

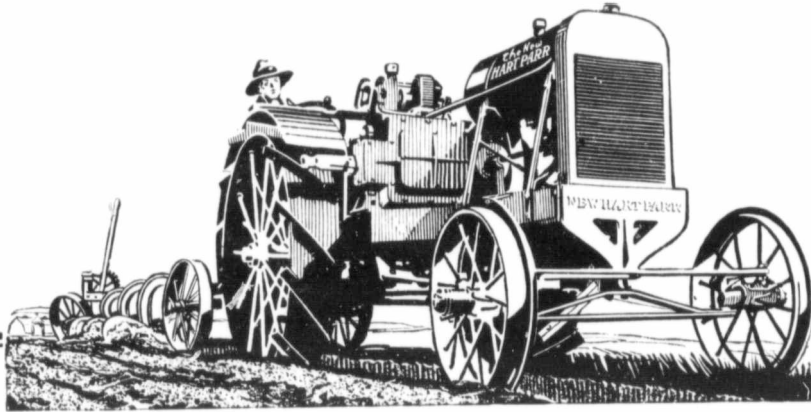
The **CANADIAN** THRESHERMAN AND **FARMER**

WINNIPEG CANADA
MAY
NINETEEN NINETEEN



A little bit of Manitoba May Blossom.

Published Monthly by E. H. HEATH CO. LIMITED - Our Seventeenth Year



SUMMER FALLOWING

IS AS NECESSARY IN MOST PARTS OF
WESTERN CANADA AS RAINFALL.

Summer fallowing must be done at a time when the weather is very warm, and owing to the growth of weeds that covers the ground, the draw-bar pull per plow is heavy.

More horses are injured summer fallowing or summer breaking than at any other season of the year, on account of the extreme heat and heavy work. Further, a great deal more summer fallowing would be done each year were it not for the fact that horses are not equal to the heavy job of plowing during the hot weather.

Summer fallowing with a New Hart-Parr is the ideal way. Warm days or cool days; long days or short days; dry weather or wet weather; it is all the same. You can plow deep or shallow. There is plenty of reserve power. You can double your summer fallow acreage over what you can do with horses. You can raise more crop at less expense.

Plow More—Plow Deeper and Plow at the Right Time

That is the basis on which you should buy a tractor and put your farm on an adequate power footing. **RAISE MORE---SELL MORE** is another way to put it.

The New

HART-PARR

pulls three plows in any soil. It does it satisfactorily on kerosene under all conditions with the Dray Kerosene Shunt. Bulldog tenacity is an outstanding feature. It is an easily managed, four wheel, two cylinder, water-cooled tractor. It has a sturdy cast steel frame and is the type that farmers have already approved. All parts are easily accessible. The aim has been to give you maximum power for the price.

WE ARE DISTRIBUTORS FOR P&O PLOWS AND SUPERIOR DRILLS. A FULL LINE OF REPAIRS CARRIED IN STOCK.

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Specifications

Power—Pulls three plows, 30 H.P. on belt. Tested at the last National Plowing Demonstration at Salina, Kansas, developed over 31 H.P. at 732 R.P.M.
Motor—2 cylinder twin, 4 cycle. Valve in head, 750 R.P.M.
Tractor Frame—Cast steel, one piece. No bend, no twist.
Carburetor—New Dray Kerosene shunt.
Bearings—S. K. F. and Hyatt.
Speeds—Two forward; one reverse.
Transmission—Selective sliding gear.
Cooling Device—Honeycomb radiator—shaft driven pump and fan.
Lubrication—Fresh oil, force feed.
Weight—5158 lbs.



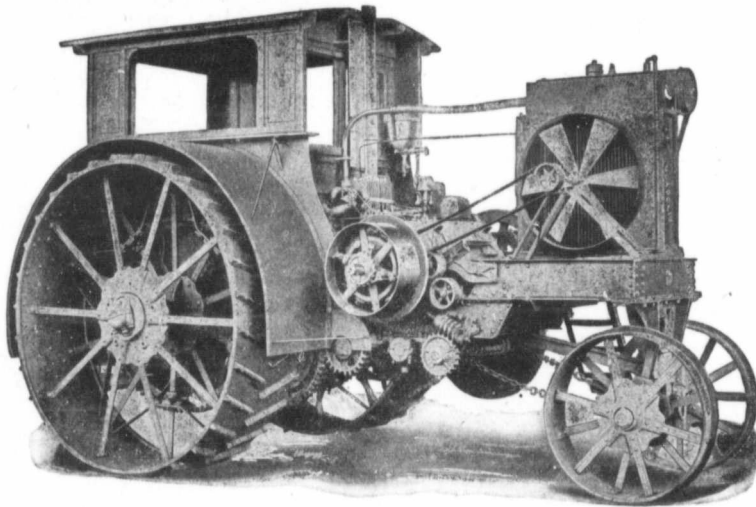
"The Great Minneapolis Line"



Kerosene Burning Tractors Large, Small and Medium Sizes

Renowned for

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- Economy
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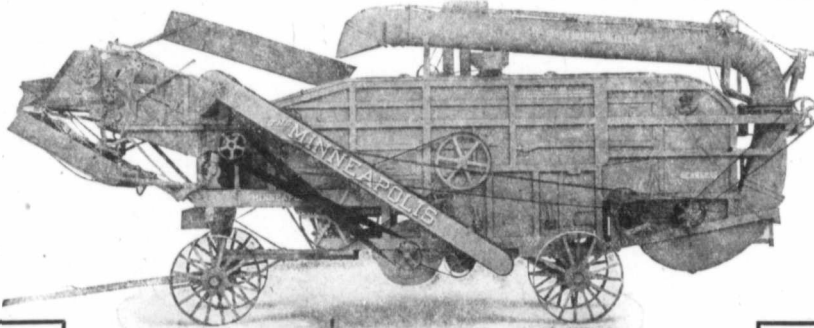


Dependable Power for

- Harvesting
- Threshing
- Plowing
- Harrowing
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- Seeding
- Hauling
- Road Grading

Minneapolis Tractors are built in our own large modern equipped plant by skilled mechanics, and of highest grade materials. They are rigidly inspected during construction and thoroughly tested when completed. Their reputation was earned and is being maintained by merit. Satisfactory and Economical Service.

Built Right
 Runs Right
 Sold Right
 —
 ASK ANY OWNER



A Good Thresher
 —
 A Perfect Cleaner
 —
 A Miser to Save
 —
 ASK THE FARMER

THE MINNEAPOLIS—THE POPULAR THRESHER

Each year brings increased demand for Minneapolis Threshers due entirely to their established reputation for performing in a highly satisfactory manner the most work in the least time.

WE INVITE INVESTIGATION AND COMPARISONS

Our Customers are our References

The Minneapolis Threshing Machine Co.

HOPKINS, MINNESOTA

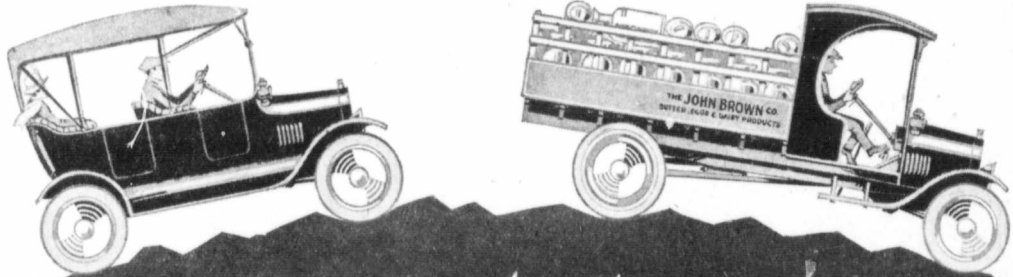
WINNIPEG

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Like the teeth of a buzz saw!

YOU'VE stood in awe before a buzz saw and watched it literally tear its way through a piece of material. Being driven at such a terrific speed, it produces results that are almost startling. But if you were to run the buzz saw at a much slower speed, and take some of the keenness off of the teeth, then you would have an action very similar to that of road bumps, ruts and rough places as they rack, strain and wear out your Ford Car or Ford One Ton Truck.

The thousands of sudden, heavy impacts, while not sufficient to cause instant breakage, yet cause great and unnecessary wear on all parts, particularly the power unit and the tires.

It has been proved by nearly a million Ford owners that by properly cushioning their machines against road shocks and vibrations with Hassler Shock Absorbers, that you save at least 30% of the ordinary tire and repair expense,

and that your Ford's depreciation is decreased a like amount. You also obtain considerable increase in gasoline mileage, due to the smoother running. Hasslers prevent squeaks, rattles and deterioration, for the spiral, conical springs of chrome-vanadium steel compress on either upward or downward movements.

In addition to all of these savings you have such greatly increased comfort that your Ford Car or Truck rides and drives as well as the highest priced heavy models. It steers easily, holds the road, travels safely at high speed, and the general and good satisfaction you derive from its use is increased astonishingly by Hassler Shock Absorbers.

Hassler Shock Absorbers can be put on in a very few minutes, either by you or your garageman. There are two types, one for all Ford Passenger Cars, the other "Double or Twins" for the rear of the Ford One Ton Truck.

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Don't ride without Hasslers because someone tries to discourage you. They are a quality product—worth their price. The Hassler dealer in your vicinity will put them on for 10 days' trial. Your money refunded if you say so. Write for name of dealer and Trial Blank.

ROBERT H. HASSLER, Ltd. 110 Sherman Avenue, North
HAMILTON, ONTARIO, CANADA

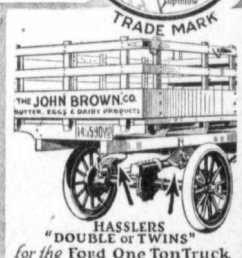
The Hassler Guarantee: "Absolute satisfaction or your money back"



Shock Absorber

PATENTED
MADE IN CANADA

The conical springs set at the angle shown, prevent sideways and allow for the most resilient downward action. The springs compress on either upward or downward movements—do not stretch out of shape—do not allow up-throw. Hasslers last as long as the Ford and make it last.





Vol. XXIV

WINNIPEG, CANADA, MAY, 1919

No. 5

LUTHER BURBANK and Dr. Charles Saunders have been acclaimed wizards in their special departments of natural science, that of creating new varieties in flowers, fruits, and cereals. One of them is an American and the other a Canadian, but they "belong" neither to the one nor the other. They are citizens of the world who have earned and would be cordially welcomed to the freedom of any city or community on earth.

From the time they began to make a study of the habits of plant life, and to discover the secrets of reproduction in their particular field, both men are entitled to the sole credit of some astonishing results, the economic importance of which has as yet scarcely dawned on the people they will ultimately benefit.

Two more humble men are not living to-day, men who are so little disposed to shout about their achievements; and yet there are probably no contemporaries who could have greater justification in mounting the band wagon with the trombone. They are of the retiring type like that other great student who first spotted the law of gravitation, and said near the end of his life that he was but a child on the seashore gazing out upon the great unexplored ocean of facts.

That is the way, the "thought habit" of all really conscientious investigators. One and all, they persist in disclaiming the right to the plaudits that come their way, and with perfect ingenuousness declare that they have done nothing that someone else could not have done as easily had they cared to set about it and worked with the same persistence.

Here we are in May with the seed practically all in, and so far with the prospects of a fine germinating season. No doubt a great part of Western Canada's seed bed has been indifferently prepared, and some careless or impecunious souls have not been over-particular in the selection of their seed, but on the other

A Wizard's Cap to Fit Every Farmer Boy

"Nothing great ever began great"

hand there is a large and growing crowd of serious men and young folks who have given much thought and infinite pains alike to

kets has stirred the cupidity at least of many keen grain growers, but far more satisfactory is it to find that the spirit of the men

crowd of farmer's boys—old boys, like Seager Wheeler, Samuel Larcombe and Donald MacVicar, as well as those indomitable lads of the boys' and girls' clubs.

"What one man has done another can do" if he will but pay the homely price in sustained effort. The same "wizard's cap" that metaphorically covers the silver hairs of Luther Burbank, or the still auburn locks of the younger Dr. Saunders, will fit the smallest boy or the oldest settler on the prairie if he wills it.

There's no secret or royal road to still more astonishing results than have been achieved by these men other than sustained and intelligent observation and careful experimenting. Boys, you have the whole materials for the performance of the trick in your hands—even Nature and labor, seed, soil and atmosphere.

There is a bigger "ocean" of unexplored facts in Western Canada than even Newton looked out upon, and the fruits of patient perseverance are withheld from no man. Nature is amazingly kind and scrupulously just (which is more than you can say of many employers of labor). If you toil in pleasant companionship with her for twice eight-hours-a-day, she won't do you out of a dime; her rewards and her punishments are invariable.

In a recent issue of "The Canadian Thresherman and Farmer" some very strong things were said in reference to the government making a large increase in the appropriation it has been in the habit of setting aside for purely investigational purposes, such as are being carried on by Dr. Saunders and his colleagues. That is all right, and it is due to the best interests of the country that the powers who control the public purse should loosen up most liberally in this respect.

But there is a strong probability that the voluntary investigations and experiments carried out by the enthusiasm of the farm boys might go a long way in the same direction if they did



OLD DADDY RED FIFE

This bundle of No. 1 Hard was raised on the farm of Mrs. Watson, 14 miles south of Weyburn, Sask.

the character of their seed and the condition of the seed bed.

The wonderful record of Marquis wheat on the world's mar-

who so patiently and so intelligently brought it forth, so to speak, is taking hold upon and fixing the ambition of a big

not in the long run outclass the results of the official investigators. Dr. Saunders was not "paid" to find out what it required to produce a wheat like "Marquis." You can't "pay" men like Saunders, and Burbank, and Edison.

Nothing is more certain than that there are young Burbanks growing up in considerable numbers on the western prairies, only needing encouragement and direction to lead them to results no less momentous than have crowned the efforts of the men we have named.

When these wonderful men were mere boys, like the average young hopeful you find in any boys' or girls' club, who would have ventured to predict that they would find a way or make one to what they have accomplished? And who will dare to say of any particular boy that he cannot do still greater things than these great leaders of to-day have done?

It is, withal, a most fascinating study, this interbreeding, cross-fertilization of plants. There are few things so completely within the reach of any member of a farm home that will afford greater delight, that will "pay" better, that will make a man such a first-rate companion to himself as a little corner of his holding close to the home buildings dedicated to investigations and experiments.

How many farm chemists have we actually "carrying on" after they have heard the elementary lectures and dabbled in the experiments at the college? What might it not profit some man or a great many men if one obscure but patient observer found out just how the flax-straw that is grown in Western Canada can be dealt with so as to make it a commercial success in our textile industry?

Has Nature set limitations upon man so that he cannot hope to do anything better with those thousands upon thousands of straw piles than burn them, or at the most use them for bedding his cattle? The thought is preposterous, but the idea will

remain where it is until some strong soul comes along and actually delivers the thing that has been simmering in many minds for generations.

It is hardly necessary to put up a similar plea for the livestock end of the Canadian farm because it seems to be doing remarkably well. As all educationalists know, far more is being spent in thought, in energy and in money upon the improvement of certain livestock units than upon the education of the young people.

Then there is an important difference in the boy's eye between a promising young calf or a colt and a head of wheat. Between the boy and his colt or calf a bond of real human interest starts in right away and grows stronger as time goes on.

groups of friends and visitors to the home with a few ordinary microscopic slides placed under an instrument of average power, and with the solitary exception of a principal of one of the city schools, not a single individual of those hundreds of educated citizens had ever seen "anything like it." "Well now, what d'ye know about that!" "I'd no idea there was anything so wonderful in such a common thing!" are a sample of the expressions of amazement that punctuated the little show.

Now this will all have to be changed in so far as the coming men and women are concerned. There's money enough and to spare in millions to do it if the heart is there to do it wisely. Money is but dirt in the wrong

all departments that with the public support, such as it has been, the educational work which has been done through the ordinary public schools as well as the colleges has been wonderful.

The onus of the blame is on the back of the dollar-devoted citizen who is more concerned in heaping up an already top-heavy bank account than in helping to raise the minds of his young people a bit higher above the store-counter, and the livestock ring than his own has been pitched at since he could remember.

The observation has often rung out from the public platform that the greater part of the farming interest by their attitude towards the development of the young folks are of the opinion that a well-bred livestock unit is

of far greater account than a boy or a girl raised on the farm. That is a raw statement, but it is in perfect accord with fact in the case of very many fathers of sons and daughters who have been born upon and are expected to remain on the farm.

And what a wretched, short-sighted policy it is—even if the father must look at it from the selfish point of view of his own material interest. Does he reflect that in a few fleeting years at most he will be quite unable to rampage about his cattle barns and grain fields at the killing pace he has set for himself? Does he ever stop to think what sort of a companion he will be to his children when the day of enforced idleness and imprisonment in the sick ward comes?

And just how far may he reasonably expect "the family" to interest themselves in him at that high-and-dry period of his one-sided existence as they look back on the years of drudgery they have passed through at his hands?

This is a "thought" that is worth thinking over.

People talk of "sacred history," meaning what happened in Palestine many centuries ago; they have yet to learn that the history of modern Canada is every bit as sacred.



Making a careful selection of heads from a first-rate crop of "Marquis"

The lad needs little or no inducement to keep his eyes peeled for faults or fine points in the living intelligent thing, but the study of a few grains of wheat, oats or barley is a far more prosaic job.

And yet just here is a great, inexhaustible mine of mental and material wealth that so far has barely been tapped. How many boys and girls, for instance, have had the privilege of examining the structure of a wheat or an oat kernel through an ordinary high-powered microscope? How many teachers in the public schools of Western Canada have any idea of the anatomy of the wheat plant, as seen under the microscope?

For many years the writer at odd times has entertained

place unless used with wisdom and foresight as to its results.

Some two years ago a friend who is fond of figures got hold of the list of Manitoba automobile licenses, made an analysis of same and of the public accounts dealing with the Department of Education, and found that (making fair allowance all round), the province had spent in that year something like twenty-nine times the amount on automobiles it had set aside for public education, the former for the greater part used for pleasure only.

This is a poor showing for Manitoba, and its much advertised educational facilities. This state of things has not been created by the educationalists, but in spite of them. Let us say for

Mending the Ways of the West

THE fixing up of the country road bed is not the first thing the farmer usually thinks of when he has the leisure or the money to lay out on improvements. It was therefore a cheering experience to the writer during a recent trip westward to find the subject of "good roads" so constantly in evidence among the farming citizens, not only as a matter of conversation, but being actively proceeded with in various ways, no less on trunk roads than on cross roads, and everywhere where traffic called for something more resistant than the old prairie trail.

There are few things in Western development on which so much money has been wasted, not to speak of the abortive labor of well meaning men and municipalities, than on experiments in the making and maintenance of good roads. Why?

Because of the want of concerted effort and the fact that for the greater part the individual or small local schemes have proved the merest makeshifts. They have been the best that could be done for a fixed maximum available price; that price was totally inadequate for the needs of the case, and in the end, after a good business-like deluge of rain and one or two heavy wagons had left their mark upon the "new grading," the last state of that road was worse than the first.

In the making of good roads, like everything else, one need not spend so much on a first class, thoroughly satisfactory job that will stand up under any test as will be frittered away on two or three drivelling attempts to plug up the mud holes and cover the surface with a few loads of soil.

The Dominion Government, and the various provincial governments, are now making advances to the municipalities, on conditions so reasonable that they cannot be set aside unless by some one or set of men whose meanness is too mean for anything in citizenship or neighborly consideration.

The farmers, however, have to

thank the motorists not a little for the substantial government recognition which has lately come their way. Of course, practically every farmer is now, or soon will be, a motorist but only a few years ago the case was vastly different.

While the pioneer motor clubs consisting of comparatively few members did yeoman service in their time, and a great deal has been done recently on a bigger scale than could have been attempted in the early days, there's still a very big task lying ahead before even the well-settled dis-

Act of 1914. This provides for the payment of two-thirds of the cost by the government on main roads of importance to the province as a whole; one-half of the cost on municipal roads and one-third of the cost on the smaller class of roads.

All these grants include the cost of culverts, bridges and drainage. The work is carried out under the supervision of government engineers, the contracts for the work must be approved by the Good Roads Board, and the entire system receive the approval of the government. Thus



A FINE ROAD MAKING EQUIPMENT THAT SPEAKS FOR ITSELF

tricts of the West can be said to be well equipped in good road service.

Government control of the main trunk roads is being recognized as the only satisfactory way of dealing with the question of upkeep. It follows as a matter of course that under one centralized control in this way the work of construction and maintenance can be carried out far more effectively and cheaply than can be accomplished by a large number of small municipal programmes, with gaps here and there and no uniformity anywhere.

The present system of building good roads in the Province of Manitoba, for example, is by government subsidy to the municipalities under the Good Roads

the whole scheme is under government control as far as the work is concerned up to the point of completion of construction, when it is turned over to the municipalities for maintenance.

No step, however, can be taken in any good road scheme unless the municipality takes the initiative and here is just the weak link that can only be overcome by the public-spirited co-operation of all the municipalities, or by the act being amended to make it obligatory on the part of a municipality that really has the means to do its bit to accept the part of the government.

So far there have occurred a considerable number of breaks—we will not say all, or chiefly

due to the lack of willingness on the part of the defaulting municipalities, but there they are, fine stretches of good roads being built only to end suddenly in a wide gap of quagmire or worse.

To meet this, the government has under consideration the introduction of a bill which will give the Good Roads Board power to step in and compel a municipality to connect up with a good roads system to either side of it if after being invited to take their part they express their unwillingness to spend the money necessary to make the connecting link.

What has been done in the interval since the 1914 Act came into operation is a most satisfactory record, all things (including war conditions) taken into account. Fifty-one municipalities have availed themselves of the government's assistance, 809 miles have been constructed in Manitoba, while some 2,235 miles of road have been placed under the provisions of the Act.

This is an affair that is really everybody's business, for there is not a responsible citizen in city, village, or on the prairie who has not a definite interest in the maintenance of good roads. To the farmer—especially the man who is at some distance from his railway point—the matter is of vital concern.

Good roads are of primary importance to the educational interests of the young folks. Consolidated schools, however well equipped, are of little use if they are not get-at-able, and there are some "eloquent testimonies" to the part that bad roads have played, and are still playing, in the case of children having long distances to travel between home and school.

Money—even a small contribution—given in support of a real improvement in the public highway is money well spent, because (in rural districts especially) nothing in outlay tends so much to increase the value of the farm as a going concern—as its owner will find when for any reason he is desirous of selling it.

THE CANADIAN THRESHERMAN AND FARMER

CANADA'S LEADING AGRICULTURAL MONTHLY



PUBLISHED MONTHLY BY

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May

The Public Service

1919

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 is 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."

THE incarnated spirit of public service is found in the person of that fine old Briton who said: "I look after my business for the sake of my wife and children, but I hold that a man's duty to society requires that he should have a care for those who are not of his own household." This humble man's life is one of the most precious and splendid portions of un-advertised Anglo-Saxon biography. Its whole tenor speaks to the fact that the humblest cobbler citizen can be and very often is among the greatest of public servants. It shows that the best kind of public service is done in secret and without sight of man. It does not advertise itself. It adopts a larger creed and a loftier code, which to be subject to and obey is to consider every human life and every human action in the light of an eternal obligation to the race.

But the popular idea of the "public servant" is not the humble soul who quietly fishes for employment in his own small pool of acquaintance. The "real public man" is the more incisive person who is sent to Westminster or Ottawa, or who is hoisted into the city council. To these men there is delegated a fearful responsibility. Within one brief term of office they may add a crown of glory to a clean record of public service or they may create conditions that will wreck the finest social structure ever set up by God-inspired mortals. What really qualifies one for public service on the larger scale and makes him a "safe man for democracy?" Above all, who are the men and women to whom the rank and file may confidently look for leadership in the public service in these fateful times?

Of a surety there is heavy weather ahead and a vast uncharted sea that will tax the character and genius of the best heart and brain in Canada. To the big questions that are even now exercising every responsible person and household of the community must be given big answers. Man's united ingenuity has to rise to supreme heights to solve the riddles of the modern world. The men who will solve them cannot be small men. The small man, rich in artifice, can never handle big and elemental things. But the "small man" is not necessarily the obscure man. More often than not the really big man is found on the cobbler's bench or setting types for a bare living, while the really small man is the puny so-called "captain of industry," stogy, pompous and imperious, soused in ugliness and humbug.

While our past for the greater part of its public life is a sorry medley of good intentions gone to seed, of rough-shod rascality with a fair leavening of noble service, the future is still a white sheet that may as easily retain its virgin purity as it may be smudged by inexcusable wrong-doing. It has no terrors for the constitutionally good man. There's mighty comfort in Mr. Wilson's recent saying that "the forces of the world do no threaten —they operate." In all debatable points in human relations, the solution of the seemingly complicated is exactly the same as the settlement of the obviously simple. It is entirely a matter of sincerity and temper. The great men of the race to-day are those who are chiefly capable of a great sincerity, and every schoolboy knows that the fixing up of any quarrel depends upon the frame of mind in which both parties approach the pow-wow.

A keen observer gives it as his firm conviction that the main cause of all the unrest in the world to-day is the state of idleness prevailing in that class of persons who have no need to labor. The old school copy books kept reminding us that "An idle brain is the devil's workshop," and no man or woman would think it necessary to ask the copy book to prove its case. Their whole experience tells them that in any fit of the "blues" or spell of discontent, no exorcism charms like hard work. When both brain and brawn are marking time it is then the human machine gets its real experience of that mood of the soul we call "Hell." To so many, life is pleasure; to still more it is suffering, and there you have the reason for the "strike vote."

Public service, perilous, arduous, delicate, is required right now from every soul who is capable of service, but let there be no mistake as to what will be acceptable in "public service." The past is strewn with the wreckage of the unacceptables. Where money or self-interest is concerned, the public servant must first of all be found clean, and last of all, be found clean under the X-ray test of that clear white light called conscience. Whether rich or poor, busy or with "time to burn," the hour is great with opportunity for the man or woman who would realize that the greatest satisfaction on earth is hopeful, useful interest and service if it is only in behalf of the man on the next stool at the lunch counter. Be a door-keeper in the humblest village Bethel rather than a prince in the "tents of wickedness."

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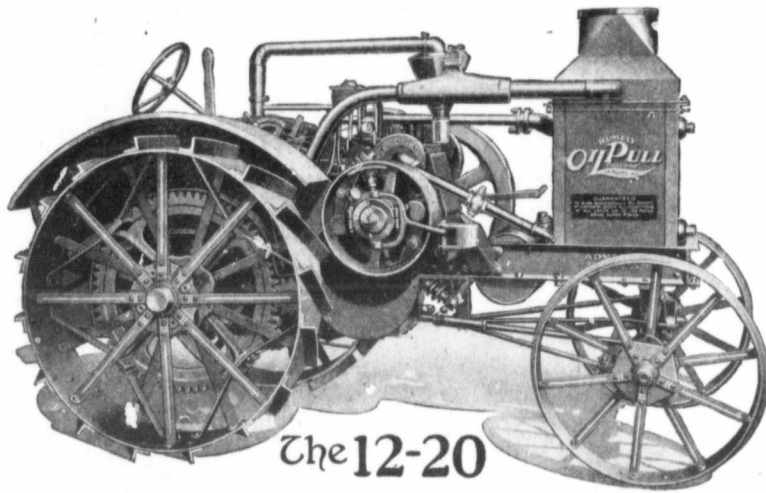
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The 12-20

Capacity—Pulls three plows—operates 22-inch thresher.

Fuel—Guaranteed to burn kerosene successfully under all conditions.

Cooling—Oil cooled—no evaporation—non-freezing.

Motor—Heavy duty, 2 cylinder 6 in. x 8 in.—560 R. P. M.

Crankshaft—Built to U. S. Naval Specifications.

Frame—Hot riveted steel members—no bends—no splices.

Transmission—Cut steel gears, enclosed and running in oil.

Bearings—Hyatt roller bearings in transmission and rear axle.

Governor—Fly ball throttling type—automatic speed regulation.

Belt Pulley—19 inch diameter—running directly off crankshaft—no intermediate gears.

Lubrication—Force feed and splash.

Speeds—Two forward—one reverse.

Drawbar—Adjustable spring drawbar.

A New OilPull in a 3 Plow Size

"Build us an OilPull in a 3-plow size."

That was the call from farmers everywhere—and the 12-20 is our answer—the latest and smallest of the OilPull line, an all purpose outfit built on the proved OilPull design and construction.

Into the 12-20 are built all the features that during the past ten years have established the unequalled OilPull record for economical, dependable operation and long life—plus those improvements that only long experience can teach.

Like all sizes of the OilPull the 12-20 is backed by a written guarantee to burn successfully all grades of kerosene under all conditions, at all loads to its full rated brake horsepower.

In the 12-20 the weight distribution is absolutely correct—no danger of turning over, or the front wheels raising off the ground. The 12-20 "stays put" on rolling land as well as level.

The 12-20 is a light weight, big power outfit—its rating based upon only 80% of its maximum efficiency—a 20% reserve power when you need it.

The 12-20 is oil cooled, which means that the radiator will not freeze in the coldest weather nor boil in the hottest—that it will go indefinitely without refilling—that instead of clogging the circulating system with sediment it keeps it always

open—that instead of rusting the cooling system parts, the oil preserves the metal. The OilPull cooling system eliminates a cooling fan—it keeps the motor at the right temperature at all loads. The harder the OilPull works—the cooler it runs.

The 12-20 is as efficient on the belt as on the drawbar. The belt pulley is just where it ought to be, on the right hand side, up within full view of the operator. The 12-20 can be lined up with a belt machine, backed into the belt and the belt started and stopped from the platform. The belt pulley is driven direct off the crankshaft—no loss of power. The band wheel is extra large and by driving through a cross belt allows the use of a looser belt.

The 12-20 will pull three 14-inch bottoms under average conditions, operate a 22-inch thresher fully equipped, and handle all the various drawbar and belt power jobs.

All OilPull tractors are not only backed by a guarantee that assures you the most economical operation—they are also backed by an organization big enough to guarantee you efficient service at all times. Advance-Rumely maintains 27 branch offices and warehouses.

Ask for the catalog describing this new 3-plow OilPull.

ADVANCE-RUMELY THRESHER CO., Inc.
La Porte, Indiana



ADVANCE-RUMELY

WE are informed from a reliable source in the United States that if the Great War had continued for another year, implements would only have been procurable by farmers after their orders had been investigated. An inspector would have been sent to see whether or not a new plow, mower or binder was actually required. He would have decided in many cases that with the necessary repairs the old ones would have to run another season or two.

We believe that more trouble comes under the latter part of the question topic, that is, in the actual care and operation. So we ask you to ask yourself the question, "Am I doing everything I can to make the best use of the implements I have?" The implement companies are doing their utmost to produce efficient implements, and because they may be carelessly or inefficiently operated, are they to blame? Certainly not. Of course, there are poor implements as well as poor operators. The question is: What are you going to do about it? Kick, or try to improve things all around. If you have to pay a big price for a gang plow, it is in your interests to get the best and also to make it last as long as possible. You should make it last ten years, and that period will be a very large percentage of the total time you will be farming. Do you want to sit on your plow and do poor work? Of course you don't. The writer holds no plea for the implement companies, but there is too much good machinery needlessly wasted for which they are often blamed. From

- (1) The large number of queries regarding the purchase and operation of machinery.
- (2) The interest already shown in the demonstration work in the draft of plows at plowing matches.
- (3) The clever advertisements announcing the introduction of new machines of all kinds.
- (4) The shortage of reliable help and the fact that much new machinery has to be procured (especially machines adapted to power work).

The writer is convinced that the return of the old-time Ontario field trials of farm machinery of all kinds would fill a long-felt want. They could be held in the summer. It would be to the mutual interest of manufacturer and farmer.

There would be considerable



Better Machinery or Better Operation of what we have ---Which?

By PROFESSOR J. MacGREGOR SMITH, University of Saskatchewan

work for those in charge. Plans would have to be well organized. To escape criticism, do nothing, say nothing, attempt nothing, be nothing. There will be adverse criticism in every district, but it can be done if the right men in the district are put in charge. Remember after you place them

farmers in the surrounding district would like to see the different makes of plows tried out, the draft tested, and the important adjustments pointed out. This would be of great benefit in the case of engine hitches. Perhaps there is a new cultivator on the market. A new attachment may



The "Wallis" tractor handling two drills

in charge, support them. A few cannot do it all. The old antagonistic days between rival companies are passing. Co-operation is replacing competition. What is for the good of

be for sale to attach behind a gang plow and many went to see if it beats a section of the old drag harrow.

These are suggestions. A start could be made and later on in



The job as done by the drills through the power supplied by the "Wallis" tractor

one is for the good of all.

Let us suppose a community decides to have such a demonstration in connection with the annual plowing match, or summer fair. The agricultural society or the Grain Growers' Association would call a meeting in co-operation with the local implement men. If they seemed indifferent their respective head offices would be glad to co-operate, explain the proposition to them, and tell them that the

suitable districts tests of stumping machinery could be conducted. A demonstration in the use of blasting powder would be worth while in a bush country or where stones were in abundance. It could be put on by a representative of one of the dynamite companies that advertise so much in the agricultural press.

More manure spreaders will be required in the future. The field is a better place than the showroom to demonstrate what each

type can do. Would it not interest you to see half a dozen at actual work? Seeing is believing, and you could see for yourself and decide. You would see the effect of narrow and wide wheels, of widespread attachments, how many horses were required. You would go home and say, "We are going to get a spreader and I know the one to buy."

Some of these things at the summer fair would beat throwing eggs at a coon. The results would be more satisfactory and far reaching. They will mean greater success in your business of farming.

There are districts where a dozen or more tractors are going into this spring. The prospective owners would be more confident of success if they knew how many plows each was going to pull. We are well aware that in some cases local demonstrations have been held by the various companies with splendid results. We refer particularly to the newer types about which we know little as far as their Canadian records are concerned. The power required to pull the plow could be ascertained, the draw bar horse-power explained to those interested. The experts could tell every trick they know.

