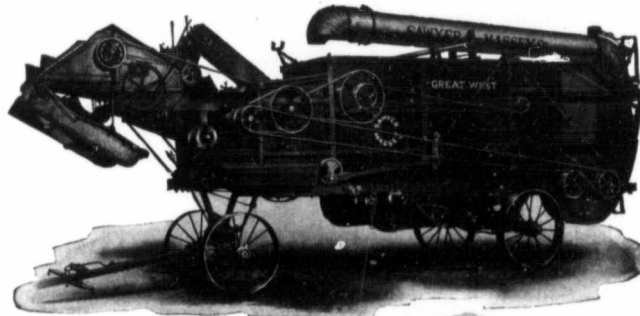


Steering Wheel
and
All Levers
Convenient
and Handy
to
Operator

Built in Five Sizes—22, 25, 27, 30 and 32 Horse Power

Make Yourself the Proud Owner of this Up-to-date Outfit

Strong,
Well Braced
Front Axle.
Swings Clear
Round.
No Reach to
Break.
Pole Doubly
Braced.
Can't Pull Out.



Adjustable End
Shake Shoe.
Throw of Decks
Adjustable.
Wheels Have
Sufficiently
Wide Tires
with
Strong Spokes
and Axles.

"GREAT WEST," Built in Seven Sizes

You Gasoline Engine Owners should know more about our Separators. Besides the "Great West," we have two other lines, the "Daisy" and the "Eclipse."

Write us for particulars—our machines and our propositions will prove interesting to you

SAWYER-MASSEY CO.

Winnipeg, Man.

LIMITED

The Largest Engine, Thresher and Road Machinery Manufacturers in Canada

A MAGAZINE FOR THE FARM AND HOME

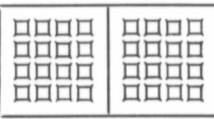


THE CANADIAN THRESHERMAN AND FARMER

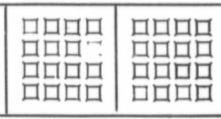
Vol. XVI.

WINNIPEG, CANADA, AUGUST, 1911.

No. 8.



The 1911 Motor Competition



The traction engine game is the biggest single game in Western Canada. It is next in importance in the country's development only to the opening of the first transcontinental railway. When we stop and consider that between the first of January and the first of July of this year practically four million two hundred thousand dollar's worth of traction engines have been sold and delivered in Western Canada, we can see that the game demands attention. This represents practically twelve hundred engines and at an average of twenty-five horse power each, it means a horse power equivalent to thirty thousand horses.

Let Western Canada start out and attempt to gather this many horses together and it will be found impossible to comb the North American Continent fine enough to get them.

Each of these engines will average when working fifteen acres per day or eighteen thousand acres per day and at an average of eighteen bushels of wheat per acre it means three hundred thousand bushels of wheat that this army of engines is preparing for each day, or about ten bushels per horse power.

We have, however, only just started on this game. We can

only see the Alpha of it. The Omega is beyond the comprehension of any men alive to-day. All honor to the men that have given us of their time and money and brains and produced machinery that will aid in the development of this great West.

enough to lend a helping hand towards the development of this great game.

The fourth annual Motor Competition held under the auspices of the Winnipeg Industrial Exhibition Association or what is now known as the Can-

fact, it has outgrown the equipment provided for it.

With all due courtesy to the organization under whose auspices it was held, it must needs be said that there is much to be desired and much more to be required in the way of equipment



The Judges in the Motor Competition Figuring Out the Results.
 Prof. C. H. Gilmore. Prof. C. I. Guinness. Prof. A. I. Greig. Prof. H. H. Musselman. Prof. L. J. Smith. Prof. J. B. Davidson

Their names must needs go down in history as having contributed towards the construction of the "world's bread basket" and emblazoned thereon will be the word "Winnipeg" and "The Canadian Industrial Exhibition Association" as having foresight

adrian Industrial Exhibition Association has passed into history and is now a matter of record. Transplanted from the mother country, a small flower in its infancy, it has grown and developed into an institution that eclipses the parent plant. As a matter of

for the handling of such an affair. The manufacturer has come to recognize in the Winnipeg Motor Contest a place to which he can bring his machinery and compare it on the same basis and under the same conditions with that of his competitors and secure therefrom data with which to load up his sales organization for the ensuing year. Such being the case it is absolutely necessary that the equipment be of the best and of such a character that the finest and closest results can be brought out.

The equipment that has been used in the past has been such as was borrowed from the various colleges or from the manufacturers. It was all right in its way; yet it did not savor of a permanent thing and while there is no fault what so ever to find with the results nevertheless, it would seem to us that a great deal more satisfaction could be derived from the contest if a permanent, complete and up-to-date

equipment were provided. The 1911 competition was supposed to have opened on July 5th and the majority of the manufacturers had their engines and men on the ground in readiness

any very large sum of money, but when it comes to the City of Winnipeg, it is an entirely different proposition.

During the 1911 competition, there was spent as a direct re-

two weeks the eyes of the traction engine world are centered upon Winnipeg and for months afterward there radiates from Winnipeg as a result of the Motor Competition data and in-

formation that goes to every civilized country. If you were to visit the agricultural departments of the various foreign countries to-day and mention Winnipeg you would undoubtedly have the Motor Contest brought to your attention.

of permanency in regard to the Motor Competition. As we have stated before, this is no reflection upon the Canadian Industrial Exhibition Association. They have done their work and done it well, but more is required. To Winnipeg will come the results and upon the shoulders of Winnipeg rests the duty of putting forth the effort.

Now what is required. In the first place a building should be provided, permanent, substantial and properly equipped with suitable testing apparatus. This building and equipment would cost in the neighborhood of \$9,000. A great deal of this money, however, in fact, considerable more than half of it, would be expended for testing instruments and these would last a (life time). In addition to this it would require a fund of about five thousand dollars per year to carry the thing on properly and if the City of Winnipeg ever found a good pace to spend five thousand a year they have got it right in the Motor Competition. As an advertisement to the city it is unequalled. As a direct result bringer in dollars and cents, it is without parallel. It is up to the City of Winnipeg to get busy.

Winnipeg is becoming known as the Motor Contest City of the

to enter into the test upon that date. The men that the manufacturers provide to look after their various engines in the test are among the highest paid in their whole organization and a day's salary means a great deal. It is fair to assume that it costs their manufacturers on an average of one thousand dollars per day to maintain their men and equipment for the purpose of entering the Winnipeg Motor Competition, and, to say the least, it is disheartening for these same manufacturers to have to sit idle and wait for equipment to be put into place.

This is no reflection upon the judges. It is no reflection upon the organization under whose auspices it was held. It is simply an indication of the fact that more is required and that more must be provided. The contests that were held in 1908, 1909 and 1910 enjoyed a stretch of very favorable weather, especially during the brake tests, but it fell to the lot of the 1911 competition to undergo a stretch of weather such as only Manitoba can at times provide. It was cold, it was rainy, it was windy and as there was absolutely no protection from the weather, it made the contestants feel anything but good.

Now what can be done. If we might be pardoned for making a suggestion, we would like to state that viewed from the standpoint of actual benefits the Motor Competition is a thing to be fathered by the City of Winnipeg rather than by any organization therein. There is no better time to hold such a competition than during the Winnipeg Fair. At such a time the various manufacturers bring their machinery to Winnipeg for exhibition purposes, and the fair itself draws crowds that it would be hardly possible to get here at any other time. However, as a crowd-drawing attraction, we do not believe that the Motor Competition would warrant the Exhibition Association spending

sult of the Motor Contest between thirty and forty thousand dollars that would not have been spent otherwise. There was brought to the City of Winnipeg the heads of manufacturing concerns whose capitalization would represent between eighteen and twenty millions of dollars. It is fair to assume that if such a



The Gas Tractor Kerosene Tractor pulling a 6-bottom John Deere Engine Gang (Silver Medal Winner Kerosene Class).

competition were not being held that these men would not come here, but coming here they cannot help but be impressed with Winnipeg's possibilities as a trade center and as result they go home and concentrate more of their energies on the Canadian West.

But let us go further. Every engine that is sold in Western Canada means the turning over of more land, the raising of more wheat and an increase in the buying power of more farmers. It matters not whether these farmers live at Sintaluta, at Lloydminster, at Virden, at Dauphin, or any other place in the West. They buy from their local merchant or dealer, who, in turn, must buy from the Winnipeg wholesale house, and as a result, Winnipeg takes its share of the toll.

The Motor Competition is only one factor in this traction engine game, but it is one of the biggest factors at the present time. For

world. The city of New Orleans establish herself as the world's cotton port. The city of Detroit, Mich., spent hundreds of thousands of dollars to establish herself as the convention city. It is now Winnipeg's turn to do something towards fixing herself in a position

That the Motor Competition is recognized as an important event by the manufacturers of traction engines and engine plows is evidenced by the fact that so many of the heads of firms and their principal representatives attended. The time of these men is worth money and they are not here for fun. Following the competition closely were to be seen the following people and their various concerns:—

Aultman & Taylor Machinery Co.: Mr. J. E. Brown, Mr. Geo. W. Seaman, Mr. F. W. Galland.

M. Rumely Co.: Mr. I. W. Ellis, Mr. U. B. Rumely, Mr. B. G. Baker, Mr. J. Brunnimer, Mr. A. C. Berghoff.

Parlin & Orendorff Plow Co.: Mr. U. G. Orendorff. Nichols & Shepard Co.: Mr. A. C. Hawthorne.

Kinnard-Haines Co.: Mr. O. B. Kinnard, Mr. Chester Kinnard. Goold, Shapley & Muir: Mr. J. W. Muir.



The I H C 45 h.p. Gas Tractor pulling a 10-bottom P. and O. Plow.

Gas Traction Co.: Mr. Fred Glover, Mr. C. C. McConville, Mr. M. McCurdy.
 American Abell Engine and Thresher Co.: Mr. F. E. Kenaston, Mr. S. O. Bush, Mr. A. Cox.
 Avery Co.: Mr. J. B. Bartholomew, Mr. W. J. Brandon.
 Advance Thresher Co.: Mr. J. D. Junkins.
 Gaar-Scott & Co.: Mr. S. S. Strattan, Mr. Frank Lamb.
 International Harvester Co.: Mr. Harold McCormick, Mr. W. A. Cavanaugh, Mr. J. L. Martin, Mr. J. F. Jones.
 Oliver Plow Co.: Mr. James Oliver.
 Reeves & Co. Mr. H. C. Clay.
 Sawyer, Massey & Co.: Mr. Robert Harmer.
 Verity Plow Co.: Mr. George Verity.

J. I. Case Threshing Machine Co.: Mr. W. F. McGregor, Mr. D. T. Davies, Mr. J. Witmer, Mr. O. B. Farney.
 Buffalo-Pitts Co.: Mr. J. F. Wagner, Mr. O. F. Lundquist.
 Canadian-American Gas & Gasoline Engine Co.: Mr. D. McCrae.

The above represent's either heads of firms, designers or men well up in their respective companies. In addition, it drew to the contest field official representatives from such firms as Rustin & Proctor, Clayton & Shuttleworth, Robey & Sons, Ransom, Sims & Jefferies, to say nothing about a large number of men from the other side of the line who own large tracts of land and who are interested in the traction engine for traction cultivation purposes.

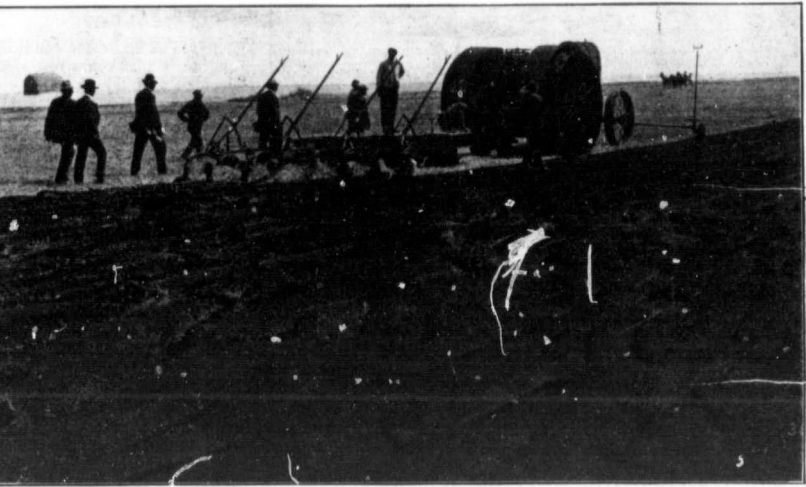
The original entry list for the 1911 Motor Competition included thirty-five engines, made up as follows:

STEAM CLASS.

J. I. Case Threshing Machine Co.	3
American-Abell Engine & Thresher Co.	1
Avery Company	1
Gaar-Scott & Co.	1
Sawyer, Massey & Co.	2

GASOLINE CLASS.

International Harvester Co.	4
Kinnard-Haines Co.	1
M. Rumely Co.	1
Canadian-American Gas & Gasoline Engine Co.	1



The Gas Tractor "Big 4 30" pulling 8 John Deere bottoms (Gold Medal Winner Class C).

Avery Company	1
American-Abell Engine & Thresher Co.	1
Sawyer-Massey & Co.	1
Goold, Shapley & Muir	2
Gas Traction Co.	1
Aultman & Taylor Machinery Co.	1
Buffalo-Pitts Co.	1

J. I. Case Threshing Machine Co.	1
Kinnard-Haines Co.	1

All of the above entered the tests with the exception of those belonging to the J. I. Case Threshing Machine Co. and the engine of the Canadian-American Gas & Gasoline Engine Co., the latter being delayed in transportation.

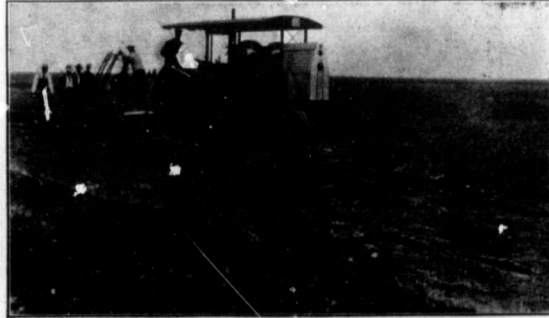


The Avery Tractor doing "hings. A 3-furrow P. and O. Gang turning the Sod.

J. I. Case Threshing Machine Co.	1
Gaar Scott & Co.	1

KEROSENE CLASS.

International Harvester Co.	4
M. Rumely Co.	2
Gas Traction Co.	1



I H C 25 h.p. Gasoline Tractor pulling a 5-bottom Oliver Engine Gang.

The lead is the number of pounds of pull upon the rope caused by the friction upon the rapidly revolving drums. The apparatus is so arranged that the pull is downward and this pull is pressed upon a platform scales. The distance is the circumference of the center of the rope and the time is the number of revolutions per minute. Therefore the load multiplied by the circumference in feet and the number of revolutions per minute and divided by thirty-three thousand gives the horse power.

It would be possible to apply a similar apparatus to the cylinder pulley of a separator and measure at all times just the horse power that is required to drive the machine.

In the table as prepared by the judges a unit of fuel is mentioned. The unit of fuel in each case is seven pounds of gasoline, seven and nine-tenths pounds of kerosene (in each case an Imperial gallon), and one hundred pounds of coal. Therefore, the expression, the number of horse power hours per unit of fuel means the amount of horse power that can be delivered for one hour of time on either one of the above units of fuel, as the engine is either gasoline, kerosene or steam.

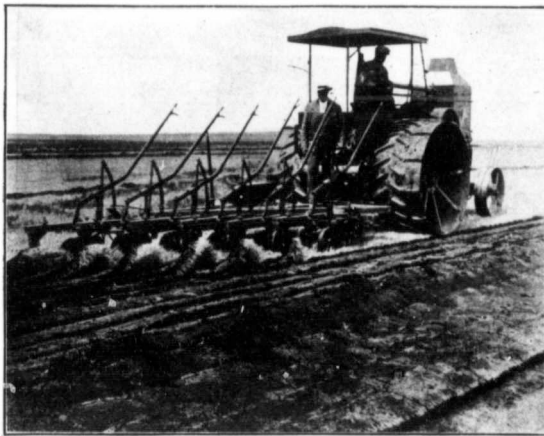
The brake tests are provided for two reasons. First, to determine the most economical load that the engine can carry, or in other words, the biggest load it can carry on the smallest possible amount of fuel and water. Also to determine the highest load it can carry or the biggest load it can pull in the belt.

In the second place, the brake test is to determine the relation between the belt power and the draw-bar horse power of an engine, and as traction engines today are used as much for one as for the other, it is necessary that they be as nearly balanced as possible.

In making the awards the following points were used:—

The brake tests began on July 7th. One of the brakes used was the same as has gone through the 1908, 1909 and 1910 competitions and the other brake which was of the same construction, belonged to the University of Saskatchewan.

The brake tests to the uninitiated are the least spectacular and require the most explanation. If you will but imagine the brake a separator you have solved the problem the only difference being that an apparatus is provided whereby the exact load of the engine can be measured in horse power. This load is secured by means of a rope friction. The process by which it is determined is very simple. A great many years ago it was decided that one horse power was the power required to raise thirty-three thousand pounds one foot in one minute and in measuring the horse power on the brakes you have three things to contend with — time, distance and the



The Rumely 15-30 Kerosene Tractor and a Rumely 6-bottom Engine Gang.

BRAKE TEST (150).

	Internal Combustion Engines	Steam Engines
Horse power hours per unit of fuel used	100	100
Water used per hour, gals. per cent. of capacity	15	10
Efficiency, as taken from mean effective pressure	15	10
Steadiness of running, vibration, condition of engine	20	10
Horse power hours per 100 gals of water		20
	150	150

MAXIMUM TEST (50)

Economical load compared with maximum	20	20
Condition of engine	30	30
	50	50

PLOWING TEST (200)

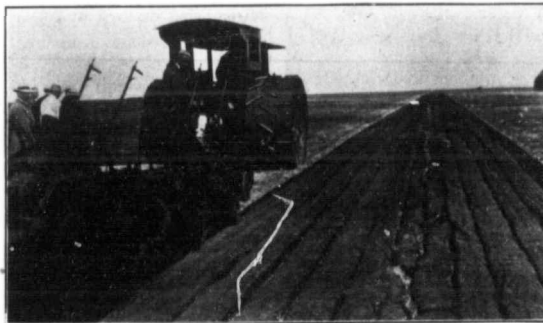
Fuel used per draw bar horse power hour	100	100
Water used per drawbar horse power hour	20	20
Acres plowed per hour per brake horse power	20	20
Quality of plowing..	20	20
Distance travelled without replenishing fuel	15	15
Condition of engine, stops, etc.	25	25
	200	200

DESIGN AND CONSTRUCTION (100).

Protection of working parts	20	20
Accessibility	20	20
Variation of speed..	20	20
Easy manipulation..	20	20
Design, materials of construction	20	20
	100	100

Prior to the opening of the competition, the judges held several meetings and decided upon the following scoring rules:

(a) Scoring for horse power hours per unit of fuel used shall be on the basis of 100 per cent. of full score to best record for each kind of fuel, and all other records rated proportionately.



The I H C 45 h.p. Kerosene Tractor pulling an Oliver Engine Gang. Can You Beat the Furrow.

(b) Scoring for water used per hour gal. of capacity substantially on the basis cited above.

(c) Scoring for efficiency as taken from the mean effective pressure shall be as follows:

The M.E.P. shall be calculated from the B.H.P. developed in brake test; the highest record so secured shall be scored 100 per cent. or full score, and all other records scored proportionately.

(d) Horse power hours per 100 gal. water same as (a).

(e) It is understood that the maximum tests shall represent the maximum continuous power output without change of speed and shall be determined by the judges.

(f) The scoring of economical load compared with maximum shall be as follows:

H.P. per 100 cu. in. of piston displacement	12
Maximum test in excess of economy test	5
Fuel consumption	3

Total for both int. comb. and steam

(g) The score for condition of engine in maximum test shall be decided as follows:

Steadiness of running	2
Vibration	3
Loose parts	10
Bearings	10
Cleanliness and excessive lubrication	5

Total for both int. comb. and steam

The 20 points allotted to the three features for two-hour brake test were distributed as follows:

	Internal Combustion	Steam
Steadiness of running	10	5
Vibration	5	2½
Condition of engine..	5	2½

All of the brake tests were finished by Saturday, July 15th, and on Monday the various engines repaired to the plowing grounds which were about seven miles north of the city and made ready for their plowing stunts, and here was where the trouble began.

The previous three contests that have been held enjoyed a very favorable plowing field. The field last year was im-

arrived on the plowing field all right and some others mired before they got there. As one competitor expressed it, the field was composed of an India rubber surface with a very thin bottomless pudding underneath. Once an engine went through the top surface it went down and in some cases it went down to stay for a considerable time. It was learned after the competition was over that the field had been secured from a real estate firm in Winnipeg by the name of Dangerfield & Doolittle, and, while no pun was intended, the names of the owners explained to a considerable extent.

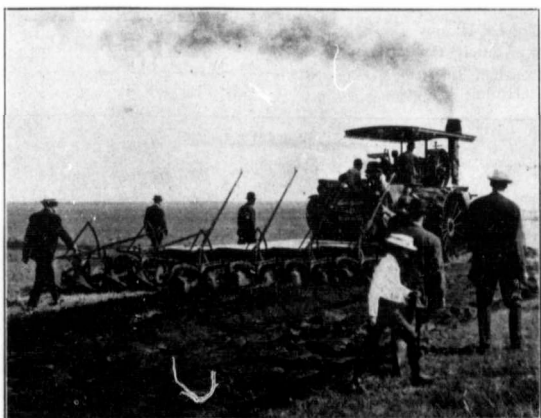
Practically every engine gang on the market was represented in the Winnipeg Motor Competition, the well known makes of Cockshutt, Deere, P. & O. Moline and Rumely and Oliver being very much in evidence.

In these plowing competitions the plowmen get rather the worst of the deal. It would not be possible to hold such a competition without the use of engine gangs, and yet no points are provided whereby the manufacturer gets anything whatsoever out of it. The heads of the various plow manufacturers, however, were very much in evidence which would indicate that they rather enjoy the game.

It is needless to say that all the plows did good work. Some pulled heavier than others as is shown by the draw-bar pull. Yet in all the competitions that have been held we have never seen as nicely turned furrows as that which the 1911 competition produced, despite the fact that the condition of the plowing field itself was not conducive to the best results.

Deere, P.&O. and Oliver were in the majority and the Cockshutt would have been well up in the list if the J. I. Case Company had not withdrawn from the competition as they were to have pulled Cockshutt plows.

The 1911 plowing fields, however, showed up one thing that none of the other competition fields have. It showed up the engines working under conditions that are often met with upon the



The Gaar-Scott 33 h.p. Steam Tractor pulling an 8 bottom John Deere Engine Gang (Bronze Medal Winner in Steam Class).

farm. There is no farmer who owns a traction engine but what at some time or other or at some place on his farm encounters soft spots and these soft spots gauge the load. A comparison of fuel consumptions for work done in 1910 and 1911 will show that the fuel consumption in 1911 was considerably higher and yet so far as the brake tests go, it shows that there has been a considerable advancement made in fuel economy in so far as the engines themselves are concerned. It takes power, however, to move an engine over soft ground and it takes fuel to produce power.

The 1911 plowing field also furnished an opportunity for a very close study of different types of wheels and a great many lessons were learned by the manufacturers themselves.

For a more detailed explanation of the Plowing Contest see the table.

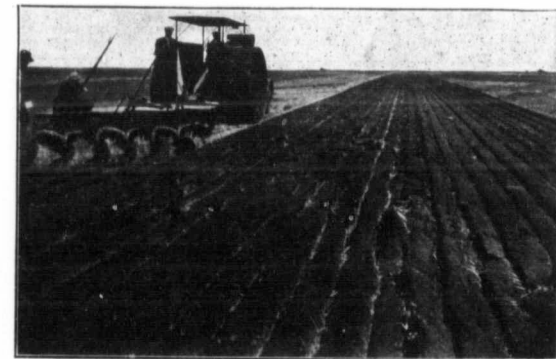
What does the Motor Contest mean viewed from the standpoint of the farmer? This question has given rise to a great deal of speculation and the farmer is very apt to say that an engine in the hands of an expert operator is not an engine in the hands of the average farmer. True. A horse on the race track in the hands of a skilled driver will develop speed that he will not develop in the hands of the average man. Yet the speed is in that horse and we recognize his proficiency in what he produces. The engines as they go through the competition are worked for all that there is in them and standards are made which the average farmer may not reach but which he can always approach. It brings home to him a great many things that he might not otherwise think of. Take for example the matter of fuel economy. The average farmer buys an engine. He pours or shovels fuel into it regardless of how much he uses. All this fuel costs money and it is just as essential to save money on this end of the game as it is to save it on the first purchase price of the engine, in fact, more so. It gives him a comparison between steam and oil engines as regards fuel consumption. It shows up the difference between gasoline and kerosene fuel consumption

under the same conditions. It gives him an approximate idea of the number of plows that he can reasonably expect to pull and regardless of what any traction engine salesman may tell you, as a farmer, about the load that his particular engine will draw in the plowing field, just look up the figures on the Winnipeg Motor Competition and see how many plows they pull.

It is true that the plowing field in 1911 was not an average field. If anything it was unusually soft. But what farm is there upon which there are not several soft spots and these soft spots gauge the load.

Power farming is a business. It requires the expenditure of a large amount of money in order to secure an equipment, and if the farmer who purchases such equipment is going to make the most out of it, he must of necessity give attention to the smallest detail.

Would it not be a good proposition for you as a power farmer when working your engine to take note of such things as fuel consumption per acre plowed or per one thousand bushels



The Flour City 30 pulling a 6-bottom John Deere Engine Gang (Bronze Medal Winner Class B).

threshed. You know what your gasoline, kerosene or coal costs you and you know what you are getting out of the work you do. Get into the habit of keeping data sheets. It is not presumed that you will go into the matter to anything like the same extent that the judges go into it, but it will pay you to go into it a little more carefully than you do.



The Gould Shapley & Muir 30-45 Gas Tractor and a 6-bottom Cockshutt Engine Gang.

There is one thing from your standpoint, however, that a motor competition does not and never can bring out, which is the durability of the engine. This is a matter that can only be determined by long service in the field. Motor contest engines have no repair bills because it is not possible to work them long enough so that any appreciable

wear and tear is noticed, but you as a farmer can handle these repair bills, and in doing so, can work out data for your own satisfaction that no motor competition can ever work out.

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wear and tear is noticed, but you as a farmer can handle these repair bills, and in doing so, can work out data for your own satisfaction that no motor competition can ever work out.

It is up to you as a farmer to study the results as given in the judges' tables carefully. Practically all of the data with the exception of the points on the design and construction, are worked out from the actual records of the engine. The points on design and construction are, of course the judges' opinions, and these opinions can only be verified by the actual workings of the engines in the field over a considerable period of time.

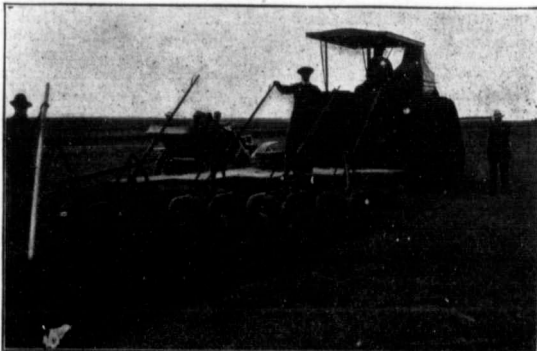
The motor competition means much to you as a farmer. It means better constructed engines. It means more economical engines. It means engines of a more uniform type which will give you more standard results.

In going over the tables as submitted by the judges, there is doubtless a mass of information that is hard for the average farmer to digest; consequently a little explanation may not be out of place. Let us begin with the Two Hour Economy Brake Test and take the headings in their regular order.

Total Time Running. This means the total time in which the engine was on the test.

Average Horse Power Developed means the average of the different horse powers developed by the engine during the entire time of the test. At certain times it runs above and at other times below a certain mark.

Fuel Used in Pounds means the total amount of fuel used during the entire time of the test. In the



The Rumely 30 h.p. "Oil Pull" Tractor marking its start in the Plowing Test with 8 John Deere bottoms (Winner bronze Medal Kerosene Class).

It is the desire and the business of every manufacturer to turn out just as good an engine as is possible and there is nothing like the motor competition to enable him to strengthen weak parts. As one manufacturer was heard to remark, who has been in the motor competition ever since it has started, "I wish that I did



Sawyer and Massey's New Gas Tractor pulling a 6-bottom Verity Plow and doing a Most Excellent Job.

case of gasoline to reduce this amount to gallons divide it by seven and in the case of kerosene by seven and nine-tenths.

Percentage of Fuel Capacity Used Per Hour. The fuel capacity in this case means the capacity of the carrying tank of the engine.

Horse Power Hours Per Unit of Fuel. The term Horse Power Hours means the amount of horse power developed per hour and the Unit of Fuel means in every case either seven pounds of gasoline, seven and nine-tenths pounds of kerosene or one hundred pounds of coal.

Cost of Fuel Per Horse Power Hour. This simply means taking the number of horse power hours and dividing it into the total cost of the fuel.

In the Maximum Test the terms are practically the same.

In the plowing test most of the headings are clear. Some, however, may need explanation.

The Average Draw Bar Pull means the average pull shown on the dynamometer, this being an instrument with a clock-work arrangement for recording the pull at all times upon a suitable chart.

The Average Draw Bar Horse Power means the average horse power delivered at the draw bar during the test. At times the horse power delivered may have run considerably above the horse power as stated. At other times it ran below, but only the average is taken.

Draw Bar Horse Power per Unit of Fuel signifies the amount of horse power delivered at the draw bar per seven pounds of gasoline, seven and nine-tenths pounds of kerosene and one hundred pounds of coal, as the case may be.

The Average Draw Bar Pull Per Fourteen Inch Plow means the average draw bar pull divided by the number of fourteen inch plows pulled.

Possible Miles Travelled Without Replenishing Fuel is determined from the distance travelled in proportion to the fuel carrying capacity of the engine.

Possible Acres Plowed Without Replenishing Fuel is determined in the same way.

The Cost of Fuel per acre plowed is determined from the total number of acres plowed and the total amount of fuel used, reckoning gasoline at 20c. per gallon, kerosene 12c. per gallon and coal \$8.50 per ton.

fourteen inch plow that the same make of plows did not have the same draw bar pull with two engines, showing that conditions vary.

An attempt was made to maintain an average depth of three and one-half inches, but this again was impossible on account of the frequent adjustments required.



I.H.C. 25 H. P. Gasoline Engine pulling a P. and O. Plow (Winner of Silver Medal Class C)

The tables themselves may in some cases be misleading. In the Break Tests the conditions under which the engines worked were practically the same, the only exception being a case where an engine was obliged to run in a rain storm with wet belts, which would naturally tend to reduce the power delivered to a certain extent. The fact that the tests were run on different days under different atmospheric conditions would also make a slight difference in the case of the internal combustion engines.

When it comes to the plowing field, however, the conditions are bound to vary. One engine may have a piece of land that is comparatively even and with few soft spots. Another engine may run into some soft places that would considerably increase its fuel consumption in proportion to the land plowed. It would be an impossibility to secure a plowing field where conditions were exactly the same from one end to the other.

It will be noticed in the case of the average draw bar pull per

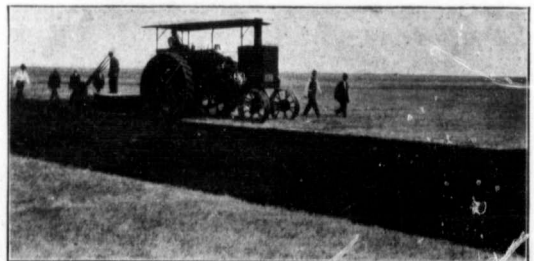
ever produced. That is to say, the average pull per plow.

Again, the fact must not be lost sight of that the Motor Competitions have always been held in sod and no data has ever been worked out for stubble plowing. It would be interesting to see this done and and to make a comparison between the two.

We cannot pass over a report of the Motor Competition without at least saying a few words regarding the men who operate the engines. These men as a rule receive very little credit for the work done yet at the same time much depends upon their skill and the conscientious support which they render their various companies. Working early and late sometimes going for twelve or fourteen hours with scarcely anything to eat, dust and grease begrimed, they are men upon whose shoulders devolves a large share of the load. They know their engines and they know how to get every ounce of power out of them; yet a little carelessness on their part might shift a gold medal winner out of place. They are the men who stand in the place of the farmer in the field. They are the men for the farmer to watch and from whom the farmer can learn a great deal regarding the operation of a traction engine.

We also cannot finish a discussion of the 1911 Motor Competition without saying something about the judges. The engineers in charge were Prof. A. R. Grieg, of the University of Saskatchewan and Prof. L. J. Smith, of the Manitoba Agricultural College. These men were assisted by Prof. C. I. Gunness, of the North Dakota Agricultural College; Prof. J. B. Davidson, of the Ames Agricultural College, Ames, Iowa; Prof. H. H. Musselman, of the Michigan Agricultural College, Lansing, Mich.; and D. O. Barrett, expert on gasoline engineering. In addition to these men, numerous observers were employed.

It is needless to say that the judges worked hard. It is quite a task to handle a motor competition of the size of that held at Winnipeg this year and give everybody a fair show. There is a mass of data to be collected and an endless amount of mathematical calculation. It is hard, trying work and withal wearing on the nerves. Yet of all the competitions that have been held, we have never heard of as little dissatisfaction after the compe-



The Aultman and Taylor Gas Tractor, pulling a 6-bottom John Deere Plow (Silver Medal Winner Class C).

tion was over as after the 1911 contest. The judges themselves are entitled to a large amount of consideration, considering the fact that the work is done without pay and is carried on largely for the love of the game.

The competition was finished on the evening of the twentieth with the exception of two of the steam engines which finished up on the twenty-first. The judges had been at work throughout the entire competition tabulating the figures and getting the results into shape, but it was not until late all night of the twenty-second that the final figures were arrived at, when it was found that the following were the winners in their respective classes:

INTERNAL COMBUSTION ENGINES.

Gasoline Classes.

Class A:

I. H. C.—15 horse power. There was only one entry in this class; consequently no medal was awarded.

Class B:

Kinnard-Haines—20-30, gold medal.
I. H. C.—25 H. P., silver medal.
M. Rumely Co.—15-30, bronze medal.

Class C:

Gas Traction Co.—30 H. P., gold medal.
Aultman, Taylor Machinery Co.—30 H. P., silver medal.
Kinnard-Haines Co.—30 H. P., bronze medal.

Kerosene Class.

Class D:

Kinnard-Haines Co.—40 H. P., gold medal.
Gas Traction Co.—30 H. P., silver medal.
M. Rumely Co.—30-60, bronze medal.



The American Abell Universal Farm Motor pulling a 4-bottom John Deere Engine Gang.



American-Abell 28 h.p. Steam Tractor Pulling an 8-bottom John Deere Engine Gang. (Winner Gold Medal, Class F.)



The "Flour City" Kerosene Tractor Performing the Plowing Feature of its Gold Medal Work. A John Deere 8-bottom Engine Gang is Being Pulled.

STEAM ENGINES.

Class F:

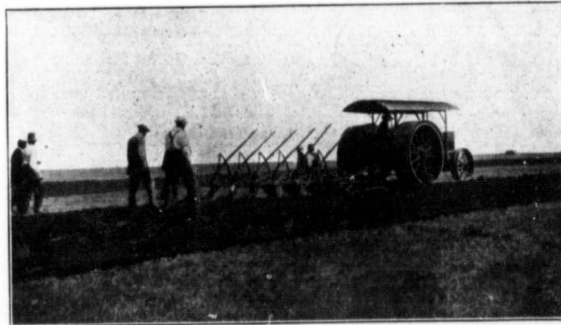
American-Abell—28 H. P., gold medal.

Class G:

Avery—30 H. P., gold medal.
Sawyer, Massey—32 H. P., silver medal.
Gaar-Scott—33 H. P., bronze medal.

The total scores of all the engines were as follows:—

Class	Points
Class A.—Gasoline.	
—I. H. C.	387 7-10
Class B.—Gasoline.	
Kinnard Haines	414 2-10
Avery Farm Tractor	365 7-10
I. H. C. 25 h.p.	413 5-10
M. Rumely, 15-30 h.p.	378 9-10
Gold-Shapley & Muir 20 h.p.	356 7-10
American-Abell Universal Farm Tractor 20 h.p.	368
Class C.—Gasoline.	
Kinnard Haines 30 h.p.	413 8-10
Sawyer-Massey 25 h.p.	409
I. H. C. 45 h.p.	403 4-10
Gas Traction Co. 30 hp.	423 9-10
I. H. C. 45 h.p.	395 3-10
Gold, Shapley & Muir 30 h.p.	328 6-10
Aultman & Taylor, 30 h. p.	420 4-10
Gaar-Scott, 40 h. p.	343 5-10
Class D.—Kerosene.	
I. H. C. 20 hp.	389 4-10
I. H. C. 25 h. p.	327 9-10
I. H. C. 25 h. p.	358 6-10
M. Rumely Co. 15-30 h. p.	403 4-10
I. H. C. 45 h. p.	394
Gas Traction Co. 30 hp.	424 3-10
Kinnard-Haines 40 hp.	425 1-10
M. Rumely Co. 30 hp.	412 5-10
Class F.—Steam Engines.	
American-Abell 28 hp.	395 4-10
Avery 30 h.p.	439 4-10
Gaar-Scott, 33 hp.	403 6-10
Sawyer-Massey 32 hp.	414 2-10



6-Furrow Cockshutt Plow 1911 Motor Trials.

I take pleasure in writing you a few lines in reference to the ten furrow Cockshutt engine gang plow which I purchased of you last season. I broke five hundred acres with your plow last season in a very brushy country, also plowed three hundred acres of stubble land in the Fall, and can highly recommend the plow for all classes of work in the land. It does not need the rolling coulters and stubble bottoms until the third plowing in any county where the land contains poplar and willow roots.

They are a splendid plow and I cannot too highly recommend them.

I intend to break six hundred acres this season of heavy scrub land.—E. S. CLINCH Shellbrook, Sask.

The ten furrow plow we purchased from you outclasses anything of its kind we have ever seen, especially on stony land. We have plowed 1300 acres of sod, some of it very stony, in forty-five 12-hour days, without even breaking a point or bolt. Two men handle the engine and plows. The enclosed photograph is a fair sample of the work it will do. Too much cannot be said of your plows.—HARRIS & SALMON, Raymond, Alta.

Tested it in stony and hummocky land—the heaviest I could find at Fillmore. It did first-class work. Broke baked sod right up to harvest time. Strongly recommend "Cockshutt."—ARCH. DALE, Moffat, Sask.

Broke over 800 acres this season with only two break-downs, both of which were unimportant. We did breaking in all kinds of soil. Where there is stone the plow can't be beat. This fall we have tried backsetting with the breaker bottoms and they do as good work as the average farmer does with horses and a gang or sulky. Everybody that saw our work was well pleased, and we can go to break for the same parties another year.—JACOB GIEM & SONS, Hirsch, Sask.



6-Furrow Cockshutt Plow 1911 Motor Trials.

The Cockshutt

THE LEADER IN ITS FIELD THE LEADER IN THE FIELDS

Years ago, when Prairie plowing became more and more extensive, the Cockshutt Plow Company built the first successful horseless plow on the market. From the very first, this Engine Gang was founded on THE RIGHT PRINCIPLE OF TRACTOR PLOWING, and it has always remained the recognized leader among tractor plows.

The modern Cockshutt Engine Gang of to-day is the simplest, and of the highest value to its owner. It is who recommend it with sincerity and enthusiasm. It all contests, of all kinds, and that owners of Cockshutt Engine Gangs have ample reason for their faith was once more demonstrated during the recent Winnipeg Motor Trials: IT MADE A HIGHLY SATISFACTORY SHOWING AND WORKED TO THE LIMIT OF ECONOMY AND EFFICIENCY.

The long and impressive list of Cockshutt Engine Gang owners from owners of records made in service and economy, all these offer the conclusive evidence that the Cockshutt Engine Gang is the best Engine Gang you can buy—bar NONE.

Read What Prominent Will Do in NO OTHER PLOW

These testimonials come from people who are under no obligation to us; their advice to you is worth more than pages of advertising, because it is backed up by actual experience with the Cockshutt Engine Gang in the field. Note also the photographs of some of the splendid plowing done by the Cockshutt Engine Gangs during the 1911 Winnipeg Motor Trials. Write us for a Catalogue, containing more testimonials and more photographs, or, better still, see the Cockshutt Dealer.

Cockshutt Plow Company, Limited
BRANCHES
WINNIPEG CALGARY
DISTRIBUTING
RED DEER LETHBRIDGE EDMONTON

Engine Gang

N ITS FIELD in THE FIELDS

more extensive, the Cockshutt Plow Company built the first successful horseless plow on the market. From the very first, this Engine Gang was founded on THE RIGHT PRINCIPLE OF TRACTOR PLOWING, and it has always remained the recognized leader among tractor plows.

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Farmers Say the Plow Stony Land CAN FOLLOW IT

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Cockshutt Plow Company, Limited
BRANCHES
REGINA SASKATOON
DISTRIBUTING
BRANDON PORTAGE LA PRAIRIE



4-Furrow Cockshutt Plow 1911 Motor Trials.

The Engine Gang has given us perfect satisfaction. Did first-class work long after horse plows had given up plowing as being too hard and dry. We had tried most all kinds of plows, trying to make them do good work with an engine, but couldn't make much headway, as there were too many breakages. We had decided to quit steam breaking when we heard of your plow. We went to see one of them working and decided to get one at once. We made no mistake in doing so. It does good work in the hardest of ground, and we have had so far no breaks except a few bolts and points of shares. That is nothing, as we have turned stones up that two men couldn't put on a stone boat alone. When we hit them we expected to see the plow all broke to pieces, but they just dropped into place and went to work plowing as good as ever. Till your plow came here we never saw one that would stand it. It is as good to-day as the day it came off the cars.—R. STUCKEY & SON, Pincher Creek, Alta.

Have broken over 800 acres this season and the plow has given us perfect satisfaction. Have turned out rocks that will measure about two feet square without damage to the plows.—HOLBROOK & ARCHBOLD, Prague, Alta.

Used the engine gang in very stony land. Have plowed out stones that would demolish a common horse gang and have not as much as bent a point or broken a bolt. It would pay you to have on exhibition one stone in particular that we plowed out. The strength of the plow could not be better proved. It has given satisfaction in every particular.—F. E. GABEL, Weyburn, Sask.

The engine gang gave me perfect satisfaction. Had tried steam plowing before with three bottom solid beam plows of another make, but one season was enough for us. However, we saw a cut of your plow and we are not sorry we bought same. It will plow stubble in fine shape as well as sod. We struck large stones and rolled them out that one man could not load into a wagon, and never hurt the plow, which went right along as if nothing had been in the way.—TIGNER & LEHMAN, Nanton, Alta.



Avery under mounted Engine and Cockshutt Plow, 1911 Motor Trials.

JUDGES SCORE SHEET AS WORKED OUT BY THE JUDGES IN THE 1911-MOTOR COMP INDUSTRIAL EXHIB

ENTRY NUMBER	HIGHEST POSSIBLE NO. OF POINTS	GAS	ECONOMY TEST								MAXIMUM TEST							
			100	15	15	10	5	5	5	150	12	5	3	2	3	10	10	
			Gas	Steam	100	10	10	5	2 1/2	2 1/2	20	150	12	5	3	2	3	10
MAKER'S NAME		Horse Power Hours per Unit of Fuel	Water Used, % of capacity	Cubic Feet of Flue-gas per H.P. hour	Steadiness of Running	Vibration	Condition of Engine	Mass Power Hours per 100 Gal. Water	Total Score, Economy Test	Cubic Feet Flue-gas per H.P. hour	H.P. Max. H.P. Econ.	H.P. Hours per Unit of Fuel	Steadiness of Running	Vibration	Loose Parts	Boatings		
CLASS A - Gasoline																		
1			International Harvester Co.	82.4	12.4	15	7	2	4	122.3	12	6	2.3	1	1	10	10	
CLASS B - Gasoline																		
2			Kinnard Haines	86.9	14	12	9.5	4.5	4.5	131.4	10.2	1.4	2.4	2	2.5	10	8	
3			Avery Co.	89.2	14.6	9	2	4	4.5	123.3	7	1.3	1.9	1	2.5	10	10	
4			I. H. C.	81.2	13.2	13.5	5	2.5	4	119.4	10.7	1.3	2.6	.5	1.5	10	10	
5			M. Rumely Co.	83.6	15	11	5	2.5	3	120.1	9.9	3.3	2.3	1	1.5	10	10	
6			Goold, Shapley & Muir	66.5	15	12	10	4.5	3	111	8.7	5	1.7	2	2	10	10	
7			American Abell Co.	66.9	15	12.5	9	4	3.5	110.9	10	.7	1.2	2	2	10	10	
8			Canadian American	Did not enter tests.														
CLASS C - Gasoline																		
9			Kinnard Haines	92.4	14	12.5	9.5	4.5	5	144.9	9.2	.9	2.7	2	2.5	10	10	
10			Sawyer-Massey Co.	90.9	9	9.5	9.5	4.5	4	127.4	9.6	5	3	1.5	2.5	10	10	
11			I. H. C. (Penalized 10 points)	89.8	10.7	12	7	3	4	126.5	10.5	3	2.4	1	1.5	10	10	
12			Gas Traction Co.	80.7	15	11.5	9.5	4.5	5	126.2	9	1.4	2.2	2	2	10	10	
13			I. H. C.	92.6	9	13.5	6	2.5	3	126.6	11.3	3.6	2.2	1	1.5	10	10	
14			Goold, Shapley & Muir	71	15	11	9.5	4.5	3	114	8	0	2.1	1.5	3	10	10	
15			Aultman-Taylor Machinery Co.	100	11.8	12.5	10	5	4	143.3	9.2	0	1.7	1	3	10	9	
16			Gaar Scott Co.	74	14.6	10	9.5	4.5	4.5	117.1	7.4	1.4	1.9	2	3	10	10	
17			Buffalo Pitts Co. (Withdrawn)															
CLASS D - Kerosene																		
18			I. H. C.	90.3	12.3	15	7	2.5	2	130.1	11.6	1	2	1	1.5	10	10	
19			I. H. C.	58.1	10	12	6	2.5	2	91.6	9.9	1.6	1.7	1	1.5	10	10	
20			I. H. C.	56.9	12.9	14	7	2.5	3	126.3	11.8	1.7	2.6	1	1.5	10	10	
21			M. Rumely Co.	96.8	15	11.5	5	2.5	3	133.8	10.6	4.6	2.3	1	1.5	10	10	
22			I. H. C.	83.6	11.7	13	7	3	2	119.3	12	4.6	3	1	1.5	10	10	
23			Gas Traction Co.	82.9	14.5	9.5	6	4.5	3	120.4	7.8	2.7	2.7	1	2	10	10	
24			Kinnard Haines	81.4	14.1	10.5	9.5	4.5	4.5	124.5	8.9	2.9	3	2	2.5	10	10	
25			M. Rumely Co.	100	15	12	10	2.5	4.5	144	11.5	5	2.4	2	1.5	10	10	
CLASS E - Steam																		
26			Buffalo Pitts Co. (Withdrawn)															
27			American Abell Co.	78.8	6.3	6	4.5	1.5	2.5	14	113.6	8.4	4.5	2.2	1	2	10	9
CLASS F - Steam																		
28			Avery Co. (Penalized 3 points)	96.9	6.1	10	5	2.5	2.5	20	143	12	4.4	1.9	2	3	10	10
29			Gaar Scott Co. (Penalized 12 points)	100	10	5	5	2.3	2.5	20	144.7	6.7	5	3	2	2.5	10	10
30			Sawyer-Massey Co. (Withdrawn)															
31			Sawyer-Massey Co.	85.5	5.3	5.5	4.5	1.5	2.5	18.5	123.3	7	4.4	2.8	1	2	10	9

COMPETITION HELD AT WINNIPEG JULY 5-22 UNDER THE AUSPICES OF THE CANADIAN FARM MACHINERY ASSOCIATION.

ENTRY NUMBER	HIGHEST POSSIBLE NO. OF POINTS	PLOWING TEST								DESIGN AND CONSTRUCTION									
		50	100	20	20	20	15	25	200	20	20	20	20	20	20	20	20		
		50	90	30	20	20	15	25	200	20	20	20	20	20	20	20	20		
MAKER'S NAME		Clearance and Excessive Lubrication	Total Points for Max. Test	D.B. H.P. Hours per Unit of Fuel	Water per D.B. H.P. Hour	Acres Plowed per Hour per D.B.H.P.	Quality of Plowing	Possible Distance travelled Without Replenishing Fuel	General Cond. of Engine, Stops, etc.	Total Points Plowing Test	Protection of Working Parts	Accessibility	Variation of Speed	Ease of Manipulation	Design, Material, etc.	Total Points, Design	Total Points, Plowing	Rank	Entry No.
1		3.5	40.4	70.7	13.6	16.4	15.5	11.8	21	149	13.5	17	13	15	17	75.5	387.7	1st	1
2		5	41.5	85.8	14	18.4	10.5	8.6	23	160.3	16	16.5	17	15	16.5	81	474.2	1st	2
3		3	36.7	45.8	12.5	16.6	9	8.3	20	112.2	18	18	20	20	17.5	93.5	365.7		3
4		3	39.6	100	10.3	19.7	11.5	15	24	180.5	14	17	13	14.5	15.5	74	413.5	2nd	4
5		3	41.0	59.4	16.5	20	11.5	5.9	25	138.3	14.5	18	18	13.5	15.5	79.5	378.9	3rd	5
6		2	37.9	60.5	14.8	12.7	11.5	9.3	20	128.8	13	18	15	16.5	16.5	79	356.7		6
7		3	38.9	57.1	20	12.9	13.5	12.7	23	139.2	14	12	18	18	17	79	368		7
8																			8
9		5	42.3	83.1	13.7	14.4	12.5	6.9	15	145.6	Same as No. 2					81	413.8	3rd	9
10		4	45.6	80.3	7.7	14.1	16.5	10.4	20	149	17.5	16.5	19	15.5	18.5	87	409		10
11		4	42.4	93.2	11.8	20	10.5	8.5	25	169	14.5	17	14	14.5	15.5	75.5	403.4		11
12		3	39.6	87.5	20	15.8	9	13.8	25	171.1	17	18.5	17	16	18.5	87	423.9	1st	12
13		4.5	44.1	86.8	11.1	18.5	14.2	9	11	150.6	13	16	14	14.5	16.5	74	395.3		13
14		3	37.6	41.5	16.3	11.9	13.5	10.3	5	98.5	12	18.5	15	16.5	16.5	78.5	328.6		14
15		4.5	38.4	82.8	10.3	16.1	9.5	11.5	22	152.2	14.5	18.5	17	18	18.5	86.5	420.4	2nd	15
16		4.5	40.2	34.7	16.1	11.4	12.75	8.8	20	103.7	14	18	17	17	16.5	82.5	343.5		16
17				Withdrawn.															
18		4.5	41.6	69.5	9.5	13.4	14.25	11.6	24	142.2	Same as No. 1					75.5	389.4		18
19		4.5	40.2	61.5	12.5	17.1	12.7	6.2	12	122.1	Same as No. 13					74	327.9		19
20		4.5	43.1	52.3	13	16.2	13	7.7	13	115.2	Same as No. 4					74	358.6		20
21		3	43	72.6	14.8	18	12.25	6.4	23	147.1	Same as No. 5					79.5	403.4		21
22		3	45.1	77.4	12.4	20	13	6.3	25	154.1	Same as No. 11					75.5	394		22
23		3	39.2	90	18.3	19.4	11	15	24	162.7	Same as No. 12					87	424.3	2nd	23
24		3	42.3	100	16.2	17	14	9.1	21	177.5	Same as No. 2					81	425.1	1st	24
25		3	45.4	67.4	16.2	16.5	13.7	8.8	24	131.8	Same as No. 5 (less 3 points for gear changed)					76.5	412.5	3rd	25
26																			
27		4	41.1	76.9	21.3	18.1	11.7	10.7	20	158.7	16	17	14	19	16	82	395.4	1st	27
28		4	47.3	82.4	18.7	16.2	13.5	4.8	23	158.6	16.5	20	20	20	17	93.5	439.4	1st	28
29		4	43.2	64.6	16.4	20	11.7	15	15	142.7	16	17	17	19	16	85	403.6	3rd	29
30																			
31		4	40.2	90	21.7	18.1	11.5	7.1	20	168.7	16	17	14	19	16	82	414.2	2nd	31

WE WIN WITH

GASOLINE

THE "FLOUR CITY" TRACTOR

**WINNER OF GOLD MEDAL 1908, GASOLINE.
WINNER OF GOLD MEDAL 1909, GASOLINE.**



The Flour City 20-30-Gasoline Tractor doing its "Gold Medal" Plowing Stunt at the 1911 Winnipeg Motor Competition

The superiority of The "Flour City" Tractor has again been vindicated under a most severe test at the Winnipeg Motor Competition. Against a large field of competitors it upheld its records of 1908 and 1909 as a Gold Medal Winner and proved itself to be the "King of Farm Tractors." It pulled its load so steady on both the economy and maximum brake tests and was so economical in its use of fuel, that the judges gave it the highest score in its class. When it came to plowing its general construction, simplicity, horse power and weight, together with its large drivers made it a winner. It went into the plowing test and kept at it when others were mired in the soft gumbo. We do not claim for the "Flour City" Plowing Engine that it is capable of tearing up the whole earth at one round, but we do claim that it is capable of plowing more land at a less price per acre than any other engine on the market at the present time, and that it is capable of plowing and breaking much more economically than steam.

THE "FLOUR CITY" TRACTORS WENT INTO THE HARDEST CONTEST EVER HELD AT WINNIPEG, AND DEMONSTRATED THEIR ABILITY TO WIN ON MERIT IN BOTH THE GASOLINE AND KEROSENE CLASSES. DON'T FORGET THIS FACT WHEN BUYING A TRACTOR.

KINNARD-HAINES Co.

WE WIN WITH

KEROSENE

THE "FLOUR CITY" TRACTOR

**WINNER OF GOLD MEDAL 1911, GASOLINE.
WINNER OF GOLD MEDAL 1911, KEROSENE**



The Flour City 40-60-Kerosene Tractor demonstrating its Medal Winning ability on the 1911 Motor Contest Plowing Field at Winnipeg

The Winning of The Gold Medal by the "Flour City" Tractor in the Kerosene Class at the Winnipeg Motor Contest, demonstrated clearly that it takes more than a "name" to make a successful machine. It went in against eight other tractors of different makes and distanced all engines regardless of type. Some time ago we made the statement that our Kerosene Carbureting System placed the "Flour City" in a class by itself, and the results of the Contest at Winnipeg backs it up. The "Flour City" Kerosene Tractor is a winner in the field as well as in the Contest. No single or double cylinder engine can deliver such steady power in the belt, and in the fuel consumed, either in the belt or in the plowing field it is without an equal. It won at Winnipeg. It will win for you Mr. Farmer. Don't get the idea that there is only one style of engine that can burn kerosene oil of fuel. The Winnipeg Motor Competition exploded that fallacy.

**828 44th AVENUE NORTH
MINNEAPOLIS, MINN.** **Ontario Wind Engine and Pump Co., Ltd.**
TORONTO WINNIPEG CALGARY

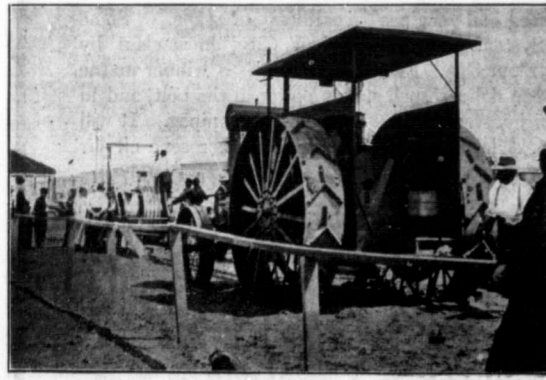
DATA SHEET AND RECORDS OF ECONOMY LOADS AS CARRIED BY THE VARIOUS ENGINES IN THE MOTOR COMPETITION, HELD AT WINNIPEG, JULY 5th TO 22nd, 1911, UNDER THE AUSPICES OF THE CANADIAN INDUSTRIAL EXHIBITION ASSOCIATION

DATA SHEET AND RECORDS OF ECONOMY LOADS AS CARRIED BY THE VARIOUS ENGINES IN THE MOTOR COMPETITION, HELD AT WINNIPEG, JULY 5th TO 22nd, 1911, UNDER THE AUSPICES OF THE CANADIAN INDUSTRIAL EXHIBITION ASSOCIATION

MAKER'S NAME	ENGINE DATA														Wt. on Drivers
	No. Cylinders	Dia. Cylinders	Length of Stroke	Rated R.P.M. of Engine	Rated R.P.M. of Drive Pulley	Rated H.P.	Maximum Brake H.P.	Dia. Front Wheels	Face Front Wheels	Distance Apart (in-side)	Dia. Drivers-in.	Face Drivers-in.	Distance Apart (inside)	Total Wt. of Outfit (tanks full)	
CLASS A—Gasoline															
1 International Harvester Co.	1	in. 8.75	15	240-280	240-280		20	in. 36	in. 8	in. 64	in. 70	in. 30	n. 58.5	14650	10400
CLASS B—Gasoline															
2 Kinnard Haines	4	4.75	5	800	353	20	28	42	8	55.5	72	14	53.5	9100	
3 Avery Co.	4	4.75	5	1000	1000	36		40	6	56	40	12	56		
4 I. H. C.	1	10	15	240-280	240-280		25	44	9	69	70	22	52	18200	12400
5 M. Rumely Co.	1	10	12	300-400	300-400	15	30	38	10	54	70	22	49	15385	10845
6 Gould Shapley & Muir	2	7.5	10	380	380	20	28	43	8	60	66	24	50	12500	1690 each
7 American Abell Co.	2	7.5	8	500	500	20	40	38.5	8	56.5	61	20-8	59.5	10971	7625
8 Canadian American															
CLASS C—Gasoline															
9 Kinnard Haines	4	6.25	7	575	288	30	45	48	9	62	84	18	61	13875	
10 Sawyer-Massey Co.	4	6.25	8	500-600	250-300	25	45	38.5	12	67.5	68	24x12	49	18500	13600
11 I. H. C.	2	9	14	300-335	300-335	45	44	44	10	36	75	24	56.5	20600	14300
12 Gas Traction Co.	4	6.5	8	600	450	30	50	58	10	62.5	96	24	54	17500	14000
13 I. H. C.	2	9.5	12	350	350	45	45	40.5	10	75	72	24	65	19500	12000
14 Gould Shapley & Muir	2	9.5	13	300	300	30	45	46	10	71	78	26.5	60	17000	2305
15 Aultman-Taylor Machinery Co.	4	7	9	500	500	30-60	60	44	12	55.5	90	3	60	22394	3065
16 Gaar Scott Co.	4	7.75	10	600	300	40	70	43.5	10	43	88	20	28000	8000	
17 Buffalo Pitts Co.	3	9	8	500	333	30	70	60	20	71	84	24	66	26000	3280 each
CLASS D—Kerosene															
18 I. H. C.	1	8.75	15	240-280	240-280		20	36	8	64.5	70	22	59	14650	10400
19 I. H. C.	1	10	12	350	350		25	38	10	62	72	24	54	18200	10100
20 I. H. C.	1	10	15	240-280	240-280		25	44	9	69	70	22	52	18200	12400
21 M. Rumely Co.	1	10	12	375	375	15	30	38	10	33.5	70	22	48.5	15385	10845
22 I. H. C.	2	9	14	300-335	300-335	45	44	44	10	36	75	24	58	20600	14300
23 Gas Traction	4	6.5	8	600	450	30	50	58	10	62	96	24	54.5	11500	14000
24 Kinnard Haines	4	7.5	8	475	288	40	60	48	10	69	96	24	63	18500	
25 M. Rumely Co.	2	10	12	375	375	30	60	44	16	59	80	30	57	27320	20060
CLASS E—Steam															
26 Buffalo Pitts Co.	2	7	10	280	280	25	70	51	14	60	78	32	53.5	34500	
27 American Abell Co.	1	10	14	260	250	28	80	46	11.25	1.25	75	37		44000	28000
CLASS F—Steam															
28 Avery Co.	2	8	10	240-250	240-250	30	90	52.5	12	37.5	84	26	69	44000	33000
29 Gaar Scott Co.	4	6.5x10	11	257	257	33	90	46.5	12	47.5	76	30	60	36000	29000
30 Sawyer-Massey Co.	1	12	14	220	230	35	115	42.5	15	51.5	84	30	55.5	39000	27000
31 Sawyer-Massey Co.	2	7.75x12.5	11	230	230	32	106	43.5	12	36.5	68	30	63	29500	22800

Slow Forward Speed (miles per hour)	Fast Forward Speed (miles per hour)	Capacity of Fuel Tank Pounds	Capacity of Water Tank Pounds	Clearance under Engine Inches	Certified Retail Cash Price L.o.b. W. P.G.	TWO HOUR ECONOMY BRAKE TEST														
						Total time running	Time lost due to engine developed	Average horse power developed	Revol. per minute of engine pulley	Revol. per minute of engine	Fuel used in pounds	Percentage of fuel capacity used per hour	Horse power hours per unit of fuel	Water used in gallons	Av. temperature of water used	Ave. Steam Pressure	Horse power hours per 100 gal. of water used	Cost of fuel per brake horse power hr.	Cost of Water disp. per h. hr.	
1.76	2.05	205.6	450	in. 14	2200	120	0	22.45	257.0	257.0	30.9	7.0	1.45	7.95					cents 1.966	717.0
2	2.75	142.45	115.5	15	2000	120	0	24.30	385.8	385.8	31.7	11.1	1.53	7.4					1.86	885.4
		141.4	150		2800	120	0	21.14	1023.3	1023.3	27.0	9.5	1.57	.36					1.82	1191.4
1.76	2.05	218.7	792		2700	120	0	25.52	264.4	264.4	35.8	8.2	1.49	9.5					1.99	843.6
1.64	2.2	175	oil 283		2200	120	0	25.05	384.1	384.1	35.4	10.1	1.472	1.76					1.94	964.6
2.19	2.94	175	oil 283		2200	120	0	25.15	367.7	367.7	43.0	10.1	1.170	0					2.44	897.0
	2.11	211.5	513	14	2350	120	0	30.77	543.3	543.3	52.3	8.5	1.177	0					2.43	866.7
2	2.5	309.4	312	13	2600 rims 125	120	0	30.77	543.3	543.3	52.3	8.5	1.177	0						
2	2.5	172.4	1790	18	2500	120	0	42.80	3111	3111	49.0	14.2	1.75	12.0					1.64	866.1
2	3	325.5	530	16	2500	120	0	35.96	297.0	297.0	44.9	6.9	1.60	21.7					1.78	1125.9
	2.08	274	870		3200	124	4	46.04	334.0	334.0	58.3	10.64	1.58	24.7					1.81	897.4
	2.1	482.3	1780	16	3350	113	0	51.97	497.5	497.5	65.3	9.9	7.6	1.42	0				2.01	941.2
2.06	2.25	320	559		3200	120	0	49.55	359.0	359.0	60.8	9.5	1.63	22.4					1.75	987.1
2.19	2.19	387	829		2525	120	0	38.96	295.3	295.3	62.55	8.1	1.25	0					2.29	970.0
2.2	2.2	350	1250		3825	120	0	58.93	534.0	534.0	67.0	9.6	1.76	26.0					1.62	871.8
2.19	2.19	645	985	13	3900	120	0	69.34	287.6	287.6	106.5	16.5	1.302	2.38					2.19	1085.9
1.86	2.2	524	650	15	3500 time 3550	120	0	56.35	340.2	340.2	95.2	16.1	1.19	14.5					2.41	960.4
1.76	2.05	253	518	14	2200	120	0	22.93	268.4	268.4	33.68	7.5	1.31	9.2					1.20	733.1
1.8	2	248	390	13	2700	120	0	26.25	371.4	371.4	62.28	12.5	0.843	12.9					1.80	926.0
1.76	2.05	247	792	14	2700	120	0	27.7	266.2	266.2	43.68	8.9	1.26	11.2					1.204	786.2
1.64	2.19	200	oil	14	2200	120	0	25.4	374.1	374.1	35.41	9.0	1.403	2.59					1.103	963.9
	2.08	322	1200		3200	120	0	51.04	350.0	350.0	83.08	13.5	1.212	26.08					1.269	847.9
	2.1	506	915	16	3350	120	0	43.18	507.0	507.0	70.78	7.1	1.202	2.7					1.28	1154.4
2	2.5	305	2500	18	3400	120	0	49.27	315.5	315.5	82.88	13.6	1.18	14.4					1.29	1037.0
1.52	2.08	594	oil	14	3500	120	0	53.1	370.0	370.0	72.35	7.0	1.45	5.975					1.082	912.1
2.25	2.5			14	2990	120	0	75.64	290.6	290.6	842.5		17.96	583.8	54.0	147.28	25.9		2.37	205.3
	2	1134	3850	14	3500	120	0	71.77	255.9	255.9	703.0	30.9	20.42	645.5	55.0	156.4	21.55		2.08	272.2
1.9	2.08	546	3750	20.5	4300	120	0	111.55	267.5	267.5	889.0	82.0	25.05	701.8	172.5	31.73	1.69		1.67.7	
	2.5	1512	5550		4200	120	0	101.52	293.8	293.8	784.5	26.1	25.83	634.6	149.6	31.99	1.65		347.2	
	2.36	1080	3177	17	4000	120	0	103.06	250.2	250.2	952.0	44.1	21.65	721.0	46.0	162.2	28.58	1.96		266.8
	2.17	756	2600		3780	120	0	83.25	279.5	279.5	753.0	49.8	22.13	556.4	166.53	29.92	1.92		314.3	

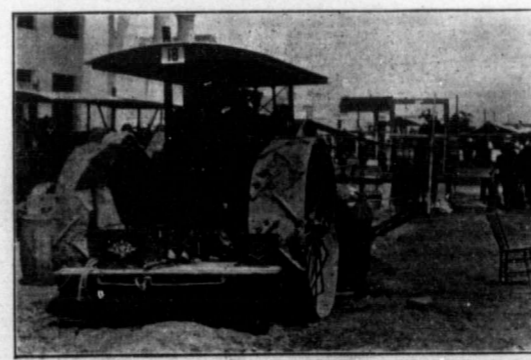
100 lbs.—unit of Coal. 7 lbs.—unit of Gasoline. 7.9 lbs.—unit of Kerosene. Costs—Coal—\$5.50 per ton. Costs—Gasoline—20c. per gallon of 7 lbs. Costs—Kerosene—12c. per gallon of 7.9 lbs.



Flour City 30 h.p. Gasoline Tractor.



Gould Shapley & Muir 20-25 Gas Tractor.



I.H.C. 20 h.p. Kerosene Tractor



Gas Traction 30 h.p. Gasoline Tractor

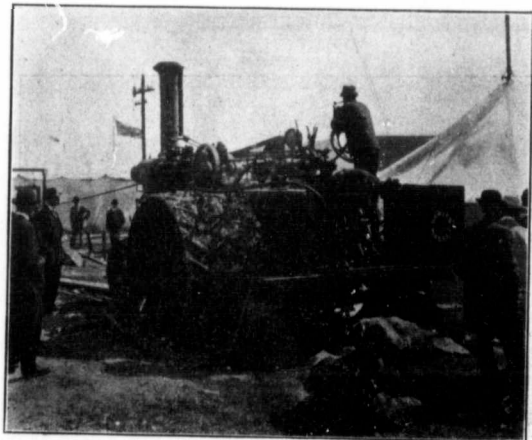
RECORDS OF MAXIMUM BRAKE TEST AND PLOWING TEST AS PERFORMED BY THE VARIOUS ENGINES IN THE MOTOR COMPETITION, HELD AT WINNIPEG, JULY 5th TO 22nd, 1911, UNDER THE AUSPICES OF THE CANADIAN INDUSTRIAL EXHIBITION ASSOCIATION

RECORDS OF MAXIMUM BRAKE TEST AND PLOWING TEST AS PERFORMED BY THE VARIOUS ENGINES IN THE MOTOR COMPETITION, HELD AT WINNIPEG, JULY 5th TO 22nd, 1911, UNDER THE AUSPICES OF THE CANADIAN INDUSTRIAL EXHIBITION ASSOCIATION

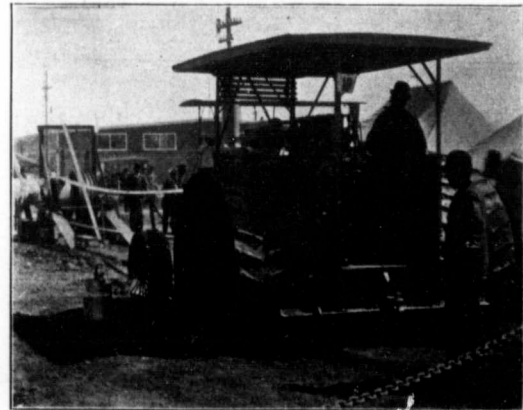
ENTRY NUMBER	MAKER'S NAME	HALF HOUR MAXIMUM BRAKE TEST								PLOWING TEST								Average Depth
		Total time running	Time lost due to engine	Average brake horse power developed	Revol. per minute of pulley	Revol. per minute of engine	Fuel used in pounds	Horse power hours per unit of fuel	Water used	Steam pressure	Number of Plows	Width of Plow	Maker of Plow	Miles Travelled (not including turns)	Length of Furrow in feet	No. Times across Field	Average Width of Plowed Land	
1	CLASS A—Gasoline International Harvester Co.	30	0	23.65	228.9	228.9	8.5	1.39	gals. 2.37									
2	CLASS B—Gasoline Kinnard Haines	29	0	29.4	375.5	851.0	10.5	1.4	2.50									
3	Avery Co.	30	0	23.85	1005.2	1005.2	10.45	1.14	0									
4	I. H. C.	30	0	31.74	264.0	264.0	10.4	1.53	2.18									
5	M. Rumely Co.	30	0	33.58	378.2	378.2	12.45	1.35	1.56									
6	Cold Shapley & Muir	30	0	26.2	353.8	353.8	12.7	1.03	0									
7	American Abell Co.	30	0	32.71	487.8	487.7	20.4	0.08	0									
8	Canadian American																	
9	CLASS C—Gasoline Kinnard Haines	30	0	46.34	306.7	612.3	14.3	1.62	3.4									
10	Sawyer-Massey Co.	25	0	51.85	288.0	576.0	14.6	1.78	5.2									
11	I. H. C.	30	0	58.4	327.4	327.4	20.5	1.42	6.7									
12	Gas Traction Co.	30	0	58.1	479.7	639.6	22.3	1.30	0									
13	I. H. C.	30	0	65.62	356.9	356.9	25.0	1.31	6.0									
14	Cold Shapley & Muir	30	0	39.53	280.6	280.6	16.2	1.22	0									
15	Aultman-Taylor Machinery Co.	30	0	58.51	469.7	469.7	18.5	1.58	5.0									
16	Gaar Scott Co.	25	0	77.79	292.6	585.2	34.2	1.14	0									
17	Buffalo Pitts Co.	30	0	54.18	320.8	481.2	22.6	1.2	1.72									
18	CLASS D—Kerosene I. H. C.	30	0	24.11	261.5	261.5	0.14 14.4k	0.83	3.22									
19	I. H. C.	30	0	29.87	364.9	364.9	0.14 20.6k	0.72	2.52									
20	I. H. C.	30	0	30.53	250.8	250.8	0.24 14.2k	1.06	3.82									
21	M. Rumely Co.	30	0	32.19	365.7	365.7	0.84 6.2k	0.947	1.4									
22	I. H. C.	30	0	64.52	343.7	343.7	0.34 25.5k	1.24	4.92									
23	Gas Traction	30	0	49.58	507.2	676.3	1.24 21.0k	1.12	0.82									
24	Kinnard Haines	30	0	57.16	312.4	515.2	1.54 21.85k	1.224	2.12									
25	M. Rumely Co.	30	0	67.99	358.2	358.2	0.74 33.05k	1.0072	21.5									
26	CLASS E—Steam Buffalo Pitts Co.	30	0	97.72	277.9	277.9	338.5	13.63	239.0	147.3								
27	American Abell Co.	30	0	101.31	238.6	238.6	308.5	16.74	251.6	156.14								
28	CLASS G—Steam Avery Co.	30	0	159.34	281.0	281.0	543.5	14.66	346.2	179.0								
29	Gaar Scott Co.	30	0	100.72	285.9	285.9	335.0	22.5	246.2	151.2								
30	Sawyer Massey Co.	30	0	144.59	245.8	245.8	420.0	17.21	306.8	162.4								
31	Sawyer-Massey Co.	30	0	118.59	267.0	267.0	279.0	21.25	185.6	167.14								

ENTRY NUMBER	MAKER'S NAME	PLOWING TEST															Total Points				
		Total Time Required Min.	Time Lost Due to Plow. Min.	Time Lost Due to Engine. Min.	Time Required Turning. Min.	Actual Time Plowing Min.	Acres Plowed per Hour	Miles Travelled per Acre Plowed	Average Draw-Bar Pull	Average Draw-Bar Horse Power	Fuel used, including turns	Draw-Bar Horse Power per unit of Fuel	Fuel used per Acre Plowed	Water Used	Water Used per acre Plowed	Average Draw-Bar Pull per 14-in. Plow		Draw-Bar Horse Power per 1 Acre per Hr.	Possible Miles Traveled Without Replenishing Fuel	Possible Acres Plowed Without Replenishing Fuel	Cost of Fuel per Acre Plowed \$
161		1'	1.5'	4	144	1.03	1.78	2650	12.93	40.1	7.74	lbs. 16.23	Phs. 99.9	40.5	662.5	12.55	22.5	12.6	4638	3.22	387.7
206		1.5	0	7	190.5	1.25	1.83	2985	18.75	63.3	9.40	15.92	179.6	45.1	762.5	15.0	16.4	8.95	4548	3.02	414.2
242.5		26	2	10.5	195	.98	2.3	1800	10.87	69.8	5.02	21.95	13.1	4.12	600	11.04	15.7	6.85	6271	3.73	365.7
2-10'		1	.5	5	125.5	1.46	1.44	3150	17.64	33.7	10.95	11.01	178.8	58.4	787.5	12.08	28.5	19.8	315	4.85	413.5
159		0	0	6	145	1.47	1.23	3800	18.42	68.4	6.51	19.16	78.1	21.8	633.3	12.53	11.2	9.1	5474	1.76	378.9
167.5		0	.5	6	157	.90	1.87	3000	13.43	53	6.63	22.45	91.8	38.9	750	14.92	17.6	9.4	6414	2.61	356.7
276		0	.5	11	262	1.11	1.80	3000	16.09	112.3	6.26	22.96	0	0	750	14.5	24.2	3.4	6560	0	368
215		0	4	7	204	1.72	1.20	4500	25.84	96.5	9.10	16.47	275	46.76	750	15.01	13.1	10.5	4705	3.13	413.8
278.5		0	11	11	253	1.43	1.17	5100	25.00	119.8	8.80	19.80	647.3	107	900	17.48	19.8	6.5	3657	6.14	409
150		0	0	7	139	2.59	.73	6400	32.36	74.8	10.21	12.47	306	51	640	12.49	16.1	22	3563	4.08	403.4
174		0	0	7	167	2.30	.92	5800	32.54	74.4	9.59	14.68	0	0	675	14.15	26.3	28.6	4194	0	423.9
149		1	1.0	6	140.5	2.58	.73	6650	33.27	81.9	9.51	13.58	345.7	57.3	665	12.90	17.2	23.6	388	4.44	395.3
212.5		0	1.5	7	212.5	1.30	1.28	3400	15.00	116.7	4.55	25.31	99.4	21.57	680	11.54	19.6	15.3	7231	1.87	328.6
210		1	3	8	195	2.66	.825	5450	32.73	117.2	9.07	13.53	513.9	59.34	681	12.30	21.8	25.8	3866	4.83	420.4
328		13	2.3	11	257	2.21	.91	5450	29.17	328.7	3.8	34.63	244.8	25.79	681	13.2	16.8	18.6	9894	1.96	343.5
150.5		7	0	4	139	.82	2.30	2275	11.50	45.7k	5.69	24.5	140	73.3	758	14.02	22.4	9.7	3724	5.25	389.4
217		0	5	5	172	1.08	1.41	4000	16.35	91.4k	5.04	29.90	175	56.27	784	15.14	12	8.5	4545	3.74	327.9
146		16	5	5	120	1.2	1.83	2700	15.81	72.8k	4.28	30.79	110	45.8	675	13.17	14.0	8.15	4680	3.48	358.6
202		0	1	7	177.5	1.22	1.63	3400	17.95	95.5k	5.95	26.48	137.8	38.17	800	14.76	12.4	7.6	4025	2.60	403.4
142.5		1	0	5	132	2.74	.73	6300	33.54	115.8k	6.34	19.28	279	46.27	630	12.24	12.2	16.7	2931	3.78	334
201.5		0	0	9	192.5	1.87	1.46	4975	30.27	128.3k	7.37	21.99	81.3	13.55	829	16.19	29	23.8	3339	.837	424.3
234.5		0	6	8	218	2.24	.86	5900	31.70	128.2k	8.19	17.24	220	26.96	787.5	14.15	17.4	19.5	2824	1.91	425.1
225		0	0	7	192	2.34	.76	6000	30.78	177.3k	5.52	23.80	187.5	25.03	684	13.15	17	22.3	3618	1.90	412.5
201		7	10	6	132	2.09	.935	5908	31.05	1088.5	6.273	236.1	5942	1289	787	14.85	4.5	4.8	1003	86.98	395.4
269		8	14	16	208	2.88	.72	6600	36.70	1892	6.728	189.2	14330	1433	673	12.74	2	2.8	804	112.7	459.4
274.5		5.5	0	10.5	91	3.26	.87	4750	35.73	1029	5.267	208.0	7860	1487	655	10.96	6.3	7.26	884	135.8	403.6
284.5		2	0	24	128	2.42	.775	7250	36.75	1068	7.338	206.6	6798	1315.0	753	15.18	3.3	3.86	878	86.72	414.2

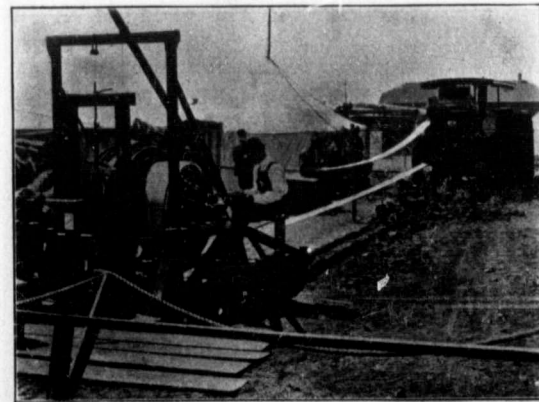
in the plowing test should be added to those marked in it after the brake test
Brake



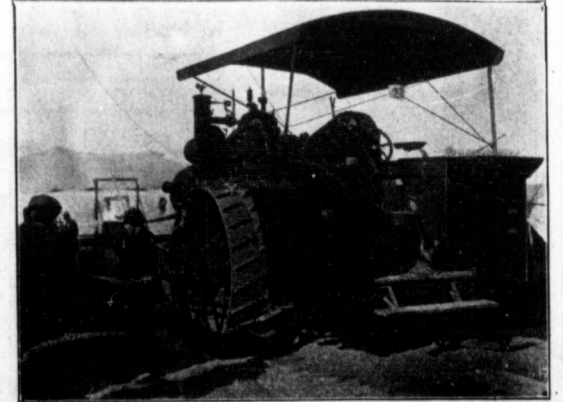
Sawyer & Massey 32 h.p. Steam Tractor.



The Sawyer & Massey Gas Tractor.



Gaar Scott 40-70 Gas Tractor.

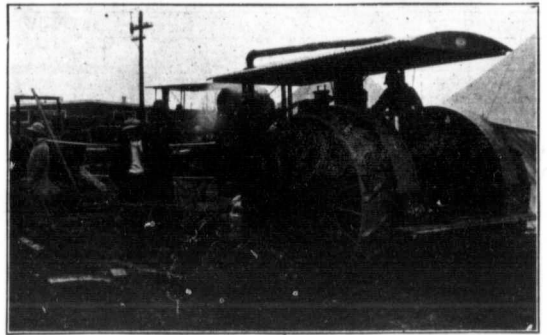


American-Abell 28 h.p. Steam Tractor

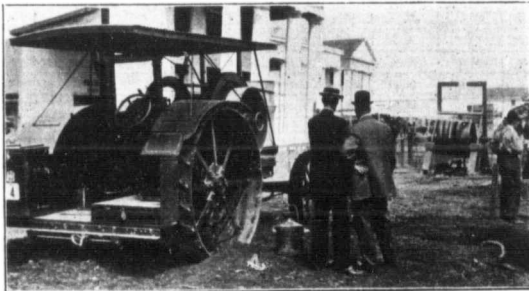
BRAKE PERFORMANCES WHEN THE SUN SHONE AND WHEN IT RAINED



The Rumely 15-30 Kerosene Tractor.



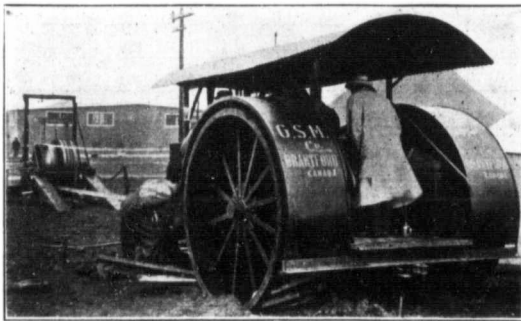
I.H.C. Kerosene Tractor 45 h.p.



The I.H.C. 15 h.p. Tractor on the brake. Messrs. Cavanaugh and Aspinwall watching the performance.



The Avey Farm Tractor doing its Brake Stunt.



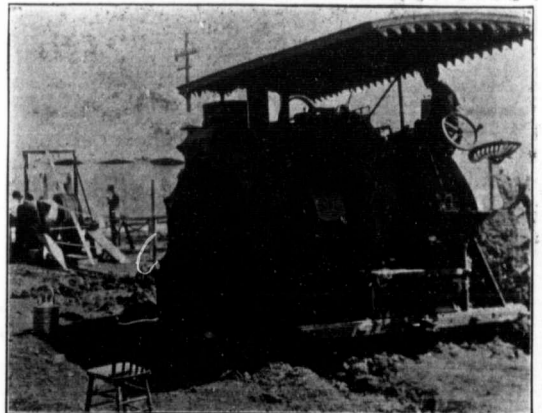
Gold, Shapley & Muir 30-45 Gas Tractor.



Gas Traction "Big 4-30" Kerosene Tractor.



The Rumely 15-30 Oil Pull. Bronze Medal Winner Class B) doing its brake stunt.



Gear-Scott 40-70 Gas Tractor

Do It Right This Year

YES, THERE'S A DIFFERENCE

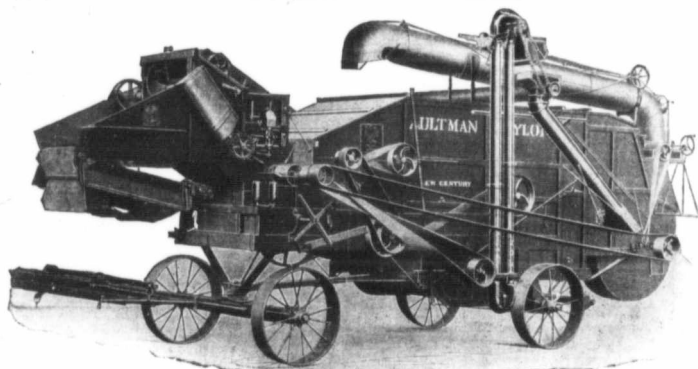
If You Once Run a "New Century," You Will Note the Difference

MR. THRESHERMAN:

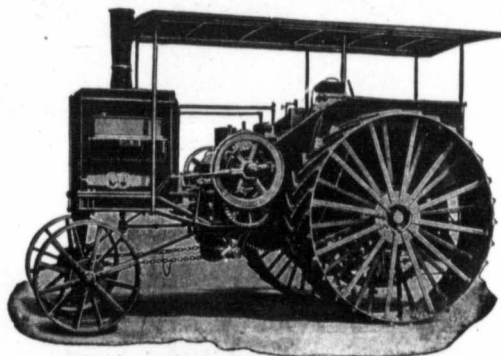
You thresh for profit. Why not get a machine that will increase your earning capacity.

THE POPULAR New Century

is known the country over as a job getter. No other make of separator has grown so much in favor in such a short period of time as has the **New Century**, and it's all because it gives **RESULTS**. Its unequalled rotary type of straw rack, open web conveyor back of cylinder, weight, compactness, system of bracing and belting, are features which have brought this machine to the front with a rush. We could tell you lots more of the good qualities of the **New Century** if space would permit.



If You Want to Make Your Threshing a Success with Gasoline Power, Insist Upon Having a "NEW CENTURY"
No Other Separator has Ever Been so Successfully Operated by Gasoline Power



The Most WONDERFUL of all Gas Tractors

The "A. & T." Gas Tractor is the product of several years of experience, and is all that we recommend it to be. It has been tested thoroughly in every kind of work, under the most trying conditions, and in no one particular has the engine ever been found to be wanting. It is just the engine you want for threshing, plowing, hauling, etc. You run no risk—the experimenting has all been done, and the engine is fully guaranteed.



Write for Special Gasoline Engine Catalogue. Ask for Information about this Wonderful Engine

The International Harvester Co. of America

Canadian Sales Agents for "New Century" Separators

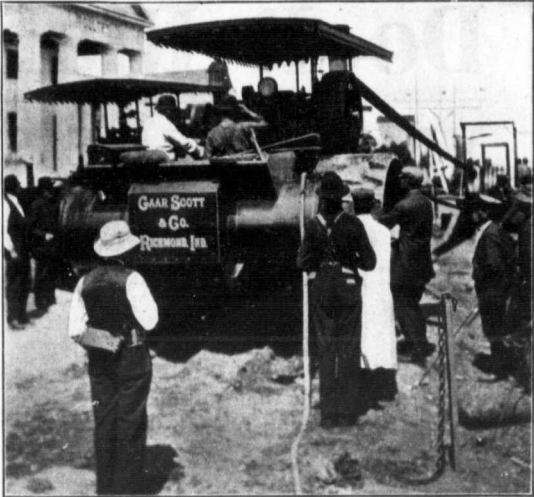
The Aultman & Taylor Machinery Company
Mansfield, Ohio

Sales Agencies: Minneapolis, Minn.; Calgary, Alta., Canada

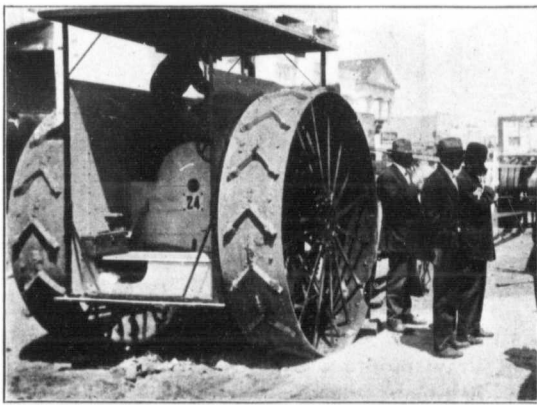
PULLING OFF SOME OF THE BRAKE STUNTS



Flour City 15-30 Gasoline Tractor



The Gaar Scott 33 h.p. Steam Tractor pulling 181 horse power on the brake. Bronze Medal Winner in Steam Class.



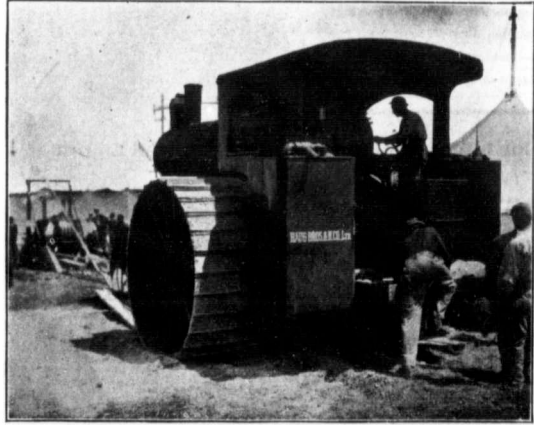
The Flour City Kerosene Tractor.



Buffalo-Pitts 30 h.p. Steam Tractor.



I H C 45 h.p. Kerosene Tractor.



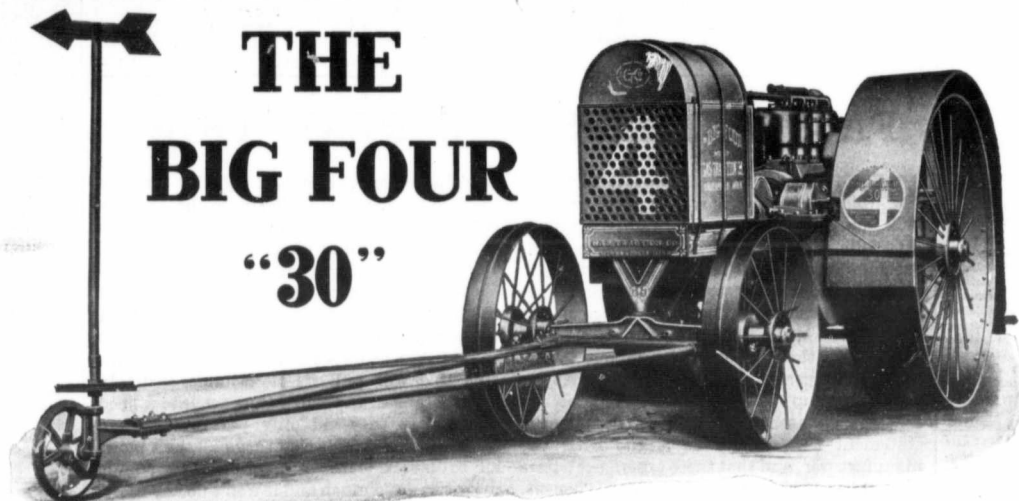
Avery 30 h.p. Steam Tractor.



Aultman and Taylor on the Brake.

TWICE GOLD MEDAL WINNER

**THE
BIG FOUR
"30"**



FOR the Second Time THE BIG FOUR "30" has demonstrated its superiority by winning the Gold Medal in the high power class in the Winnipeg Agricultural Motor Competition, making a perfect run, and breaking Prairie sod on two gallons of fuel to the acre, using no water.

The identical machine, No. 430, which won the Gold Medal last year, burning gasoline, won the Bronze Medal this year, burning kerosene--an engine built more than a year ago. Results count.

About Ourselves

The Gas Traction Company was the first, and is to-day the Largest Builder of Four-Cylinder Farm Tractors in the world. Back of each engine we build stands a highly competent service organization, whose one aim is to keep THE BIG FOUR "30" producing profitable results for its owner.

**Facts and Figures about
THE BIG FOUR "30"**

Ask us to send you a copy of our beautifully illustrated 112 page catalog, "The Book of Gas Traction Engines," which is crammed from cover to cover with straight-from-the-shoulder facts and figures on gas traction operation--tells how THE BIG FOUR "30" comes to you, subject to your approval--backed by a genuine "Golden Rule" guarantee. Get this full, free information to-day. Your name and address on a post card or slip of paper will do the trick. **DO IT NOW.**



GAS TRACTION COMPANY

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

156 PRINCESS ST., WINNIPEG

Factories: Elmwood, Man.

MINNEAPOLIS, MINN., U.S.A.



The Canadian Thresherman and Farmer

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E. H. HEATH
PRESIDENT AND MANAGER

E. W. HAMILTON
SECRETARY

F. C. BRAY
TREASURER

"Everything begins and ends with the soil."



FACTS VERSUS THE REAL THING

**OUR
GUARANTEE**

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

RECENTLY we have had several letters from our readers to the effect that our correspondence columns were unsatisfactory, especially so when it came to traction cultivation. Some of our readers have written to us to the effect that it would be impossible for any farmer to duplicate some of the figures that were given. They also objected to the fact that the majority of our letters are good experiences. They claim that we never show up the poor ones. Some of our readers have even gone so far as to make the statement that we are in league with the manufacturer, and that these experience letters are published wholly and solely for his benefit.

Naturally these kind of letters make us sit up and go back and look the ground over. Out first real experience letters in traction cultivation were published in 1905. At that time we scoured Western Canada and succeeded in getting hold of thirty-eight letters on traction plowing, the majority of which were not over two or three inches in length.

We have continued to scour the country every year and to show you how this proposition has grown; in the spring of 1911 with practically no solicitation on our part we secured

nearly a thousand traction cultivation letters. A great many of these were two or three type-written pages in length and when a farmer will sit down and write long hand copy enough to fill two or three type-written pages, it is assumed that he knows something about the game.

These letters are published just as they come to us and we make no attempt whatsoever to weed out kicks from the good experiences. It has always been our intention to give you these letters just as they are.

The traction cultivation proposition is not by any means a rosy one and there are several reasons for it. In the first place, it has been one of development. From the threshing engine to the steam plowing engine to the gas traction engine, enough has been accomplished to occupy a quarter of a century. Yet, it has all been done within practically five years. It has not been wondered at that mistakes have been made and that the machinery has not always stood up to the work. The farmer wanted it, he clamoured for it, and he got it; some for profit and some for loss.

The introduction of the gas tractor has mixed matters up to a considerable extent. The gasoline engine was a new thing and in the beginning the farmer had the mistaken idea that it did not require an engineer to run it. The result was that he got into a bunch of trouble and learned a bitter and expensive lesson through experience.

To-day we see gas tractors of the same make go out into the hands of two different farmers. One of these farmers will take hold of it and make a success out of the proposition. The other one will go all to pieces. Now it is fair to assume that a portion of the trouble at least devolves upon the farmer. A machine is only a machine and iron and steel can only stand so much and will only do so much. Unlike the horse, it never tells when it is tired and unless a considerable amount of common sense and

good judgement is exercised by the man on the foot board there is likely to be trouble, trouble of a kind that will cost the owner a considerable amount of money.

The same thing is true of plows. With the old horse plow there was only so much power to pull it and the result was that the plow was not over-loaded. With the engine it is different. Often-times we see farmers with an engine that will pull six plows under ordinary circumstances, and when they get into a good tough place they will only pull four or even three with the result that they pull their plows all to pieces. Now a traction plow is only meant to do so much and it won't do any more. You have got to use a certain amount of common sense in connection with it, or you will have trouble and a lot of expense.

But to get back to our letters. We have no objection whatsoever to publishing kicks and want to publish them provided they are founded upon good legitimate grounds. We don't want personal grievances between the farmer and the company. Those are things that our publication cannot straighten out. However, we do like experiences where the farmer tells his troubles, as such prove valuable guide boards to those who are about to engage in the traction plowing proposition in the future. There is always two sides to the story and you cannot get the whole story unless you get both sides.

Another thing. Most of the letters that we receive are solicited by us and it is fair to assume that the man who has had a bunch of trouble is not going to sit down and write his experience letter, and for that reason we probably get very few of the bad ones. Every letter that comes into our office is preserved and if any of our readers doubt the facts contained therein, we will be more than pleased to show them the letters themselves, and then it is up to the man who wrote it to back it up. If he has stretched the truth it is his funeral. It is simply a case where we have to take his word for it.

The great trouble with the average farmer who owns a traction plowing outfit is that he does not know just what the facts are. When it comes to fuel consumption and work done, it is largely a matter of guess work. He does not always know whether he makes a profit or whether he makes a loss. It would be a very good thing if every farmer who owns a traction cultivation outfit would keep a set of cost sheets. It would not take any time and some valuable lessons could be learned therefrom. These cost sheets need not be as elaborate as those in the Motor Competition by any means, but when it comes to fuel consumption, acres plowed, oil and grease expense, repair bills, labor bills, etc., these are all matters that could be easily recorded, and when the collector comes round in the fall to collect the money for his machine, such records would be mighty valuable to hold over his head.

We believe that the different manufacturing companies, however, would welcome such a thing as they are just as anxious as you are to get things into the proper shape. The future of their business depends upon it. Give us the kicks at any time, and all the time, but stick to the facts.

SUBSCRIPTION RATES

Postage prepaid, Canada and Great Britain, \$1.00 Per Year.

Postage prepaid United States and Foreign Countries \$2.00 Per Year.

Failing to receive paper, you should notify the office at once, when mistakes, if any, will be corrected immediately.

All Subscriptions must be paid for in advance and are positively discontinued at date of expiration unless renewed.

Advertising copy in order to secure good position should be in our hands not later than the 15th of the month preceding date of issue.

Advertising rates furnished on application.



Now Comes The Real Test-- The Test of Actual Service

It is also a test of dollars, for profits are the measure of service with threshermen and traction plowmen who look upon their work as a cold-blooded business proposition, which it is.

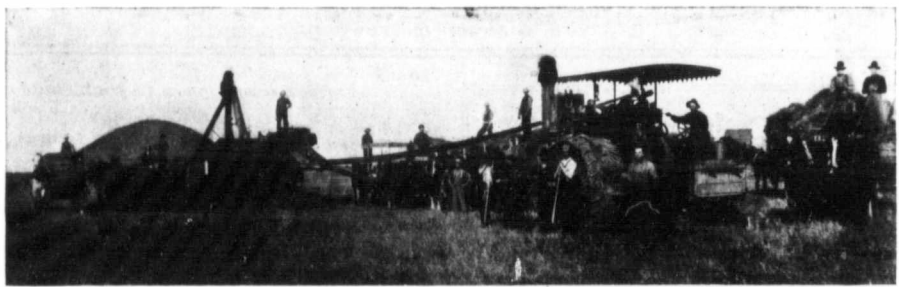
Not one man in a hundred who has the auto fever would coax a manufacturer to take his money for a car because it had made the record of a mile in 39 seconds. He would keep his eyes open for the machine that showed itself able to be up and about on four wheels, at an ordinary gait, seven days in the week.

Most buyers of threshing machinery use the same horse sense. They get a rig that Jim Smith and Bill Jones can run and do run, not to break records, but to save money on their own work and make money on the other fellow's job.

There is no trouble to make speed records with a Tiger Thresher. We can cite you to hundreds of them that go unchallenged. Our big-cylinder machines are limited only to the amount of grain that can be gotten to them. But capacity in threshing, as well as traction plowing, is more a matter of keeping at it than of scorching. In an endurance test Gaar-Scott machinery always wins. It runs as long as you will let it, without any stops for adjusting and tinkering, and with the cost of up-keep so slight that it cannot cut any figure in your profits.

Macklin, Sask.
It may interest you to know that during the past season we broke with the 40 h.p. double-cylinder tandem-compound engine 1,650 acres in 40 days. Our largest day's work was a small fraction of an acre less than 50 acres in 13 hours. We are glad to state we are highly pleased with our engine in every respect, as it did not cost us one cent for repairs. We can also say that the separator is all you claim it to be in every respect. Had we gotten our plows in time, we could have broken 4,000 acres in the past season.
EDLER & MANSKE.
Nov. 12, 1910.

Owners of Gaar-Scott machinery are not job beggars but job getters. If you want to know why and who they are ask for Canadian Tiger Truths.



A Full "Tiger" Team, Owned by Heatley Bros. & Smith, Headingly, Manitoba. Read their letter below.

Headingly, Manitoba.
The 25 h.p. double-cylinder traction engine and 36 x 60 separator bought from you, has given us entire satisfaction. We threshed our own grain and for twenty-four of our neighbors, all in twenty-three and three-fourth days, totalling over 80,000 bushels of grain. Your guarantee that the old Tiger would do more and better work than any other outfit of the same size, holds good, and we are satisfied that we could have beaten our own record if the crop had been good. We never had any trouble holding steam, and the engine is a dandy. The separator can't be beat. All of our customers are well pleased, and we threshed grain—as good as which was thoroughly cleaned—as good as if it had been run through a re-cleaner, and grain wasted in the straw. We can recommend the old reliable Tiger Line to any one who wants the best in the market and a square company to deal with. We are sending you some photographs of our outfit in three hours and fifty minutes, which yielded 1,350 bushels of oats and 251 bushels of wheat.
HEATLEY BROS. & SMITH.
Sept. 27, 1910.

If you have this kind of machinery, you are ready for the season of 1911. If you have not, it is time to get busy. You can not follow old wasteful methods and get the cream of the threshing run. The grain growers want all the grain, and the elevators want it clean and whole. Let us send you our "Get-All-the-Grain" circular and our special plowing circular.

Our three branch houses are well stocked with everything for the Canadian thresherman and traction plowman. Write any one of them, but do it quick if you want to be prepared for the real test.

Gaar, Scott & Co.

WINNIPEG, MAN.

Regina, SASK. Calgary, ALTA



MASSEY-HARRIS "OLDS" GASOLINE ENGINES

Make friends wherever they go, and the stauncher friends are their owners. At the Canadian Industrial Exhibition at Winnipeg, and such is the case wherever the Massey-Harris "Olds" are shown, visitors were astonished at the remarkable simplicity of construction and operation, at the ease with which all tasks were performed, and at the extremely low comparative consumption of fuel.

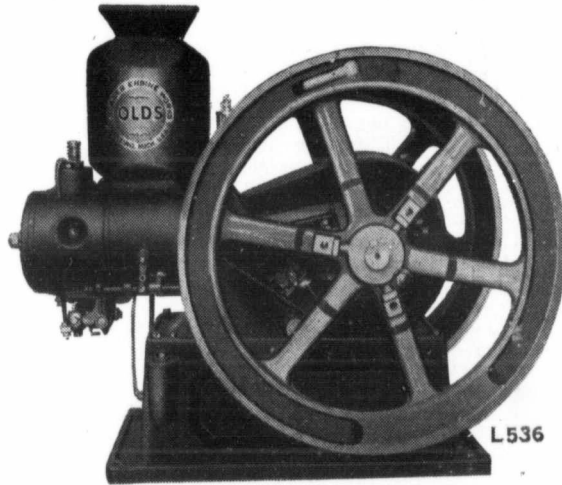
With this absolutely up-to-date engine there are only **Three** things for the owner to do, viz: **Put in Your Fuel, Start the Engine and Do Your Work.** Repairs need not be quoted as they will be so slight as to be not worthy of mention.

Carburetor has
No Working Parts

No Pump Used

Heavier Construction is
Employed at those parts of
Engine where required.

Engine **Always** delivers
Rated Horse Power, and
in many cases more.



L536

Jump Spark Ignition
**Always Fires at Proper
Time.**

Governor has control of
Engine **at all times.**
Engine **can't** run away.

Engine has only about
One-half as many parts as
other makes.

**Runs perfectly year
'round. No trouble to
start in winter.**

SOLE
CANADIAN

MASSEY-HARRIS COMPANY, LTD.

SALES
AGENTS

LOCAL AGENCIES EVERYWHERE

THE DISC HARROW

By J. F. Irwin

The disc harrow is one of the most useful as well as one of the most abused of our farm implements of to-day. As a weed destroyer and conserver of moisture it is almost indispensable. But it is very often erroneously used as a plow, and to give good results must be properly handled and cared for. By being properly handled, is meant the careful attention of the operator to his machine, so that when a nut gets loose it must be tightened at once; if a bolt, brace, or casting is broken it must be replaced as soon as possible to do perfect work. If this is not done and a boxing becomes loose the extra wear will soon put the part in poor working condition, so that in the end it will cost time and money to replace what might have been saved by a mere tightening of a nut. As well the extra wear and tear will considerably lessen the lifetime of the implement. Proper care will include the housing, oiling, and keeping all nuts tight, because the nuts should be kept tight and all boxings well lubricated on any machine for it to give satisfaction and do good work. When not in use, implements should be kept in a waterproof building, and this one raised off the ground

to keep the discs from rusting.

The lifetime also depends on the work they have to do, for instance they are not worn nearly as much in discing stubble land behind the binder to start weeds so that they may be killed by fall plowing; or used on summerfallow, as they are when used on breaking or backsetting. For in working newly broken land they are called upon to do heavier work; are generally set deeper; the sod is tougher; and there is always more strain on them because of the uneven ground over which they have to pass. As well, weights are often carried to give more pressure, and the more weight carried the greater the strain when going over uneven surfaces. It can, therefore, be seen how easily the machine will get out of order or parts broken, if nuts are allowed to become loose and the discs not handled properly. Since there are burrs which have a greater strain to bear than others, it is advisable to put an extra or jamb nut on to be sure everything about the frame is rigid, because in keeping the parts bolted together tightly it will prolong the life of the machine.

Discs are made in different sizes from twelve to twenty

inches, and while the larger ones have a greater cutting area and are lighter in draft, they do not work up the soil, nor cut as deep as the smaller sized ones. The sizes most universally used and which give the greatest satisfaction on ordinary soils are the fourteen and sixteen inch ones, because they cut and turn better than the larger sizes, and are lighter in draft and cover more ground than the smaller size. Right here, I must say, too, that the discs must be kept sharp to do perfect work, neither can good work be done if they are carrying a lot of moist soil or clay stuck to their sides, and to get rid of this they must have a good set of cleaners. Cleaners are of many sizes, weights and shapes, but perhaps the best are the ones which are not too heavy and can be applied to the surface of the disks at the will of the operator by foot levers, and, upon the pressure being taken off the cleaners, spring back between the disks, so that no undue friction is caused nor weight on the power.

A man cannot keep his land clean nor his discs sharp if he does not remove all stones and rubbish from his fields, and as most makes of discs have sheet iron boxes or weight pans, it is very profitable to the farmer and easy for the operator to place small stones and rubbish on the discs and carry it to the end of the field; thus will the field give a greater yield and the deprecia-

tion in value of all machines used on the field be less.

The bearing boxes are also a very important part of the disc for if they are not well lubricated the discs will draw heavier. These boxes are reached by means of iron pipes which are apt to get filled by fine dust particles, and for this reason the operator should carry a wire cleaning rod gimlet shaped at one end to clean out the pipes before oiling. If they become clogged, then the operator must take off the boxings, clean them thoroughly, and grease with a good, hard oil, or axle grease. This should be done every few days to ensure light draft, whether the pipes become clogged or not. When the boxings cannot get oil, they wear out very quickly, and this is the reason that most discs have hardwood filled boxings, so that if they are worn out they are not an expensive part to replace. Then oil just before the implement is put away for the season. When this is done they will be found to work smoother at the beginning of the next season than if it had not been done.

Another factor to be considered is the lever or levers, the distance they are from the operator, and ease of operation, as he must have perfect control of his machine at all times. Most men prefer the double lever system on account of the different set they can give the two sides, e.g., to

Power for Threshing

Smooth, Steady and Dependable

A WET bundle instantly increases the load to maximum, a team driving away leaves one side of the separator running empty and it is impossible for bundles to be pitched with regularity, so when threshing there is a continual changing in the amount of load. It varies frequently and suddenly, from minimum to maximum and from maximum to minimum.

In spite of all of this, in order to do its work perfectly, the separator must be driven at an unchanging rate of speed. The tractor that does this to the perfect satisfaction of all users is the

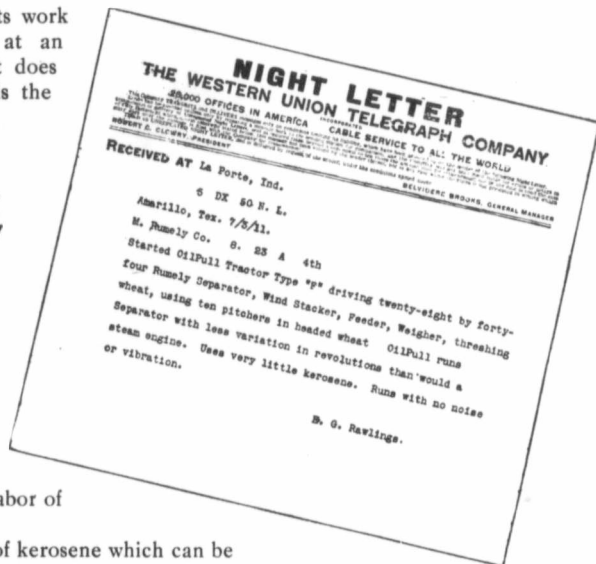


The sensitive throttling governor in the **Oil Pull** Tractor automatically adjusts the engine to all these wide variations. The **Oil Pull** Tractor, when threshing, requires no attention except the necessary daily oiling. One operator can easily care for both engine and separator. This eliminates the labor of the engineer.

The **Oil Pull** Tractor burns a cheap grade of kerosene which can be secured most anywhere at from 5 cents to 7 cents per gallon. Daily fuel cost from \$2.00 to \$3.00 per day. Ten hours' fuel supply carried right on the engine. This does away with the expense of coal and water hauling. The **Oil Pull** Tractor is easy to operate, working parts simple and accessible. Any intelligent farm hand can quickly learn to run it.

The always present danger of fire from sparks when threshing with a steam engine or an explosion when handling gasoline is done away with in the **Oil Pull** Tractor, as it burns the safest liquid fuel known.

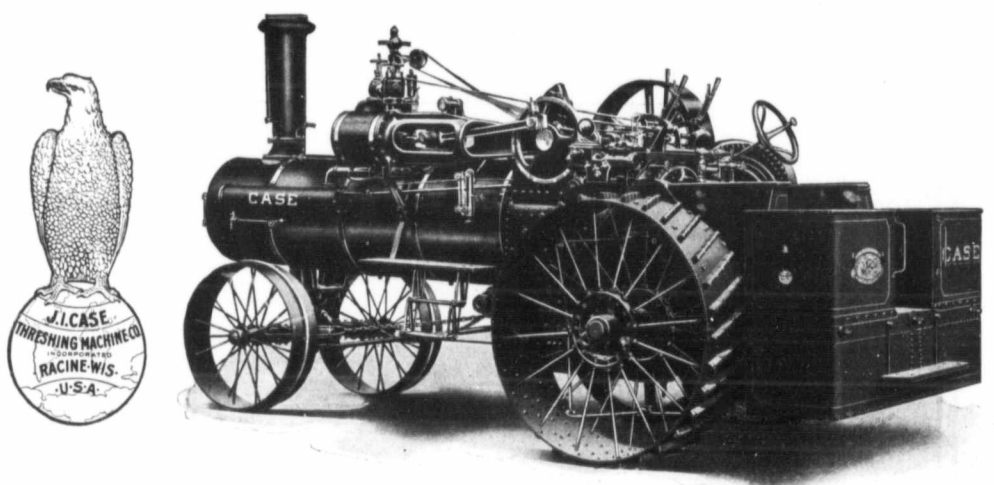
Besides threshing, hulling, etc., the owner of an **Oil Pull** Tractor can make good use of his engine doing custom plowing in the Fall and Spring season. One can find use for an **Oil Pull** Tractor nearly every month in the year. Send for special literature.



M. RUMELY CO., 1981 Rose St., Regina, Sask.

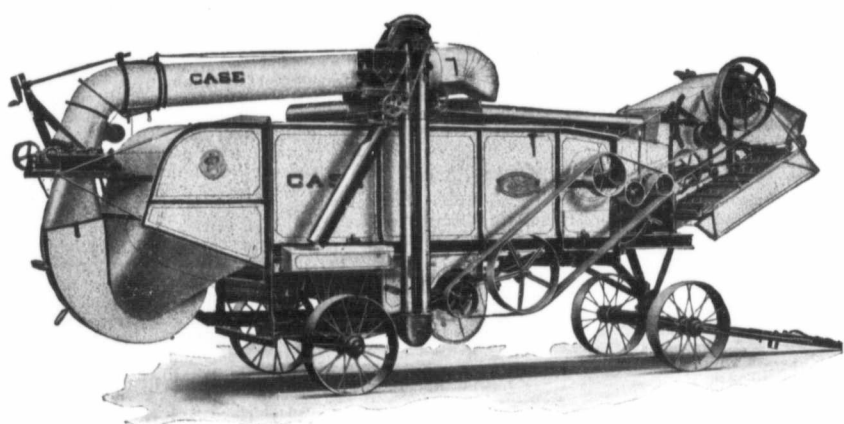
BRANCH OFFICES AT WINNIPEG, MAN., CALGARY, ALTA., SASKATOON, SASK.

"YOU WANT WHAT YOU WANT WHEN YOU WANT IT"



To supply those who buy late we carry stocks of Engines, Threshing Machines, Attachments and Automobiles at our Branch Houses Deliveries are made promptly.....

WRITE FOR OUR
J.I. CASE THRESHING
 INCORP
RACINE, WIS
 CANADIAN BRANCHES ·· WINNIPEG



Particularly if you are threshing. Promptness is instilled into **CASE** dealers. **CASE** men at the branch houses, in the field and on the road. Orders for repairs and supplies are given immediate attention.

CATALOG NO. 68
MACHINE COMPANY
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CONSIN, U.S.A.
 REGINA CALGARY TORONTO.

Chicago
 ENGL

GASOLINE TRACTION ENGINES

A DEPARTMENT FOR THE USER

We want every owner of a gas tractor in Western Canada to give us his experience. The owners of gas tractors to-day are in a sense pioneers. They are working out the data and compiling a record of work done that both manufacturer and farmer alike the world over are watching with intense interest. Don't keep what you know under your hat, but let us have a story of your gas tractor work. We will reward every such story with a copy of "Plain Gas Engine Sense," one of the best handbooks we know of on the gasoline engine. Don't neglect this matter but let us have your experience at once.—(Editor.)

An Oil Pull.

I wish to say that my experience with a traction engine is very limited. However, as you have gone to the trouble of writing me, I will endeavor to relate to you something of my experience.

Last July, the latter part of the month, I purchased a section of land (raw land) at Sedley, Sask. I wished to get it broken, so concluded to purchase an engine to do the work.

I looked around and finally purchased a 25 horse power Rumely Oil Pull. I went to work with it the first days of October and turned 200 acres of tough sod before it froze up in the fall. I got an eight bottom Cockshutt plow and took off two plows. I hooked a 16 foot scrubber after, so calculated we were pulling a 40 horse load.

I attended the plows myself and hired an engineer.

We used one barrel of oil and one barrel of water a day. I think the actual breaking cost 50 cents per acre, counting out the engineer's wages. I paid him \$4.00 a day and we turned 12 acres per day.

I have never threshed with my engine, but know it to be a successful threshing one.

Trusting this may be of some benefit to you, I remain,

Yours truly,

G. M. Cleveland,
Sedley, Sask.

Don't Load Too Heavy.

Our experience in traction plowing extends over one year. We have a 45-22 horse power Hart-Parr gas tractor and Cockshutt engine gnag, eight plow frame. We use seven fourteen-inch breaker bottoms.

The outfit arrived April 26th, 1910, after which time we started our spring work. We started discing sod, drawing three 16 x 16 inch discs and our 24 ft. drag well weighted down. This made only a light load for the engine, but we thought it advisable not to load too heavy until all the bearings were properly adjusted. We prepared in this way 50 acres of sod for seeding.

After completing this work, we started plowing, drawing seven fourteen-inch stubble bottoms and one 12 ft. drag. This made a nice load with plenty of power for emergencies. We prepared in this way 225 acres and used, on an average three gallons per acre of engine

kerosene at 16 cents per gallon.

After this the breaking season started. We drew six fourteen inch breaker bottoms during the breaking season and had plenty of power to meet all conditions.