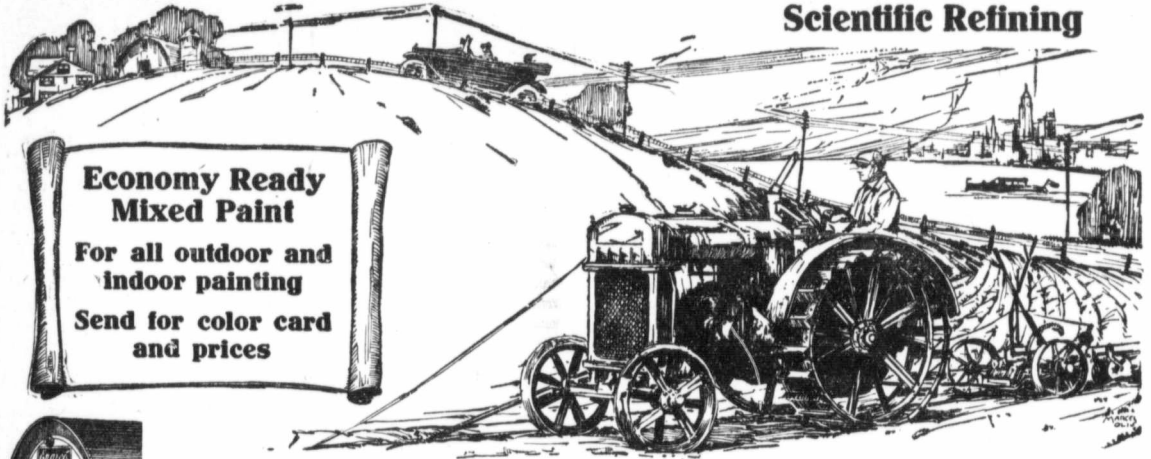
There is not any doubt that the motor contests of the past have served their purpose in so far as the improvement of the tractor is concerned, but on the other hand the data means very little to the average man. Like the famous people from Missouri, it is a case of "Show Me."

We want good implements always, and we want to see them operated under our local conditions before we buy. Implement companies do not want dissatisfied customers. Such demonstrations should be arranged to take in a wide range of territory, and be held at some central point. They should be located with the idea of service to the greatest number, and not by means of "pull."

Start something. We hear about better crops, better stock, better marketing, greater production, but what about our implements? They represent a large investment. Their selection should be given very careful thought. Then they should be maintained in good condition. If you have no plowing match in your district, get one going. If you have had one in the past, add some new features. Make it more worth while every year.



Scientific Refining



Economy Ready Mixed Paint
For all outdoor and indoor painting
Send for color card and prices



The Proven Lubricant

Studious research in the first place, then rigid tests, and finally scientific distillation based on the tests resulted in the production of En-ar-co, a lubricant free from residue and coke-like substance.

Popular experience has corroborated the results of our tests: En-ar-co has been found by the public to be the satisfactory motor oil. Just as our other products for 40 years have given satisfaction.

En-ar-co National Motor Oil For Maximum Power

En-ar-co lubrication helps to make possible the production of your motor's greatest power. Hence it is the lubrication you want, for power is what you sought in buying your automobile or tractor.

And other En-ar-co products that make for power and efficiency are as

eminently satisfactory. White Rose Gasoline for greater power. National Light Oil for Tractor fuel, also best for lamps, oil stoves and incubators.

En-ar-co Motor Grease for every lubrication point on tractor or auto. Black Beauty Axle Grease for wagons.

Buy En-ar-co National Motor Oil the Economical Way

50 gal. wood barrels 50 gal. steel drums
 30 gal. wood half barrels 30 gal. steel half drums

Buy of your local dealer if he has En-ar-co Products in stock; if he cannot supply you, mail us your order direct.

Tell your dealer you want to try En-ar-co National Motor Oil and other products bearing the En-ar-co label.

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I use.....gals. gasoline per year I use.....auto grease per year
 I use.....gals. motor oil per year I use.....gals. kerosene per year
 I use.....lbs. axle grease per year I use.....gals. tractor oil per year

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 Postoffice..... Province.....

Tear or Cut Out—Mail Today

NOTE: This can will not be sent unless you give make of your auto or tractor.

TO have a smooth running and economical operating tractor, it is necessary to have the ignition system in first-class operating condition. Next to putting fuel, water and oil in the tractor these parts should receive attention. Let us examine the troubles that may be encountered and the way to cure them and keep them cured.

Some day after the tractor has been running fine, the operator will notice that one of the cylinders begins to "miss," that is, instead of the steady, "put-put-put" of the exhaust, there will, every once in a while, be a "miss." In a short time the "miss" will become pretty regular and the tractor will run badly and lack power. When the tractor gets running this way the first thing to do is to find which cylinder is "missing" and this is very simple.

Take a screw driver and place the end on the body of the plug of the No. 1 cylinder, then carefully bring the stem part into contact with the high tension cable connection, and thus short circuit the plug. Immediately there will be a second cylinder "missing" unless this happens to be the faulty one. If this cylinder is O.K., then test Nos. 2 and 3, until the fault is found, which will be in the one, which in being short circuited in this way, will make no difference in the sound of the exhaust. Note that it is important to be sure and touch the spark plug body first, because if the terminal is touched before the body, the operator will receive a strong shock.

Examine the Spark System

The next thing to do is to disconnect and take out the spark plug and see if the porcelain is dirty, cracked or broken. Perhaps a piece of carbon has bridged across the spark gap or the spark gap may be too wide. Generally the plug will be found to be dirty or coated with carbon and the best way to clean it is to grip the body in a vise or second wrench and with a wrench take it to pieces. Now scrape the carbon out of the body with an old pocket knife, clean the porcelain part with a rag, moistened with kerosene or oil. The operator must remember never to use sandpaper or emery, or, in fact, anything gritty for this purpose, because it takes the gloss off the plug and it then will carbon up very quickly.

After everything is nice and clean, reassemble the plug, being



Locating and Preventing Troubles in the Tractor Ignition System

By GEORGE PLEYDELL PEARCE

sure to tighten up the bushing so the gaskets are fairly tight, but do not overdo it or the porcelain will break. By using a six-inch monkey wrench the operator will not be likely to get it too tight. When the gaskets are out of shape or considerably jammed, it is advisable to replace them with new ones. After the plug is reassembled, then the spark gap should be tested and carefully set to give a space of 1-32 of an inch, which is the thickness of a piece of galvanized

Even Moist Plugs Cause Trouble

A wet or moist plug will also cause a weak spark and sometimes will fail altogether. The operator can have a wet plug on a bright clear day, for the water from a leaky radiator may be picked up by the fan and thrown over the spark plugs.

Suppose, however, that the spark plug is in good condition and therefore the missing is due to some other cause. The next place to look for trouble is in the high tension wires. Care-

wire will break, but the insulation remains perfect and the ends of the wire get separated and cause extra resistance to the spark. These breaks can easily be detected by carefully bending the cable to and fro along its full length. The break will be found by the greatly increased flexibility at that point.

If no trouble can be discovered, then the cable should be disconnected and fastened so that the metallic end is about 1/4-inch from some parts of the engine frame, then start the engine and observe if a good fat spark is delivered regularly across this gap. If this is so, then the trouble is not an ignition one, but must be due to a stuck or broken valve, tappet, or other cause. Should it happen that no spark appears then the trouble is in the magneto. A short circuit should be looked for in the distributor, or it may be dirty or greasy. Occasionally dirt will get in the return system.

I remember once having considerable trouble with the erratic running of a tractor and it was not until the magneto was taken apart that the cause was discovered. In this case grease had in some way got on to the carbon return brush and every now and then would insulate it and there would be a miss. This trouble generally shows up in starting; in fact, grease or oil on the return or collector makes starting very difficult.

Send Magneto to Maker

Some tractors are equipped with a key to cut off the magneto, and if this wire gets grounded or frayed and occasionally touches some metal part, then it will stop the tractor or cause very erratic running. Sometimes, of course, the magneto becomes defective, but the modern magneto has reached such a state of perfection that it is very rare for one to go dead unless it has become wet, or oil soaked, or very dirty. Under good running conditions a high grade magneto will outwear the machine. If, however, the magneto does go dead, it is better to send it to a repair station than for the operator to attempt repair and adjustment himself, unless he properly understands how it works and how it is assembled.

There is one precaution that must be taken when removing the magneto, and that is to be sure and carefully file a notch or make

Continued on Page 65



"Three Heads Are Better Than One"

sheet steel of No. 22 gauge. This makes a very handy gauge if a strip 1/2-in. x 2-in. is procured from the hardware store.

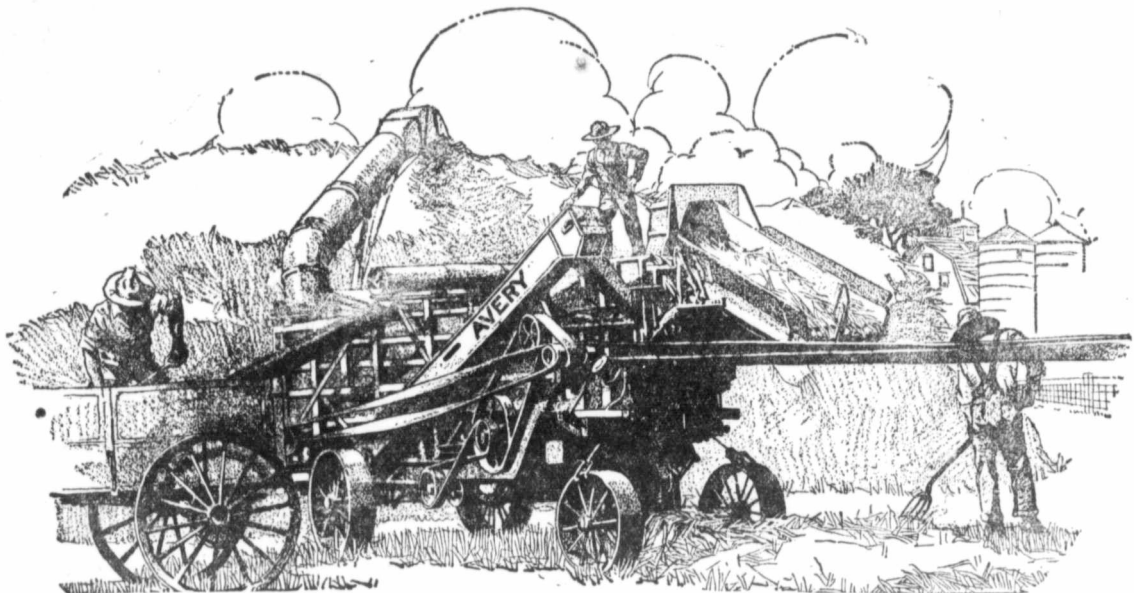
The plug is now ready for service, so a little oil can be put on the threads and the plug replaced, drawing up fairly tight so there will be no gas leakage. The engine should now run smooth and O.K.

Occasionally a plug will have what is known as a "gas leak." This is due to the stuffing box not being drawn up tight enough or the gaskets being defective. A quick way to detect this is to run the engine in the dark, at night, for instance, when the plug will be illuminated every time it fires. A "gas leak" causes a weak spark, occasional "missing" and the plug generally carbons rapidly.

fully trace back from plug to magneto and see if there is any spot where the insulation is frayed off due to rubbing. Sometimes a small crack will develop in the covering and if this is near any metal parts it is apt to make a path for the spark. Remember, the spark will at times jump a half-inch space outside sooner than the 1-32-in. gap in the cylinder, because the effort required to cross the gap in the cylinder is very great on account of the high pressure and gasoline vapor. If a defect is found it can be patched temporarily by wrapping some insulating tape around or even by tying with string to some part of tractor, so leaky place is at least one inch from any metal part.

Trouble From Broken Wires

Another thing to look for is a broken wire. Sometimes the



Champions Again

Grain-Saving Record Made by Avery Separators Over 1/4 of 1% BETTER Than Government Test Records

AGAIN have Avery Separators proved their superiority in saving the grain. The canvas tests, made by the Government during the past season, again prove Avery "Yellow-Fellows" to be the **champion grain-saving threshers of them all.** Here are the facts:

The Food Administration Grain Corporation, under the authorization of the Government last summer, made 408 canvas tests throughout the Northwest. They found many separators wasting a large percentage of the grain, and even after carefully adjusting them the average percentage of grain saved was only 99 62-100 per cent.

The average percentage of grain saved by Avery Threshers in 27 actual field tests, threshing on canvas in a similar way, was 99 91-100 per cent—an average grain-saving record that has never been equalled by any other make of separator.

In other words, Avery Separators beat the Government record by 29-100 of 1 per cent—over 1/4 of 1 per cent.

Write for our Catalog—find out all about the Avery Guaranteed Grain-Saving-Device Fingers, the Guaranteed for Life Cylinder Teeth and many other exclusive features in Avery Threshers.

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

Test No. 1.....	99 92-100%
Test No. 2.....	99 93-100%
Test No. 3.....	99 92-100%
Test No. 4.....	99 91-100%
Test No. 5.....	99 89-100%
Test No. 6.....	99 94-100%
Test No. 7.....	99 94-100%
Test No. 8.....	99 91-100%
Test No. 9.....	99 92-100%
Test No. 10.....	99 93-100%
Test No. 11.....	99 92-100%
Test No. 12.....	99 93-100%
Test No. 13.....	99 96-100%
Test No. 14.....	99 94-100%
Test No. 15.....	99 92-100%
Test No. 16.....	99 93-100%
Test No. 17.....	99 98-100%
Test No. 18.....	99 96-100%
Test No. 19.....	99 96-100%
Test No. 20.....	99 9-100%
Test No. 21.....	99 67-100%
Test No. 22.....	99 80-100%
Test No. 23.....	99 95-100%
Test No. 24.....	99 87-100%
Test No. 25.....	99 99-100%
Test No. 26.....	99 94-100%
Test No. 27.....	99 96-100%
Average Saving, 99	9-10%
Greatest Grain-Saving Record Ever Made	

Think what this means in saving high-priced grain.

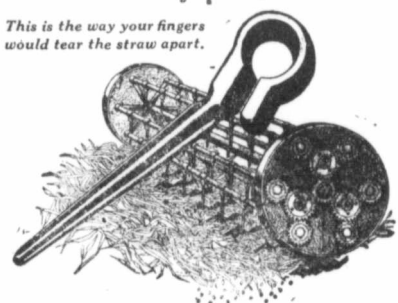
Built Right to Save the Grain

Avery Separators are regularly equipped with the famous Avery I.X.L. Separating Device—the device that turns the trick. It is the greatest invention made for saving the grain. Its fingers tear up the bunches of straw, wet or dry, and thin them out so well that the kernels of grain cannot help but fall into the grain pan below. These fingers hunt around for the last kernels and get them.

That's why we can back Avery Separators with the strongest definite grain-saving guarantee given with any machine—a guarantee that means what it says and is printed right in every Avery order blank.



This is the way your fingers would tear the straw apart.



The fingers in the Avery Separating Device do it the same way.

There Is a Size Avery Thresher for Every Size Run

Built in sizes from a small 20x30 inch machine to a large 42x70 inch, you can get an Avery Thresher to exactly fit any amount of threshing you have to do. Avery "Yellow-Fellows" and "Yellow-Kids" are alike except for size. They do good work, run steady, last a long time and are easy to operate. They are money-makers and job-takers for the threshermen, and grain-savers and grain-cleaners for the farmer. If you are a thresherman, it will pay you to get an Avery Separator to thresh with. If you are a farmer it will pay you to have an Avery Separator thresh for you.

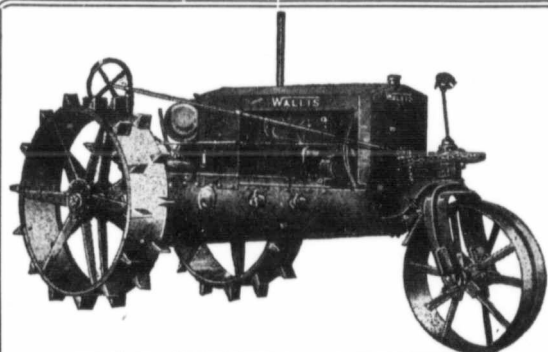
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AVERY

Motor Farming, Threshing and Road Building Machinery



WALLIS

America's Foremost Tractor

The cost of a tractor is determined by the service it renders. The purchase price of the WALLIS, divided by the years of service, plus the wonderful gain in work accomplished, will give an approximate idea of cost. The WALLIS will give you the biggest returns for your money. It will do the most work in a given time, and will last the longest.

"Lowest plowing cost per acre" is an actual proven WALLIS performance. The purchase price is returned to you through the extra service rendered.



You would find a complete description intensely interesting. Write for Catalog.

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Canadian Fairbanks-Morse Co.

Limited
Winnipeg Saskatoon Calgary

Our Line for 1919 is Complete

We can satisfy both farmer and dealer on any part of his implement equipment both as to kind of goods as well as quality.

The Old Reliable Stewart Sheaf Loader—

Well and favorably known throughout Western Canada.

The "New Era" Combination Loader—

Eliminates the use of Bundle Wagons.

"New Era" Separators—

Built in Western Canada for Western Canadian farmers and threshermen.

Stewart Standard Separators—

Proved its worth through several successful seasons.

The "New Era" Rotary Cultivator—

Kills the weeds and cultivates the soil.

**THE MOLINE LINE of Plows, Harrows,
Discs, Drills, Mowers, Binders, Tractors, etc.**

We manufacture and handle only quality goods. Write us for prices or see your nearest implement dealer.

**Stewart Sheaf Loader Co.
Limited**

470 MARTIN AVENUE

WINNIPEG, MAN.



Question—Can you tell me what would make spark plugs act like this? I have a — 10-20 tractor which runs fine for a few minutes, then starts to miss and act like it couldn't pull the load and pounds bad and stops. I stop and clean all the plugs and she goes fine, but I couldn't see much dirt in the plugs. She only runs for a few minutes and then does the same thing over again. I have to clean the plugs about every 15 minutes.—R. D.

Answer—Your trouble isn't in the plugs, it's in the fuel line, which is evidently partly plugged somewhere. While you are cleaning the plugs, the fuel fills the carburetor so that you can start easily and run for a few minutes. Then, as you are taking fuel out of the carburetor faster than it flows in, the motor can't get enough to keep it going and starts to miss. The pounding is caused by some cylinders missing and throwing an overload onto the others.

The fuel level in the carburetor soon gets low enough so that the motor can't run at all and she stops. Thinking that the plugs are at fault, you clean them again, giving the carburetor time to fill again, and then you repeat the whole performance.

You evidently have fuel in the tank and not enough at the motor, so start at the motor or carburetor and work back until you find out where the line is plugged.

Question—I have a — 9-18 tractor for which I have bought a new — high tension magneto. How will I time the magneto to the engine?—A. P.

Answer—On the tractor which you have, the magneto drive is provided with two couplings. One is the standard cross coupling and the other is made of two plates with more holes in one plate than are in the other. There are two bolts in these plates which should be removed when the magneto is fastened to the stand. This allows you to turn the armature and one plate without turning the other.

In the first cylinder, get the piston on the top of the compression stroke, then tie a piece of string around the dogs in the impulse starter coupling so that the dogs cannot engage with the catch. Re-

move the distributor and breaker box covers and turn the armature in the direction in which it runs until the distributor segment is opposite the post for the first cylinder and the breaker points are just beginning to break apart. Slip the bolts back into the coupling, through the holes which match, and the magneto is timed. The breaker arm should be in the full "retard" position while this work is being done.

Question—I have a — separator which cracks the wheat when I set the concaves up close enough to thresh clean. In fact, it cracks the grain all the time. The teeth are evenly spaced and there is no end play in the cylinder. I am using four rows of teeth, all in the bottom.—A. D.

Answer—The cracking is probably caused by having all the teeth in the bottom. The grain threshed by the first two rows of teeth does not have time to get away and is carried through the next two rows. This is where the cracking is done. If you place one concave at the bottom, then a blank and then another concave, the grain threshed by the first two rows has a chance to get away through the blank and practically only the unthreshed grain and straw gets into the second two rows.

This will probably break up the straw a little more, but will also probably stop the cracking. If this doesn't stop the cracking, come again.



A MATTER OF A PINION

"An' 'e says, 'Did you 'ave anything to do with intricate machinery before the war?' And when I ses 'yes,' he says 'You're just what we want for the Tank Corps,' without givin' me a chance to say 'I'd bin a watchmaker!'"

Sawyer-Massey

(CANADIAN BUILT)

Farm Tractors

FOR

Plowing or Threshing

Standardized Tractors of the same general appearance and design in four sizes: 11-22, 17-34, 20-40 and 25-50 horse-power. All are equipped with four cylinder kerosene burning motors, two speed gearing, spring mounted brass tube radiators, high tension ignition with impulse starter (no batteries). One of the features of these Tractors is the almost total absence of vibration, which means the Tractors are not hard on themselves, do not shake loose, and furnish a steady stream of power to drawbar or belt without jerk, jar or vibration. All these Tractors are conservatively rated, have an abundance of reserve power, and the two speed gearing makes them flexible powered and instantly convertible from steady, powerful pullers for plowing and heavy work to fast haulers with sufficient speed to pull binders, harrows and for freighting on the road.

Threshers

For coupling with Tractor Power we manufacture what we call our No. 1 and No. 2 Individual Threshers, sizes 22 x 36 and 28 x 44 respectively. The 22 x 36 Machine couples with Tractors of 10-20 to 12-25 horse-power and the 28 x 44 Separator with 15-30 Tractors. These are light running Threshers with few belts, designed for doing a farmer's own work and that of a few of his neighbors. They are easy to look after and care for, and are so evenly balanced that even when running at full threshing speed it is possible to balance a spike on the sills.

We manufacture larger Separators than the above suitable for steam power and custom work, we also have the only Combination on the market mounted on a six wheel truck and equipped with a four cylinder kerosene burning motor.

If interested in Tractor Power or Grain Threshers get in touch with our Local Agent in your Town, or fill out the coupon below for free literature, and mail to your nearest Sawyer-Massey Branch Office.

Sawyer-Massey Co., Limited

Head Office and Factory, HAMILTON, ONT.

Branch Offices and Warehouses:

WINNIPEG REGINA SASKATOON CALGARY



Sawyer-Massey 11-22 four cylinder Kerosene Burning Tractor doing the heavy work on the farm.



Sawyer-Massey 11-22 four-cylinder Kerosene Burning Tractor and Sawyer-Massey No. 1 Separator—the individual Threshing Outfit.

READ THIS LETTER FROM AN OWNER

Sawyer-Massey Co., Ltd.
 Dear Sirs:—
 The Sawyer-Massey 11-22 Tractor hauled three 14-in. bottoms and a section of harrows in summerfallow on a half-mile furrow at the rate of about 80 per cent of an acre per hour; soil, good, sandy loam, clay subsoil; consumption of kerosene about 1 1/4 gals. per hour. It is strongly built, and should, with proper care, last many years.
 The Sawyer-Massey Separator 22-36 is very satisfactory. It runs very steadily and evenly; with four stook teams and a spike pitcher it threshed from 80-90 bus. No. 3 Wheat per hour and 175-200 bus. No. 1 X Feed Oats per hour.
 I threshed enough wheat to make a large straw stack in the hog pasture and found that neither hogs nor poultry paid any attention to it—a sure indication that the straw contained no grain—to signify.

Salcoats, Sask., 15th Nov., 1918.

Yours truly,
 (Sgd.) THOS. MACNUTT.

Request for Free Information Coupon (Mail to nearest Sawyer-Massey Branch).

Kindly place my name on your mailing list to receive free 1919 Literature, covering the Machinery which I have marked with an X below.

- 11-22 Kerosene Burning Tractors.
- 17-34 Kerosene Burning Tractors.
- 20-40 and 25-50 Kerosene Burning Tractors.
- Steam Engines.
- Individual Threshers.
- Large Custom Threshers.
- Combination Threshers.
- Road Machinery.

Name

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Date

Happy Farmer Tractor

Guaranteed Drawbar Pull 2000 lbs. 12-24 H.P. Pulls 3 Plows



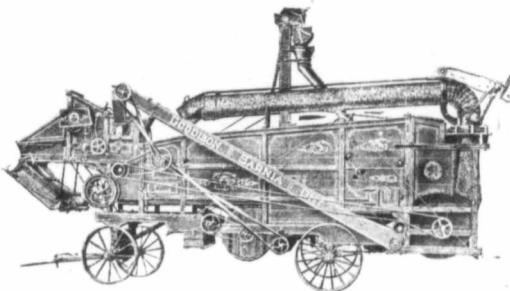
Read what one of the hundreds of satisfied owners has to say of the "Happy Farmer"

Rathwell, Man.,
Feb. 17, 1919.
Gasoline Engine and Tractor Company,
104 Princess St.,
Winnipeg.

Dear Sirs:
Regarding the "Happy Farmer" Tractor I purchased last April. It has given entire satisfaction at plowing and threshing. I ran a 22-40 separator threshing wheat, oats, barley and flax and had no trouble in any way.
It burns kerosene perfectly, have seen no signs of carbon. I plowed as long as two days on less than one tea cup of water. It uses about one and a half gallons kerosene per acre.
It is the simplest and most get-at-able tractor I have seen.
Yours truly,
Walter Pritchard.

Write us NOW for full information and prices

Goodison Threshers



Are Known Wherever Grain is Raised in Western Canada.

35 years of Thresher building has developed a thresher that meets all requirements. It takes all the grain out of the straw and does it fast.

It Puts the Grain in the Sack and the Straw in the Stack with a minimum of power.

From the big substantially built cylinder to concaves, grates, straw decks, grain decks and cleaning shoe, every part is designed and built to give a maximum of the best quality work combined with durability.

Built in sizes 20 x 38, 24 x 42, 28 x 42.

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TO OWN A GOODISON IS TO LIKE IT.**

For the individual farmer who uses his gas tractor for power, there is no more successful thresher built than the Goodison.

Sold and Distributed by

The Gasoline Engine and Tractor Company Limited

104 Princess Street

WINNIPEG, MAN.

Some Essentials of Tractor Care and Operation

By V. C. HULL

THE two items of importance which must be considered in the care of a tractor are adjustment and lubrication. Some things may be neglected, but not the regular and careful adjustment of parts. Without systematic lubrication a tractor soon becomes a junk heap.

The plan of a Montana man is a good one. At regular periods he stopped his tractor to fill the various tanks and grease cups. At these times he also went over the tractor and saw that all parts were in good adjustment. By this plan of work he got excellent results and made his tractor pay and pay well.

Experience vs. Inexperience

However, most operators would not stop four or five times a day to make adjustments. It is not necessary either. The experienced man can usually tell by the sound and working of his engine if something is going wrong. But the inexperienced man must have some plan of work or he will have trouble.

In the very first place the new operator must try to keep his rig clean. Not the polish and rub sort of cleaning, but rather the prevention of grease and dirt formation all over the tractor working parts. While it is not always true, it is frequently the case that dirty tractors are the ones with heavy repair bills. This is true for the simple reason that the man who has the habit of scraping dirt and dust from the magneto, carburetor, lubricator and bearings is quite apt to discover loose bolts and defects which would otherwise pass unnoticed.

Keeping the Tractor Clean

"How can I keep the tractor clean?" is asked. The answer depends upon how clean the machine is kept. There is a happy, common-sense medium. One owner of whom I knew, cleaned and rub-

bed and polished every day, a clear waste of time. Another ran until his radiator was full of dirt, inside and outside, while the dust lay four inches deep between the horizontal cylinders. One man wasted time, while the other wasted fuel and tractor parts. A safe rule is to keep the parts which need attention always clean enough for easy inspection.

The nuts and bolts of a new tractor should be tightened carefully as soon as the tractor is unloaded from the car. Anyone who has had shop experience knows that some things get by the inspector in poor order. So an hour or so spent in tightening nuts and bolts on a new machine may save a serious repair.

When the tractor is put in service the bolts and nuts should be gone over every three or four hours and then at less frequent intervals until every one comes to its seat or is "bedded." Even after the tractor has been in hard service, the best results will be had by a daily inspection, for in some cases it is practically impossible to hold nuts and bolts.

The adjustment of the motor bearings is an important one. It is also a hard one to describe. Loose bearings cause pounds and excessive strains; tight ones mean too much friction if not overheated bearings. As a general rule the adjustment of a connecting rod is good when it is just free to move sideways on its pin. The main bearings, too, must be snug, or trouble will result.

Adjusting the Bearings

One operator of whom I heard, used to adjust the crank and main bearings so tight that he could scarcely turn the fly-wheel. Then he put in a pair of thin shims and "let 'er go." Probably no other adjustment on a tractor is as important as that of the motor bearings. Neither is any harder, for



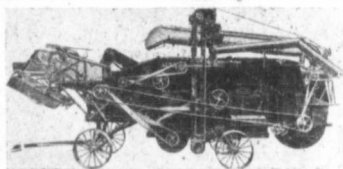
The Corporal: "Don't move, or she'll go. I'll walk back to the village and 'phone for the 'First Aid.' She ought to be here in a couple of hours or so."

AULTMAN-TAYLOR NEW CENTURY THRESHERS

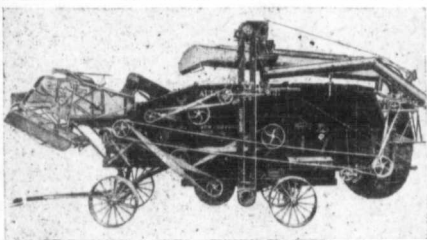
FOUR SIZES TWO SMALL SIZES FOR USE WITH THE SMALL TRACTOR



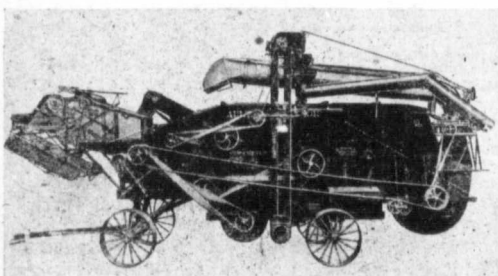
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AN IDEAL THRESHER FOR USE
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IT'S SIZE PARTICULARLY FITS IT
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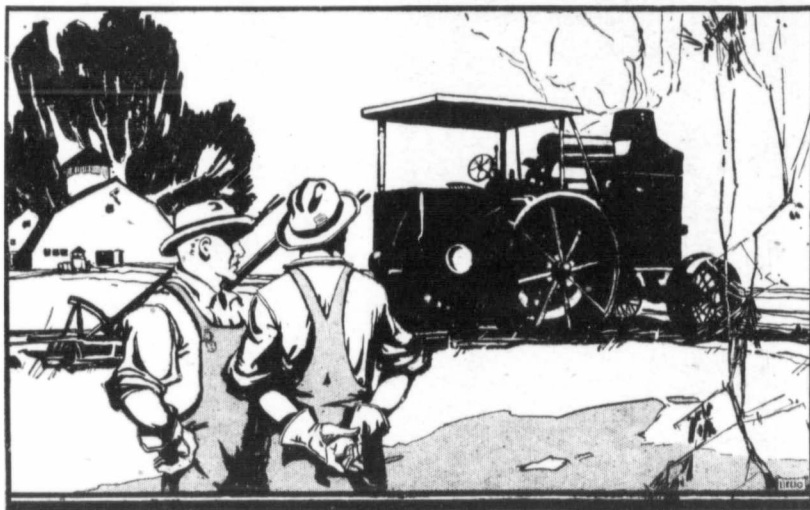
An Ideal Thresher for Either Custom Threshing or Individual Use

The New Century is an ideal thresher for custom work or for individual use. The work it does is always of the highest quality, and this year with the price of grain very attractive, loss of any kind should not be permitted.

Prospects give promise of the largest crop in the history of the country. With these conditions staring you in the face, can you afford to be without a New Century? Can you afford to buy a thresher of lesser quality? The splendid work of the New Century—the extra bushels it will save for you, will soon make up the difference in price between the New Century and the ordinary small, cheap thresher which is being hurried on the market to meet the demand for a small thresher for use with the small gas tractor.

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the new operator must make an adjustment, try the tractor and then shut down to see if the bearings are heated. After a man has run a tractor for a time he should be able to tell by the sound if bearings are too loose. On the contrary, he must not be alarmed if the bearings seem warm, because they naturally will do this if the engine has an enclosed crankcase.

Neither can the tractor be run with loose piston pin parts. If there is no adjustment provided, new parts must be put in when wear occurs.

Other bearings on the tractor should be inspected frequently and adjusted when needed. Those who purchase tractors nowadays have less of this to do because ball bearings and roller bearings are used so largely. But on some types and in some places an occasional tightening is needed. The bearings of all shafts used for

driving valves, magnetos or governors should be kept in good snug running condition.

The careful adjustment of the valve gear is highly important. No tractor can pull well with valves badly out of time. All bearings, cams and lever bearings should be kept in position. Also it is absolutely necessary to adjust valves properly for opening and closing. No definite rule can be given for this because every make of engine has certain methods of setting the valves. However, it will be found that the "end of exhaust" is the important setting as a usual thing.

The valves may need grinding occasionally. The important part of valve grinding is the "clean up." All grease and cutting matter should be carefully cleaned away. Unless one has done some grinding, he should have experienced help the first time valves are to be ground.

Regarding the Magneto

The magneto requires adjustment once in a while. The best rule here is to follow carefully the printed instructions of the maker. Do not try to improve upon the suggestions until thoroughly experienced. Besides the trouble is often found outside the magneto which may require no change. The good operator makes sure of spark plugs and connections before he touches the magneto.

Spark coils require only an infrequent adjustment. It should not be necessary to clean contact points until they plainly show that they need cleaning. As for the inside of the coil, the "greenhorn" should let it alone.

In general, ignition equipment should be kept clean. All contacts should be kept clean and tight. Oil and grease are bad, especially for insulated wires. Dust or water in high tension parts will certainly

cause poor ignition. One other thing: When the ignition system is working properly do not fuss with it. "Good enough" is best.

Carburetor-Adjustment Pointers

The adjustment of the carburetor is another one which causes new operators a deal of concern. Of course, a final adjustment is a good thing, but to my notion the best plan is to get an adjustment with which the tractor will pull well at average loads. Unless the operator is very careful, an effort to get a close adjustment will give a weak, slow-burning mixture, which may cause slow burning and heating. A very common error is that of tightening the spring of the auxiliary air valve too much. This tends to reduce compression. A good plan is to go slowly on carburetor adjustments. It is better to burn a half gallon too much fuel per day than to run with a mixture which lacks "pep" in a hard pull. Above all things the manufacturer's directions should be followed, for he has spent experimental money to find how to set the carburetor.