We broke in all during the season five hundred acres. Of this amount 137 acres was fireguard for the Canadian Pacific Railway and extended from Tuffnell to Wynyard, Sask., a distance of 40 miles. 243 acres was custom work and 120 acres on our own land. We used on an average of 4 gallons per acre of engine kerosene at 16 cents per gallon.

We use two men, one engineer and one plowman.

We also have a Sawyer-Massey Great West 32 x 56 separator with all attachments. This outfit the engine runs with ease and

done in its proper season, with more ease and less expense than with horses, at the present high prices, with the high cost of keeping them in idle seasons, and the number of men needed to look after same.

We run our outfit with two men, and one horse does our driving and hauling any fuel and water we need. We used about 40 gallons of kerosene, five gallons of gasoline and ½ barrel of water per day.

I think traction work is much harder than threshing on engine from what experience I have had.

I estimated for breaking per acre as \$1.15 for stubble with harrows attached about 90 cents.

I did not keep a record of cost while discing and seeding, but the cost is in proportion to the above figures.



I H C 45 F. p. Tractor pulling a P. and O. Engine Gang in the Winnipeg Motor Contest.

does first-class work, using from 45 to 50 gallons of engine kerosene per ten hour day. Our engine has not given us any trouble in the least.

Your truly,

Kauffman & Miller,
Tuffnell, Sask.

Well Pleased.

I have a Hart-Parr oil cooled 22 H. P. tractor and a Cockshutt engine gang with eight stubble bottom and six breakers. This was my first season at traction plowing and I am exceedingly pleased with the results. I have plowed in all about 800 acres, double discing and harrowed 656 acres, seeded and harrowed 370 acres and threshed about 9,000 bushels.

I think traction farming is the only system as each thing can be

I have a 34 x 56 Rumely separator with all attachments. The above size separator is all right for me, as I did not intend to do any custom work, but it is no load for this engine.

I find a few dollars spent in good tools is the best investment for anyone who has an outfit of their own. I stop work about half a day each week when plowing or doing heavy work of any kind, and adjust my bearings and examine the outfit in general and find everything can be kept in better shape. I think it will add to the life of an engine to have everything tight and in proper adjustment.

I intend to keep a better account of my work in the coming season, so I can give an exact account of everything.

Yours very truly,

Dave Shields,
Glenside, Sask.

Broke 8½ Acres Per Day.

I operate a 20 horse power International Harvester traction engine and a five bottom Cockshutt engine gang.

The first plowing we did was for oats last spring. We hauled four fourteen-inch plows and a harrow on rolling ground, which the engine handled quite easily. In breaking we hauled three fourteen-inch plows in clay land and found that our engine had about all it could handle. We broke on an average of eight and a half acres a day, using 2¼ gallons of engine gasoline per acre and two barrels of water for cooling purposes. Grease and lubricating oil cost us about 50 cents a day, and gasoline cost us 26 cents a gallon at Perdue.

Two of us handled the outfit, while a third man hauled the water, drew our gasoline from town and kept the shares sharp. When the ground got dry, we changed shares every day, as we found we could make a better job when we kept our shares sharp. In the fall we hauled five plows, averaging ten acres a day.

In threshing, we operate a 28-40 Nichols and Shepard separator with all attachments. We purchased the outfit in August 1909, and not having any experience with gasoline engines, we had considerable trouble during the threshing season. The engine did not seem to have power enough. This fall by getting a smaller belt pulley on the engine and letting it run a little faster we had much better satisfaction. We had seven stook teams, one spike pitcher and one man to haul water and gasoline and help when moving. Plowing is much harder on an engine than threshing.

We have not had any experience with hitches, but intend seeding with it in the spring. Our idea of a hitch for drills, harrows, discs, etc., is to have a stick of timber six inches square and about twelve feet long with a wheel on each end. Wheels to be large enough to raise the pole level with the drawbar of the engine. For seeding the drill poles would be fastened to this stick of timber, and the draw chains would come from the hitch on the drills up to this same stick, which is drawn from midway between the poles of each drill to the drawbar of the engine. Discs could be drawn the same way.

Yours truly,

Jackson Bros.,
Keppel, Sask.

After All Is Said It's Reliability that Counts

You require a power that is dependable, one that will stand up in the field regardless of weather or other conditions. A few hours wasted means money lost, both in wages and time. Don't let the many points of superiority claimed for a tractor cause you to forget the most important one — its **reliability**.

I H C Gasoline Tractors

Not only deliver the most power on the least fuel, but they stand up in the field under the most severe conditions. They are good for twenty-four hours a day if necessary. Their simple design and strong construction frees them from the petty troubles of more complicated engines.

They are the cheapest and most satisfactory power for threshing. With an I H C tractor, and an I H C thresher, you are equipped to do the best work at the least expense.

These machines insure a wonderful saving in time and work.

The line is complete and includes I H C tractors in 12, 15, 20, 25 and 45-H.P. sizes, and stationary, portable and semi-portable engines, vertical or horizontal, air or water-cooled, in sizes 1 to 35-H.P.; I H C threshers in several types and sizes.

See the I H C local agent at once. Let him tell you all the facts and the results obtained by using the I H C machines. If you prefer, write nearest branch house for catalogues, and any special information you desire.

WESTERN CANADIAN BRANCHES.—International Harvester Company of America at Brandon, Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon, Weyburn, Winnipeg, Yorkton.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
CHICAGO (INCORPORATED) U S A



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Take a Course in Gas Engineering.

In April, 1910, I bought a 20 horse power Type C gasoline traction engine from the International Harvester Company of Regina, and before the engine arrived I took a lesson of one and a half hours duration from the expert at the warehouse at Regina, on how to run a gasoline engine and then on arrival of the engine at the Station I was met with the expert who ran the engine out to my farm, a distance of two miles.

The next day the expert took the engine with discs and harrows to the field when I received my first practical lesson in running a gasoline engine in field work and the expert stopped with me for two hours, then leaving me to paddle my own canoe.

This being all the experience I had in running a gas engine, I was not able to give the engine justice for a considerable time, and my advice to the intending purchaser of a gas engine would be to go and take a thorough course in gas engineering at the works of the engine chosen, as it will save a lot of delay and annoyance, as it is not all pleasure running a gasoline engine, especially if a person has had no experience.

The first plowing was done with two three-furrow disc plows (horse). I plowed fifty acres in 3½ days of twelve hours, but I found that horse gangs were not satisfactory for engine plowing. So I purchased a five furrow fourteen-inch engine gang from the Cockshutt Plow Co., and attached a two section iron harrow behind the plows and this made an excellent job of both spring plowing and summer-fallowing, as it retained what moisture there was in the soil, besides making an excellent seed bed. In spring work the engine pulled this with ease. I think a gasoline engine does not work satisfactorily if loaded to its full capacity.

I attended the plows and ran the engine myself and averaged about 16 acres per day of 12 hours, and then when seeding I hitched a five section harrow to axle of engine so as the harrows were close to engine wheels, and then attached a 22 disc seed drill with stub tongue to hitch on engine following behind harrows. The harrows were then under tongue of drill, and behind the drill was hitched a ten foot pulverizer packer with stub tongue attached to a 2 x 6 plank, which I bolted to foot boards on drill, and by using cross rods on seed drill hitch I found this worked very satisfactorily. Although the engine will do the work of 14 or 15 horses; 1,400 pounds, on plowed land, I was able to handle this outfit and do about 27 acres per day, but a farmer who had much seeding to do would gain time by attaching two or three drills and harrows for same and have an extra man.

I used about a barrel of water per day for cooling and if a windy

day, about 1½ barrels as it blows off the screen.

In my season's work on the farm, plowing, harrowing, seeding, packing, etc., I used about an average of 20 gallons of gasoline per day of 12 hours, which costs here 26 cents per gallon (in tanks) and 70 cents per day for grease and oil. But in threshing it takes about 18 gallons per day.

I have an Aultman and Taylor 27 x 42 inch separator with all attachments which will thresh an average of 1,200 bushels (18 bushels per acre of wheat) per day.

A farmer needs a four horse outfit, even if he has an engine, as there are some low places in spring where you could not put an engine through with implements attached. Although I am a lover of the horse, I am well pleased with my engine, as it takes the heavy work off the horses in spring seeding. I found out by experience that when an engineer understood his engine he could save considerable fuel and could get more pull out of his engine.

Yours truly,

George Jeffrey,
Davidson, Sask.

Experience Necessary.

In the spring of 1910 I purchased a 20 h. p. Type C International Harvester tractor and a 6 bottom John Deere engine gang with 6 stubble bottoms and 6 breaker bottoms. This outfit, although ordered to be up on the first of April, did not come until May 9th, and I started plowing on the 12th.

I knew absolutely nothing about gasoline engines and had never seen an engine gang. The

consequence was that I had a lot of trouble, and did not make a success of it from a financial point of view. In fact, I made very little more than running expenses.

I had a lot of fierce plowing to do, stones, scrub, hills and wet places, so wet, in fact, that I do not think I exaggerate it when I say I got stuck in the mud once for every acre I plowed. I never used a team to get out of the mud holes, but passed a log under the engine in front of the drivers and chained it to the wheels, and the engine would lift itself up on it.

I tried to put in all the days there were plowing from May 12th until the last of July, but on account of long waits on gasoline and repairs and wet weather, etc., I only put in 36 altogether.

In that time I plowed 400 acres of breaking, 50 acres of stubble and double disced 100 acres, drawing four 14 x 16 discs. I drew from 3 to 5 fourteen-inch plows in sod and six in stubble. The fuel, etc., used were about as follows:

1772 gallons of gasoline costing	\$584.45
25 gallons of machine oil	11.25
Gas—engine oil—21 gallons	12.20
Axle grease and hard oil	9.85
Repairs and blacksmith work	98.15

I have given the total amount of gasoline bought and it was not all used in actual plowing, as I had quite a few long moves from place to place.

My tractor is a stationary gasoline engine mounted on a traction truck with clutches or friction drives for both forward and reverse speeds. I believe a

single cylinder engine should not go over 15 h. p., as the flywheels are too heavy to turn to start it by hand power, and 2000 pounds of iron are too much weight to whirl around when more cylinders and less fly wheel weight will do the amount of work and give steadier power.

When I bought this outfit I was afraid that the land up here was too stony. But I have plowed land that was considered too stony to plow with horses. I used swivel rolling coulters and let them go down on the share. So that when the coulters blade hit a stone it rolled over it, lifting the plow out of the ground. If the coulters are run that way it is impossible to break the plows or bend the beams no matter how stony the land is.

The gas tractor to my mind is yet in the experimental stage, but it is no doubt the coming power. I would say to all intending purchasers, do not buy a tractor just because it was a gold medal winner, but buy the engine best suited for your needs, and above all things, don't be afraid to get lots of power, for your engine will last much longer, give better satisfaction and better results financially if you never overload it.

The nominal horse power given means nothing. When it comes to a dead load such as plowing, nothing counts but the actual brake horse power. The draw bar horse power of a tractor is just what it is geared down to. The faster the fly wheels on the driving pinion run in relation to the traction speed, the more the draw bar horse power, and the results are practically the same as far as the draw bar horse power is concerned.

Continued on page 63

Made in Winnipeg



Patent applied for. Registered.

"Nine Lives"

A New XCELL Feature

"Xcell Igniters"

With Spring Clip Terminals



The new connections are soldered to the carbon and zinc electrodes, thus making loose connections impossible. Merely press down the spring, slip in the wire and forget your batteries.

No more knurled nuts to tighten. No more sore thumbs. No more pliers. No more loose connections.

MR. DRY BATTERY USER:—Equip your engine with XCELLS. They are made in Winnipeg and are guaranteed.

The Canadian Carbon Co., Ltd., Winnipeg.

Irish and Bury, Toronto, 12-14-16 Shuter St.




We say to You :

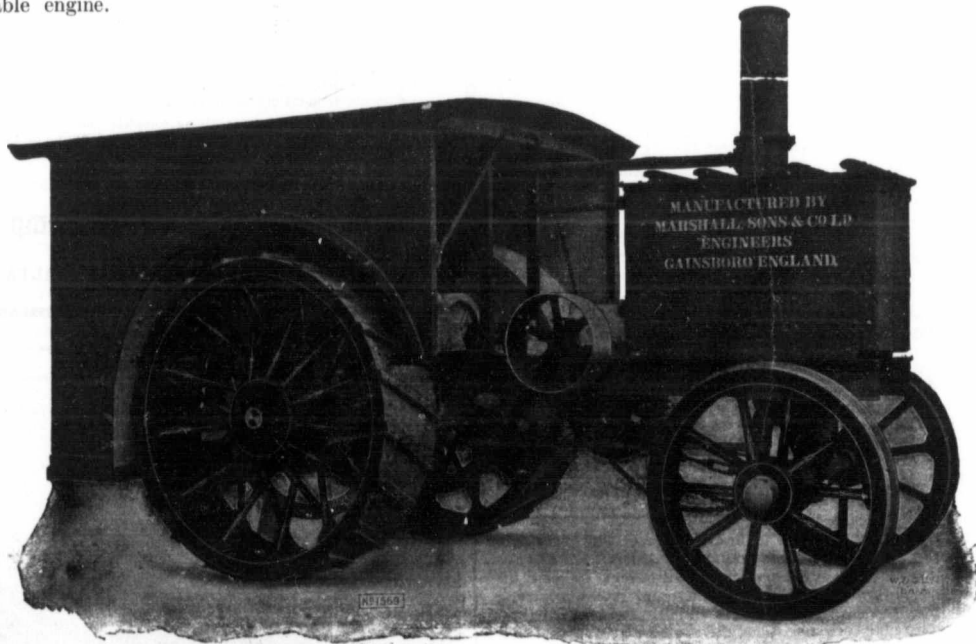
Look carefully at this Engine

Then read what we Say

You men that have Plowing and Threshing to do should know what the British Colonial or Marshall Tractor can and will do for you.

You know like the rest of us that "power-farming" is fast becoming the only method in Western Canada to-day, but like everything else there is a right way and a wrong way to go about it.

Your success in "power-farming" depends almost entirely upon having reliable power—in other words, a reliable engine.



The British Colonial Tractor, the Engine that does deliver, steady reliable power; built in two sizes—35 and 70 brake horse power

You depend upon your engine to furnish power to break, plow and seed your land ; to cut, thresh and haul your grain to the elevator.

When you come to think about it, it's a pretty large order.

A whole lot depends upon that engine.

Now just stop and consider this carefully—for you a good strong thoroughly reliable engine can do a whole lot of good and win for you substantial profits.

Upon the other hand, an unreliable engine will cause you untold misery, trouble and expense.

Therefore, its up to you to get a good reliable engine.

We guarantee the reliability of this Tractor, and that it will do your work.

WRITE US for particulars of this really great engine. All information cheerfully supplied.

Sawyer-Massey Company, Ltd.,

613 Union Bank Building

Winnipeg, Manitoba

Course in Gas Engineering

This Course will consist 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 X.

The subject of compression from a practical viewpoint has been taken up quite thoroughly in some of the previous lessons, and it was shown how important the use of compression was to obtain the highest efficiency from the internal combustion engine. A method was given for determining the clearance space which space, obviously, determines what the compression of the engine shall be. However, the method of calculating the amount of the compression for a given clearance, or determining the clearance space for a given compression was not discussed, and we wish now to go into this.

Let "v" be the volume in cubic inches of the compression space of an existing engine; let "V" be the volume displaced by the piston in making one stroke. When the piston is at the end of the suction stroke the cylinder is filled with a mixture of gas and air, occupying the volume "V" + "v". As the piston returns on the compression stroke, the mixture is gradually compressed until it occupies the clearance space back of the piston, or the volume "v".

Now the amount of compression depends upon the "compression ratio," which is the ration or proportion of the volume before compression to that after compression, or the "compression ratio," "c r" equals "V" + "v" divided by "v". Using the compression ration simplifies calculation, as by its means we eliminate many large and cumbersome figures.

The term pressure as ordinarily employed in every day use refers to the pressure as measured by the steam or air gage. However, this represents pressure above the atmosphere. Air, of course, has weight, the same as all other material substances, and, consequently the atmosphere of the earth exerts its weight downward, or as we may say, there is a certain pressure upon the earth due to the atmosphere. If we were to take a pipe or tube, one inch square, and closed at one end, and fitted at the other with an air tight piston, and then attach this tube to an air pump and exhaust all the air, we would find that the piston would be pushed in by the pressure of the air surrounding. Were a string balance attached to the piston it would register 14.7 pounds, which would be the pressure of the atmosphere in pounds per square inch. Since gases and liquids are free to move in all directions this pressure is also exerted in all directions. The pressure of the atmosphere is generally referred to the sea level for as we

ascend a mountain the air becomes "light", that is, the layers of air above are less in height and consequently the weight becomes less.

The method of determining the pressure of the atmosphere is by means of the barometer, which, in its simplest form, is merely a long glass tube closed at one end, and completely filled with mercury; the open end is then inverted in a dish of mercury and the air, pressing upon the mercury in the dish, forces that in the tube to remain at a certain height; for this reason, the pressure of the atmosphere is usually given in inches of mercury.

INCHES OF MERCURY.	POUNDS PER SQUARE INCH.
28.5	13.97
28.6	14.01
28.7	14.06
28.8	14.11
28.9	14.16
29.0	14.21
29.1	14.26
29.2	14.31
29.3	14.36
29.4	14.41
29.5	14.46
29.6	14.50
29.7	14.55
29.8	14.60
29.9	14.65
30.0	14.70
30.1	14.75
30.2	14.80
30.3	14.85
30.4	14.90

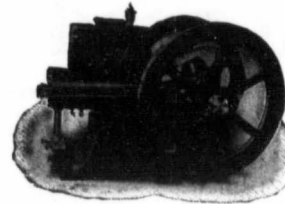
The table gives the pressure in pounds per square inch corresponding to different heights of the barometer in inches of mercury. In all scientific calculations the pressure at the sea level is used and this is taken at 14.7 pounds per square inch, which as will be seen from the table corresponds to 30 inches of mercury. Of course, the pressure of the atmosphere is not the same at all times; for instance, when the air is damp and "heavy" the barometer stands higher.

The pressure as measured by the ordinary steam gage is known as gage pressure, and represents the pressure 'above' that of the atmosphere. To get absolute pressure, or the measure above zero pressure, it is thus necessary to add 14.7 pounds to the gage pressure. Where any confusion is likely to occur, it should always be stated whether the gage or the absolute pressure is used. In most scientific work the absolute pressure is employed.

In the matter of temperatures, as usually designated confusion is also likely to occur. In the fahrenheit or ordinary system of temperature measurement used

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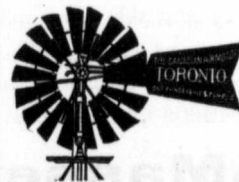


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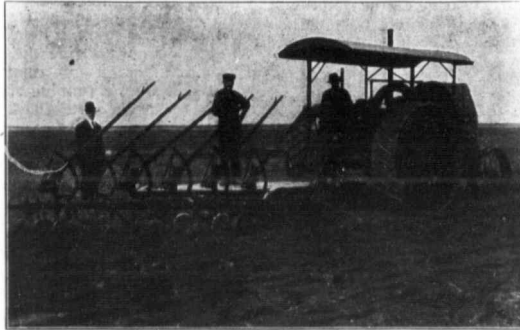
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in English speaking countries, the zero point is chosen arbitrarily, 32 degrees below the freezing point of water. We have ordinary temperatures much below the zero point so that it is necessary to have some point at which we might say there were no heat, so as to have a zero point from which we can measure absolute temperatures. Now heat expands and cold, or absence of heat, contracts. It is found that at ordinary temperatures when a gas is cooled, its volume decreases 1/493 for each degree of fahrenheit. For instance, if we have 493 cubic inches of a gas at 32° fah. and cooled it to 31° fah., the volume would decrease to 492 cubic inches. Theoretically, were we to continue the process for 493° below the freezing point of water the volume of gas would be zero. Practically, this is impossible, but it furnishes us a convenient point from which to reckon temperatures, and so this point is called the absolute zero, and is thus 461 degrees below the fahrenheit zero. Thus to obtain any absolute temperature, it is necessary to add 461 degrees to the fahrenheit reading.

Now one of the fundamental laws concerning gases is that the absolute pressure times the volume divided by the absolute temperature is the same for all conditions. For example, the absolute pressure before compression in a gas is equal to the absolute pressure after compression

times the clearance volume divided by the absolute temperature after compression.

Let v = Volume of clearance or compression space.

Let P = Absolute pressure at the end of the suction stroke.

Let T = Absolute temperature at the end of the suction stroke.

Let V = Volume displaced by piston per stroke.

Let p = Absolute pressure at end of compression stroke.

Let T = Absolute temperature at end of compression stroke.

The law may be expressed as follows:

$$P V \div T = P (V + v) \div T.$$

Knowing all the conditions of pressure, volume and temperature at one point we can easily solve for any one of the conditions at another point having given the other two.

Were a diabatic compression possible, that is, if there were no heat abstracted from the mixture by the walls or cooling water, the following equation would represent the conditions existing.

$$P v^{1.4} = P (V + v)^{1.4}$$

However, in the gas engine there is a loss of heat so that the theoretical conditions do not exist. In actual practice, by calculations made from indicator cards, the value of the exponent in the above equation is found to be 1.33 instead of the theoretical value 1.4. Of course, this value varies with different conditions, but 1.33 may be considered a fair average value and may be used with fairly accurate results. It is usually necessary to assume the pressure at the end of the suction stroke so that the calculated compression depends

upon the accuracy of this assumption. This pressure is usually taken as about 13 pounds absolute, but due consideration must be given these points; whether the admission valve is mechanically or automatically operated, velocity of air through admission passages which depends upon the area of the same, size of admission valve. Were no heat abstracted from the charge during compression, the temperature at the end of the compression stroke would be higher than in actual practice; consequently, the gas would tend to expand and the pressure would also be higher. The larger the exponent, then, the higher the pressure.

In the next lesson we will take up a specific example and show how to calculate the compression

Continued on page 85

OILDAG Deflocculated Acheson-Graphite

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Graphite does not dissolve in any liquid or break under pressure, and these qualities, added to the unctuous softness and purity together with its non-coalescing nature, makes Acheson-graphite ideal for lubrication purposes.

The process of deflocculation takes Acheson-graphite powder so fine that it will go through a sieve having 40,000 meshes per square inch, and subdivides each grain of this finest powder into many still smaller particles—so small that they are invisible under a powerful microscope.

Oildag is this Deflocculated Acheson-Graphite suspended in oil, where it neither floats or sinks, but is evenly distributed throughout. Oildag will flow anywhere the oil alone will go.

Mr. Robert A. Ross, E.E., of Ross & Holgate, Consulting and Supervising Engineers, Montreal, after running a '910 Model T Ford car with Oildag, in reply to an anxious inquirer, wrote the following letter:

A. B. Grove, Esq., Airdrie, Alberta.

Dear Sir,—Referring to yours of May 8th with reference to Oildag, I would state that the Ford Company warned me against its use, but being an electrical man, I reasoned it out for myself and came to the conclusion that, while a graphite was a conductor and if used alone would short circuit the magneto, oil was an insulator and that each small molecule of graphite was surrounded by a sphere of oil, so that in effect no short-circuiting could take place, and this has been proved in my case and doubtless in others. I may say my car is of the model of 1910, with the magneto in the oil bath. I do not think you need be alarmed on this score. Yours very truly, (Signed) R. A. ROSS.

May 13th, 1911.

WRITE FOR OILDAG BOOKLET 77B

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PRE-IGNITION, Etc.

Causes—Symptoms—Remedies.

In the broad sense of the term, any ignition in a gas engine cylinder occurring earlier than is necessary to produce the maximum mean effective pressure in that cylinder is pre-ignition. So far as the internal economy of the cylinder is concerned, the effect of pre-ignition is to produce a loop at the top of the indicator card. This loop indicates that all or practically all of the charge has been burned before the piston has reached the end of the compression stroke and that the charge begins to lose pressure from the absorption of heat by the surrounding surfaces before expansion has fairly begun. If it were not for this loss of heat there would be no loop; the charge would simply expand until the piston reached the position at which, during compression, combustion had ceased.

Pre-ignition is objectionable, because it reduces the effective power of the engine by adding materially to the pressure to be overcome on the compression stroke. But its worst effect is found not in the loss of power but in its destructive effect on the bearings. If the charge is ignited too early, so that it burns completely before the end of the

compression stroke, the maximum pressure in the cylinder will be considerably in excess of what it is under normal working conditions, and this imposes severe strains and shocks on the engine bearings and working parts. It is entirely possible for a crankshaft, connecting rod or wrist pin designed a little too close to the working load to be sprung or bent in this manner. Even if the parts are strong enough to stand these abnormal stresses the sensitive driver will feel his nerves instantly on edge when he hears the sharp hammering which is the frequent symptom of spontaneous pre-ignition.

Pre-ignition may be spontaneous, in which case it is caused by overheating of some part in the combustion chamber; or the term may be used to describe early ignition, caused by too early spark. For an advanced spark where the conditions demand a retarded spark—such conditions being generally a slow engine speed with full or nearly full charges of gas—there is, of course, no excuse. But a spark may be too early owing to looseness in the connections between the spark lever and the timer, to wobbling of the timer itself on

its shaft, or to a loose key or the like on the timing shaft of a motor with make-and-break ignition, allowing the spark timing ing smoothly. Or it may be caused by defective adjustment of the tremblers on the spark coils, to the trembler contacts being burned out, to a loose connection in the battery circuit, to burnt contacts in the timer, or the like. Any of these will either cause the timing itself to be irregular or will interrupt the spark altogether at intervals. In either case the result is to compel the operator to give the engine a full charge of mixture when the engine is running slowly and to advance the spark to the best average position, although this makes the spark too early at times. The symptoms of pre-ignition due to irregular spark are occasional misfiring and pounding when the explosions come too early. The pounding will generally have the sound of a hard thump but will be free from the metallic ring which frequently occurs with spontaneous pre-ignition. The exact character of the sound, however, will be very variable, according to how early the spark is, how fast the engine is running, how well the piston fits in the cylinder and the crank and wrist pins in the bearings etc. The best remedy is obviously to remove the cause of irregular firing by tightening the loose connections, rebushing the spark

timer or truing up the contact ring and segments, readjusting the tremblers or putting in new contact points, etc., according to the particular case. If the pre-ignition has disclosed looseness in the bearings it will, of course, be well to investigate these and make absolutely sure of their condition.

Spontaneous pre-ignition is sometimes due to lack of water, occasionally to lack of oil, and once in a while to the water jacket not having been cleaned out after casting. If, however, the radiator is full and the water circulates properly—as evidenced by absence of steam in the radiator—the trouble is most likely to be caused by incandescent particles of carbon deposited on the piston head or elsewhere in the combustion chamber from an overrich mixture or inferior or excessive cylinder oil. Even in the best engines, with the best carbureters and lubrication, the carbon slowly accumulates and scraping out is necessary at least once a season. Different engines, however, differ greatly in their ability to run without pre-ignition in the presence of carbon deposit. Engines with high compression will pre-ignite under less provocation than those with moderate compression. Single cylinder engines, or double cylinder engines with crankpins together will suffer pre-ignition sooner than three or four cylinder engines, because the crank-cases of the former must be

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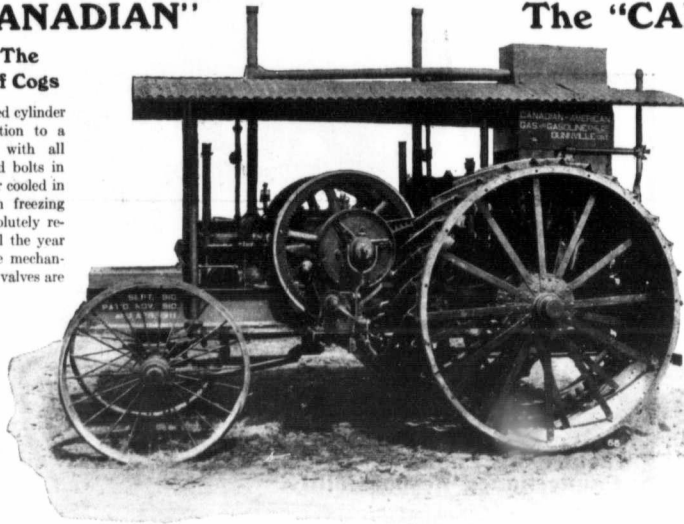
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Special Features of the "Canadian" are its Hardened Steel Roller Transmission Gear, Fuel Mechanism; its Low Fuel Consumption, Starting Device that cannot Kick Back; Steering Device, Cooling Arrangements, Power Transmission, Style and Construction and the Simplicity with which it can be operated.

Canadian-American Gas & Gasoline Engine Company, Limited, Dunville, Ontario.

George White & Sons, Brandon, Man., Western Distributors.

closed airtight to prevent the oil from being thrown out by the pumping of the pistons. An engine with the exhaust valve insufficiently water cooled is liable to pre-ignite, especially if the inlet valve is adjacent to the exhaust valve instead of on the opposite side of the cylinder. Other things that will cause pre-ignition are sharp corners or edges in the combustion chamber, or projecting fins left by cores and not chipped out. In some cases also the spark plug itself may cause pre-ignition by some part, such as the positive wire, becoming incandescent. Whatever the cause of spontaneous pre-ignition, its immediate symptom is a loss of power in the engine, together with a marked pounding. The loss of power is invariable. The pounding may be muffled or severe, according to the construction of the engine, the condition of the bearings, and other things. If the pistons are of good fit in the cylinders if the wrist pin and crankpin bearings are in line instead of a little offset as is frequently the case and if all the bearings are well fitted and tight the sound may be more like a thump muffled or heavy, as the case may be. Very often, however the sound is a sharp metallic hammering, almost as of a hammer striking an anvil, and when this sound is heard the prudent motorist will not delay to hunt for the cause. He may find this to be nothing more than lack of water or a break in the pump, or a stopped water pipe. If his

radiator has a screen in the bottom, over the opening to the outlet pipe this screen may have become clogged. A case is cited where a radiator with such a screen became clogged, the screen being punched out to clear it, with the curious sequel that some time later a round pebble got into the radiator and lodged in the hole in the screen, where it acted almost as a check valve to stop the circulation. Old rubber hose connections will sometimes fill with miscellaneous rubbish or waste and make trouble. Generally speaking overheating due to stoppage of the circulation is at once detected by feeling of the radiator. If the radiator is not of nearly the same temperature throughout the circulation is probably slow, and if the circulation has ceased altogether, the bottom of the radiator will be cold, while the top will be overheated from boiling water.

The metallic hammering that is a frequent accompaniment of spontaneous pre-ignition is commonly credited to looseness in the bearings, but this is hardly a fair statement of the case, because bearing looseness alone is far from sufficient to cause the sound. This is proved by the fact that when the cause of pre-ignition—such as carbon deposits—is removed the hammering at once stops, even though the bearings be quite loose. Bearing looseness alone will make an engine noisy, but the noise is rather in the nature of a rattle or a muffled thumping and never produces unaided the sharp metallic

ring above referred to. Moreover the metallic ring may occur when the bearings, if not perfectly tight, are still by no means loose enough to call for attention. The exact origin of this fact is a trifle obscure but it seems to be due chiefly to two things. One is looseness of the piston in the cylinder, the piston being driven against the side of the cylinder by the sudden explosion with force enough to bend it to the contour of the cylinder; the other is the endwise offset already referred to as sometimes found between the wrist and crankpin bearings. If the connecting rod is light and springy, or even if it is not, this offset will result in the lost motion at the end of these bearings being taken up, the tendency being to make the bearings bell-mouthed. If the bearings are otherwise perfectly tight, but with end play of this character, the explosion will in all probability take up this end play with what would appear to be a smart blow.

It is frequently held that the hammering sound referred to is caused by the explosion taking up the slack in the — cylindrical — crankpin and wristpin—bearings

themselves, the reason assigned being that the inertia of the reciprocating parts causes them to pull away from the crankshaft as they approach the end of the exhaust and compression strokes, and that this pull is not reversed until the explosion comes. The trouble with this theory is that it overlooks the fact that the hammering is generally worst when the engine is running slowly and the throttle fully open, although under these conditions the inertia just referred to—which increases as the square of the speed—is a minimum and is easily overcome by the compression. As a matter of fact the compression under these conditions takes up whatever slack there may be in the bearings long before ignition occurs, so that there is no reversal of forces on ignition but only an increase of pressure on the bearing surfaces already in contact. If under these conditions the throttle be nearly closed the hammering may frequently be stopped, although this reduces the compression to an amount presumably insufficient to overcome the inertia of the reciprocating parts. Evidently the fact is simply

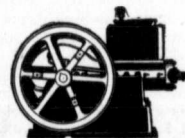
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that reducing the throttle by reducing the compression makes it less easy for the charge to be pre-ignited by the hot carbon or other object in the combustion chamber. Another evidence is the fact that increasing the richness of the mixture will generally stop the hammering by causing elimination of the pre-ignition.

In general a thin mixture will pre-ignite more readily, or at least it will burn faster after it is pre-ignited, than a normal mixture, and an overrich mixture is less liable to pre-ignite and also burns more slowly than a normal mixture. Care should be taken therefore not to mistake overfeeding of gasoline for a cure of the trouble, as whatever its momentary effect, it speedily aggravates the cause by adding to the carbon deposit in the cylinder.

When spontaneous pre-ignition does not occur something closely related to it may be produced by the same causes; that is to say, the charge when once ignited by the spark will burn much faster in the presence of incandescent particles in the cylinder, probably because the first increase of pressure due to the spread of the flame around the spark is all that is needed to cause the mixture next to the incandescent carbon to ignite spontaneously. A multiple cylinder engine in this condition will not give nearly its rated power because the charges will burn faster in some cylinders than others, and it is impossible to adjust the spark timing to fit them all. This condition is denoted partly by lack of power and partly by the hard sound of the explosions, which may approach the hammering above mentioned. When the cylinders are in this condition it is but a step to actual pre-ignition when the engine is laboring when ascending a hill.

A circumstance that might puzzle the novice is that what is called near pre-ignition troubles are more marked with a weak than a strong spark. This does not apply to actual pre-ignition, but only to the spread of combustion after the spark has passed. If the spark is weak it must occur earlier than if it is strong, and if certain cylinders have a tendency to pre-ignite the influence of the hot carbon in these cylinders will be relatively more marked with an early weak spark than with a strong spark occurring somewhat later and having energy enough in itself to cause rapid propagation of the flame within the cylinder.

Profit in the Gas Engine.

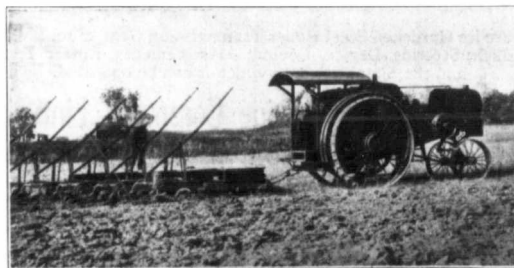
We occasionally find a farmer who concludes that the gasoline engine is a machine that is too expensive to operate on the farm. We find others that claim it is the most profitable piece of machinery that they can own and will pay for itself quicker than any other. Here must be a vast difference in the management of the engines as well as their power application or there is a great difference in the way of figuring the cost. The gasoline engine is most profitable to



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THE ALL STEEL GAS TRACTOR

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You Take No Chances With The Twin City "Forty."

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the farmer who keeps it busy. It can not be a very profitable machine to anyone standing idle. The farmer himself will not realize much profit out of his own efforts who will not keep himself busy, or who prefers to idle away half his time. It is the busy farmer who makes the most profit out of the gasoline engine. He plans to find employment for his engine. We have one in mind who recently purchased a gasoline engine who is feeding about one hundred bushels of grain each week to his stock. He must either have this grain ground at an actual expense of 5 cents per bushel at the mill, or feed whole grain. He knows the value of ground feed hence he has for some years been paying the miller 5 cents per bushel for grinding. His grinding bill was \$5 each week. To keep this up for twenty weeks or five months in the year his grinding bill in cold cash would be \$100, to say nothing of the balance of the year during which some ground feed is

required. When his grinding is done at the mill 3 miles distant, he with his team spends an entire half day, and oftener the full day in winter time getting his grist to the mill and back again. The miller may have other work before he can wait on him.

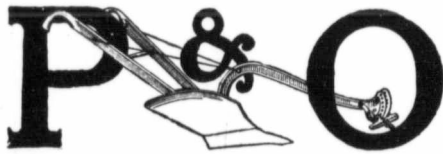
With the gasoline engine he can do his grinding for less than one cent per bushel, and he stays right at home in his warm barn building in the dry and does his grinding in less than three hours. In other words his engine grinds his week's supply in three hours and saves the farmer many an all-day disagreeable trip to town, and gives him the balance of the day to look after other work, and saves him the wear and tear on his team, harness and wagon, and possibly, a bad cold if not lung fever (pneumonia) and his life. This farmer we have in mind figures his time worth something as well as the wear and tear on his team, harness and wagon, and especially does he appreciate the pleasure of

remaining at home one day out of each week with his family that would otherwise have to be spent away on a disagreeable trip. He figures on saving at least \$150 each year with his gasoline engine alone on his grinding bill.

If he found nothing else to do for his engine it would be a big payment on his engine the first year. But the man who looks at business in this way will find a big profit in cutting up his rough feed, such as hay, straw, fodder, and feeding it in this way rather than whole. He claims that much less will be wasted and that which is wasted makes much better manure than the whole feed waste can possibly make. All this must be credited up to the engine and is gain where there would be loss without an engine.

A great many farmers who live in wood countries can find several days each year at sawing wood and in that time make ready the year's supply which without the engine,

Continued on page 62



Mogul Engine Gang Plow



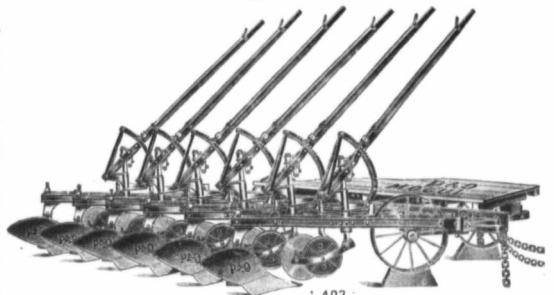
The P. and O. Engine Plow is made in five, six, eight, ten and twelve furrow sizes. There are four distinct patents covering the following features on these plows:

1st. The method of setting the levers so that they point to a central place on the platform, thus saving the operator about half the walking on the platform. This patent also covers the self-castering gauge wheels, which permit them to turn with the frame without grinding or dragging.

2nd. The method of manufacturing the frame for the five and six furrow sizes, the front end of which is made V shape in order to bring the plow platform within stepping distance from the engine platform. This is a great advantage on a small outfit where the plow and the engine are operated by one man, as he can step back and forth without being obliged to get on the ground.

3rd. The method of using break-pins when working the plows on stony or root ground, when the plows will trip back just exactly like the shovels on a spring trip cultivator. It is not necessary to use break-pins as the plow is regularly equipped with bolts, but where the plows are liable to damage on account of foul ground, a break-pin has been the means of saving many plows from damage. This patent also covers the appliance on the end of the stub beams to regulate the suction of the bottoms.

4th. The method of lining the plows laterally to cut uniform furrows by means of set screws on the oblique frame rail, and which operate on triangular castings; also to regulate the level setting of the bottoms by set screws on the beams.



P. and O. Six-Furrow Mogul Engine Gang Plow

Ruddell, Sask, June 3rd, 1911
Parlin and Orendorff Co., Canton, Ill.

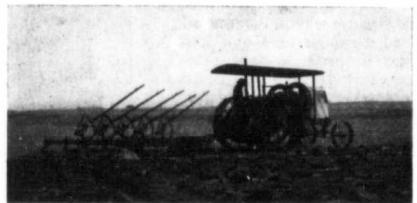
Gentlemen,—On the 15th May we purchased a Five-Furrow P. and O. Mogul Gang. We have plowed about 600 acres since that time, 300 acres of breaking and 300 acres with old ground bottoms, and can cheerfully say that we are more than pleased with the plow in every particular. I have never seen plowing done by others that was equal to what we have done. It is light of draft and easily handled.

J. W. and S. SEMPLE.

Lashburn, Sask, June 10th, 1911
Parlin and Orendorff Co., Canton, Ill.

Gentlemen,—I purchased a P. and O. Ten-Furrow Mogul Engine Gang, and commenced breaking about twenty miles north-east of this place.

I have found the plow all that you claim for it. It has not given me one moment's trouble, and certainly does the best job of breaking I have ever seen. The draft is light and the plow is convenient to handle. The pin break for service in stony or brush land is a great feature. I can recommend it most highly. I plowed 100 acres in three days right from the start, and can do better when I become used to handling it. ALEX. McMILLAN.

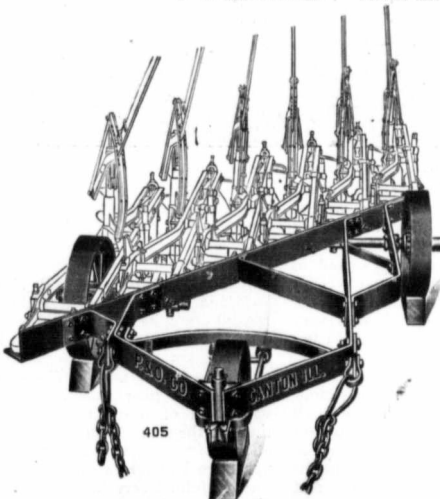


Lloydminster, Sask., June 12th, 1911
Parlin and Orendorff Co., Canton, Ill.

Gentlemen,—About the 1st of May I purchased a P. and O. Five-Furrow Mogul Plow from J. Lawrie and Co., of this city, and am certainly delighted with it. No such plow has ever before been offered to the farmer. And I take pleasure in recommending it to all who contemplate purchasing an Engine Gang. The draft is light. It is easy to operate, and does beautiful work. The feature of pin break for stony and brush land is a strong point in favor of your plow. I cannot recommend it too highly. JOHN GILLYEAN

Mozart, Sask., June, 9th, 1911
Parlin and Orendorff Co., Canton, Ill.

Gentlemen,—I wish to inform you that I have used a year. It does the very best of work, both in breaking and stubble. I consider it far ahead of any other engine plow on the market in every way. I have also used your Horse Plows, and am willing to go into any plowing with my P. and O. Plows, either engine or horse plows, as no plow can do better work than the P. and O. J. I. DAVIDSON.



P. and O. Six-Furrow Mogul Engine Gang Plow—Shows the construction of the Frames for the Five and Six-Furrow Plows.



PARLIN & ORENDORFF CO. Canton, Illinois

International Harvester Co. of America, Sales Agent for Canada

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.

A Good One.

We have a 25 h. p. J. I. Case engine and John Deere eight bottom plow.

We employed four men, that is with the waterman and a man to haul coal, but he was only on half time. He would haul enough in one day to last us two days, as the farthest he had to haul it was five miles and sometimes only two miles.

We cannot say how much coal we used per day. It all depended on how much work we did. Some days we would plow 22 acres and others we made 16 acres, which was the smallest. We broke 810 acres and disced 320 acres three times and only used three car loads of coal. It was steam coal, which cost us \$7.50 per ton. We used about 80 tons of coal all told.

We had a lot of moving around as we did a lot of outside breaking and most of the breaking was small jobs, such as 80, 120, 40, 160, 90, etc. So you see we had to do a lot of moving every week.

The first two weeks we plowed we did not use a tank team at all. We had a rubber hose and took the water from the sloughs as we needed the water, but as soon as the sloughs got dry we had to haul water with one team. We had a long rubber hose to syphon water with and also the tank pump to fill the engine tender. Our tender carried water enough to do two miles and coal four miles. By using the tank pump and syphon it did not take us long to fill up the tender. The steersman filled up the coal in the coal box. It does not take us more than ten minutes at the longest.

We believe it is harder on an engine to plow than to thresh, but we cannot see as it has done much damage to our engine. In the fall of 1909 we threshed 98,000 bushels of grain and in 1910 we threshed 65,000 bushels and plowed 810 acres, disced 320 acres three times and in all of that time all the repairs we had to put on was two new pinions which cost us \$40.00. Our flues are in good shape and all the rest.

We make our engine work hard as we pulled eight plows and broke from 6 to 7 inches deep, as we believe in deep breaking on the beginning. It may not give as good a crop the first year, but it will do better always after.

It cost us \$600.00 for coal and \$540.00 for labor. That is for the time we were breaking and discing.

We believe that steam or gas plowing and farming is the only way to farm.

Yours truly,
Knenke Bros.
Southey, Sask.

Straw Not As Good As Coal.

I started in last spring disc plowing with a 30 h. p. Rumely steam engine. I plowed 2217 acres in all, 1500 of which was disc plowing and 717 acres of breaking. Nine hundred of this was done burning straw, the balance burning coal. I pulled a 20 disc Emerson disc plow, which is splendid for this soil.

I could only plow 28 to 32 acres per day burning straw, and could plow from 36 to 40 acres a day burning coal. I got \$3.00 an acre

day — (the balance he worked in the field) . . . 2.00
Oil, packing and repairs . . . 2.00
Supplies 1.50
Myself attending plows and managing 5.00
2 tons of steam coal at \$6. 12.00

\$36.08

I used about 100 barrels of water per day in breaking. I had to haul water six miles and coal fifteen. It took two four-horse teams and two men hauling water and the coal man all day to make the trip, which makes the total cost per day for breaking \$45.58, covering eighteen miles, which makes about 19 acres at a cost of about \$2.40 per acre. When disc plowing I made 20 miles, which makes 40 acres at a little less than \$1.00 per acre.

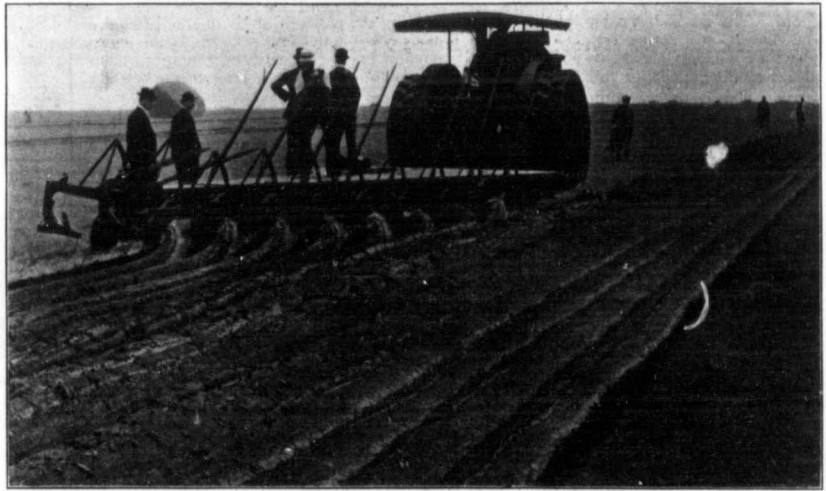
well as some claim to have done, but my soil is not by any means light. If farming a section and a half or two, I would not think of plowing with horses, if I could possibly get an engine.

Yours very truly,
T. J. Connaughty,
Wilcox, Sask.

Has been at it One Season.

I have not had very much experience in traction plowing, as I had only one season at it. 1910 was a bad season for breaking as it was so dry and hard and I want to say right here that my first year gave me more experience than money. There were two causes for this result, the dry year and my ignorance.

I started to plow on May 12th



The Gaar Scott 40-70 Gas Tractor in the Motor Contest with an 8-bottom "Big Dutchman" Engine Gang.

for plowing, so found that it did not pay to burn straw for the eight acres difference which was accomplished when using coal.

In breaking I used an eight bottom John Deere fourteen-inch breaker which made a good load in the sloughs or low places where it was rough. The breakers give very good satisfaction. I find that an engine has not got the power on rough ground that it has on the level. The land I broke was very rough and hummocky, and I find that the dryer the ground the better for engine plowing. In disc plowing I used the following labor:—

	Per day.
Engineer at	\$6.00
Steersman at	2.25
Tankman and team at . . .	4.00
Cook (\$40 per month) . . .	1.33
Coalman and team — 1/2	

Plowing is harder on an engine than threshing, but my engine is a special plow engine and has stood it very well. I have not lost over two days, and in two seasons' threshing have not lost a minute on account of the engine. I consider a man very foolish to try to plow with a common threshing engine.

The greatest draw-back I had when breaking was the water. I hauled from a well and used a gasoline engine to pump, but the pump was not substantial enough. I consider a 30 h. p. engine equal to forty horses and the engine plows will do better work. The threshing and plowing outfit has paid for itself in two seasons' threshing and one season's plowing. I got \$4.25 per acre for breaking. Now perhaps I have not done as

with a 22 horse power internal gear American-Abell steam engine, which I was told would draw eight plows, and this proved to be true. Owing, however, to the ground being so dry and hard and having to use three-furrow plows I had to use either a six or nine bottom plow, so I used the six.

I started first with a Massey-Harris light plow, but as there was a lot of stone, I soon had them in the scrap heap. I worked at them for a week and then gave up. Then I bought a set of three-furrow John Deere heavy plows. These are giving good satisfaction in good, level land, but not where there are bumps and hollows.

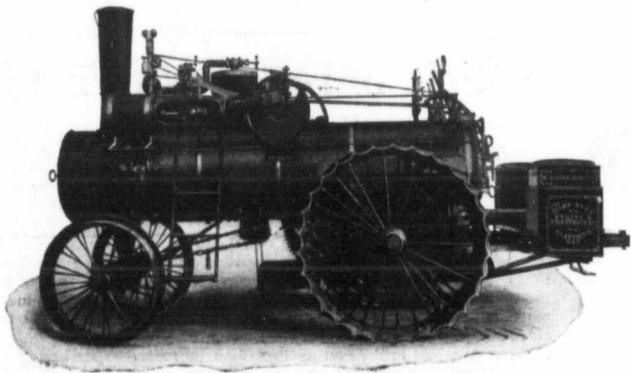
I could not give you figures of how much coal I use per day, as I had some green wood on

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OF ALL FARM MACHINERY IS

THE "IMPERIAL" LINE

With Best Record of any Machinery in the West



Engines

22, 26 and 30 h.p. Simple. 22 h.p. Compound.

Boilers of extra fine construction, heavy plate, thoroughly stayed, beautiful workmanship and design; Extra Long Tubes, 9 feet long, in the 30 h.p. size, High Pressure carried of course, 150 to 175 lbs.; Shafting, Axles, and all parts properly proportioned and of ample strength and size.

Separators

36 x 60, 32 x 54, 32 x 50, 28 x 42, with "Ruth" Feeders Side Fan, Stackers and Attachments.

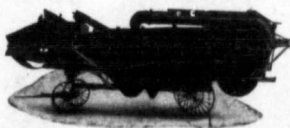
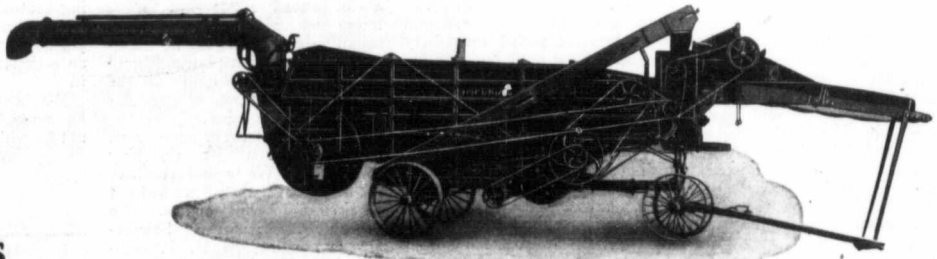
"Imperial" Separators and attachments have no peers in Western Canada to-day for clean, quick work in the harvest field, and you cannot buy

Better Value

**DON'T
BUY**

Till you have
looked into

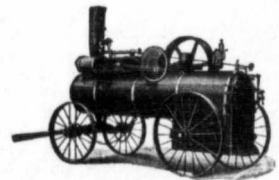
**OUR
GOODS**



An Exceptional Chance

To individual large farmers or syndicates of farmers is offered in our 28 x 42 in. machine with light traction and portable re-built engines.

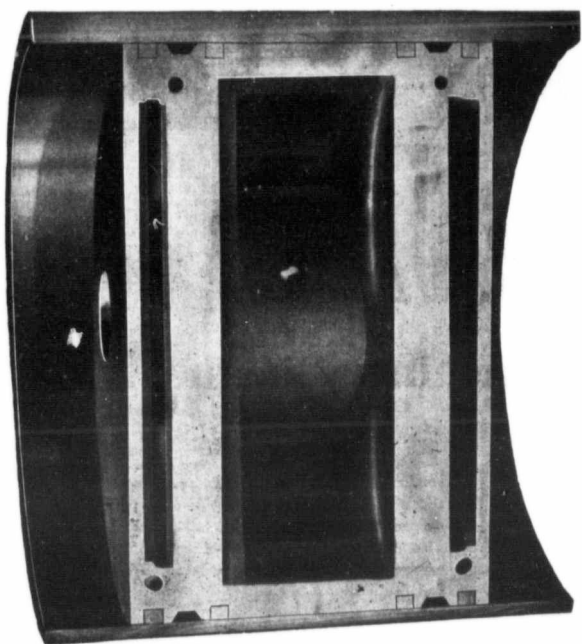
These can be seen at our Winnipeg Warehouse. Their quality and price represents an opportunity of unusual attractiveness to any extensive farmer.



The Robert Bell Engine and Thresher Co., Ltd.

SEAFORTH, ONT.

WINNIPEG, MAN.



Why the Demand for Gould Balance Valves on Traction Engines in the Field? - -

Because no engine is complete without a balance valve. No engine gives the best service that is in it with a common 'D' slide valve. No engine that wastes from 18 to 30% of its power performing a needless service is giving the best there is in the engine to its owners; and if some manufacturers hesitate to put a Gould Balance Valve on their engines their customers will do it themselves, for you cannot keep them from having the best there is. They are doing it every day. One customer ordered his fifth engine equipped with this valve, another his fourth, while we have hundreds of customers who have equipped their second and third engines with a Gould Valve. These men tried the valve and know what it will do. They are not guided by the musty records of by-gone ages regarding the benefit of a Gould Balance Valve to their engine, but like all the notable achievements of today, defy the predictions of failure by realization.

Our Catalogue and "Evidence" tells you what to do. Send for them

GOULD BALANCE VALVE CO.

Kellogg, Iowa.

GEO. WHITE & SONS, LTD., London, Ontario, Manufacturers in Canada.

hand, and I used this mixed with some coal, which helped out the coal.

I used about five tanks of water a day of twelve hours and employed five men, engineer, fireman, plowman, tankman and man to drive fuel teams and four horses. The teamsters got the meals ready.

I am satisfied that plowing is harder on an engine that threshing, as there is more strain on the gears and the dust will get in around the gears and cut them.

I did not keep track of the cost per acre, so as I cannot give you the correct figures I will leave this out, but I intend to keep a good tab on everything this year and I will send you the full particulars after the season is closed, as this business is young yet, and we must help one another, and there is no better way than to give our experiences to one another through the Canadian Thresherman and Farmer.

Yours truly,
Leonard Jones,
Floral, Sask.

Working in Hard Land.

Our first experience in traction plowing commenced away back in 1906. In the summer of that year we thought we would try and do some breaking with our Sawyer-Massey 25 H. P. compound engine. So we got three Imperial gangs and started, but we got along rather slow, as we had to stop every half mile for wood and water. We were so slow for a day or two that we were on the point of giving up, but decided to stick to it and things began to improve. We finished within two weeks with 60 acres broken. The sod in this district is very tough with considerable stone in places. So we had to guard the plows

against breakage, and procured some automatic release hooks. When the plow struck a rock it would drop off rather than break.

In 1907 as we did not consider the little gangs suitable for the heavy breaking we purchased two three furrow P. and O. Canton engine gangs. The agent we bought them off thought our engine too small to handle them but when he saw us start off with them he thought we could pull two more. It pulled them very well for a time until the gear began to break. The plows worked fine for a day or two when we began to strike some stone. Then we found the three furrows too heavy. They would hang on to a stone as if it were a matter of life and death. We also broke some shares and twisted two of the beams and lost considerable time getting them straightened.

Well we broke about 70 acres that summer and would have broken more but we struck a soft spot and down went the engine as far as it could get. We backed up a little and threw blocks of wood in below the wheels and started up, but it did not come out. We broke one of the bevel wheels on the differential gear and had to wait for repairs, which ended our plowing that summer.

In 1908 we started in April doing some stubble plowing. We had the two Canton gangs fastened by chains to the release hooks and a Bissell eight foot disc harrow, and eight feet of smoothing harrow attached to the hooks as well, so that if the plows dropped off the harrows would too.

We only plowed ten acres because the ground was too wet, and we got stuck a few times. We didn't do any more plowing until we started to break in June. We started on a half mile furrow, got along fairly well for a day or

two when bolts and gear began to break on the engine. We broke more of the engine than we did of land, so it seemed. So we decided to quit and go on with the horses. We had broken 30 or 40 acres in 1909 and didn't know whether to break any with the engine plows or not. However, we decided to give it another trial. We got along fine for a day and a half when we got into some tough sod and the gear and bolts began to go again. So we decided to quit traction plowing until we got an engine built for the purpose, as this was a threshing engine we were using.

In 1910 we sold our engine, having used it for threshing since 1904. We would certainly not have sold it then if we had not required a plowing engine. So we purchased another Sawyer-Massey engine 30 H. P. compound combination engine. We do not consider it pays to cultivate with steam power unless the engine will handle from eight to ten plows.

We also purchased last fall a John Deere 10 furrow engine gang plow. But it was too late when we finished threshing to get any plowing done. We merely tried the plow, which the engine handled as if it were a toy.

We have also bought a Dain Hay press and are baling our wheat straw to burn in the engine the coming summer. We think baled straw will be cheaper and handier than wood or coal.

As to the number of men we employed. We have never had more than four, engineer, fireman, plowman and wood and water hauler. As wood and water were handy, one man and team could keep us going with ease. We have never used more than 2 cords of wood a day and used from 40 to 50 barrels of water.

We do not consider that plowing is harder on the engine than threshing unless the engine be overloaded. We find it a mistake to overload the engine.

As to the cost per acre. Any plowing we have done so far would be rather costly on account of the nature of the land and breaking gear on engine, etc. I would rather wait until the coming season's work be over before forming an estimate of the cost per acre. I will try and give you an estimate next fall if you desire it.

We have taken your magazine for a number of years and would not be without it.

Yours truly,
Reid Bros.,
Bincarth, Man.

INTERNATIONAL GALL CURE



SOLD ON A SPOT CASH GUARANTEE

CURES While Horses Work or Rest

International Gall Cure is a certain, sure, quick and infallible cure for Galls, Sore Necks, Sore Backs, Sore Mouths, Cuts, Bruised Hoofs, etc. Will not melt and dissolve from the animal heat, but stays right where it is applied. Possesses extraordinary healing and soothing qualities. International Gall Cure is the cleanest, most antiseptic, purest and best Gall Cure on the market. We will refund your money if it ever fails to cure. Keep a box on hand as it is almost a daily need on the farm.

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INTERNATIONAL STOCK FOOD CO., Limited
TORONTO, ONT.

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AS WELL AS OURS



W.C. C. Co.

Conducted by
Professor
P. S. Reese

Practical Talks to Threshermen

Talk No.
XLVIII.

Fans for producing the blast are of two kinds known as over blast and under blast fans, depending upon their direction of rotation. If the top of the fans travels towards the sieves it is called an over blast, if in the opposite direction it is called an under blast fan. Both types of fans are widely used and both perform the same functions equally well. The principal thing is to obtain the correct intensity of blast for the work it has to do. This work is the lifting of the chaff, straw, dust and other light material slightly above the sieves and projecting it back to mingle with the straw at the rear end of the machine. None of this light material should drop through and mingle with the grain which is delivered to the grain auger. Neither should the blast be so strong as to throw any of the unthreshed heads beyond the chaffer extension and into the straw. When properly handled the blast will keep all of the material which falls on the sieves thoroughly agitated, in a loose fluffy condition and moving back slowly toward the rear. The heavier grain falls through this mass to the sieve and the lighter portions move back barely in contact with the sieves or chaffer. The unthreshed heads should fall through the chaffer extension and be caught by the tailings auger. When the grain is very dry and brittle the blast should be stronger to take care of the heavy burden on the sieves. This burden, however, as indicated in a previous lesson, can be relieved somewhat by removing all but two rows of concave teeth.

There is some difference between the effects of the seed of the blast and its volume. A thin blast, that is, with a relatively small quantity of air and high speed, is apt to throw grain into the straw, while a slower blast with greater volume will move the lighter portions surely but gently and makes far better separation. It is the duty of the operator to look after the blast very closely since so much depends upon its proper manipulation. The intensity or amount of the blast is regulated by the amount of opening of the wind gates on the sides of the fan housing. If these are wide open the volume of air passing through the sieves will be larger than if they are only partly opened, consequently with a heavy burden on the sieves they should be opened wider.

Another matter the operator must watch carefully is the direction of the blast upon the sieves. The air should strike the sieves in equal intensity and amount at

all points from side to side of the machine. In other words, it should be distributed evenly across the width of the sieves and no more should pass through on one side than on the other, because if this occurs the part of the sieve getting insufficient air will allow dirt to fall through into the grain, while on the other side grain may be thrown over into the straw, and the machine will work very badly, presenting a curious condition of poor cleaning and yet of throwing over grain.

This condition is liable to occur in the case of a strong side wind if the blast gates are not properly handled. A strong wind from one side has a tendency to force the greater part of the air to the opposite side of the machine and leave one side of the sieves insufficiently supplied. The remedy is, of course, to close partially or wholly according to circumstances, the wind gates on the windward side of the machine.

Another thing which affects the load on the sieves and also the distribution of the air is the inclination of the machine sideways. If not set level the grain and chaff will gravitate toward the lower side, thus overloading one side of the sieves and leaving the other side nearly bare. Under such conditions it is almost impossible to adjust the blast. Care should be taken to level the machine sideways before beginning threshing. Indeed, some operators always set the rear of the machine a few inches lower than the front and claim to obtain better results. There is no objection to the custom. In fact, the writer knows of many cases where it has shown improved results, due to the fact that the grain was retarded less by gravity in moving back from the front end of the machine, and to the better angle at which the blast impinged upon the sieves.

The point at which the blast strikes the sieves and the angle at which it strikes are both important. The blast should strike at a point about half way back on the sieves and at such an angle that it keeps the chaff lifted well from them, but without driving it backward out of the machine with too great force. The blast will, necessarily, be strongest in the meshes of the sieve than a short distance above, because the openings represent only about seven-twelfths of the area of the sieve. All of the air must pass through this restricted area and hence must have higher velocity in the meshes than just above the sieves. This is as it should be. It keeps the meshes

clear and the blast is strongest at the place it can do most good. The direction of the blast is controlled by the wind board or boards which can be turned to direct the air at the desired angle and position upon the sieves.

In some machines special devices for distributing the wind are shown, the idea being to spread it evenly over the sieves as well as to direct it at the proper angle. The Avery Company claim to obtain better distribution of the air and less tendency for the greatest discharge to take place at the middle of the fan by means of metal bands placed a short distance.

Some machines are provided with an automatic blast regulator or governor which regulates the volume of the blast in accordance with what it has to do. There seems good reason for a device of this sort, for the reason that when the machine is heavily loaded a much stronger blast is needed than when it is running almost empty. A regulator that is sensitive enough to take care of these variations in the load ought to do some good. Otherwise the good operator is careful to see that the feeding is done as uniformly as possible and instructs his pitchers to that effect.

In our last lesson the statement was made that there are no side shake shoes now used. This is an error which inadvertently slipped in. As a matter of fact, there are several excellent machines of well known make that have side shake shoes but end shake chaffers. The amount of side shake is slight, but it is enough to agitate the grain on the sieves. Machines built in this way are said to give good results. There are also several machines in which the shoe is stationary, that is, it has no motion. The sieveless machines are of this class, and will be discussed in a subsequent lesson.

Sieves and Screens.

Sieves are distinguished from screens by the fact that grain passes through sieves and over screens. The object of a sieve is to assist the fan or blast to remove all straw, chaff, sticks and other large stuff from the grain. The sieves are placed in the upper part of the shoe and the screens in the lower part. There are two kinds of sieves, the common and the adjustable. Common sieves are made either of woven wire or of sheet metal. Those made of sheet metal are perforated with either round or oblong holes depending upon the grain they are intended to clean. For clover seed, timothy, flax seed and sometimes wheat, round

hole sieves are used, while peas and orchard grass sieves have oblong holes. Then there is another style of sieve commonly used known as lipped sieves for wheat, oats, rye and barley.

The adjustable sieve has been introduced within the past few years and will eventually displace most of the common sieves. It is readily adjustable for different kinds of grain by means of a lever on the outside of the machine. The adjustment can be made while the machine is running and tried gradually until the exact opening is found to give best results. The adjustable chaffer with adjustable sieves makes a good combination. Screens are also made with either round holes or oblong holes. Except where there is much weed seed or dirt in the grain, screens are not generally used because of the fact that they obstruct the blast and become easily clogged. When used they should be watched carefully. For most weed seeds the round hole screen is best but for wheat the oblong screen is the only form that will work satisfactorily.

Of Interest To Farmers.

We are just in receipt of general catalogue, No. 40, from the Chain Belt Company of Milwaukee, Wis. This concern manufactures all sorts and varieties of link chain belts.

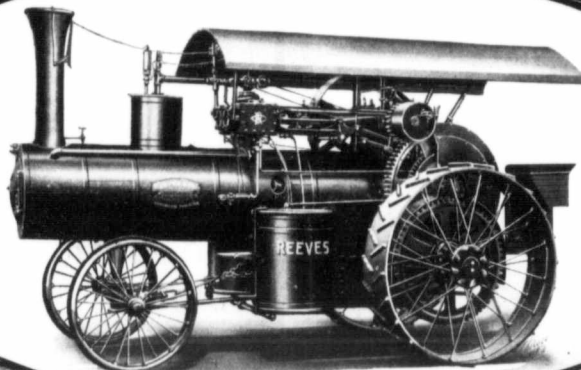
Practically every farmer has some machinery on his place that uses this chain belting and a great many times he is at a loss to know where to get extra links. The above concern can help him out.

Russia has just recently established great electric steel-works mainly for the manufacture of armor-plate and material for projectiles. Other countries have become much interested in this new move and will doubtless follow the example.

Two of the greatest waterfalls in Brazil are to be used to supply power to a great electric road that will penetrate a territory rich with vast mineral deposits. Great interest is manifested in this new project.

The Mexican Central Railroad has established a plant where railroads ties made from native woods are so treated that they are rendered practically indestructible, and they are placed from 3,000 to 4,000 ties in use every day. This will possibly solve a problem that has been puzzling rail traders for years.

REEVES



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.

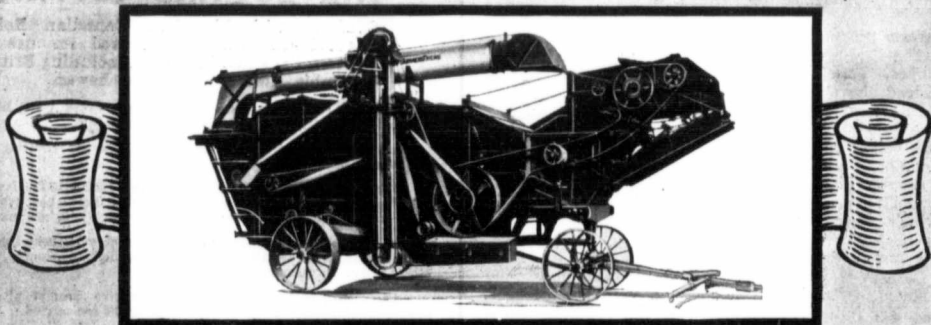
Dear Sirs:—Have you on hand lower pan for 40x60 separator No. 1052 bought in 1900? If you have, let me know and send price. This is the first repairs I have had to buy in eleven falls. I run this separator six falls in Illinois and five falls in Dakota, and it is still in first-class shape excepting 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 came 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.



Our catalogs are free — ask for them
REEVES & COMPANY
COLUMBUS, IND. U.S.A.

REEVES

CANADIAN BRANCH: REGINA, SASKATCHEWAN.

The Thresherman's Question Drawer

Answers to Correspondents

L. B. Q. I have an engine, simple with a 10 x 11 cylinder and it runs 240 revolutions. The boiler pressure is 135 lbs. to the square inch. It is supposed to be 25 h. p., but figuring according to my books, I always get it more than again as much and cannot see how in the world they figure. Please explain to me how to figure the horse power of an engine.

A. The 25 h. p. is nominal h. p. and your rule likely gives you the actual horse power, which is about twice as much as nominal horse power. The mean effective pressure on the piston, which might be 50 or 60 lb., in your case multiplied by the area of the piston, by the stroke in feet, by two, by the revolutions per minute, and thus divided by 33,000 will give the indicated horse power. An indicator is necessary to arrive at the pressure and by the aid of a planimeter or by other means the mean effective pressure is obtained.

J. C. Q. When an injector does not work properly, what is likely to be the trouble, and what can be done to correct it?

A. Here are a number of causes for improper working of an injector:

1. Leak in the suction pipe.
2. Water supply cut off by strainer on suction pipe getting clogged.
3. Loose lining inside of suction hose.
4. Leak around the stem of suction valve (a common cause).
5. Too low steam pressure for height to lift.
6. Too high steam pressure on long lifts.
7. Dirt in tubes, scale, iron cuttings, or red lead blown in or drawn in through steam or suction pipe.
8. A bad check valve; one not lifting enough, or not at all.
9. Valve in suction pipe not properly regulated below the pressure at which it can be thrown wide open.
10. Loose disc on water supply valve.
11. Wet steam, foaming boiler, or new boilers full of oil or grease.
12. Steam pipe connection made to pipe used for other purposes and at the same time, thus robbing the injector.
13. Water supply too hot.
14. Overtaxing injector beyond its capacity.
15. Injector improperly connected.
16. The feed pipe where it enters the boiler may be limed up.
17. The injector may be limed up, or in case of gritty water the jet may be cut out to a larger opening.

18. There may be an obstruction in the steam pipe, or a scale or chip in the steam jet, but, more often than anything else, a defective suction pipe or hose will cause the injector to fill.

G. A. Q. What is the value of wood for fuel as compared with coal, or how much wood does it take to equal a ton of coal?

A. One cord air dried hickory or hard maple weighs about 4,500 lbs. and is equal to about 2,000 lbs. coal.

One cord air dried white oak weighs about 3,850 lbs. and is equal to about 1,715 lbs. coal.

One cord air dried beech, red oak or black oak weighs about 3,250 lbs., and is equal to 1,450 lbs. coal.

One cord air dried poplar (white wood), chestnut, or elm weighs about 2,350 lbs., and is equal to about 1,050 lbs. coal.

One cord air dried average pine weighs about 2,000 lbs., and is equal to about 925 lbs. coal.

From the foregoing, it is safe to assume that 2 1/4 lbs. of dry wood are equal to one lb. average quality of soft coal, and that the full value of the same weight of different woods is very nearly the same — that is, a pound of hickory is worth no more for fuel than a pound of pine, assuming both to be dry. It is important that the wood be dry as each 10% of water or moisture in the wood will deduct about 12% of its value as fuel.

A. N. Q. How can I remove the flywheel from an engine crank that is stuck fast? It is fastened on with a key, but I cannot move either one.

A. Build a quick fire under the hub of the fly wheel; a blow torch would be a good thing to use. Heat the hub as much as feasible without heating the shaft. In this way you will expand the hub and you can drive it off, or you can get the key out more easily.

R. F. Q. If I make my smoke stack, say a foot longer, could I run with a larger exhaust nozzle?

A. The draught in a short stack depends on the velocity of the exhaust steam and a foot more stack would not help matters, unless the stack is too short. It should not be less than three feet long.

L. W. Q. I use an ejector to transfer my water from the wagon to the engine tank. The ejector heats the water so that the injector will not work the water. What can I do to prevent the water from getting so hot?

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The Garlock Packing Co.

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Pickering Governors

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Every Build of Engine

A Record Breaker for Output and Reduced Operating Expenses

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The supremacy of LUNKENHEIMER PRODUCTS is universally acknowledged, and to maintain this reputation, the highest type of skilled labor is employed, and only new material of the very highest grade is used.

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particulars and prices.



"DREADNOUGHT" Endless Thresher Belts are manufactured in England from the highest grade cotton duck, and in accordance with specification to suit the Western Canadian Market. Every belt guaranteed to give satisfaction.

"GENSUP" Brand Packing, Suction Hose, Lace Leather, Tank Pumps, and all Threshing Supplies are the best to be had. Get them from your dealer or write to us.

"DREADNOUGHT"

Sewn Canvas Endless Thresher Belts

Six Carloads of these Belts sold last season, and
not one complaint

Are very much Cheaper than a Rubber Belt

LAST TWICE AS LONG

The General Supply Co. of Canada, Ltd.

OTTAWA

TORONTO

WINNIPEG

Winnipeg Office and Warehouse: COR. MARKET AND LOUISE STREETS.

A. After the water is started by the ejector turn the steam off until it almost stops working. In other words, use as little steam as possible to do the work. These machines are made to lift water 15 or 20 feet and the steam pipe and steam jet are large. The ejector should be designed with small steam pipe and possibly small steam jet when it is not required to lift the water.

A. G. Q. My flywheel has three spokes broken all together. Is there any way to mend it, if so, tell me how?

A. A piece of flat wrought iron may be riveted on one or both sides of the broken arms. If the arm is broken near the hub, so that rivets cannot be used, the iron can be bent at right angles to fit in the corner and cap bolts can be screwed into the hub. If it is broken near the rim, either bolts or rivets can be used. A good blacksmith will know the size of iron to use, which will depend on the size of the arm.

C. S. Q. What is a good remedy for heating piston rods?

A. In the first place, the piston rod should be in line with the guides. By watching the piston rod stuffing box while the engine is running, you can determine whether it is in line or not. If the stuffing box gland rocks up and down with the engine in running, it is not in line and the way to move the crosshead and to get it in line will suggest itself.

Another cause of heating is hard and tight packing. Take all the old and hard packing out and put in fresh packing and enough of it. After the first day's run, if you have to draw the stuffing box up to keep it from leaking, put in more packing and keep it full. The more packing you have in the box the less you have to draw it up to keep it tight; on the other hand, the less packing you have in the box the more you have to draw it up and the more likely it is to heat. If the rod is rough from heating caused by hard, tight packing, or by one side of the gland drawn up farther than the other, a good way to help out is to fix a bunch of waste or a rag on the rod close to the stuffing box by means of a wire and keep the rag or bunch of waste well oiled. This will hold the oil and deliver it to the rod by degrees and thus keep the rod lubricated continuously.

E. M. Q. Is there any difference, if so, how much, in the power of an engine with a fourteen-inch bore and twenty-two-inch stroke, and an engine with a fourteen-inch bore and twenty-inch stroke, both running at 200 revolutions, all other conditions the same?

2. Is it advisable to use emery cloth in any form to smooth a shaft, if not, why?

3. When a 25 horse power engine governed by a hit and miss governor cuts out every fourth

explosion, would it be economy and better for the engine to cut down the fuel supply so that it would take every explosion? I refer to an engine that is run day and night and only stopped for about fifteen minutes every eight hours to be oiled.

4. Would you advise feeding a little water into the cylinder through the air pipe in a 25 horse power portable engine pulling full load and standing in the sun?

A. The engine having the longer stroke should have more power, but just exactly how much more it is difficult to state. If the steam is cut off at the same relative point in each stroke and the engines are alike in every respect, you should get at least one-tenth more power from the long cylinder machine since the length of the cylinder is one-tenth longer in the twenty-two-inch engine than in the twenty-inch.

2. It is not advisable to use emery cloth on the engine shaft. The fine particles of emery are liable to become embedded in the shaft and cause abrasion when the shaft revolves rapidly.

3. It is advisable always to cut down the fuel supply to the point where it will give you the best mixture. If the fuel is reduced below this amount the engine will be less economical than before. It is impossible in a hit and miss governed engine to cut down the fuel supply until it will take an explosion every

revolution. If the governor is right and holds the speed of the engine constant it will give you very economical results, in fact, more economical than the throttle governed engine, for the simple reason that you are able to use the correct mixture all the time.

4. If your cylinder overheats, you might find it advisable to use a small portion of water in the manner you suggest. If you are using kerosene for fuel it will be almost necessary to do so in order to obtain satisfactory results on account of the greater heat generated in the cylinder, but so far as the writer is aware none of the gasoline engines are fitted this way.

A. R. Q. Can you tell me which is the best form for a cylinder tooth? Should it be thin and slant backwards at a considerable angle or thick and nearly straight? Will one style of tooth give as good suction as another, and which will cut up the straw more?

A. We do not know of any experiments that have ever been undertaken to answer these questions. Personally, we do not believe there is very much difference, but this is merely an opinion which is not based upon any very substantial basis. We would be glad to hear from any one who has positive knowledge on this subject. Mere opinions, unless backed up by experimental data, do not amount to very much.

MEN WHO MAKE No. 1 HARD

Being first hand experiences of the men who own and operate threshing outfits in Western Canada

The Small Outfit.

I own and operate a 20 h. p. International gasoline tractor, which was received May 30, 1910. I have used this engine for plowing (stubble and breaking), threshing and moving granaries and find it very satisfactory and a very cheap power. I plowed 160 acres stubble, back setting in 8 days, running 16 hours and altogether have plowed 480 acres, of which 160 acres was breaking, at a cost for gasoline, grease and lubricating oil, of \$341.69, which is about 80 cents per acre. I did not keep a record of the cost of breaking 160 acres separate.

I have here a very tough heavy land, the heaviest in Canada, which requires six horses for 14 inch breaker; therefore, under favorable conditions four breaker bottoms are enough for the engine and throughout the dry summer I pulled three plows. The engine will handle in any stubble the 7 disc Emerson engine gang, plowing 6 or 7 inches deep. The engine handles very easily heavy portable granaries 12 x 14 ft. and 8 ft. to plate and granaries 14 x 16 ft and 8 ft. to plate.

I have a 27 inch cylinder Aultman & Taylor separator, Ruth feeder, Dakota wagon loader and wind stacker. My engine is about the right size for the average grain farmer. To my mind the gas engine is certainly the most economical power for this locality and its development is but in its infancy.

Very truly yours,

Ira B. Cushing,
Lang, Sask

Small Outfit the Thing.

I have used a 20 horse power International engine for the past three seasons and an 8 forty-six inch Case separator with all attachments. This is a portable engine and I use it for threshing, crushing and sawing wood.

For threshing I do not think there is any power better than the gasoline. We use one man in the field, four stook teams and two grain teams with four triple boxes. We thresh about 1,800 bushels of oats per day and from eight to nine hundred of wheat per day. We have threshed 520 bushels of wheat in half a day from the stook with this force and eleven hundred of oats in half a day.

In stack threshing we can do two thousand of oats in a day and one thousand of wheat per day.

With hired help at \$30.00 per month (we keep two hired men), gasoline at 26¼ cents per gallon, it is not hard to figure out quite a profit on threshing twenty thousand bushels of grain in a

season. We can do as good a job as any of the steam threshers, if not better. The little outfits in this district are running the big machines out. I could name ten small rigs within eight miles of here.

Hoping this will fill the bill, I remain,

Yours truly,

George H. Underhill,
Rapid City, Man.

A Good One on Troubles.

I have operated a Hart-Parr for threshing two seasons, and also run a small engine for light farm work such as sawing wood and crushing grain.

In running the Hart-Parr, I find that the main bearings of crank shaft and crank bearings must be kept nicely adjusted, or they will soon ruin themselves by pounding. Our engine is equipped with sight feed lubricators instead of an oil pump. In very cold weather just those which are kept warm by the heat of the cylinders will work. So we take them off and oil the bearings by hand about every 20 minutes. This works very successfully and is much better than trying to keep lubricators thawed out with torches, etc. We are also careful to keep a little more oil in the crank case in cold weather as it does not splash so freely when engine is cold. With regard to fuel, we strain all our gasoline and kerosene through cheese cloth as we put it in the tank. This catches any pieces of chaff, etc., which may get into the oil in handling, and so saves a great deal of trouble, as dirt is a very troublesome thing, either in the force feed or gravity system.

I think ignition requires more care than any other part of the engine. We have had many stops caused by the insulation wearing off the connecting wires where they pass through wood casing from battery box to engine, and so causing a short circuit. We keep an extra set of wires on hand as the constant vibration is sure to break the wires sometimes.

I find that the vibrator springs on the induction coils have a trick of moving while in use unless the lock screws are good and tight. They need very careful attention or they are sure to give trouble.

Another source of trouble sometimes is the spark plugs for jump spark ignition. In starting up on a frosty morning it is necessary to dry and clean the outside of the plugs with clean waste, as the frost forms a coating of moisture over the mica insulation, which will carry the electric current, unless it is cleaned off. It is also necessary to clean the inside of the

GOOD GOODS WIN

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AND



Lion Rubber Endless Thresher Belts

Go Hand in Hand as Pre-eminently the Best — Ask the fellow that has one

The Winnipeg Rubber Company Limited

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WATERLOO LION BRAND MACHINERY

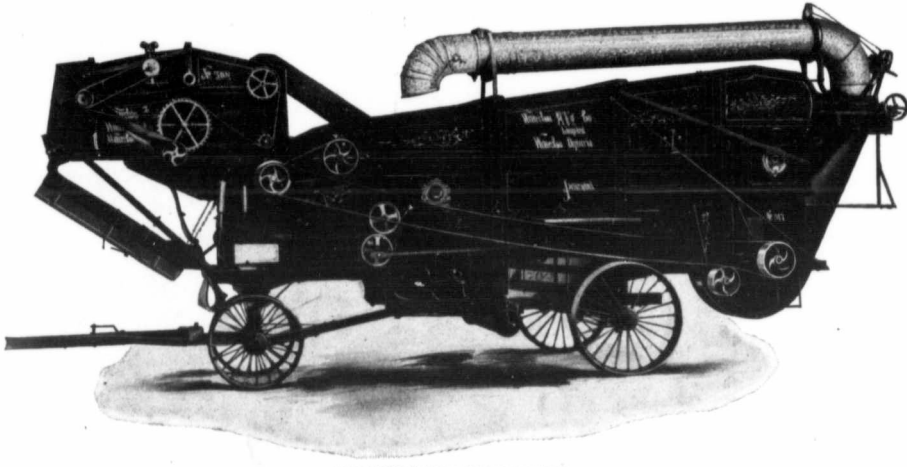
Plowing Engines, Threshing Engines, Steam and Gasoline, ranging in size 14 to 30 h.p.
Waterloo Separators, 28-42 to 40-62, best grain sayers in the market. Wind Stackers, Feeders, Baggers
and Drive Belts.

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Write for Catalogue

Branch Offices and Warehouses
PORTAGE LA PRAIRIE, MAN., and REGINA, SASK.

The Waterloo Manufacturing Co., Limited



"CHAMPION" SEPARATOR

Made in four sizes; viz: 28-42, 35-52, 56-56 and 40-62

plugs oftener when using kerosene.

We threshed last fall until December 10th. So we learned something of cold weather operating, as it was 30 below zero some of the time.

We had considerable trouble to start our engine in the morning, until my brother thought of the following plan: We put a small tin heater under the cylinder and put on a good fire in it about an hour before we were ready to start. We fixed it so that the blaze from the stove pipe hole of the heater went up between the explosion chambers of the cylinders. When we were ready to start we would take out tin stove and then go ahead, the engine starting as good as it would in the middle of summer.

We tried an oil stove to warm up the engine before we used the heater, but it was no good on a cold windy morning, as it did not have enough heat.

We used to take the float out of the carburetor before we put on the fire; otherwise, the heat from the stove would melt the solder.

I also fitted up another battery box, so that I could take off my battery at night by just undoing the wires connected to the induction coils. It is necessary to take off the battery at night in zero weather in order to keep them from freezing up.

I may state that we found it impossible to use kerosene in our engine after the winter set in

although we can use it as good as gasoline when it is not freezing.

Hoping this may be of some interest to brother threshermen, I remain,

Yours truly,
Fred W. Knott,
Bredenburg, Sask.

7 Cents for Wheat and 5 Cents for Oats.

Being an old time thresher, I thought I would like to write you regarding my experience. I do not know as my letter will be of any benefit to you, however, I will try and tell you some of my experience.

My two brothers and myself own a thresher now, of which I act as manager. We have a 21 h. p. Compound Port Huron traction engine and a 36 x 56 Great West Sawyer and Massey separator. We have had the engine for nine years and outside of retubing it has never cost us over \$20.00 for repairs. We have worked it hard all the time, using it for crushing and sawing lumber in the winter and breaking in the summer. I act as engineer, and, of course, take good care of it.

We got the separator in 1909. We have not had a break down on it yet. Of course, before starting in the fall I go carefully over the machine, examining every detail, and if there is anything wanting I attend to it. I believe it pays to do this, as we seldom have a break down.

Last fall the season was a short one with us. We ran only 15 days. During that time we did not lose one hour waiting on the machine. We threshed altogether 24,472 bushels, of which 15,054 were wheat. So you see our average was a fair one.

We charge 7 cents for threshing wheat and 5 cents for oats and barley. There is no flax grown here, so we have no price set for it. We were well satisfied with last year's run considering the short season and light crop.

Yours truly,
L. J. Mabley,
Kelwood, Man.

Averaged 1,400 Bushels Per Day.

I will try to tell you our experience with a threshing outfit. We own a Waterloo rig 20 h. p. engine, 33 x 52 separator, which makes a good outfit, and will do the work if kept in good shape. But, of course, none of them will do the work if in bad order.

Before starting out we always see that everything is tight and in the very best of shape.

We started out last fall in good time, pulling in to a big job of stook threshing, putting in good days and running steadily. We made an average of 1,400 bushels per day until the cold weather came. I think that is pretty good for a small rig.

We threshed nothing that went less than 20 bushels per acre. Some spring wheat went

31, some fall wheat went 47. The fall wheat averaged 31, but fall wheat straw does not make good firing. It is rather tough and thin like hay.

It certainly pays to give good weight all round. We like to have the farmers tell us their grain went so much over our tally. We carry a pair of hand scales along and weigh a bushel every day. We try to leave a job so that we can go back next year.

I would not be without the Canadian Thresherman and Farmer. It beats them all.

Yours truly,
Thomas P. Stringer,
Kenville, Man.

Threshed 23,000 Bushels.

We bought an International Harvester 20 horse power gasoline tractor and an Aultman & Taylor separator with feeder, blower and high bagger.

The outfit worked fine. We did not have any extra men to run it. We threshed 23,000 bushels of grain last fall and we consider it very good for a small outfit.

Gasoline cost me 27 cents per gallon. The engine uses about 25 gallons of gasoline per ten hours. I am well pleased with my outfit and would be very pleased to receive the Gas and Oil Engine Handbook. I am a lover of the gas engine.

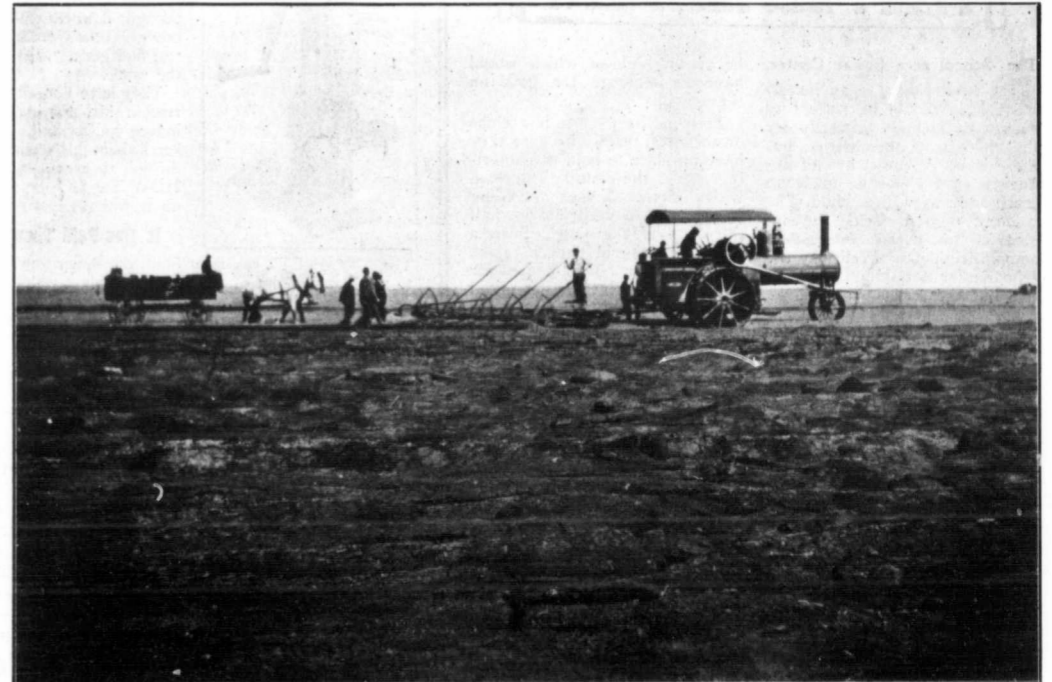
Yours truly,
V. H. E. Elliott,
Davin, Sask.

A TRIO HARD TO BEAT



The Straightest and Most Evenly Laid Furrow at the Winnipeg Motor Contest. An American-Abell Universal Farm Motor Furnished the Power.

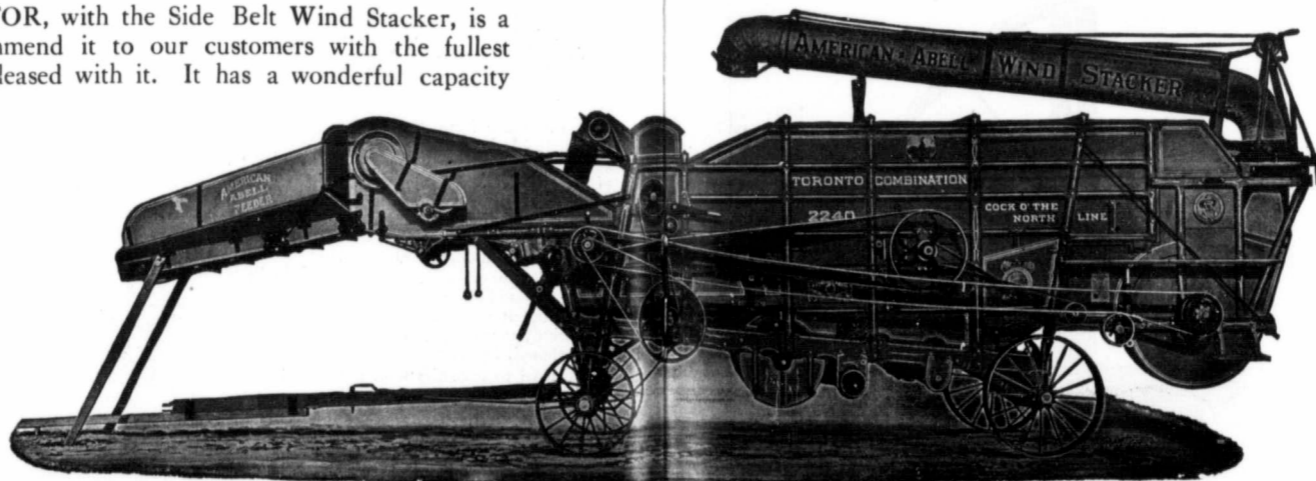
FOR
**STRAIGHT
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 FAST WORK
 Clean Grain
 DURABILITY
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**GENERAL
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The Only Engine in its Class to Negotiate the Soft Ground at the Winnipeg Motor Contest. The 28 Horse Power Simple Rear Mounted American Abell Steam Tractor. Gold Medal Winner Class F Steam Engines

OUR AMERICAN-ABELL SEPARATOR, with the Side Belt Wind Stacker, is a Separator in every respect. We recommend it to our customers with the fullest confidence in their being more than pleased with it. It has a wonderful capacity for handling grain and cleaning it perfectly without breaking the kernels.

Many of our customers report to us that grain from the American-Abell machines brings a better price at the mill or the elevator, because of its superior condition as compared with the output of other machines. A customer more than satisfied is the best advertisement the owner of a threshing outfit can have, and insures him the best of the jobs in his territory for the following season. There is also a great deal of satisfaction in having the machine that is a little better than the best of others. That is one reason you should buy the American-Abell.



THE AMERICAN-ABELL SEPARATOR

ANOTHER reason is that you get the best value for your money. The AMERICAN-ABELL requires less power to run it; it does the most work in a given time; it calls for little or no expense in the way of repairs, and it is so simple in construction and so easily handled that it is quickly moved from one job and set ready for work at the next one.

Don't waste time trying to patch up that old separator. Get a new AMERICAN-ABELL that will run the remainder of this season without a stop and will be in perfect shape for next season's use. It will pay for itself in the extra work done during the balance of this season.

Our Creed: "We believe that honest goods can be sold to honest people by honest methods."

American-Abell Engine and Thresher Co., Limited

TORONTO WINNIPEG REGINA CALGARY EDMONTON SASKATOON

We represent the Advance Thresher Co., Battle Creek, Mich., and the Minneapolis Threshing Machine Co., Hopkins, Minn.



The School as a Social Center.

The rural school is an investment. It should be treated as such. It is built primarily for the children of the district, but there is no reason why its influence should not be made to reach adult as well as child. The country district lacks the incentive to social intercourse among neighbors. Well may the school offer not only the incentive but the means which make it possible. Here we have a common interest and a common investment; the school belongs to all. It should be the natural meeting place for the people of the district. The greatest draw-back to life on the farm to-day is its isolation. Anything which will bring people together in a social way should be hailed with gladness. And so the country school may become a powerful factor in rural uplift if once the inhabitants of the district can be drawn to it as a common center.

There are objections to using the school room as a public meeting place, and for this reason it had better, under ordinary conditions, be used only for district gatherings. The promiscuous public audience is too irresponsible. To allow such an audience to occupy a school-room, leads to broken furniture, littered floors, soiled walls and decorations and mutilated books. However, even these difficulties may be partly overcome, where the district is so minded, by having movable furniture so that the room may be cleared for public meetings. The district residents, having a personal interest in the school and its contents, are likely to exercise greater care in keeping it intact.

But is it not worth while to so build our school houses that they may answer for public meeting places? The additional cost of a hall on the ground floor of a country school would repay the investment many times over. In fact, in a country where halls are few and far between, such a meeting place may be made to pay a liberal interest on its original cost, by charging small rental fees. Such a hall could be built partly below ground in many instances, so that a very short flight of steps would lead to the school room. It would furnish a fine playroom for the little folks on stormy days, besides serving the public. It would encourage the school to give public entertainments and would allow popular lectures to

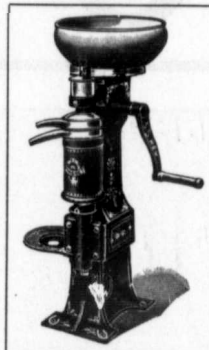
be given, both of which would have an influence for good on the school.

Farmers have very few clubs or societies, mainly because they have no place to hold their meetings. Yet the country is dotted with school houses standing empty and unused nearly half the days of the year. Such a condition should never exist. What are our school houses for if not for the instruction of all the people? Why this worship of the district school as being something to admire from afar? While we are investing two dollars in a building at which our children may attend school, let us invest an additional quarter of a dollar and make it a school which we may attend and thus double its actual value to the community.

To say what a country school ought to be is one thing; to make it that is another. Development along new lines is slow — particularly so in the rural districts. However, all movements, be they great or small, must have a beginning. All that is needed to place the country school where it belongs, as a social factor, is for some good, live man or woman to start the movement and keep pushing until it has gathered momentum enough to run with very little motive power. The life of a country club invariably centers about a small group of people who are willing to give freely of their time and energies to finish what they have started. A good leader never has the slightest trouble in securing enthusiastic followers. We have seen a district club organized in a locality where there were not three people who believed that such an organization could endure for three months. We have seen that same club go on year after year, winning large favor each year of its existence, until it had become so much a part of the community life and of the school in which it held its meetings that to not be a member of the club was to proclaim one's self an outcast.

Much of the enthusiasm should come from the teacher of the school. She should recognize that her position is one of larger usefulness than the training of the generation to come. She owes something of an obligation to the present generation, and, in the rural school her opportunity to fulfil that obligation is ever present. It furnishes her the means of getting into touch with

We Replaced Our Cream Separator with a Magnet



This statement of fact is being so frequently brought home to us we feel it due to ourselves to give publicity to it, and to state why it is that a very large number of dairy farmers in Western Canada have thought it worth while to give the other Fellow's separator a long rest and get a "MAGNET" to do the work.

They have done it for the same reason, Mr. Farmer, that would induce you to send a "bum" farm-hand about his business and give the job to a man who KNOWS HOW TO DO the work and will do it without loss of time.

It Has Paid Them To Do It

The "MAGNET" has been built, not down to a price, but up to the highest point of efficiency that human skill and the experience of a life time at butter making can bring it. It will pay you to have it regardless of cost and its price is easily within the reach of any farmer who has cows enough to keep it going.

It is MADE BY CANADIANS who, like the poor, are "always with us." This means that in the event of any mishap from whatever cause all parts can be supplied instantly from the nearest branch house.

We will prove every point we claim for the superiority of the "MAGNET" on your own farm—at our own expense.

The Petrie Mfg. Co., Ltd.

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WINNIPEG, CALGARY, REGINA, MONTREAL, VANCOUVER, ST. JOHN, N.B.

Load your own cars or fill your granary with a
"TAGGART" Portable Elevator

Construction

The "Taggart" Portable Grain Elevator is built any height, standard 18-ft. leg.

Grain is elevated by cups and conveyor by worm screw.

Mounted on skids, but can be operated on a wagon or truck.

Hopper swings back out of the way for wagon.

Leg swings down when moving and rests on frame.

Spout can be swung in any direction, or up and down.

Will save its cost in one Season

It is a back saver, time saver, money saver. It will save three men's time and two teams at least.

Our Prices are Right

For loading cars and filling granaries—it can be operated by horse power or gasoline engine.



This cut shows Elevator mounted on truck, with leg up and hopper ready to receive grain. Write for prices and terms. Agents wanted.

Our 1911 Model has improved skids, delivery spout, force fed connection, etc., and is in fact as near perfection as we can make it—write for descriptive circular.

Our Line Includes Case Plows and Engine Gangs, New Superior Fanning Mills, Owens' Smut Cleaners, Steel Wheel Trucks, Harrow Carts, Sewing Machines, Disc Sharpners, etc., Gasoline Engines, 1 to 4 h.p.

The Harmer Implement Company

WINNIPEG

See our Exhibit at Winnipeg Fair

the parents of the children she has under her charge, and no teacher can give efficient service in a country school without know the people of the district. We talk about "average" men and women, but in the country we do not have "average" men and women; every home is an independent kingdom with its own peculiar ideas and practices. This is the result of the farm isolation we have already spoken of; it is the condition that we want to wipe out of rural life by bringing people into closer association through the medium of the rural school.

One of our prominent educators has well described the attitude which the teacher should hold toward the people of his district, when he says: "The teacher should remember that he is a citizen as well as a teacher; and he cannot expect to interest and influence those about him unless he is an intelligent citizen, keeping pace with the progress of the world and with public affairs. He should be an all-round man, with knowledge of, and interest in, what occupies the thought and attention of other good people. He should be influential in every matter looking to the public welfare, and he cannot be unless he is in intelligent sympathy with the public about him." This implies a responsibility that would fairly appal many of our present rural school teachers whose chief ambition centers about their monthly wage, but in the new day when the rural school shall have come to be the school of all the district, old and young alike, we may expect to see mature, thoughtful men and women filling the position of teacher to the children and companion and leader among their elders.

When that day comes, we may expect our country schools to touch the life of the whole community, and, in turn we may expect to have the interest of the community reflected back in the efficiency of the school. Indifference is a powerful drag on any institution. It is often worse than open antagonism. Our rural schools are peculiarly the victims of thoughtless indifference. If every taxpayer in a district could be coaxed into the school room just once a year it would marvelously aid in throwing off this indifference. And to keep him coming to the school time after time, insures a lively interest succeeded by genuine enthusiasm.

So while we urge the centering of social interests about the school for the sake of those who are to reap the direct benefit of such associations, the school children, themselves, are the largest gainers. It will mean better teachers, a neater and more comfortable school building, well-kept grounds and out-buildings, a clean room and adequate furnishings, a better at-

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tendance of pupils and a spirit of hearty co-operation between teacher, school board and taxpayer.

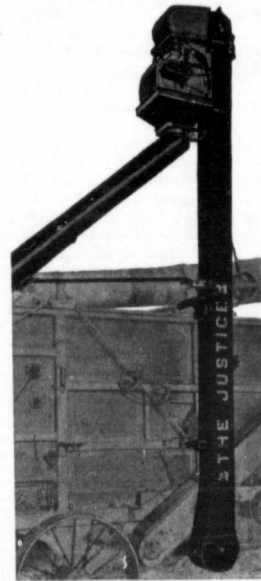
Killing the Weeds in August.

August is one of the most important months in the fight with weeds, for it is during this month that a very large number of our worst weed pests mature their seeds, and as one of the most essential things to do to keep weeds in check is to prevent them from seeding, much good work can now be done. The weeds described in this article are among those which are most prominent this month, though many others will be found to be producing seeds at this time. A good general rule is to mow or pull all weeds which show signs of seed production, if it is not possible to keep them down by cultivation.

Ragweed.

One of the most prominent weeds along roadsides and in stubble fields during July and August is the common ragweed. This weed is also a pest in old pastures, in meadows and along fence rows. In meadows and pastures it is objectionable because of its strong odor, as stock often will not eat grass or hay which contains any considerable quantity of it, and it sometimes produces a bad odor and flavor in milk. Ragweed is well known to most people because of its finely divided leaves and long spikes of flowers, which produce an abundance of pollen. The yellow, disagreeable dust produced by a heavy growth of these plants along roadsides and in fields is irritating to the throat and lungs and is said to be a factor in the disease known as fever. Ragweed is an annual which grows from a few inches to about four feet high, with branching stems and many thin, finely divided leaves, which are grayish white on the under surface because of many short hairs.

Every effort should be made to prevent it from seeding. Wherever such treatment is possible, it should be mowed close to the ground before it produces seed, and should be cut again two or three weeks later if much second growth is made. Stubble fields should be mowed two or three weeks after harvest, or if they are to be cropped next year, they may be disced. Land which is badly infested with this weed may be cleaned by growing a cultivated crop for one or two years, if care is used in keeping the field free from the late growth of ragweed after ordinary cultivation ceases, and attention is given to mowing the stubble after the field is again put into small grain.



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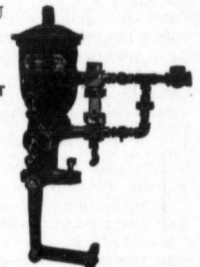
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Kinghead.

Kinghead is a near relative to the plant just described, and one which must be treated in much the same way. It is particularly common in the Red River Valley and in other sections which are subject to overflow in wet seasons, as the seeds are carried long distances by water. Wind also carries the seeds, particularly in drifting snow in winter. The plant is much larger and coarser than that of ragweed, and the leaves are divided into only three parts. The pollen-bearing flowers are produced in spikes much like those of ragweed, while those which produce seeds are in the axils of the leaves and are not conspicuous. The seed is tipped by a short beak, around it are six or eight blunt spines, giving it somewhat the appearance of a crown. It is to this characteristic that the names kinghead and crownweed are due.

Kinghead should be mowed before it produces seed. This plant is an annual like ragweed, and the principal thing in fighting it is to prevent seed production. It is most common in the edges of grain fields and along fences and roads. In grain fields it may be pulled early in the season or killed by spraying with iron sulphate. If this work was not done at the proper season, the plants should be mowed before they produce seeds or should be pulled from the grain before it is harvested. Along fences and roads mowing is about the only practical remedy. Whenever it is possible to obtain a good stand, a heavy seeding of grass along roadsides and in waste places will go a long way toward preventing the growth of kinghead and other troublesome weeds. Kinghead can be kept down in cultivated fields without much difficulty.

Cocklebur.

Another rank growing weed along roadsides and in waste places is the cocklebur. This is an annual weed with tall, much branched stems and large, heart shaped, dark green leaves. As in the ragweeds, the pollen bearing flowers are borne in spikes, with the seed bearing flowers below them. The seed is inclosed in a bur with many long, thick hooked prickles. Each bur contains two seeds, which may remain in the ground for several years before germinating, so that in order to eradicate this weed it is necessary to prevent it from seeding for several years in succession, until the supply of seeds in the soil have either germinated or decayed. Mowing or pulling the plants before the seed is produced is the best remedy. In cultivated fields they usually give little trouble, except occasionally in wet seasons where thorough cultivation cannot be given.

Burdock.

Burdock is a common weed in pastures and along roadsides, where its large heart shaped leaves and conspicuous heads of purple flowers, followed by large

burs, are noticeable at all stages of its growth. This plant is a biennial which produces a deep tap root the first year and a number of large leaves which rise from the crown. The second year the leaves are larger and more numerous, and are topped by a tall branching stem which bears heads of flowers about an inch in diameter in the axils of the leaves. These heads later become seed-bearing burs, which are carried from place to place by animals. These plants are most easily killed by cutting them off below the crown at any stage of their growth before seed is produced. Sprinkling a small handful of salt or a little kerosene on the cut surface of the root will make the death of the plant more certain. Mowing is effective only if repeated several times during the summer, as the crowns throw up new shoots which will produce seed in a few weeks if allowed to grow.

Milkweed.

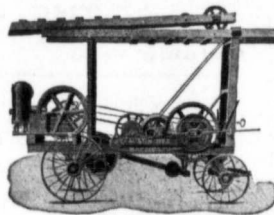
This is the only weed described in this article which is really difficult to eradicate, as all of the species are perennials and the most common spreads by means of running rootstalks, while the seeds of all are carried long distances by the wind. In a trip through the West, taken by the writer recently, this was the most prominent weed noted. There are three common species of this group found in the Northwest, but the most troublesome is the common milkweed or silkweed. This plant, as just stated, produces many running rootstalks, from which tall, thick stems are sent up, bearing large, oval, opposite leaves, which are lighter on the lower than on the upper surface. The flowers are in dense clusters, and are a dull purple in color. The stems and leaves contain a thick, milky juice, which has a strong odor. The seed, which is produced in large pods, bears numerous long, silky hairs. Repeated cuttings of this plant in pastures and meadows with the hoe or scythe will in time destroy it, if it is not allowed to make any top growth. Thorough cultivation is effective on land that can be cropped, while in grain fields the plants should be cut before they seed, and the stubble should be mowed or disced at frequent intervals after harvest to prevent top growth. The other species of this group produce flowers and seeds which are quite similar to the common milkweed, but they do not possess the running rootstalks, and are easily killed by any of the methods just described.

Produce Eggs by Proper Feeding.

By J. R. Cote, Chatham, Ont.

Are you getting eggs? Is your egg basket well filled? If not, are you making an effort to ascertain the cause, and remedy it? Are your hens doing their duty? Possibly your feeding is at fault,

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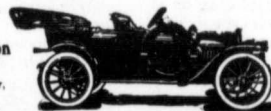
When investigating motor cars think of this: Almost any car runs smoothly while new, but the racking of motor operation, and road-vibration, soon tends to disarrange the delicate motor adjustments in cars of ordinary design. Then ask yourself: What will this car be like after running a few months?

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protects owners by safety devices, self-oiling devices, and extra quality of material at every point subject to extra strain. The "Everitt" motor is made strain-proof and vibration-proof by being built in, on and around a solid one-piece casting that is perfectly rigid. All the delicate adjustments and moving parts have bearings immovably seated in this unvarying main unit. Therefore adjustments remain correct and the motor runs smoothly, always. More: "Tudhope Service after you buy" is an asset worth a considerable share of the cost of your "Everitt." This is protection to the owner.

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although other conditions may be favorable. In order to obtain eggs, and thus secure from your fowls that which, after all, is most desirable, it is absolutely necessary that you supply the hens with the proper food to get results.

Nearly every poultryman has his or her own method and system of feeding, and it is, indeed, a hard matter to convince them that they are not feeding along the proper and most beneficial lines. Again, there are many methods of feeding in vogue at the present time for egg yield which have been productive of good results, but a great many of these are rather expensive and require much work and attention on the part of the attendant.

I will endeavor to give here a simple formula for feeding for eggs which has been used with success. After the fowls have gone to roost for the night, place in the coop, in troughs or hoppers, a dry mash consisting of two parts bran, one part middlings, one part corn chops or yellow cornmeal, one part beef scrap, and about one third linseed meal, well mixed. On arising in the early morning the fowls will partake of this liberally, and it contains all of the egg-making qualities. For the regular morning feed, give equal parts of corn, wheat and oats, allowing one scant handful to each bird. This should be scattered in the litter, causing each individual member of the flock to dig and scratch for their proportionate share which keeps them working for several hours and gives them plenty of exercise. At night, just before roosting time, feed corn from a hopper, allowing a liberal supply for each. They then retire with a full crop of food, which furnishes heat for the body. I find that this method of feeding makes the hens happy, active, and on the whole anxious and willing to lay.

The mash food may be fed wet, but in this case care should be taken so as to prevent getting it too sloppy, as this might cause bowel trouble. If fed wet, it should be in a crumble state. With any system of feeding for egg production, however, it is necessary to supply green food, and where fowls are confined—that is, without free range—these foods are essential to a full egg basket.

Again, another and most important matter to be considered is fresh water in abundance, oyster shells, grit and charcoal. When you come to buy the oyster shells, see that you get good shells, get some which have the required ingredients for supplying egg shells. Some people have the notion that if they break old plates or fine glass it will answer the purpose. Old plates and glass broken will answer for grit, but there is nothing to take the place of oyster shells, and my opinion and experience is that the best oyster shells on the market are the Belle brand. I have tried several kinds and I find the Belle brand the best, and if any of my



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AMONG the prizes we are offering in our big Prize Contest is one of \$100.00 (Prize "C") for the farmer in each Province who furnishes us with a photograph showing the best of any particular kind of work done on his farm during 1911 with "CANADA" Cement. For this prize, work of every description is included.

Now just as soon as you finish that new silo, barn, feeding floor or dairy, that you've been thinking of building, why not photograph it and send the picture to us? The photograph doesn't necessarily have to be taken by a professional or an expert. In fact, your son's or your daughter's camera will do nicely. Or, failing this, you might use the kodak of your neighbor's son nearby. In any event, don't let the idea of having a photograph made deter you from entering the competition. Particularly as we have requested your local dealer to help in cases where it is not convenient for the farmer to procure a camera in the

neighborhood. By this means you are placed on an equal footing with every other contestant.

Get the circular, which gives you full particulars of the conditions and of the other three prizes. Every dealer who sells "CANADA" Cement will have on hand a supply of these circulars—and he'll give you one if you just ask for it. Or if you prefer, you can use the attached coupon—or a postcard will do—send it to us and you'll receive the complete details of the contest by return mail.

If you haven't received your copy of "What the Farmer Can Do With Concrete," write for that, too. It's a finely illustrated book of 160 pages full of useful and practical information of the uses of concrete.

Write us to-night, and you'll receive the book and the circular promptly.

Do not delay—sit right down—take your pen or pencil, and fill out the coupon NOW.

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readers cannot get them from their dealer, write me a post card and I will send you samples and tell you where to get the shells. These should be kept before the fowls all the time.

Keep your house clean, dry and devoid of vermin. Be careful not to feed any mouldy feed, and you get results by keeping your egg basket filled during the whole spring and the eggs will be good for hatching if you have your birds mated up properly. Of course, there is something in the breed. I have kept track of some of my birds laying for the past few weeks, and I have a pen of White Wyandottes which have now laid 154 eggs in 30 days. There are six hens in that pen. So you can see whether that method of feeding pays or not. A man who could raise a few hundred birds from that pen would make money if he was feeding them properly.

Good Roads.

The value of good roads becomes evident when we look at the financial side of the problem. The cost of hauling one ton one mile is nine cents in Germany and twenty-five cents in the United States, the difference is largely one of road bed. If we apply these figures to hauling, say 5,000 bushels of wheat 5 miles, the cost

in Europe would be \$67.50, in the United States \$187.50, or \$120.00 more. It will be safe to say that where 5,000 bushels of wheat is raised as much more hauling will be done which would represent another \$120.00 or \$240.00, the extra outlay caused by poor roads. This is only one item. Good roads increase the value of the land, \$5.00 an acre is putting it too low, but at that it amounts to \$1,600.00 for a half section—then the convenience and the ability to market at any time so that advantage can be taken of the highest prices. The man in town realizes the value of good roads and he gets them. He paves the sidewalks and streets. He knows that they will increase his business, his comforts and social advantages—but no more so than in the country for the farmer.

Plowing.

Plowing is the most common work on the farm, and it is also the most important. More is done with the plow in preparing the seed bed. If the plowing is not done right, no amount of work with any other tool can make it right.

What It Does:

Plowing loosens up the soil and turns new portions of it up

to be acted on by the elements so that the plant food that it contains can be made available. In loosening up the soil the water can get into it more easily and more of it will get in a given time. In case of a heavy rain for instance, much more of it will soak into a deep plowed soil than into a shallow plowed one. The

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other day the writer was in a portion of the state where the crops were suffering for lack of moisture, yet a few days before a heavy rain had fallen. The plowing being shallow it could not soak in quick enough, so most of it flowed off from the land, and into the gullies.

When to Plow.

The land should be plowed when the soil is moist. If it is dry, the pulverizing action of the plow is largely lost. When the good housewife makes bread she does not work the flour, but works it after she has added the water and yeast, kneads the dough. Plowing the soil when dry would be a good deal like kneading the flour instead of the dough. The best time to plow is in the fall and early at that, as this will give some of the effect of summer fallow. In case the soil is dry in the fall and moist in the spring, better results may come from the spring plowing.

Harm From Soil Drying Out.

The more nearly constant the moisture content of a soil can be kept the more available plant food it will have.

What the Moisture Does.

The moisture is all the time exerting a solvent action, bringing plant food into a form that the plant can use. It, however, does something else fully as important, and that is to make it possible for germs to live. These germs work on the insoluble plant food and make it available. The importance of this work is usually underestimated. When the soil becomes dry, the solvent action of the water ceases and the germs become inactive; many of them die. Thus, the two principal agencies that make plant food available are cut off at once. The effect that drying has on bacteria is well illustrated in drying fruit or hay to make it keep. The killing of the germs is a good deal like allowing the live stock to die from thirst or hunger. It will take some time to restock the farm again, and likewise it will take some time for the germs to increase so as to do the work needed to produce a big crop. A big crop cannot be produced without them.

How to Remedy.

The greatest damage is usually done after harvest. The soil is compact, the crop is removed and the rain scant. The land should be disced as soon as cut, in fact, follow the binder with the disc, which loosens the surface and kills weeds that take large amounts of moisture. This will save a good deal of moisture.

Organic Matter

It is also necessary for the germs to do well. It furnishes them food and enables the soil to hold moisture.

Deep Plowing

Is one of the most effective ways of keeping a good moisture

content in the soil. It also gives the germs more space to work in as they live principally in the soil turned with the plow.

Germs and Live Stock.

The germs are a sort of live stock and the more live stock kept on a farm the more germs there will be in the soil due to rotating crops and applying manure.

Don't neglect the soil germs even if they are small. There are so many of them, and they are working for you just as much as your horse or your cow.