Gear Mesh and Alignment

Another matter which should be watched is gear mesh and alignment. A great deal of power may be lost if gears get out of proper set. They should run square and true and mesh deep. Just the other day I saw a big tractor gear set with six-inch faces in bad order. They had been run out of line until they had worn so that there was really but five inches of actual bearing surface for the teeth. Besides, the shaft bearings were worn so badly that the gears lacked fully three-eighths of an inch of meshing deeply enough. Yet there was a provision made for taking up end play and also one for spacing the shafts properly for gear mesh. The best tractor operators give careful attention to gears and gear set bearings.

To get the best out of the tractor, the pistons, rings and cylinders must be kept in order. In the first place, good oil must be used. In the second place, the carburetor must be set properly and the cooling system kept in order to prevent overheating and carbonization. In case there is any question regarding the condition of pistons, they should be pulled and the rings carefully loosened and fitted in the grooves. When putting pistons in place care must be exercised to prevent jamming the ring grooves so that the rings stick. Any hard or rough spots should be chipped or filed from the piston surfaces.

Lubricating the Tractor

As for lubrication, it is probably the most neglected and yet most necessary part of successful tractor work. Many operators have the notion that once a day is

Continued on page 60

Canadian Haying Efficiency

ALWAYS in the forefront---**Deering** and **McCormick Haying Machines** have been so closely followed in their work by the eyes of skilled and practical men who have developed improvements to meet all field conditions that loyal users know them to be in a class by themselves.

Deering and **McCormick** mowers can be depended on to cut without clogging or waste, day after day and year after year. The cutter bar on these machines adapts itself to the ground, rising and falling, leaving the stubble smooth and short. Built of materials that are always first-class, they reach a good old age with every part functioning smoothly and well, with little need for any doctoring.

Your best interests will be served by owning other machines that go to make up the International Harvester line for haying time requirements. **Deering** and **McCormick** rakes and tedders, and **International** combined side delivery rakes and tedders, and **International** hay loaders, etc., are prime favorites. Durability, ease of operation, and satisfactory work in all the details that go to make up haying success are qualities that you will look for in these tools---and find!

It is understood that with all these machines goes **International service**---so alert and intelligent that loss of time through replacements or adjustments is reduced to a minimum. This is an important item. Often the kind of service you get draws the line between the "good" hay crop and the "fair" or "poor" crop. See a convenient **Deering** or **McCormick** dealer or write the nearest branch house listed below for information you may need.

International Harvester Company of Canada, Limited

BRANCH HOUSES:

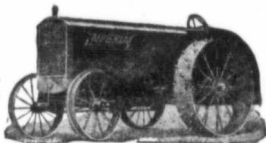
WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N.B.

About Tractor Motors

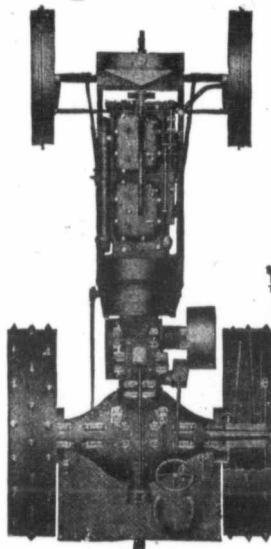
By E. R. GREER

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But develops fully 40 h.p. at the belt and a corresponding increase at the draw bar

Imperial SUPER DRIVE Tractor



All Steel Machine Cut Gears. All fully enclosed and running in oil. Spring Cushioned engagement to Rim of Drivers, through Driving Spiders, NOT through the hubs and spokes of the Wheel.

Timken and Hyatt Roller Bearings throughout Transmission and Final Drive.

Four Cylinder Kerosene Motor (5 x 6 1/2 inches) specially designed for Tractor service.

The cheapest Tractor of any, with actual power developed and draw bar pull as the basis of value.



Threshing Machines, all sizes 20/32 — 24/40 — Imperial Jr. 28/42 — 32/54 — 36/60 Imperial standard.

We are offering a special machine, size 20/32 for owners of 10/20 or smaller Tractors.

Write for full particulars and prices of our Kerosene or Steam Tractors, Threshing Machines and Rebuilt Machinery

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THE term "tractor motors" is far from having a definite meaning, and no special form or type of motor is suggested by the name. All tractor motors should be divided into two classes — those designed especially for tractor use, and those which have been applied to tractors but were designed for some other use.

Of the motors designed for tractors those which cannot run successfully on kerosene fuel can be discarded, because tractors must be operated on kerosene if the gasoline supply is to be conserved and the cost of tractor operation is to be kept down to reasonable figures.

All tractor motors have a few points in common on account of the fact that they must use kerosene. They must all provide some way of applying heat to the fuel mixture, and all of them are using the exhaust as the source of heat. Because of the higher operating temperatures when kerosene is used, it is necessary that the pistons have liberal clearance. General practice is about .001 inch to 1 inch of diameter on the skirt and .005 inch to 1 inch of diameter at the head. The piston rings have to have as much end clearance as the piston clearance or the ends will be pinched together when the motor becomes hot. The spark plugs have to be set near the center of the combustion chamber, and they must be surrounded by the water jacket. The spark plugs are generally the cause of preignition, either because of their position or their construction.

Plugs with heavy or poorly cooled points give the most trouble. Small plugs, with short electrodes and having conical porcelain arranged to conduct and radiate the heat quickly, are the best. Metric plugs, because of their smaller diameters, are preferable, though they have not come into general use. Valves and valve caps are always thor-

oughly water-jacketed and the valves are usually a little smaller to the inch of diameter than is practised with automobile motors. Small valves are more easily kept cool, and in the case of the intake the higher velocity of the incoming charges helps to keep the kerosene from condensing. The piston speed for tractor motors is usually between 700 and 900 feet to the minute, and the motors are governor-controlled, so that they are practically constant-speed motors. The compression is between sixty and seventy-five pounds.

Before more points in common can be given, it is necessary to consider only one type at a time. The types that are being used by more than one or two companies are two-cylinder opposed, two-cylinder twin horizontal, and four-cylinder vertical.

The two-cylinder opposed motors nearly all use force-feed lubrication but are widely different in details of construction. They lend themselves to simple tractor designs because of the short two-bearing crank shaft, and they present a poor appearance, but they can be made easily accessible.

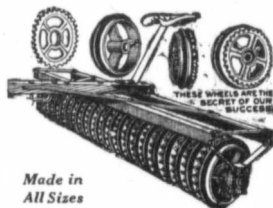
The two-cylinder twin motors have a decided advantage in burning kerosene, because the intake valves, being side by side and close to the carburetor, eliminate the problem of even distribution of mixture and trouble from condensing in the manifold. This construction is very simple, accessible and compact. The principal disadvantage is that the torque delivered is uneven and there is considerable trouble from vibration.

The four-cylinder vertical motor is most popular. This is likely due to the fact that it is the most highly developed type, and does not have the disadvantages of the two-cylinder types. It gives the greatest satisfaction, though there are still many of the best things to be desired. The general con-

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The Western Pulverizer, Packer and Mulcher pulverizes and packs down the soil and puts it in perfect condition for seeding in one operation, either a stubble ground or sod ground. It will not clog. Provides a granular mulch to the land which stops evaporation and preserves moisture.

Insures larger crops when used after seeding.

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2 ft. 6 in. two-furrow weight 330 lbs.
4 ft. three-furrow weight 475 lbs.

SINGLE SECTION

4 ft. weight 600 lbs.
6 ft. weight 725 lbs.
8 ft. weight 920 lbs.
10 ft. weight 1200 lbs.
12 ft. weight 1400 lbs.

THREE SECTION

11 ft. weight 1400 lbs.
15 ft. weight 1840 lbs.
21 ft. weight 2650 lbs.

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—nor from a Ford Branch.

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They can be delivered “on the spot” by over 2000 garage and repair men.

Although highly specialized pieces of engineering and machining, Ford parts have become *staple articles of merchandise*. They are as easy to obtain as a hatchet or a saw.

This is a most unusual service to the owner of a car.

Its value is incalculable.

The Ford car need never be “tied up” while repair parts are being “brought on from the factory.”

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The owner of a Ford (barring serious breakdown through accident) may enjoy uninterrupted use of his car.

Caution to Ford Owners

Never allow “spurious” or imitation parts to be used in repairing your Ford. Your repair man—if he is earnest in his desire to serve you well—can get genuine Ford parts and sell them to you at a reasonable profit.

You need never accept “spurious” repair parts. In any locality, in any emergency, there is sure to be close at hand, a Ford Service Station.

Demand genuine Ford parts. Be firm.

Keep your Ford running at full Ford efficiency.

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DEMAND

Genuine Ford Parts

struction of all of them is quite similar. The greatest point of difference is in the valve location. Nearly all have three-bearing crank shafts hung from the housing. Connecting-rod lengths usually are twice the stroke. The strike-bore ratios do not run to very long strokes, and many motors are nearly square. Magnets with impulse starters are general. The failure of storage batteries to stand tractor service has prevented the use of electric starters. Fans are often gear-driven. Pump circulation of the cooling water is very necessary. Splash lubrication is nearly always used though sometimes a combination of splash and force feed is used.

The trouble due to kerosene getting past the pistons into the lubricating oil is quite serious. The education of the farmer seems to be the best solution, but it would be a fine thing if someone would devise a simple way to separate kerosene from oil. One who allows his engine to run on a very rich mixture before it is thoroughly warmed up will likely soon find his oil is getting thin.

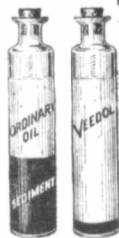
A great deal of attention is being given to finding a more efficient means of burning kerosene. So far the best results are being obtained by starting on gasoline and changing over to kerosene after the engine becomes hot, the heat being applied to a very rich mixture, which is afterwards diluted with cold air. On some engines it is necessary to use a small amount of water with the mixture to prevent pre-ignition, but this is not always the case. High velocity in the intake manifold and even distribution are very essential. In general, the power of kerosene is about ten per cent less and the economy, based on pounds, ten per cent poorer than that of gasoline.

There is much talk against tractor contests, but contests will be the means of eliminating the unfit, and progress in motor design will be stimulated when contests are held.

LEAKY VALVE-STEM GUIDES

There are always many new wrinkles to learn about the tractor engine, and recently while visiting a farmer who had used his tractor many seasons I picked up this unique wrinkle which he had devised to cure some very troublesome leaky, worn valve guides.

It so happened that he had been having considerable trouble with the engine missing when working the tractor in gang plowing at slow speed, and after a considerable lot of tinkering with

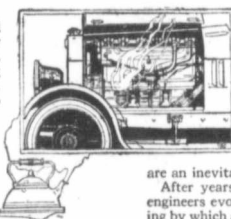


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OUT OF OIL! Yet you started with a full supply—more than enough, you felt sure, to bring you safely home again. If you take the cap off the oil filler you will see the oil evaporating in a thin cloud of smoke. The intense heat of the engine—200° F. to 1000° F.—causes ordinary oil to evaporate rapidly.



Sediment crowds out the good oil on the metal-to-metal surfaces and prevents it from efficiently lubricating the fast moving parts. Loose bearings are almost always the result of using poor oil. Engine knocking, broken connecting rods, scored cylinders, slapping pistons are an inevitable result.

After years of experimentation, Veedol engineers evolved a new method of refining by which a lubricant is produced which resists heat. This—the famous Faulkner process—is used exclusively for the production of Veedol, the scientific lubricant. How Veedol, the scientific lubricant, reduces the formation of sediment by 86% is shown by the two bottles illustrated above.

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Ordinary oil not only evaporates rapidly, but also breaks down under the heat of the engine, forming a large part of its bulk in black sediment which has no lubricating value.



the carburetor with no results, he came to the conclusion that air was being drawn in somewhere and weakening the mixture. An inspection of the intake manifold gaskets and joints showed that they were all O.K. It was decided to have a look at the valves, and luckily while inspecting them

he noticed that the stems were quite a loose fit in the guides, and it dawned on him that here was the place that the piston could be sucking in air.

The valve-stem guide holes had become worn considerably, and as no bushings had been fitted he had to improvise some way to correct the trouble. This he did as shown in the accompanying sketch. Brass thimbles were made to fit round the lower end of the cast-iron valve-stem guides. They were made of brass pipe and the bottom disks soldered into one end.

This packing gland was put on the stem and then packed with some small narrow strips cut from old felt, and some small springs made that slipped on the stem inside the regular valve-stem spring. This spring forced up the packing gland and packing, and very successfully closed the opening round the stem. The

trouble was cured. An occasional renewal of the felt packing is all that has been needed for the past year.
C. H. Willey.

Wages No Object

"Can't you get any work?" asked a woman of the tramp who had applied at the back door for food.

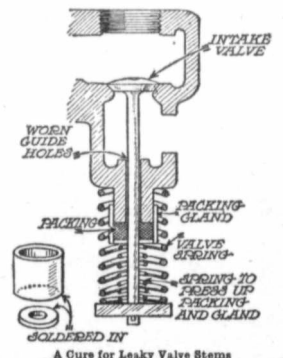
"Yes, ma'am," he replied. I was offered a steady job by the man who lives down the road in that big white house."

"That's Mr. Outseed. What was the work?"

"He wanted me to get up at 4 in the morning, milk seventeen cows, feed, water and rub down four horses, clean the stables and then chop wood until it was time to begin the day's work."

"What did he want to pay?"

"I dunno, ma'am. I didn't stop to ask."



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A copy of this booklet will be mailed free to any Returned Soldier who intends to take up farming. Send us your name and address.

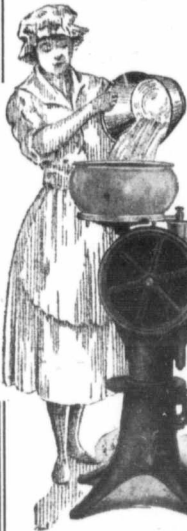
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on your own farm will
prove it.

United Grain Growers Limited will gladly send to anyone—anywhere—a Sanitary King of a size best suited to the number of cows milked, with the clear and distinct understanding that if, at the end of 30 or 60 days' use, you do not find it in every way equal to any other machine you can find—many of them costing materially more, we will willingly take it back, without argument and refund every cent you have paid for it with freight charges both ways included.

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- Ball-Bearing—The one piece bowl spindle rests on a ball-bearing anti-friction adjustable socket.
- Perfect Simplicity—Only three gears and two points of contact.
- Non-Clogging Bowl—Will skim the largest milking without choking up.
- Density—You can skim a cream of any density—all regulated by a single screw in bowl head.
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is the title of a most interesting and valuable piece of literature on the cream separator question. It gives facts and figures that everyone who is milking cows should have, and we will be glad to send it to you absolutely free, postpaid, if you will fill out the coupon and mail it to us.

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—a comparative test of material, design, workmanship, close skimming ability, ease of operation, method of lubrication, sanitary features, ease and accessibility of parts for thorough cleaning, and above all **PRICE**—with quality and service considered.

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"SAFEST AND BEST"

Some Fundamental Principles of Tractor Ignition

STORAGE BATTERIES

By C. C. HERMANN

IN Part I of this series on tractor ignition, which appeared in last month's issue, dry cells or primary batteries were described at length. Storage batteries, or secondary batteries as they are otherwise known, are similar in action to the primary cell and they are subject to the same general laws. The principal difference between the two kinds of batteries is that the secondary battery can be recharged after

the solution to the cathode E. By closely watching the cathode E hydrogen bubbles will be seen to arise, while the anode D will begin to turn dark-brown.

This brown coating is a compound of lead and oxygen, which is formed by the action upon the plate of the oxygen which is liberated. The reading of the ammeter will at the same time rapidly decrease, and if the switch S1 is now opened and the

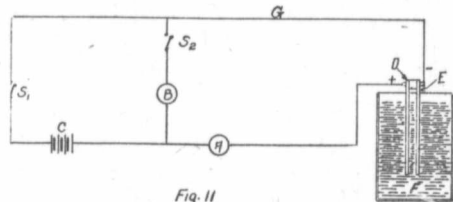


Fig. 11

Diagram Showing Functioning Principles of Storage Battery

having been exhausted, by passing an electrical current from some outside source through it in the opposite direction to that of the discharging current.

As the storage battery used in connection with tractor ignition is the lead plate type these only will be considered.

The principle underlying the lead plate storage battery is as follows: If two lead plates are fastened to a small piece of insulating

switch S2 is closed, the bell will ring and the ammeter will indicate current flowing in the opposite direction to that of the original current. The current will decrease rapidly, as the energy, which was stored in the cell by the original current is expended in ringing the bell. In this operation two similar lead plates were changed into dissimilar plates, one being lead and the other lead peroxide.

The battery is not, properly speaking, a storage of electricity, but simply a storage of chemical energy, and this energy is supplied in the opposite direction to the charging current until the coating of peroxide is used up, when recharging is necessary.

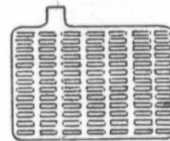


Fig. 12

Sketch of Positive Plate

material and immersed in a solution consisting of one part of sulphuric acid to ten parts of water, and the current of several dry cells connected in series be sent through them, a certain chemical change will take place. Referring to Fig. 11, the arrangement is as follows: A is an ammeter inserted in the circuit G to measure the current. B is an electric bell controlled by the switch S2. C is the 'dry cell battery controlled by the switch S1. F is a glass jar containing the solution known as the electrolyte. D is the positive plate or electrode known as the anode, and E is the negative plate or electrode known as the cathode. When the switch S1 is closed, current will flow from the dry cell battery C to the anode D through

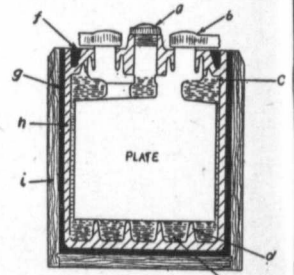
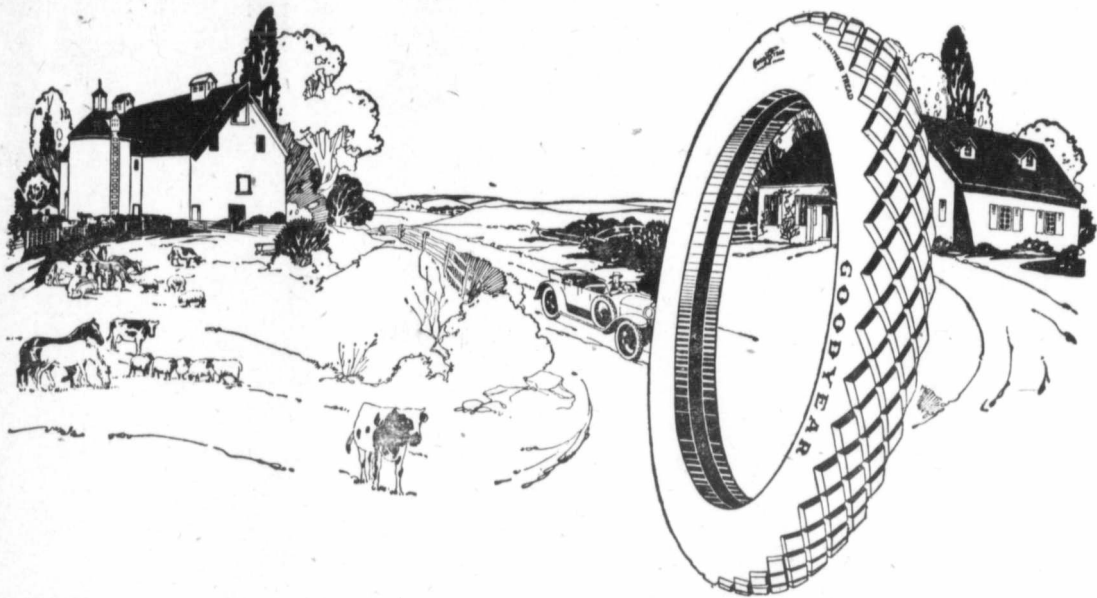


Fig. 13

Cross Section of Cell

The commercial cell differs from the one just described only by the thickness of the coating of lead peroxide or active material on the positive plate. In the commercial cell this material is pressed into the interstices in the plates in some instances, as shown in Fig. 12. These cells are



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Straw costs a lot less than hay and grain—until you feed it to your stock. Then the cost of straw shoots up—in lost stock and in sickness.

Tires are just about the same. Lots of tires are priced lower than Goodyears. It's pretty hard to resist that low-price bait—until it's time to buy another tire. Then you wonder how you wore out that tire. It didn't *wear out*—it *gave out*. Wear was never put into it.

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of two types, namely: Plante cells or Faure cells. In the Plante type the lead is chemically attacked and converted into lead peroxide. The plates are all formed as positive plates first and then the plates intended as negative are reversed and the peroxide is change into sponge lead. In the Faure type the plate is constructed by attaching the active material by a mechanical means to the grid. The materials used are largely secret, but usually consist of minimum or litharge and acidulated water mixed into a paste.

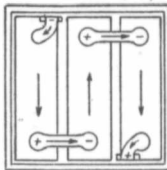
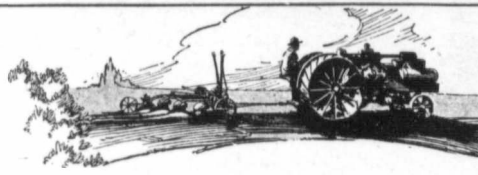


Fig. 14
Plan of Connections

Fig. 13 shows a cross section of a commercial storage cell and consists of the following parts: a is the filler cap; b is the terminal; c is the upper level of the electrolyte; d is the hard rubber supports for the plates; e is the mud space into which the material from the plates collect; f is a sealing compound; g is sealing compound run between the hard rubber container h and the wood case i.

The electrolyte is made by pouring one part of chemically pure concentrated sulphuric acid having a specific gravity of 1.80 slowly into several parts of distilled water, rain or water or melted artificial ice, never the reverse. The water should always be kept in a porcelain dish or earthen jar, never in contact with metal surface containers. While mixing the liquid should be stirred with a clean wooden stick. When mixing, the liquid becomes hot and should be allowed to cool until its temperature is about that of the atmosphere. The proper mixture will have a specific gravity of 1,200 or 25 deg. Baume; if it is lower than this, add more acid, if higher, add water until the proper specific gravity is obtained. The mixing of the electrolyte should only be attempted by one entirely familiar with the process.

As the nominal voltage of a single cell is only 2 volts it is necessary to connect several cells in series in order to obtain the required voltage for ignition purposes. Fig. 14 shows the connections and the direction of flow of the current in a battery of three series connected cells. Tractor ignition systems employing storage batteries have batteries of 3, 6, 8 and 9 cells. Stor-



Where is the Best Place to Test Your Tractor Lubrication — on Your Farm or in a Laboratory ?

A test on your farm will tell you more about an oil, than any number of tests in a laboratory.

The striking superiority of Gargoyle Mobiloils for tractor lubrication, is not proved by viscosity, flash test, color or any of the thirty-five tests they go through during manufacture.

The following 20-acre test has never yet failed to prove the superiority of Gargoyle Mobiloils over other tractor lubricating oils.

You can easily make it with your own tractor and without interfering with your own week's work. This is the method:

1. Find on the Chart the grade of Gargoyle Mobiloils specified for your tractor. Purchase a 4-gallon sealed can, being sure the correct grade is marked underneath the name.

2. Pick out 20 acres of ground, of uniform character and condition.

3. With the oil you are now using plow the first ten acres. Note carefully oil consumed, fuel consumed, smoke from exhaust, engine heat, and the pulling power of your tractor.

4. The following day, drain, clean and refill the oil system with the correct grade of Gargoyle Mobiloils. Plow the second ten acres. Again note oil and fuel consumption, smoke from exhaust, engine heat, and pulling power.

This test will show you how you can save time and money by using the correct grade of Gargoyle Mobiloils.

If you are not now using Gargoyle Mobiloils, make the 20-acre test the next time you plow. The results are likely to surprise you.



Mobiloils
A grade for each type of motor

FOR PASSENGER CARS

The passenger car has entered the farmer's life as a business as well as a pleasure vehicle. Its lubrication is as important as the lubrication of your tractor.

Write for booklet "Correct Lubrication," containing complete Gargoyle Mobiloils Chart of Recommendations for all Automobiles, Tractors, Motorboat and Motorcycle engines. There is also a complete discussion of Automobile problems and troubles.

In buying Gargoyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container. For information kindly address inquiries to this office.

IMPERIAL OIL LIMITED

Manufacturers and Marketers of Polarine Motor Oils and Greases
Marketers of Gargoyle Mobiloils in Canada

BRANCHES THROUGHOUT CANADA

CORRECT TRACTOR LUBRICATION

Explanations—The four grades of Gargoyle Mobiloils for tractor lubrication, purified to remove free carbon, are:

Gargoyle Mobiloil "AA" Gargoyle Mobiloil "BB"
Gargoyle Mobiloil "A" Gargoyle Mobiloil "Arctic"

In the Chart below, the letter opposite the tractor indicates the grade of Gargoyle Mobiloil that should be used. For example a man's Gargoyle Mobiloil "A," are man's Gargoyle Mobiloil Arctic, etc.

TRACTORS	1916		1917		1918		1919	
	Small	Large	Small	Large	Small	Large	Small	Large
Albion (Square Turn)	BB	A	BB	A	BB	A	BB	A
Allis-Chalmers	BB	A	BB	A	BB	A	BB	A
All Work	B	A	B	A	B	A	B	A
Andrew	BB	A	BB	A	BB	A	BB	A
Applon	B	A	B	A	B	A	B	A
Ardman-Taylor	BB	A	BB	A	BB	A	BB	A
" (18-20)	BB	A	BB	A	BB	A	BB	A
Avery	B	A	B	A	B	A	B	A
" (14-16 HP)	BB	A	BB	A	BB	A	BB	A
" (16-18)	BB	A	BB	A	BB	A	BB	A
Bacon Steel Mule	B	A	B	A	B	A	B	A
Best Tractor Oil	A	A	A	A	A	A	A	A
Best	B	A	B	A	B	A	B	A
" (16-18)	B	A	B	A	B	A	B	A
Big Bull	B	A	B	A	B	A	B	A
Bowley	BB	A	BB	A	BB	A	BB	A
Buckeye (Indiana)	BB	A	BB	A	BB	A	BB	A
" (Indiana/Ohio)	BB	A	BB	A	BB	A	BB	A
" (Ohio)	BB	A	BB	A	BB	A	BB	A
Case	A	A	A	A	A	A	A	A
" (8-10)	A	A	A	A	A	A	A	A
" (10-20)	A	A	A	A	A	A	A	A
" (20-40)	BB	A	BB	A	BB	A	BB	A
Chas. F. Smith	BB	A	BB	A	BB	A	BB	A
Cleveland	BB	A	BB	A	BB	A	BB	A
Common Sense	BB	A	BB	A	BB	A	BB	A
C. O. D.	BB	A	BB	A	BB	A	BB	A
Com. Bull	BB	A	BB	A	BB	A	BB	A
Comp. Grip	BB	A	BB	A	BB	A	BB	A
Corson-Brantingham (E)	BB	A	BB	A	BB	A	BB	A
" (E-10-12)	BB	A	BB	A	BB	A	BB	A
" (Big Four)	BB	A	BB	A	BB	A	BB	A
" (Beaver)	BB	A	BB	A	BB	A	BB	A
Farm Home	BB	A	BB	A	BB	A	BB	A
Flour City	BB	A	BB	A	BB	A	BB	A
" (Heavy Duty)	BB	A	BB	A	BB	A	BB	A
Galley	B	A	B	A	B	A	B	A
Gas Pull (Rumley Co.)	B	A	B	A	B	A	B	A
Grain Bell	BB	A	BB	A	BB	A	BB	A
Gray	BB	A	BB	A	BB	A	BB	A
Happy Farmer (Model B)	B	A	B	A	B	A	B	A
Hart Parr	B	A	B	A	B	A	B	A
Heide	B	A	B	A	B	A	B	A
Holt Caterpillar	B	A	B	A	B	A	B	A
" (Model 4)	BB	A	BB	A	BB	A	BB	A
" (Model 18)	BB	A	BB	A	BB	A	BB	A
Holzer	BB	A	BB	A	BB	A	BB	A
Imperial Forty	BB	A	BB	A	BB	A	BB	A
Jargon	A	A	A	A	A	A	A	A
Kearl	BB	A	BB	A	BB	A	BB	A
K. C. Prairie Dog	BB	A	BB	A	BB	A	BB	A
Nickard	BB	A	BB	A	BB	A	BB	A
Lion	BB	A	BB	A	BB	A	BB	A
Little Chief	BB	A	BB	A	BB	A	BB	A
Little Giant	BB	A	BB	A	BB	A	BB	A
Lyle	BB	A	BB	A	BB	A	BB	A
Manitowish	BB	A	BB	A	BB	A	BB	A
Mogel (I. H. Co.)	BB	A	BB	A	BB	A	BB	A
" (14-20, 20-30, 30-40)	BB	A	BB	A	BB	A	BB	A
Moine Universal	BB	A	BB	A	BB	A	BB	A
New Age	BB	A	BB	A	BB	A	BB	A
Nichols & Shepard	BB	A	BB	A	BB	A	BB	A
Nixon	BB	A	BB	A	BB	A	BB	A
Oil Pull (Rumley Co.)	B	A	B	A	B	A	B	A
" (14-20, 20-30, 30-40)	BB	A	BB	A	BB	A	BB	A
" (Rumley Co.)	BB	A	BB	A	BB	A	BB	A
Parrott	BB	A	BB	A	BB	A	BB	A
Peris	BB	A	BB	A	BB	A	BB	A
Pomeroy	B	A	B	A	B	A	B	A
Flow Boy	BB	A	BB	A	BB	A	BB	A
Flow Man	BB	A	BB	A	BB	A	BB	A
Forcing	BB	A	BB	A	BB	A	BB	A
Rumley	B	A	B	A	B	A	B	A
" (8-10)	B	A	B	A	B	A	B	A
Russell	B	A	B	A	B	A	B	A
" (Little Chief)	B	A	B	A	B	A	B	A
Sandusky	B	A	B	A	B	A	B	A
Simplex	B	A	B	A	B	A	B	A
Standard	BB	A	BB	A	BB	A	BB	A
Stratford	BB	A	BB	A	BB	A	BB	A
Titan (I. H. Co.)	BB	A	BB	A	BB	A	BB	A
Tom Thumb (4 cyl.)	BB	A	BB	A	BB	A	BB	A
Top Gun	BB	A	BB	A	BB	A	BB	A
" (Model 18)	BB	A	BB	A	BB	A	BB	A
" (Model 19)	BB	A	BB	A	BB	A	BB	A
Walla Cob	BB	A	BB	A	BB	A	BB	A
" (Lumber)	BB	A	BB	A	BB	A	BB	A
Waterloo Boy	BB	A	BB	A	BB	A	BB	A
Wauwauk	BB	A	BB	A	BB	A	BB	A
Wauwauk	BB	A	BB	A	BB	A	BB	A

age batteries are generally designated by their nominal voltage as a 6-volt battery or an 8-volt battery.

The capacity of a storage battery is generally expressed in units called ampere-hours. An ampere-hour is a current of one ampere maintained for one hour. The capacity of a storage battery is found by multiplying the number of amperes of current delivered by the number of hours that the current flows. Therefore a 60-ampere-hour battery will pass 6 amperes for 10 hours, 5 amperes for 12 hours, or 4 amperes for 15 hours. Likewise the rate of charge and the rate of discharge of a battery is spoken of in hours, as, for instance, the above battery discharging 6 amperes for 10 hours has a discharge rate of 10 hours.

As previously stated in connection with dry-cells, batteries will cause the current to flow in one

direction only, therefore in charging a storage battery the current must be continuous in one direction and in the opposite direction to the discharge. In charging the battery the active material is brought into proper condition for generating current by passing a direct current through it from some outside source.

In some ignition systems the battery is charged, while the engine is delivering power to the machine by means of a direct current generator. Often, however, it is necessary to charge the battery by some outside means or when the tractor is not in use; it is then necessary to use a lighting or power circuit either direct or alternating current.

The most convenient circuit to use is the 110 or 120-volt direct current, using sufficient resistance in the battery circuit to give the proper charging rate. When an

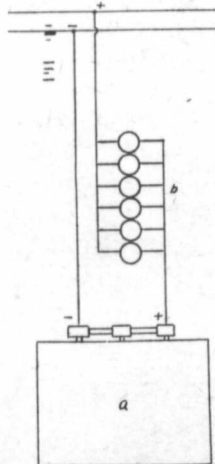


Fig. 15
Connections for Charging



A Call for Greater Production

Great Britain's Need is Canada's Opportunity—Egg
and Poultry Export Demand is Unlimited—230,000
Dozen Canadian Eggs were Moved for Export March
12th to 31st—Business was Offering for as Many
Cases but Supply was not Available.

Aim for 100 Laying Hens on Every Canadian Farm

Pure breeds of laying strains—eggs and meat are the Poultry Producer's objective.

Remove non-producers—do not have any boarders—consult the Government Officers on Flock Improvement Methods.

Only early hatches will give maximum profits—winter eggs give greatest cash returns—have pullets laying in November.

Destroy all unhealthy birds. Disease spreads rapidly, causing heavy loss. Keep houses sanitary. Prevention is the best cure.

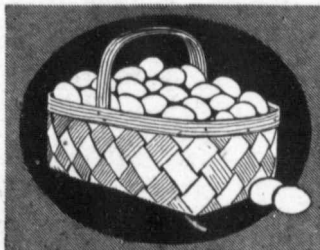
Uniform methods are essential. Hens are creatures of habit. Help them to get the laying habit—it will pay you. Canada is good for poultry. No country in the world is better able to produce eggs and poultry. Climatic conditions are ideal.

Every farm should have 100 laying hens—75,000,000 hens for Canada. This is a possibility and also a probability if you do your share.

Produce Economically through Flock Improvement

Free Literature

The Department of Agriculture has information for free distribution on all phases of eggs and poultry production and marketing. Candling appliances are also available. Copies of the Egg Regulations under the Live Stock and Live Stock Products Act may be had upon application. Write for these free publications—the service is yours—make use of it.



Volume, Quality and Co-operation

Market regularly and frequently—Do not hold eggs; they deteriorate rapidly; bad eggs have no place on the market.

A dirty egg case and dirty fillers cause heavy losses. Quality always commands a premium.

Remove male birds after the breeding season; fertile eggs incubate in the sun's heat.

Keep eggs in dry, cool place. Exposure to heat and contaminating odors should be avoided.

Eat the very small eggs on the farm. Weight is a determining factor in grading.