Saving Moisture.

In the matter of saving moisture in the soil a good many of us are a good deal like the rabbit in the fable. In the winter time he was always speaking of building a house next summer. When summer came and he was reminded of it, he answered; "Every bush is a house now."

When a good shower comes we ought to get the moisture into the soil and keep it there. We have no assurance that we will have more rain right away, that there will be enough to ripen the crop, to put the soil in good condition for plowing, to leave the soil with a good moisture content for next spring. More can be done in the thirty-six hours following a rain than at any other time.

If the soil is too dry, then save what little moisture is left. Remember that moisture cannot pass up through loose soil.

Moisture in Roads.

Stone is perhaps the ideal road material but it is usually out of the question. Earth roads can be made. The keynote to success in making them is controlling the moisture. When there is too much of it the earth becomes mud; when too little the result is dust. There is a happy medium between these two extremes, when the soil packs hard. In most soils, excepting sandy ones, it is not difficult to maintain this favorable moisture content. Keep the center of the road higher so that the water cannot remain there. When it does the result is ruts in wet weather and in dry weather the sides of the roads are ground up into dust. Drainage ditches should be provided along the road. If water stands there it will soak under the road bed and soften it.

Another important factor is to keep a space of fifteen feet free from grass and weeds, which if allowed to grow on the road, take up so much moisture that the soil grinds up into dust.

Wagon Roads.

Wagon roads are to the farm what the railroads are to the town and city. What would happen to a city if it had such railroads that they would have to charge two or three times as

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1909	11,679,743
1910	14,041,187
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160,000,000 acres yet to brought under cultivation Consider what this development makes possible for the manufacturer.

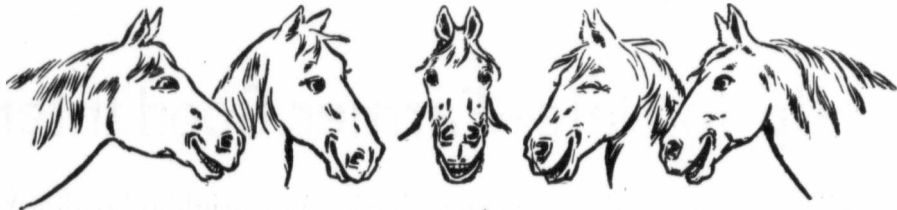
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Commissioner of Industries, Winnipeg, Canada



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This man uses The Kramer Rotary Harrow Attachment

Save all this slavish work By using a Kramer

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A Dry Season

The success of any crop depends far more on the care that is taken of the fall and winter precipitation than on the spring rainfall. You should never take chances on 'summer showers.' Your land always gets a soaking in the Fall and Winter. Mulch the soil when it is plowed and the moisture will remain to do its work. So sayeth the Kramer people and so doeth the **Kramer Rotary Harrow.**

See Our Hercules Model for Summer Fallowing, Back Setting or Stubble Breaking

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SOLE AGENTS FOR CANADA

much for freight and passenger traffic as to some other city otherwise equally well situated; or the road bed so poor that only slow time could be made; or that the roads would be impassable during parts of the year? We know no city could maintain itself under these conditions.

These are preposterous statements to make of a railroad; but they are the conditions that often maintain on country roads where the expense of hauling is in many cases two or three times what it should be, where the road is such that it takes two or three times as long to get to market as it should, where the roads are not in condition for hauling loads at all times. This works to the detriment of the farm and its industries just as much as that kind of railroad would work to the detriment of a town or city.

Butter Making.

I have lived on a farm for 36 years and have made butter to sell on the market and for our own use all of that time. How many changes there have been in the handling of cream, milk and butter.

When I commenced making butter in 1874 the gallon stone crock was used to strain the milk into and set in a cool cellar or milk house with a tank of water. Then every morning there were ten or twelve crocks of milk to skim by hand, empty,

wash and scald, with big buckets of clabbered milk to carry out to the pigs and cream to churn in a dash churn, what back-breaking work it was, but we made good butter and sold it for eight and ten cents a pound. I thought there was an easier way so I quit using crocks and got gallon tin pans. They were much lighter to handle and easier to keep sweet. Then came the crank churn which was a great convenience as I could sit down and churn. The next was the water separator in which you put as much water as milk. This was better than setting in pans, but took so much pumping and diluted the milk too much to make good feed for stock. The next improvement that came was a separator which consisted of a tall can which was set in a tank with cold water around it. This was much better, but still the water had to be pumped and kept cool which was a good deal of work if you had no ice.

All this time I was making butter with a great deal of hard work and not much profit but the change came with advent of the hand separator. It is the greatest money maker and work saver in the dairy. There is little trouble now in making good butter and getting a good price for it. With separated cream a crank churn, and a dairy thermometer you are ready to go to work.

I churn at from sixty to sixty-two degrees according to the

weather. After the butter is in the granular stage I draw off the butter milk and wash the butter in weak brine. I work it lightly, salt, and make in pound molds. The glass butter molds are the best. If the butter sticks to the ladle or bowl, I rub with dry salt. Have no trouble getting a market for butter made in this way and a good price also. It is better to have regular customers and a fixed price the year around. With a good separator you can sell your butter fat to the creamery for a good price, saving much work. I think the Jersey cow is the best for butter making.

Mrs. J. M.

The Man Who Makes a Farm.

The man who makes a farm on a homestead claim is a nobleman. He breaks away from the friends and environments of youth and asserts individuality. He enters into partnership with nature, develops a home and establishes a business. The strings of conventionality are severed and the ties of society unbound. With the combination of health, energy and intelligence, he utilizes the forces of the soil, water and sunshine in expanding the fields of agricultural independence.

The man who makes a farm in the North is a commander. He fears not the snows of winter, but makes practical use of the sunshine of summer. He

emulates the ant in storing, during the harvest season, for the days when icebergs shall close the gateway to commerce. He counts on the morrow and heeds the advice of boyhood, to look out for a rainy day. He rejoices in performing that which others hesitate to undertake — the plucking of prosperity from the fertile vaults of frosted fields.

The man who makes a farm in the West is a builder. He enters a field, formerly occupied by special interests, and publishes a new page in the history of civilization. He wrests the range from the sheep baron and cattle king, and introduces a new era in peopling the earth with families holding the small farm units. His example is followed by thousands of homeseekers, and the region once known as private herding-ground becomes a center of public schools and churches.

One of the more recent propositions in engineering is the construction of a great electric tunnel beneath the sea between Sweden and Denmark. Such a work would consume years to attain completion.

A sort of wine made from the palm, in addition to being used as a beverage is used as yeast, an insecticide and a very successful disinfectant. It has also been found to be excellent for removing rust from many metals.

Farmer Up-to-Date—Farmer Good Intention

Their Farms adjoin. Both of these Farmers live in your neighborhood. You know them and they know you. Are you one of them? If so, we sincerely hope you are the right one.

FARMER UP-TO-DATE

AUGUST
1911

FARMER GOOD INTENTION

Mother.—I am very glad I went to the Dominion Fair at Regina. The poultry exhibits were the best I ever saw, and I purchased some fine cockerels. I also saw some new ideas in incubators that I mean to try, and with that new chicken house I mean to do some big things in the poultry line another year.

Father.—Boys, I believe we had better cut the hay on that east eighty this week. I was through it yesterday, and it certainly is a fine stand. Hay is selling in Winnipeg at the present time at \$22.00 per ton, and with a big shortage in the hay crop across the line, there is sure to be a big demand for hay this winter. There is no use in letting any of it go to waste to furnish fuel for a stray prairie fire. We can get the baler out this fall and make enough money to make a good payment on that tractor we are going to buy next spring.

Week
Ending
August
5th

Father.—I have got my outfit all ready to go on the road to sell nursery stock. I gave Brown a note for the buggy, but I know I can soon pay it back as the profits in the nursery business are big. I don't like to take that bay horse away from the harvest field, but I must have a good animal on the road. You boys will be able to get along all right. Even if you do have to go a little slow and it takes a few days longer it will not make much difference.

Mother.—The cows broke into my garden last night and ate what little there was left of it, so that it will be canned goods for ours this winter, if we have any vegetables to eat at all. Next year I am not going to plant any garden, as I have to do all the work myself, and I cannot even have a proper fence constructed to take care of the work I do. It is clear discouraging

Henry.—That wheat in the north eighty is ready to cut and the binder hitches are all ready as well as the tractor. John and I tried them out last week while you and mother were at the fair, and they worked fine. The way we will mow down the grain this year will be a caution, and the best part of it all is that the horses can kick up their heels in the pasture. The hotter the day the more work we can do, and no one will suffer from the heat. The binders are all in excellent shape. Two of them have been equipped with new canvasses and all worn parts have been replaced on all of them. There will be no stop once we start this year, and bad weather will have an awful time to catch us. We are out to make a record and we are going to make it. All we want you to do, father, is to keep us supplied in the field with plenty to eat.

Week
Ending
August
12th

Charles.—Here I am left with a hired man, a few scrub horses and a lot of old broken down binders, and father expects me to put up the harvest. I was looking the binders over yesterday, and the whole five would not make one good one. When I asked Brown for some repairs yesterday, he told me that he thought it was up to us to pay for the machine before we began to pile up a big credit bill for repairs. He, however, gave them to me, but if we break anything or need any more I haven't the gall to go to him. I don't see why we can't run our farm as other people run theirs. Up-to-date's wheat is the best I ever saw and ours is so weedy that it is scarcely worth cutting. I am going to try and rent the farm myself another year. It seems to me that we had better work one half of the land and work it right, than to try and skim over a big patch and get nothing.

Father.—I noticed at the Regina Fair that there is an outfit for threshing whereby they use wing feeders and dump racks. You simply draw the load to the machine and dump it off in a heap, and the wings on the feeder make the spike pitchers to stand on the ground and pitch it in. It certainly is a big time and labor saver, and I am going to insist that the outfit that does our threshing this fall is equipped with a set. It requires altogether too many teams with the average outfit to say nothing of men. You know how it was last fall. The outfit that threshed for us was short of both men and teams, with the result they were about twice as long in doing the job as they should have been. It requires too much work to get the grain in the stook to have it trifled with by a threshing outfit and besides, I want the most up-to-date outfit that there is to be had.

Week
Ending
August
19th

Herd Man.—I don't believe I care to work here any longer. The harvest gangs are getting better wages and they don't have to work as hard. This place is a back number any how, and if the wheat does escape frost, I don't believe there will be enough to pay me my wages. I want to work for a farmer that does things right and where I can learn something. This "hand to mouth" way of farming is not to my liking. I am sorry to leave Charles in a hole, but when the "old man" won't help out his own son, I don't see why I should.

Charles.—Worse luck and more of it, here I am without any help but that good-for-nothing brother of mine, and right in the middle of harvest. I will have to go to town to-night and see if I can't rustle a man or two, and if I can't it will be simply a case of cutting it all down and stooking it up when I can.

John.—I have never seen a more beautiful stand of wheat than that we just harvested. The cool weather kept the gravel and straw back but permitted the grain to fill in fine shape. Another thing noticeable in our grain this year is the absence of weeds. A great many of the neighbors are complaining of weedy grain, but ours is very clean. I can see no reason for it other than good cultivation and clean seed. I thought father was a little over careful about the seed last spring, but I can see now that it pays in the end. I can also see that you cannot make too good a seed bed. The old saying of Benjamin Franklin, "To plow deep while sluggards sleep and you will have corn to sell and to keep," is only too true.

Week
Ending
August
26th

Mother.—Here is a letter from father asking for some money. He says that the nursery company do not advance any expenses and that his commissions are payable only when the trees are delivered and accepted. I knew there would be some hitch in this business. What with the money we are losing by his being away from home and with what he won't make, we are very likely to get rich. I am not going to stand this sort of thing much longer. I have to stay here and drudge day in and day out and get nothing for it. I can't even get a horse to go to town any more and if Mrs Up-To-Date hadn't taken pity on me and called for me with her auto last Saturday I do not know what I should have done. One thing is certain, father can't get any money from here, because there is none to get.



STOPPED! WHY?

Didn't have either a Ruth, Parsons or Hawkeye

REGARDING that Self-Feeder. We wonder whether or not you have given it the thought and attention that it deserves. In a very short time you will be in the midst of the threshing season, and if there is any one thing that you want to be able to say, it is "My outfit is equipped in such a way that there will be no stops or no delays." From your experience in the past, haven't you found that the major portion of your stops were occasioned by your self-feeder not working properly, and it is with the idea of relieving you of these troubles that we insist on your clipping this ad. out and putting it in your pocket.

UNLESS a calamity befalls Western Canada, there will be the biggest crop of straw to thresh that it has fallen to the lot of the threshermen to handle for several years. It will be long, it will be tangled, it will be weedy, and it will try your feeder to the utmost. It seems to us that it is poor policy for you to attempt to get through this year's threshing season with the same old feeder that you used last year. A few break-downs will cost you far more than the price of a new feeder, and if you will just commit to memory the **warranty** at the bottom of this page you will see that with a Ruth Feeder you take absolutely no chances. We shoulder all the responsibility.

THERE is a wrong impression in circulation regarding self-feeders. It is supposed by a great many that only the feeder built by the Thresher Company will do its work properly. Our Feeders—and don't forget this for a minute—are built to feed any make or size of separator. Building feeders is our business and our only business; consequently, we build feeders that will work under any and all conditions, and we are not afraid to back it up by the strongest guarantee that it is possible for us to make. Don't let any thresher salesman convince you that a Ruth Feeder cannot be attached to his machine because it can, and we stand ready at all times to do it.

HAVE your Thresher Company supply you with a Ruth Feeder. Insist upon it, and if you already have a machine, and feel that your present feeder will not stand the strain of the season's work, take the matter up with us direct and we will fit you out immediately with any size that you may desire. Any of the following Threshing Machine Companies can supply you with Ruth Feeders to fit their separators.

Sawyer & Massey Co.
International Harvester Co.
Waterloo Manufacturing Co.
The Rumely Co.
Robert Bell E. & T. Co.
Geo. White Sons & Co.

American Abell E. & T. Co.
Haug Bros. & Nellesmoe Co.
Gaar, Scott & Co.
Nichols & Shepard Co.
Reeves & Co.
Case J. I. Co.

Burridge Cooper Co.
Buffalo Pitts Co.
Canadian Port Huron Co.
John Goodison Thresher Co.
Aultman & Taylor

We have sold feeders in the past to every one of these companies and are ready and more than willing to supply them with all they will order. When buying a separator of any of them insist on having either a Ruth, Hawkeye or Parsons Feeder. When buying a new feeder for that old separator, don't forget that any of the above will fit it, and don't forget our Warranty.

The Maytag Co. Ltd.

Successors to the Parsons Hawkeye Manufacturing Co. Limited,

WINNIPEG

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 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.



Result of our Wheat Guessing Competition.

A great many of our subscribers have been anxiously awaiting the results of our Big Wheat Guessing Competition of 1910 and 1911. Some of you no doubt expected to see this in our July issue, but as our issue comes out on the first of the month and as we did not start to count the wheat until that date you can readily see that it was impossible for us to make known any results. As a matter of fact, the paper was in the mails before we ourselves knew.

We want to say to you, one and all, that we have enjoyed this competition and from November first 1910 to June thirtieth 1911 in the neighborhood of fifty thousand guesses were recorded.

The contest which has just closed differed from our previous contest in that everyone was in some way or other rewarded. In the first place, you got the magazine, which in itself was worth a great deal more than you paid for it. At least we think so and from the number of our subscribers who tell us the same, we are of



H. C. Fields, who was the lucky winner of the Automobile in our Guessing Competition.

the opinion that we cannot be very far wrong. In the second place, you got a valuable premium with each subscription. We did not give out any cheap catch penny affairs, but sent out staple articles such as you would go to the store and buy.

Everyone of course could not win first prize, but the man who did get it was certainly lucky. We have tried to make these competitions just as fair as possible. The wheat is secured, placed in a bottle and sealed and deposited with the trust company. The weight of the wheat is determined by the Dominion Weights and Measures Office. On the 30th of June we issued an order to Mr. D. D. Campbell, Dominion Shippers Agent at Winnipeg on the National Trust Company where the wheat was deposited, and he with his assistants, Mr. James Fraser, Assisstant Grain Inspector at Winnipeg, and Mr. J. J. Ring of Crystal City, Man., a prominent farmer, started in on July first to count. It took them nearly five days and when it was all over it was found that there

were 197,543 grains in the twelve pounds.

Mr. Campbell, who was chairman of the Counting Committee accordingly brought us the following letter.

Winnipeg, July 5th, 1911.

Canadian Thresherman & Farmer, Winnipeg.

Dear Sirs:—

We, the undersigned, having been asked to count the number of grains of wheat contained in the bottle certified to weigh twelve pounds and stored with the National Trust Company, Winnipeg, found the correct count to be 197,543 grains. One hundred and ninety seven thousand five hundred and forty three grains.

Signed D. D. Campbell
James D. Fraser
J. J. Ring.

It was then up to us to determine the winner. A thorough search through our guess books revealed the fact that under date of February 22nd, 1911, Mr. H. E. Fields, of Regina, Sask., sent us the following letter:—

Regina, Sask., 22, 2, 11.

E. H. Heath Co.,
Winnipeg.

Gentlemen:—

Herewith find post office money order for \$3.50 as payment for three subscriptions and also my estimates. Kindly send the papers to H. E. Fields, Regina, Sask., C. A. Fields, Victoria, B. C. and S. H. Round, Cedar Falls, Iowa. My estimates are as follows:—

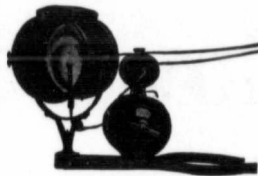
197,543; 198, 786; 199,763; 200,640; 201,282; 202,427; 203,621; 205,967; 206,563; 208,491; 209,103.

As a premium I will take the speed indicator as illustrated on page 42 of your reward book.

Signed, H. E. Fields,
Lock Box 564,
Regina, Sask.

We might say that out of practically fifty thousand guesses Mr. Fields was the only man who guessed the exact number. A great many came very close both before Mr. Fields and after. Mr. Fields is a prominent farmer living near Regina and doubtless the car which he won will be a familiar sight to those living in that vicinity.

The Canadian Thresherman and Farmer will not put on a guessing competition in 1911 and 1912. We have given you three of these competitions and have given away some valuable prizes. We cannot help but feel that our magazine warrants the price you pay for it without the inducement of a premium. What we want you to buy is the magazine not the premium. We have been glad, however, to give these prizes away and we want to thank you, one and all



Now is the time
to replace that defective spark arrester with one that gets all the sparks. The "Gullick" cannot be equalled. Try one and be convinced. :: :: ::

Have You

equipped your engine with the best that can be had in the way of a headlight? If not you should get the GLARE. It will surprise you with the amount of light you can get. Do not delay. Order now. :: :: ::

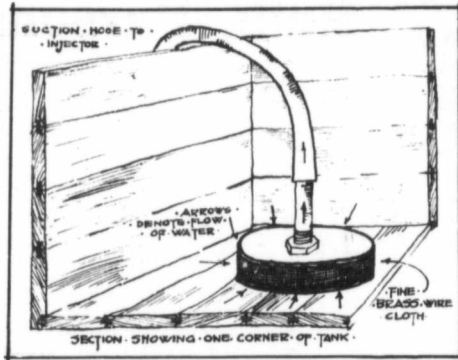
Are You

still in the market for a new set of flues? Remove the old ones with the POPE ADJUSTABLE FLUE CUTTER. They can be had if you will call on

The Maytag Co'y, Ltd., Winnipeg, Man.

While visiting Winnipeg for the Motor Contests

Estate of E. M. POPE, Watertown, S. Dak., U.S.A.



Injector Troubles Ended by the use of the No Choke Tank Strainer

Let the significance of that statement sink in. How many times a day does your injector break because the tank strainer clogs with moss, dirt or insects in the water. There is no more aggravating thing in connection with threshing than injector troubles, and nine-tenths of it is caused by the strainer clogging or letting through particles of matter large enough to stop ejector from working. My strainer will remove this trouble entirely.

The "NO CHOKE" strainer has over 28 square inches of strainer surface. There is not enough current to the water entering the strainer to draw the dirt against it. You may mix fine oat chaff or wheat bran in water and with this strainer you can draw off all the water through your injector without a break.

It is strongly constructed from 18 gauge galvanized iron onto which is soldered fine brass wire cloth of the very best quality. The pipe is held in place by a lock nut inside and outside, and extends inside to within half inch of the bottom.

I have had many years experience threshing, and know well how much time, water and worry this device will save you. It is guaranteed to give absolute satisfaction.

You require two: one for large tank and one for platform tank. The price is \$2.50, or two for \$4.50. I will guarantee immediate delivery on all orders received before the 20th August. Later orders will be filled with as little delay as possible. Send money by P.O. order or registered letter, and do it at once before you lay down this magazine, lest you might forget.

Strainer is six inches in diameter. If opening in your platform tank is smaller give size, and strainer will be sent to fit.

Again, I say, order at once. If you think you do not need it, just think for a minute or two along these lines. Imagine a hot, windy day, a field of long stubble, straw blown all around your engine. A fire leaps up the side of your engine from fire box or ash pile, as it has a habit of doing, you quickly pull down your discharge hose and rush to turn on your ejector. But, will it work, or will it just break and splutter. Even three or four seconds delay may mean the loss of your machine and perhaps hundreds of bushels of grain. With a no choke strainer in your tank your injector will start and continue to work if there is water in your tank. Do it now. Address—

W. M. BEAMISH, 173 Eugenie St., Norwood, Man.

A REVOLUTION COUNTER THAT'S RIGHT

Discount to DEALERS

\$1.00

By Mail



Do not guess at your speed

Buy a Tabor Stop Motion Counter

THE GRANT MANUFACTURING AND MACHINE CO.
110 SILLIMAN AVENUE - BRIDGEPORT, Conn.

Fall Plowing Made Easy

with a Traction Engine and a
Cuddy Patent Steering Device

THE CUDDY PATENT STEERING DEVICE is no experiment. It has been given a thorough demonstration in the hands of Western Canada's best farmers and traction plowmen and has lived up to its claims in every case. The universal opinion is that: "We wouldn't be without it at any cost." It can be attached in a few minutes. It saves a man's time and makes traction plowing a pleasure instead of a drudgery. It has proven its success from Winnipeg to Edmonton in all kinds of soil and on all kinds of engines. Delivery can be made at once. Be sure and state size and make of engine. Read what one user says:

MANITOBA ELEVATOR COMMISSION

279 Garry St., Winnipeg, Man., May 25th, 1911.

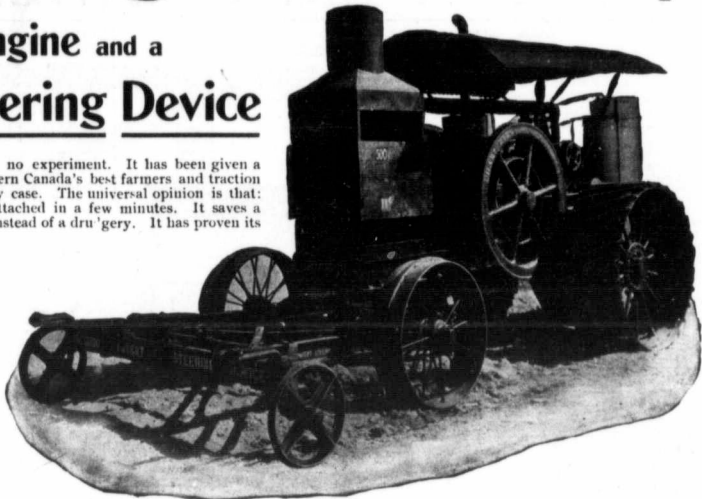
Western Steel and Iron Co., Ltd., Winnipeg.

Dear Sirs—This is to certify that I have purchased, and am using one of Mr. Cuddy's steering rigs on a 22 h.p. Hart-Parr, and would without hesitation say it is the completest rig of the kind I know of. The rig being short it will turn quickly and in a very small space. In a pinch one man can operate the engine and plows, and enables the plows to be set that the front plow will plow the same width as the last one, so much so that a person could not pick out the work of one or the other by walking across the plowed land. I would not be without it on any account. It saves a man standing or sitting up in the heat of the engine all the time. I can heartily recommend it to any man having a traction engine for plowing. It is simple and nothing to go out of order.

Yours truly,

J. W. McQuay

Chairman, Manitoba Elevator Commission.



The Western Steel and Iron Co.
Winnipeg, Canada Limited

for the generous support that you have accorded us. We trust that each and everyone of you, even though you did not win first prize, will continue with us and that you will say a good word for us when-

before. Last month we gave you 108 pages and this month we are giving you the same. The price which you pay for a subscription does not pay for the white paper upon which the magazine is print-



Counting the Wheat; J. J. Ring, J. D. Fraser, D. D. Campbell.

ever occasion demands and we want to assure you that we will do everything in our power to reciprocate.

We are going to give you in the coming year a bigger and a better magazine than you have ever had

Paving the Way.

Jim Hill's railroad policy was mapped out along the line of putting a railway where there were no people and having the people follow the railway. It worked and it worked well. It opened up territory that would have remained virgin for years. A similar campaign has been mapped out and is

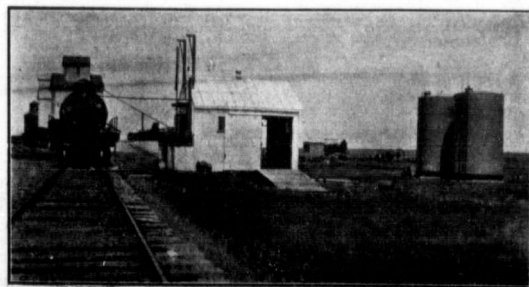
being carried out by the Imperial Oil Co., in the way of distributing oil to the farmers of the West. The oil engine game is a big one especially so from the stand point of farm tractors and the question of a ready supply of oil is a vital one. The above concern now have over 250 tank stations scattered throughout the West and

many more are in course of construction. The stations are very complete are equipped so as to always keep a supply on hand and at the same time get it to the farmers as quickly as possible. The Company will put in one of these stations at any place where there is a demand for 300 bbls. of gasoline and 300 lbs. of kerosene, and at the rate at which the oil tractor business is growing the tank station business promises to be a big one. The Imperial Oil Company is keeping a very close tab on the farm engine business. In furtherance of this a banquet was given at the Royal Alexandra Hotel during the Motor Contest. The banquet itself was a very nice affair and had the result of bringing the contestants together in a friendly gathering that proved very pleasant to all in attendance. It was very carefully arranged by Mr. H. J. Guthrie, manager of the Imperial Oil

Co., who spared neither pains nor expense to give his guests a good time. The list of guests were as follows:—

GUESTS.

Mayor, City of Winnipeg:
W. SANFORD EVANS, Esq.
BUFFALO PITTS CO.
Mr. Lundquist
AULTMAN TAYLOR
Mr. J. E. Brown
Mr. Geo. W. Seaman
Mr. F. W. Galland
CAN.-AMERICAN GAS ENGINE CO.
Mr. G. D. McCrea
CANADIAN STOVER CO.
Mr. J. F. Stewart
J. I. CASE CO.
Mr. W. F. McGregor
Mr. D. P. Davies
Mr. J. Witner
Mr. Mustard
Mr. Farney
HART PARR CO.
Mr. A. R. Porter
Mr. W. H. Williams
MANITOBA WINDMILL & PUMP CO.
Mr. J. W. Williamson



A Typical Tank Station of the Imperial Oil Co.

Save your Chaff. It is Valuable for Feeding Purposes

YOU CAN DO IT WITH A

NEEPAWA WIND-STACKER.

OUR GUARANTEE

We guarantee the Neepawa Wind Stacker to do better work and to run easier than any other stacker on the market doing the same work, and under the same conditions; to stack the straw on one side of the machine and the chaff on the other, to handle all the straw that can be put through any machine without taking it into the fan, and to not back the shoe current into the separator.

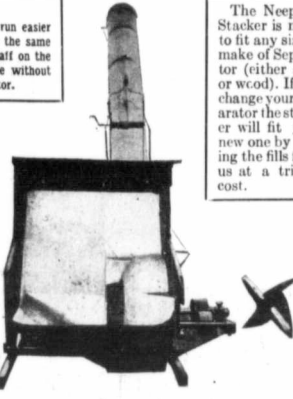
W. A. Henry of Wisconsin College of Agriculture says:

"The chaff of oats and wheat contain more crude protein than does the straw and forms a useful roughage for stock. All such roughage will be widely utilized when a rational system of feeding is followed." "That wheat oat or barley chaff as a food for the repairing of body tissue, for growth, for the laying on of fat, or for the production of external work is worth almost as much as timothy hay."



Side View Without Chaff Attachment

What You Should Know Before Ordering a Wind-Stacker



Looking into the Stacker Showing Fan

This is the way the operators of the Neepawa Wind Stacker answer the questions:

1. Has it any back draft? No.
2. Does it allow the dust to accumulate in the separator? No.
3. Will the chute work at any point in a full circle? Yes.
4. Is it hard to handle? Can be folded with one hand while machine is in operation.

The Neepawa Stacker is made to fit any size or make of Separator (either steel or wood). If you change your separator the stacker will fit your new one by getting the fills from us at a trifling cost.



Side View Showing Chaff Attachment

5. Is the straw cut up by the fan? No. The construction of the fan will not allow the straw to go through it.
6. Can you open the door to examine the shoe without being smothered with dust? Yes. The construction of the fan is so arranged that it will not blow the chaff out of the side door.
7. Does the stacker run light? Yes. The lightest on the market.
8. Will it fit any make of separator? Yes, and can be taken off one and put on another.
9. Has it a bevel gear, chaff auger or rakes? No. We drive with a straight belt from the cylinder shaft to the fan shaft without any gear.
10. Has it a belt tightener? Yes.
11. What is the weight? 650 pounds.
12. What is the material used in its manufacture? Galvanized sheet steel, seasoned oak and maple.
13. How much power does it take to run it? Less than any other stacker built in Canada, doing the same work

The Neepawa Manufacturing Co. Ltd., NEEPAWA, MAN.

MASSEY-HARRIS CO.
Mr. C. H. Whittaker

MOLINE PLOW CO.
Mr. R. J. McKay

MINNEAPOLIS THRESHER CO.
Mr. F. E. Kenaston

ROBERT BELL THRESHER CO.
Mr. Robt. Bell

SAWYER MASSEY CO.
Mr. Harmer
Mr. Kirkland
Mr. Turnbull

WATERLOO MANUFACTURING CO.
Mr. John Herron

ADVANCE CO.
Mr. Jenkins
Mr. S. O. Bush

AVERY CO.
Mr. J. B. Bartholomew
Mr. W. Brandon
Mr. A. Critenden
Messrs. Haug Bros. & Nellermeo

AMERICAN ABELL CO.
Mr. Stinson
Mr. Brooks

COCKSHUTT PLOW CO.
Mr. E. A. Mott

JOHN DEERE PLOW CO.
Mr. H. W. Hutchinson

FAIRBANKS CO.
Mr. Britton

GAAR SCOTT CO.
Mr. S. R. Stratton
Mr. Frank Land
Mr. Thorpe

INTERNATIONAL HARVESTER CO.
Mr. W. A. Cavanaugh
Mr. J. L. Martin
Mr. J. F. Jones
Mr. Waterman
Mr. Welles
Mr. Aspinwall
Mr. Brookbank
Mr. McCallum
Mr. Potter

OLIVER PLOW CO.
Mr. James Oliver

REEVES & CO.
Mr. Clay

TUDHOPE ANDERSON CO.
Mr. Anderson

AMERICAN GAS TRACTOR CO.
Mr. Laeke
Mr. Haggarty

BURRIDGE COOPER CO.
Mr. Fred. LeGresley

CANADIAN FARM IMPLEMENTS
Mr. F. W. Blakeley

GAS TRACTION CO.
Mr. Fred. Glover
Mr. McCurdy
Mr. Thompson

GOULD SHARPLEY-MUIR
Mr. John Muir
Mr. D. J. Taylor

KINNARD-HAINES
Mr. O. B. Kinnard
Mr. Chester Kinnard

NICHOLS & SHEPARD
Mr. Hawthorne
Mr. S. C. Olsen

ONTARIO WIND ENG. & PUMP CO.
Mr. J. M. Reid

PARLIN & ORENDORFF PLOW CO.
Mr. U. G. Orendorff

RUMELY CO.
Mr. R. G. Baker
Mr. J. D. Adshead
Mr. John McIntyre
Mr. A. C. Engloff
Mr. V. P. Rumely
Mr. L. W. Ellis

WATROUS ENGINE CO.
Mr. G. W. Erb

VERITY PLOW CO.
Mr. George Verity

JUDGES MOTOR CONTEST.

Mr. C. J. Guinness
Mr. J. B. Davison
Mr. A. R. Greig
Mr. H. H. Musselman
Mr. O. B. Barrett

MANAGER WINNIPEG INDUSTRIAL EXHIBITION.
Dr. A. W. Bell

WINNIPEG DEVELOPMENT AND INDUSTRIAL BUREAU.

Mr. C. F. Roland.

SECRETARY BOARD OF TRADE.

Mr. C. N. Bell.

THE PRESS.

"Canadian Thresherman"

Mr. E. W. Hamilton

Mr. Bray

"Nor-West Farmer"

Mr. C. D. Stovel

"Free Press"

Mr. Macklin

"Tribune"

Mr. R. L. Richardson

"Modern Power"

Mr. W. L. Williams

Mr. V. C. Parker

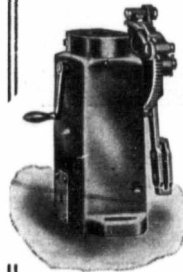
"Gas Power Age"

Mr. E. W. Rugg

TOAST MASTER.

Mr. E. W. Hamilton.

A MADISON-KIPP Pays for Itself IN LESS THAN TWO MONTHS



One of our customers recently wrote us that he had saved oil enough with a MADISON-KIPP OIL PUMP to pay for it in 48 days. Oil costs money. What you want is a pump that will use as little as possible and yet keep your cylinders lubricated.

THE MADISON-KIPP IS A POSITIVE FEED PUMP.

It always works. It makes no difference whether the temperature is 30 degrees below or 100 degrees above, and it "Saves Your Oil Bill." Over 50,000 in use, and as many thousands of satisfied users.

Write for prices on a pump for gas tractors with all fittings, attachments, etc., necessary to readily and easily attach to the engine in the field.

THE MAYTAG CO., LIMITED

Sole Agents for Canada WINNIPEG, Man.

Manufactured by MADISON-KIPP LUBRICATOR CO., Madison, Wis.

Family Group Photos a Specialty

AT

STEELE & CO., LTD.

MAIN ST. AND BANNATYNE AVE.

WINNIPEG

THIS IS ABOUT YOUR TIME



The little two, five or ten minute shut-downs that are caused by stopping to make some little change or adjustment in the working of a separator do not seem to amount to a great deal, but, should a thresherman figure the minutes lost every day in bushels that could have been threshed, had the outfit kept running, he will quickly begin to see how his profits are slipping away from him.

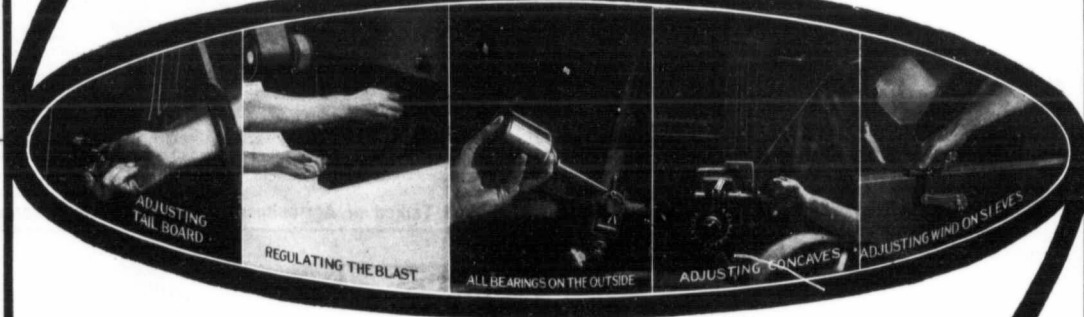
Think of the time taken in climbing around over the separator giving each bearing its daily oiling, the time lost in changing or regulating the blast, setting the wind deflector, adjusting the concaves, tightening belts, pulleys, etc.

Bearings *must* be oiled, all of these adjustments must occur several times during each setting as conditions of the grain may warrant. Belts are bound to stretch.

Some separators are built with all these parts that require daily adjustment in such out-of-the-way places that making a change necessitates stopping the outfit.

Not So with the RUMELY Ideal Separators

Every part is on the outside, pulleys, belts, bearings, even the parts that require frequent adjustments.



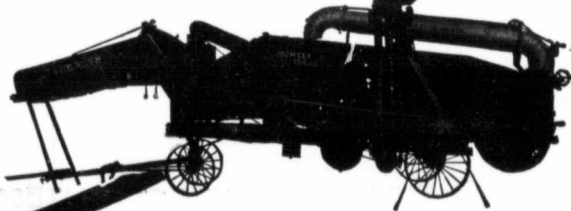
changes in the concaves, the blast, and even oiling the bearings can all be accomplished while the machine is in motion.

Aside from this great degree of accessibility there are other advantages in the RUMELY Ideal Separator that insures more profits, greater success and better satisfaction for the customer.

There's the smooth-working, automatic Feeder, Gearless Wind Stacker, six sets of Agitating Fingers, over an extra-long Straw Rack, Screening Section in the Grain Pan, the Shoe and the Traveling Chain Rake just back of the cylinder. This construction at the cylinder in the RUMELY Ideal Separator provides for a straw travel of nearly $7\frac{1}{2}$ feet from the time the straw touches the first cylinder tooth until it reaches a point *three feet from the cylinder*.

This Chain Rake is the greatest separating device found in any machine. It increases the capacity of the machine to such an extent that *19 out of every 20 kernels* are in the Grain Pan before the straw even reaches the Straw Rack.

The RUMELY Ideal Separator is a profit maker and time saver for the thresherman. These features will put lots of extra dollars into *your* pocket. You can get one yet this year in plenty of time for threshing. Write us at the nearest office.



M. RUMELY COMPANY

1982 Rose Street, REGINA, SASK.

BRANCH OFFICES AT WINNIPEG, MAN., CALGARY, ALTA., SASKATOON, SASK.

The Canadian Industrial in 1911 From the Standpoint of Machinery

The Canadian Industrial in 1911 from the stand point of machinery.

The Canadian Industrial Exhibition is a matter of history. Viewed from the stand point of agricultural machinery, the exhibit was rather one sided owing to the fact that very few of the implement concerns displayed their goods. However, when it comes to threshing machinery and traction engines, there is probably no place in the world where such a large exhibit is made. As evidence of this we submit the following.

The M. Rumely Co. had a very good showing of their line with two 15 h. p. Oil Pull Tractors, one of which was driving a 28 x 44 Rumely Ideal Separator, equipped with Wind Stacker, and Hartley Weigher. They also had one of their 30 h.p. Oil Pull Tractors driving a 36 x 60 Rumely Ideal Separator equipped with Ruth Self Feeder and White Wings Carrier, Rumely Wind Stacker and Hartley Weigher. One 20 h.p. Double Cylinder Steam Tractor was driving a 40 x 64 Rumely Ideal Separator with all attachments. On the Plowing Field they had two 15 h. p. Oil Pull Tractors, one of which was using gasoline and the other kerosene, and one 30 h. p. Oil Pull using kerosene.

The Aultman Taylor Co. showed one of their 30 h. p. four cylinder Gasoline Tractors, equipped with their special self starting device.

The Gas Traction Co. were on hand with four of their large 30 h. p. four cylinder Gas Tractors.

The Waterloo Co. were there with one of their 30 h. p. Simple Steam Tractors driving a 40 x 62 Manitoba Champion Separator equipped with Waterloo Feeder, and Wind Stacker, and Hartley Weigher. In addition they also showed one 16 h. p. Simple, and one 25 h. p. Simple Steam Tractor; and one of their 22 h.p. Gasoline Tractors. They also had two of their 28 x 42 Champion Separators at the Canadian Fairbanks exhibit.

The Nichols & Shepard Co. had a 30 h. p. Nichols & Shepard Double Cylinder Special Plowing Engine driving a 40 x 60 Red River Special Separator, equipped with Nichols & Shepard Feeder, Nichols & Shepard Wind Stacker, and Perfection Weigher. Also one of their 20 h. p. Double Cylinder Threshing Engines driving a 32 x 52 Red River Special Separator equipped with Nichols & Shepard Feeder and Wind Stacker, and Perfection Weigher.

The Sawyer-Massey Co. were there with bells on. They showed

one of their 30 h. p. Compound Plowing engines driving a 40 x 64 Great West Separator equipped with Ruth Feeder, Sawyer-Massey Wind Stacker, and Hartley Bagger and Weigher. A 27 h. p. Compound was driving a 36 x 60 Great West Separator with Sawyer-Massey Steel Feeder and White Wings Carrier, Sawyer & Massey Wind Stacker, and Perfection Weigher. A 22 h.p. Simple Threshing Engine was driving a 29 x 44 Daisy Separator with all attachments. There was also one of their 40 x 64 Great West Separators opened up to show inside construction, also one Eclipse 30 x 36 Great West Separator equipped with Straw Carrier. They also showed one of Marshall & Sons 70 h. p. Gasoline Traction Engines, Sawyer & Massey Steel Stock Loader, Western Reversible Road Grader, and Junior Road Grader.

The Gaar Scott Co. had a nice exhibit showing one of their 22 h.p. double cylinder engines driving a 40 x 64 Tiger Separator with Gaar Scott Feeder and Blower, and Perfection Weigher; one 22 h. p. Simple engine driving 36 x 60 Tiger Separator with same attachments; one 16 h. p. Simple engine driving a 28 x 40 Tiger Separator with all attachments.

The Robt. Bell Engine and Thresher Co. had a 22 h. p. Simple engine attached to a 28 x 42 Imperial Separator equipped with Ruth Feeder, Bell Wind Stacker, and Perfection Weigher. One of their 26 h. p. Simple engines was driving a 32 x 54 Imperial Separator with all attachments, and one of their 30 h. p. Simple Rear Mounted engines was driving a 36 x 60 Imperial Separator with all attachments.

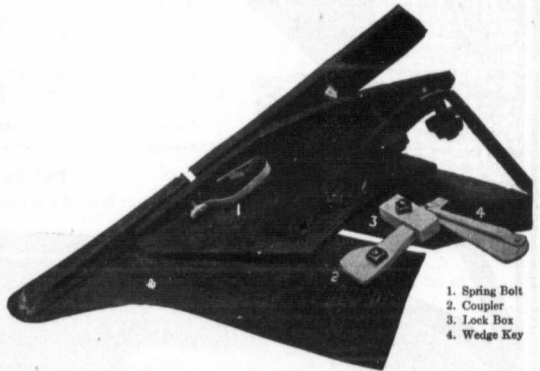
The Parsons Hawkeye Co. had a very neat exhibit showing their Perfection Dump Rack, Ruth Feeder with White Wings attachment, Maytag power washing machine, Maytag electric washing machine, Pastime washing machine, Glare acetylene gas headlight, Success belt guide, Myers low down pump, belts and other thresher supplies.

The Ontario Wind Engine & Pump Co. had quite a large exhibit of their various lines showing an Aylmer 5 Ton Pitless Scale; a 2000 lb. Aylmer Truck Scale; Aylmer Power and Tank Pumps; Stickney Pump Jacks and Portable and Stationary Engines starting with one h. p. 1 1/2, 3, 5, 7, 10, 16 all stickney. Grain Grinders of different sizes as well as Wood Saws; Lawn Swings, Well Augers; Climax Well Drilling outfit complete with engine. They are Agents for Kinnard Haines Engines and showed a 20 h.p., 30 h.p., and 40 h.p. Flour City Tractors.

Time is Money to Every Traction Plowman

With a large expensive outfit that costs thousands of dollars you cannot afford to stop. If you are to make money you are to keep going all of the time. Did you ever stop and consider just how long it took you to remove your dull plowshares and put them on again. Did you ever figure out just how much land you might have plowed while you were performing the job. Equip your plowshares with

Parks-Coughlin Plowshare Fasteners

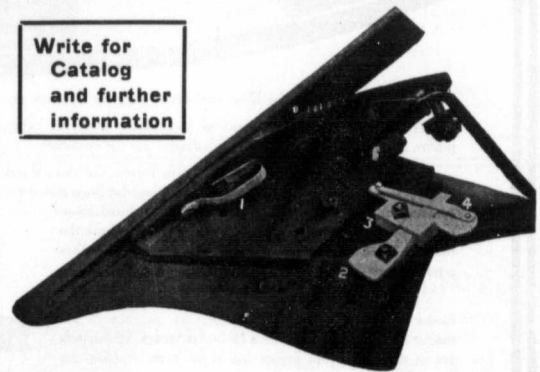


1. Spring Bolt
2. Coupler
3. Lock Box
4. Wedge Key

The time required to remove and replace plowshares that are equipped with our device is so small as not to be considered. It is an absolute necessity on every traction plowing outfit.

The Most Talked of Agricultural Device in Western Canada

Write for
Catalog
and further
information



EVERY PLOWMAN NEEDS IT!

Because

- 1. eliminates burr and bolt troubles.
- It eliminates spring share troubles.
- It works satisfactorily on engine plows as well as others.
- It eliminates the need of night man to change shares on engine gang.
- It eliminates the need of hammer and punch to force holes in share line with those in the frog of the plow.

IT HAS STOOD EVERY TEST!

It holds the share on with an iron grip, in spite of gumbo, rocks or stumps, and yet permits it to be removed so easily that your boy can do it.

CHANGE SHARES IN FORTY SECONDS!

Simply lift the plow out of the ground, loosen the wedge key by tapping it at the point with your wrench, remove it, unsnap the spring bolt and lift the share off. Place the new share into position, insert the wedge key, secure the spring bolt, and drive the wedge key in with your wrench.

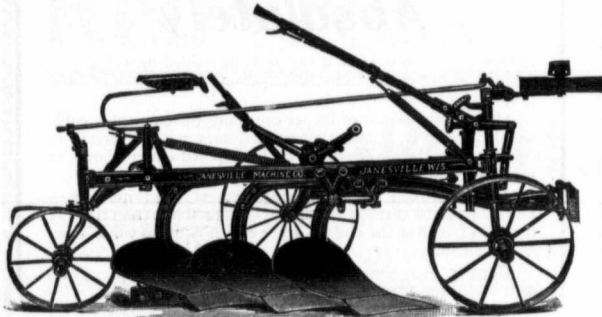
IT FITS YOUR FLOW!

The fastener is easily attached and need not be removed until the plow is worn out. The value of time and bolts saved, not to speak of shares and the better grade of work done by changing shares often, will more than pay for a set in a year. One set lasts a lifetime.

IMPLEMENT SPECIALTIES CORPORATION, LTD.

45 MERCHANTS' BANK BUILDING, WINNIPEG

The One Great Plow for the Great Northwest



The Janesville foot-trip horse-lift is a big feature found on no other plow. Simply trip the "lift" with your foot while riding or throw the land wheel lever while walking, and the horses will pull the plow bottom into the ground at the start and out of the furrow at the end. The point of the plow bottom always goes in and comes out first just like the walking plow, because the movement is just like your arms. In entering the ground the heel of the plow bottom is held up so the point must go down first. In leaving the ground, the heel of the bottom is held down, so the point must come out of the ground first. This Janesville feature eliminates the objections to the foot lift as compared with the hand-lift. Our self-leveling device is unequalled on any other plow made. You have absolute control of the Janesville Plow Bottoms at all points.

All levers are spring balanced which makes it possible for even a mere boy to operate them. The bottoms and beams on the Janesville Northwestern Gang Plow are not held rigidly in the frame but are balanced over the single bale which permits adaptability to the unevenness of the surface of the ground, which has a great effect on the draft. The single bale feature also permits raising the Plows and leveling at the same time, which is not possible with a two bale construction.

The connection between the front and rear furrow wheel is automatic in action and in place of forcing the rear furrow wheel around in turning at the corners it simply permits it to follow along behind in the corner of the furrow. All the side and down pressure caused in turning over the soil is carried on the wheels. We use nothing but steel and malleable iron in the construction of the frame. The shares furnished on all Janesville Northwestern gangs are 1-16 inch thicker and made much stronger than the ordinary kind. The front furrow wheel is 24 in. high; the rear 20 in.; the land wheel 30 in.; all with 2 1/2 in. tire. There are so many other features and advantages of Janesville Northwestern Gangs that we want you to know them all before you decide on any plow. Let us send you

Here's the Plow that Meets Your Needs Best

The Top-Notch of Plow Value

You farmers of the Northwest require a much heavier and a much stronger plow than is regularly used in other territories. You have more work and the work is harder. An ordinary plow won't stand the strain long enough to pay for itself. Besides extra strength, you must have a plow with certain distinct features, which are absolutely essential to the greatest efficiency on your land. We have made a plow just for you—a plow that meets every condition of the Northwest and every requirement of the Northwestern Farmer. It's the

JANESVILLE NORTHWESTERN GANG

In the first place, this Janesville gang is provided with extra heavy beams—both of which extend beyond the frame in front, allowing a very long cross clevis to be attached. This clevis gives you choice of four horse abreast—or four, five or six horse tandem hitch.

All Janesville Books Free

We will give you the name of our dealer in your town so you can see the Janesville. We also make the famous Janesville Walking Plows, Riding or Walking Cultivators, Disk Cultivators, Disk Harrows and Janesville Corn Planters. When you write for Janesville Plow Book, say whether you are interested in any of our other implements. We'll gladly send you all the Janesville books free—postage prepaid. Send postal or letter now to

"We expect to exhibit our line of Plows at the leading western provincial fairs, Regina and Edmonton, and invite you to call and look us over carefully."

King and James Streets
WINNIPEG

American Seeding Machine Co.,

(INCORPORATED)

CANADIAN
SALES AGENTS:

Made by THE JANESVILLE MACHINE CO., Janesville, Wis.

The Buffalo Pitts Co. had one of their 25 h. p. Double Cylinder Steam Tractors driving a 38 x 62 Niagara Second Steel Frame Separator equipped with Pitts Self Feeder, Weigher and Russell Stacker. They also showed one of their 30 h. p. gasoline Tractors.

The International Harvester Co. had a splendid showing of their various lines. In the portable gasoline engines they showed vertical and horizontal air cooled and water cooled engines 1 h. p., 2 h. p., 2 1/2, 3, 4, 6, 8. In the gasoline Tractor line they showed one of their 20 h. p. Gasoline Tractors driving a 28 x 42 Aultman Taylor Separator with all attachments; one 20 h. p. gasoline tractor driving a Goodison 28 x 42 Separator with all attachments.

The Massey-Harris Co. showed a very complete line of Massey Harris Olds gasoline engines starting with a working model 1/4 h. p., 1 1/2, 3, 4 1/2, 6, 8, 12. In addition one 6 h. p. portable driving a Massey Harris straw cutter, one 15 h. p. portable driving a Massey Harris blizzard ensilage cutter, one 20 h. p. portable Massey Harris Olds gasoline engine.

The Canadian Fairbanks Co. had a couple of exhibits in the manufacturers building in addition to their large tent showing one 25 h. p. gasoline tractor driv-

ing a 28 x 42 Waterloo Separator complete, one 25 h. p. portable driving same sized outfit; two 25 h. p. gasoline tractors; one 25 two portable well drilling outfits made by the Sparta Co.; one traction Sparta well drilling outfit; skidded gasoline engines of 2 h. p., 3, 4, 6, and 8 in operation. A complete contractors sawing outfit; power pumps, pitless scales, automatic grain weighing scales, and assortments of various sized scales from 2000 lbs. down; a complete working exhibit of the Midget Flour Mill and an assortment of trucks and flour scales for milling purposes; marine engines from 3 1/2 h. p. to 24 h. p. both in two cycle and four cycle types and in from one to six cylinders; eighteen foot launch; electric dynamos and motors from 1/4 h. p. to 15 h. p.

Goold, Shapley & Muir had quite a line of skidded Ideal gasoline engines of 1 1/2 h. p., 2 1/2, 3, 6, 8, one 20 h. p. portable Ideal; two 45 h. p. Ideal gasoline tractors, one 20 h. p. Ideal gasoline tractor; two Maple Leaf grain grinders, one complete pumping outfit; Ideal concrete mixer, Pole sawing outfit.

The American Abell Engine & Thresher Co. were on hand with one 26 h. p. Simple Steam Traction driving a 36 x 60 Toronto Combination Separator with American Abell Feeder, Wind Stack-

er, and Perfection Weigher. One 20 h. p. Universal Gas Tractor driving a 32 x 56 Toronto Combination Separator, with American Abell Feeder, Wind Stacker, and Perfection Weigher. On the plowing field they also had a 20 h. p. Universal gas tractor, and a 28 h. p. Simple, rear mounted traction.

Geo. White & Sons exhibited a 25 h. p. Simple engine driving a 36 x 60 Challenge Separator with White Feeder and blower, and Perfection Weigher; one 30 x 62 Separator with same attachments; one 35 h. p. double opposed Canadian American gasoline tractor;

one 3 1/2 h. p. air cooled Canadian American skided engine; one 2 1/2 h. p. water cooled Canadian American skided engine.

Canadian Swensons were there with one of their No. 2 Swenson stump pullers and a Glide road grader and leveller.

The Belden Machinery Co. showed the Cameron Grain Elevator all complete with engine, and mounted on trucks. A working exhibit.

The Stewart Sheaf Loader attracted considerable attention and daily demonstrations were given.



THE STANDARD BABBITT OF THE WORLD MAGNOLIA METAL GIVES SATISFACTION

Where all other Bearing Metals Fail
Lowest Co-Efficient of Friction of any known Metal
Saves Oil, Fuel, Power and Rebabbitting.

We carry in stock Magnolia and a full line of other Babbitts.
THE GENERAL SUPPLY CO., OF CANADA.
WINNIPEG OTTAWA

The Hammond Stooker was a new one in the grain stooker line and showed itself up to good advantage.

The National Grain Stooker has made its appearance on the grounds in previous years, but this year it showed that many improvements had been made.

The Neepawa Wind Stacker with chaff saver was a feature in wind stackers. The chaff saving device attracted much attention.

The American Gas Tractor was a new one in the traction engine line. This was exhibited by P. J. Downes & Co., of Minneapolis, and attracted considerable attention.

In the machinery building were to be found the following:—

The Kramer Rotary Harrow with its usual neat and attractive exhibit. Desmond-Stephan Manufacturing Co. with a full line of Desmond-Stephan Injectors. The able demonstrations of Mr. Doyell convinced many that these injectors fit any old connection. The John Watson Manufacturing Co. were on hand with a full and complete line of specialties including carts, lawn swings, wheel barrows, etc., etc. Johnston and Jordan exhibited a complete line of the Canadian Potato Machinery's goods and at the present price of potatoes it would seem that this machinery should find a very general use. Beatty Bros., of Fergus, Ont., and Brandon, Man., displayed a complete line of barn equipment and haying machinery. The Loudon Hardware Co. also displayed a similar line which attracted considerable attention. The Harmer Implement Co. were on hand with the famous J. I. Case plows, also a complete line of Owens fanning mills and smut cleaners. The Crane and Ordway Co. had a very neat and attractive exhibit of the famous Waterloo Boy Gasoline Engines. This exhibit was very nicely arranged and drew a considerable crowd.

Pre-Ignition.

Causes—Symptoms—Remedies.

Continued from page 42

would require many days of his time.

The large stock farmer has usually a great deal of hay to unload during the haying season. A gasoline engine can be quickly rigged to do this work, and at a slight expense. There is nothing of more importance to the farmer than his water supply; not only for his family's use but also for all stock and poultry. Much of the sickness of farm animals is due to an insufficient and impure water supply. This insufficiency and impurity is in turn due to the inconvenient way of getting the supply. The gasoline engine is the machine that can be depended on to always furnish an abundant supply of fresh water for the family and all the stock, poultry and dogs.

We wonder how many farmers have learned that such a thing as gapes among their little chickens would be unknown if they always had fresh, clean water to drink. The drinking water can not be clean in dirty drinking vessels; drinking troughs will get filthy if there is not an abundant supply of fresh water conveniently near with which to flush them. Drinking troughs for hogs, cattle, horses and sheep should be flushed and cleaned every few days in summer weather. The gasoline engine with a large elevated storage or supply tank and a strong well of good water is the very foundation upon which to build everything that makes farm life attractive, comfortable and pleasant. Here is probably the source of its greatest profit on the farm, although by many farmers it is considered unnecessary and unprofitable in this connection. Show us a farmer whose water supply is abundant and convenient because of his effort to make it so and we will show you a prosperous and happy farmer.

A dead horse, hog, cow, and many chickens each year for want of plenty of good, wholesome water soon cuts the profit of the farm entirely out, and each year he finds himself poorer than the previous although he strives harder to win. He calls it bad luck and doesn't realize what is lacking to change the trend of affairs. How anxious the large stock farmer becomes if there is something wrong with his water apparatus, even for a few hours. If ever he gets busy it is then. He has learned to know what a loss it is to him if his large herd of fat cattle have to do without water for 24 hours. This is what he calls a water famine. But really on many ordinary farms, where cows, hogs, horses, sheep and poultry are kept more for the sake of having them than for the profit that might be derived from them, there is a sort of a semi-water famine all of the time. That is the animals have no means of getting water only when it is carried to them, and that is very spasmodically and not at regular intervals.

If the reader of this article has ever attempted to pump water by hand in the old fashioned way, by jerking the pump handle up and down, for a herd of 15 or 20 cows as they came in from the field on a summer evening without having had a drop of water since early morning. I am sure you will understand the valuable service that the gasoline engine can give at this kind of work. Surely the boy on the farm would think more of his farm home if he were relieved of this kind of drudgery. The writer has been through it when a boy, and while we live in the city now the happiest moments of our lives are spent on our farm a mile beyond the city limits.

We haven't got the water supply yet, but we intend to have it because we have just fairly come into possession of the farm. One of the first improvements we are planning is a water system operated by the gasoline engine. With

We Guarantee Absolutely

against loss from lightning any building rodded by us together with its contents in live stock, grain, implements or any property whatsoever.

Our system is that of 99 per cent pure woven copper cable which (unlike steel and other metals) does not depreciate in conductivity however long it is exposed either above or under-ground.

You can "rod" a building with steel at less initial cost—but it begins to corrode and lose its conductivity from the day it is fixed, and at the end of six years it is of no value, even as scrap metal.

Copper is as sound and intact at the end of twenty years as it was when first installed.

Are you protected
Against lightning?
The
**TOWNSLEY
SYSTEM**
GUARANTEED TO PROTECT
HAVE NO OTHER
REMEDY OF
THE CANADIAN
ELECTRIC
AND
ELECTRICAL CO.
WINNIPEG, MANITOBA.

Unlimited Insurance

is what is meant by our warranty given to every purchaser of our 99 per cent pure woven copper wire system of rodding buildings as a protection against lightning.

In thirteen years during which we have been in business we have not yet had to pay a dollar on this warranty because no building or its contents rodded by us has ever been damaged.

It will pay you to see us as the cost of our system will be defrayed by the saving it will effect in your insurance rates.

The first cost is the last. There is no "maintenance expenses" to meet and if you wish to realize on the copper, it is worth 15 cents a pound as old metal, even if it has been in service for a quarter of a century.

Red Cross Thresher Belts

ARE THE BEST

Because heavier duck and better friction are used in their construction. Only expert workmen are employed in their manufacture, and back of all this is the Broad Goodyear guarantee that they are perfect in workmanship and material--Good Belt is good insurance in Thresherman that your outfit will not be tied up at any time this fall. Try some Red Cross Insurance. We are not experimenting, we have been making this material a great many years.

All Mechanical Rubber Goods bearing our stamp is a Gold Bond Insurance Policy.

We carry a stock of Brass Accessories, Reels, Tank Pumps and Hose.

The Goodyear Tire and Rubber Co. of Canada, Ltd.

41 PRINCESS ST. - WINNIPEG, MAN.
BRANCHES AT REGINA AND CALGARY.

it one can have a green lawn, water fountains wherever desired, a beautiful and profitable garden, with always an abundance of pure, fresh water for every creature on the farm. Such a water system is surely profitable.

Gasoline Traction Engines

Continued from page 36

I will be pleased to answer all enquiries on traction plowing and will give anybody the simple facts as I see them.

Wishing the traction plowmen of 1911 a prosperous year and wishing the Thresherman the success it deserves, I beg to remain,

Yours truly,
Walter Johnson,
Zorra, Sask.

Uses 30 Gallons of Oil in 10 Hours.

So far I have only had one month's experience with traction plowing, but I can give that.

My engine is a Flour City gasoline tractor, 30 horse power, manufactured by the Kinnard-Haines Co., of Minneapolis, Minn. It has four cylinders, and it works fine.

The plows are the Cockshutt engine gang. They work very even in rough and stony ground. Each plow works separate from the others. The plow is a six bottom, but I could only use five as it was so dry here last summer.

I employed three men, one to handle the plows, one to run the engine and one blacksmith. I also have a team to haul the fuel and water.

I used about 30 gallons of gasoline in a ten hour day and one barrel of water. Well, sirs, my idea is that plowing is harder on the engine than threshing, because when plowing you have got to move right along over the rough ground and stones and the dust is awful hard on the engine.

It cost me about \$2.33 per acre to plow for fuel, oil and labor.

I haven't had any experience with hitches for attaching drills, harrows, etc., but I am ready to learn most anything. I am sending you a photograph of my outfit at work, and would like very much to become a subscriber to The Canadian Thresherman and Farmer.

Yours truly,
A. R. Stapel,
Coutts, Alta.

Gangs Good in Stones.

Last summer we broke 500 acres, backset 50 acres and threshed the crop from 700 acres.

Our engine, a 30 horse power Flour City, can easily haul our six bottom John Deere engine plow at the rate of two miles per hour, turning a nice even furrow about three inches deep.

We expected lots of trouble with the plows in the rather stony land we were plowing, but were

surprised at the fine way the gangs jumped as the gauge wheels or rolling coulters struck stones.

When breaking, doing about 15 acres per day, we used 30 gallons, or under, of gasoline at 25c.; 1 gallon cylinder oil at 50c., and two barrels of water.

Our gang consisted of two men with the outfit and a man and team one half day twice a week to haul water and gasoline.

I am enclosing a photograph of the outfit at work doing contract work at \$3.00 per acre on the farm of Mr. Dugan in the Assiniboine valley, where we had a good run on a half mile furrow, doing 25 miles in 1½ days, using 40 gallons of gasoline.

In the fall we hitched to a 32-54 Red River Special with gearless wind stacker and self feeder, threshing over 22,000 bushels of grain in about one month, with a small gang of eleven men all told, hauling practically all grain to the elevator three miles away. Next year we intend starting threshing earlier, as we had considerable trouble to start the engine when the weather got cold.

Yours truly,
Goodbun Bros.,
Dropmore, Man.

Engine Does Not Need Hay and Oats:

We have at present an International Harvester Co. 20 H.P. tractor and find it about the right size for us. We are farming a section of land with it and four horses. We seed, harrow and

**Hillcrest
Steam Coal
Will Plow
More Land
and Thresh
More Grain
Per Ton
Than Any
Other Coal.
Try It
Next Time
You Need
Coal!**

**Hillcrest Collieries,
LTD.
HILLCREST, ALTA.**

plow with it and find it cheaper than to keep enough horses to do the work.

We use two 20 disc drills and six sections of harrows. We set the harrows up close to the engine ahead of the drills and hitch them on with two chains about 9 feet apart. If hitched by the center they swing too much and in turning get in the road of the front drill. Then we take blocks of about 20 pounds weight and spike one in each section of the harrow. This keeps them down and one stroke is as good as two would be without the blocks.

For the seeders we bolt a 2 x 8 hardwood plank 12 ft. long on the trunnion of the engine, take the tongues out of the seeders and put a 9 feet tongue in the front (right hand) one and 15 foot tongue in the rear and attach them to the plank with eye bolts. We use the ones out of the neckyokes. This keeps them spaced right, and we draw them with chains. We tried drawing by the tongues, but found that it would take a mighty strong one to stand it. We have seeded 50 acres with this outfit in ten hours, but 40 to 45 acres is a good average day's work. We find seeding the hardest work on the engine in the whole season on account of the dust and sand.

On the breaking we started with two three-furrow gangs, but soon pitched them up. They did fine work in level land, but in willows, instead of cutting the roots, if one plow struck a bunch it was pulled out bodily, root and branch, and it would plug the plow. Then the only way was to stop and upset the plow and chop the root out. We did this for a few days and then got a P and O five furrow Mogul and our troubles as far as plows were concerned were over.

One man can plow about 1 1/3 acres an hour without hurrying himself, using about 19 gallons of gasoline per eight hour day. That is in decent breaking, but when it is dry and the gumbo gets baked we have had to raise one bottom out and plow with four and have used as high as 23 gallons of fuel.

We broke 6 inches deep most of the season, but took a contract late in June and broke it 3 1/2 to 4 inches deep, and we could not tell any difference in the draft of the plow. It cost about \$6.00 per day for fuel and oil and gear grease and we used a barrel of water every day. If it were windy we would sometimes need 15 or 30 gallons of water more.

We consider breaking the easiest work on the engine on the farm, as there is no dust and the footing is first class.

We summer fallowed 160 acres, and allowing \$4.00 per day for the engineer, it cost \$152 for everything, share sharpening and all other expense. We could have done better but the last was very hard on the bottoms, using up a set of shares every day.

We did not thresh much away from home as we had no time. The only advantage in having a



They Always Work

The "Penberthy" has stood the test for over a quarter of a century, and is the acknowledged Peer of Automatic Injectors. They will work in LOWER steam pressure, HIGHER steam pressure, HOTTER water and LONGER lifts, than any other type of Injector. Used by Leading Engine Manufacturers, and recommended by thousands of Engineers EVERYWHERE.

To get the Best, say "Penberthy."

MANUFACTURED BY

Penberthy Manufacturing Co.
WINDSOR, ONT.

separator is in getting one's own grain out early and then one can take advantage of any raise in price that happens along. We could thresh from 12 to 13 hundred bushels per day with eleven men and six teams. We found it rather harder on the brasses on the crank and wrist than plowing and used as high as 25 gallons of gasoline per day. But we worked two to three hours longer per day.

We had no experience with gasoline engines prior to this year, and we have had some very serious times getting acquainted with it. We have opened the throttle and flooded the chamber, and turned the fly wheel till all was blue, and it would not start. It has quit firing and finally stopped and we have hunted from stem to stern to locate the trouble. We have walked half a mile with two pails of gasoline to bring it to the tank. We have had the cylinder full of water and did not know what on earth was the matter and had to find the trouble. But then it has gone for weeks without any trouble at all; in fact, it was mostly a well behaved engine, and did a lot of hard work on very little attendance. It has not been eating oats all winter at 50 cents a bushel and hay at \$7.00 a ton, and still it is ready to start with a full load as soon as spring opens up. An Optimist.

Used 3 Gallons per Acre.

In the spring of the year 1909 I purchased an International gasoline engine of 20 B. H. P.



"XL-96 EJECTOR"—The Liquid Lifter

Traction Engine Ejectors

We make a Special XL-96 Ejector that delivers water to engine tanks at 30 degrees less temperature than that of other ejectors, thus overcoming all trouble with the Injector, which heretofore had to handle heated water as delivered to engine tanks by steam syphon.

The Penberthy Ejector is by far the best on the market.



"SATURN"
Plain
Engine
Lubricators



"SATURN"
Plain Compressed
Grease Cup



"SILEX"
Self-Feeding
Grease Cup

WE MAKE THE BEST

Grease and Oil Cups
IS ONE OF OUR SPECIALTIES

and an Aultman and Taylor separator 27 x 42 and a P and O Mogul engine gang with five bottoms.

I commenced breaking on the 7th of June, pulling four plows, which the engine handled fairly well then, as the ground was in good shape for breaking; but after breaking for two weeks the ground got so dry and hard to break that I found it too much for the engine to handle four plows and so I pulled one off and after that I only hauled three plows to the end of the season.

I broke in all 310 acres and finished about the first of August. The least I have done in any single day's breaking is 13 miles, and the most I have done is 26 miles in one day. On an average I made about 22 miles per day, or about 8 miles more per day than my neighbors did with horses.

I used about three gallons of gasoline per acre for which I paid 29 cents a gallon laid down at Tugaska, and as I live 20 miles from Tugaska, I figure that the long haul would bring the cost of gasoline per acre up to about \$1.10.

I had one breakdown in the season which caused the rig to stand idle for one week, or until the company had a new piece sent out and a man to put it on the engine, which they did free of charge, as they guarantee their engines for the first season.

I never had more than one man to run the outfit plowing, as the P. and O. plows are so handy to operate and come so close to the

engine that it takes but a few seconds for the engineer to stop his engine, take a step over on to the plows, pull down the lines to raise same, and take a step back on to the engine again.

I used about 60 gallons of water per day for cooling the engine and about 1-2 gallon of gas engine oil for lubricating. I always keep my engine well oiled as oil is cheaper than machinery every time.

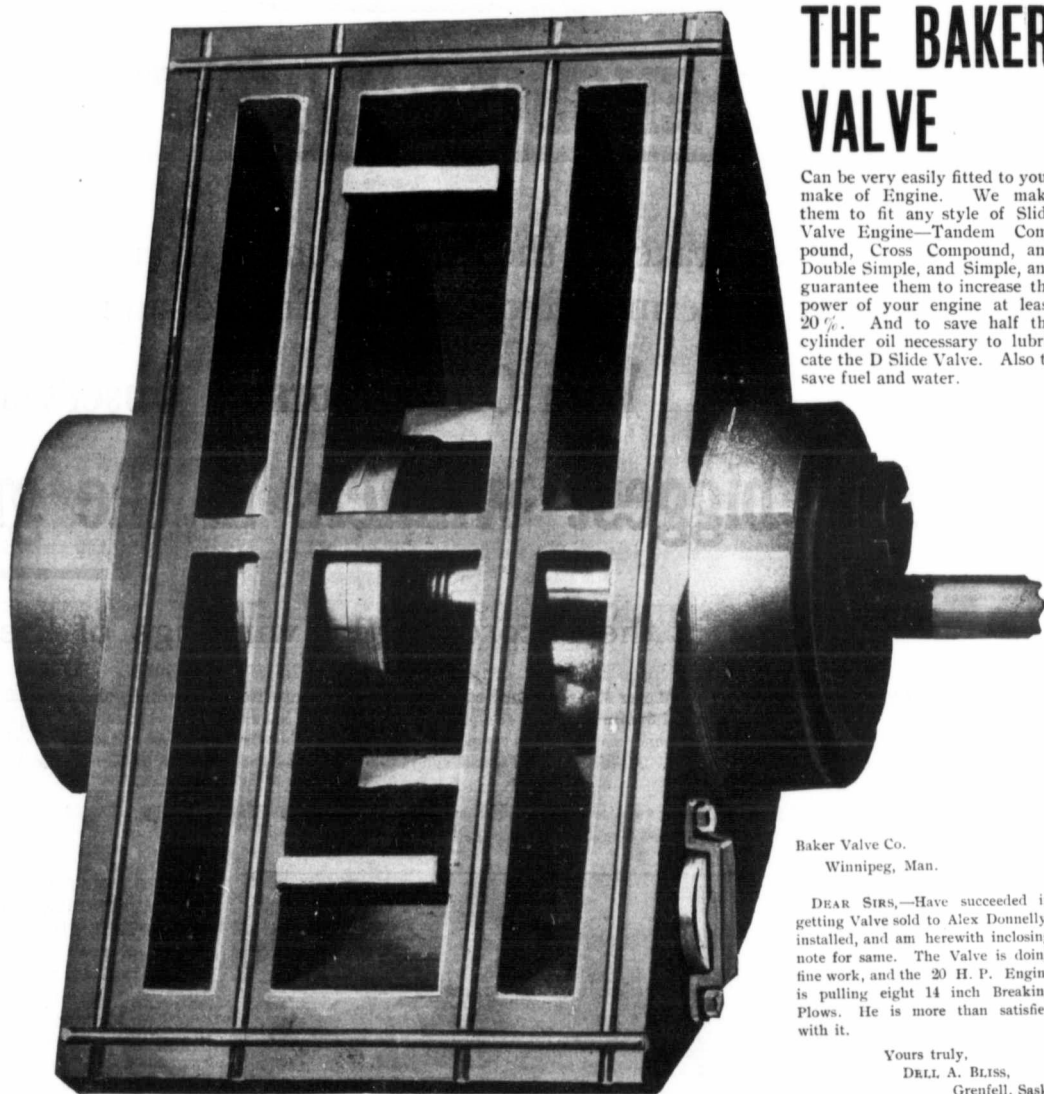
In threshing I used about 20 gallons of gasoline per day and somewhat less oil and grease than in plowing. I consider threshing easier on the engine than plowing.

For crushing the sod after it was broke I pulled three discs and a sixteen foot drag harrow. In hitching the discs to the engine I first put stub poles into two of them, about two feet long, or just long enough to allow for turning short, and in the third one I put a pole about 7 feet long. Then I hitched one of them directly on to the draw bar on the engine and then bolted four by six on top of it to hitch the other two on too. The reason I made the pole longer in one of the discs than in the other two was to keep the two hind discs from coming in contact, as I was double discing and wanted them to cut close, so as to make a clean job.

Wishing the Canadian Thresherman and Farmer and all its readers a prosperous and successful season, I remain,

Yours truly,

Andrew Gunderson,
Lawson, Sask.



THE BAKER VALVE

Can be very easily fitted to your make of Engine. We make them to fit any style of Slide Valve Engine—Tandem Compound, Cross Compound, and Double Simple, and Simple, and guarantee them to increase the power of your engine at least 20%. And to save half the cylinder oil necessary to lubricate the D Slide Valve. Also to save fuel and water.

Baker Valve Co.
Winnipeg, Man.

DEAR SIRS,—Have succeeded in getting Valve sold to Alex Donnelly, installed, and am herewith inclosing note for same. The Valve is doing fine work, and the 20 H. P. Engine is pulling eight 14 inch Breaking Plows. He is more than satisfied with it.

Yours truly,
DELL A. BLISS,
Grenfell, Sask.

You can reverse your Engines under full head of steam with perfect ease, and can let reverse lever stand at any point of cut off and will remain indefinitely. Bad water will not affect them. You ought to have one this fall. Write us for information and terms.

100 JAMES ST.

BAKER VALVE CO.

WINNIPEG

Something New in a Farm Machine.

The tendency of modern agriculture is to increase the output of farm work and at the same time decrease the amount of labor that is put into that work. In fact, it is this spirit that has made the modern farm machine possible. Start back as far as you may and trace the growth up to the present time and you will see that every farm implement that has met with any measure of success has done so because it increases the efficiency of the men who handled it.

In the east and in the older settled portions of the south the grain is always stacked. It is drawn to the barn on waggon

and put up in such a way that the fall rain cannot harm it. In Western Canada this is hardly possible and the grain must of necessity be threshed from the stook if the crop is going to be handled in the time allotted. The farmer cuts his grain and stooks it and the threshing outfit comes onto his farm to thresh it. The rule is that the thresher furnishes the stook teams and men; in fact, furnishes the entire outfit complete with the exception of the teams and the men to take the grain away from the machine.

It takes an army of men to gather the sheaves from the field and convey them to the separator and it is with the idea of lessening both the number of men and

teams that the Stewart Sheaf Loader has been devised. This is a simple but very satisfactory contrivance which is drawn by three or four horses. The machine gathers the stooks which are thrown back by means of a revolving fork on to a platform equipped with an endless carrier. This carrier in turn conveys it to an elevator carrier which elevates it up sufficiently high so that it can be deposited into the box rack. This box rack is drawn along side of the sheaf loader by the loading team.

If you will but stop and think you can realize just about how long it will take to put on a load. Imagine a row of stooks and the machine travelling as fast as the horses

can walk and it only takes about a minute of time to fill the average box rack.

The machine itself is very complete. It has passed through several seasons of demonstration and experiment work, so that all weak points have been strengthened and made sufficiently strong to carry the load.

The machine is handled almost entirely by chains, there being but one set of bevel gears. All boxes are interchangeable and as the machine is constructed almost entirely of malleable iron and steel there is practically nothing to wear out. The machine itself should prove a boom to the thresherman of Western Canada.

EVERY ENGINE WINS THE 1911 WINNIPEG MOTOR CONTEST

Sweepstakes in the Entire Contest over Twenty-nine Avery Undermounted Steam Engine and the Avery Gasoline Tractor.

With Competitors as Observers and a Contest Open to the World
The biggest winners in the greatest Engine Contest ever held

Below is the record of the winnings of the Avery Undermounted Steam Engine and Gasoline Tractor

SWEEPSTAKES IN CONTEST over All Other Entries and against 29 Competitors was won by the Avery 30 H.P. Simple Double Cylinder Undermounted Steam Engine. 439 points out of a possible 500 with the next highest only 425 points. In competition with double tandem compound, single tandem compound, and simple single cylinder engines, and single, double and four cylinder gasoline and kerosene engines. All styles and all classes and 11 different makes and the Avery Undermounted Won the Sweepstakes over them All.

FIRST PLACE IN ITS CLASS was also won by the Avery 30 H.P. Undermounted Steam Engine. 25 points over the nearest competitor. A clean win in the hardest fought contest ever held.



IN THE BRAKE TESTS the Avery 30 H.P. scored the highest number of points of any engine in the Contest as well as in its Class 8, a total of 190 points in the Economy and Maximum Brake Tests out of a possible 200. This record was made by the Avery Simple Double Cylinder Engine in competition with Single, Simple, Single Compound and Double Compound Engines.

IN THE PLOWING TEST the Avery Undermounted Engine went right along pulling 10 plows where other engines were unable to even travel alone because of the wet and soft condition of the ground. Plowed more land in less time than any other Contestant.

No better proof could be produced than was done in this contest to show that the Avery Undermounted Steam Engine is the Real Plow Engine.

TWO FIRST PLACES IN THE MAXIMUM HORSE POWER BRAKE TEST—FIRST Place in the Entire Contest over all Entries and First Place in Its Class were also won by the Avery 30 H.P. Undermounted Steam Engine. This Engine developed 164 Horse Power—the highest horse power ever pulled in any of the Motor Contests. Said by all to be one of the smoothest, steadiest and most wonderful exhibitions of power ever witnessed.

THE AVERY BULL DOG LINE Cleaned up the Field in a Contest open to the World and Against Twenty-nine Competitors.

Sweepstakes over all other Entries, A Gold Medal and Seven Firsts.

Competitors, a Gold Medal and Seven Firsts won by the Gasoline Tractor.

a Contest Open to the World
Best Engine Contest ever held

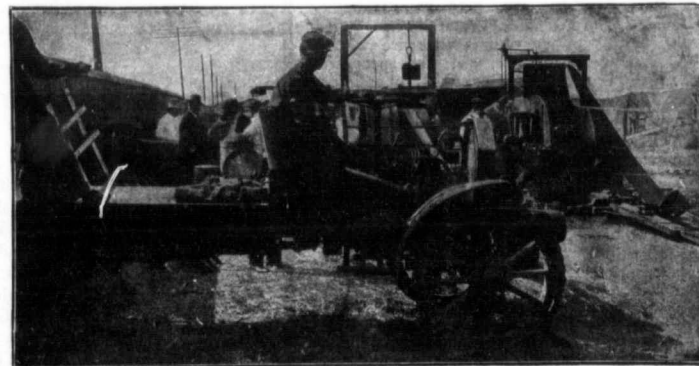
Undermounted Steam Engine and Gasoline Tractor

FIRST PLACE IN ITS CLASS IN DESIGN AND CONSTRUCTION also won by the Avery Double Undermounted Engine. The judges awarded First Place to the Undermounted Avery Engine against all Topmounted Engine Competitors. The only Undermounted Engine built and winner over all others. This is a strong support for our claims of the superiority of the Undermounted Design.

FIRST PLACE IN ITS CLASS IN LEAST GASOLINE CONSUMPTION PER HORSE POWER HOUR, in the Two Hour Economy Brake Test won by the Gasoline Tractor.

FIRST PLACE IN ITS CLASS IN DESIGN AND CONSTRUCTION also won by the Avery Gasoline Tractor. And not only First Place in Its Class but First Place over all other Internal Combustion Engines in the Contest. The design of the Avery Tractor—the Only Combination Gasoline Farm Wagon and General Power Machine—is thus placed ahead of every other design of internal combustion engine as more fully meeting the requirements of the work for which it is intended.

A DOUBLE FIRST PLACE IN DESIGN AND CONSTRUCTION OVER ALL ENGINES ENTERED IN THE CONTEST was won by the Avery Undermounted Engine and the Avery Tractor. Both scored the same—93½ points out of a possible 100 with the next competitor scoring 87 points. A most wonderful confirmation of the superior design and construction of Avery machinery.



And besides all this we back up Avery Machinery with the Strongest Warranties ever given by any Manufacturer.

PLACE YOUR ORDER for an Avery complete Engine and Thresher or Tractor. Catalog sent on request. If you are in the market ask for our representative to call.

IN THE BRAKE TEST the Avery Tractor scored first in least gasoline consumption per horse power hour, and second in the entire markings for the 2 hour Economy run, and practically cut in half the amount of gasoline used in the test of the previous year. In fact the record made by the Avery Tractor was so surprising that we were required to make a second run, and the second run proved that the first was correct.

Our four cylinder Motor made a higher score in Economy than the six, single and double cylinder engines, in its class, thus knocking out one of the strongest claims made by the single and double cylinder advocates.

Haug Brothers & Sells Co. Ltd.
Canadian Jobbers Winnipeg, Canada

How a Farmer Can Tell Whether His Land is Wheat-sick or Not.

By H. L. Bolley.

I have seen a number of statements in various papers regarding the prevalence of tip-burn and sun scald, blighting by hot weather, etc., in the wheat crop. I am writing this note to call your readers' attention to an interesting fact that they can corroborate for themselves if they wish.

I know it has been very warm during the past week and have no doubt that such hot weather is actually more or less injurious to the crop, but I have examined various fields and various plots of wheat for a number of years past and have learned that when tip-burn or blighted tops of leaves appear as they are showing now on various wheat fields there is present a root disease in the land on which that wheat is growing, either placed there in or on the seed which was sowed in spring, or remaining there from the previous crops. So far as the land in the Red River Valley is concerned, there is yet sufficient moisture in the ground to maintain the crop without blighting, in spite of any temperature which we have had up to this date. When such blighting has occurred it can be taken for granted that the land on which the blighted wheat is growing is wheat-sick.

Any person who wishes to controvert or confirm this statement can do so for himself by going out to his fields and digging up wheat plants. Let him take a chisel or strong butcher knife and inspect the roots of the wheat plants which are tip-burned, or which show the so-called sun scald. At the same time, let him go on to some land where there is less liability of disease; that is, either on new land or on well worked corn land and dig up some wheat plants which do not show the tip-burn or sun scald. Then compare the underground portions of the two kinds of plants and I think that the person who carefully does the digging will learn a lesson with regard to crop rotation, seed selection and seed treatment, which no other line of observation will give.

If you go into one of your old wheat fields, even though the soil is rich and moist, you will find plants, which are not properly stooling, that have tip-burn and already have yellow or dead leaves at the base. You will find on digging them up that the underground portions are creosote colored or have creosote spots on the stems underground. You will find also that many of the roots are rotted off and perhaps some new roots are starting at points higher up. You will find that many stools have started and died even though they are shaded from the heat of the sun.

Young wheat plants should never be brown or dark colored below ground. The natural

color is white or greenish white.

Plants of wheat which show the portions underground creosote brown or black colored will never properly stool regardless of the weather conditions. They will remain either few stooled or a single stem, sending up one central or single stock. If the land is found to have large spots or areas in which most of the plants are thus single stooled those spots may be looked upon as wheat-sick in the same sense as certain areas of land are now known to be flax-sick. If you have a nice piece of land which was properly worked under corn cultivation last year in which only scattering plants show tip-burn or creosoted roots and single stool plants, you may rest assured that that land was not particularly wheat-sick when you sowed wheat which had a considerable percentage of internally or externally infected seeds,—seeds which contained or bore the spores of the wheat root rot.

We blame the weather for entirely too many things. I am writing this statement not to prove that the weather is just right for wheat, but to interest a number of farmers in going out into the fields and studying their crops so that they can understand what is meant by "wheat-sick soil" and what a proper crop rotation might do towards purifying such soil. Strictly, wheat diseases must have wheat to grow on; therefore put in some other crops for a while on such land.

If any farmer, who, after reading this article, is unable to state whether he has spots of wheat-sick land on his farm or is doubtful about whether he has pulled up any plants that are wheat-sick or not, will send specimens into my office with proper information regardless where he got them, I think I will be able to explain the matter, so that he can understand the portions of the land which are sick and those which are not.

The plan may be good and the product may be good; but success comes only when it is pushed by a big man.

Whatever you do you will receive only a fraction of the results. The remainder will go to associates, customers, and the world at large. But the more you do the larger will be your fraction.

We need the thinker in business as well as the doer. To be a doer alone is to finally become a mere machine. But when thinking and doing are combined, then we have material for the really big man.

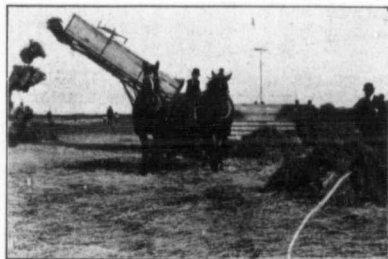
The New Town of Bredenburg.

"Monopoly" is an ugly word, and when it is in the custody of an unscrupulous power, there is scarcely a synonym in our vocabulary to do justice to it. Even when

**Save Men!
Save Horses!
Save Time!
Save Money!**

The question of sufficient help at threshing time is a problem. It is hard to get and is more or less unsatisfactory when you do get it. Any machine therefore, that will reduce the number of men required is worth looking into. Such a machine is the

STEWART SHEAF LOADER



Reduces The Number of Teams and Will Save \$35 a day in Men's Board and Wages

The "Stewart Sheaf Loader" is guaranteed to load even more accurately than a man pitching with a single fork over his shoulder. It will carefully lift and pitch sheaves either when stooked or lying loose on the ground. Will handle short grain much better than a man can deal with it, and will make a complete load in two minutes—frequently in less time. It is an easy pull for two good horses, but three might be necessary for best work on a field of unusually heavy straw.

NOTE—This machine almost entirely eliminates the item of manual labor in stacking or threshing and the safety of the grain is assured in a wet season.

The Stewart Sheaf Loader

is made in Winnipeg by a strong company of practical men—leading business men and farmers—and in sending out a machine perfect satisfaction is guaranteed.

Write for full particulars at once to

The Stewart Sheaf Loader Co.

LIMITED

715 McINTYRE BLOCK

WINNIPEG.

SILVER STAR

Engine Kerosene

THE BEST FUEL FOR

Oil Burning Traction Engines

Price at Branch Stations
Plus Carload Freight

11^c

Per Imperial Gallon in Bulk
F.O.B. Winnipeg

ALSO

Standard Gas Engine Oil & Engine Gasoline

Used by all Gas Tractors in Motor Contest at Winnipeg Industrial Exhibition, July 1911.

Carried in Stock at 250 Tank and Warehouse Stations in Manitoba, Saskatchewan, and Alberta.

For Prices at our Branch Station nearest you, Write to Office of

THE IMPERIAL OIL CO., LIMITED

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

it is held by a generally accommodating institution like the Canadian Pacific Railway Company, it is very difficult to get the monopolist to loosen the grip, and the only thing that will do it is the approach or the apparition of a rival. Then the fun begins—as illustrated by Aesop's fable of the "Dog and the Bone."

The trite little aphorism that "Competition is the life of trade" loses none of its forcefulness when applied to the operation of great railway companies, and sometimes assumes a delightful piquancy when two of these begin to parallel their right of way. The great C.P.R. in its grand paternal way has had a genius of its own all these years for standing pat when anything has cropped up that threatened its dividends—short of a something that was no less powerful than itself.

Quite recently many little pleasantries have occurred and passed into history in which the rapid progress of the Grand Trunk Pacific has played a part with its older rival; not, however, at any time to the advantage of the travelling and freight-paying public.

One of these that is likely to have a far-reaching influence upon the general development of the West was the strategic move, made under the heel of necessity by the C.P.R., when it shifted its divisional point from Yorkton to Bredenburg—about 30 miles Eastward of Yorkton.

The Grand Trunk Pacific had built its line from Melville through

Yorkton to connect with the Hudson Bay Road at Pas Mission. It therefore became necessary for the C. P. R. to "get a move on," as if they built from Yorkton to the Hudson Bay they would be paralleling the Grand Trunk Pacific the entire distance.

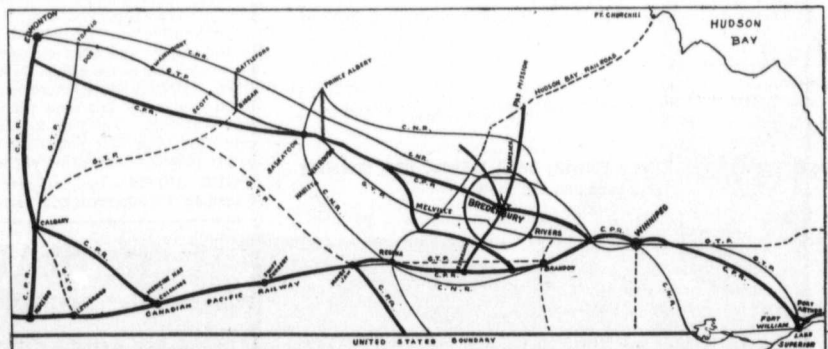
By moving their divisional point to Bredenburg, the C.P.R. can build a line Northwards to connect at Pas Mission with the gov-

seam in the "great unoccupied" to the west of us, and certainly an activity at Bredenburg that will keep a lot of people busy around the townsite for many years to come.

Bredenburg has no less prospects before it than any of these great towns that have so recently sprung into a full fledged maturity along the highway of the new transcontinental. The C.P.R. had a great object in view in deciding

of the C.P.R., and it is the centre from which converse the various branch railroads which connect in Eastern Saskatchewan all the great transcontinental railways.

A line of railway to the South crosses the main line of the Grand Trunk Pacific and taps the main line of the C.P.R. at Esterhazy. A line to the North crosses the main line of the C.N.R. at Kamsack, and taps the Hudson Bay Railroad at



ernment railroad through a new and what has been ascertained to be an intensely fertile territory which will certainly provide profitable traffic for this line as far into the future as the most sanguine of men care to speculate upon.

This is a healthy move from whatever point of view it is regarded. It means the tapping and development of an entirely new

to remove the divisional point from such an old established town as Yorkton and place it at Bredenburg, and it takes very little effort of the imagination to see it another Saskatoon as a distributing point before many years have gone.

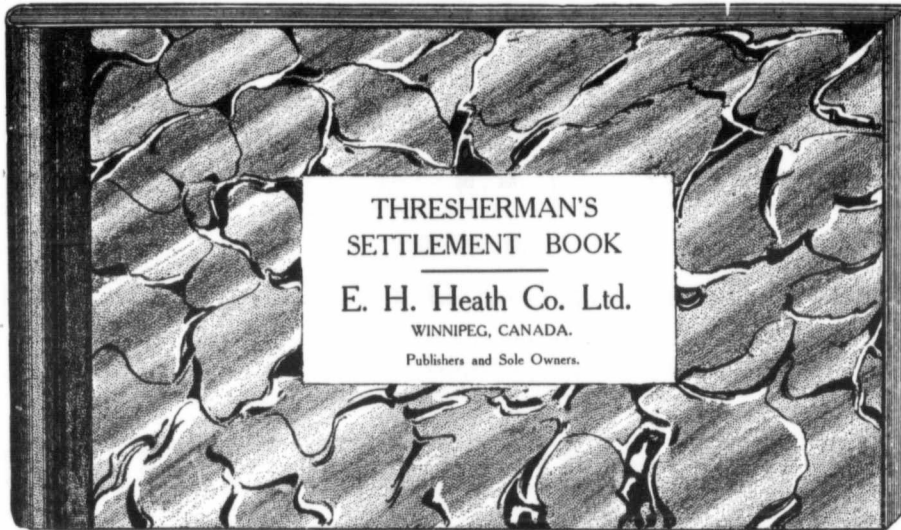
Its great outlook lies in the fact that it is the first divisional point west of Minnedosa on the Manitoba and North Western Division

the Pas Mission, while another line is projected from Bredenburg to Prince Albert.

These lines all focusing on Bredenburg and passing as they do through the very choicest of Canada's Agricultural country bespeak a future for the new town that will probably outrival anything that has been done on any of the hustling new townsites to the West of it.

THRESHERMAN'S SETTLEMENT BOOK

(Revised Edition) (Revised Edition)



The above illustration shows actual size, the Thresherman's Settlement Book just received from our Printers. This book contains settlement blanks in duplicate, one for the Customer, and one for the Thresherman; and expense blanks for keeping tab on the cost of running your outfit. The book is bound in strong board covers, and plainly printed. A handy size for coat or hip pocket.

OUR OFFER.—One Thresherman's Settlement Book, and The Canadian Thresherman and Farmer, one year, \$1.00

Power and the Plow

The New Book on Traction Cultivation, Covering Gasoline, Kerosene and Steam Tractioneer.

If you own or operate an engine, you need this great new book of ours. Contains over 300 pages, forcibly written in ordinary everyday language, bound in cloth board covers, and well and clearly illustrated throughout. Special chapters, on the Motor Contest, Feuls, Draft of Plows and other Implements, the Measurement of Power, etc.

Don't Spend 4,000.00 for a Plowing Outfit without first investing in Power and the Plow.

Regular price, \$1.50; but for a limited time sent postpaid, including a year's subscription for the Canadian Thresherman and Farmer for \$1.50.

A Thresherman's Settlement Book, Power and the Plow, and the Canadian Thresherman and Farmer, one year, all for \$1.75.

A Thresherman's Settlement Book, Power and the Plow, the complete set of fifteen blueprints of traction engine hitches, and the Canadian Thresherman and Farmer, one year, all for \$3.00.

E. H. Heath Co. Ltd.

WINNIPEG

CANADA

Hitches for Traction Engines

So many have asked us for suggestions regarding building a hitch, that last Spring we wrote all the engine owners we could get hold of for a description of the hitch they used. We have selected fifteen of the best of these, have had them drawn to scale, and blueprints made.

YOU CAN MAKE THESE HITCHES for all of them have been made and used by engine owners, and each blueprint bears the name and address of the man who worked it out. These men probably experimented for months before they perfected their hitch. They show you how they hitch discs, drills, drag harrows, or pulverizers, etc., so the pull from the last implement will come on the engine, and not the implement in front, and arranged so as to turn as short as possible. Therefore with THESE FIFTEEN BEST HITCH ideas before you, you should be able to build a hitch to exactly suit your particular requirements. These blueprints average about 9 in. x 10 in. in size, and are worked out very carefully. We offer you a set of these blueprints at a cost that barely pays for the making of them.

OUR OFFER—The complete set of fifteen blueprints, and The Canadian Thresherman and Farmer one year—\$2.00.

E. H. HEATH Co., Ltd.

Winnipeg

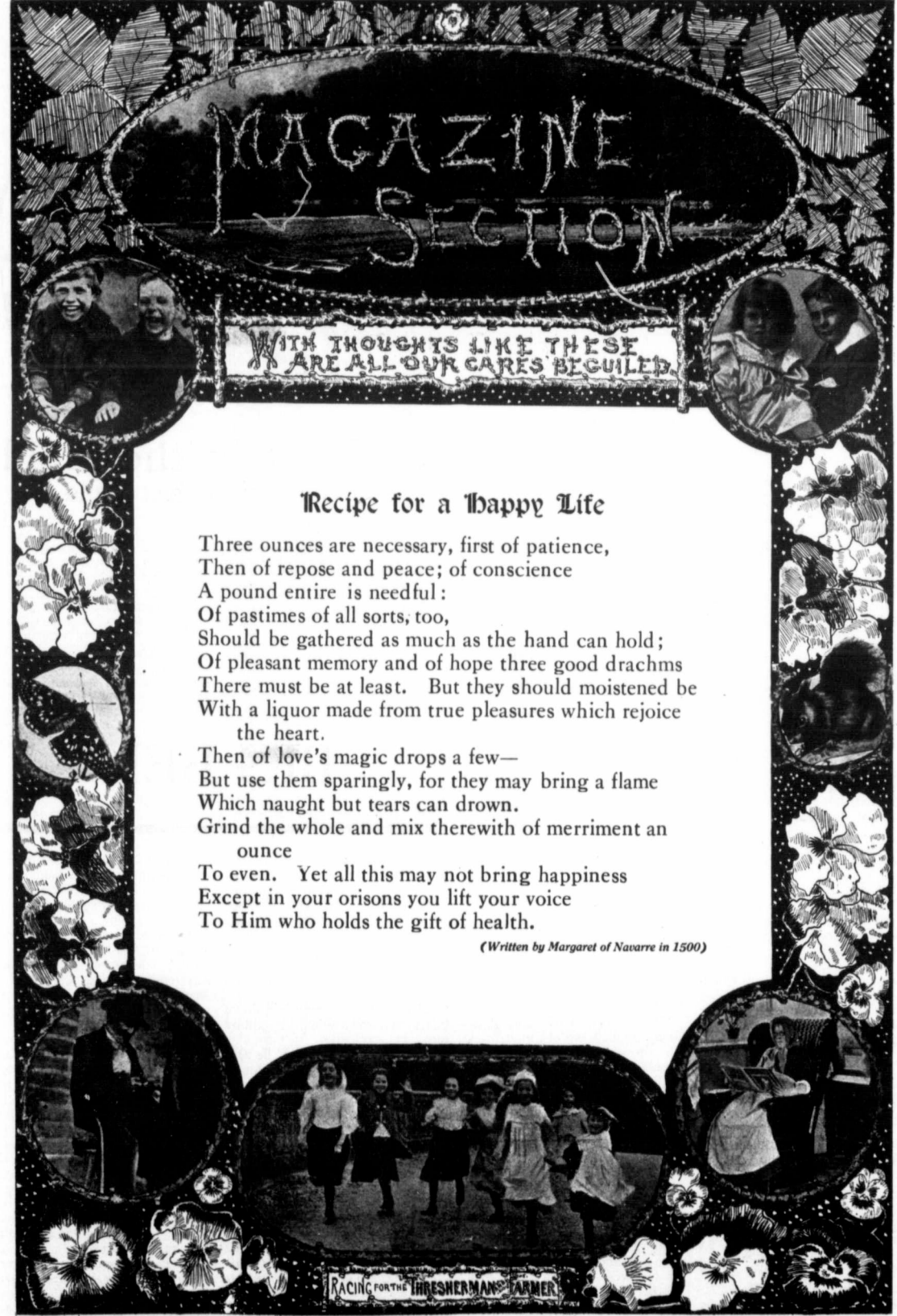
Canada

E. H. HEATH CO. Limited,
Winnipeg, Canada.

Please find enclosed \$ for one year's subscription
for The Canadian Thresherman and Farmer and
to be sent to (premium)

Name

Address



MAGAZINE SECTION

WITH THOUGHTS LIKE THESE
ARE ALL OUR CARES BEGUILED.

Recipe for a Happy Life

Three ounces are necessary, first of patience,
Then of repose and peace; of conscience
A pound entire is needful:
Of pastimes of all sorts, too,
Should be gathered as much as the hand can hold;
Of pleasant memory and of hope three good drachms
There must be at least. But they should moistened be
With a liquor made from true pleasures which rejoice
the heart.
Then of love's magic drops a few—
But use them sparingly, for they may bring a flame
Which naught but tears can drown.
Grind the whole and mix therewith of merriment an
ounce
To even. Yet all this may not bring happiness
Except in your orisons you lift your voice
To Him who holds the gift of health.

(Written by Margaret of Navarre in 1500)

In Season Always.

If you think it's going to rain, Don't hurry.
 If it spoils a little grain, Don't worry.
 If you've got a lot of hay out, Don't hurry.
 Trust the Lord: He'll find a way out— Don't worry.

If the weeds are busy growin', Don't hurry.
 Jist keep steady at the hoein', Don't worry.
 If the Robins eat your berries, Don't hurry.
 Heaven next week will send you cherries Don't worry.

If you're busy making love, Don't hurry.
 If her heart is hard to move, Don't worry.
 Stay away for quite a while, Don't hurry.
 Soon or late she's bound to smile, Don't worry.

If you'd like to be elected, Don't hurry.
 If at the polls you are rejected, Don't worry.
 List! if you d win a splendid name, Don't hurry.
 Slow are the iron feet of Fame, Don't worry.

Now if you think you're going to die, Don't hurry.
 And when the wife and children cry, Don't worry.
 You'll soon be up and out of bed, Don't hurry.
 For some day you'll wish you're dead, Don't worry!

Remember And Forget It.

Forget it!

Your brain has a capacity limit. Don't overload it. Don't fill it with details. Don't burden it with worry.

Get a system.

Make your system your storehouse. File therein the little cares that wear and tear — the important details that annoy.

Make your system the guardian of the necessary, the grave of the needless. Leave your work at night, free and unshackled. Your system will bring your duties before you the next morning—the next week—the next month.

Keep clear the rails on which run your trains of thought. Keep your mind on the stretch of track ahead; ride over the pebbles of petty troublings in the road-bed.

Train your system to remember all that it should not forget—to forget all that it should not remember.

Carry with you the success of to-day. File with your system the duty of to-morrow. Profit from your failure of yesterday—and then forget it.

**Abner Hunker's Historic Corn.
By Hugh Pendexter.**

Reuben Philbriar, storekeeper, stood stiffly alert, holding the rim

of a bean bag in his teeth and one hand as he rested the scoop on the counter, while his eyes congealed in an icy stare as old Abner Hunker hesitated on the threshold and elaborately kicked the snow from his boots.

"Well, Reuben," at last saluted Mr. Hunker to relieve a painful silence, "this is great weather for business. What, are you doing, measuring corn?"

Mr. Philbriar retained the bag in his teeth and made no reply, and as this left his molars and hard set eyes somewhat distorted, the new comer made no move to sit down, but watched keenly for an opening. Snap! closed the shopkeeper's mouth as the bag dropped, and with a frown he turned brusquely to his desk and began sorting over his debtors' account books. The largest and most tattered was held ostentatiously in view so the old man could not help but see 'A. Hunker' marked thereon, while the storekeeper drew in his chin and began adding up long columns of dim figures.

Mr. Hunker drew a deep breath and glanced uneasily at the door. He would have to pass very near the desk to reach it, and for many days he had been longing to visit the store. Then his eyes caught the discarded bean bag in their search for an attractive subject. "For if you was putting up corn I wish I'd come in before," he at last observed.

"I believe you was to come in last week and settle up that little account that's—" acridly began the storekeeper, not deigning to look at his tardy customer.

"Yes, siree," continued Mr. Hunker in a dreamy voice, still eyeing the bag sadly, "I wish I'd known, that's all. Mebbe, it ain't too late now."

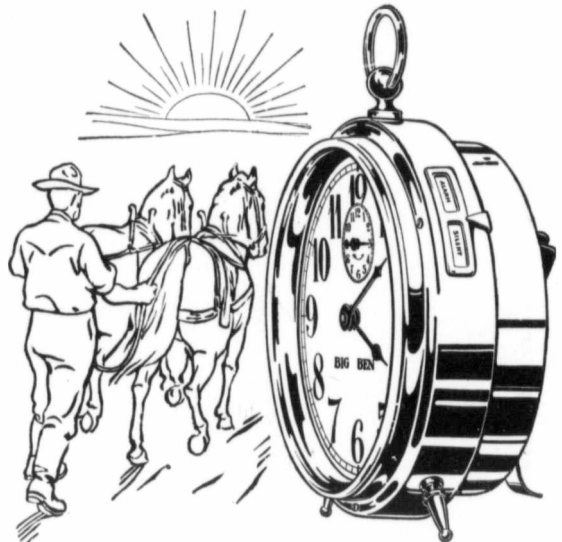
"Figures in this book are most gone, but better late than never," growled the storekeeper, showing no physical weakness in piling total on total.

"I hope it ain't too late," Mr. Hunker continued, as if giving a monologue. "For there ain't no one, Reuben, who I'd rather see git that corn then you."

"Corn? What corn? Any one giving away corn?" sneered Mr. Philbriar, now scowling openly at Mr. Hunker's aged form.

"You may well ask what corn," replied the old man briskly, throwing back his bowed shoulders and eyeing some smoked herring in a chummy manner.

"Think of it! Seed corn brought over here in the Mayflower and landed at Plymouth Rock on December 21, 1620. I suppose of all priceless heirlooms, that corn heads the list. What is the blue china of the Daughters of the Revolution and Paul Revere's lantern compared to that precious cereal, clustered about with its memories of Miles Standish and the immortal lines, 'Just three kernels of corn, Mother!' Why, when I reverently saw it the last time and realized how thousands of



**Be First in the Field
—Get the Biggest Yield**

I am the solution of the early rising problem for you men who want to be "first in the field." My name is BIG BEN. I get you up on time for I'm a timekeeper, not an ordinary alarm clock. I'm known as the "big watch with a breakfast bell." I never fail. You can depend on me. I tell the true time all the time. I wake you "on the dot."

My bell rings steadily until you are wide awake or gives you a short ring at the appointed hour and several reminder rings at intervals for several minutes—just as you choose to set me.

Keep me in the sleeping room and

you'll be "bright and early" in the field each morning. Get me for the farm hands, too, and you'll not have to wait for them. Your work will begin on time and you'll get the most done every day. You'll get the biggest yields and be the envy of the neighborhood.

My price is \$3.00. But you would gladly pay more for my service—my timekeeping qualities—my durability—and my fine appearance.

See me at your dealer. Hear my breakfast bell sing out. Then take me home and let me help you on the farm by getting everybody out on time.

BIG BEN

Care of WESTERN CLOCK CO., LaSalle, Ill., U.S.A.

If your dealer doesn't sell me I'll come duty prepaid on receipt of \$3.00

dollars couldn't buy it, if its true worth were known, I could hear Massiot cry 'Welcome, Englishmen,' I tell you, Reuben, corn that was corn when the Aborigines flocked about those old Puritan fathers and sought to alienate them from their very back hair, would bring any kind of a price to-day."

Mr. Philbriar slowly laid down his pencil and rubbed his stubby nose in perplexity.

"Too odd to plant, eh?" he asked casually, keeping one finger on the open page.

"Ripe with age and associations," defended Mr. Hunker firmly, sinking into a chair and attracting the attention of the herring with his subtle left hand. "Of course, chickens will grow a bit gloomy after eating it and will detest music on the Sabbath, but as a relic it's worth a mint. Think of a kernel of Mayflower corn set in a ring, or a scarf pin! Naturally only the rich could afford it. I suppose a tiara of that stuff, for some society woman in Boston, would be worth a hundred dollars a kernel."

"Abner!" cried the storekeeper, tossing the account book to one side, and there was a world of yearning in his voice, "Abner!"

Have to keep every blamed kernel of it locked up in your safe," continued Mr. Hunker, carelessly picking a handful of seedless raisins from a convenient box. "I snum, Reuben, I begin to envy you. Rich summer boarders calling in every day and cluttering up the place. 'Please, give me a solitaire ring with a ten carat kernel. Number four. Two hundred dollars? Here?' O I can hear just how they would go on and slap the money and checks down on the counter. That would be the only trouble," and the old man shook his head regretfully, ejecting a prune seed beneath the stove at every movement of his long beard. "Yes, Reuben, there'd be the hitch. Too bad."

"Where?" demanded the storekeeper in a weak voice, leaning his fat form against the counter and refraining from touching the eggs with his trembling digits.

"In having your regular business interrupted by a lot of city folks who didn't care what a kernel of that stuff cost," replied Mr. Hunker resting one hand easily on the peanut bin. "That would be the drawback."

"I wouldn't mind that, Ab," expostulated Mr. Phillbriar, loosening his collar. "I'd hire Jim Selby and turn this place into a jewelry store."

"What a corner in corn that would be," mused Mr. Hunker in mild ecstasy, keeping seven peanuts jumping from their dusty resting place at once. "A corner that no trust or clique could break, a guarantee given with every kernel. Of course, you'd plant a little and sell the crop at reduced rates, as being descendants of the original."

"Don't suppose any one could tell them apart," protested the storekeeper, mopping his brow.

"I shouldn't want to be the man of having you practice any deception," gravely declared Mr. Hunker, picking up a can of sardines and reading the inscription with deep interest, while Mr. Phillbriar remembered his own position as deacon of the church and coughed apologetically and felt of his ears to see why they should become so warm.

"But," reassured Mr. Hunker, exchanging the sardines for their weight in brown sugar, "by cutting the price you'd reach the middle class of well-to-do, who would buy greedily while not able to purchase a simon pure gem of the parent stock. Yes, I think Reuben, you'd make as much out of them as you would out of the original kernels."

"Abner!" choked Mr. Phillbriar, "Abner! Who has this corn?"

"Willis G. Felmy, of Perkins Corner had it," informed the old man, rising slowly and pulling on his red mittens. "And he didn't appreciate his great boon as you would have—"

"As I will, you mean, murmured the storekeeper in pained correction.

"As you would have appreciated it," concluded Mr. Hunker soberly wandering aimlessly to the door. "And I was glad when he lost it."

"Lost it!" gasped the storekeeper, as one in great physical pain.

"Yes," replied Mr. Hunker in a hushed voice, testing the latch and then opening the door to allow his exit and the entrance of a cold wave that bathed Mr. Phillbriar's fevered brow. "Yes lost it. His cow, most worthless critter in the lot, gobbled it down right before my eyes. That's why thousands of dollars can't buy it."

"Abner Hunker, if that bill ain't settled by to-morrow, I'll send the sheriff—" began Mr. Phillbriar, hoarse with emotion, as he made a dive at the offensive account book. But only the crunch of Mr. Hunker's heavy boots on the dry snow answered him back. He saw the old man pause, when opposite the post-

How You Can Profit

BY

Canada's Increasing Population

Increasing population the past few years has augmented the valuation of Canada's new cities by millions of dollars. This valuation will continue to increase at the same or even greater rate for years to come. These millions of dollars—all created by the demands and requirements for land and business property of the increasing population—represent the profits paid to the early holders of real estate.

Buy Lots in

WATROUS

NOW

SEND THIS COUPON FOR DESCRIPTIVE LITERATURE

SEND THIS COUPON WITH YOUR FIRST PAYMENT

PROFITS ARE MADE BY THOSE WHO BUY.

You cannot participate in profits already earned, but you may share—in the course of a reasonable time—in the profits yet to be earned by Canada's continued increasing population. If you take advantage of present-day opportunities surrounding you, you should be able to profit thereby.

Watrous, Saskatchewan, is a favored town of one of the great transcontinental railways of Western Canada—The Grand Trunk Pacific. It is located near the banks of the Little Manitou Lake, the most wonderful body of mineral water on the American continent. Proximity to this lake should of itself alone in a few years make of Watrous a thriving bustling metropolis. But add to this Natural Sanitarium of International importance a surrounding community of prosperous progressive farmers with modern, highly cultivated farms—a large population of railway wage earners and a class of live up-to-date go-ahead business men and cities who do things, and you have a hint of the irresistible influences and forces that are at work building up Watrous.

Manufacturing industries will be needed, and Watrous is the natural place for them to locate. And lastly Watrous has Little Manitou Lake, a veritable Mecca for health and pleasure seekers. Thus is Watrous doubly sure of constant and permanent growth.

This wonderful mineral lake cannot be duplicated and no other feature of competing cities can take its place. Everything indicates that the rapid growth of Watrous will continue.

BUY LOTS IN WATROUS AT PRESENT PRICES.

The progress being made to-day throughout the West is almost beyond belief. Judging the future by the past it might be reasonably said that it would be almost impossible to purchase lots in a live and growing young city of Western Canada and not make money.

Many lots in Moose Jaw that sold a few years ago at \$100 each are to-day worth from \$1,000 to \$3,000.

Lots which sold in Saskatoon ten years ago for \$100 are to-day worth ten to fifty times that amount.

Those who purchased lots in Edmonton ten years ago are now the possessors of property worth 1,000 per cent. more than the price at which it was originally purchased—an average increase in value of 100 per cent. each year.

It is almost impossible to chronicle the rapid advance in property in Calgary, Regina, Winnipeg, Vancouver and other cities of Western Canada.

All of the cities mentioned above and many others which might be enumerated, were once the same size as is Watrous today. Those who were sufficiently farsighted bought lots then at \$100 and \$200 each in these cities, and those who held on to them are to-day rich.

Buy Grand Trunk Pacific Lots in WATROUS now while they are selling at the ground floor prices.



On account of the rapidity with which lots are selling, we advise that you let us make the selection for you and we promise that we will give you the best available remaining lots at the time your order is received.

Make remittances payable to the order of and send direct to the Land Commissioner of the Grand Trunk Pacific Railway, Winnipeg. Receipts for payments made will be issued direct by the Land Commissioner to the Railway Company and when you have completed your payments title will be issued to you direct from the Grand Trunk Pacific Railway.

No interest charged on deferred payments in case you purchase on the installment plan and no taxes to pay until 1912. Lots 50 feet frontage price \$100 and \$125.

Reserve the number of lots you wish to purchase at once and send all remittances to

**Land Commissioner
Grand Trunk Pacific Railway
Winnipeg, Manitoba**

In case you wish any further particulars before buying address

**International Securities Co.
LIMITED
Somerset Building, Winnipeg**

Information Coupon

INTERNATIONAL SECURITIES CO.
Limited,
649 SOMERSET BUILDING, WINNIPEG.

Please forward to me by return mail full particulars of the lots in the above mentioned division to the original narrative of Watrous which is being put on the market.

NAME ADDRESS

office, and with great relish tear in twain a fig.

Get Ready for Fall Plowing.

The fall plowing season will soon be here and if previous years have been any indication of what 1911 is going to be a large number of traction engines will be used.

On another page of this issue

is advertised the Cuddy Steering Device and it would be a good thing for you as a traction plowman to look into this. It has been tried on a great many different makes of engines and has proven a success. It saves a great deal of time and labor and makes the handling of a traction engine in the plowing field easy. Investigate it.

Of Interest to Threshermen.

On another page of this issue will be found a little device the value of which should appeal to every thresherman. Every man who has handled a steam engine knows the difficulties encountered with dirty water and how it multiplies injector troubles.

This little device which is known as the "No Choke Strainer" and

which is manufactured by Imer Beamish, Norwood, Man., is about the neatest little thing that we have seen along this line. It will pay you to look into the matter, as it will save you its cost hundreds of times over before the season is out.

Plain Little Talks on Business.
By Philip S. Fiske.

The great trouble with nearly every woman, when it comes to a matter of business, is that she doesn't know. She never has been told. Her father, or brother, or some other man in the list of relatives has always looked out for her, and with a man's horror lest a woman find out how cold and dishonest and selfish part of the world really is, this well-meaning but short-sighted protector has carefully kept from her the lessons of life that are sure to cost her more if she has to learn them by herself. Then comes the time when she has to transact her own business—and she is absolutely at the mercy of the first sharp-witted gib-tongued individual who comes along.

Everybody ought to know the elementary rule of business, at least. Only be sure you are right; and the best way to be sure you are right is never to make any kind of a bargain or agreement without understanding clearly just what you are doing.