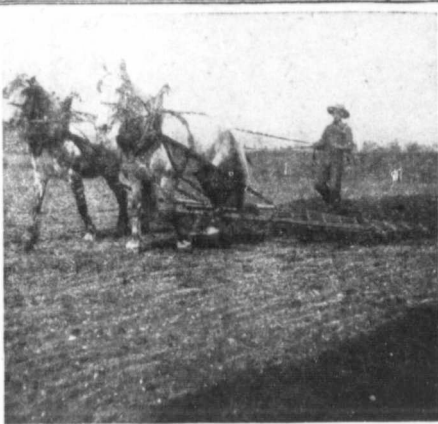
Train the children to handle the poultry flock and you will have solved the labour problem. Co-operate with other producers in your locality. Volume, quality, and co-operation with standardization and advertising will help the hen to pay our war debt.

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Markets Intelligence

Daily and Weekly Egg and Poultry Markets Reports are issued by the Poultry Division of the Live Stock Branch, Ottawa. These are distributed free on application. A weekly market report service is available in the Western provinces, Winnipeg being the distributing point for Manitoba and Saskatchewan, and Edmonton for Alberta and British Columbia. These reports cover prices prevailing at the large market centres.

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You cannot measure the satisfaction of genuine hit-the-spot Coca-Cola. Every member of the family will joy in its use. Home folks, guests, everybody. Twelve Canadian Factories necessary. Your dealer—grocer or druggist—will load a few cases for you next time you're in town.



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or case**

alternating current only is available a rectifier must be used to change the current into direct current. The correct charging rate varies with different makes of batteries and is usually given on the name plate of the battery or in the instruction book accompanying it. However, in the absence of this information the charging rate can be figured as follows: One-sixth of the ampere-hour capacity of the battery may be maintained until the voltage reaches 2.4 or 2.5 volts per cell, at which time the cells begin to gas or bubble, when the rate should be, reduced to one-twentieth of the ampere-hour capacity until the cells again begin to gas or bubble slightly, indicating that they are fully charged.

Fig. 15 shows a convenient method of connecting up a storage battery for charging from a 110-volt direct current circuit. The battery a is connected through the lamp board b to the lighting circuit as indicated. For a 110-volt circuit the lamps used may be the 32 cp. or 16 cp. carbon filament lamps, equal to the 110-watt or 40-watt lamps respectively. These lamps are connected in parallel and mounted on an asbestos-covered board between the positive wire of the 110-volt circuit and the positive terminal of the battery. The basis for figuring the number of lamps necessary is as follows: One 32 cp. or 100-watt lamp placed in a 110-volt circuit will allow approximately one ampere of current to pass through, and one 16 cp. or 40-watt lamp approximately one-half ampere. Therefore, if a charging current of 6 amperes is desired, 6 of the 32 cp. or 12 of the 16 cp. lamps may be connected in parallel as shown in Fig. 15, thus allowing 6 amperes to pass through the battery.

It is very important that the negative wire of the circuit and the negative terminal of the battery be connected together, likewise the positive wire of the circuit and the positive terminal of the battery, making it necessary that the polarity of the wires be determined. This can easily be done as follows: Take a small quantity of the electrolyte from the storage cell and insert two thin strips of lead attached to the wires from the charging source. The strip that turns brown is attached to the positive wire and this wire should be attached to the positive terminal of the battery.

The voltage of a fully charged cell is about 2.5 volts, but the pressure falls rapidly until 2.3 volts are reached, after which the voltage will gradually drop. When the voltage gets down to

1.7 the battery should be recharged as very little electrical energy is left, besides the life of a battery is shortened by discharging below 1.7 volts per cell.

During the recharging of the battery, as well as at frequent intervals during the life of battery, the electrolyte must be tested for its specific gravity in order that the conditions within the cell may be known. To do this requires the use of a hydrometer. The hydrometer syringe provides the best and simplest method of testing the electrolyte. Fig. 16 shows the hydrometer syringe and the method of using it in making a test. In the figure, a is a section of the battery with the hydrometer syringe b inserted with its lower end in the electrolyte. The bulb d is

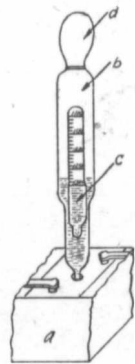


Fig 16
Testing with Hydrometer

squeezed and then released, sucking electrolyte up into the body of the syringe, causing the hydrometer float to float at a level depending upon the condition of the fluid. The float is graduated from 1100 at its upper part to 1300. The reading is taken at the acid level on the float. If this reading is from 1100 to 1150, the cell is discharged; if from 1200 to 1250, half discharged, and 1275 to 1300, fully charged. Hydrometer readings are generally spoken of as so many points as 1275 points, and this corresponds to 1750. The difference between 1250 and 1275 is 25 points, and so on.

A storage battery that is in service should be tested every two weeks and distilled or clean rain water added to the electrolyte. The electrolyte should be tested before the water is added. In hot weather the tests should be more frequent. New acid should only be added when a quantity has been spilled, and then only by one entirely familiar with batteries. The battery should never be under-discharged to any great extent as this causes the active material to fall out in large quantities.

A battery, when weakened by

Don't Be Out of Date

YOU will not be if you own a Red River Special outfit. With a Nichols-Shepard Steam Traction Engine and a Red River Special Separator, you don't have to take a back seat for any one. It makes money for the thresherman, and saves money for the farmer.

With wheat at over two dollars a bushel, a machine that wastes grain is like having a hole in the pocket where you keep your money.

You can't afford to run anything but a Red River Special outfit. It is built right, and it runs right.

The same outfit will be good next year, the year after, and for many years after that. You might have to buy new cylinder teeth occasionally, but you can let your repair man go. You will not need him.

The Red River Special separator has made a reputation for itself wherever grain is threshed. Use or hire a Red River Special and you will know why. It runs smoothly, it BEATS out the grain and saves it. It is the cheapest machine for you to buy because it won't take long for it to save you what it cost.

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Builders Exclusively of RED RIVER SPECIAL THRESHERS, Wind Stackers, Feeders, Steam and Oil-Gas Traction Engines

Battle Creek - Michigan

Branch Houses:—REGINA, Saskatchewan

H. P. NORTON COMPANY, CALGARY, Alberta

WINNIPEG, Manitoba

continuous under-discharge, may sometimes be restored by putting it on a long charge at a very low rate. When a battery is to stand idle for any length of time it should be given a full charge and then a freshening charge every once a month. Where a battery is stored in cold climates it must have special care to prevent it from freezing. If the temperature is apt to be below 0 deg. F. the battery should be kept nearly full charge. Electrolyte testing 1.150 will freeze at 20 deg. above zero; 1.215 at 20 deg. below zero, and 1.260 at 60 deg. below zero. A stored battery should be kept clean and dry and open flames should never be permitted near it.

THE PROPER USE OF THE GREASE CUP

BE sure to fill your grease cups properly. Though the grease cup of a tractor is simple, it needs some real at-

ention. When you're filling a cup, squeeze the grease down in the top so that it will ooze out and follow the bearing. When the cup is not properly filled, the first few turns down do not force the grease into the bearings, but simply compact it in the cup."

The illustration at bottom will bring home more clearly than words just what it means to make a grease cup do its full part in saving wear and tear on valuable machinery.

There is a general rough and tumble idea among amateurs that it is only necessary to "give the grease cup a lick" and it will take care of itself. The law of gravitation will do the rest. But it won't in this case. Good lubricating oil and a proper treatment of the grease cup will save a lot of trouble and cut the cost of repairs in half.

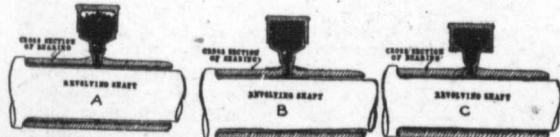


Illustration 1. Grease cup not properly filled. The first few turns will not send grease into the bearing—but will compress it in the cup.

Illustration 2. Another careless way of using a grease cup—entire bearing is not lubricated.

Illustration 3. The proper way to lubricate with a grease cup. Note grease full length of bearing and oozing out at ends.

MR. FARMER

Put the K.O. (Knock-out) on Work Glove Trouble



And see that your next glove purchase calls for a pair of the famous "Two-Dollar Knock-out Glove", they are worth the price and more beside as they comprise Fit, Wear and Comfort.

EVERY PAIR GUARANTEED

They Wear Longer Because They Are Made Stronger

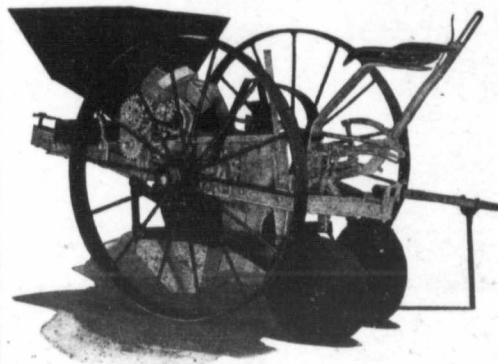
SOLD AT ALL GOOD STORES THROUGHOUT CANADA



Northland Knitting Company, Limited
WINNIPEG

MANUFACTURERS OF MEN'S, WOMEN'S AND CHILDREN'S SWEATERS, MITTS AND GLOVES AND MOCCASINS

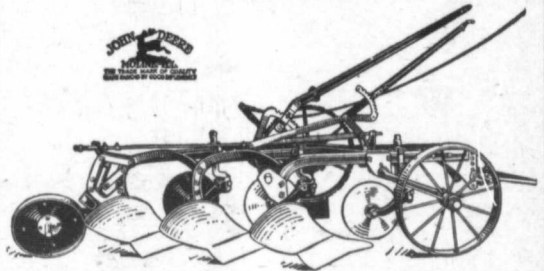
Good Tools mean Bigger, Better Crops



Hoover Potato Planter

Has automatic seed control and the operator can see every seed planted and every motion the machine makes. High wide-tired wheels and ball bearings give very light draft. Soil is opened and closed in such a way as to give uniform depth and proper covering. Hopper capacity 3 bushels. Simple arrangement for changing the dropping distance. One lever controls all.

John Deere Light Tractor Plows



Extra strong construction; John Deere quick detachable shares; high and level power lift; two-bottom, three-bottom or four-bottom to suit your tractor; plows locked to the ground through action of power lift—these advantages are yours with every John Deere Light Tractor Plow. John Deere organization, service and local dealer all stand behind every John Deere implement. See your John Deere dealer—or write for folder.

John Deere Plow Co., Limited

WINNIPEG

REGINA

SASKATOON

CALGARY

EDMONTON

LETHBRIDGE

MOST OF HIS TROUBLE FROM OVERLOADING

Beulah, Man.,

Feb. 8, 1919.

IN compliance with your request I will give you my experience with tractors. I have owned and operated a Case 20 H.P. steam engine for fifteen years, used it for threshing, pulling scrub, grading, and all sorts of belt work, but no plowing. Last spring, however, I purchased a 9-18 J. I. Case tractor of the 1917 model, second-hand, and early in April started breaking for flax.

We first pulled a 12-inch Verity gang, an old horse plow which did good work, but was too light to stay in the ground in the hard spots and needed a man to ride it all the time. Then we got a two-furrow Oliver engine gang which gave fair satisfaction and did very good work, although we had only the stubble bottoms, as the company could not supply breakers at that time.

We found, however, that the levers were very hard to handle and that the raising device was not strong enough, breaking the eccentric lifting casting several times until we had it reinforced by an additional piece welded to original by oxyacetylene.

I would, however, advise a buyer to get a plow with a smoother lifting action. We broke

Success or Otherwise with the Tractor

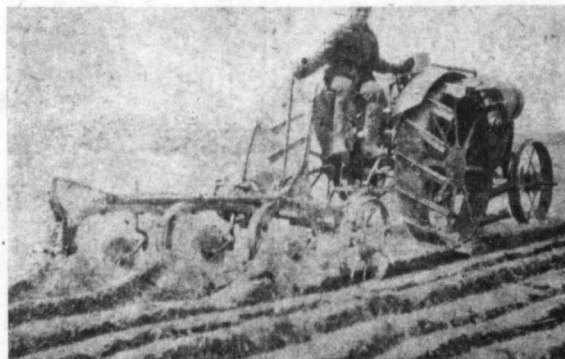
(Experience Notes from Owners and Operators)

ninety acres for flax, packed it, using a very heavy sub-surface packer weighted with stones, and disced it, pulling two seven-foot discs half-lapped one behind the other, and a heavy ten-foot drag harrow behind that.

After this crop was in we continued breaking and did about seventy acres more when we had a bad smash-up. As our bull gear and pinion were enclosed and run-

ning in oil we did not know that the pinion was nearly gone till the cogs started to slip, and the first slip it made caused such a jar that it tore the corner out of the transmission case, and when we took the case out to fix it no one in our district could take the gears out, so we had to ship it to Winnipeg to be fixed.

Got it back a bit late for threshing, but finally got to work. Our



Replacing ten heavy horses and not a muscle strained

separator was a 30x36-inch Moody with an overshot cylinder and the engine handles it in all kinds of grain splendidly, and has lots of power even if the grain is tough.

We had quite a lot of trouble with the magneto, however, and also with spark plugs breaking porcelains, but find that a plug with a mica core will stand up under any conditions. So I advise every tractor operator to buy nothing else and you will have to buy very few of them.

We used gasoline most of the time, but found that our engine, which has a kerosene-burning attachment, would run on kerosene all right if kept at full load, but did not seem to do as well when running light. Also it seemed to foul the plugs and cylinder head quicker, so we did not use anything but gasoline after the cold weather started.

Re consumption of fuel: I think that about three gallons per acre for breaking and one-half gallon cylinder oil is about right in our case, but we had some very heavy work to do and the tractor was greatly overloaded at times. In closing, I would like to advise any intending buyer to be sure you get enough power for your work as the bulk of our troubles comes from overloading our engines. Yours truly, W. R. Doyle.

A GOOD TIP FOR A COLD SPELL

Zealandia, Sask.,
March 4, 1919.

IF you figure that the information which I am sending in this letter is worth a two-years' subscription to your paper, I will be pleased to receive it and give it as much time as I have to spare. If I am interested in it I will try to send you a short article occasionally which, I think, will be of interest to your readers.

I graduated from high school in 1911, then took a short course in traction engineering in the school year 1911-12. After that I generally took a position running a tractor through the summer, then took up mechanical engineering in college during the winter, at all times making traction engines and farm machinery a specialty. Now I own a J. I. Case 12-25 H.P. and am farming one and a quarter sections of land with it and fourteen horses.

In addition to your questionnaire I will give you a little scheme which I discovered and use in the extremely cold weather for starting my tractor. The first thing I do is to turn the motor over a few times, then prime it good with common gasoline. Next, I go about getting everything set and ready to run. Then comes the secret. I take an old worn-out log-chain, about four feet long, and heat it red hot in my forge. When it is hot I put it in an old pail and carry it quickly to the tractor and insert one end in the air intake pipe or hose. Then I put in one priming cupful of ether and twice as much gasoline in each cylinder and crank the motor over a time or two and away she goes, even when it is below zero. If it is real cold I sometimes put in two cups of ether and three of gasoline. This will also depend on the size of the tractor and number of cylinders. Hoping that this may be of some use to you, I am, as ever, yours truly, C. M. Lotto.

Quite a Bouquet of Praise

Weyburn, Sask.,
Jan. 19th, 1919.

THE engine I have is a 12-24 Hart-Parr. I have been using Massey-Harris 3x14-inch mouldboard plow. The engine handles them fine at a depth from six to seven inches on summerfallow. With this engine and plows it is very easy for one man, as all levers can be reached from the platform and self-lifting attachment, making it unnecessary to stop at the ends.

I only plowed about one hundred acres of summerfallow with it, using about two gallons of coal oil per acre. As for lubricating oil, I used about one to one and one-quarter gallons a day, and grease and hard oil about one-

A Correct Lubricant for every Farm Machine

For Gasoline Engines, Tractor, Auto or Stationary
POLARINE OIL STANDARD GAS ENGINE OIL
For Kerosene Engines, Tractor or Stationary
POLARINE OIL HEAVY
POLARINE OIL A IMPERIAL KEROSENE TRACTOR OIL EXTRA HEAVY (Recommended by many tractor manufacturers)

For Open Bearings of Farm Machinery
PRAIRIE HARVESTER OIL
—very heavy body, resists cold, won't thin out with moisture
ELDORADO CASTOR OIL
—a thick oil for worn and loose bearings

For Steam Cylinder Lubrication, whether Tractor or Stationary Type.
CAPITOL CYLINDER OIL
—the standard product for steam cylinder lubrication

THRESHER HARD OIL
For Grease Cup Lubrication of Bearings, a clean solidified oil high melting point.

IMPERIAL OIL SERVICE

Our service is far more than the mere selling of our products. It follows our products to their work and insures as far as we can insure it, that each Imperial Product does the work for which it is bought. Ask the *Imperial Oil man*. There is one near you. His service is free and should be valuable.

IMPERIAL OIL LIMITED

Successful Farmers are Well Posted on Lubrication

The fellows who are making the most money are usually the ones who have studied the question of lubrication, as well as other farm problems. A thorough knowledge of lubrication is worth hundreds of dollars per year on every Canadian farm.

You cannot expect service from your automobile, if it is poorly lubricated. Your tractor is poor property without proper lubrication. The two machines are unlike in structure and duties, and one kind of oil will not do for both. Be sure that you are using the oils and greases best suited for each machine and each moving part of your farm machinery.

From Imperial Farm Lubricants you can select the right oil for every purpose. All are high grade reliable products. All are correctly refined, from carefully selected crudes. All Imperial Farm Lubricants are made in Canada.

Imperial Farm Lubricants are put up in convenient sizes; one-half, one and four-gallon sealed cans, half barrels and barrels.

When writing Advertisers please mention *The Canadian Thresherman and Farmer*.

Shinn-Flat Protects Property

Worry No More About Lightning.

Lightning cannot harm any building equipped with Shinn-Flat Lightning Rods—this we guarantee when we make the installation.

Shinn-Flat LIGHTNING RODS PROTECT

Shinn-Flat Lightning Rods are installed by men who have been carefully trained under the direction of Prof. W. H. Day—Canada's well known authority on Lightning Prevention.

Professor Day realizing the importance of efficient Lightning Rods scientifically installed is now devoting his entire time to advancing the use of Shinn-Flat conductors. You will profit by these services.

FREE—Our illustrated book Lightning "Cause and Control" by Professor Day describes Shinn-Flat Rods and tells how the reduction in the insurance premiums pays for cost of installation.

SHINN MANUFACTURING CO. OF CANADA, Limited Dept. M
Factory and General Offices: **GUELPH, ONT.**
Prof. W. H. Day, Sec. and Manager
Western Representatives, **Chisham Motor Works of Canada, Limited, Winnipeg, Man.**



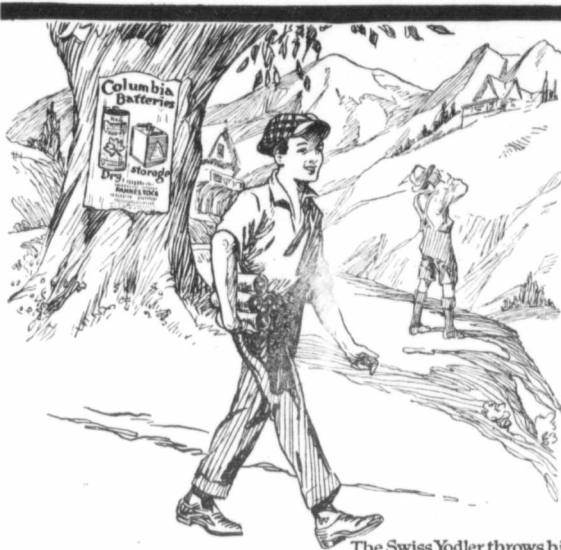
Lightning Can't Strike IF Shinn Gets There First

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Bickmore's Gall Cure Is GUARANTEED

to do all we claim for it. Your money back if not satisfied. Bickmore's is wonderful for collar and saddle galls, broken skin, rope burns, sore shoulder, mange and other skin diseases, bruises, cuts, chafes, mud scalds, grease heel, chapped teats on cows, and other wounds on horses, cattle, pigs and poultry. And the best part of it is that you can work the horse all during the time it is being cured. "I am a constant user of Bickmore's Gall Cure. It excels all others because you can work the horse all the time and a horse in harness is worth two in the barn," says Ernest Vetter, of Mago, Canada. H. H. Norris, of Whitehall, Illinois, says: "Your gall cure has no equal. I had a cow with a badly swollen hump, nearly as hard as a rock. Two boxes of Bickmore's took out all the swelling." Get Bickmore's from your druggist, harness dealer or general store. Never accept a substitute—always look for the "Old Gray Horse Trade-Mark," well and favorably known for 24 years. Or send us for liberal trial sample of Gall Cure and helpful Farm Accounts Book, giving full information on keeping track of your expenses and receipts, and many useful pointers about farming. **THE BICKMORE COMPANY, Dept. 555 545 Notre Dame St. West, Montreal, Can.**



The Swiss Yodler throws his voice across the valley —

the Fiery Little Columbia can throw a voice across a continent

THE Big Swiss Yodler throws his voice across the valley—the echo registers that fact in four seconds. We marvel at the power behind such a voice. But let us not forget—

The Fiery Little Columbia can carry the Big Yodler's ordinary conversation over a thousand miles of telephone line, and deliver it instantly.

THE DRY BATTERY
CONSIDER, too, that besides tuning up telephones, Columbia Dry Batteries run toys, ring doorbells, and furnish the vital spark of life to thousands of autos, trucks, motorboats, tractors, and farm engines.

The Fiery Little Columbia is never sick, for his constitution is tough; he is never tired, for he works only when you need him. Always healthy, rested, and vigorous, he meets every battery need faithfully and long.

THE STORAGE BATTERY
The Columbia Storage Battery is built and sold to yield definite power for a definite time. In a Columbia you buy definite service; you

receive a clearly defined guarantee, a specific agreement that you will be entitled to thorough repairs or another battery without additional cost if the original battery fails within the guarantee period.

The Columbia Battery Terminal Seal protects the battery, the purchaser, and us. The guarantee is a record of that fact.

Stop at any Columbia Service Dealer's or Columbia Service Station and learn how thousands of auto owners are avoiding the costly battery tinkering that used to be tolerated as part of the day's work.

Columbia Storage and Dry Batteries

Canada C-19

quarter pounds, which was a very small item, on an average of eight acres plowed per day, running ten hours a day.

This engine is guaranteed to pull 3x14-inch furrows in stubble and give surplus power to work, on which I pulled one section of a harrow behind the plow. I tried other plows but found the Massey-Harris much easier to pull and better work.

My engine is guaranteed to run a 24-inch separator all equipped, which she will do and give lots of power. I have purchased a 10-foot double disc. I disced about 200 acres this fall, loading down with stone makes a very nice load. I hauled three loads of wheat to town, averaging 95 bushels to the load, making two trips a day.

I think this engine is much handier to operate than some others as she is very simple and any one wishing any information with regard to it or the plows, I will be willing to write them. Yours truly,

R. G. McIntyre.

Doing a Far Better Job Than He Had Ever Done With Horses

Pinkham, Sask.,

Jan. 30th, 1919.

IN the spring of 1918 I bought a 12-20 Heider tractor, and at the time of receiving tractor I possessed very little information as to the care and handling of the engine. But as I had a little previous experience with an auto, I soon picked up how to handle the tractor.

I have used the tractor for nearly every job on the farm, except seeding and cutting. I have used it for plowing, disking, harrowing, cultivating, floating, moving buildings, such as granaries, also running a grain separator.

When plowing, the two wheels of tractor that are on the furrow side, run in the furrow, and by doing so the tractor will guide itself from one end of the field to the other, giving the operator a better chance to watch and take care of the plows.

I have a Rock Island self-lift

engine plow, which has three bottoms. The third plow is very easily taken off for breaking, as I just use two bottoms for breaking and three for stubble plowing. Besides it does not pay to load tractor too heavy, as a person will make more time and do a better job by not overloading.

The soil here is a heavy clay and loam, and I plowed 160 acres about five and six inches deep, doing a far better job than what I had ever been able to do with horses. When using tractor I always worked a 12-hour day, and in plowing with it used about one and two-thirds gallons of kerosene per acre plowing stubble and about one and one-quarter gallons of lubricating oil each day.

I always run tractor on kerosene, only using gasoline for starting with; besides, I found that kerosene has more power than gasoline if handled right, as kerosene will not work good unless tractor is warm. I also disked 228 acres, harrowed 283 acres, cultivated 85 acres, floated 30 acres and threshed about 700 acres of grain.

At belt work the tractor run a 24-in. separator with a self feeder and all other equipment; but of the two jobs I liked the tractor the best on the draw-bar. This tractor has a friction drive with seven speeds forward and seven reverse. With the friction drive there is no danger of stripping any gears, and tractor will start off with the load without jerking to start it; besides, when backing up to anything or moving forward, tractor can be moved half inch at a time.

When operating tractor I always kept it well oiled, for without oil a tractor would not run very long. Oil is the life of a tractor. I always went over all the grease cups twice each day, and any parts that travelled rapidly every two or three rounds; by so doing, I kept down my repair bill, and after tractor has been overhauled will be as good as ever for next season. Yours truly,

A Goose Lake Farmer.

The Cheapest Way To Pull Stumps

No horses needed with a *Kirstin Puller*—no extra help required. One man alone pulls biggest stumps in 4 to 10 minutes. The wonderful *Kirstin One-Man Puller* pulls little, tough or green stumps no low as 5¢ each; also brush, hedges and trees. Cuts land clearing cost way down. Costs less to buy—less to operate. Weighs less—has greater strength—more power.

Get Our Big FREE BOOK

Tells how to clear land quickly and economically. Guides you at every point. Worth many dollars to any farmer. Also get agent's proposition.

Kirstin One-Man Stump Puller

Works on wonderful leverage principle—gives one man giant's power. Its six speeds and patented cable take-up save time, cable and machine. All steel—three years' guarantee against breakage. Pulls acre from one anchor. Sold on 30 days' free trial—no money in advance. One man style or HORSE POWER. Write for FREE BOOK and agent's proposition—TODAY!

A. J. Kirstin Canadian Co., 1211 Dennis St., Sault Ste. Marie, Ont.



In the thick of a big job—D. W. Heibert, 6th August, 1918

A Splendid Story of Women's Field Work

Box 25, Miami, Man.,
Jan. 18th, 1919.

IS the tractor a good investment for a farmer in the West? I would say from my summer and fall experience in 1918 it pays well. I purchased a 10-20 Titan about middle of June. Might say I was hailed out in 1917 and had no feed except what I bought, and it took no little to feed fourteen horses to keep them up for summer-fallow work. So I decided to buy a tractor and dispose of eight horses.

As soon as tractor arrived, I commenced to plow on 130 acres. Of course, having no experience with a kerosene engine, I had a little trouble for a few days, but experience is a great teacher. We got along very well (a 14-year old boy and myself). As I did not buy a regular engine plow, it took two of us, as one had to pull plow at ends. We got through our plowing without any mishap, then took a cultivator and harrows, hitched on behind and went over first field. Our land, or part of it, is sandy and drifts, so did not cultivate any more but let weeds grow for a while, then before harvest went and plowed it over again and put packer on after plowing.

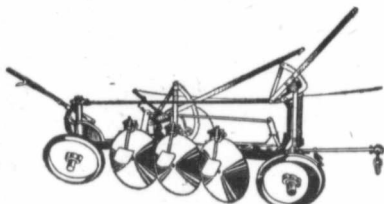
Harvest came on, but feed was still scarce, and having 300 acres to cut, I thought I would try tractor. Had one 7-ft. binder, which the girls had learned to drive (and a good job, too, as I got laid up with blood poison in my hand). We kept on until we had 100 acres cut. Kept binder going from time we could start in morning until the dew fell again in evening.

But we could not cut fast enough with one binder, so I bought another, using the horses to it. The tractor and the horse binder each went round for round until dinner time. Then the tractor went several rounds while horses were feeding and resting; two girls and tractor cut 200 acres, the horses 100 acres, and thanks to the town stokers, they came out and stoked it for us. In the threshing season, as I had no separator, another neighbor bought one and I put my engine on to it. We did not need any extra help as three young women offered to do all the field pitching and two boys and two men handled the stook team. We threshed 18,000 bushels of wheat, oats and barley in twenty-one days, with 500 gallons of kerosene and about 4 gallons of gasoline.

Have not done any road work of any kind. Hauled portable granaries, and it walked right away with them, 12x16 buildings, over plowed fields or any surface. When winter comes, it does not

COCKSHUTT Power Lift DISC PLOW

One of the latest additions to the famous Cockshutt line of Light Tractor Plows. A One-Man Tractor outfit that will stand up to the hardest plowing conditions and do good work.



Some of its Good Points:

- Exceptional Strength for Hard Work
- Easy Turning Adjustable Disc Bearings
- Discs controlled by cord from Tractor
- Interchangeable from 3 to 4 Discs
- Exceptional High Lift and Light Draft

Every "Power" Farmer should see this Plow

For land that has to be worked with a Disc Plow you can't do better than use this splendid Cockshutt Power Lift Disc Plow. The solid, strong, up-to-date construction guarantees that it will stand up to any soil, and it has a full measure of the famous Cockshutt "light draft." New and superior ball-and-gudgeon bearing, capable of very fine adjustments, make the Discs turn easily, while the Scraper adjustment can be set to any position desired.

Levers to set plow and gauge depth of work are convenient and easily handled. Disc lifting and lowering device is fully enclosed and positive, lifts discs high out of ground by pulling cord at tractor seat, and another pull on same cord lowers them again. Built in a 2-furrow size, also in a 3-furrow size which can be readily transformed into a 4-furrow plow when desired. Wide adjustments possible on draw-bars and clevises.

Let us send you to-day a copy of our new folder, "Cockshutt Light Tractor Plows," telling all about these up-to-date implements.

Cockshutt Plow Company, Limited

WINNIPEG REGINA SASKATOON CALGARY EDMONTON

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SHERWIN-WILLIAMS PAINTS & VARNISHES



Commonwealth Barn Red

Your barns are burning up slowly. It is a very slow process, usually called DECAY. But its destroying power is as certain as it is slow, and the only sure protection is the best paint you can buy.

Use SHERWIN-WILLIAMS COMMONWEALTH BARN RED

on your barns and other buildings. It is the best paint made for this purpose. This bright, rich Red,—so prosperous looking—is decidedly an economy. Pay out a little money for paint instead of many times as much for rebuilding.

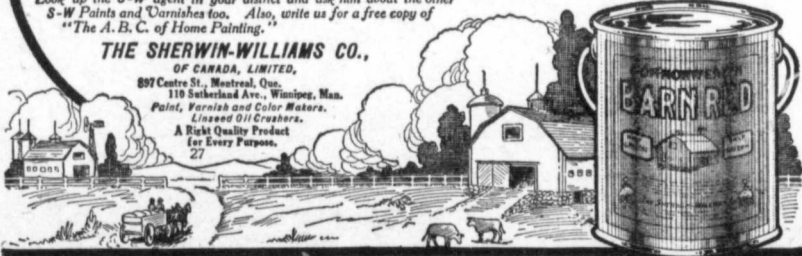
That's common-sense, and it applies just as strongly to the use of SHERWIN-WILLIAMS Wagon and Implement Paint, to S-W Buggy Paint, and to S-W Auto Enamel.

Remember, paint is a protector, not an expense.

Look up the S-W agent in your district and ask him about the other S-W Paints and Varnishes too. Also, write us for a free copy of "The A. B. C. of Home Painting."

THE SHERWIN-WILLIAMS CO.,

OF CANADA, LIMITED,
297 Centre St., Montreal, Que.
110 Sutherland Ave., Winnipeg, Man.
Paint, Varnish and Color Matters.
Lined Oil Crabs.—
A Right Quality Product
for Every Purpose.
27



Massey-Harris



Plowing with Power

Plowing, of all farming operations is the one to which the farmer most enthusiastically welcomes the use of Tractor Power. It makes a hard job easy and gets through the work quickly.

In Tractor Plowing, however, it is the Plow that makes or mars the job of plowing. Not only should it plow more land in less time, but it should turn the right furrow, cover weeds and trash well, and be easy to operate from the Tractor.

The Massey-Harris Power-Lift Tractor Plow is the product of a rich experience of over half a Century of Plow Building. Its entire construction is especially rigid and strong to stand the immense strain of Tractor Plowing, and it is fitted with Bottoms specially designed for plowing with power.

Two Levers within easy reach of the operator on the Engine regulate the depth of plowing. By simply pulling a rope the Power Lift operates to raise or lower the Plow as desired. The Hitch has wide range of adjustment both vertical and lateral, and being stiff permits the Plow being backed. When raised all Bottoms

are at the same level, the rear being equally as high as the front, namely, 6 inches. A Hardwood Break Pin in the Hitch prevents breakage. The Third Bottom or Plow can be detached to convert a Three-Furrow into a Two-Furrow, or vice versa; it can also be attached to a Two-Furrow, thus making a Three-Furrow Plow.

The Ideal Plowing Outfit—The Massey-Harris Tractor and Tractor Plow. Whole Outfit Covered by One Guarantee—No Divided Responsibility.

MASSEY-HARRIS CO., LIMITED

Head Offices—Toronto, Ont.

Branches at

Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current,
Yorkton, Calgary, Edmonton. Transfer Houses—Vancouver and Kamloops.

Agencies Everywhere

need any feed or any "upkeep" whatever. During the summer it would take three or four weeks putting up hay (if you could get it) to feed those horses over winter, not saying anything about feeding them and cleaning stables out.

Enclosed please find two snaps of our outfit of men-savers, to bring victory for the Allies—on back of each find description.—Yours truly,

J. W. Corden.

Mr. Corden's snapshot of his men-savers was published on page 28 of our April issue.—Ed.

A Real Humdinger and No Repairs

Windthorst, Sask.,

Feb. 12th, 1919.

I WILL give you a few facts of the work which I have done with my 11-22 Sawyer and Massey gas oil tractor which I purchased in the early spring of 1918. I must say that it has given me splendid satisfaction during the past year. I have used it for plowing, threshing, hauling and feed grinding, and am quite convinced that as a general purpose tractor it has no equal.

It is easy on pull and easy to handle; as to plowing, I run it 12

hours a day and plow an acre an hour and use twelve gallons of coal oil a day. I only use gasoline for starting when the motor is cold; and when using coal oil, it is coal oil only and no water. No trouble to get the right mixture.

This tractor will not pack the land as the wheel is narrow, the cleats are deep and extend over the rim. And as to hauling, I put four wagons behind the tractor and loaded 300 bushels to a trip, which I hauled over a humpy road on the high road gear.

In threshing, she runs a 26-in. separator with perfect ease. My tractor takes the place of a horse and two men, and I am satisfied that tractor power is the cheapest. The men and horses I must feed and take care of, rain or shine. On the other hand, the tractor when I am not working with it, is not costing me anything, and as to repairs, it didn't cost me anything. I think that the most of the repair bills come from the men running the engine. Carelessness is the foundation of the repair bill.

W. H. Kapell.

FROM THE BIG STEAM RIG TO THE SMALL GAS OUTFIT

Gledhow, Sask.,

Feb. 26, 1919.

I HAVE a 16-30 "Advance Rumely" oil pull engine and I consider it one of the best, if not the best, engine on the market. I bought it last fall and can say that I like it fine.

I have had a lot of experience with tractors, steam as well as oil, as my father has owned three steam engines since I was about 14 years old.

We have put it to every test on the plowed land, as well as plowing and threshing, but can say that an engine on the plowed land is not the best as it packs the ground too hard. The drills cannot put seed in the hard soil after a heavy engine goes over it.

My father has a 35 H.P. steam engine at present, but the lighter tractor like the modern gas outfits are taking the big, heavy engine's place, as it costs too much to run a steam outfit now. It takes too many men (from five to six), while with the gas tractor one man can run the outfit.

I have had several years' experience working on my father's outfit and have found out that a gas engine is far cheaper; that is why I bought an Oil-Pull.

I have only plowed and threshed with my engine. I use four 14-inch plows, and one section of harrows behind plows, as that helps to hold the moisture, and plow at a depth of six inches in clay or sandy soil, and can plow from ten to fourteen acres per day.

The amount of kerosene used is generally about one gallon per H.P. per ten hours. I have never measured it, so I cannot say exactly, and other oils from one to three gallons per day, depending on how good shape your engine is in. As my engine is new, one to two gallons of cylinder oil, probably, should suffice, and would, unless you waste a lot.

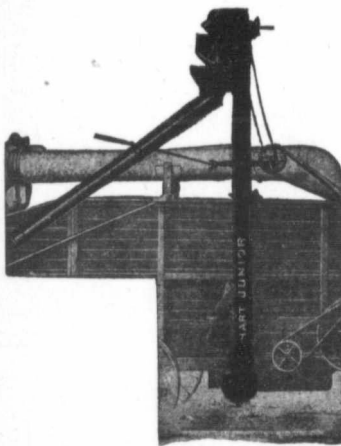
My idea of having an engine is to do your plowing and threshing and keep the engine off the land, that is the plowed land, as the plowing is the big question here,

THE HART LINE

Hart Machines backed by thirty years of satisfactory service, embrace all the latest and best improvements in Automatic Registers and Self-Feeders and are recognized as standard by the discriminating and far-sighted manufacturers and users of threshing machinery.

THE WORLD'S LARGEST THRESHING MACHINE MANUFACTURERS USE AND RECOMMEND HART PRODUCTS

While the Junior Registers and Self-Feeders are recommended for Junior Threshers, the big Hart Line embraces dozens of styles and sizes of Registers and Feeders for the larger separators.

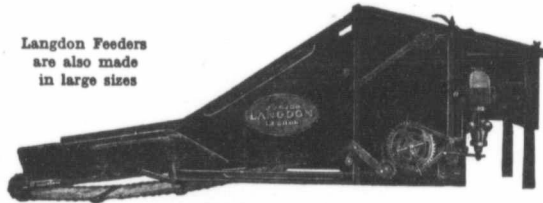


HART JUNIOR AUTOMATIC REGISTER
With 14-ft. Elevator

Also furnished as a low-down machine with conveyor, for Eastern trade.

AN AUTOMATIC REGISTER AND SELF-FEEDER FOR EVERY SIZE SEPARATOR, LARGE OR SMALL

Langdon Feeders are also made in large sizes



LANGDON JUNIOR SELF-FEEDER

CATALOG IS NOW READY

Hart Grain Weigher Co., Peoria, Illinois

Makers of Hart, Peoria, Hart Belt and Bucket, Simplex, Perfection and Hart Junior Automatic Registers; Loaders and Baggers; Langdon Ideal and Langdon Junior Self-Feeders; Hart Wing Feeders and Hart-Brown Wing Carriers.

for once the plowing is done it don't take long to get it ready and seed it.

You may ask: Why didn't you get a 20-40 or larger engine instead of 16-30? About 6 or 8 years back the large outfit was all right as help was only a quarter as high as it is now. About that time we would laugh at the man who had a small threshing outfit with a 28-inch cylinder separator for it seemed as if he never threshed much. Everybody wanted the big outfit to thresh, but now, in this district, the farmers do not like the big fellows as they will put on about ten or twelve teams and four or five pitchers and feed the separator so fast that some of the grain finds the straw pile.

I say "some." I have seen some straw piles that looked to me like as if they had made a mistake and got the grain in the wrong place, as the straw pile was nearly full of wheat and the bin nearly empty.

With the small outfit they use a 28x48 separator with a 16-30 on the belt and cannot rush it so fast by feeding with two or three pitchers. The small rig takes the lead here now, as a man cannot afford to have all his profit thrown in the straw.

The big rig can do the work, too, but they won't, as they think if that machine isn't kept right to

its fullest capacity they are not making any money; but they never think of the poor beggar's living they are throwing away.

I know what it is, as I have had the same thing to contend with, so I made up my mind I would do my own and get a smaller rig, and if I couldn't put 7,000 or more bushels through, I would have the most of it in the bin, anyway. It is the grain I am after, not the straw.

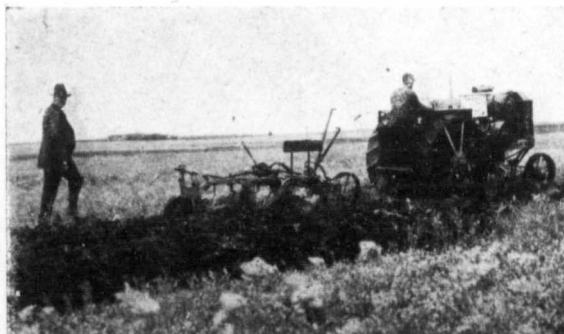
And another thing to consider is the help. If there were four or five of the largest outfits in here you could not find enough teams to keep them going half the time. With the 28x48 separator, six teams will keep it going, and that

is all one outfit here can gather up and keep a full crew.

So in buying an engine here you have got to buy the one that suits the district if you intend to thresh.

After a man gets a starf and gets implements on hand and paid for, he has got to buy the machine that will go with what he has got. To buy machinery for a large engine nowadays a man would need a trust company to back him up or he would bust.

If there should be any questions you would like to ask, I will answer them to the best of my knowledge. I remain, L. G. Buchanan.

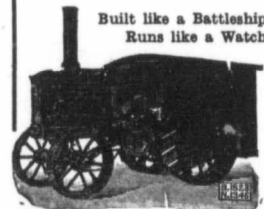


Sawyer-Massey 11-22 with 3-bottom Cockshut

HIGH-CLASS "BRITISH" MACHINERY

The "Marshall" Oil Tractor

Built like a Battleship
Runs like a Watch



The Dreadnaught of the Prairies

This Tractor is made in 2 sizes, 16 H.P. Drawbar, giving off 30-35 Brake H.P. on the pulley; 32 H.P. Draw-bar, giving off 40-70 Brake H.P. on the pulley. They are economical, durable and reliable. Guaranteed of finest materials and best workmanship. They need few repairs.

IF YOU WANT SATISFACTION, BUY OUR TRACTOR AND THAT WILL STAND UP AND GIVE YOU MANY YEARS OF SERVICE

Farmers are seriously warned not to be misled by the light, short-lived, inferior cheap (so-called) Tractor; it will not stand up, and only causes trouble, vexation and loss.

SEND FOR CATALOGUE SEMI-DIESEL, TWO CYCLE, OIL ENGINES, STATIONARY AND PORTABLE

suitable for General Farm Work, Threshing, Electric Lighting, Contractors, and General Commercial use.

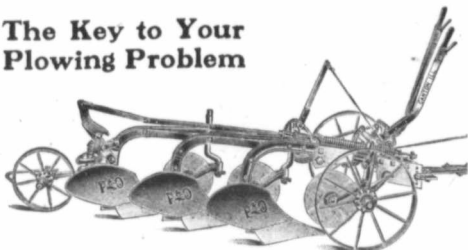
Marshall, Sons & Co. (Canada) Ltd. ENGINEERS

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LITTLE GENIUS

The Key to Your Plowing Problem



The P&O Little Genius Tractor Plow and a good tractor put the solution of your plow problems right into your own hands—relieve labor shortage by enabling every man to do more—and make it possible for you to get your plowing done in time to plant at the right season.

The P&O Little Genius is field proven. Tractor demonstrators like to pull it because it enables them to make good so easily.

The P&O Little Genius is the ideal plow for light tractors. Instant and positive power lift, with single trip rope control. Perfect bottoms with Quick Detachable Shares. Pin-break hitch. Great clearance. High, level lift.

Automatic retracting levers. Easy and simple adjustments—anyone can make them. A dozen other features and a matchless field record recommend the P&O Little Genius to your serious consideration.

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SALES AGENTS FOR CANADA

WINNIPEG REGINA SASKATOON CALGARY

SOUND ADVICE FROM AN OLD HAND

Elrose, Sask.,
Feb. 7, 1919.

AS to my experience with the tractor, I may say that I have been on tractor work for nine years steady and like the job all right. I owned and operated a 36 H.P. "Steamer" for eight years and found it very good and made good money plowing and threshing.

But the time has gone for such big outfits, for the reason that breaking is much done and there are so many small outfits that there are few big jobs left for big outfits to do. Another reason is the labor is so scarce and independent.

I find it hard to keep enough men to run a big outfit at full capacity; besides, if the weather is wet in threshing, you pay too much for to board so many men, and when the wet spell is over they leave you and go to work for the next man that comes along, for the reason he will give them 50 cents more a day. Not having to board these men during the wet weather he can very well afford to do this.

This is why a big outfit is not as good as a small one, so to get rid of all this trouble I bought a smaller tractor.

In March last year I bought an 18 H.P. on draw-bar Rumely oil pull 35 on the belt, and I must say that this is about the best size for a farm from one section to three sections.

I have broken this summer with this engine 845 acres, at least six inches deep, every foot of it well turned over, and I summer-fallowed 120 acres.

I only pull three plows around here, the land being so heavy, and I had a self-steering device which I think is the best thing on an engine. It takes the place of a man and does better plowing, for it does not miss any land for the first plow, thus making a good job. I run my engine 20 hours a day in plowing. I had a green man to start with me in the spring. I showed him how to start and stop and to keep her well oiled.

This is generally hard to teach a green man, but the man I was fortunate in getting, being a good worker, he soon learned to take good care of the engine. I did not allow him to do any repairing. I did what was necessary myself and was sure it was done right.

My man got up about two o'clock and ran the engine until six o'clock, and then I ran it an hour while he was eating his breakfast. I ran it for another hour at dinner time, took the engine at six o'clock in the evening and ran it till ten or eleven. In this way I had the use of my engine 20 hours a day with just the one man. I had plenty of time to haul water and oil and look after the rest of my farming operations. I also had two other men on the horses.

I used a four-bottom Cockshutt plow, but pull only three bottoms. I used on an average five gallons of fuel to the acre.

For threshing I pull a 30x48 "Ideal" separator and had lots of power. My advice to anyone who wants to buy a tractor is to buy one that is not too small. A tractor that is not so complicated and a tractor that you can obtain repairs for quickly. A tractor that has been out for a few years and has proved itself a good engine.

Do not take a chance, but profit by the experience of someone else. Lots of the trouble arising from oil tractors is the poor lubricating oil. Get good lubricating oil and half of your trouble is gone. If anyone wants information about any particular trouble with steam or oil pull engines, I will gladly answer them.. Yours truly, Yil-fred Gaudreau.

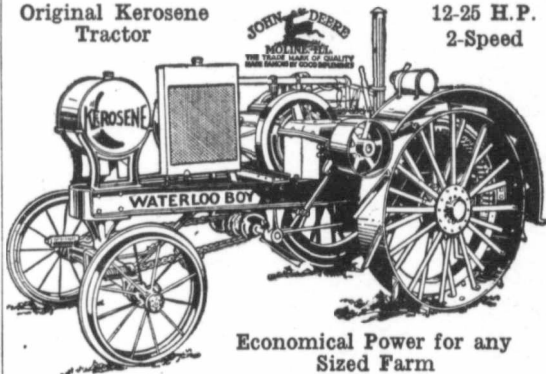
Spring unlocks the flowers to paint the laughing soil.

He was a wounded Tommy who had been badly injured in the hands. "Doctor," he said anxiously, "shall I be able to play the piano when these mits of mine heal?" "Certainly you will," assured the doctor. "That's good, doctor!" murmured the patient. "You've worked a blooming miracle. I never could before."

WATERLOO BOY

Original Kerosene Tractor

12-25 H.P.
2-Speed



Economical Power for any Sized Farm

It pays a farmer best to select the tractor which has been chosen by a big reliable company that can and does render personal prompt service to the user through its many branches and dealers all over Western Canada. Ask your John Deere dealer for information about this sturdy three-horsepower Waterloo Boy Tractor which delivers its full rated horsepower on both belt and drawbar. Or write us direct for complete illustrated folder.

John Deere Plow Co., Limited

WINNIPEG CALGARY REGINA EDMONTON SASKATOON LETHBRIDGE



The "Wallis" (Canadian Fairbanks) 15-25 drawing by J. I. Case "Encars"

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against loss of time and all manner of loss at threshing time, or at any time in which you have to engage the service of belt transmission. The **Belting** we manufacture is guaranteed to stand the strain of any normal use, and practically anything you can give it in downright abuse. We back it against anything made to give perfect and continuous satisfaction. If you want the most economical thing you can buy in belting, then get the



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Rubber Belt
 or the
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ENDLESS THRESHER BELT



They are unbeaten in the field of grain production

and are sold by all thresher companies doing business in Canada. They may cost a trifle more than some fabrics that are always a big risk but that is forgotten in the added years of service, and we guarantee our goods against all disappointment from slippage or breaking. It is not possible to make better belting by any scientific method known at this day

Gutta Percha and Rubber Limited

WINNIPEG FORT WILLIAM REGINA SASKATOON CALGARY LETHBRIDGE EDMONTON

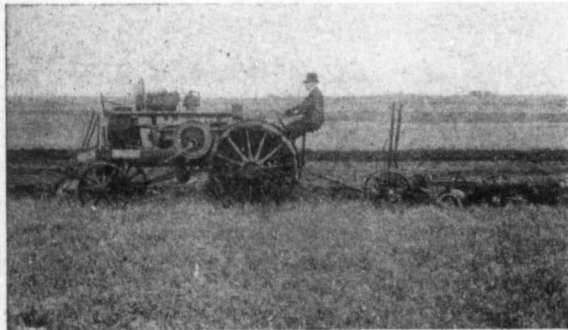
A FINE EXAMPLE IN NATIONAL DEVELOPMENT

ON the invitation of D. A. Downie, of Winnipeg, a party of Iowa bankers visited Western Canada last fall and made quite an extensive tour of the country. As a result of this visit, they have secured a tract of 8,000 acres of land in the Swan River Valley, Canadian National Railways, which they intend to break up and get under cultivation as quickly as possible. A manager has been engaged and it is planned to break 3,000 acres this summer.

Five tractor outfits are now

busy and will be kept going until freeze-up next fall. The entire tract will be fenced and 500 head of stocker cattle will be grazed. Two carloads of fencing wire have been sent out with other materials that were bought in Winnipeg. Necessary buildings will also be erected.

When the land has been developed it will be sold to farmers who want farms on which the pioneering work has been done. Mr. Downie states that there is quite a movement of settlers to the Swan River district. His firm has already located a number of settlers on purchased farms and on homesteads, and others are quickly following.



Avery 8-16 pulling 2 Grand Detour Plows

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SARNIA FARMER'S FRIEND FENCING

THE SARNIA FENCE

The most satisfactory way to buy Fencing is from a responsible Fence Factory where you get first service at Factory prices. That's us—we make Fencing for and sell to Canadian Farmers. We will save you a lot of good money if you deal with our Farmers Fence Factory. Prompt shipments made. Fencing fresh from the loom—always highest quality. Lowest prices on all Sarnia Farmers' Friend Fencing, Sarnia Gates, Barb Wire and Fence Supplies. Costs no more to erect a Sarnia Fence with full gauge wire, heavily galvanized, rust resisting. Full measurement. Full size rolls and full weight. An honest service and a square deal. Our methods and our Fencing vouched for by thousands of satisfied users—Canadian Farmers throughout the Dominion. There is a good reason—it sells because it excels. Speaks for itself and stands for years as an advertisement of Sarnia Fence Satisfaction and the prosperity and good business judgment of Sarnia Fence users—

For Every Fencing Need **SARNIA** **For Canadian Farmers**

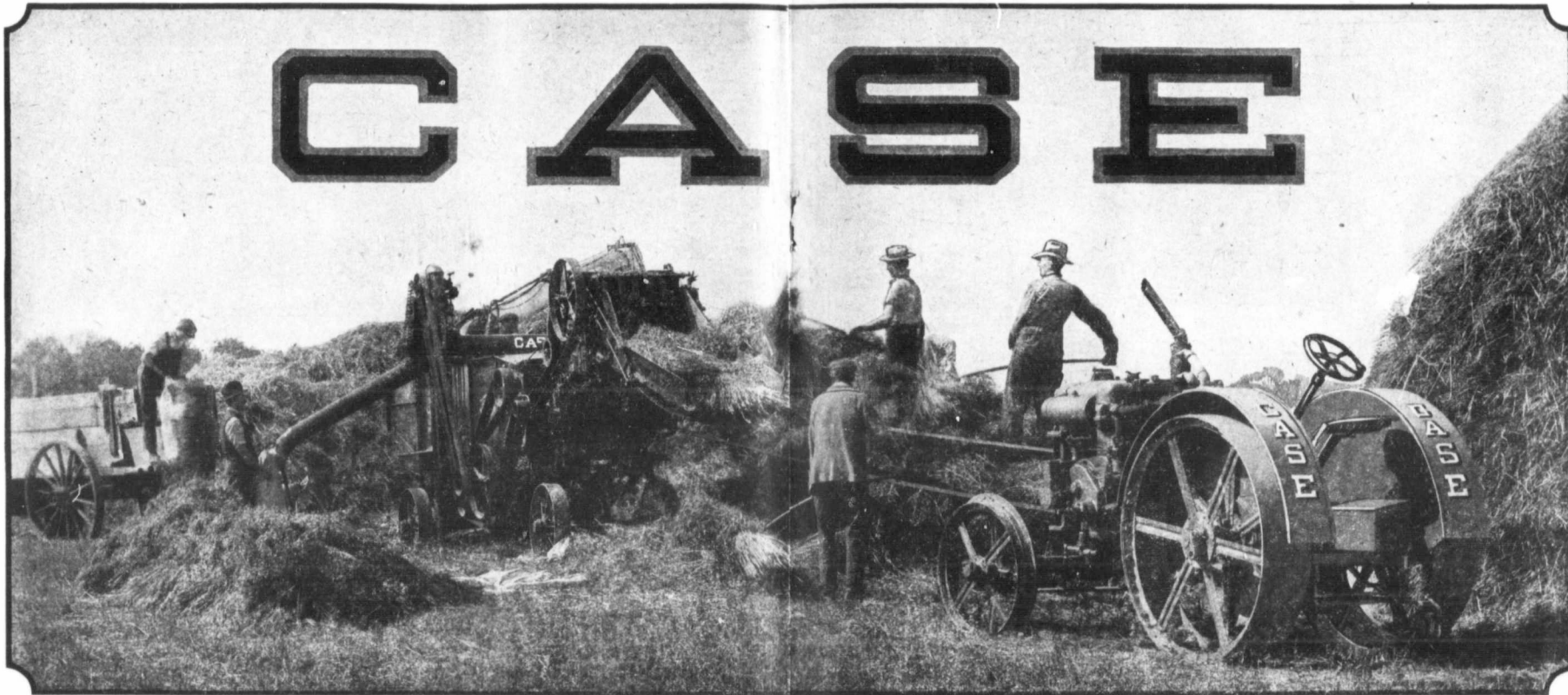
Will not sag in summer nor break in winter, conforms to uneven ground, up hill or down, as well as level ground. The strong line wires have a wave or crimp which gives elasticity and spring to the Fence, providing for contraction or expansion. The strain is evenly distributed on each wire. The Sarnia knot grips and stays tight—will not slip in any direction. We have saved the farmers of Canada many thousands of dollars by our plan of direct dealing from Factory to Farm—cutting out all dealer or middleman's profits and giving it to the Farmer.

Canadian Farmers must help supply the hungry nations of Europe by using every foot of ground for productive purposes. Have no waste fence corners but pile to the line. Do not buy Fencing until you have our prices. Freight rates quoted in Old Ontario. Four cents a roll extra in New Ontario, Quebec and Maritime provinces. Western Canada supplied from our Winnipeg warehouse. Order now and be ready. Price list, order blanks, descriptive literature yours for asking.

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DIRECT to FARMER

CASE



CASE GRAIN SAVERS - FAVORITES FOR 77 YEARS

All-Steel Construction

All sizes are built of steel. This means rigidity and sturdiness. And longer life.

And a steel built thresher means protection against total destruction by fire. Wooden machines are easily affected by climatic conditions and are apt to rot and warp, but the all-steel construction assures Case owners of long service at little or no expense for repairs.

Case construction also guards against distorted frames and disalignment because of pull from heavy main drive belts.

Steel Feeder, or Hand-Feed, Wind Stacker or common folding stacker, and different types of grain handlers furnished for ALL sizes.

Whether you have your threshing done by someone else, or do it yourself, you should be certain that your crop is threshed by a Case Machine.

Not merely because Case Threshers are most famous, but because they do better and more thorough work.

In fact this is the very reason why Case Threshers have won their renown—why more Case Threshers are used than any other. For 77 years farmers have shown a preference towards Case. Until today a large percentage of the American harvest is threshed with Case machines.

There is a size for every need. And all built to operate at a minimum of power and upkeep expense. If you want to own your own thresher and run it with a small tractor, such as a Case 10-18 Kerosene Tractor, we recommend the Case 20x28 Lightweight Thresher pictured below.

J. I. CASE THRESHING MACHINE COMPANY, Inc.

Like all Case Threshers, it is built of steel and is noted for its simplicity. It is our smallest and latest, and no better can be bought.

If you own a big farm and want to handle larger crops or if you are a contracting thresherman, you will be interested in one of the larger Case Threshers pictured below.

In all, there are seven sizes of Case Threshers, and equipment may be had for handling every kind of grain grown, also peas and beans, rice, clover and alfalfa, peanuts, etc.

For everything that's threshed, you can depend upon a Case Thresher for clean threshing, thorough separation, perfect cleaning and unequalled saving, therefore Case threshed grain usually brings more money. Write for descriptive catalog.

888 LIBERTY ST. RACINE, WISCONSIN, U. S. A.

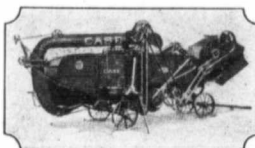
Simplified Designing

In Case Threshers you will find fewer parts. This means fewer adjustments. And that means saving time during the threshing season, when time is money.

Case Threshers are easier to oil. Nearly all the bearings are supplied with pressed steel compression cups for hard oil. The cups can be filled in the morning and at noon—occasional turn of the cap on the grease cups is all that is necessary. This can be done while the machine is running, for all are located on the outside of the machine. Case construction also saves in weight. Case Threshers, therefore, are easier to move about and are less liable to "mire down" in soft ground.



Case 20x28 Thresher



Case 20x36 Thresher



Case 26x46 Thresher



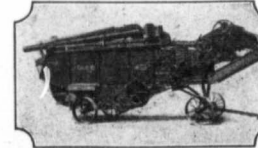
Case 28x50 Thresher



Case 32x54 Thresher



Case 36x58 Thresher



Case 40x62 Thresher

There are No Leaks



in the record of work done by the Magnet Cream Separator. The function of this utensil is to separate the last atom of butter fat from the milk. A separator that only "separates" a part is a source of loss that can't be computed. But it is a big loss, and certainly describes the difference between actual loss or just breaking even and a thumping profit in your dairy department. Would you automatically realize this profit from your milking herd? Then don't waste a day in obtaining the service of a

"MAGNET" Cream Separator—

the greatest labor-saving and food-conserving machine ever introduced into Dairy Farming and they will give it you.

DAIRY WOMEN know that the "MAGNET" bowl and one-piece skimmer is easily washed sweet and clean in less than five minutes—a saving of from 10 to 15 days' labor each year over the time required to properly wash the disc kind.

MAGNET ALWAYS SKIMS CLEAN

After nearly 18 years' constant use on Canadian farms the "Magnet" has established beyond the shadow of a doubt that its square gear drive and ball-bearing adjustments is unequalled as an effective piece of dairy-mechanics and has nothing in front of it in lasting quality.

because its bowl is supported at both ends, cannot wobble and therefore will do perfect skimming for a life-time. Dairy men and women can avoid all "misery" by buying the up-to-date "Magnet" Cream Separator.

"Facts are chieftains that winna ding, and canna be disputed."

The Petrie Mfg. Co. Ltd.

Head Office and Factory: Hamilton, Ont.

WINNIPEG, CALGARY, REGINA, VANCOUVER, MONTREAL, ST. JOHN, EDMONTON, LETHBRIDGE



Potatoes---Seed and Time of Planting

(Experimental Farms Note)

THE yield of potatoes throughout Canada would be very much increased if everyone who grew potatoes used seed of the strongest vitality, free from disease. While the variety used is important, the quality of the seed often makes much more difference in the yield than the variety.

Seed potatoes from a crop which grew vigorously until the tops were cut down by frost in autumn usually give much better returns than those from a crop where the tops dried up in the middle of summer. There are parts of Canada where the former conditions obtain, as a rule, and it is from such places that the most vigorous seed is usually obtained.

In 1918 the best seed of the Green Mountain potato yielded at the rate of 387 bushels per acre, while the poorest seed yielded only 57 bushels per acre at Ottawa. In the case of Irish Cobbler, the best seed yielded at the rate of 616 bushels per acre, while poor seed yielded only 26 bushels per acre, a remarkable difference. Just as striking differences have been obtained in other years.

Each grower of potatoes should aim to have a full stand of plants in the field, and to have every plant a vigorous and healthy one. There is often a large

proportion of misses in potato fields and a still larger proportion of weak and diseased plants which lessen the yield enormously.

Experiments have been tried in different parts of Canada to determine the best time to plant potatoes for highest yields, and from these experiments and the experience of the best growers, the following dates are suggested as being the best: Prince Edward Island, June 1st to 7th; Nova Scotia, June 1st to 15th; New Brunswick, June 1st to 15th; Quebec, May 15th to June 15th, depending on the part of the province; Ontario, May 1st to June 15th, depending on what part of the province; Manitoba, May 10th to 15th; Saskatchewan, May 10th to 24th; Alberta, May 10th to 24th; British Columbia, April 1st to May 15th, depending on what part of the province. The tendency has been in most places in Canada to plant later than is desirable for highest yields. From results obtained, the following general recommendation is made: Where the spring is early and autumn frosts early, plant early. Where the spring is early and summers are dry, plant early. Where the spring is late and autumn frosts are late, early planting is not so important. Where the spring is early and autumn frosts are early, plant as soon as soil is dry enough.



For rough work wear
OVERALLS
SHIRTS and
JUMPERS
made of

STIFEL'S INDIGO CLOTH

Standard for over 75 years.

Better than you expect—a cloth that's built to stand wear and tear and weather. Three generations of wearers have found it the most-for-the-money cloth.

Be sure your overalls, shirts and jumpers are made of Stifel's—it hasn't an equal anywhere for all-round satisfaction. Look for the label on the back of the cloth inside the garments when you buy. Insist upon STIFEL'S and you'll never be disappointed in service. Remember, it's the CLOTH in your overalls that gives the wear!

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Visitor: "You fought with the gallant 51st Division, did you not?"
Sot: "Ay—d'ye mind my face?"
Visitor: "Oh—not at all."

SEED SOWING AND EARLY CARE OF VEGETABLES
(Experimental Farms Note)

THE time of sowing the seed and the early care of vegetables are very important factors in the successful growing of them.

The seed of some kinds of vegetables will germinate at a temperature and under certain conditions of moisture at which other seeds will not germinate and will sometimes rot.

Seeds of beets, carrots, lettuce, onions, parsnips, peas, radishes, kohlrabi, garden cress, salsify, spinach, parsley and leeks can be sown as soon as the ground is dry enough in the spring so that it will work well. The seeds germinate at relatively low temperatures and the plant will stand considerable frost without serious injury. Other vegetables, such as cabbage, cauliflower and celery will also stand frost, but these are usually started in a hotbed in order to save time in the field.

Vegetables which require higher temperatures than the above in order to grow well and which are injured by light frosts are beans, corn, cucumber, melons, potatoes and squash.

Seed of late cabbage is not sown until late in May, but it will endure frost, and seed of Swede turnip should be sown late when required for the table.

In order to obtain plants subject to light frosts, which are well advanced before being set out and to save considerable time the field melons, egg plants, peppers and tomatoes are usually started in hot-beds.

Frequently lack of germination of seed is blamed on the quality of the seed, whereas it may be due to the way the seed is planted or to the rotting of the seed in the ground when certain kinds of seed have been sown too early. Small vegetable seeds are often planted much too deeply. For the smaller seeds one-quarter of an inch for the smallest to one-half of an inch for those a little larger is deep enough. If planted much deeper the seed may germinate but the shoot does not reach the surface of the ground and the tiny plant dies. Peas, corn and beans are planted about two inches deep. In very loose soils, the surface of which dries down more than those fairly compact, slightly deeper planting may be necessary.

When the seed has germinated great care should be taken to ventilate hot-beds carefully. When the young plants come up, the frame should be kept sufficiently aired by raising the back or higher part of the sash to prevent the plants from getting spindly or weakly, when they are apt to damp off. When young plants

are grown in a window in a house they are often very thick in the pot and if in the sun and with the surface soil wet, they are very liable to damp off or scald. They should be thinned out and transplanted as soon as possible. Great care should be taken when ventilating a hot-bed when the wind is high in cold weather, as cold wind blowing directly on the plants will injure them. A board should be put at the end of the sash to break the force of the wind.

Plants which have been growing in a hot-bed or cold frame or in the house should be exposed to the open air for several days before they are set in the field, protecting them as usual at night, as if set in the field without hardening off in this way they are much more liable to be injured in cold or windy weather.

THE COMMON BARBERRY AND THE STEM RUST OF GRAINS

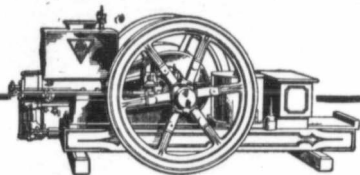
(Experimental Farms Note)

THE outbreak of stem rust in 1916 caused a loss of from 50,000,000 to 100,000,000 bushels of wheat in Western Canada. Every year this rust is more or less common all over Canada, attacking wheat, oats, barley and rye and greatly reducing the yield in many places.

The rust disease is caused by a fungus which attacks the leaves and stems of wheat and other grains, and produces masses of reddish spores on these parts. These spores are blown about and spread the rust during the summer. Later in the season small black masses are formed chiefly on the stem. These also consist of spores, but they will not attack grains. They, however, live over the winter and in the spring attack the young parts of the common barberry. Masses of yellow spores are soon produced chiefly on the leaves and they are carried by the wind from the barberry to grasses or grains growing near, and thus the rust started by the barberry spreads rapidly.

It may be that the stem rust has other ways of living over the winter till the next season and infecting grains without the aid of the barberry, but if so, the way of doing this is still unknown. However, it has been proved many times that the rust can be means of the barberry live over the winter and spread to grains and grasses before it has appeared elsewhere, so that the barberry is an important agent in the spread of this rust.

The barberry is a shrub planted on lawns and in hedges for ornamental purposes. There are no native wild barberries east of the Rocky Mountains. All of the



Alpha Engine RELIABILITY

RELIABILITY is the keynote of the Alpha. It RUNS when you want it to—chugs away all day and you never need to think about it.

It's always reliable; always ready.

Why?

Because it's so simply and sturdily designed and so expertly and honestly built.

There's nothing complicated about the Alpha—no electric batteries; no delicate attachments to "keep you guessing."

Just oil it; turn on the fuel—either gasoline or kerosene—and the Alpha does the rest.

It takes a whole lot of the drudgery out of farmwork, and, in addition, saves time and fuel.

Made in 12 sizes, 1½ to 28 H. P.

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butter-Workers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

MALTESE CROSS TIRES

Maltese Cross Tires are the individual handiwork of expert Craftsmen, as proud of their workmanship as were the Craftsmen of the Guild of the Middle Ages.

Your Dealer to Show You The New Non-Skid Tread



Gutta Percha & Rubber, Limited

Head Offices and Factories, TORONTO

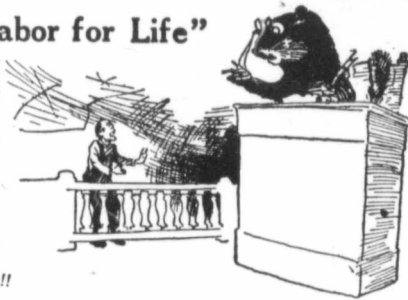
BRANCHES:

Halifax, Montreal, Ottawa, Toronto, Ft. William, Winnipeg, Regina, Saskatoon, Lethbridge, Calgary, Edmonton, Vancouver, Victoria

"Hard Labor for Life"

Have the gophers imposed that sentence on you? They will if you let gophers keep on running things. You'll do nothing but fatten gophers. There's no profit in that.

Kill 'Em! Quick!!



Increase Your Crops!

We tell you, as will thousands of Canadian farmers, that Kill-Em-Quick will increase your crops from 1 to 5 bushels per acre—and we guarantee Kill-Em-Quick.

The only way to get this increase in your crops is for you to use



We are talking about your crops of grain—your crops of gophers will increase if you simply let them alone.

Kill-Em-Quick has an odor so attractive to gophers that they find it rods away and always eat it. It is so strong,—Government analysis shows it to be much the strongest sold in Canada—that it kills instantly any gopher that picks it up.