It has been said so many times that it sounds foolish but it ought to be repeated every day; never sign your name to even a receipt till you have read it through understandingly. Don't take anybody's word for what it says; believe only your own eyes. "Nobody will 'think you're suspicious,'" which is the excuse most sensitive people offer for being careless. Any good business man will respect you for your discretion. You wouldn't expect anyone else to give you money without knowing precisely what you were getting for it; only there are some folks going up and down the earth all the time who hope you will.

Say, for example, that a scheme is proposed to you for buying something you want very much and paying for it "a little down and the rest in easy installments." There is nothing to be ashamed of in getting a set of books, or a piece of furniture, or whatever it may be, in that way. You pay more for it in the end than you would if you gave cash, of course, for the concern that sells it is not tying its money up for nothing; but any number of good reasons may make it worth your while to do that, and it's your own affair anyway. Naturally you will have to sign a contract of some kind. The document was drawn up by the lawyer behind the man you are buying from and you may be sure it takes good care of his interests without paying any special attention to yours.

Well, read it through and see

what you find. One or two things you are sure to discover in your "lease." For instance, you agree that the books, furniture, or what-not shall remain the property of the seller until fully paid for, that they shall be used with reasonable care and that they cannot be sold or disposed of until the last instalment has been collected—all of which is perfectly proper on the face of it.

When you have gone that far you are likely to decide as so many people do, that "it's all right" and you "won't bother to read the rest of the fine type." But you may save yourself an unpleasant surprise if you keep right on till you understand that in case of failure to pay any single installment when it is due all your previous payments become forfeited and the goods may be taken away from you; besides any one of a hundred things might come up to make it hard or utterly impossible to keep payments going without interruption, but having once signed the contract you are helpless. If the concern you are dealing with is perfectly reputable it will probably be willing to make any reasonable arrangement in case it is convinced that you are really unexpectedly and unavoidably hard pressed, though it deals with weak human nature so much that it is very likely to be rather disagreeable about it. But if it happens to be of the other variety, which intends to get a big profit from lapsed contracts, it will close the transaction abruptly, telling you that the money you have already given up is no more than a fair lease price; and you have no legal escape from such a position, however strongly you may feel that you are being wronged, for such an alternative was nominated in the bond.

Having, under the hypnotic influence of a skilful solicitor, signed a dollar-down-and-fifty-cents a week agreement, you wonder afterwards why you did it. You don't want the books; you "wouldn't give 'em house room," and finally you decide to let the money they already have cost you go and send them back. Then around comes a man who tells you that you signed a written promise to make the full number of payments and that you will be guilty of breach of contract if you don't do it. If you return the books in good condition at once when you stop paying the installments, that will close the incident, provided you don't prolong the discussion yourself and don't allow anyone else to prolong it.

This matter of buying things on a partial payment basis is simply an example—the most common and forcible, but only one—of which all of us should be careful to know before we sign anything just exactly what we are putting our names to. If it is a receipt that requires your signature, make sure that the date, the amount and other de-



The Up-Keep Cost of a Car—Is it as Low as the Everitt?

IT is one thing to show a car flying along the road, but that doesn't tell the full story, for the same car may need daily care and adjustment at

home out of all proportion to the mileage. Avoid that. This Up-Keep Cost is a matter of intricacy of design, and to a great extent of the complexity of the motor with its fine setting of adjustments.

When you get an "Everitt," you get a car of few parts, and in it a motor of exceptionally few parts, built around a solid main casting. This solid main casting is rigid and takes up all vibrations so they cannot loosen and rack the delicate adjustments of timing, valve lift, etc., that give smoothness of action and long life to the motor. The "Everitt" admits of remarkably low running expense—low gasoline consumption, because no power is wasted through motor troubles—and remarkably comfortable riding through absence of vibration. Wouldn't YOU like to know more about the

"EVERITT"

Get Catalogue

Demonstration arranged

TUDHOPE MOTOR CO., Limited, ORILLIA
Tudhope-Anderson Co., Ltd., Winnipeg Calgary Saskatoon, Lethbridge Regina. 30

Wall Plaster

For good results use

The Empire Brands of Hard Wall, Wood Fiber and Finish Plasters.

The Sackett Plaster Board

Shall we send you the Plaster book?

THE MANITOBA GYPSUM COMPANY, LIMITED
WINNIPEG, MAN.

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

tails are correctly stated; if it is a note, or a mortgage, or any kind of a binding agreement, take the same precautions. This doesn't mean satisfy yourself by a hurried glance; read every word until you understand it. It doesn't take long and it may save you money and anxiety. Having taken proper care in the first place, stand by any agreement you make and never try to "crawl" but if need be make a frank explanation of any delay or interruption in carrying out the provisions of a contract.

Two other general rules apply to all business transactions: never lose your temper, apparently, at least, and if you find yourself in a really serious tangle consult a lawyer. Monkeying with legal complications when you don't understand them is as dangerous as trying to make a smouldering fire perk up with a kerosene can.

Cockshutt Plow Company to Enlarge Factory.

It is but a short time since we detailed in the columns of this publication extensions that were made to the Cockshutt Plow Company's factory at Brantford, Ont.

Information is at hand to the effect that new extensions are demanded owing to the increase in business. These extensions are as follows:—

Carpenter Shop ... 109 ft. 4 stories
Moulding Shop ... 107
Structural Shop ... 96
Blacksmith Shop ... 106
Iron Storage ... 96
Casting Storage and

Paint shop ... 105, 3 stories
The factory of the Cockshutt Plow Company is arranged according to what are known as bays, each bay being in a sense a unit, and the new additions will total forty-six of these bays.

The above extensions were necessitated through the large expansion of the Cockshutt Plow Company's business in Western Canada as well as in other foreign countries. The Canadian West absorbs a large amount of the above concern's goods and it is largely a matter of providing suitable factory facilities in order to keep pace with the demand.

Preparations are now under way for a five story concrete and stone warehouse at Regina. This will have a frontage of 200 feet on Broad Street and trackage facilities to three railways. This will facilitate the handling of their Saskatchewan business with better advantage and will help to keep pace with the large demand for Cockshutt goods in that province.

In order that they may be linked more closely with the Canadian West Mr. A. M. Nanton, of Winnipeg, and Mr. E. A. Mott, were appointed directors. Mr. Mott, who has guided the Cockshutt's interest in the West for a period of years and who has seen it grow from a comparatively small business to one of the largest in Western Canada is also Western general manager.

GREAT WEST

CUT PLUG

SMOKING TOBACCO



10¢

EVERYWHERE

The Disc Harrow.

Continued from page 30

overcome sidehill sidedraft, that side which is farthest up the hill must be given the deeper set to work the soil the same depth at the same time and give equal draft on both sides. Also to disc properly, disced land must be lapped half way to cut and throw all of the soil which is being worked and do away with that ridged appearance which is too often seen. To do this, that side on which all the land is be-

ing cut and thrown will have the more work to do and consequently will have the most draft, if it is not properly adjusted.

The disk harrow must have a good strong, well trussed frame, the braces so placed on the tongue to ensure the greatest rigidity. Some men say the weight on horses' necks is together with the side jar too hard on their horses, but the weight is almost entirely done away with if the seat is placed well back over the disks, so that the weight of the operator balances the machine; then the only jar is that

from side to side, which is only given when going over uneven ground. Of late years tongue trucks have been placed on the market to do away with all weight and jerk on the necks of the horses, and also to prevent breakage in turning on uneven ground.

Thus it has been shown that a farmer who will get the best results from his disks and prolong their life will keep them sharp; all nuts tight; bearings, well oiled; and his machine stored after the working season in a dry building.

THE VALUE OF A HUMAN LIFE

Can any sacrifice be too great or any monetary compensation too heavy a price to pay for the preservation of a single human life?

It is generally held by all Civilized Communities that the saving of the life of one of its units takes precedence over all other activities or considerations. What will a parent not suffer to safeguard his own offspring from disease or risk from whatever source?

If, therefore, men will take such pains in the interests of those of their own household, what may they not do in recognizing the services of any institution that life's purpose of which is centred on the preservation of the health of a whole community?

There is no problem half so important to the concerns of a rapidly increasing and no less quickly congesting populace than that of its sanitary affairs, the simple neglect of which may mean a recurrence at any moment of those dreadful scourges that in years gone by—in an age of hopeless ignorance, swept whole cities and tribes from the face of the earth.

When men were ignorant they were scarcely to be blamed, but in these days of scientific certitudes with regard to everything that affect the cleanliness and health of man and beast, this excuse can no longer be urged.

The simple laws of health are now within the common knowledge of our school children. They are imperious laws are those statutes of the Great Creator of the Universe that he will permit no creature to treat with impunity, but the failure to live in harmony with them—whether from ignorance or criminal neglect—brings its own swift punishment of disease and death.

The rapid and continual increase both in the urban and rural population of Western Canada, is calling aloud for precautions which we know are being foolishly neglected on every hand. The writer of this warning has visited practically every settlement and community of any size from Winnipeg to the Pacific and has a perfect knowledge of actual conditions of the average farm home in these North West Provinces.

In quite a few cases, serious and successful efforts have been made to safe-guard the health of the inmates of the farm home, town or village, but there still remains the fact that the sanitary provisions in the great majority of cases are altogether inadequate if not futile, and that in many cases the absolute neglect of any precautions whatever are a disgrace even to the worst we have read of "Darkest Africa."

This subject has been written about until it has almost reached the nauseating point. It seems hopeless to make an appeal that will reach the mark in the awakened energies of every householder until some calamity reminds him—

generally too late—of his criminal negligence.

Were the remedy or the precaution of an expensive or complicated nature one might feel inclined to pity rather than blame the absence of it, but neither plea can for one moment be urged in the face of the fact that all that is necessary is so easily within the reach of any man or woman who is physically able to take care of their own health and that of their progeny.

Municipal authorities, fortunately, are nowhere slack (so far as the writer has observed). The mischief is done by individual householders and that mischief often means the undoing of all that it has taken Municipal Authorities years and thousands of the people's dollars to accomplish.

What would be the feelings of any reader of the *Canadian Thresherman and Farmer* who has a child struggling in the throes

the most important of these, the closest that are necessary in domestic use. An absolutely sanitary chemical closet has recently been patented by the firm of Parker-Whyte, Limited, of Winnipeg, can be installed in any home at very little cost. The "Parkyte" closet, as it is called, needs no water, plumbing or excavating to keep it in perfect working order and there is no "burning" process in connection with it.

The device has been strongly endorsed by leading health inspectors throughout the Dominion and is specified by architects in many important public and private institutions and homes particularly in the West. With the use of this fine appliance, the residents of any rural district may enjoy all the comfort and security of the most modern convenience without sewage. Were this simple and slightly little appliance only seen and its

Beginning in a very modest way little more than two years ago, Messrs. Parker and Whyte (two of Winnipeg's most energetic and intelligent young business men) were quickly compelled to go afield for assistance in handling the overwhelming proportions of their business and in September 1910 they incorporated as "Parker and Whyte, Limited" with a paid-up capital of \$50,000.

The progress continued, however, to such an extent that this figure was very soon found to be inadequate to the proper handling of the business and a supplementary charter was taken out in March of the present year which brought the capital account up to \$150,000.

The solidity and high character of the organization is evident in the personality and record of the men who now form the directorate and are its principal shareholders. Mr. D. C. Cameron, who has just recently been appointed Lieutenant Governor of Manitoba, is president of the Company, while Messrs. W. L. Parrish and Frank O. Fowler are first and second vice-presidents respectively. Mr. C. S. Parker is managing director and Mr. S. H. Whyte, secretary-treasurer. The business was founded by the two last named gentlemen, and it is due to their sound judgment and untiring energy that it has in such a remarkably brief space of time assumed the proportions it has reached today, while the fact that they have secured the co-operation of the business magnates who are now their associates is a striking tribute to their integrity and business capacity.

The company's head office is at 1203 McArthur Building, Winnipeg and within convenient reach of the offices, at 246 McDermot Avenue is the factory where the "Parkyte" Sanitary Closets are manufactured in ever-increasing quantity to meet the continuous demand. In the same building are also located the ware-rooms, packing and shipping departments, and also the great tanks in which are stored the liquid disinfectants, which are rapidly finding their way to every point of the Dominion from Coast to Coast.

Branches have been established at Toronto and Vancouver, and amongst other trophies and testimonials to the vital importance and value of these sanitary specifics may be mentioned the fact that for three successive years; 1909, 1910 and 1911 the Winnipeg Industrial Exhibition Association has awarded its diploma for sanitary appliances to Parker & Whyte, Limited.

The exhibits of this company at Winnipeg, Brandon, Portage la Prairie, Saskatoon, Moose Jaw, Regina, Calgary and Vancouver attracted much attention from visitors. Exhibits will also be made at Toronto, London, Kingston, Ottawa, Edmonton, New Westminster, Victoria and the Vancouver fall fair.



A Sample Fair Exhibit of Parker-Whyte Co. Ltd.

of diphtheria, typhoid or possibly some still more horrible visitation, if he found that beyond all doubt the sickness of his loved one had been contracted from the filthy neglect of his next-door neighbor?

That is actually happening with greater frequency than the world is aware of. No one reading this paper needs to have described to him the back yards, closets and rubbish heaps of some of our Western farm homes, country hotels and boarding houses. They cannot be described and they can't be compared to anything else on earth because there is nothing on earth like them.

Thanks to scientific research and especially in some of its more recent achievements, it is possible to secure at very little expense a humanly perfect immunity from the danger that lurks in every receptacle of decaying matter such as must be associated to a greater or less degree with every habitation.

Take the commonest and always

effectiveness more generally known, there can be no doubt that it would greatly lessen the mortality statistics that at times—particularly in prolonged dry seasons—run up to an alarming figure.

This enterprising company not only handles the closet which was its first staple product but has a large plant constantly employed to its full capacity in the manufacture of chemicals, disinfectants, insecticides, liquid soaps and soap containers and sanitary appliances of various descriptions, all of which are in perfect accord with the last development of scientific knowledge in its campaign against every form of germ and bacteria.

Incidental to the programme of the "Parkyte" business is its sheep and cattle dip specific the "Parkyte" floor oil, spraying systems for insect exterminators which destroys both insect egg and larva of the pests without attendant injury or discomfort to the surroundings in the home or stock building.

THINK OF THE WORD

“PARKYTE”

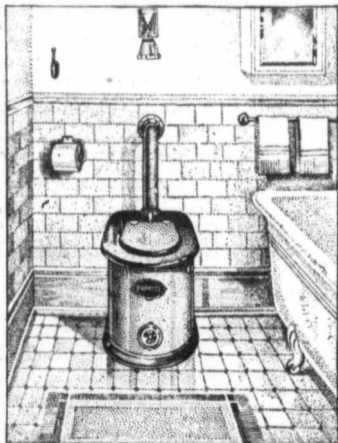
Get it as solid and firmly rooted on your brain as the word BIBLE, because it is as surely a new revelation in domestic science in its relation to cleanliness and health. It reveals the **ONLY WAY OF ESCAPE** from the pestilence that lurks in every corner of refuse and decaying matter and tells how you may safe-guard yourself and those of your own household from all the ravages of disease germs.

Parkyte Improved Sanitary Closets

are perfectly adapted to the Farm Home, Country Schools, Hotels, etc. Their installation is simplicity itself—requiring no water, plumbing, excavating, or burning. Because they so completely meet the requirements of perfect sanitation, they are specified by well-known architects and strongly endorsed by leading health inspectors throughout the Dominion.

A “Parkyte” Closet, while it absolutely does away with the frightful risk of those primitive, unsightly and evil-smelling appliances that are still in use, is an attractive piece of cabinet work that will harmonize perfectly with the most elaborate scheme of interior finish and take its place at once as a credit to the house furnishing.

It means that at a comparatively trifling cost, every prairie home and every rural district resident may now have the advantage of the most modern conveniences of the best equipped city home, without sewage, and with a complete immunity from bacterial risks.



“PARKYTE”

Sheep and Cattle Dip will do no less for the health and comfort of your Live Stock than the “Parkyte” system of Hygiene and Sanitation guarantees to the household.

“PARKYTE” and PARASITE cannot live together and it is death to the parasite every time. “PARKYTE” Insecticides, Chemical Disinfectants and Germ Destructors will positively accomplish all we say they will do and are sent out to the public with the undertaking on our part that **“If our goods are not all we say they are, or even what you think they ought to be, back goes your money—no argument—just money.”**

Parker - Whyte Limited are the inventors and sole manufacturers of PARKYTE goods. This company numbers among its directorate and stockholders some of Winnipeg's strongest financial men whose business successes are a complete guarantee, not only of the stability of this great manufacturing concern, but of the high character, efficacy and intrinsic value of the “Parkyte” specialties to any household or community who will use them in all that concerns the vital question of cleanliness and health. A Western Branch has been established at Vancouver and customers of the firm who are using “PARKYTE” preventives are to be numbered in thousands all through the West. Ask any one of these you may know what they think of “PARKYTE” or write

PARKER - WHYTE Ltd.

General Offices:
1203 McArthur Building

Winnipeg.



Womans' Department

Conducted by PEARL RICHMOND HAMILTON

A HOUSEHOLD FORUM FOR THE DISCUSSION OF EVERYTHING THAT PERTAINS TO THE HOME



FOUR LEAF CLOVERS.

I know a place where the sun is like gold
And the cherry blooms burst forth with
snow
And down underneath is the loveliest nook,
Where the four-leaved clovers grow.

One leaf is for Hope, and one is for Faith,
And one is for Love, you know;
And God put another one in for Luck,
If you search you will find where they
grow.

But you must have Hope, and you must
have Faith,
You must love and be strong, and so
If you work, if you wait, you will find the
place
Where the four-leaf clovers grow.
Ella Higginson.

FOR THE WOMAN WHO HAS LOST HER SMILE.

(Dear Readers:—Among the letters I receive are many from women who are so heavily burdened that they are bowed down with discouragement. I realize that there are bitter hardships for these women to bear, and I sympathize sincerely with them. I long to give them a word of encouragement, and from "A Little Bundle of Cheery Thoughts," which is in my possession, I have gleaned the following quotations. I trust they may cheer and help you in your daily work. P. R. H.)

"The ability to smile, to enjoy the laughter of others, to spread the contagion of happiness wherever we go, makes us not only a welcome guest, but an actual blessing."

"We are so desperately intent on making a living that we forget to live, so wrapt up in our solemn vocation that we forget that we owe the world at least the courtesy of a smiling face and each other the inspiration of a cheery word."

"I am bigger than any thing that can happen to me. All these things, sorrow, misfortune and suffering are outside my door. I am in the lumina and I have the key."—Charles F. Lummis.

"Twixt optimist and pessimist the difference is droll;
The optimist sees the doughnut, the pessimist the hole."

"To give pleasure to a single heart by a single kind act is better than a thousand head-bowings in prayer."—Saadi.

"Post-mortem kindness does not cheer the burdened heart; flowers on the coffin cast no fragrance backward over the weary way."—George W. Childie.

"The inner side of every cloud is bright and shining;
I therefore turn my clouds about
And always wear them inside out
To show the lining."
Ellen Fowler.

"One who claims that he knows about it
Tells me the earth is a vale of sin;
But I and the bees and the birds, we doubt
it,
And think it a world worth living in."
Ella Wheeler Wilcox.

"It's the song ye sing and the smiles ye wear,
That's a-makin' the sun shine every where."
James Whitcomb Riley.

"The soul would have no rainbow
Had the eyes no tears."
John Vance Cheney.

"What we call Luck
Is simply Pluck,
And doing things over and over;
Courage and Will,
Perseverance and skill,
Are the four leaves of luck's clover."

"If you have knowledge, let others light their candles by it."—Thomas Fuller.

"Don't you go and git sorry for yerself.
That's one thing I can't stand in nobody.
There's always lots of other folks you kin be sorry fer 'sted of yerself."—Mrs. Wiggs.

"So many gods, so many creeds,
So many paths that wind and wind;
When just the art of being kind
Is all the sad world needs."

Ella Wheeler Wilcox.
"Don't do anything, till you do it, and when you've done it, stop doing it."—William Gillett.

"But in the mud and seum of things
There always, always, something sings."
Ralph Waldo Emerson.

"Joy is a matter of character."
"The Lord meant us ad to be happy."
"To believe in the heroic makes heroes."
—Disraeli.

"The ornaments of a house are the friends that frequent it."—Ralph Naldo Emerson.

"Whether the world is blue or rosy depends upon the kind of spectacles we wear. It's our glasses, not the world, that needs attention."

"When things first got to goin' wrong with me, I says: 'O Lord, whatever comes keep me from gittin' sour!' Since then I've made it a practice to put all my worries down in the bottom of my heart, then set on the lid an' smile."—Mrs. Wiggs.

"What we see depends mainly on what we look for."—John Lubbock.

"To enter Heaven, a man must take it with him."—Henry Drummond.

"I believe in gittin' as much good outen life as you kin, not that I ever set out to look for happiness; seems like the folks that does never find it. I jes' do the best I kin where the good Lord put me at, an' it looks like I got a happy feelin' in me 'most all the time."—Mrs. Wiggs.

"If I cannot do great things, I can do small things in a great way."—James Freeman Clarke.

"All 'e of God that is, or is to be,
And 'od is good."
John G. Whittier.

"Every man should keep a fair-sized cemetery in which to bury the faults of his friends."—Henry Ward Beecher.

"There are persons so radiant, so genial, so kind, so pleasure-bearing, that you instinctively feel in their presence that they do you good, whose coming into a room is like the bringing of a lamp there."—Henry Ward Beecher.

"The perfect model makes the perfect copy. The successful finish of everything on earth depends on the right thought which brought it into being."—Agnes Greene Foster.

"People who lead busy lives and are happy never find time to have hysterics."

In one day you may meet five people.
5 x 365 = 1825. 1825 times you might say a word that would help another.
What a vast opportunity in a year!

Religion is the touch of God,
The Infinite, in all our affairs.

"Sir Robert Peel told Lady Derby that he learned a verse of poetry every night before he went to bed to take away the taste of the House of Commons."—Janey Canaue.

"The greatest thing in the world is comedy. It is straight from the hand of God. The comic spirit enriches the one who possesses and exercises it, and it enriches those who receive it. No gift should be more conscientiously fostered for the sake of one's happiness and one's looks than the gift of making people laugh and forget."—Maxim Elliott.

"I forgot she was plain—I remembered the divine halo of her smile."

"When a crash happens all a woman has left to hold on to is her religion. According as her spiritual side has developed will her physical side stand the strain."

Mother's Corner

TIRED MOTHERS.

A little elbow leans upon your knee,
Your tired knee, that has so much to bear;

A child's dear eyes are looking lovingly
From underneath a thatch of tangled hair.

Perhaps you do not heed the velvet touch
Of warm, moist fingers, folding yours so tight—

You do not prize this blessing overmuch;
You almost are too tired to pray to-night.

But it is a blessedness! A year ago
I did not see it as I do to-day;
We are all so dull and thankless; and too slow

To catch the sunshine till it slips away.
And now it seems surpassing strange to me

That, while I wore the badge of motherhood,
I did not kiss more oft and tenderly

The little child that brought me only good.

And if, some night, when you sit down to rest,

You miss this elbow from your tired knee,
This restless, curling head from off your breast,

This lisping tongue that chatters constantly;

If from your own the dimpled hands had slipped,

And ne'er would nestle in your palm again;

If the white feet into their grave had tripped,

I could not blame you for your heart-ache then!

I wonder so that mothers ever fret
At little children clinging to their gown,
Or that the footprints when the days are wet

Are ever black enough to make them frown.

If I could find a little muddy boot,
Or cap, or jacket, on my chamber floor;

If I could kiss a rosy, restless foot,
And hear its patter in my home once more;

If I could mend a broken cart to-day,
To-morrow make a kite to reach the sky

There is no woman in God's world could say

She was more blissfully content than I.
But, ah! the dainty pillow next my own
Is never rumpled by a shining head,
My singing birdling from its nest has flown.

The little boy I used to kiss is dead!
—May Riley Smith.

"A woman who creates and sustains a home, and under whose hands children grow up to be strong and pure men and women, is a creator second only to God."
—Helen Hunt Jackson.

The decline of Greece began when the women relegated the duties of motherhood to the lower classes. So will it be with our beloved nation. It is un fashionable, now, to have a large family. O, for a return of the days when every home resounded to the "Ringing of girlish laughter, and the "Echoing of boyish strife."

Queen Victoria set her subjects a noble example. She could find time to be a queen and an empress and at the same time be a noble mother of a large family.

O, that mothers would awake to the realization of their power in the home for either good or evil, on the plastic mind of the little child. If she herself be good and kind and gentle and then if the father would fall in line and do his very best to aid her in every good word and work and to set to the boys an example of chivalrous deference to motherhood, how soon this old world would be revolutionized and the millennium draw near.

"Blessings on the hand of woman,
On its strength and on its grace,
In the cottage, palace, hotel,
O, no matter where the place.
Would that storms never assailed it
Blessings ever safely curled,
For the hand that rocks the cradle,
Is the hand that rules the world."

A home filled with kind words, peace and contentment, loving interest in each other, is so charming and enjoyable that one can feel the love and kindness almost immediately upon entering. These are the homes where disputes and divorces never enter, where the brothers become inseparable friends and the sisters remain chums always.

I have an article on "Helps for Expectant Mothers," which I will gladly send to any woman who requests it. Many are writing for it, and because of letters I receive from young wives in the far West, I continue this offer another month. I am anxious to help my readers who are far from medical help. P. R. H.

"Mother Nature's playthings—acorn-cups and daisy-chains, pebbles, moss and tinted shells—delight her children more than the finest toys that men can make."

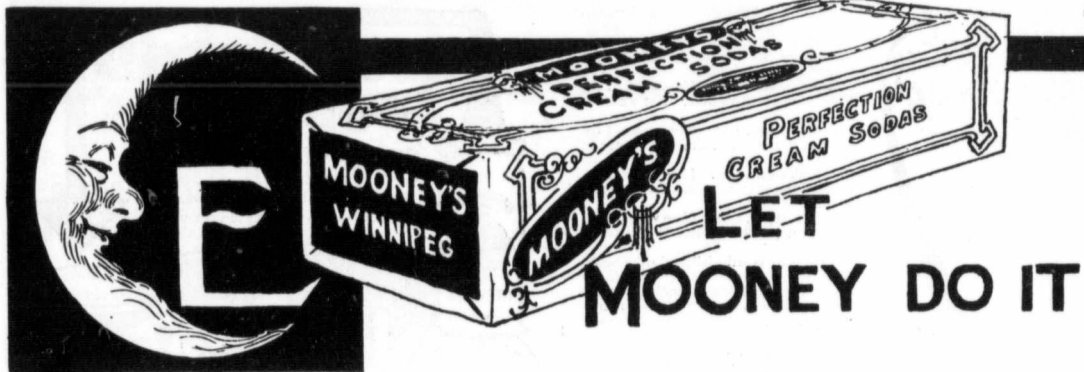
When a child has a very high fever for some time, put a bag of ice or a bag of cold water at its head and a hot water bag at his feet. This keeps the rush of blood from going to his brain. If there is pain in the stomach, put hot flannels on his stomach.

For severe pains in the stomach a mustard plaster over the stomach is splendid. This is made by mixing lard and mustard together and putting it between two layers of cotton cloth.

When a child or any one has severe attacks of indigestion, no solid food should be given. Only food that is thin enough to be strained through a sieve will do.

In case of fever and stomach trouble, never give a child milk to drink.

The Board of Health at the Winnipeg Exhibition had a very instructive display of foods, showing very clearly the difference between pure and impure foods. It also had splendid demonstrations of contrasts in cleanliness and uncleanness in homes, as well as convincing lessons in the distribution of diseases. One chart impressed me forcibly. It contrasted the bottle-fed baby with the nursing baby. This chart made the following statements:



DON'T BAKE—BAKE—BAKE IN THE HARD
OLD FASHIONED WAY

It shortens your life, spoils your temper and ruins your looks.
Try the new way—the **MOONEY** way.

No spoiled baking. No overheated kitchens. Lots of leisure in the home.
MOONEY'S BISCUITS are so fresh, so crisp, so appetizing that they are largely taking the place of home baking with thousands of Western people. Ask for

MOONEY'S PERFECTION SODA BISCUITS

in air tight, dust proof and damp proof packages
—or in sealed tins if you prefer them.

Made in the Big Sanitary Factory in Winnipeg.

Seventy per cent of the city babies get their food through a tube sixty miles long. Then the tube was pictured. It began with a cow in the country, next it was in the milkman's wagon, from there it passed on to the railway station, then on the train, another station, and on to the fresh milk depot, from which it reached the home of the baby by the hands of the milkman.

It often takes forty-two hours for the milk to run from the cow end of the tube to the baby end of the tube.

And yet some people wonder why so many babies die.

The mother-fed baby gets its milk fresh, pure and healthful; no germs can get into it.

To lessen baby-deaths, let us have more mother-fed babies. You can't improve on God's plan. For your baby's sake, nurse it."

Last week the mother of a very sick baby told me this: "I could have nursed my baby, but the doctor said my milk was not good. He thought he was doing a kindness by telling me this." If you had seen the tears in that mother's eyes you could have read her opinion of the doctor. Such a doctor should be prosecuted.

In a bulletin on Infant Feeding, issued by the Department of Public Health in the city of Winnipeg—A. J. Douglas, Medical Health Officer—the following table is given for the aid of the mother who is forced to give her baby artificial food. I trust it may help many mothers.

Milk from a herd is better than milk from one cow; if a cow is diseased, the baby may acquire the disease, while the danger is lessened if taken from a herd.

Cows milk, undiluted and unmodified, is unfit for infant food. It must be diluted on account of its richness in curds. When diluted, however, it contains too little fats and sugar. Hence, after dilution, we must add cream and sugar to the milk.

This idea being to imitate the milk of the mother.

The following materials are required for milk modification:—

Water.—This should be absolutely pure.

Lime Water.—Used to overcome the acidity of cows milk and to lessen the consistency of the curd. It does not agree with some infants. Used too freely may cause constipation. May be obtained cheaply from the druggist.

Sugar.—This is not added to sweeten it, but to make it conform as nearly as possible to mother's milk. Milk sugar is best, which you may get from the druggists. If you can't get milk sugar, use cane sugar, but only half the quantity.

Barley Water.—Tends to make curds more easily digestible. Is made as follows—To 2 tablespoonfuls of barley meal add enough of a quart of cold water to make a thin paste, then add the remainder of the quart of water, stir and boil 15 to 20 minutes. Barley water should not be kept from day to day, but should be made fresh every morning.

Oatmeal Water.—Is used the same way as barley water, especially when a laxative effect is desired. To make it, stir 2 tablespoonfuls of oatmeal in a quart of boiling water, cover it and let simmer for 2 hours. Replace the water as it evaporates so that there will be a quart when done. Make fresh every day.

Milk Mixtures.—The upper third of a bottle of milk is called "10% milk"; the upper half "7% milk"; and the entire bottle "4% milk." The upper third or upper half may be easily taken off with a spoon or small dipper without disturbing the lower milk. In using a spoon it will be remembered that eight teaspoons are equivalent to one ounce, or to four dessert spoons or two tablespoons.

During the first four weeks the infant is to be fed every two hours and take about two ounces at each feeding. The food should be mixed in the morning for

the entire day. It should be placed in the nursing bottles, enough for a feeding in each bottle, or should be put in covered glass jar and placed on ice. For the first five weeks in life the baby will use twenty ounces a day. The following milk mixtures are based on that amount. For a 25 ounce mixture, add one-fourth more of

each ingredient. For a 30 ounce mixture, add one-half more of each ingredient.

Milk Mixtures.—(From Birth to Three or Four Months of Age.)

1. Milk sugar, 1 oz. Enough hot water to make 20 ounces.

After the milk sugar is dissolved, add two ounces of upper third milk (10% fat)

Be A Bit Curious



You've tried other brands of Tea. Now try Blue Ribbon. Only in this way can you find out just how rich, strong and delicious Blue Ribbon is. No other tea compares with it. And if you don't find it superior to other tea, take back the packet—the grocer will refund your money.

**GET THE REAL
LABOR-SAVING WASHER
THE 'GEE WHIZZ'**

Does better work, is easier to operate and lasts longer than any other Washer made

\$12.50

(complete with Wringer)

Direct from maker to you

The Gee Whizz

will wash anything, from lace curtains to blankets and carpets—will wash them in one quarter the time it could be done by hand and much quicker than any other washer.

A Guarantee goes with every Gee Whizz.

Do not slave over the wash tub another day. Get a Gee Whizz.



The Gee Whizz Mfg. Co.
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HOME MONEY MAKERS**



Home knitting is quick and easy with any one of our 6 Family Knitting Machines. Socks and Stockings, Underwear, Caps, Gloves, Mittens, etc.—Plain or Ribbed—can be knitted ten times as fast as by hand, and for far less than they cost ready-made.

A child can work our machines. Besides your own family work, you can make good money knitting for others.

FREE—6 illustrated Catalogue—G.H.I.K.L., 6 Agents wanted in every locality for Typewriters and Home-money-maker knitting machines. Address

CREELMAN BROS.
box 612 GEORGETOWN, Ontario.

This is suitable for the infant immediately after birth.

2. Milk sugar, lime water and water same as for No. 1 with the addition of 3 ounces upper third milk.

3. Milk sugar, 1 oz. Lime water, 1 oz. 4 ozs. of upper third milk. Hot water to 20 ozs.

4. Milk sugar, 1 oz. Lime water, 1 oz. 5 ozs. of upper third milk. Hot water to 20 ozs.

5. Milk sugar, 1 oz. Lime water, 1 oz. 6 ozs. of upper third milk. Hot water to 20 ozs.

6. Milk sugar, 1 oz. Lime water, 1 oz. 7 ozs. of upper third milk. Hot water to 20 ozs.

If the baby is artificially fed from birth, begin with Mixture No. 1. Substitute the succeeding mixtures gradually until the fourth month. After the fourth month the above mixtures are not strong enough.

In weaning an older infant, use the mixture suited to the age of the child from the above or from following mixtures:

From the third or fourth months to the end of the ninth or tenth month.—For these is used the upper half milk or milk containing 7% fat. This may be secured not only from the upper half of the bottle of good milk, but also by mixing 3 parts of good milk with one part of cream.

1. Milk sugar, 1 oz. Lime water, 1 oz. Enough hot water to make 20 ozs. After the milk sugar is dissolved add 3 ounces of upper half milk.

2. Milk sugar, 1 oz. Lime water, 1 oz. 6 ozs. of whole milk. Hot water for 20 ozs.

3. Milk sugar, 1 oz. Lime water, 1 oz. 8 ozs. of whole milk. Hot water for 20 ozs.

4. Milk sugar, 1 oz. Lime water, 1 oz. 10 ozs. of whole milk. Hot water for 20 ozs.

5. Milk sugar, 1/2 oz. Lime water, 1 oz. Enough water to make 20 ozs., to this add 12 ozs. of whole milk.

6. Milk sugar, 1/2 oz. Lime water, 1 oz. Enough water to make 20 ozs., to this add 14 ozs. of whole milk.

7. Milk sugar, 1/2 oz. Lime water, 1 oz. Enough water to make 20 ozs., to this add 16 ozs. of whole milk.

Correspondence

We are pleased to publish the following reports and papers which I am sure you will all find interesting.

Farewell to Mrs. Nellie L. McClung.

Members of the H. E. S., Manitou, assembled in the Opera House, Saturday afternoon, May 20th to farewell one of their members—Mrs. Nellie L. McClung—who has decided to take up her residence in Winnipeg. The afternoon consisted of social intercourse, tea, music and speeches. Almost one hundred women were present from town and country.

The hall was tastefully decorated and a thoroughly enjoyable time spent—in fact, one of the most enjoyable afternoons ever indulged in by the society and the first afternoon of its kind where women of all creeds and of all conditions of life met as one.

Mrs. G. F. Bradley, Miss Cassin and Miss Walkinshaw delighted the audience with their singing and the president, Mrs. C. H. Brown, gave a very able address.

Short speeches were also given by Mesdames Armstrong, Swinton and Rome and, last but not least, a talk from our departing member—Mrs. McClung.

She told us of her days of discouragement when she wrote and wrote and always had her manuscripts returned, but nevertheless she kept right on and this she thinks is the secret of success—perseverance.

So many of her writings had been rejected that she made up her mind to write something as she herself puts it, "that those fellows would be glad to get and pay her well for it." And she has succeeded and we wish her more success. The afternoon closed by singing National Anthem.

Manitou's loss is Winnipeg's gain. Mrs. McClung has many warm friends here who welcome her sincerely.

The following report was received from Morris:

The usual monthly meeting of the Home Economics Society was held on April 15th in the County Court Hall. Two very interesting papers were read. One on flower culture by Mrs. Bestwick

**GOOD BREAD
GOOD CAKES
GOOD PIES**

Everything on baking day supremely
GOOD—always—if you always use

FIVE ROSES FLOUR

"UNBLEACHED
YET WHITE AS SNOW"

FOR BREAD FOR CAKES

Good conscientious housewives with the highest ideals as to purity in the food they serve, use only FIVE ROSES FLOUR

**BETTER BREAD
BETTER CAKES
BETTER PIES**

Never a criticism if you always use FIVE ROSES FLOUR
LAKE OF THE WOODS MILLING CO., LTD.

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N. G. LESLIE, Manager, Winnipeg Branch

BREDENBURY

SASKATCHEWAN

ANDREW CARNEGIE, speaking of investments, said: "Place all your eggs in one basket, and then *watch* that basket." This advice may be right or wrong, but the fact remains, that under the conditions of modern life ordinary investments require strenuous watching. We know that the possibilities awaiting the investor in BREDENBURY are tremendous, and that the craving for property in this divisional point is rapidly increasing. Its destiny as a big railway point is assured. Branch lines connect it with the three great Transcontinental Railways. It is the Divisional Point of the North-Western Division of the C.P.R. Get a share of the lots offered now. **DON'T DELAY!**

Today, if you know which side your bread is buttered on you will buy in BREDENBURY. There's money in it for you—big money—in a short time. It is the point which has been deliberately chosen by the C. P. R. to supersede such an old established town as Yorkton as Divisional Point on that very important branch of their great system. BREDENBURY will be another Saskatoon. There are fortunes to be made in BREDENBURY, with its railways running to all points of the compass, and with the splendid agricultural country all around it. Its population will exceed the 10,000 mark before many years. Get in early. **GET IN NOW.**

Bredenbury is the centre from which the C. P. R. will run its branch lines south to Esterhazy and north to Kamsack, the latter line being eventually continued north to the Pas Mission, connecting at this point with the proposed government railroad on Hudson's Bay which is to run from Pas Mission to Fort Churchill. Thus Bredenbury becomes the centre of a perfect network of important trunk and branch lines, all of which will promote its growth and make it one of the largest railroad centres in the West—a place as large as Brandon or Saskatoon. What will it mean to YOU?

"GRIP STRONG A CHANCE LIKE THIS BEFORE IT SLIPS ALONG"

—OUR—
GUINEA GOLD
GUARANTEE

WE GUARANTEE that the titles to lots in Bredenbury are under the Torrens system, and are guaranteed by the Government.

WE GUARANTEE to furnish a good and valid deed to each purchaser of a town lot in Bredenbury as soon as the total amount of the purchase price is paid.

WE GUARANTEE to pay all expenses, both for time and money expended by any person who, upon investigation, finds that we have stated anything in printed literature or written letter materially at variance with the facts in regard to Bredenbury.

WE GUARANTEE to return all money paid to us if conditions at Bredenbury are not as represented in our printed matter and written letters.

Address all enquiries
to the Sole Agents:

THE WALCH LAND COMPANY

Northern-Crown Bank Building

WINNIPEG, MAN.

and one on How to be Happy by Mrs. Forde. The society is preparing for a concert to be given under its auspices on the evening of Coronation Day. There will be both local and outside talent on the programme so we expect to have a first class entertainment.

Signed by Secretary.

I wish I might have the two papers mentioned for publication.

A letter from Birtle, Manitoba, states: "I am very much interested in the work of the Household Science all over the Province and I think a great deal of good will be accomplished by it, as it brings together all classes and denominations as nothing else will. We have a very good branch here numbering about sixty and we have some very good papers read. I shall be pleased to send you reports occasionally and any papers that we think good and that would be of general interest."

I will be pleased to publish the papers.—
P. R. H.

From Carmen

The Dufferin Home Economics Society held a very successful meeting on June 15th. The following was the programme: Reading "Home Economics" from the Nor'West Farmer by one of the member's paper on Breadmaking by Mrs. Parrott, who took first prize on her bread at the Winnipeg Industrial last season. Several members made salads and brought them to the meeting.

The salads and sandwiches were passed around and a social time was enjoyed by all present. There was a general discussion on salads and salad dressings and recipes exchanged.

The paper on Breadmaking was a splendid one and treated on all phases of that art, and our society feel very proud to have a prize bread maker for one of its members.

One member who uses the bread mixer brought a loaf of her bread and said she couldn't be without the mixer in her home, and considered it a much easier method than the old way.

Some new members joined us and more have promised to join next time

when our president entertains the society at her home.

Our society attended the Grain Grower's picnic through the kindness of the Grain Growers' Association. Mrs. Murray, our president gave a short address on the aims and objects of the society and appealed to the Grain Growers to have more of their homes represented at our society.

H. C. F.

I should like the paper on Breadmaking by Mrs. Parrott, if I may have it, for publication. I would like to have some of the recipes for salads too. I am sure many of our readers would like them.

P. R. H.

The following paper on Buttermaking by Mrs. Robert Shelton of Manitow, is one that is full of helps for our readers:

Paper on Buttermaking

Each cow should as far as possible be milked by the same person as near the same hour night and morning in clean pails and should be strained and separated as soon as possible after drawn from the cow. In order that all solid impurities may be at once removed before they dissolve and become mixed with the milk. The cream should then be thoroughly cooled before mixing with other cream and well stirred each time fresh cream is emptied, no fresh cream should be put in the cream can within from twenty to twenty-four hours of churning as sour cream churns more easily than sweet, and if churned together the sweet cream would be all left in the buttermilk.

The churn should be well scalded with boiling water then cooled with cold water; put in the cream and in winter for six gallons of cream I add one-half teaspoon of butter color; some cream requires more color than other cream; but people must try their own judgment. Churn till butter is in large granules, then drain off buttermilk, put cold water on and give a few turns of the churn, drain off, add more cold water, give a few more turns of the churn then the butter is ready for the salt. Have butter bowl scalded, and well cooled, take out butter and for every twelve pounds of butter add one full cup of finely rolled salt, mix slightly and let stand in winter for one

hour; but in summer I let stand over night, then mix again and print. Just mix long enough until it is an even color as too much mixing spoils the grain of the butter. Wash and scald all milk and cream vessels as soon as finished using.

Dear Editor:—As my husband takes the Canadian Thresherman and Farmer, I am a most interested reader of the Woman's Department. I am interested in the Dower Law, I think it is most useful in this country. Why are the women not complaining down East? They have the Dower Law down there. I have known cases where it has kept the home together where otherwise everything could have been taken from them by the husband's creditors.

I read the letter from "Farmer's Wife" and as I am most interested in window plants, I would like to respond to her request. I am most interested in Cacti, as they are a most curious, as well as interesting plant, but I will not discuss them now but instead inclose a cutting from our local newspaper, which I think is very good. If you have her address you might find it worth while to send it to her. I hope she will have success with her flowers. Also I think it would be a most pleasant topic for the Woman's Page.

Home Bird,
Carnegie, Man.

I have sent the article to "Farmer's Wife" as requested. I wish we could have the subject of plants discussed by our readers who know from experience. I do not know enough about plants to write a practical article on them. I should very much like to have the subject discussed on our pages.

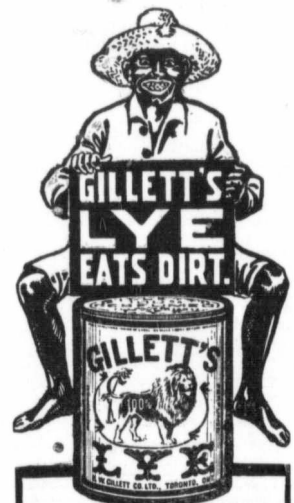
I have a good paper on How to Keep Farm Life from Being Monotonous, read at a Home Economics meeting. It will be published in the September number.

P. R. H.

An Assortment of Beautiful POST CARDS, one sent post paid to any person sending us the names and correct addresses of five of their friends.

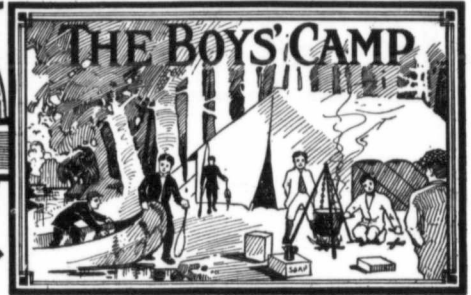
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The Girls' Cozy Corner

JUST BEING HAPPY.

Just being happy is a fine thing to do; Looking on the bright side rather than the blue;

Sad or sunny musing,
Is largely in the choosing,
And just being happy is brave work and true.

Just being happy helps other souls along; Their burdens may be heavy and they not strong;

And your own sky will lighten,
If other skies you brighten,
By just being happy with a heart full of song.

—Ripley D. Saunders.

A MAGIC CURE.

Are you awfully tired with play, little girl;
Weary, discouraged and sick?
I'll tell you the loveliest game in the world—
Do something for somebody, quick!

Dear Girls:—The printer played us the meanest of tricks last month, and I felt very cross at him. I wrote a story for you and one for the boys, and what do you think the printer did? Why he just put both stories in the Boys' Camp. Now if you will hunt up last month's magazine and find the first story in the camp, you will see your story. The printer is very bad sometimes. He gets words twisted, spells them wrong and does all sorts of things. Some of the letters published this month were written last winter. Cousin Doris never throws a letter into the wastebasket.

I am pleased to know that my girls can cook and sew. I hope you will all grow into practical women. I have a request to make. During the next thirty days will every girl exert an extra effort every day to help her mother. Then write me of your experiences. I wonder how many girls will have happier mothers at the end of the month.

With love to every girl in our Cozy Corner, I am, Sincerely, Cousin Doris.

PRIZE LETTER.

Dear Cousins of the Girls' C. C. C.—I am an annual member visiting our corner once in every twelve months, but although I do not write as often as I might, I always have my eyes, ears and mouth open, ready to devour every word that is written by the cousins.

Since my last letter, I think that a stray sunbeam must have found its way into this little corner and could not escape, because most every letter seems so cheerful and interesting, and I always read each letter over two or three times.

I am a farmer's daughter, living out in the broad and open prairie, where the air is always so fresh and where you always feel so free and happy. Yes! people can say as much as they like about the fashionable city life of balls, concerts and grand operas, but give me the simple country life. I would not trade my home for the most beautiful one in the city. Would you, Cousin Doris?

Then the spring is always much pleasanter out in the open country; it reminds me of a little verse which I read some while ago, entitled, "Spring on the Farm."

When Spring comes to the city, she just stands
On the rear platform, and, from brimming hands,
Throws out a crocus or a budding spray
To the poor dwellers, then speeds on her way.
They catch her garments' sheen and nothing more;
But when she gains the farms,
She opens wide her arms
And, prodigal, flings all her precious store.

We live near a large river and sometimes we go fishing, which, I think, is delightful sport, although I have never caught a fish, but I have had lots of bites. There are different kinds of fish in the river, among which are the gold eye, sucker, pike and cat fish. There are some more, but I do not remember their names.

Last summer we all went down there to catch fish. We took our lunch with us, and were intending to make a fire and cook our fish on the banks of the river. We went early in the morning, and by dinner time we had caught quite a mess of fish and were all very hungry, so we made a fire and put them on to fry. Soon they were ready to eat and so were we, for they looked very good and appetizing. But to our dismay, as well as disappointment, we found that by mistake we had put sugar on them instead of salt. So you can imagine how we enjoyed our feast. Well, any way, after our enjoyable dinner, the boys all went off again to try their luck in fishing, while we girls climbed hills, picked berries and threw stones into the river. But we passed a very delightful day, and all returned to our homes tired and, I might add, hungry, without a fish. I believe that was about the only time we had had such bad luck.

In the spring of the year there are nearly always plenty of service berries, choke berries, bull and squaw berries around here. We do not raise much fruit around in this part of sunny sunny Alberta, but we raise some nice gardens when the year is not too dry.

I am taking music lessons. I have taken forty-eight lessons and four examinations. I love music very dearly, and could sit and practise for hours and hours if I had time.

I also love writing. There isn't anything I love better than to make up a story. I have two stories now nearly finished; both are quite long. I suppose nearly every girl loves reading, as for me, I could read and read and never tire. I love most any kind of a book or story, so I guess it would not do for me to tell the names of the books that I like or that I have read, as I am sure there would be no end to the names.

Well, girls, here are a few sensible hints for the toilet. I suppose most of you have heard them but maybe most of you haven't, so here I go.

For scrawny neck—Wash neck and chest with hot water, then rub in sweet oil, all that you can work in. Apply this every night before you retire and leave the skin damp with it while you sleep.

Rub your hands with the skin of a lemon and it will whiten them.

Squeeze the juice of one lemon into a pint of sweet milk. Wash the face with it every night, and in the morning wash off with warm rain water. This will produce a very beautiful effect upon the skin.

If you desire to be fat, take a desert-spoonful of olive oil before each meal.

Lemon juice will remove sunburn.
To remove dark rings from under the eyes, drink plenty of pure cold water, take plenty of exercise and get up early.

Touch the eyelashes with a little olive or castor oil every night on retiring, and it will thicken them.

Cucumber peelings, boiled in water, will be found good for the skin.

A little diluted lemon juice rubbed on the face, neck and hands at bedtime will both bleach and soften the skin.

Here is a recipe for the kitchen, which is very nice.

Magic Custard—Cut and butter on both sides half a dozen thin slices of bread. Cut into quarters and cover with one quart of custard, flavored with vanilla. Bake, and when cooked have the whites made into a meringue or frosting and put on top. Return to oven to brown, and serve cold.

Oh, dear me! I never intended to write so much, but any way I will close now. Remember, Cousin Doris, I do not write for a prize, but just to help make this little corner a bit cozier.

I will send a little puzzle or whatever you may call it.

Best wishes to all cousins.—Mayflower.

Puzzle.

With these numbers you can tell the age of any person.

Ask your friend to tell you which of these columns contains his age; then add together the top figures of the columns that contain his age, and you can tell exactly what his age is. For example, a young lady whose age is 17 says her age is in the first and fifth columns. Add the top figures together and it will give you 17.

1	2	4	8	16	32
3	3	5	9	17	33
5	6	6	10	18	34
7	7	7	11	19	35
9	10	12	12	20	36
11	11	13	13	21	37
13	14	14	14	22	38
15	15	15	15	23	39
17	18	20	24	24	40
19	19	21	25	25	41
21	22	22	26	26	42
23	23	23	27	27	43
25	26	28	28	28	44
27	27	29	29	29	45
29	30	30	30	30	46
31	31	31	31	31	47
33	34	36	40	48	48
35	35	37	41	49	49
37	38	38	42	50	50
39	39	39	43	51	51
41	42	44	44	52	52
43	43	45	45	53	53
45	46	46	46	54	54
47	47	47	47	55	55
49	50	52	56	56	56
51	51	53	57	57	57
53	54	54	58	58	58
55	55	55	59	59	59
57	58	60	60	60	60
59	59	61	61	61	61
61	62	62	62	62	62
63	63	63	63	63	63

Manitou, Man.

Dear Cousin Doris:—Seeing in the "Girls' Cozy Corner" that you wanted them to try and get ahead of the boys, I thought I would try to help.

I go to school, and I am in Grade VII. I like to go to school. I have about two miles to go. We drive in the winter, but in the summer we walk. My teacher's name is Miss Graham, and I like her very much.

I like to sew and bake. Last year I got first prize for the best dressed doll. I am going to do more sewing this year.

I also bake cakes; sometimes they are not very good, but I try again.

Do many of the members of the Cozy Corner like to read? I do, and I have read quite a number of books.

I will send you a receipt for a spice cake, and hope it will be good.

2 eggs, 1 cup of white sugar, 1 cup of thick sour cream, 1 level teaspoon of baking soda, pinch of salt, 1 heaping teaspoon of cinnamon, 2 cups of flour. Cream, butter and eggs. Dissolve soda in cream, add to the eggs and sugar, mix salt and cinnamon in flour, mix together. Bake in moderate oven for twenty-five minutes.

I will close now. Wishing the paper every success, I remain, Your Loving Cousin, Ethel Tait.

Box 81.

I am sorry this letter was not published before, Ethel. The recipe you send is splendid. Thank you very much for it.—Cousin Doris.

The Canadian Boys' Camp

THE FIRST STORY.

Once a sweet boy sat and swung on a limb;
On the ground stood a sparrow-bird looking in at him.

Now the boy he was good, but the sparrow was bad;

So it shied a big stone at the head of the lad,

And it killed that poor boy, and the sparrow was glad.

Then the little boy's mother flew over the trees;

"Tell me, where is my little boy, sparrow-bird please?"

"He is safe in my pocket," the sparrow bird said,

And another stone shied at the fond mother's head,

And she fell at the feet of the wicked bird, dead.

You imagine, no doubt, that the tale I have mixed,

But it wasn't by me that the story was fixed,

'Twas a dream a boy had after killing a bird,

And he dreamed it so loud that I heard every word.

And I jotted it down as it really occurred.

—Exchange.

BOYS THAT RUN THE FURROW.

You can write it down as gospel,

With the flags of peace unfurled,

The boys that run the furrow
Are the boys that rule the world.

It is written on the hillslopes,

In the fields where blossoms bend;

Prosperity is ending
Where the furrow has an end.

The glory of the battle,

Of clashing swords blood red
Is nothing to the warfare

Of the battle hosts of Bread.

The waving banners of the fields
O'er the broad land unfurled—

The boys that run the furrow
Are the boys that rule the world.

—Frank L. Stanton.

Dear Campers:—Some of the letters published this month were written last winter, but we have had no space for them until now. I want every one printed, you know. I am sorry to keep you waiting so long. I want just as many letters as possible for next month's magazine. Let us have one hundred letters. Tell us about your experiences of this summer, about your work or your home. I like the letters that describe the habits of animals.

I am pleased to know you are interested in the Camp. I think we have a splendid class of boys in our Camp.—Sincerely, Cousin Doris.

Girvin, Sask.

Dear Cousin Doris:—This is my first letter to your club. I go to school every day and like it very much. I am in the fifth grade at school. The name of our school is Arm River. I have a pony. He is a roan in color. He is pretty quiet now. I have one brother and two sisters. I have two calves.

I will close now. Hoping to see this letter in print.—Yours truly, Jack Stanley.
P.S.—Would like a book.

BOYS' PRIZE LETTER.

Drake, Sask.

Dear Canadian Camp:—This is my first letter to the Boys' Camp. My age is fourteen years. My brother is taking the Canadian Thresherman and Farmer, so I thought I would write a letter to the camp. I drove the straw team last fall when thrashing.

I learned a little over twenty dollars. The weather is fine in our country. I go to school. I study seven branches; I am in the fifth grade. I go one mile to school. My brother has a bicycle. He sometimes rides to school with it in summer. I see that you are giving a prize for the best letter, so I will try my best to get it.

There are many sales here this winter. The people are all going to the so-named Paradise (meaning California). I guess they want to get warmed up.

I have three brothers and two sisters. One of my sisters is married. She is in Oklahoma, U.S.A.

Well, I do not know much to write, so I will give a few riddles.

1. Two lookers, two hookers, four hangers, four bangers and one switch-bow.

2. What is a kiss?
3. I know a man who shaves twenty times a day. Who is he?

4. Can you tell me the difference between a pie and a pair of pants?
5. Why is a handkerchief like a ship at sea?

Try and answer these riddles in the next issue of C. T. and F.

We have ten horses and fifteen head of cattle. We have to drive our cattle one mile every day to water them. Well, I do not know any more to write, so I will tell a story.

Beanbout and Tom.

Once there were two families living together. Each family had a large flock of chickens, and they ran together. Tom's wife's name is Betsy and Beanbout's wife's name is Sally. Now Betsy and Sally agreed that Sally should cut off her hens' tails, so they would know them apart.

Now one of Betsy's hens had made a nest by a stump, and laid eggs in it and was brooding. Now Tom and Beanbout wanted to have a little fun, so they cut the hen's tail off, just to see what the women would do.

Next day Betsy came to see how her hen was. She saw that its tail had been cut. She thought Sally had done it. So she went to Sally and said, "Sally, you have been trying to steal one of my hens, so they both went to the nest, but Sally said "You are a liar!"

Each woman reached for each other's hair, and both got a good hold, so they started round and round. Sally's foot struck the hen and knocked her about a rod. When Betsy came around she fell in in the nest and broke a lot of eggs.

Beanbout and Tom pulled them apart, and each one took his wife home. When they got home they put on clean dresses and washed off the eggs. But they did not comb their hair, for they did not have any to comb. Then Beanbout and Tom told them how it had all happened.

Well I will close my letter. I guess it will take up too much room in the camp.—I am your friend, Frank Bartel.

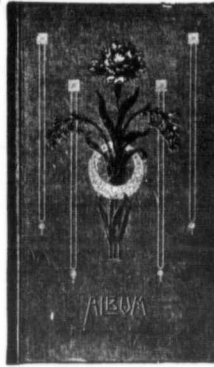
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A Thing of Beauty A Tour of Canada Boy's Watch
is a Joy Forever



42. Heavy gold-plated adjustable, signet, extension bracelet; fancy embossed pattern; fine roll plate finish; can be adjusted to any size required. Put up in a handsome, lined box. Given for selling only \$4.00 worth.



43. This is a very handsomely got up Post Card Album; the covers have a variety of designs in assorted colors of sage green, red, blue and drab, large spray of leaves and flowers, embossed in an ornamental pattern in front. These are treated in natural colors, contrasting to the color of the cover. You will wish to make a collection of post cards this year, so be sure to get one of these albums. They hold from 200 to 250 cards, and besides we put 100 very fine selected picture cards (colored views from all parts of Canada) in each album. Given for selling \$4.00 worth.