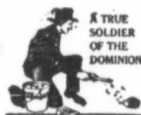
Kill-Em-Quick is easy to use, merely stir into thoroly moistened oats or ground feed and drop near the holes. It is safe, deadly sure, used by more Canadian farmers than any other poison. Recommended by Agricultural Colleges as the most effective gopher poison.



It's much the cheapest poison per gopher killed. Don't confuse it or be misled by unsupported claims. Get Kill-Em-Quick. Be safe—not sorry. Increase your crops.

40 acre size, 60c; 100 acre size, \$1.20. At Dealers, or post paid upon receipt of price.

Kill-Em-Quick Co., Ltd.
Dept. C Regina Canada



A TRUE SOLDIER OF THE DOMINION
Every farmer who occasionally poisons Gophers Spring, Summer and Fall serves his country well for he increases crops. #

barberries commonly planted are susceptible to the stem rust except the Japanese varieties. The common barberry has spiny stems and reddish berries, which hang in long clusters on the bushes all winter. The spines are usually in groups of three. The leaves have spiny teeth on the edge and are green in some varieties and purple in others. The Japanese barberry does not grow as tall as the common, but is rather low and spreading.

The stems are spiny but the spines are generally single, although sometimes three together. The leaves are smaller with a smooth edge. The fruit is red and remains on the bushes all winter, but the berries are single or only two or three together.

Since it is certain that the common barberries are a menace to the grain crops they should be destroyed. They should be completely uprooted, as if only cut down and large roots are left in the ground the shrub readily springs up again. In some places the common barberry is escaping from cultivation, so there is a danger that it may become a more serious menace to the grain crop than at the present. Care should be taken not to destroy the Japanese variety as it does not spread rust and is a satisfactory shrub for ornamental purposes.

AUTOMOBILE INDISPENSABLE ON FARM

THE automobile has been one of the prime factors in improving the social conditions on the farm.—The farmer is no longer thought of as a back number, a hayseed, or rube; but instead, he is thought of in terms befitting his superior rank in the world's industries.

The automobile, telephone and rural delivery have completely revolutionized social conditions in country life. Since the farmer gets his mail delivered at his door every day; can telephone to anyone for miles around; can drive into town or any place within the neighborhood in a few minutes with "the car"; country life differs but very little from city life, in a social way.

The automobile is a source of much pleasure to the farmer and his family. It is a means of getting some place without spending a whole day on the road, and the journey can be made in comfort. Farm life can easily become drudgery if it is necessary to stick to your work all the time. This is especially true with the farmer's wife. Unless the farm woman can mingle in social circles, take part in the church work, and so on, life will lose its interest for her, and she will soon fail in health.

Most farmers are beginning to realize that, after all, life is sometimes more than putting all their dividends back into lands, buildings, and stock, just to heap up more wealth for their city children to law over. It is safe to say that their children will be in the city, because it is inevitable that the children of a farmer who never stops to appreciate his family in his mad desire to hoard together more worldly property, do not stay on the farm. Books, magazine articles, newspaper stories, and enough literature has been written to fill a young Carnegie library on "How to Keep the Boys on the Farm." An automobile would probably solve the whole problem more satisfactorily than anything else.

The primary purpose of the automobile on the farm is not for pleasure, however. It is more of a business proposition on the farm than it is in any other occupation. The farmer has more use for an automobile than any other business man. The manager type of a farmer of to-day stays on the farm and keeps the brains and brawn on the farm which belongs to it.

The automobile is the farmer's friend, and after having used one a few years he would not think of doing without it. It is the sure mark of a prosperous farmer who intends to continue to be prosperous.

HOT BEDS AND COLD FRAMES

BY the use of hot beds and cold frames plants can be grown through their earlier stages out of doors even before the growing season has arrived. By the use of these, garden crops can be secured much earlier in the season than if seeding is delayed until the soil is warmed up in the open garden. Such vegetables as peppers, egg plant, melons, etc., can be so hastened in the spring as to ensure their maturing before the frost period arrives in many parts of Canada where these crops are not usually grown. Such crops as radish, lettuce, spinach, and other vegetables can be made to reach a marketable size relatively early in the summer.

While hot beds, as the term signifies, are heated with fermenting manure, the cold frame depends upon the sun shining through the glass sash to warm up the soil and start growth. The cold frame, for that reason, is more easily adopted, although it cannot be used to so great an advantage.

This information is taken from Pamphlet No. 19 of the Dominion Experimental Farms, written by Mr. W. T. Macoun, Dominion Horticulturist, and available at the Publications Branch, Department of Agriculture, Ottawa.

Prevent Wear and Tear on Axles and Harnesses

Imperial Mica Axle Grease

—coats axle spindles and hub linings with a glass-smooth coat of soft mica and grease that banishes friction between the metal surfaces. Makes loads easier to move up-hill or on level roads. Saves wagon wear and tear. Sold in sizes—1 lb. to barrels.

Imperial Eureka Harness Oil

—keeps leather like new—soft, strong and pliable. Sinks in and keeps water out. Prevents drying and cracking. Makes it last longer. Sold in convenient sizes.

Imperial Eureka Harness Oiler

—makes it easy to keep harness and leather thoroughly oiled. Saves time and work.

At Dealers Everywhere



IMPERIAL OIL LIMITED

Low Viscosity Light Lubrication products in all sizes

CARE AND REPAIR OF FARM MACHINERY

(Experimental Farms Note)

A BIG leak, usually unrealized, occurs through the meagre attention given farm implements. The care of farm machinery is a phase of farm management that does not usually receive the attention its importance warrants. In the rush to get the crop into the ground at the proper time and in the best possible condition for satisfactory returns or to gather in the harvest promptly, the care due the implements which have made each operation possible is lacking or performed in a more or less haphazard manner. As a consequence, part of the toil-earned revenues of the farm is swallowed up in the purchase of new machinery or in expensive repairs which might have been avoided had proper precaution been taken in time.

Throughout the experimental farms system, attention is given, so far as circumstances permit, to this factor in farm management. All implements are cleaned and placed under cover when not in use, all polished surfaces receiving an application of an anti-rust preparation. Axle grease or other lubricant will answer this purpose. As shelter, many types of structure are suitable and an expenditure not exceeding \$400 will usually provide a suitable building. Besides, it is not always necessary to go to this expense, since any weather-proof building already available will answer the purpose.

It is advisable to go over each machine after the day's operations, making proper adjustments, tightening loose bolts, making sure that the lubricating devices are working properly, that the bearings are not too tight or too loose and that cutting parts are sharp. An assortment of bolts, rivets, springs, etc., for each machine is provided and allotted a definite location in the tool room. This saves many trips and probably valuable time and the plan, systematically carried out, results in the prevention of many breakages. Besides, it has been proven that an implement in repair at all times has a longer life and gives more satisfactory service than one that receives erratic attention.

To carry out this work systematically a properly fitted work shop is necessary. It provides a comfortable place to work in during bad weather and in which those who so desire may develop their mechanical skill. It should be equipped with the necessary tools, including anvil, forge, work bench, vise, tongs, hammers, hardies, punches, drills, square, chisels, saw, wrenches, etc.



CANADIAN NATIONAL RAILWAYS

14,000 Miles of Railway
56,000 Miles Telegraph Line

Traversing every province in Canada's Dominion and directly serving the great ocean ports of HALIFAX, ST. JOHN, QUEBEC, MONTREAL, VANCOUVER, VICTORIA

Passenger - Freight - Express - Telegraph

48 VESSELS

Now under Construction for the Atlantic, Pacific and Great Lakes Service

With these ships in commission and working in conjunction with the vast railway system, CANADA'S products of FIELD, FOREST, MINES and INDUSTRIES will find ready markets in the ports of the world.

CANADIAN NATIONAL RAILWAYS



Burn Kerosene—Save Gasoline
Especially designed manifold—switch from one fuel to the other without carburetor changes.

Proven by
10 Years Actual
Field Work

Back Up to Your Load a Fraction of an Inch at a Time

CREEP back to the exact spot under perfect control of the operator every quarter inch of the way.

That's just one of the many of your advantages in the Heider special friction transmission—sometimes called the biggest single feature ever built into a tractor. No sudden jerking of machine—no straining of the engine—no power eaten up in turning needless gears, no gears to strip. Easy and perfect control of the tractor anywhere. Seven speeds forward and seven reverse—all with one lever. Easier than handling an automobile. The

Heider

12-20—The Real All-Purpose Tractor—9-16

has a remarkably low upkeep cost. "My repairs cost less than 40 cents for past year and I have plowed hundreds of acres with my Heider," says one farmer. "So easy to operate that my youngest boy does a hired man's work in plowing and working the field," says another owner.

You buy no experiment when you get a Heider. It's backed by ten years of good service in owners' fields. The first Heiders sold are still in use. Being built right in the first place, they couldn't be changed and still be right. And back of Heider construction there are 63 years of experience in building Rock Island farm

implements with their unbeatable reputation in all parts of the world. Here is the one-man outfit you want for your farm. Standard four-wheel construction, four cylinder, heavy duty Waukesha Motor, 7 speeds forward, 7 reverse. Burns kerosene or gasoline. Two models, Model D, 9-16 h.p. pulls two plows; Model C, 12-20 pulls three plows.

What are your power needs? Let's show the answer to them in Heider construction. Write for our new catalog and booklet of "Owner's Say So." Know the economy of owning a Heider—the tractor that gives you all your ideals in one outfit.

Write for Catalog of Rock Island Tractors and Plows
United Engines and Threshers Ltd.
CALGARY and EDMONTON, Alberta Distributors
A. T. DAVIDSON, 328 William Ave., WINNIPEG

HEIDER Model C. 12-20 H.P.

Heider Model D, 9-16 H.P.
Carrying Rock Island No. 9 plow. Handiest plowing outfit you could own. Your hands operate the tractor while your foot raises or lowers the plow. Automatic power lift. Gets into fence corners easier than you ever could with a team. Sold with or without plow attached.

Rock Island Tractor Plow
No one has been able to beat the plowing made possible with the Rock Island "Front Furrow Wheel Lift" Tractor Plow with 2, 3 or 4 "CTX" Bottoms. It's ready for any soil—and the pull of any tractor. Extra high clearance. "CTX" Bottoms turn the furrow slices clear over and prevent air spaces from stopping moisture. This means increased crops.

The Waterloo Manufacturing Co. Ltd.
Western Head Office: PORTAGE LA PRAIRIE, Man.
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"THERE SHE IS"

Certainly. Nothing can hide from the brilliant, searching rays of a Reliable Flashlight. Rain or wind can't extinguish it—nothing to explode or set fire. Gives long intermittent service.

A complete line of Reliable Tubular Flashlights, made of metal, in red, brown, blue and green. Also Searchlights and all standard types and sizes of metal and fibre Flashlights.

Reliable Ignition Batteries are best for your car or truck—your telephone or door bell. Truly "Lively and Lasting." All Reliable Products are made in Canada, according to highest standards.

For sale by dealers everywhere.

DOMINION BATTERY COMPANY LIMITED, Toronto, Canada

RELIABLE
TRADE MARK

Canadian Products *"Lively and Lasting"*



This is the Year to Re-Build or Re-Model

"NOW the war is over," every thought is being turned into peaceful channels with the subconscious feeling that no employment can take second place to that of taking some part in making good the wastage occasioned by the war.

To some extent, at least, probably every subscriber to the "Canadian Thresherman and Farmer" will have some building or other constructive programme in his mind's eye. We know lots of farmers and city men who are itching to build, but they pull up dead at the question of the price of raw material. Is this the time to build or to wait?

The following facts gathered from a most reliable source will perhaps clear away some cobwebs and let the light into the fact that 1919 ought to be the most auspicious year of many ahead of it in which to build or remodel barns, home-buildings, etc.

Some Reasons Why

(1) At the date of writing, building materials are relatively low in price, while farm produce, which the farmer sells to buy building materials, etc., is relatively high in price.

(2) It is as evident as any outlook can be that lumber, cement, barn equipment and labor will not drop to any extent, if at all, next year.

In support of what we have said take a look at the following comparative tables, bearing in mind that the increases set out occurred between January, 1914, and January, 1919. (The labor figures were secured by the Dominion Department of Labor in rural communities from coast to coast. They vary, of course, in different localities and we give the average.)

Building Materials' Labor

- Carpenter labor is up an average of 15c an hour—37½ per cent.
- Mason labor is up an average of 12c an hour—28 per cent.
- Painters' labor is up an average of 14c an hour—38 per cent.
- Structural iron workers' labor is up an average of 17c an hour—38½ per cent.
- Pine lumber is up \$20 per 1,000 feet, or—36 per cent.
- Hemlock is up \$13 per 1,000 feet, or 76½ per cent.
- Shingles at St. John are up \$1.50 per 1,000, or—50 per cent.
- Canadian Portland cement is up 85¼c per bbl. Toronto—54½ per cent.
- Shingles in Winnipeg are up 96c per 1,000—32 per cent.

The chart on next page shows conclusively that building materials are relatively lower this year than they have ever been before.

The chart leaves nothing to explain. It shows that building materials by comparison with products of agriculture, mines and industry, are not high priced and that now is a most advantageous time to exchange these products for building. It shows that in the five-year period, building material has advanced about 35 per cent, while the fruits of industry, agriculture and mines, show an advance varying from 70 to 195 per cent.

Food Prices Control the Situation

In the end, the whole problem comes back to the farmer.

The world depends upon the farmer for what it eats. The laborer in the factory, the mill, the lumber yard, depends upon the farmer for what he eats.

The greatest part of the cost of any article is labor. A pine tree in the bush costs practically nothing. Labor has to be used to fell it, log it, cut it up and ship it. Consequently, when labor is high in price, lumber is high in price. The same thing is true of steel and iron and cement and every other manufactured product.

Now, what regulates the price of labor?

Our old enemy—the cost of living regulates the price of labor. The cost of living includes many things, but the primary one is food. The cost of food, in the long run, automatically sets wages.

It is evident that as long as the cost of food is high, the cost of living will be high, and as long as the cost of living is high, wages cannot drop. And, if wages do not drop, prices cannot come down, building material cannot be any cheaper.

Farm Products

- Wheat is up \$1.39 per bushel Winnipeg—163 per cent.
- Wheat is up \$1.28 per bushel Toronto—149 per cent.
- Oats are up 32c per bushel in Toronto—84 per cent.
- Oats are up 37c per bushel in Winnipeg—116 per cent.
- Choice butcher cattle are up \$5.75 per cwt, Toronto—80 per cent.
- Washed Ontario wool is up 51c per lb. Toronto—196 per cent.
- Select hogs are up \$1.50 per cwt. Toronto—84 per cent.
- Creamery butter is up 25c per lb. Montreal—86 per cent.
- Cheese is up 11c per lb. Montreal 79 per cent.

The Great-West Life

is noted for the Dividends paid to Policyholders. The following is typical of Dividends being paid this year.

TWENTY-PAYMENT LIFE POLICY FOR \$1,000.00

Issued 1899.	Matures 1919	
Age 30.	Premium \$30.06	
Cash Value at Maturity.....		\$ 801.00
Total Premiums paid.....		601.20
Excess Return.....		\$ 199.80

The Policyholder was protected by \$1,000 Insurance during 20 years and at the end of that period the cash value constituted not only a return of all premiums but in addition a splendid surplus.

Such remarkable results are worthy of attention.

Ask for Rates at your own age, and examples of other Maturities.

The Great-West Life Assurance Company

HEAD OFFICE - - WINNIPEG

When Can the Farmer Expect to Get Building Material at a Lower Cost

It is not hard to answer that question—until the farmer gets a lower price for his produce—if he ever does. We believe the farmer is receiving a very fair and just price for his produce. Since the prices of building materials are dependent upon the prices of farm produce, the prices of building materials, we think, are equally fair.

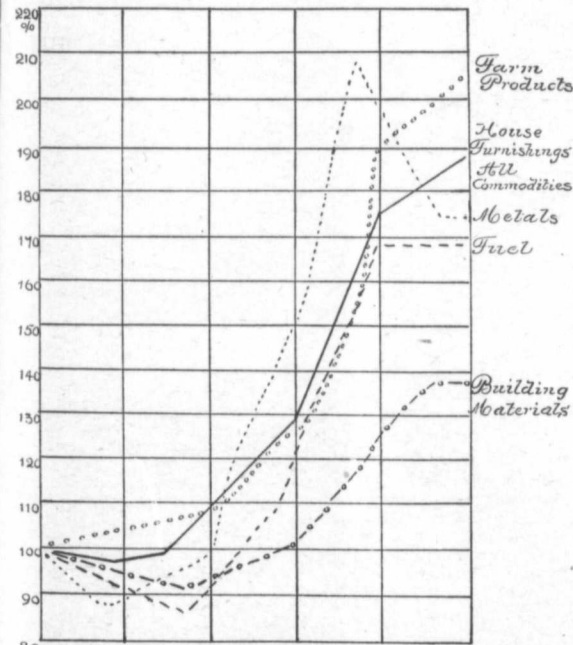
Lumber

There is nothing in sight that would encourage the hope that lumber prices will be reduced. The reverse is indicated by everything we can reach in the nature of evidence. Labor, for example, has taken its firm and final stand for no reduction of wages, and

half that of 1913, while the demand will be increased three-fold. The mills of Russia which supplied most of the British demand before the war are hopelessly disorganized and offer no prospects whatever of an early return to normal conditions.

The feeling is unanimous in well-informed circles that cement prices will hold steady for a long time to come. Cement was sold before the war at a price too low.

Another besides the labor factor in governing prices, particularly on cement, is the increased freight rates, which are now 50 per cent higher than they were in 1915. Here again labor is to a large extent responsible. Coal (which enters largely into the cost of manufacturing materials) may be more easily obtained, but that will



labor is the main factor in fixing prices to-day.

If the logger has to pay as high or higher wages, how can he sell cheaper to the millman? And if the millman has to pay as high or higher log costs and wages, how can he afford to let the consumer have this lumber for less? The whole trend of the times is toward higher wages, and, therefore, higher prices.

We live in an era of new price levels, and the sooner everybody recognizes this the better it will be all round. Stocks of lumber in Great Britain are alarmingly low, and there is an immense house-building programme ahead which calls for great deliveries of soft wood.

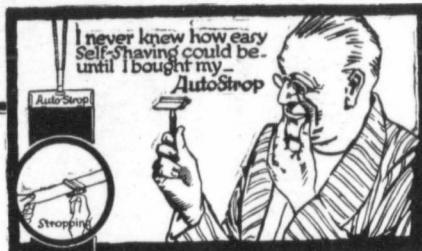
The British timber merchants have ascertained that the world's supply of soft wood available during the next season will not be

got nowhere in leading prices to anything like what they were in 1914, because there again the question of labor in mining and handling the coal, and freight rates, are jointly responsible.

Steel and Iron

We may say emphatically that there is no price slump coming in steel and iron. Nearly six months have gone by since war ended, yet prices of a great many commodities have soared rather than dropped. And now we find the United States Steel Corporation is fixing, with the approval of the American Government, a price for steel and iron for 1919 which is higher than the price that many implement manufacturers have been paying.

Here, as in everything else, the history of the price movement for centuries has been upward. Prices will never go back to their old level. We are on a permanently



The AutoStrop Safety Razor marks as great an advance in shaving methods as the reaper over the old hand scythe. All that the modern mower has meant in convenience, comfort, and economy is realized in the AutoStrop Razor.

The safety construction of the AutoStrop Razor enables the novice to use it with the same ease and dexterity as the veteran shaver. The self-stropping feature gives him a clean, keen-edged blade for every shave; while throughout stropping, shaving and cleaning the blade remains in the razor, thus removing the troublesome necessity of taking the razor to pieces and assembling it again.

There's nothing to learn about the AutoStrop Razor. A man takes to it as naturally as a duck to water, and he gets head-barber shaves from the start. So sure are we of this that we offer the AutoStrop Razor with strop and 12 blades, complete in an attractive case, on the distinct understanding that if it fails to please you, the purchase price—\$5 will be handed back to you without argument. Any dealer will be glad to let you have an AutoStrop Razor on this condition.

AUTOSTROP SAFETY RAZOR CO., Limited
AutoStrop Building, Toronto, Canada

Auto-Strop Safety Razor

Asked for His Reasons

for carrying Life Insurance with The Manufacturers Life, one of our large Policyholders cogently replied:

- 1st.—"In case I do not accumulate a competence, or meet with reverses in business, I know my wife and family will not become objects of charity, as my Life Insurance will supply sufficient funds for their needs."
- 2nd.—"Life Insurance is always the first asset realized on, so, if at my demise the time is not opportune to dispose of my other assets, my Executors will not need to sacrifice same to obtain ready money."
- 3rd.—"It is the only way I can make absolutely sure of providing for my dependents."
- 4th.—"It is the very essence of good business."

The Manufacturers Life Insurance Company

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Kindly complete and mail to the address above:

Without obligation, will you kindly furnish me with full particulars of your Guaranteed Policies. I am.....years of age and am (married) (single).

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WALTHAM

THE WORLD'S WATCH OVER TIME



WALTHAM Accuracy



The Vanguard
The World's Finest Railroad Watch
23 and 19 jewels

is due very largely to a factory organization and equipment that leave nothing to chance.

Every part of the Waltham movement is made in the Waltham factories under the supervision of master horologists who have no superiors in the world.

And the manual skill of thousands of expert workpeople is reinforced by exclusive automatic machinery for shaping, drilling, polishing and finishing with marvellous accuracy and speed the myriad tiny parts entering into Waltham mechanism.

Every plate, wheel, spring, screw, jewel, hand and dial is rigidly inspected and must be pronounced perfect before going to the assembling rooms.

As a result the completed Waltham Watch is as perfect as any mechanism can be made, and carries the company's full guarantee.

Waltham Watch Company, Limited, Montreal
Makers and Distributors of Waltham Products in Canada
Factories: Montreal, Canada; Waltham, U.S.A.

higher price level. We can never expect to obtain building materials at the prices of 1914 and 1913. On the other hand, farmers will never again be paid prices for produce as low as the prices they were paid in those two years.

Next year there may or may not be some change in price. If there is a change it will only be a slight one. The readjustment of prices after a great war is a gradual process which takes many years, and this is the greatest cataclysm the world has ever witnessed.

It is estimated that from three to five years at least must pass before prices have reached a normal, peace-time level, and that then they will not be nearly as low as they were before the war.

Therefore—Don't Wait

The farmer who hesitates now will assuredly lose. At the best he can gain nothing. He can scarcely fail to experience an actual loss if he waits for the slow process of price adjustment to be completed.

Note this: The difference between this year's prices and next year's will be no greater than between the prices the farmer receives for his produce this year and next. The farmers will be no better off to wait until next year to build, because even if prices do change a little, they will change less than the price of farm produce.

And, after all, this is only one side of the question. Isn't the farmer losing money all the time he slides along without needed improvements in his farm buildings and plant? By doing without these needed improvements he is losing much more than he could possibly hope to gain by putting off the purchase of materials and equipment until another year.

TRACTOR SPEEDS IN RELATION TO PLOWING SERVICE

TRACTOR manufacturers and their salesmen sometimes run up against the farmer who demands a speed of four miles per hour for a machine and criticizes any that do not record such a gait.

"When I find such objectors," says an old and tried tractor hand, "I endeavor to convince them of the truth of the old adage that 'haste makes waste,' and that in my judgment the maximum of plowing speed should be two and one-half miles per hour.

"The average gait of horses in handling plows is less than two miles an hour, and, until the day of the tractor, most farmers appeared to think it was ample. The desire for a four mile gait is, in my judgment, and based on my experience of thirty years as a farmer and machinery man, ill-

advised. Many tests conducted by experts have proven that the gait of two and one-half miles is most successful, giving the proper handling of the soil and, later, good crops.

Excessive speed has a tendency to throw the earth too far, and the furrow is left uneven. The unsafe strain upon the engine and tractor is also a factor that should be taken into consideration. The successful tractor manufacturers are installing ample power, and which will give a reserve rather than a shortage in hard soils. It is wiser to add a plow and reduce speed than to cut off plows and increase the speed, as the soil is never laid over properly at a rate of speed higher than two and one-half miles. While there are some soils where it is impossible to exceed the speed indicated, yet something is sacrificed whenever this is done.

The ideal tractor is available for many kinds of service, and the demand should be only for that at the normal speed of travel. While it is possible that plow manufacturers may change their models so that they will contribute to higher speed, there will be very serious doubt in the minds of practical plowmen as to the success of such changes, and they are still likely to insist that the best plowing can only be done at a gait of two and one-half miles.

The wise farmer will study carefully the character of the work performed by a tractor. He is not interested simply in the tearing up of the soil, but he demands that good, even furrows are turned and the soil turned upside down in order that good crops will result.

"I have attended many plowing demonstrations," says this same expert, "but have never seen anywhere the plowing done at a two and one-half mile gait was equalled in quality by that done at a faster gait. It is also true that if plows strike an obstruction on the soil, that the damage is much greater if the speed is excessive. All high-speed tractors may operate in a fashion when a minimum amount of power is required, but they are lost when plowing conditions become stiff."

There is no happiness in giving and getting, but only in giving; half the world is on the wrong scent in the pursuit of happiness.—Henry Drummond.

Not Worried

Father (impressively) — "Suppose I should be taken away suddenly. What would become of you, my boy?"

Irreverent Son—"I'll stay here. The question is, 'What would become of you?'"

Paint is as essential to your House as clothes are to you!

Good paint properly applied, is necessary for the well-being of your house. It beautifies and protects. It puts your property "in a class by itself" and it stamps you as a citizen who cares.



Stephens' House Paint

is desirable from every point of view; it covers economically, stops decay, withstands our extreme weather conditions and it is as beautiful as paint can be.

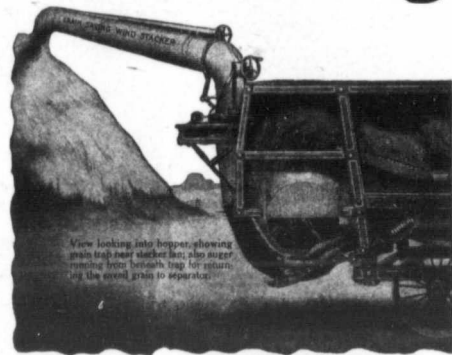
When the painter is through with your house you will be glad you specified Stephens'. See your own dealer for color cards, prices and suggestions.

G. F. Stephens & Co. Limited
Paint and Varnish Makers
Winnipeg, Canada



This Is the Grain-Saving Wind Stacker

Furnished on the *Famous Threshers* made by the Firms Named Below



View looking into hopper showing grain trap near stacker fan; also auger running below trough trap for returning the saved grain to separator.

NORTH AMERICA'S leading threshing machines are equipped with the **GRAIN-SAVING WIND STACKER**. Not just an ordinary wind stacker, but the wind stacker with the grain-saving improvement which by actual test saves *one to three per cent more grain*. Keeps it from being blown into the stack.

Full information will be given you by any in this list, many of whom you will recognize as the manufacturers of the best-known tractors and farm implements. Write any of these for descriptive circular.

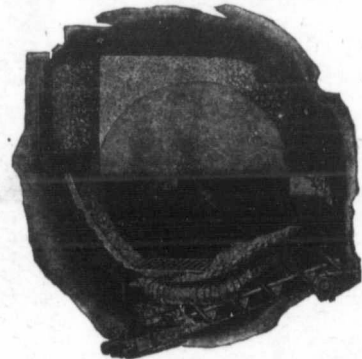
List of Manufacturers

Canada

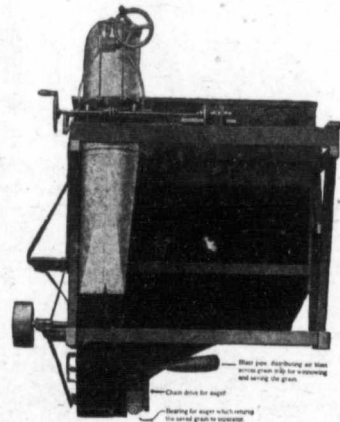
- Robt. Bell Engine & Thresher Co., Ltd., Seaforth, Ont.
- Dominion Thresher Co., Ltd., New Hamburg, Ont.
- Ernst Bros. Co., Ltd., Mt. Forest, Ont.
- John Goodison Thresher Co., Ltd., Sarnia, Ont.
- Hergott Bros., Ltd., Mildmay, Ont.
- McDonald Thresher Co., Ltd., Stratford, Ont.
- Sawyer-Massey Co., Ltd., Hamilton, Ont.
- Stewart Sheaf Loader Co., Ltd., Winnipeg, Man.
- Sussex Mfg. Co., Ltd., Sussex, N. B.
- Waterloo Mfg. Company, Ltd., Waterloo, Ont.
- R. Watt Machine Works, Ltd., Ridgetown, Ont.
- George White & Sons Co., Ltd., London, Ont.

United States

- Aultman & Taylor Machinery Company, Mansfield, Ohio.
- Avery Company, Peoria, Ill.
- A. D. Baker Company, Swanton, Ohio.
- Banting Manufacturing Co., Toledo, O.
- Batavia Machine Co., Batavia, N. Y.
- Buffalo Pitts Company, Buffalo, N. Y.
- Cape Mfg. Co., Cape Girardeau, Mo.
- J. I. Case Threshing Machine Company, Racine, Wis.
- Clark Machine Co., St. Johnsville, N. Y.
- Ellis-Keystone Agricultural Works, Pottstown, Pa.
- Emerson-Brantingham Co., Rockford, Ill.
- Farmers Independent Thresher Co., Springfield, Ill.
- A. B. Farquhar Co., York, Pa.
- Frick Company, Waynesboro, Pa.
- Harrison Machine Works, Belleville, Ill.
- Huber Mfg. Co., Marion, Ohio.
- Illinois Thresher Co., Sycamore, Ill.
- Keck-Gonnerman Co., Mt. Vernon, Ind.
- Minneapolis Threshing Machine Co., Hopkins, Minn.
- Port Huron Engine & Thresher Co., Port Huron, Mich.
- The Russell & Company, Massillon, O.
- Russell Wind Stacker Co., Indianapolis, Ind.
- Sawyer-Massey Co., Ltd., (U. S. Agency) Moline, Ill.
- Southwest Mfg. Co., Oklahoma City, Okla.
- Swayne, Robinson & Co., Richmond, Ind.
- The Westinghouse Co., Schenectady, N. Y.




View looking into noppes showing grain trap near stacker fan; also auger running from beneath trap for returning the saved grain to separator.



Chain drive for auger. Shows gear distributing air from across grain pile for returning and saving the grain. Shows for auger which returns the saved grain to separator.

GRAIN SAVING WIND STACKER



Home again

To those, who for health or other reasons, formerly used our famous American Style Rice Beer, Redwood (Malt) Lager, Extra Stout or Refined Ale (which may now be obtained only on a doctor's prescription) we would suggest a trial of Maltum or Maltum Stout, which contains all the healthful properties of choicest malt and hops but is non-intoxicating.

Maltum
REGISTERED

is a high-grade malt beverage.
It will improve the appetite,
and be found deliciously refreshing.

May be had at table in all first class Hotels, Clubs and Cafes; or may be obtained from Grocers, Druggists or Confectioners.

MANUFACTURED ONLY BY
E. L. DREWRY, LIMITED
WINNIPEG

Food License No. 15-325 67

The Case for and against the Horse: A study in Thermal Efficiency

THE horse is used to generate power for such a large percentage of our farm work that a careful study of his characteristic is necessary if we are to understand his strong points and discover his weaknesses. As the situation stands to-day, the horse is regarded by the farmer as the standard prime mover for field operations. This animal motor with the help of the mule, has been the chief power generator for operating machinery, the use of which has enabled the farmer to produce large crops with relatively little man labor. As is the case with any other motor, the horse should be studied from the viewpoints of his overall efficiency, cost of operation and general adaptability to the work which is to be done. Unfortunately, very few reliable investigations have been carried on for the purpose of securing authentic information on these most important points. Book after book, article after article, has been written regarding the origin of the horse, breeds of horses, the conformation of the horse, the proper feeding of the horse, etc., but all these works, valuable as they are, failed to get at the meat of the question: "What will the horse do when used as a motor?" A careful survey of the whole literature furnishes a slight amount of information, enough so that by making reasonable assumptions a few general conclusions can be drawn which will open this interesting subject for further study and discussion.

A foreign investigator named Zuntz, after carrying on an elaborate series of investigations, reports that the horse can utilize about 33 per cent of the net energy available in the food. This figure agrees very well with the work reported by Hirn, another foreign investigator, and on the surface would appear to be very flattering to the animal motor were it not for the fact that it was computed on the basis of net digestible nutrients in the food after deductions had been made for the work of digestion, assimilation and maintenance. In fact, it would correspond very closely to the overall efficiency of an internal combustion motor, working under ideal conditions, providing deductions were made for internal friction losses and unburned fuel. Under these conditions the best gas motors would give an

overall of between 35 and 40 per cent.

How Efficiency is Determined

It will be worth while to review briefly the general methods used by nutrition experts. The heat energy in foods is computed on the basis of therms in the digestible nutrients (one therm—1,000 calories—3,087,100 foot-pounds). As a rule not over 75 per cent of the total energy in the feed can be digested by the horse. On the average, hay yields 1.7 therms of gross energy per pound and grain 1.85 therms per pound. In the past it has been customary when determining the efficiency of the animal motors to make allowance for undigested food, and the energy required for digestion and maintenance. As explained above the efficiency reported by Zuntz was obtained on this basis. From a nutrition standpoint this may be entirely satisfactory, but when a comparison with other motors is desired, an entirely different basis must be used. From an agricultural standpoint we are interested in the overall efficiency of the horse as used on the farm, in which case the total energy in the food consumed must be compared with the total work done in a given period of time, say, one year. No deductions can be made for the energy required for maintenance, digestion and assimilation. The overall efficiency of the horse as a motor is the total work done divided by total input of energy.

It is generally assumed that at hard work in the field a horse will exert a pull equal to one-tenth of its weight, at the rate of two miles per hour for ten hours per day. Under these conditions a 1600-lb. horse will perform 16,896,000 foot-pounds of useful work in ten hours. While at this work the horse will require approximately 1.3-lb. of grain and 1-lb. of hay per 100-lb. live weight per day. The gross energy in this food is 65.7 therms, equivalent to 202,822,470 foot-pounds. This would give an overall efficiency of 16,896,000÷202,822,470—.0834, or 8.34 per cent. This figure is computed on the basis of one day's work and feed. However, our farm horses do not work every day, but they must eat. In order to arrive at the real efficiency of a farm horse, we should know the total food consumed and work done in the course of a year. Thomas Edison is reported to have said the aver-

One Dollar-and-a-Half spent on the "Canadian Thresherman and Farmer" will give you the best education on power-farming you can buy at any price.