41. Handsome engraved nickel watch, new design, just out; open face, stem wind and set; carefully adjusted movement; fully guaranteed. Given for selling only \$4.00 worth.

Beautiful Doll



52. This dolly is 22 inches tall, and is stylishly dressed in the daintiest lace trimmed dress that a doll ever wore, with a stylish lace yoke, puffed sleeves and up-to-date graceful skirt with a flounce of handsome lace. She has a stylish hat to match, beautifully trimmed, which just gives the finishing touch to this little princess. She is fully jointed, can hold out her arms, sit down or turn her head; you can undress her and put her to bed, and she will close her eyes and go to sleep like a real baby. Given for selling only \$4.00 worth.

Lady's Watch



47. Not only neat and dainty, but a reliable time keeper; polished nickel case, with a pretty little face and fancy hands; stem wind and set. Fit for any lady to wear. Given for selling \$4.00 worth.

Beautiful Bronze Clock



45. Handsome Bronze Clock over six inches high, new design, and fully guaranteed. This clock is a beauty and no home should be without one. Given for selling only \$4.00 worth.

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THE FUNNY WORLD

The matter on this page lays no claim whatever to originality. The one idea is to amuse, to provoke a smile. It utilizes this mission we shall feel amply repaid for the time and labor expended in its preparation. Have you read or heard something that has made you laugh? Has it chased dull care away for a time? Then pass it along for publication in our Funny World. Such contributions will be greatly appreciated.

A duellist one day would have been shot through the heart had it not been for some money he carried in his breast pocket.

"Really, sir," observed the bystander, "your money was well invested."

Woggs.—So young Saphead and his father are carrying on the business?

Boggs.—Yes. The old man does the business while young Saphead does the carrying on.

A party of Leland Stanford students pased on the rim of the crater of Vesuvius. As they peered into the seething mass of horror below them, one exclaimed in an awed tone: "Don't that beat hell!"

Some Englishmen were standing near and evidently overheard. One of them remarked to the others in his well-bred, distinct voice: "Isn't it remarkable how widely these Americans travel."

"Now, Harold," said the teacher, "if there were eleven sheep in a field and six jumped the fence, how many would there be left?"

"None," replied Harold.

"Why, there would," said she.

"No, ma'am, there wouldn't be," persisted he. "You may know arithmetic, but you don't know sheep."

A college professor, noted for strict discipline, entered the classroom one day and noticed a girl student sitting with her feet in the aisle, and chewing gum.

"Mary," exclaimed the indignant professor, "take that gum out of your mouth, and put your feet in."

The girl looking for a proposal will find that men are like corks. Some will pop, while others have to be drawn out.

Tom Foozle.—Wetherby seems strangely drawn to that pretty Mrs. Strong—don't you think?

Dora Dormie.—Yes. Another example of the widow's might, I presume.

The following epistle was sent by an angry tenant to his landlord:

"Dear Sir:

"I want them sellar steps fixed right off. My wife fel down last nite and like to broke her dam neck. Please send blumber and figs our bath tub it will soon be time now for us to use h.b agen and obligé. "Your trule, "

"What became of that little kitten you had here?" asked a lady visitor of the small boy.

"Why, haven't you heard?"

"No, was it drowned?"

"No."

"Lost?"

"No."

"Poisoned?"

"No."

"Then whatever did become of it?" said the lady.

"It growed up into a cat, was his reply.

What man has done, man can do; but it isn't a marker to what the Suffragettes propose to do.

A stout old gentleman was having trouble with the telephone. He could hear nothing but a confused jumble of sounds, and finally he became so exasperated that he shouted into the transmitter:

"Is there a blithering fool at the end of this line?"

"Not at this end," answered a cool, feminine voice.

A traveling man who was a cigarette smoker reached town on an early train. He wanted a smoke, but none of the stores was open. Near the station he saw a newsboy smoking, and approached him with:

"Say, son, got another cigarette?"

"No, sir," said the boy, "but I've got makings."

"All right," the traveling man said. "But I can't roll 'em very well. Will you fix one for me?"

The boy did.

"Don't believe I've got a match," said the man, after a search through his pockets.

The boy handed him a match. "Say, Captain," he said, "you ain't go anything but the habit, have you?"

A pitch in time saves nine.

It's all right to learn to say no, but it has made many an old maid.

Better economize before your creditors compel you to do so.

T. R. Sherwood, Democratic Congressman from Ohio, tells this story:

A man had for years employed a steady German workman. One day Jake came to him and asked to be excused from work the next day.

"Certainly, Jake," beamed the employer. "What are you going to do?"

"Vall," said Jake slowly, "I tink I must go by mein wife's funeral. She dies yesterday."

After the lapse of a few weeks Jake again approached his boss for a day off.

"All right, Jake, but what are you going to do this time?"

"Aber," said Jake, "I go to make me, mit mein fraulein, a wedding."

"What? So soon? Why, it's only been three weeks since you buried your wife."

"Ach!" replied Jake, "I don't hold spite long."

The new minister had preached eloquently on the wisdom of God, and His goodness in providing for us according to our needs. "It is the same with the flowers," he said. "Sunshine for your geraniums and heliotrope, a shady corner for your fuchsias."

The little woman who had listened intently came froward to thank him.

"I profited so much by your sermon," she exclaimed. The minister beamed. "I never knew before," she went on, "just what was the matter with my fuchsias."

She advanced to the paying teller's window and, handing in a check for fifty dollars, stated that it was his birthday present from her husband and asked for payment. The teller informed her that she must first endorse it.

"I don't know what you mean," she said hesitatingly.

"Why, you see," he explained, "you must write your name on the back, so that when we return the check to your husband, he will know we have paid you the money."

"Oh, is that all?" she said, relieved. One minute elapsed.

Thus the "endorsement": "Many thanks, dear, I've got the money, Your loving wife, Evelyn."

Pat and Mike were sleeping at a farmhouse. Mike got hungry in the night and slipped out of the room without awakening Pat.

"Whar you been, Mike?" Pat demanded as Mike re-entered the room.

"Sure an' Oi was afther bein' down to the pantry to git a bite to ate, Patsy, boy." Mike whispered cautiously as he climbed into bed again.

"Sure, Moike, an' it's meself will be afther doin' the same," Pat declared, as he rolled quietly out of bed.

"Good luck to yez, Patsy, boy," Mike whispered, "due yez wants to keep a sharp lookout for the old mon when ye passes trough his room. It's meself thet stumbled over a chair on me way back, an' when he yelled out, rale sharp loike, 'Who's thar?' I jest stood still in me tracks and sez 'Me-ow, me-ow,' an' he sez, sez he, 'Ef it ain't that durn old cat again!' an' then he turned over on his side an' went to slape like a bebbie, an' Oi slipped out quiet loike."

"Sure, an' thet was easy done, Mike," Pat whispered back. "Sure an' it's meself will be afther doin' the same."

And five minutes later when Pat stumbled over a pair of shoes in the farmer's room, and a stentorian voice roared out, "Who's there?" Pat felt perfectly safe from detection, as he answered in a rich Irish brogue:

"Loiy still, soir, loiy still. Oi'm the cat."

A Quebec shoe-dealer recently received the following order from a French-Canadian customer:

"You will put some shoe on my little families like this, and send by Sam Jameson the carrier: One man, Jean St. Jean (me), 42 years; one woman, Sophie St. Jean (she), 41 years; Hermedes and Lenore, 19 years; Honore, 18 years; Celina, 17 years; Narcisse, Octavia, and Phyllis, 16 years; Olive, 14 years; Philippa, 13 years; Alexandre, 12 years; Rosina, 11 years; Bruno, 10 years; Pierre, 9 years; Eugene, we lose him; Edouard and Elisa, 7 years; Adrien, 6 years; Camille, 5 years; Zoel, 4 years; Joseph, 3 years; Moise, 2 years; Muriel, 1 year; Hilaire, he go barefoot. How much?"

By the time you have acquired wisdom everybody looks upon you as an old fool.

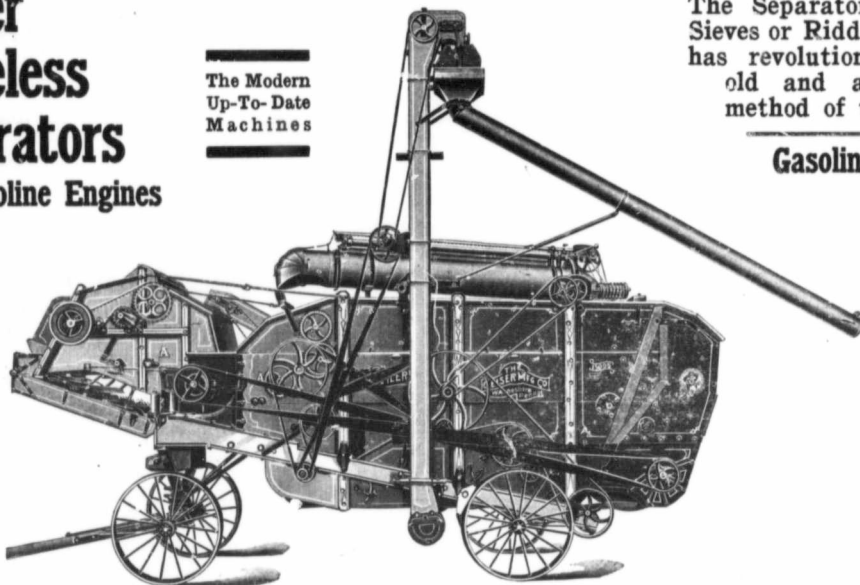
Geiser Sieveless Separators And Gasoline Engines

Manufactured in
the following sizes

27-39
26-46
30-46
33-50
36-56
40-60

Special Sizes for
Gasoline Engine
Power

Leading Features:
"Sieveless"
The Grain Plate
and Roller System
and Automatic
Blast.



The Modern
Up-To-Date
Machines

The Separator without
Sieves or Riddles, which
has revolutionized the
old and antiquated
method of threshing.

Gasoline Engines

In the following
sizes:

16-18-20-22

Horse Power
Single Cylinder
Portable

25-30

Horse Power
Four Cylinder
Portable

50

Horse Power
Four Cylinder
Tractor

THIS new process has revolutionized the whole process of threshing and cleaning grain. It eliminates the entire nest of sieves or riddles. The simplicity and efficiency of this new process of separating and cleaning all kinds of grain is simply wonderful. The peculiar quantities and advantages which have caused the extraordinary demand for this machine arise from the fact that it has no sieves or riddles, and that it possesses the most perfect cleaning system in the world, and has a very large capacity, and is very light running. See our exhibit at the Winnipeg Industrial Exhibition. For catalogue and information address:

BURRIDGE COOPER COMPANY, Ltd., 303 Owena Street **BRANCH OFFICE:**
WINNIPEG, Man. 1840 Dewdney St., Regina, Sask.
Canadian Agents for the Geiser Mfg. Co.

Course In Gas Engineering.

Continued from page 39

from measurements taken from an existing engine.

Loss Due to Altitude.

Mention has just been made of the fact that the pressures of compression depends upon the pressure at the end of the suction stroke. When engines are operated at a higher altitude than at the sea level it is found that they will not develop the same power. The air is less dense and, consequently, the cylinder does not contain the same weight of air at the end of the suction stroke. The amount of oxygen in the air is less and the same amount of fuel cannot be admitted. The compression is also less. Engines operated in high altitudes are usually fitted with longer connecting rods or pistons so that the compression is raised. The air passages should also be made larger so that there is less resistance to the flow of the entering air. This loss in power is about 3 per cent. for each 1,000 feet elevation.

Many novel birds' nests have been found in various parts of the world. It is remarkable the skill displayed by some of the different species of birds in the construction of their little homes. The hanging nests are the most beautiful, and often shows won-

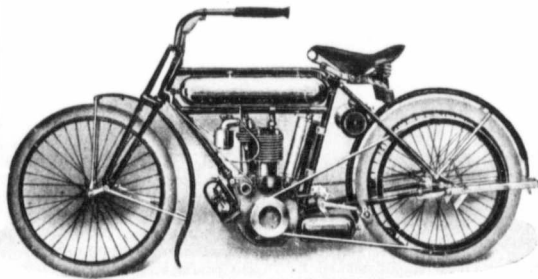
derful mechanical skill on the part of the little feathered weavers. One of the queerest nests was found in a Connecticut town. It was made entirely from discarded ends of delicate watchsprings. These bits of metal were woven together in such a manner as to make it impossible for a person to detect the point of beginning or the completion of the novel nest.

Go when and where we will in this grand land we find thousands of people traveling. If one were to judge by the great throngs seen in some of the large depots of the leading cities, it would not be unreasonable to imagine enough people traveling to form a considerable colony. On a number of occasions, the railroads have handled as high as half a million of people or more entering one city, and persons who are fully acquainted with the facts have stated there are very often enough people traveling on the entire railroad system in the United States in one day to populate one of the smaller states. The daily transit population of New York alone is somewhere near the quarter-million mark.

At an elevation of but ten feet above the sea the apparent horizon is about ten miles distant. It would be about the same on the level prairie country.

Farmers - Threshermen

Did you ever stop and consider what a Motor Cycle could do for you during the busy season? It combines the simplicity of the Bicycle with the comfort and speed of the Automobile.



Do you need repairs quickly? The Motor Cycle will get you to town as fast as any Auto. Do you want to make a quick trip to town for supplies or the mail? The Motor Cycle will get you there and back in a hurry. It costs practically nothing to run. And will pay for itself in time saved in a very short period. You need a Motor Cycle this fall, and what is more you need a

M.M-4

"KING OF MOTOR CYCLES"

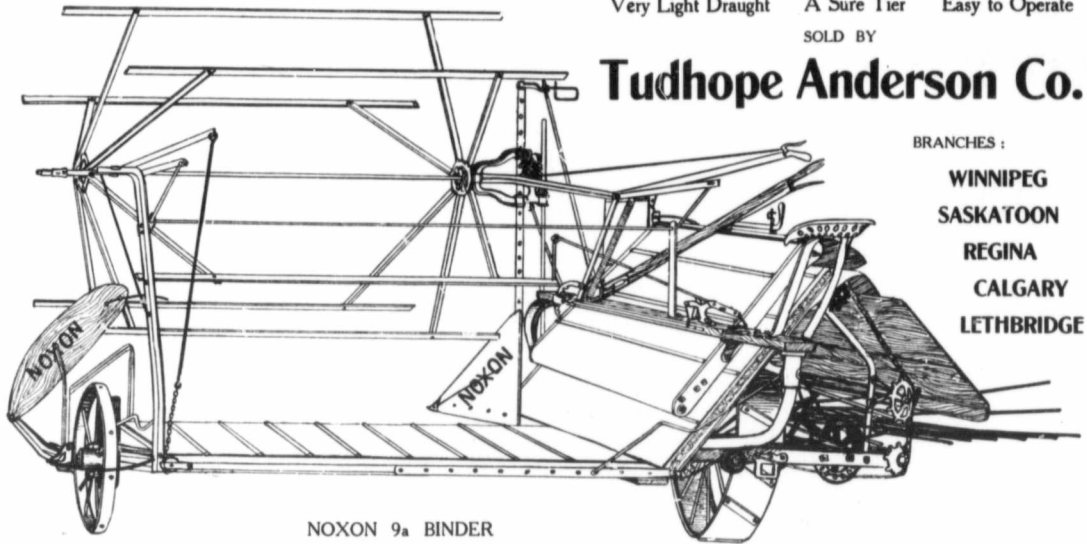
It embodies the best in construction and equipment. 4 h.p., Schebler Carburetor, Magneto, air cooled Motor, positive Lubrication, easy control, roller bearings, long wheel base etc., etc. These all make a machine that will give you service and save you money. Investigate this immediately as the low price will surprise you, but do it now before the threshing season starts.

Canadian Port Huron Co., Ltd.
Chambers of Commerce - Agents Wanted - Winnipeg, Canada

Very Light Draught A Sure Tier Easy to Operate
SOLD BY

Tudhope Anderson Co.

BRANCHES :
WINNIPEG
SASKATOON
REGINA
CALGARY
LETHBRIDGE



NOXON 9a BINDER

Watrous and its Lake of Miracles.

"Within three miles of the Carlsbad of Canada" is a tempting location for any health-seeker, or indeed for anyone who, against all contingencies, would be within easy reach of a healing power, and a health sustaining environment such as only Nature at her best can provide for human flesh.

But Watrous presents a no less powerful attraction to the bustling "Canuk" in the strategic position it commands on the main line of the new Grand Trunk Pacific. While it has already assumed remarkable proportions in view of

established, the history of which is a matter of common knowledge.

The imposing group of elevators which have been erected at Watrous indicate in a small way what it means as a shipping point for grain, and its cultivable acres have as yet been tilled to very little extent having regard to what may be done in this way within easy haulage of the station.

The town is rapidly extending towards Little Manitou Lake and the fine dwellings, stores, hotels and churches which have already been erected in the town would do credit to any Western city. Details in this respect do not serve

it, it is necessary to shoot a man to start a cemetery in the place.

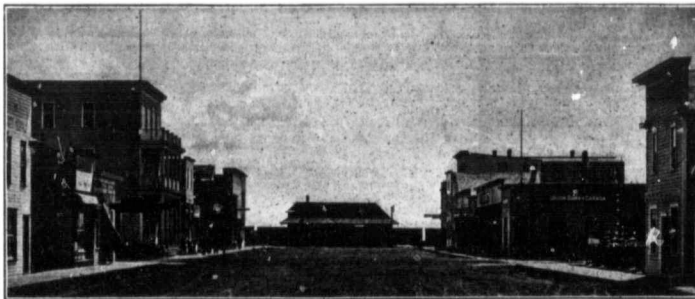
The joke is a stale one, but the fact that the remarkable medicinal waters of this lake are so buoyant that a human being will float on their surface like a cork is no joke but a literal fact that will never grow stale, and remain a scientific fact that while the world holds together. The lake averages three quarters of a mile wide, and twelve miles long and the liquid is so clear that the sandy bottom can be distinctly seen at a depth of over six feet.

There is certainly nothing akin to it on the North American Con-

known lake or Mineral Spring in the world. Where those minerals and medicinal properties come from no one knows but before the days of the white man in Western Canada, Little Manitou had become famous among the aboriginal red-skins as the Lake of Healing Water, and within recent date, hundreds of cures—many of which medical science has declared to be almost miraculous—have been effected through the natural properties of this water.

Presentation to T. F. Simpson.

An event, which was considered by the Travelling Staff of the Manitoba Branch of the Massey-Harris Company, Limited, as one of the most important and pleasant happenings of Exhibition week, was the presentation by the "Boys" of a handsome Travelling Bag to Mr. T. F. Simpson, who is and has been for many years prominently connected with the Designing and Experimental De-



The Main Street of Watrous.

the short time which has elapsed since the town was inaugurated, its future in a still more remarkable development leaves little room for doubt.

As the central divisional point of the G.T.P. it has already grouped upon and around the townsite one of the most enterprising communities to be found at any point of Western development, but as the promise has been definitely made that in course of the next four or five years, the car shops and operation offices, etc., will be located at Watrous, there are the most reasonable prospects of an expansion at least that equal to that of any of those great centres where the same industry has been

any practical purpose because, in common with every development of the kind, the statement has no sooner gone into print when the data has become obsolete—superseded by still greater achievement.

As a holiday resort as well as health center of the utmost value to the Dominion, its importance cannot be computed in dollars, or real estate appraisalment. So invigorating are the atmosphere and the waters of the "Lake of the Good Spirit" that some grateful souls who have gone there to recuperate offer the suggestion that it must have been Watrous of which it is said that in order to constitute a complete municipal-

tyment. Already many citizens from the great republic have found their way to the place and have gone home full of its praises. It stands to reason that as its extraordinary virtues, coupled with the splendid hotel accommodation and social facilities which have grown around the resort become generally known, there will be an influx of monied residents and visitors such as perhaps have never gathered around any settlement in Western Canada.

The waters of Little Manitou Lake have been found to contain those ingredients that have an almost certain curative effect on rheumatism and skin diseases in greater proportion than any other



T. F. Simpson.

partments of the Plow Factory of Massey-Harris Company, Limited.

Mr. Simpson is one of the oldest Plow Builders in Canada, and since a great portion of his time has been spent in the West, and since he has made a very careful study of the requirements of the Great and Growing Western Plains, his exertions naturally turned in the direction of supplying to the Western Farmer a Plow suited to his exact needs. With what success his efforts have been crowned is demonstrated by the

THREE J. I. CASE ENGINE GANGS.



Made with 4, 6, 8, 10, 12 or 14 Bottoms

Surely this is a plowing proposition of sufficient immensity to make anybody sit up and take notice.

And three **J. I. Case** Engine Gangs were put on the job because they were thought peculiarly adapted to so large a proposition.

Above picture shows three **J. I. Case** Engine Gangs being operated by Cheyenne County Development Co., Cheyenne Wells, Colo. Each gang is equipped with ten 14-inch breaker bottoms. The combined width of the furrows turned is 35 ft.

If the **J. I. Case** can handle a big proposition, better than any other make, it can do so with a smaller one.

Better write for printed matter, mentioning this paper.

General Sales Agent: THE HARMER IMPLEMENT CO., Winnipeg, Manitoba.

OR

J. I. Case Plow Works, Racine, Wis.

enormous demand for the product which his ingenuity created.

"Tom," is a most genial associate, he is never too busy or too tired to give someone a lift, and, what is a great asset in this world, he always has a pleasant word for everyone. The regard in which he is held by his business associates was plainly to be seen and understood by the address given to him and by the hearty wishes expressed for his continued successful career.

Too Late for the Contest.

System is a fine thing. Everything that is of any account has its system. The man without a system is not altogether a harmless nonentity he isn't likely to make the mischief that the man will who is reputed to have a system but has allowed it to become inoperative or get loose in the joints.

In the former case no one depends upon the notoriously shiftless character but when you depend upon a man and he falls down—! That is what happened with the great Canadian Pacific Railway System the other day when they gave the Canadian-American Gas and Gasoline Engine Company, of Dunville, Ont., a shipping bill in acknowledgment of one of the fine Gas Tractors made by that firm. The engine was put on its car with clear directions to Winnipeg, the purpose being to take part in the great motor test.

Notwithstanding the fact that the shippers allowed a very wide margin of time, the Dunville Tractor arrived several days behind time, and to the regret not only of its makers but many independent admirers of its business like proportions, it was unable to take part in the field trials.

It is all very well to say "don't worry" but that is poor comfort

to an enterprising company of men who, having taken the utmost pains and neglected no safe-guard to a certain end, are finally baulked of their object by a type of human stupidity and icebound indifference against which, as Carlyle said, "the very gods fight unvictoriously."

There isn't a vocabulary that can deliver the word.

During the recent Motor Contest much lively interest was directed to the Canadian Fairbanks Co.'s demonstration of their 25 h. p. Fairbanks-Morse Tractor. This was held in an adjoining field, where the engine was walking along with six fourteen inch plows in breaking. The performance was very creditable, a noticeable feature being the almost entire absence of vibration.

The engine itself is of the simple, slow speed, heavy service type—a development of the well known Fairbanks-Morse Stationary and

Portable Engines. This fact in itself is a recommendation that begets confidence, and augurs well for the popularity of the machine in Western Canada.

Lost motion means decreased speed, and in consequence much work with little gain.

New Tractor and Plows:—Capital wanted to patent tractor and plows, etc., which can perform all farming operations efficiently, and manipulated automatically. Mechanically correct.

Address Box 3079,
Winnipeg, Man.

For Sale.

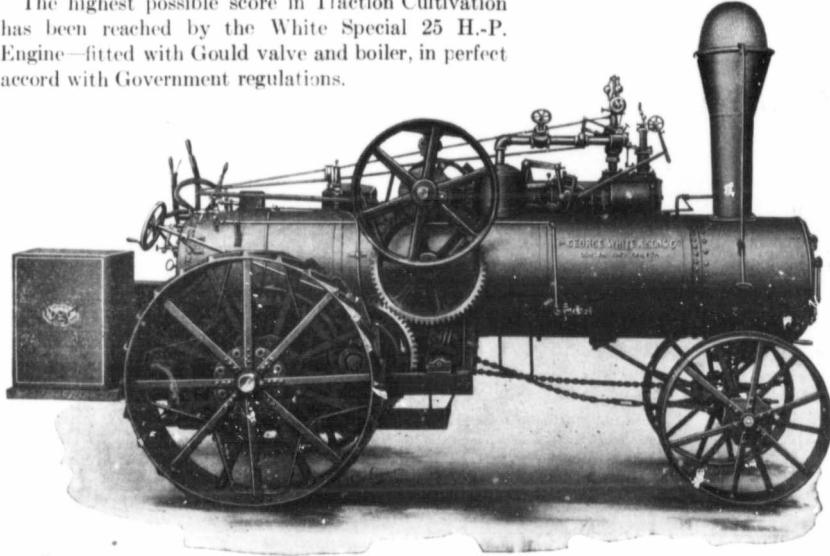
One steam engine 26 h. p. simple American-Abell, run two seasons. Good as new. Ready for this fall's threshing, with new flues. \$1600.00, terms reasonable.

Laird Bros., Tate, Sask.

"THE FIRST QUALITY LINE"

AND THEREFORE NOTHING BETTER MADE

The highest possible score in Traction Cultivation has been reached by the White Special 25 H.P. Engine—fitted with Gould valve and boiler, in perfect accord with Government regulations.



The best work possible, either in plowing, belt work or any description of haulage, is being constantly performed by this finely equipped engine—**Made in Canada** by the pick of skilled labor.

QUALITY is in evidence in the last bolt put into its construction, and the makers challenge all else in its own field to produce better results with greater fuel economy.

Write for full descriptive matter of our complete line of Threshing Outfits, and let some of the many leading Western grain growers who are using it tell you what its great earning capacity is doing for them.

You can buy more expensive machinery, but you cannot get greater efficiency out of anything than from the **WHITE** line of Engines, Threshers, Feeders and Baggers, etc.

THE GEORGE WHITE & SONS CO., Ltd. LONDON - ONT. BRANDON - MAN.

It is said the largest grape vine in the world is at San Gabriel, California. It was planted one hundred and twenty years ago by Franciscan Friars. Its main trunk is over a foot and a half in

diameter and about eight feet high. Its branches and immense foliage cover five thousand square feet. It often bears the immense crop of two and a half tons of fine fruit.

Having seen him safe under the wing of the robust looking matron who commanded at the convalescent home, Sam returned to duty and hurried forward arrangements for sailing the day after Christmas.

doing his duty and finding his happiness in the act of duty performed; and especially that part of it which consisted in helping to bring sunshine into the lives of those who had been victims of his pure "cussedness" and all but criminal neglect.

A Freight of Currency

BEING THE LAST REMITTANCE OF CAPTAIN JOSHUA WINDLASS

(Continued from page 58b last issue)

"But I tell ye Doc' I'm a dead man a'ready. Haven't I told Sam, here, that I saw a vision—?"

"Hivings, Josh' what are ye thinkin' of?" protested Sam. "Aint it yer dooty t'keep livin' if ye can. Besides, aint it better to die comfortable among mates an' clean bed clo'es, than kickin' the bucket all alone in a place like a sweep's backyard? Anyhow, if you don't take the Doc's advice (an' its mine too) I back out o' this Boston job. How does that suit you?"

Josh for a brief space, was silent and looked the image of hopeless discomfort. At last, brightening up a bit, on the second thoughts he meekly acquiesced in the scheme to get him out of his den, and added that he "guessed they was doing it all for his good; an' besides, he could not have the ass to set up any whim of his

agin the advice of a doctor what had been t'Collidge."

Two day's later, Sam gave Windlass a receipt for the custody of a certain receptacle, contents as described, and a charter party was drawn up between them in which the aforesaid Samuel Slimber consented to make safe delivery of the property entrusted to him to one Elspeth Windlass or Allan now living at Sunnyside Farm near Des Moines in the state of Iowa of the United States of America, and to take all the risks other than that arising from the act of God, the Queen's enemies etc. etc.

About the same time the bed-ridden chandler seemed to pick up sufficiently to get himself into garments he had not worn for three months' and which had not tasted the flavor of soap since the previous new year's eve—the captain's last washing day.

It is astonishing how environment colors if it does not absolutely dominate a man's outlook on life. This theory had a remarkable confirmation in the case of Cap'n Josh. In less than a week he became so enamoured of his new surroundings and so sick of his old consortsments that he determined to sell right away and give his friends a little surprise on the day on which the Mermaid was billed for Boston. He found his way back to London on the Monday following the date of his coming to Deal, saw a broker with regard to the sale of his business as a going concern, and within forty-eight hours had closed the deal and returned to the home of his adoption.

He was no longer a sick man. He never was a sick man in so far as the sickness was caused by any functional disorder. His trouble was that which affects the great majority of men who fail to find the nectar that is hidden in the humblest flower along the way-side of life.

Imagination, foreboding, worry, a guilty conscience—all of these had been dogging the heels of Joshua Windlass for many years, but relief came the moment he set his face towards the business of

The "Mermaid" had been refitted and redecorated for her trip across the Atlantic, and early on the morning of Christmas she was warped out of dock, taken down the river and moored off Gravesend ready to sail with the next morning's tide.

A party of friends had been invited on board to celebrate the happy season, and the "Mermaid's" Christmas dinner became a red-letter day in the lives of all who took part in it. The last to arrive was old Josh Windlass, who was given the post of honor on the right of the president—Captain Samuel Slimber—and the carving of the goose at the far end of the table was in the hands of the red-headed medical man who had so successfully diagnosed the case of Captain Windlass.

The crew, besides the captain, consisted of seven men, and Sonny was entered as cook's mate.

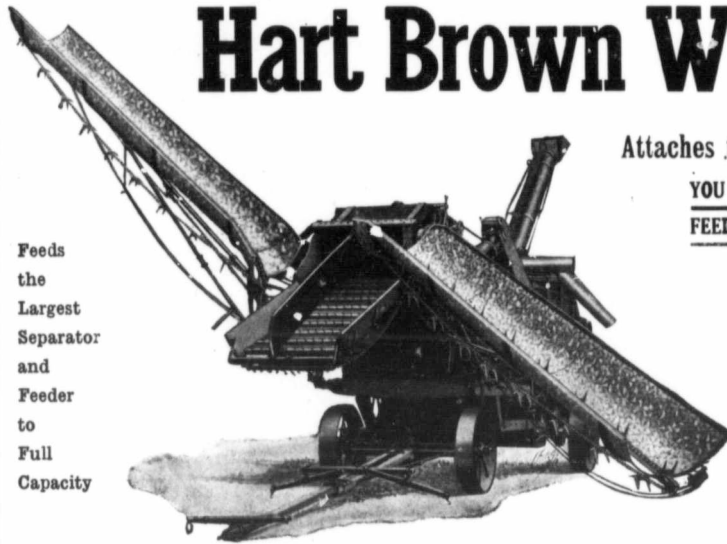
When the time came for parting, the last but one of the guests had slipped down the ladder into the ferry that was to take them ashore. The one remaining visitor was the guest of honor who sat on a coil of rope, apparently

Hart Brown Wing Carrier

Attaches to any Separator with any Feeder

**YOU DON'T HAVE TO BUY A NEW
FEEDER TO USE THIS CARRIER**

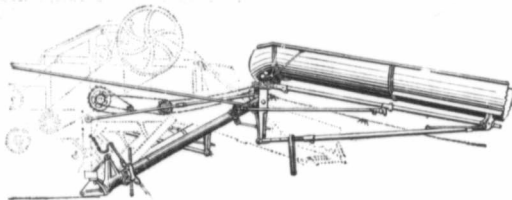
Feeds
the
Largest
Separator
and
Feeder
to
Full
Capacity



The Hart-Brown has 15-foot troughs (the longest made) that raise and lower and swing about so that they are always within convenient reach of the pitcher.

Oiless Bearings. All bearings in the Carrier proper are oiless and require no attention during the life of the machine.

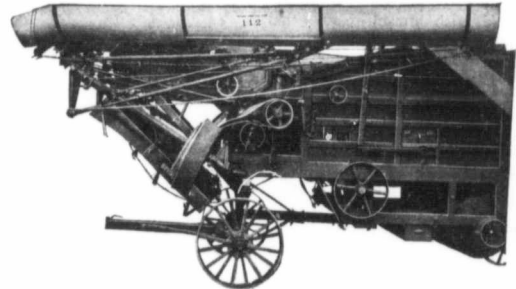
No overhead derrick or support to ground or tongue of separator to catch in trees or wires or interfere in moving, there being no bails over the Carrier, there is nothing to hinder the free movement of the grain.



DOES NOT HANG ON FEEDER

The Carrier puts no strain on feeder but is supported from the main sills and frame of separator, the strongest and most rigid parts of the entire machine.

Notice the delivery end of Carrier. It is so constructed that the bundles go to the band knives straight and evenly. This means no slugging.



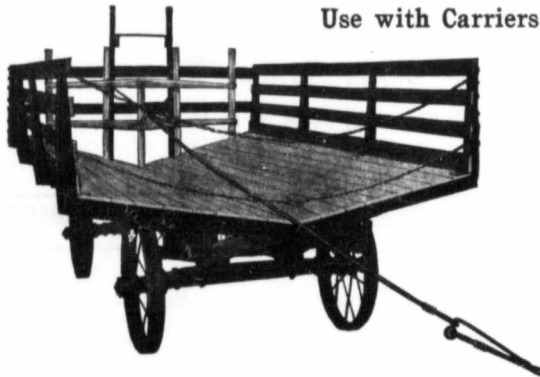
FOLDED FOR MOVING

No parts to detach or throw out of gear. Just swing the Carrier around to side of separator, and you are ready to go.

A Belt reel is furnished with every Carrier.

HART UNIVERSAL THRESHER RACK

Use with Carriers and Save \$30.00 to \$50.00 per Day



Saves One-Half the Bundle Wagons

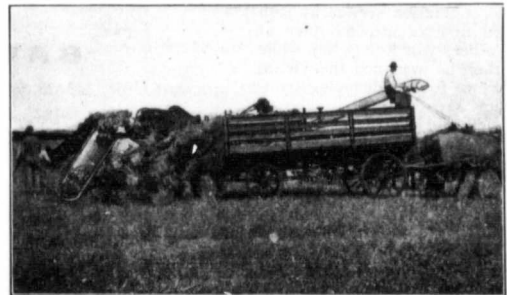
The driver does his own loading and drives to separator where load is taken off instantly by means of a pull off gate. The team does not stop at the machine. This saves time, consequently six Thresher Racks and their drivers will haul as much grain to the machine as twelve ordinary racks, and six field pithers generally do.

Write us, giving us the name of your feeder and separator and we will send you our large illustrated catalogue and tell you just how Wing Carriers can be attached to your separator and give you full particulars about the racks. We will furnish you the hardware and license if you wish to build racks yourself.

HART BROWN Wing Carriers and HART Universal Thresher Racks are sold by the Leading Canadian Thresher Companies

BE SURE AND MEET US AT THE FAIRS

HART GRAIN WEIGHER CO., Peorio, Ill., U.S.A.



RACK UNLOADING AT MACHINE

Saves all the Field Pitchers

The driver does his own loading and drives to separator where load is taken off instantly by means of a pull off gate. The team does not stop at the machine. This saves time, consequently six Thresher Racks and their drivers will haul as much grain to the machine as twelve ordinary racks, and six field pithers generally do.

Write us, giving us the name of your feeder and separator and we will send you our large illustrated catalogue and tell you just how Wing Carriers can be attached to your separator and give you full particulars about the racks. We will furnish you the hardware and license if you wish to build racks yourself.

HART BROWN Wing Carriers and HART Universal Thresher Racks are sold by the Leading Canadian Thresher Companies

BE SURE AND MEET US AT THE FAIRS

HART GRAIN WEIGHER CO., Peorio, Ill., U.S.A.

in deep dejection. Sam did his best to cheer him up, and Sonny did his part to the same end, but old Josh would not be consoled or prevailed upon to move, and the party in the boat were shivering in the crisp air of the Christmas night.

"Mermaid ahoy!" came from somewhere between the ship and the river bank, and at the sound Josh sprang to his feet.

"Sam!" he cried, and he danced with the enthusiasm of boyhood: "I'm going with you and them's the boys with my baggage — blowst them — they ought to have been here an hour ago."

The announcement was greeted with yells of delight and the boy hugged his grandfather in a transport of real affection, for whatever the old crank's shortcomings were, he certainly loved the lad and had treated him with the tenderness of a mother.

The boat load of guests left the ship's side and as soon as the baggage of the new passenger was hauled on deck it was unceremoniously bundled with himself into the cabin. Just before retiring for the night, he was regaling himself with a pipe in the company of Sam and the boy when a heavy foot appeared at the top of the companion way followed by another, and finally the completed form of "Doc" Macpherson loomed into full view of the astonished Windlass.

"Hello, Doc—you goin' with us, too?"

"Looks like it don't it?" said he, squinting a confidential wink in Sam's direction.

"He aint no doctor, Josh, he's no more o' a doctor than you are a Dutchman or I am a Sandwich Islander."

"What! an' you palmed 'im off on me as a full blown medical man from the horstipal?"

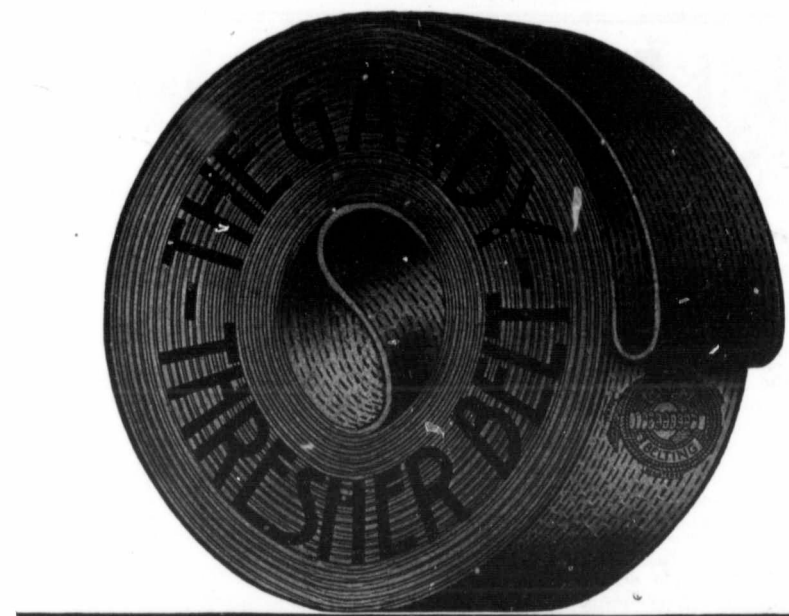
The parties to the rank deception looked the personification of condemned men listening to the commination service as Josh glared first at one, and then at the other, wondering the while whether he was not the victim of some foul kidnapping conspiracy.

"Well, old sport," pleaded the "Doc" (who was no other than the ship's mate) "if I ain't a Doc' I didn't give you bad advice, did I? You took it like a glass o' grog — didn't ye? an' I didn't charge ye anythink for it — did I?"

Josh was in no mood to harbor resentment against a living soul at that moment. He saw the kindly trick that had been played upon him, and entered into the spirit of it right up to the hilt. A glass of grog capped the harmony of the evening, and all hands slept the sleep of the just on board the "Mermaid" that night.

At four in the morning the tug came alongside.

"The sea was bright and the bark rode well," and in due course the "Mer-



ONE EDGE IS GREEN!
Gandy Endless Thresher Belt

After September 1st, 1911, will have one edge painted Green.

The color of GANDY Stitched Cotton Duck Belting has always been a dark red—ever since it was first manufactured 34 years ago.

But in order to reap some benefit from the great reputation of the Gandy, other stitched cotton duck belt manufacturers also painted their belts red, and it is to add some distinct marking, by which you can absolutely identify the GANDY that we have established the rule that every GANDY BELT will have **one edge painted green.**

Remember—there is only one GANDY BELT made by the Gandy Belting Company of Baltimore, Maryland, the oldest and largest manufacturers of cotton duck belting in the world.

Always be sure to look for the trade mark: a coil of belt and a bale of cotton, also after September 1st, 1911, a green edge, the distinguishing mark of "The Gandy Belt."

Send for our booklet and sample. Write for these today—right away.

THE GANDY BELTING COMPANY

733 WEST PRATT STREET

BALTIMORE, MARYLAND

New York Office, 88-90 Roade St.

maid," under her own canvas, had started on her long voyage. The weather was fair to moderate all the way across and the trip was made without incident of any news value.

Josh had parted good friends with all old relations, even to giving the ex-convict Elmer a donation of fifty pounds with some good advice, which included a suggestion that he should take himself off to some of the colonies and start life afresh.

Sonny had the run of the ship and was no useless appendage to its company. His services in the cook's galley would have done credit to one of twice his age, and he found some entertain-

ment in "potting" the gulls and other sea fowl that almost swept the decks of the ship in their keen quest for food.

His weapon was a .44 colt which enjoyed the distinction of never having taken a life and of probably saving a few score on the only occasion on which it had seen service. That was when, as chief officer of the "Northfleet," Sam held a crowd of panic struck Italians at bay till the women and children were all in the boats. The vessel was run into as she lay at anchor off Dungeness by a Spanish steamer that skipped off in the darkness and left her victims to sink or swim.

The first night in Boston was a somewhat uncomfortable one for the skipper of the "Mermaid." Rarely deprived of his modicum of sleep, he found the utmost difficulty in closing his eyes that night and finally gave it up and got on deck for a time.

Everything was quiet while he paced the deck for the greater part of an hour, but just as he was about to get below again a pair of big, hulking figures crept noiselessly down the quay and halted right opposite to where he reclined against the ship's mizenmast.

There was a vessel between his own craft and the quay, but the two figures were clearly sil-



LIGHTNING

It strikes! Home and hopes gone! When the stroke comes you may be left to mourn, but mourning will be useless.

BE WISE IN TIME. PROTECT YOUR HOME AND LOVED ONES WITH

THE DODD SYSTEM

of Lightning Control

The only real system. Prof. West Dodd perfected it and demonstrated its efficiency to the world. Fire insurance companies welcome it because it saves in all losses from lightning. Old Line Insurance Companies are joining with the thousands of Farmers' Mutual Companies in lowering insurance rates in buildings protected by D.-S. lightning rods.

PURE SOFT COPPER CABLE RODS

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houetted against the lighter, moonlit background of the freight sheds. Standing as he did against the mast and in the shadow, he had the advantage of the men, who did not observe him till they were on the deck of the inside vessel. They halted the moment they saw him, and then a voice with a strangely familiar ring in it inquired: "Are you the Milwaukee?"

"No!" was Sam's curt reply, without vouchsafing the information as to who he really was, and with a grunt from the speaker, the pair sheered off and were quickly lost in the shadow cast by the intervening masts and rigging.

With somewhat ruffled feelings Sam sought his couch, and after another hour or more listening for any movement on deck, he gradually dropped off and was not disturbed till awakened by the others at the call for breakfast.

Not a single reference was made by the skipper to the incident of the two midnight prowlers, but after supper, Sam took the mate into his confidence, and they decided to set a watch between them that night. It was impossible to secure an inside berth until next day as the ship that had preceded them was still discharging, and that day of enforced idleness was spent in doing odd jobs about the ship and laying plans for the long railway journey of Josh and Sonny to their destination in far away Iowa.

Late that night, to the astonishment and vexation of the "Mermaid's" captain, the entire crew, after a somewhat long sojourn ashore, returned to the ship more or less in a maudlin state from excessive drinking. They were a decent lot of fellows on the whole and the captain was inclined to treat the matter lightly until he found that the cook was missing from the convivial party. With something of alarm he was told by the only man who was able to articulate decently that it was the cook and a friend he had met who treated them, and whose hospitality had ended in them returning as they did. They all went quietly to quarters, however, and were soon sleeping like logs in the fo'c'sle.

It was about half an hour after midnight, and the three inmates of the cabin were sound asleep. The skipper was on deck, stealthily performing his part of the guard which was to be kept up till day-break. Sam had put in about half of his watch when he saw what he took to be the missing cook stepping over the deck of the inside craft. He appeared to be perfectly sober at all events to walk steadily and warily directly towards where he stood.

"Hello, Jenkins! What does this mean? You've no right to be prowling about the ship at this hour; and I believe it is you I have to thank for sending the rest of the men—"



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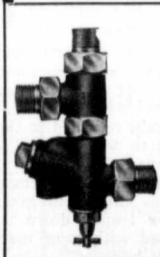
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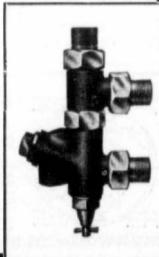
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He got no farther. He was seized from behind, and in an instant the cook had him gagged and bound, while two pairs of powerful arms prevented even his herculean strength from asserting itself to any purpose.

They blindfolded and pinned him so securely, it was useless attempting any resistance, and he had no choice to lie where they flung him and let matters take their course. He was able in a short time, however, by rubbing his head against the deck to dislodge the handkerchief that bound his eyes so that he was able to command a fairly comprehensive view of the poop.

Keeping guard over the entrance to the cabin was a tall, heavily-built man as to whose identity he had very little doubt. It corresponded exactly with the voice that had challenged him on the previous night as to the name of the vessel, and he had no doubt in his mind as to the purpose of the attack.

Judging from the treatment he received, robbery was certainly the objective, but if he surmised correctly as to this, the personnel of the gang and their evident knowledge of what was aboard, it was hard to say what might not happen were any resistance offered to their operations.

After moments that seemed to drag into hours of horrible suspense, as he thought of his sleeping companions in the cabin, two men made their appearance on deck, one of them carrying the plunder. There was a hurried consultation with the man on guard, and without so much as looking in the direction of where Sam had been flung, they made for the ship's side.

One had cleared the bulwarks and was already on the deck of the vessel moored between the "Mermaid" and the quay. A second (he who was loaded with the booty) was doing his best to scramble over while the third party halted behind as a sort of rear guard. Number two with his impediments came to grief in trying to get over and just as he was preparing for a second attempt, the unmistakable figure of Macpherson came tearing out of the companion door and flung himself bodily upon the man who carried the swag. He dropped it, and the two men were at once locked together in a life or death struggle, clutching at each other like wild beasts, the mate yelling for help in a voice that must have been heard in the clear midnight all over Boston harbor.

The third man—he who had stood on guard at the cabin doorway — made a dash after his companion with the treasure, but quickly returned to the aid of his mate who was now helplessly pinned down close to the main hatchway, Macpherson kneeling on his chest. The great hulking fellow leaped down on the deck armed with some murderous-looking weapon.

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He sprang behind Macpherson, raised his bludgeon, holding it aloft for a moment as if to be fatally certain of his aim and the next moment it would have crashed into the skull of the mate; but while it was still raised in the air, the sharp voice of a well-known weapon shattered the night's silence, and with a groan and a curse, the gigantic form of the would-be murderer crashed on the deck.

Sam's eyes instinctively turned at the instant to the point whence the pistol flashed and to his amazement, there stood Sonny or the apparition of the boy, for he was clad only in his night garments and the smoke from the shot that had found his mark still circled around and crowned him with a ghostly halo.

"Look for the skipper, Sonny—quick! and shake up the boys in the fo'c'sle!"

It was the mate who spoke, his voice hoarse with excitement and indignation, but it put nerve into the brave, little fellow and his wits sprang to his command at the instant.

"Unc' Sam!" he cried in terror when he found the prostrate form of the skipper, but another shout quickly announced his joy as he found him alive, uninjured, and in possession of every faculty saving the powers of speech and locomotion.

He was cut free from every fetter, and the moment he could use his limbs he sprang to the assistance of the mate, while Sonny had the crew awakened and on deck. The mate's prisoner, having been fairly secured, the wounded man was taken in hand. Lights were procured and these were brought to where he lay, two members of the night police patrol came on deck, attracted by the gun shot, and matters were quickly explained to them.

Poor old Josh had been roughly handled but was gradually recovering from the shock he had sustained. The scoundrel had stunned the poor fellow the moment he had shown signs of disturbing them in their search, but from the keen interest he took in all that was going on, it was evident that the time had not yet arrived when he should pay in his checks. When he made inquiries about the sacred vessel which had been his thought by day, his dream by night, Sam compassed him with lies and dodged every inquiry with his own matchless skill in the use of subterfuge lest the shock of its loss might kill him on the spot.

One of the crew with a ship's lantern, in guiding the operations of the policeman was performing the office of first aid to the victim of Sonny's bullet, flashed a strong shaft of light on the man's face. It's ghostly aspect drew an exclamation from some one, and all turned to look at it.

"My God, its Elmer!" the old man cried, shivering in every

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limb, his face blanched with the bloodlessness of death.

"Don't worry, Josh; he's past prayin' for or doin' ye any 'arm now. Anyhow, if he lives I don't think he'll get much space to swing his legs in for the rest of his life when the boys here get to know of his record at home."

When he had been taken away on the police ambulance, the four occupants of the cabin did their best to straighten things out, but although they had been robbed of the best part of their night's rest, sleep was still impossible while the fever of the excitement continued.

As they sat discussing the untoward proceedings and unaware of Sam's desire to keep it quiet, the mate blurted out an expression of his intense regret that the thieves had been able to make away with the treasure. The news fell on Josh like a thunder clap, and he threw out his hands in mute appeal to Sam for any consolation he could give him.

"No good takin' on like that, shipmate. 'Ow could I help it? It was yer fool way o' doin' things. You planned the whole business and you've no doubt blabbed about it to Elmer or some other chap what put him wise to that lobster tin o' bank notes and sovereigns bein' aboard. An' o' course, what could you or any man what can see two inches ahead of his nose expect to happen. Why, just what did happen. That thief would have 'ad them shekels by hook or by crook. Ye've allus been the same Windlass. Yer a man what cannot be crossed in any straight-forward way. If a chap wants to have fair play out o' ye, even for yer own benefit, he's got t'git it by foolin' ye or swindlin' ye in some gol-darned way or another."

"But there! Don't yer lose yer pecker altogether, mate, an' look like a chap about to be hung. Your time ain't come yet, an' the police may be able to trace the man that got away with the swag altho' it's as unlikely as a hurricane in the doldrums, so far as I can see," continued the merciles Slimber.

As Sam proceeded, Josh looked the personification of misery, of some victim of dark despair from whom the last ray of hope or interest in life had blown out never to rekindle. The Doc' tried to preserve a countenance in harmony with that of the suffering Windlass and his success was remarkable.

Poor Sonny looked so sympathetic and so overcome with the awful loss of his grandfather, and what it would mean to him, that Sam felt constrained to ease the boy's mind at once, and ordered him on deck for something that wasn't there, merely to reassure him in his own enigmatically way that it would "come all right yet."

Old Josh admits that he "never knew how he lived through that night;" but he did survive and gave the best example on record

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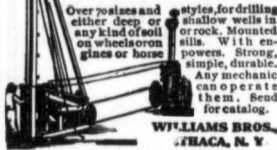
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that no man need perish by his own suicide, however fiercely he might be hounded to it if he had one faint glimmer of earthly interest still flickering in his heart.

Next morning the "Mermaid" was hauled in and moored to the quay and the business of unloading her general cargo proceeded under the direction of the sturdy mate.

Captain Slimber, from the moment of getting up, took on an unusually jovial demeanour and shaved and dressed with as great care as if he were preparing for a wedding. The contrast to the sombre happenings of the night before, struck old Josh. "But there!" he reasoned to himself, "Sam was always a bit o' a riddle an' had his own way o' doin' things." The gay and festive humor was no doubt put on with the kindly purpose of raising the spirits of the man who had, it seemed, been denuded of practically his whole material possessions, and Windlass was not a long time until he caught the infection from Sam.

"Get on your best togs, Windlass; I'm goin' to take you an' Sonny with me to see the sights of Boston. I've got to call on some swell friends, an' we musn't so much as smell o' beer or bacca."

Shortly after breakfast the trio found themselves in a street where there was nothing in sight but great buildings such as Josh had seen in the banking and stockbroking thoroughfares of London and the great European cities he had visited.

To his amazement, Sam led him into one of these which he had evidently visited before, for he took a straight course, without asking a question, to a wicket at the far end on a long counter, where his inquiry was politely answered by a youth who showed them into a little room.

By and by an elderly gentleman ("the very image of Mister Pickwick") Sonny said afterwards, came in and shook hands very warmly with them all.

"Well, we're all ready for you, Mr. Windlass. Tell me how much you want to take with you, and then we will fill in the particulars on this slip so that we can make out the draft to the point nearest your destination."

Josh looked towards Sam and Sam looked as if champagne oozed out of every pore of his clean, shaven face, shaking with merriment as if his head would drop off from his fat, wobbly shoulders.

It's like this, Mr. Baring," he at last began by way of explanation to the great banker; "that old fool wanted me to fetch over in bank notes an' gold the money you've got on that there draft. Well, sir, I ain't sich a hass as to take any risk o' the kind, so I stuffed his bloom' old tin full o' paper curls I got from the matron of the convalescent home and some bits of lead clippin's to make the dead weight o' the sovereigns,

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an' took the real money as ye can see, to your chaps in Lom-mard Street. Let 'im see that bit o' paper, Sir."

And "Mr. Pickwick" exhibited to the astonished Windlass a crisp, neatly-written and printed document: "At sight of this first of exchange—second and third unpaid-pay to the order of Samuel Slimber, the sum of eight thousand and twenty pounds."

The old man sank into a chair and wept—the first tears he had shed for many a long day.

"Avast there Josh, we ain't done wi' business yet," and Sam proceeded to undress as if in response to the call of "Man over-board." First came his great pea-jacket, next a wool-lined waistcoat, and then another, and finally the pigskin braces of his huge pants, went by the board. Off came the shirt, and when the pants were just on the point of clewing up like the "Mermaid's" big foresail when she hove to, Sonny sprang at them and averted all disaster, while Sam unhitched a great buckskin waist-belt. From a pocket of the latter he proudly withdrew a packet which he solemnly handed over to Windlass. Josh opened it with trembling hands and there was the historic necklace with the no less precious Napoleon—the legacy of his dead wife and which were more precious to him by far than the wealth of two continents.

The storm-buffed old salt seemed to be deprived of all powers of utterance and to transact the little business he had remaining with the great banking house as if he moved in a dream. All the same, the great banker was a reality—a living creature of flesh and blood. The money also was a thing that positively did exist, and Time in his flight did not pause one instant to wait upon the inertia even of Joshua Windlass.

Documents were completed that defied the worst that marauding mortal might do to possess this man's property without the further help of Sam Slimber, and next day, the old man supported by the young life that had been the biggest factor in his salvation was to start on the last lap that remained between him and his great objective.

"What d'ye say to a shot at a tin of lobster, Josh?" Sam suggested when Sonny entered the cabin for the last time to ask what he would get for supper.

"Get a ship load o' them, Sam, if you like and I'll foot the bill, but I'll stick to my gruel if ye don't mind. Lobsters gie me visions and—"

The whole ship's company reflected the smile that lingered on the face of Joshua, and "Doc" Macpherson gave it as his professional advice that if he renewed that act of self-abnegation at every temptation, it would guarantee him an immunity from nightmare for the rest of his natural life.

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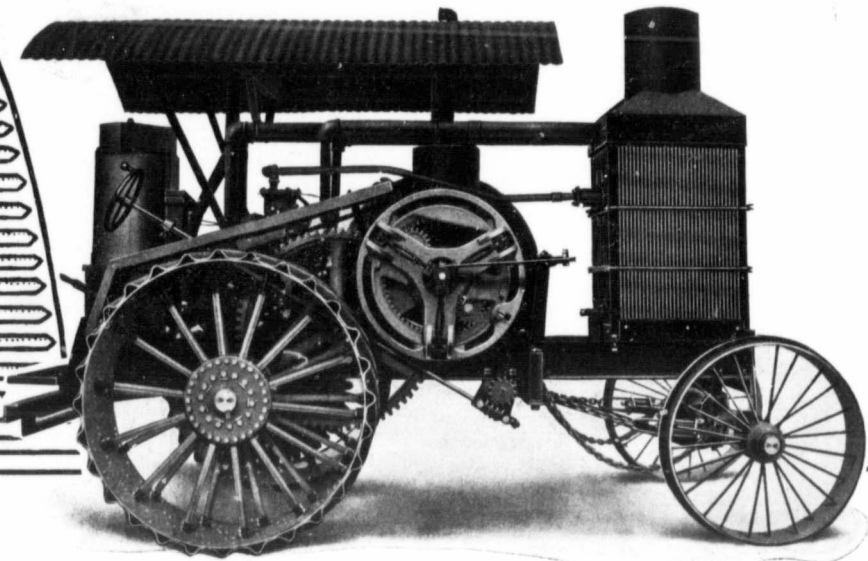
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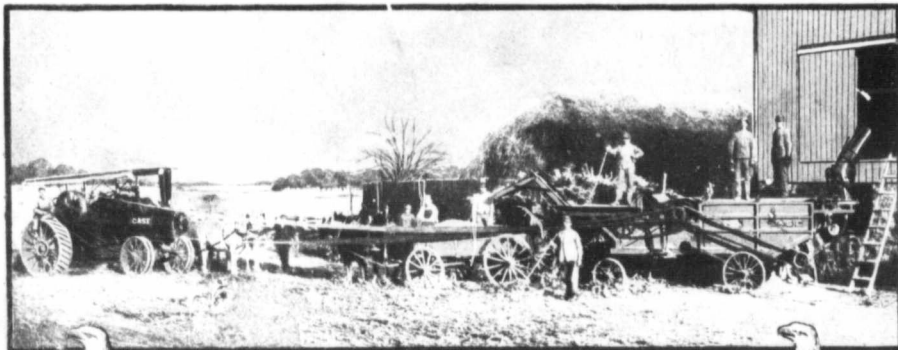
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