POP SALE—One 22 H.P. Cross Compound Reeves Engine and one 44x66 Reeves Separator. Both in good shape. An up-to-date outfit for threshing and plowing. Apply Young Bros. Wainwright, Alta.

FOR SALE—A 3-plow tractor, slightly used. Cheap for cash. L. C., Box 3164, Winnipeg.

WANTED—to hear from owner of good farm for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

WANTED—Man experienced with farming in Western Canada, and capable of position as manager of large farm. E. G. Dollenmeyer, Briercrest, Sask.

age farm horse has an overall efficiency of about 2 per cent. Unfortunately, this estimate cannot be accurately checked, but data (Table I) as reported from the Agricultural Experiment Sta-

tion at the University of Missouri which can be used, making reasonable assumptions to compute the yearly overall efficiency of mules-used on the farm there.

Table I. Showing Over-All Efficiency of Mules

Ration	Corn and Hay	Oats and Hay
Number of mules	4	4
Length of period	364 days	364 days
Average weight	1279.16 lb.	1258.61 lb.
Average gain or loss in weight	18.5 lb. gain	2 lb. loss
Total corn per mule	4442.76 lb.	
Total oats per mule		4288.5 lb.
Total hay per mule	5360.31 lb.	5434.87 lb.
Hours heavy work per mule	433.12	374.75
Hours medium work per mule	497.50	188.75
Hours light work per mule	1002.12	956.75

Assuming the hay contained 1.7 therms of gross energy per lb. and the grain 1.85 therms of gross energy per lb., and that mules work under the following conditions:

Work	Traactive Effort	M.P.H.
Heavy work	1/2 weight	2
Medium work	1-12 weight	2.5
Slight work	1-16 weight	2.5

The corn-fed animals gave an overall efficiency of 3.54 per cent. and those fed oats 3.4 per cent. These mules worked between 1500 and 1600 hours per year. Considering the fact that the average farm horse works only from 800 to 1000 hours per year, it is safe to estimate that his yearly overall efficiency is somewhere between 2 and 3 per cent.

The Cost of Horse Labor

Fortunately there is a limited amount of reliable data available regarding the cost of horse labor. The University of Minnesota reports the following data in Extension Bulletin No. 15:

Detail of cost	Average cost		
	1908-12 included Rice County	1908-10 included Lyons County	1908-12 included Norman County
Interest on investment	\$7.04	\$6.66	\$6.48
Depreciation	3.10	3.11	1.41
Harness depreciation	2.62	2.17	2.20
Shoeing	1.83	.43	.13
Feed	70.72	72.02	53.82
Labor	47.33	15.32	20.06
Miscellaneous expense	.73	.33	.55
Total	\$103.27	\$100.64	\$84.67

The average cost of horse labor per hour on the basis of the above figures was 9.72c., 8.64c., and 8.05c., respectively. The cost per hour varied greatly on different farms. One man whose horses worked on the average 1672 hours per year reduced the cost to 52c., per horse hour, while another one whose horses worked only 804 hours each had a cost of 13.2c. per horse hour. These figures were compiled when corn was selling on the farm for 54c. per bu., oats for 35c. per bu., and hay for \$12 per ton. On the basis of present prices, it will cost from \$150 to \$200 per year to keep a farm horse; as an average figure let us take \$175. It must be understood that the cost of keeping a horse will vary greatly. In the same community there will frequently be a difference of 50 per cent on different farms. Both of the above cited sources of information report that the farm horse works from 800 to 1000 hours per year, which gives an average of 900 hours. On the basis of the data here given it will cost from 16 2-3c. to 22 1-3c. per hour for horse labor to-day, and this is exclusive of the wages paid the operator. This will give a cost of from \$6.67 to \$8.93 for every day that a four-horse team is worked 10 hours in the field.

Points in Horse's Favor

From the standpoints of efficiency and unit costs, the case is not very favorable to the horse, but it is the all-around adapt-

Masterpieces of Strength
HAND MADE
PARTRIDGE TIRES
Made by The E.E. Partridge Rubber Company Limited, Guelph, Ont.

"TREAT 'EM ROUGH"
THEY'RE EQUAL TO IT,
NORTHERN
Guaranteed
Shirts and Overalls
Made to match the husky men that wear 'em
The Northern Shirt Co. Limited, Winnipeg



Visitor: "But those attacks of Malaria don't last long, do they?"
Tommy: "Mine isn't ordinary Malaria. The doctor calls it Malingering Malaria."

Milks Any Cow
EMPIRE Milkers are self-adjusting. They milk any cow, regardless of whether she is a hard or easy milker, large or small teats, nervous or calm, large or small udder. Teat cups stay on without surcingle or harness. Action in teat cups is always uniform, for the Empire has a Super-Simple *Pulsometer* Pulsator. Never leaks vacuum. Pulsator comprises but five moving parts. Milk can't touch them. Used by leading breeders, dairymen and Agricultural Colleges. Write for 1919 Catalog No. 3W. Ask for name of nearest dealer.
THE EMPIRE CREAM SEPARATOR CO., of Canada, Limited.
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Western Canada Distributors
140 Princess Street, Winnipeg.

EMPIRE MILKING MACHINES

Real Reasons For General Use

Imperial Royalite Coal Oil and Imperial Premier Gasoline have been used by a big majority of Canadian farmers for years. They are well and favorably known wherever tractors and farm gas engines help to lighten farm labors. There are real reasons why Imperial Royalite Coal Oil and Imperial Premier Gasoline are generally used. Skillful refining in well-equipped Canadian refineries, careful selection of crudes and excellent distributing facilities are some of them.

IMPERIAL PREMIER GASOLINE

Straight-distilled gasoline. Every gallon the same. Always full of gingery power. Burns clean and makes every tractor or automobile in which it is used, deliver its full utility and satisfaction. Clean-burning—excessive carbon eliminated.

Imperial Royalite Coal Oil and Imperial Premier Gasoline available everywhere in any quantities desired.

IMPERIAL ROYALITE COAL OIL

The highest grade of coal oil it is possible to make from first-grade, carefully selected crudes, with the best equipment that it is possible to supply. Uniform and economical for use in tractor and coal-oil-burning gas engines. Just the thing for the oil heater, the oil cook-stove and for other household uses as well.



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Power · Heat · Light · Lubrication
Branches in all Cities

THE I. H. C. AND THE RETURNED SOLDIER

THE officers of the International Harvester Company of Canada, Ltd., have just announced the completion of arrangements with the Returned Soldiers' Settlement Board whereby returned soldiers who take up land through the Settlement Board will be granted maximum discounts on International Harvester Company implements purchased.

The Returned Soldiers' Settlement Board at Ottawa, of which Captain Wm. C. Chandos Innes is director of equipment, has been working energetically since its recent organization in the interest of the Great War veterans for whose benefit it was established. Among other things, through the efforts of Captain Innes, several of the leading manufacturers of farm machinery have agreed to sell machinery to soldier-settlers at rock-bottom prices.

The effect of the just completed agreement with the Harvester Company, however, will undoubtedly be more far-reaching than any of the similar arrangements made heretofore, as this concern's great plants at Hamilton and Chatham, Ontario, produce a greater variety of farm machinery than probably any other plant in the world. Plows, tillage and seeding machines and implements, haying machines, harvesting machines, threshers, wagons and what not, are being turned out here—implements designed and built to suit Canadian conditions.

The sale of farm machinery to soldiers under the new plan will be handled entirely through the offices of the Settlement Board, these offices being located at Winnipeg, Regina, Edmonton, Saskatoon, Calgary, and Prince Albert, Sask., in the West, and Toronto, Montreal, St. Johns, Halifax and Charlottetown in Eastern Canada, with the main office at Ottawa. Each branch office will be in charge of a provincial supervisor.

Soldiers desiring to take up land and purchase necessary equipment to put the land on a paying basis in the shortest length of time, will file their applications with the nearest Soldiers' Settlement Board office. Upon approval of the application by the supervisor, the applicant will be referred to a local implement agent in the community where he plans to settle. This agent will furnish the soldier with equipment called for and will take the soldier's receipt for goods purchased. The agent makes his settlement with the manufacturer and both the manufacturer and soldier make settlement with the Returned Soldiers' Settlement Board.

UNION BANK OF CANADA

Loans for Livestock

To good farmers living in the vicinity of its rural Branches, the Union Bank is prepared to make loans on reasonable terms for the purpose of purchasing Cattle for feeding or breeding purposes.

Consult the Local Manager for particulars



Head Office: Winnipeg
Total Assets as at Nov. 30th, 1918 over \$153,000,000
Deposits over \$127,000,000

Paid-Up Capital \$5,000,000.00
Total Assets as at Nov. 30th, 1918 over \$153,000,000

THE PIONEER BANK OF WESTERN CANADA

ability of this motor which has enable it to earn the title of the standard prime mover for field work. The horse is well adapted to variable loads, having a 300 or 400 per cent overload capacity for short periods of time. When a relatively large power unit is desired, several horses can be hitched together. When a number of smaller power units are desired, this same team can be broken up into a number of smaller units.

However, the horse has a decided weakness when it comes to operating soil preparation machines. It is very difficult to get horses enough on our plows and harrows so that the work can be done as well or as fast as the average farmer demands today. Furthermore, it is this soil preparation work which saps the vitality of the horse, pulling him down in flesh. Under favorable conditions it requires from 1.9 to 2.4 mechanical horse-power to operate a 14-in. plow in brown-silt loam soil at 2 1/2 m.p.h. When soil conditions are adverse for plowing, this power requirement is frequently doubled. The same general conditions apply to the harrow. Injudicious use for an hour's time will ruin a good horse. The great weakness of the horse is found when it comes to operating implements which require a relatively large power unit, a field in which the tractor offers wonderful possibilities.

OXY-ACETYLENE WELDING APPARATUS and SUPPLIES

We can supply a thoroughly practical outfit from \$100.00 up. There should be at least one plant in every district to repair breakages quickly and SAVE TIME and MONEY. Up-to-date farmers with Traction Engines are putting in welding outfits and doing their own and their neighbors' repairs. We give free instructions to purchasers. SEND YOUR BROKEN CASTINGS Sourced Cylinders or any kind of Repairs. We Re-bore Cylinders, True Up Crank Shafts, Re-tip Boiler Flues and are in a position to handle any repair job promptly.

Nothing too large or too small

GIEGER WELDING WORKS, SASKATOON

Don't Fail to Renew your subscription if it has run out. There are Great Things Coming!

A TRACTOR SHORT COURSE HELPS A GOOD ROADS PROGRAM

(Here is an example worth imitating all over Western Canada. It is a story of what has recently been done in the "Good Roads" programme of Nebraska State in the way of encouraging and training men to handle the tractors necessary in any road grading job worth undertaking.

We reprint the report in full and strongly commend it to the consideration of every municipal council, particularly to those who are in quest of capable gas engineers and who find trouble in locating them.—Ed.).

On March 29th, 1919, the State Engineer, George E. Johnson, was talking with Professor L. W. Chase, head of the Agricultural Engineering Department at the University of Nebraska. In this conference he showed Professor Chase the map of Nebraska with the roads marked off which were to be built during the year 1919, and then made the comment that he was at a loss to know where they would find competent tractor operators to handle the machines which would be needed and used during this work.

He had known of the tractor short courses which had been conducted in the Agricultural Engineering Department, and asked the question, "Could you people put on another short course whereby a few men at least could be gotten together preparatory to doing this work?" We had thought that the tractor short course period was over for the year and were settling down to the regular work of the department, but after this request came to us we decided to attempt, at least, another short course. The season for such work, we felt, was over. However, we decided that by a special effort we might be able to get from 15 to 25 men together, who would help just that much in filling out the requirements for such work.

After Professor Chase had talked over the matter with us we reluctantly consented to put on another short course in the department and set the date for it to commence April 14th. By hurrying around and devoting every energy to this work we were able to have in the mail by Thursday night, April 3rd, about 900 posters announcing that the university would put on this tractor short course to aid in preparing men for the road construction work in the state. The newspapers all over the state, as well as the dailies, were very kind in seeing the need as it was



RIDE AN EATON WHEEL FOR SERVICE AND SATISFACTION

The Speedwell 1919 Models are desirable in every point including price and efficiency. They are of high-grade construction and finish throughout and will compare favorably with many machines at considerably higher prices. Below we list two of the most popular models at prices that will be hard to beat.

THE SPEEDWELL SPECIAL MODEL

The Frame—Seamless tubing, flush joints, diamond shaped; all joints are brazed.
Forks—Have nickel three-plate crown, sides are spear jointed and brazed.
Hanger and Sprocket—Hanger is of one-piece construction and has simple adjustment; the cones are hardened and the sprocket and crank are nicely nickel-plated.
Coaster Brake—New model, easy running, positive in action.
Tires—Speedwell studded. A rugged tire that has always given universal satisfaction.
Tubes—Dominion Speedwell grey rubber, top covered with cotton stockinette.

Handle Bars—Nickel-plated, adjustable to almost any position.
Chain—American Diamond Roller Chain, regular 1 1/4 pitch, same as supplied with our highest grade bicycle.
Pedals—Combination pattern. Rubbers can be removed if rat-rap pedals are desired.
Saddle—Leather top, Black enamelled cushion spring, comfortable seat.
Wheels—Natural color maple rims, spokes swaged and nickel-plated. Front hub is concave shape and supplied with well finished cones and cups. The rear wheel is equipped with Coaster Brake.

22NA603. Speedwell Special Bicycle, 22 inch. Price from Winnipeg	37.50	22NA604. Speedwell Special Bicycle, 24 inch. Price from Winnipeg	37.50
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THE SPEEDWELL DE LUXE

The Frame—Seamless tubing, flush joints. The joints are reinforced and brazed, giving the frame great strength.
Forks—Have nickel-plated reinforced interleaf head, fork sides are spear jointed and brazed.
Hanger—Hanger is of one-piece construction, giving maximum strength, and has simple adjustment; cones are hardened, sprockets and cranks are nicely nickel-plated.
Coaster Brake—Eadie Coaster Brake, English make, positive acting, smooth running.
Tires—Dunlop Traction Tread Tires, considered by most riders as the best treaded tires on the road.
Tubes—Michelin Red Tube, the best tube made; does away with the wear-and-tear troubles that beset the buyer of cheap tubes.
Chain—The American Diamond Roller Chain, easy running, regular 1 1/4 pitch.

Pedals—Solid rubber treads that give a sure and comfortable foothold and tend to absorb vibration.
Saddle—Easy, comfortable spring Saddle, eliminates road shocks and makes riding a pleasure.
Handle Bars—Full nickel-plated, forward extended, up and down adjustment.
Grips—Motor cycle, type made of live red rubber. With their use there is only the slightest vibration to the rider's wrists and arms.
Mudguards are made of the best quality steel, extra deep motor cycle type. They extend well over the tires and fully protect the rider's clothes from mud.
The Finish—The frame and rims of wheels are nicely enamelled in bright Maroon and artistically striped in Black and Gold. The fork head is nickel-plated. A splendidly finished bicycle at a moderate price.

22NA602. Speedwell De Luxe Bicycle, 22 inch. Price from Winnipeg	50.00	22NA601. Speedwell De Luxe Bicycle, 24 inch. Price from Winnipeg	50.00
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SHIPPING WEIGHTS—The shipping weight (Crated) of these Bicycles is approximately 75 lbs. All Bicycles we ship are carefully crated to ensure safe delivery. Bicycles take One and One-Half Times First-Class Freight Rate.

Bicycle Tires and Accessories listed on page 286 of our Spring and Summer Catalogue

THE T. EATON CO LIMITED
WINNIPEG CANADA

Have you had your copy of the Grocery Catalogue. Send us your name and address and it will be mailed free to you.

presented and continually kept this before the people of the state for the few days intervening between April 3rd and April 14th, on which date the course was to commence.

You can imagine the surprise of everyone in the department, as well as all who were interested in this road programme, when on Monday night we found that there were in the neighborhood of 60 men enrolled for this tractor short course. Others had not seen the announcement of it until Sunday,

and got here as quickly as they could, but were late. Consequently during the next two days enrollments continued, until now there are over 80 taking this course.

Instead of having one section as we had planned to have in the beginning, three sections were necessary, and for five days the lecture periods had to be doubled. The work in this course consists of two lectures and six hours laboratory work each day for 20 days. Every subject dealing

with tractors is touched upon during this period, and although the period is short, by working intensively the men can be aided a great deal in this work.

The subjects which are studied in this course are tractor frames, wheels, clutches, brakes, lubrication, steering devices, babbitting, ignition, carburetion, valve timing, trouble shooting, repair work, operation, governors, transmissions, and, in fact, every subject of vital importance to a successful tractor operator. The

GUARANTEE Every garment bearing the G.W.G. label is guaranteed to give full satisfaction to the wearer in fit, workmanship, and quality; and because this satisfaction should be guaranteed, please do not buy any other garment unless you are satisfied that the merchant from whom purchased is authorized by us to replace it.

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Overalls



*"They wear longer
because they're
made stronger"*

Insist on getting
G.W.G.
Accept no substitute

The Great Western Garment Co.
Edmonton, Alta.

Sending Money to Soldiers



Those who have friends or relatives at the front, may wish to send money, but possibly do not know the best way to do so.

If time permits, the safest and most convenient method of making remittances abroad is the Bank Money Order or Draft, as issued by The Merchants Bank.

If, however, it is necessary to send money without delay, the Bank will arrange this by Cable Transfer.

THE MERCHANTS BANK

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With its 27 Branches in Manitoba, 41 Branches in Saskatchewan, 69 Branches in Alberta, 8 Branches in British Columbia, 119 Branches in Ontario, 37 Branches in Quebec, 1 Branch in New Brunswick and 2 Branches in Nova Scotia serves Rural Canada most effectively.

WRITE OR CALL AT NEAREST BRANCH.

Steam or Gas Tractors



Equipped with

PICKERING "THE GOVERNOR WITHOUT JOINTS" PICKERING

give greatest efficiency

FITTED TO EVERY BUILD OF ENGINE

Patent Ball Ringer Speed Changer Supplied
on all Genuine Pickering Governors.

Will increase speed 50% or more.

THE PICKERING GOVERNOR CO.

PORTLAND

CONN, U.S.A.



time is divided as nearly as possible according to the relative importance of the various subjects. Ignition we find to require the greatest amount of time. Consequently 10 lectures and 24 hours laboratory work is devoted to this one subject. Carburetors also come in for a large portion of the time, 4 lectures being given to carburetion and 12 hours to laboratory work. Twenty tractors are on hand for the use of the men taking this work. Any distributor in this neighborhood has the privilege of having one of his tractors here at the school while this course is being given.

The work in the course is made just as intensive as possible. An 8-hour time schedule is followed to the minute. Late registration is discouraged, and, in fact, not tolerated except in cases where men have come long distances to get here, not having seen the date of the course until the day before it was to begin. Having had such a short time in which to advertise the course we feel somewhat obliged to accommodate these men, especially when certain that they are decidedly in earnest.

This makes a total of 380 men handled in tractor and automobile short courses of one month each since December 30th, 1918, in this department.

BOLSHEVISM HAS NO FUTURE AND IS NEARING ITS END

**Utterly Impossible to Carry on
Industry and Commerce Under
Its Rule Declares E. J. Dillon
—Uneducated and Rapacious
Following Only.**

THAT the Bolshevist rule in Russia or anywhere else has no future, and is even now nearing its end, is the view confidently expressed by Dr. E. J. Dillon, who for many years has been a recognized authority on Russian affairs. Dr. Dillon lived in Petrograd in the days immediately before the war. He received the degree of Master of Oriental languages at the University of Petrograd and was professor at the University of Kharkoff. He was married to a Russian lady in 1881, has edited more than one Russian journal and has written much on Russian literature and affairs.

Dr. Dillon cannot see an end to the chaos in Russia for some time to come, though he has full faith in Russia's power to endure through her present turmoil and torment and to found a stable government at last.

No Future For Bolshevism

"The Bolshevist government has no future," said Dr. Dillon, "for the simple reason that it is utterly impossible to carry on industry and commerce on the lines on which the Bolshevist work."

"Not 10 per cent of the factories of Russia are working at the present time. Industry is practically at a standstill; that is because under the system of the Bolshevist the factories have been seized by workmen, who have no capital to carry on the industries. Of course, many workmen got a great deal of money, but what happened was simply that they took money and used it up on themselves and the things they were interested in or wanted to spend it for, and then there was none left. Economically, it is absolutely impossible for the Bolshevist government and the Bolshevist system of running things to last.

Do Not Represent People

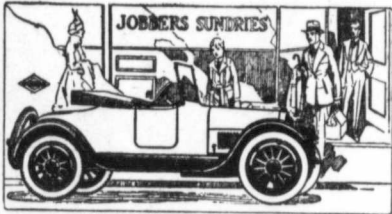
"The Bolsheviki do not, of course, represent the Russian people. Their government represents one section of the Russian people, but it is a section that is relatively small. It is a section of people who are uneducated and greedy for money. Their idea never has been equality. Their purpose and their idea have been the sway of one class over the entire community.

"Matters are very bad in Russia now, but they are going to be worse," he said. "This is going

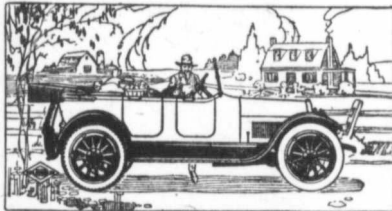
WHAT MARK TWAIN SAYS ABOUT BIRDS

THE moment that Tom began to talk about birds I judged he was a goner, because Jim knewed more about birds than both of us put together. That's the way that people does that writes books about them and loves them so that they'll go hungry and tired and take any amount of trouble to find a new bird to kill. Their name is ornithologers, and I could a been an ornithologer myself, because I always loved birds and creatures—and I started out to learn how to be one, and I see a bird sitting with his head tilted back and his mouth open, and before I thought I fired, and his song stopped, and he fell straight down from the limb, all limp like a rag and I ran and picked him up, and he was dead, and his body was warm in my hand, and his head rolled about, this way and that, like his neck was broken, and there was a white skin over his eyes, and one little drop of blood on the side of his head, and laws! I couldn't see nothin' more for the tears, and I hain't ever murdered no creature since that warn't doing me no harm, and I ain't going to"

McLAUGHLIN CARS IN NATIONAL SERVICE



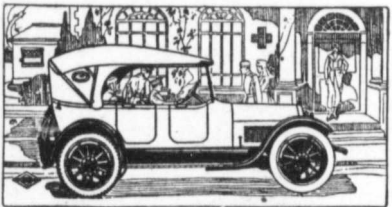
McLAUGHLIN MASTER SIX H-61X-44 ROADSTER
(The H-61X-44 Special is a replica of this model with Special Appointments)



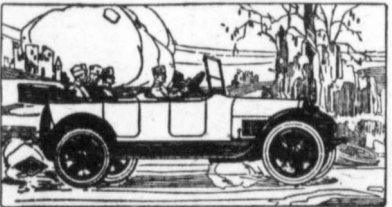
McLAUGHLIN MASTER SIX H-61X-45 SPECIAL TOURING
(The H-61X-45 Regular and the H-6-45 Extra-Special are mounted on same Chassis as H-61X-45 Special)



McLAUGHLIN MASTER SIX COUPE H-61X-46



McLAUGHLIN MASTER SIX H-61X-45 EXTRA-SPECIAL



McLAUGHLIN MASTER SIX H-6-49 TOURING (7 PASSENGER)
(This Model is being used by Siberian Expedition)



THE efficient performance of McLaughlin cars has placed them foremost in the estimation of Canadian motorists.

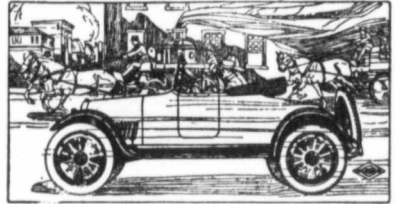
The new 1919 Series "H" more than uphold this high McLaughlin reputation. The Master Six Series are refined and improved in detail, making them more beautiful than ever.

Graceful in design and exquisite in finish and appointment, these models represent the best work of master builders and master artists.

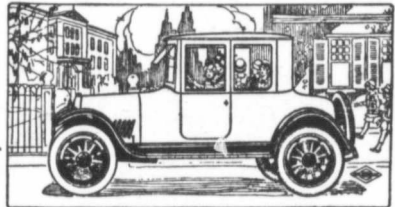
The Light Six Series maintains an established record for economy in gasoline consumption and tire mileage. No detail of material and workmanship has been stinted in production. For efficiency and economy in motoring cost the new Light Six Series stands without a peer in Canadian built cars.

The McLaughlin Series "H" for 1919 will appeal to motorists intending to purchase a new car this year. Call at the nearest McLaughlin show rooms.

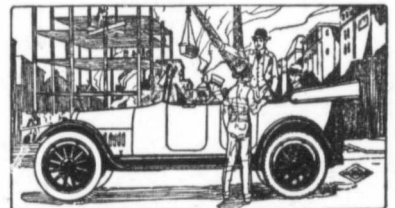
See the McLaughlin Models at the nearest McLaughlin Show Rooms -



McLAUGHLIN LIGHT SIX ROADSTER H-61



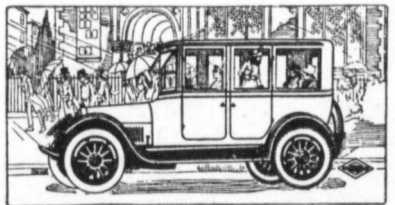
McLAUGHLIN LIGHT SIX COUPE H-61



McLAUGHLIN LIGHT SIX TOURING H-61



McLAUGHLIN LIGHT SIX SEDAN H-61



McLAUGHLIN MASTER SIX SEDAN H-61X-50 (7 PASSENGER)

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to be a very terrible winter there. I think there will probably be famine. There are not any harvests.

Land Neglected

"The trouble is," he explained, "that Russia is in such a state of upheaval that men have not planted their usual crops. It is not so much that they can't as that they have not thought it worth while as things are now. The man who owns, say, a certain piece of good farming land hasn't the slightest idea how long he is going to continue to own it or how long he is going to be able to work it. The chances are that if he goes to the trouble and expense of planting and cultivating it someone will take it from him before he is able to harvest his crops. So he just doesn't do anything with the land. That is what has been happening all over Russia. The land has simply not been tilled."

The Friendly Hand

Having the firm hope that Russia will recover, Dr. Dillon is of the opinion that she must be helped through her difficulties by the friendly powers. This is difficult, he said, and would require the exercise of much tact. In explanation of this statement, he said:

"The Russian is exceedingly sensitive to anything that may seem humiliating. No friendly power could use force with the Russian people. I think the lines on which President Wilson has planned to aid Russia are right and that the United States is peculiarly well situated to render assistance because America, of all the powers, is the only one that cannot be even suspected of territorial aims. With respect to the other powers the Russian peasant is suspicious even where there is no ground for suspicion."

BILL'S IN TROUBLE

I'VE got a letter, Parson, from my son away out West, An' my ol' heart is heavy as an anvil in my breast.

To think the boy whose futur' I had once so proudly planned, Should wander from the path o' right an' come to sich an end! I told him when he left us only three short years ago, He'd find himself a plowin' in a mighty crooked row— He'd miss his father's counsel, an' his mother's prayers, too, - But he said the farm was hateful, an' he guessed he'd have to go.

I know thar's big temptation for a youngster in the West, But I believed our Billy had the courage to resist. And when he left I warned him o' the ever-waitin' snares, That you find like hidden sarpients in life's pathway everywhere. But Bill he promised faithful to be keerful, and allowed He'd build a reputation thad'd make us mighty proud. But it seems as how my counsel sort o' faded from his mind, An' now the boy's in trouble o' the very wustest kind.

His letters came so seldom that I somehow sort o' knowed That Billy was a'trampin' on a mighty rocky road, - But never once imagined he would bow my head in shame, An' in the dust'd waller his ol' daddy's honored name. He writes from out in Denver, an' the story's mighty short; I just can't tell his mother; it'll crush her poor ol' heart: An' so I reckon, Parson, you might break the news to her— Bill's in the Legislatur', but he doesn't say what fur.

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Smaller sizes and lower grades proportionately lower Don't delay while the demand is keen	
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SPECIAL FARMERS' ACCIDENT POLICY
FIRE INSURANCE

AGENTS WANTED



Proud Father: "Well, Mac, what do you think of him?"
Mac (critically surveying the parant): "Och! not bad—concedering!"

And Who Has Saved Us?

"Unto the Noble Army of the Heroic Dead be the Praise, the Glory and the Laurels of the Divine Liberty that Purifies the Earth, the Sea, the Air"

"And who has saved us? Let there be no mistake about that. Under the good providence of God, as the Navy Act has it, the seamen and the soldiers have saved us. Let us recall the first days of the war. What shall we say, then, of these men who have fought, endured, and suffered, day in and day out, summer and winter, on the sea, on the land, and in the air, all these red years?"

"We were better employed considering what we can do for them; and especially what we can do for those whose lot is bitterest, whose pain is heaviest—the prisoners of war."—Morning Post.

It requires the pen of one who has dipped it in sorrow and who is acquainted with grief to do justice to the memory of the men who died and lived to save the world.

Such a pen is that of Mr. James Douglas, whose heart has been stabbed by the loss of a son. He pays this high tribute to the great company of heroes:

"Unholy is the voice of loud thanksgiving over slaughtered men, and our natural exultation is chastened by the grieving thought of aching hearts and wounded spirits in every war-worn land," he writes in the Star. "We are encompassed in our devout jubilation by a cloud of heroic witnesses, the gay and gallant dead who are living in their country's breast.

"When the young men are taken from the city and from the hamlet the spring goes out of the year.

This Epic of Freedom

"In these dim November days of bated thanksgiving and muted rejoicing our hot, salt tears fall upon the lonely graves of the young men who have given their lives for their country. There is a supreme sanctity in the soldier's supreme sacrifice, and we would gather all the young soldiers into the arms of our compassion and the embrace of our ruth.

"Not unto us, but unto the noble army of the heroic dead be the praise, the glory, and the laurels of the divine liberty that purifies the earth, the sea, and the air. Greater love knoweth no man than the love of the soldier who lays down his life for the unborn generations of mankind.

"And in this epic of freedom let all the unaging martyrs mingle in a serene and sacred comradeship of devotion and duty.

"In the holy kingdom of liberty there is no place for stale rancour or stagnant revenge in the presence of the young knights and

paladins who proudly sleep in the calm amnesty of death.

"The generations to be will never know the anguish and the agony of our generation. They will never feel the sorrow of the innumerable mothers and fathers who have died the death with the flesh of their flesh, the bone of their bone, the heart of their heart, the soul of their soul. Theirs will be the harvest of our grief, the reaping of our sorrow.

Their April: Their Spring

"Our November will be their April, our autumn will be their spring. For us the fall of the leaves will always be a symbol of glorious youth marching like a bridegroom to the nuptials of death, to the bridal of the grave.

"Gladly one by one they laid down their stainless lives year after year from the red dawns of 1914 to the red sunsets of 1918. Not grudgingly or of necessity did the young men lay their treasure of youth on the shrine of Liberty.

"They were not too curious in their nobility of honor. They were not too fastidious in their heroism of sacrifice.

"Royally they shed their blood, not for our sake, but for the sake of the better ages yet to be. It is fitting that we who for a brief hour stand with bared heads by their sacred graves should prostrate ourselves in lowly gratitude and trembling love.

Their Simplicity

"The world is not worthy of their simplicity.

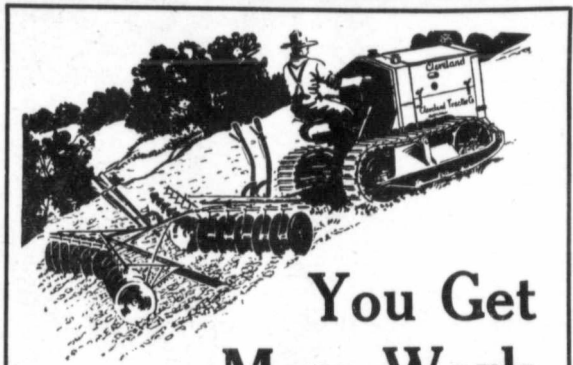
"As we witness the overthrow of haughty cruelty and callous arrogance, the abasement of throned evil and sceptred sin, the crushing downfall of tyrants and tyrannies, the humiliation of the froward, the punishment of the crowned criminal, the judgment of the mighty, let us search our hearts and play for the purification that transcends triumph and outsoars victory.

"The liberty won by the selfless agony of the living dead is not ours to squander in petty selfishness. It is a trust for us and for all men and for all time. Upon us has descended an unparalleled and unmatched miracle. We are the legatees of Heaven, the executors of Providence. Something not ourselves has made for righteousness.

A Spiritual Victory

"This is not a secular but a spiritual victory. The two Marnes and the two Ypres were pale triumphs wrested from sombre defeat, not by mortal but by immortal thews.

"In dust and in ashes let us



You Get More Work with a Cleveland

Buy a tractor—for faster, less man-power, less horse-power, more profitable farming.

But buy a tractor that will—disc, harrow, seed.

Without spoiling the seed bed.

Buy the Cleveland Tractor.

Plows 10 acres a day. Will harrow neck and neck with the plowing of the biggest and fastest tractor in the world.

But the Cleveland is the *only* tractor that will disc, harrow, seed, leaving the seed-bed in fine condition.

Because it travels *on top* of plowed ground.

Lays its own tracks as it travels. 600 square inches to carry a 3,200 lb. load. Less pressure on the earth than you exert in walking. The Cleveland tractor *can't* pack the soil. *Can't* wallow in soft ground. Will work over rough ground, hilly ground, gullies. And uses less fuel doing this because it rides on top *without slippage.*

In harvest time a Cleveland Tractor will speed up work in every direction. Will reduce the number of men and horses needed. After threshing it will haul your

grain to the elevator economically and quickly. All through the year it will work for you.

The Cleveland Tractor is the product of an organization embracing engineering genius and manufacturing facilities of the highest type. That is why the Cleveland operates successfully on kerosene (coal oil). Uses no more kerosene than other tractors use gasoline. That is why the Cleveland stands up to its work day in and day out, year after year. That is why the Cleveland is an investment, not an expense.

Of course, a Cleveland Tractor pays for itself. Your nearest Cleveland dealer can show you how. Write to him or to us for interesting booklet, "Our Owners Say."

The Cleveland Tractor Co. of Canada, Limited Windsor, Ontario

THE CLEVELAND TRACTOR SERVICE CO., Ltd., REGINA
Distributors for the West.

The Cleveland Tractor Co. of Canada, Limited Windsor, Ontario

Dear Sirs—I have used one of your Cleveland Tractors on my farm, thirty miles west of Winnipeg, during this last fall, plowing about two hundred and twenty-five acres, using two fourteen-inch plows and going eight inches deep.

Your machine did splendid work, was easily handled and very economical to operate, and gave me general satisfaction in every way.

CHAS. H. McFADYEN

Cleveland Tractor

Massey-Harris**Reliability its Great Feature**

The great feature of the Massey-Harris Mower is that it can be depended on to go through Haying without a hitch. It matters little how many other features a Mower has if it gives out, for any reason, during the Haying Harvest. The Massey-Harris Mower removes the fear and worry of having trouble with your Mower at that time. So in choosing a Mower get one you can depend on—the Massey-Harris.

The features that make the Massey-Harris thoroughly reliable are its strong, sturdy construction, giving durability, easy-running with the absence of side-draft altogether. It is easy to handle, a new and improved Foot Lift enabling the operator to raise the Bar easily and there is no sagging at the outer end. It cuts clean and handles all kinds of crops.

Cuts the last Swath as certainly as the First.

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Send us all your broken or cracked Cylinders, Crank Cases, Gear Wheels, Gear Housings or Machine Parts. We will deliver perfect results and **save you money.**

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Lowest Prices consistent with Best Workmanship.

confess that we were led out of disaster by ways that we knew not, and that the pure secret of our undeserved and unearned salvation is eternally locked in the cold young hearts that beat no more with ours and everlastingly hidden in the young eyes that see no more the earthly sun.

"In our grateful humility," concludes Mr. Douglas, "let us clasp hands as brothers, resolved that in the days to be we shall labor together for the sure garnering of the great harvest of liberty and peace in all the sorrow-stricken lands."

"It is a victorious peace," says the Westminster Gazette. "In the blessedness of relief at the task accomplished and the victory won, our hearts go out to-day to the incomparable men who have pursued to the end, in fair weather and foul, through the slime and horror of the trenches, the chill of the zero hour, the hazards of going forward, the misery of going back—all this day by day for four years and more, without loss of heart and faith, or unwavering belief in the blackest hour that the end would justify all. Above all, we think of the dead who have given their lives in the greatest cause that ever bound men together, and of those whose only consolation is pride in their sacrifice."

The Wrecks of the War

"With very deep gratitude in our hearts we heard the great news, and first of all our memories were of the fallen and of all we owed them," says Lieut.-Col. Repington in the Morning Post. "That debt we can never repay, but the sacred trust remains to us of stinting nothing to honor and provide for the wrecks of the war, and then for the glorious fighting men for whom nothing must be spared to enable them to know how deep is our affection for and our gratitude to them.

"It is our fleets and flotillas upon the seas and our wonderful Armies in all theatres that have won this triumph, and have, as ever of old, been the firmest and the greatest in the last quarter of an hour. We must charge the Government to insure that no hero wants, and no man but finds ample provision for himself and his dependents until he is once more installed in civil employment."

All They Had They Gave

"In this day of rejoicing there will be one thought present in every heart and home—the thought of the dead who won for us this victory by their sacrifice, and now lie 'dark to the triumph which they died to gain,'" says the Daily Mail.

"Only the eloquence of a Pericles could do justice to their fame and make some payment of

the immense debt which humanity owes them—they who 'when the shock of battle came chose rather to suffer to the utmost than to win life by weakness, and giving their lives to their country received each for his own memory praise that will never die.'

"The bravest and best are under the soil in France. The redeemed land holds its redeemers. The spring has gone out of our year with the loss of that 'swift and joyful generation' which welcomed the call and obeyed."

Proudly they gathered, rank on rank to war,

As who had heard God's message from afar;

All they had hoped for, all they had they gave

To save Mankind — themselves they scorned to save.

OUR COMRADE JOHN BULL

(E. S. Martin, Editor of Life in Philadelphia Ledger.)

(We make no apology for reprinting this hearty appreciation. Every Canadian citizen who is worth his salt will nail its substance to his memory or carry it in his hat day in and day out—Ed.).

EVERYBODY in the war gets more bouquets than John Bull, yet but for John there wouldn't be any war. It would have been over long ago and Germany would be busy with the details of her appropriation of Europe.

John Bull has saved civilization. We call it that, though civilization is a tough product, and would have survived Kultur, just as it survived Attila and the successors of Mahomet and all the conquering hordes that swept over Europe. Belgium saved civilization when her body blocked the road to France as in history a woman's arm, that for a moment barred a door, saved a fugitive prince, France saved civilization by her sacrifices, and her military competence and her heroism. Russia saved it by her drive into East Prussia. Italy has helped in her turn, and now Uncle Sam has brought indispensable aid and fresh strength to the great cause.

But Uncle Sam can come and bring his help because from the first day of the war Britannia has ruled the wave and made the seas passable for all the Allies.

And consider the troops John Bull has raised and trained and sent and the treasure he has poured out, and the war material he has poured in, and the ships he has built against U-boat destruction. What a tale of fortitude, of devotion of all the immense resources of a great Empire to a great cause!

Our kin, the British, doubtless have among them great faults, and in their day have done wrong deeds, and have been selfish on occasion and often greedy. But in those particulars they are not unlike other peoples, and in this war they have given evidence of being exceedingly handy to have on earth in times of crisis. All the Allies will admit that much about them.

And they will continue on the earth—there is no fear to the contrary—and they will continue to be a strong people. But they will come out of the war with strength depleted by immense sacrifices of blood and treasure and trade and all means of temporal resuscitation; justified in character, glorified by achievement, but in need of nursing.

So will France, so will Belgium, so will every nation that has been long in the thick of the fight; but because Great Britain in the past has been so strong and so rich, there may be danger of a less generous disposition toward her than toward the others, and of less solicitude to bind up her wounds and repair her losses. There will be a feeling that she can take care of herself and so she will. But that should not be the attitude of these States toward her. To us she has been a great bulwark against the most dangerous enemy that has threatened our place in this hemisphere since we started as an independent nation. We owe her friendliness; a kindness born of sacrifices in the same struggle and of identity of general aims for the reconstruction of the world. We shall be her rivals in trade but we should be generous and considerate rivals, careful not to build up prosperity at cost of hers; helpful as to a people that shares with us a great duty of world reconstruction and reorganization. The rivalry between Uncle Sam and John Bull should be a rivalry in good works, and so, please God! it will be.

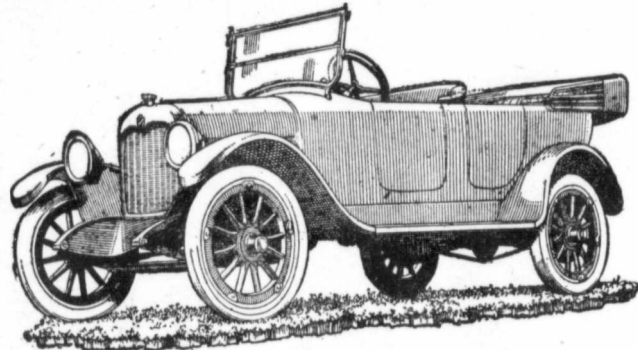
CARE OF BROOD MARE

LET the brood mare live as near a normal life as possible. Given a sufficient amount of mixed, wholesome food, such as oats, bran, corn, alfalfa, prairie hay, oat straw, cornfodder, carrots, rutabagas, she will balance the ration. Allow no valuable mare to be pampered, for those that have the freedom of all out of doors and live on nature's pastures go through the ordeal of pregnancy and parturition with the least inconvenience and danger. Regular exercise is absolutely necessary; an energetic high-life animal will take enough exercise if turned out for several hours each day. For those not so

ambitious forced exercise is necessary; place in harness every day for several hours. Avoid all severe exertion and injuries as far as possible. Each pregnant mare deserves a stall to herself. As the period of parturition approaches

watch condition of bowels closely and reduce the diet, remove the mare from the work horse stable (which is a hot-bed of disease microbes); if possible place her in a clean, disinfected stable, with an abundance of sunshine, fresh air

and clean straw. Keep the mare and stable scrupulously clean at this time, have her well groomed each day, no dirt on belly, flanks or legs, and wash with good disinfectant, especially the udder before allowing the young to nurse.



**The Maxwell
is a sensible buy for
farmers—Why?**

FARMERS more than any other class buy the Maxwell. They buy it for many reasons. But all these reasons come down to the one fact—the Maxwell fits the farmers' needs better than any other car.

It is a big, roomy, comfortable car. A family car. It is light enough to give the utmost economy in tires and gasoline. It is strong enough to stand country road driving. It is powerful enough for any rough going.

And it is completely equipped. No "extras" to buy.

But, above all, the Maxwell is a dependable car. Five years ago the chassis was designed—for rugged simplicity. Then Maxwell after Maxwell was built on this original plan—over 300,000 of them.

This chassis has been perfected, of course; but not changed. It was *right* five years ago. It is *right* to-day. Over 1000 refinements have been made. To-day's Maxwell is the best car our engineers *could* produce for farm service.

And this dependable chassis has been robed in new beauty. 24 refinements in appearance in this year's model make it a car you'll be proud to own. Beautifully upholstered. Distinctive in style.

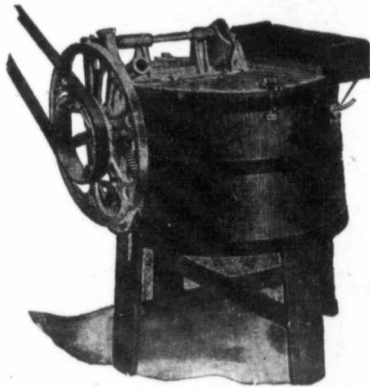
Not the least of the sensible reasons for buying the Maxwell, for getting Maxwell value, is Maxwell Service. There's a Maxwell dealer near you—anywhere in Canada. \$1275 f.o.b. Windsor, Ont.



*More miles per gallon
More miles on tires*

MAXWELL MOTOR CO. OF CANADA, Limited, WINDSOR, Ont.

Wash Day—A Holiday



Compared with the wash days the housewife has been familiar with, wash day with a Beaver Power Washer is indeed a holiday. The work is done entirely by the machine. It cleans linens, woollens or cottons perfectly. It can be attached to a gasoline engine or to any shafting.

Perfection Electric model—with or without motor—has no peer among power washes. If you have electricity in your home you cannot use it for a better purpose than to wash with this machine. It will

pay you to see or write for complete details of our machines.

The tubs are made of the finest seasoned Louisiana Red Cypress on which water has no effect. They are beautifully finished with water-proof varnish.

Sales Agents for Western Canada—

John Watson Mfg. Co. Ltd. 311 Chambers St. WINNIPEG

The Drive that Pulls SEVEN SPEED FRICTION TRANSMISSION



24-12 H. P.



**BEAVER
KEROSENE
TRACTOR**

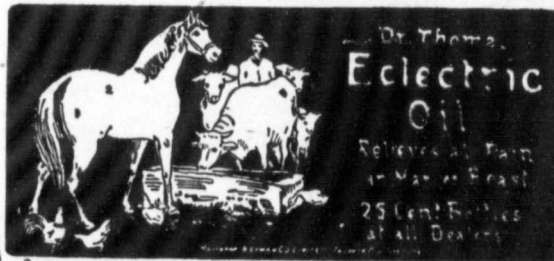
Pulls Three Plows

A wonderful reserve of surplus power—50% over rating—makes it easy for the Beaver to pull three plows in the toughest prairie sod. The friction transmission makes the direction of this energy doubly effective.

Write for our free illustrated catalogue

Goold Shapley & Muir Co. Limited

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YOUR INVENTIONS

Send direct to Ottawa for free patentability report and booklet "Patent Protection." Citizens' patents advertised in the "Patent Review."

Harold C. Shipman & Co.

111-113, CENTRAL, CHURCH ST., OTTAWA, CANADA

DYKE'S AUTOMOBILE AND GASOLINE ENGINE ENCYCLOPEDIA—a standard text of over 900 pages adopted by the United States Government. Money refunded if dissatisfied. Every Automobile and Tractor owner should have one. Send \$4.50 for post-paid copy to Dept. T, Dominion Text Book Company, Calgary, Alberta.

Pure Air in the Barn

THE business of a scientifically correct ventilation system is to provide a constant supply of pure air. With special reference to cattle barns, a system that falls short of making and keeping the inside air practically as pure as the outside atmosphere, may be a "system," but it is not ventilation.

Because a barn is cold it is not to be supposed that it is well ventilated, nor is it necessary that a well ventilated barn should be cold. With an effective system, the barn or stable may be kept comfortable all the time and still with the air pure and free from odors.

Some think that the opening of the hay, chutes—provides proper ventilation. While this may effect a sufficient change of air in the stable, it does it at the expense of

ever, not difficult with most old barns to install a satisfactory system of ventilation.

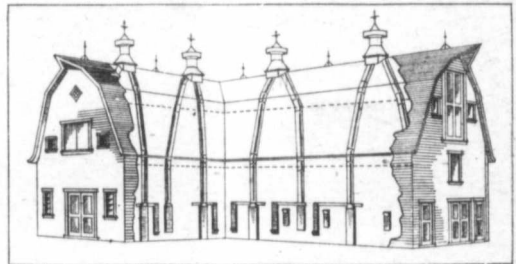
What is Required

The only practical way in which oxygen can be brought to the cow's nostrils and foul air removed is by correct ventilation, and this requires:

1. That there be a continuous change of air in the stable, so that at no time there be too much air that has been once breathed. Authorities set $3\frac{1}{2}$ per cent of air once treated as the limit.

2. There must be no stagnant spots of foul air at any place in the stable; the pure air must be thoroughly diffused throughout the barn, supplying fresh air to each and every cow.

3. This complete change of air and its thorough diffusion throughout the barn must be ac-



A Thoroughly Ventilated Barn
(Courtesy of Canadian Lightning Arrester & Electrical Co., Brandon)

heat and makes the barn cold, removing all of the warmest air, which is at the ceiling.

Another objection is that the warmer air of the stable coming in contact with the cold air in the hay-mow condenses the moisture. The moisture and some of the foul elements of the air from the stable are deposited on the hay, and is again fed to the cows.

If any cow in the herd has tuberculosis, this may be a very serious matter. The germs of tuberculosis and other diseases have no power of locomotion themselves, but are readily carried on particles of dust. With the right method of ventilation these particles of dust, carrying the disease germs, would be conveyed through the out-take flues out of the barn and into the open air and sunlight, where they quickly perish.

If the air with its load of germ-carrying dust is taken into the hay-mow, much of the dust with the germs of tuberculosis and other diseases will be deposited in the hay, and being again fed to the cows may have disastrous results in the spreading of disease.

To provide the immense amount of fresh air required by the cows in the barn, careful provision should be made when planning and building a barn. It is, how-

ever, accomplished without excessive loss of heat.

4. No harmful drafts should strike the cows.

The principles of ventilation proven necessary by scientific investigators in past years are made use of.

Warm air and moist air rises. The foul air is ordinarily removed from the barn at the floor through one or more out-take flues, the principal reason for so doing being to prevent undue loss of heat, as the kindling of a fire in the stove starts a draft that gradually becomes strong.

This movement is also assisted to some extent by the wind blowing across the top of the out-take, just as a chimney has a stronger draft when the wind is blowing hard. However, if dependence is placed on the difference in temperature between the air in the stable and that out of doors, the system will not always work satisfactorily in the warmer weather.

Systems have been developed to increase the air movement and make more certain the uniform operation of the ventilating system. This is accomplished by taking full advantage of the power of the wind, creating a suction that exerts a powerful pull on the air in the out-take flue.

Scientific tests by a competent

engineer, as well as tests in actual use in dairy barns, have proven that with this principle in ventilators, 30 to 65 per cent better ventilation is secured as compared with the old wooden cupola and the ordinary ventilators on the market.

Although it is usually desirable to remove foul air from the floor level in order to conserve the heat, it is sometimes found that this method fails to remove enough of the moisture.

That moist air rises is evidenced by the fact that steam, which is air 100 per cent saturated with moisture, always rises. The moisture in a barn will, therefore, tend to collect at the ceiling.

An opening in the out-take flue should be provided at the ceiling to remove this moisture on days when it is excessive, this opening to be the same size as the opening at the floor, and provided with a slide that it may be opened or closed as conditions may require. This opening at the ceiling may also be used to remove the warm air in warm weather.

The Intakes

Every foot of foul air removed from the stable will, of course, be at once replaced by an equal amount of fresh air. This fresh air enters at the ceiling through intakes in the walls of the stable, the inlets of which in the outside of the wall are located about half-way between floor and ceiling. The purpose of this is to "trap" the heat within the stable. The warm air, being lighter than cold, cannot get out through the intake flues.

The air at the ceiling being warmest, the fresh air is gradually warmed as it descends. Where the cows face out, air enters from the side wall near the ceiling; where the cow faces in, the air is brought to the centre of the barn and enters the stable through the ceiling.

Thus the fresh air always reaches the cows' noses before passing over the gutter, the intakes being so located that the foul air is drawn out from the rear of the cows.

We are indebted to the Canadian Lighting Arrestor and Electrical Company of Brandon for the illustration appearing at top.

The barn represented has been completely equipped with their "Townslay System" of ventilation (which can be followed in the etching), and is one of the most effective and least expensive installations in use to-day. It has the endorsement of many experts and experienced stock-breeders, and is now widely known throughout Western Canada.

If you think you have to stop and rest after every live attempt to increase business, you will find your net profits for the year pretty small.

**FREDERICK ROBINSON
PASSES ON**

It is with profound sorrow that we announce to the trade the death of Frederick Robinson, director and former vice-president of the J. I. Case Threshing Machine Co., Inc., of Racine, Wis. Mr. Robinson passed away at his home in Racine on April 22, 1919. He was born in Kenosha, Wis., Nov. 15, 1862. He was reared in his native city, where he attended the public schools and later graduated from Lake Forest University.



THE LATE FREDERICK ROBINSON
Director and Former Vice-President J. I. Case
Threshing Machine Co.

The first position that he held was as office man in the office of the National Vehicle Company of Racine. In 1887 he went to Denver, Colo., where he engaged in the structural iron industry for several years.

In 1896 he returned to Racine and became purchasing agent of the J. I. Case Threshing Machine Company. In 1898 he was one of the purchasers of the entire stock of the company and was elected vice-president and general manager.

In 1914 he retired as vice-president, but remained on the board of directors and took an active interest in the affairs of the company.

Few men in Wisconsin possessed a more keen business mind than Mr. Robinson. He began at the bottom of the ladder and by his own industry, frugality and judicious investments accumulated a fortune. He was a public-spirited and progressive citizen.

"Do you mean to say," said Wemyss, "that you have never discovered a redeeming feature in an habitual criminal?" "Yes, I did once," admitted Briggs. "Ah, I knew it!" cried Wemyss, triumphantly. "No one is all bad. What was it? Love of home? Kindness to animals? Love of children?" "No," came the uncompromising reply; "it was a pawnticket."

Order Direct at These Prices

When you buy a MACLEOD outfit, you not only save money by dealing direct, but you get a guaranteed outfit with special advantages not found in any other make.

WASHING OUTFIT

COMPLETE AS ILLUSTRATED
WITH MAGNETO ENGINE

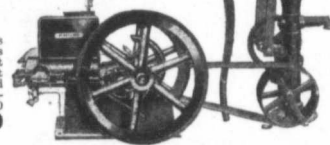
\$106.75

No. CT76—Consists of the famous 1 1/2 H.P. 3-speed MACLEOD engine equipped with Webster Magneto; the Merit power washing machine with reversible wringer and gears all enclosed and belt complete, all ready to run, weight 440 lbs.... **\$106.75**



PUMPING OUTFIT

No. CT38—This pumping outfit is complete and ready to pump as soon as you attach the jack to your pump. It is suitable for wells up to 150 feet deep. Outfit consists of 1 1/2 H.P. 3-speed MACLEOD engine with Webster magneto and 6 x 4 inch pulley, and No. CT150 heavy pump jack and belt, weight complete 400 lbs... **\$78.50**



No. CT35—1 1/2 H.P. MACLEOD 3-speed engine only with Webster magneto and 6 x 4 in. pulley.... **\$69.25**

No. CT90—Complete Washing and Pumping Outfit Engine, washing machine, pump jack and belt as above.... **\$115.70**

FARM SUPPLIES **MACLEOD'S LIMITED** ORDER DIRECT
WINNIPEG

**"MASTER MECHANIC"
OVERALLS**

Give Your Money's Worth

They are work garments with the "slouch" left out—they prove that overalls may be as dressily cut as a good suit of clothes.

"Master Mechanics" will keep their color and freshness—the cloth used in their manufacture is dyed with genuine indigo, an expensive vegetable blue which neither sun nor rain will bleach.

Added to these important points of cut and color are many things found only in the "Master Mechanic" line: Seven large pockets in overalls and six in coat—two of these are combination watch and pencil pockets, cinder-proof collar; removable brass buttons on coat; four-piece sliding web suspenders, with no-slip brass snap fasteners; high back, high bib, and extra roomy seat. All seams are double stitched, vital parts are reinforced, fly and side openings are faced to prevent tearing, buttonholes are whip-stitched.

And, in the hip pocket of every suit is our ironclad guarantee—Buy "Master Mechanics" and know real overall comfort.

Western King Manufacturing Company, Limited

Winnipeg - Manitoba



"EASTLAKE" TANKS



Cheapest because they're the Best

THE "Eastlake" Round End Stock Tank is very popular. Made of highest quality, heavy galvanized iron; the heavy tubing is firmly locked on and the strong angle iron braces are formed around the tubing. Side seams have double row of rivets. Bottom is turned up inside—the strongest construction known.

"Eastlake" Tanks are right in every rivet. All styles including House Tanks, Cisterns, Granaries, Hog Troughs, Gasoline and Coal Oil Tanks, Wagon Tanks, Snow Melters, Feed Cookers, etc., Well Curbing, Corrugated Culverts, Garages.

Ask for folder on the Tank you want.

The **Metallic Roofing Co.** Limited
Manufacturers
797 Notre Dame Ave. Winnipeg

So Easy to Turn

because of the fewer mechanical parts—self-balancing bowl—easy starting clutch.



ANKER-HOLTH Self-Balancing CREAM SEPARATOR

In Several Sizes

The only disc machine that takes cream from bottom of bowl—you get all the cream with no flushing. It is self-draining and non-freezing. Anker-Holth, the inventor, personally supervised the construction. Built to make woman's work easy—a boy or man finds it play. Self-contained oiling system—no smelly oil cups. Hinged base gives easy access to parts. Every machine sold on

30-DAY TRIAL!

Use it in your own home—60 times—then decide. Its best friends are its owners.

GUARANTEE goes with every separator that bowl will keep in perfect balance during entire life of separator.

If your dealer hasn't one on the floor, write direct.

Western Anker-Holth Co.
61 VICTORIA ST. WINNIPEG, MAN.

PASSING OF WILLIAM BROWNING

IN the death of William Browning, for many years domestic sales manager of the International Harvester Co., a great gap has been opened in a circle of friendship which was literally world-wide in the ranks of the farm implement industry.



THE LATE WILLIAM BROWNING
Domestic Sales Manager I. H. C.

Mr. Browning's kindly nature and his capacity for helpful friendship endeared him to all who were privileged to know him. His career dates from 1875 when he entered the service of what was then known as C. H. & L. J. McCormick at their agency in Chillicothe, Missouri. Ten years later he became general agent for the McCormick Harvesting Machine Co. at Warren, Ohio. In 1907 he became assistant manager of the Harvester Co.'s domestic sales department, and in 1910 was

promoted to the position of manager.

The death of William Browning is a severe blow to the Harvester Company. In these days of co-operation of friendship between companies, all benefit from the influence of a great man. We believe William Browning's closing words to-day would be the same as he uttered in 1916—"I wish good health and happiness to all, and say that I am still with you in spirit."

SOME ESSENTIALS OF TRACTOR CARE AND OPERATION

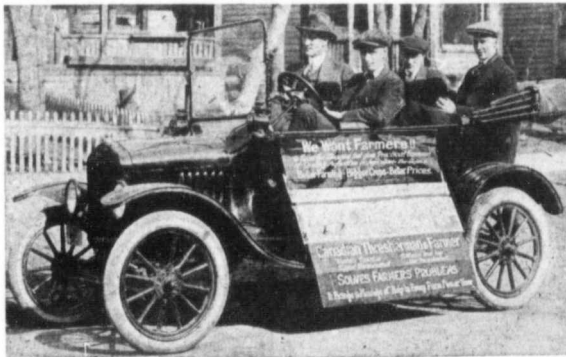
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enough for any part. They go over the machine in the morning and then pound along until night. The time for greasing up depends upon the part to be greased. As a general rule it is better to oil sparingly and often rather than to oil amply at irregular times.

Gears in particular require frequent oiling if used in exposed places. One tractor designer built a tractor with a gear and transmission oiler driven by the tractor drive. In many ways this was an excellent plan for the traction parts were oiled regularly when the tractor was used.

With some of the latter types it is only necessary to keep the gear chamber filled. This is a decided improvement over some of the old machines, which has all gears and oiling devices open to dust and wind.

But regular lubrication in only sufficient quantities to preserve an oil film is the thing, regardless of the type of machine. This is of course done perfectly by an automatic oiler. The newer models have them. It would in many cases pay the owners of older

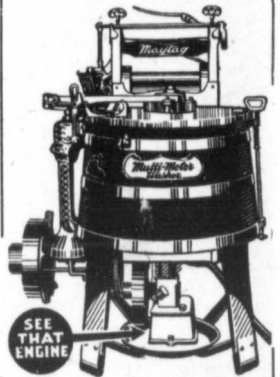


Watch for This Car

THE above shows one of the Canadian Thresherman and Farmer Special Circulation Cars that is now traveling Western Canada in the interests of our subscribers. The men in these cars are thoroughly reliable, and are safe for you to do business with. We have carefully picked these men, and any moneys you pay them for subscriptions to our magazine will be sure to reach our office.

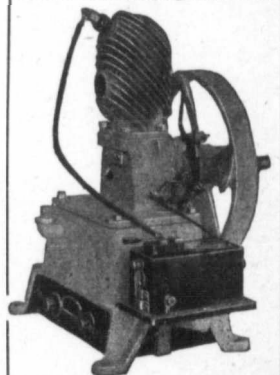
Man! Have a Heart

Maytag Multi-Motor Washer



What the Maytag Multi-Motor Washer Will Do

It operates the washer and wringer. It will operate the sewing machine, churn, cream separator or any other small machine that does not require more than 1/2 H.P. Wash-Day, and that is Work-Day, changed into Play-Day. Good-bye backache, headache, nerve wreck! No woman need bend over the wash tub, as her grandmother did, nor turn the old-style washer, as her mother did, if she has a Maytag Multi-Motor.



The Maytag "Multi-Motor" Engine

The lightest, most powerful one-horse engine ever built.

Two-cycle, air-cooled; operates on gasoline. Warranted in every particular.

- 1 Engine.
- 1 Set of Columbia Sealed Batteries
- 1 Maytag Coil
- 1 Can Maytag Multi-Motor Special Oil.

Complete, ready to go, \$55.00.

For pumping, running fanning mill, and other similar work it has no equal.

ADDRESS:

The Maytag Company
WINNIPEG Limited MANITOBA

types to equip with automatic oilers.

The best plan is to leave an automatic oiler set just as it leaves the factory, unless absolutely certain that a change is needed. So long as pistons and bearings have a good oil film without waste of oil there is little need to change a lubricator. I have known some operators to get into trouble by cutting the oil supply so close that it plugged up on cool mornings and caused trouble. It is better to waste a bit of oil than to injure a bearing by lack of oil.

Most tractor men will agree that most harm is done by scant lubrication than is done by an excess of oil.

So if an operator will be at all careful about adjusting and tightening parts and at the same time keep the machine well oiled, he will have but little trouble. Careful, patient inspection of the tractor and the removal of the cause of a knock or groan may take a bit of time, but both will pay big in the long run.

Keep the Tractor Working

The real secret of success with a tractor is keeping the tractor everlastingly at it. Some capable mechanics are poor tractor operators because they do not keep the tractor at work. Others fail because they overload, while some men cannot make the tractor pay because they do not put a load large enough for real efficient work. Others, too, lose time by trying to plow ground too wet in which the tractor gets mired.

The best results in the field work will be had when a regular schedule is followed. If the tractor is looked over and the tanks are filled at regular intervals, but little time need be spent waiting for fuel, water and oil.

Careful Operation

When plowing or pulling a heavy load one must be careful not to slip the drive wheels until he gets in deep. Neither is it a good plan to slam in clutches and start loads by jerking them. It is also well to hitch to prevent as much side draft as possible. As a rule a fairly long hitch makes easier handling. In soft ground particularly a short hitch puts too much load on the drivers.

Tractors used at road work are strained and require very careful attention. The best operators unhitch from the road machines and pull them out with chains or cable in case they get in a bad piece of roadway. In many cases, too, road machines with a steering device are used, so that the tractor can be hitched long and kept up on the firmer footing.

Belt work is the easiest part of the tractor work. Only by experience can an operator tell when the belt is just right for tension. In backing into the belt one should remember always that the tight

A Complete Line of Known Farm Supplies

CUSHMAN

Growing in Favor Year after Year

MACDONALD 12-24 Tractor

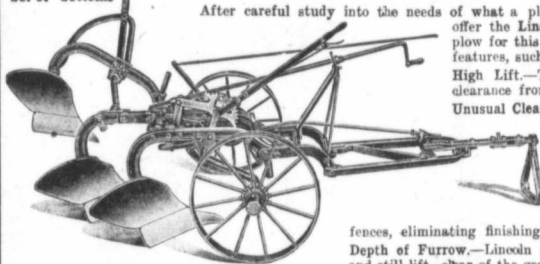


Handles three plows under ordinary conditions and four in light soil. Motor: four-cylinder, four-cycle, 4 1/2 x 6-inch; 750 to 800 r.p.m. Develops 28 to 30 h.p. at belt; 12 to 15 h.p. at draw-bar. Weight, 5,900 lbs. The best light tractor made in Canada. Ask for full particulars and price.

Write to-day.

Note ease in changing number of bottoms

Lincoln Tractor Gang Plows



After careful study into the needs of what a plow must do in Western Canada, we offer the Lincoln. Experience has proved that the plow for this country must have several outstanding features, such as:—

High Lift.—The Lincoln gives six to eight inches clearance from point of plow to ground.

Unusual Clearance.—By eliminating the gauge wheel through our single unit construction, and bending the beams very high in the throat, clogging of trash and stalks is practically impossible.

Hitch.—Here you have a wide range of adjustment and a rigidity so strong as to make it possible to back up to fences, eliminating finishing up with horses.

Depth of Furrow.—Lincoln gives you a nine-inch cut if necessary and still lift clear of the ground with the automatic lift. Weight of plow is directly above the bottoms, insuring uniform plowing depth under any condition.

One-Man Feature.—A single cord, extending to operator, from the clutch, raises and lowers perfectly. A full turn of wheel raises the plows—a positive, powerful lift.

Light Draft is accomplished by our special hitch-bar which eliminates side strain.

These features are sufficient to put Lincoln Plows easily in the lead, but the Lincoln has more than all these.

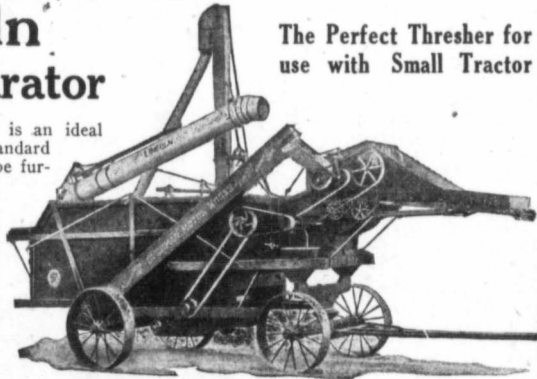
You Can Change the Lincoln into Two-Bottom, or Three-Bottom Plow, by Simply Pulling a Lever.

Nothing to unscrew or lift off. To the farmer who has had an engine doing poor work, pulling three bottoms in unusual soil conditions, this feature at once recommends itself. It is possible to change to two bottoms in hard soil and revert to three when plowing is good.

WRITE FOR PARTICULARS AND PRICES

Lincoln 24-46 Separator

The Cushman 24x46 Thresher is an ideal machine for the owner of a Standard 10-20 or 12-24 tractor. It can be furnished with Hand Feed and Wind Stack, or with full equipment, as illustrated. Very strongly built; exceptional capacity. Cleans the grain fit for market. Also furnished mounted on same truck in combination with our 22 h.p. heavy-duty, ball-bearing Engine.



The Perfect Thresher for use with Small Tractor

Ask for Full Particulars of our Improved 1919 Model

Cushman Motor Works of Canada Limited

Builders of the Famous Light-Weight Cushman Farm Engines

Dept. C Hythe Ave. and Vine St. WINNIPEG

DISTRIBUTING WAREHOUSES: MOOSE JAW, SASKATOON, CALGARY, EDMONTON

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| Tank Heaters. | Auto Accessories. | Lincoln Grinders. | Wagner Hardware Specialties. |
| Straw Spreaders. | Tractor Plows. | Vacuum Washing Machines. | Western Pulverizer, Packer and |
| Lincoln Saws. | Combination Threshers. | Holland Wild Cat Separators. | Mulcher. |
| Incubators and Brooders. | Light-weight Engines. | Smut and Pickling Machines. | Shinn-Flat Lightning Conductors. |

side of a belt runs to the centre. Hence in backing in, the front end of the tractor must be steered or turned whenever the belt runs off the pulley.

In general, nothing helps in tractor operation as does just good, common sense. If any sound

or action of the tractor is not understood, shut down and find what it is. Above all things, give the tractor at least a part of the time for care that the care of the number of horses it replaces would require. Then keep it moving with a good load.

Then Something Happened

—
 "What's become of Jakes?"
 "He's gone all to pieces."
 "You don't say so. Nervous prostration?"
 "No; he looked for a gas leak with a lighted candle."



A V-bottom ditch will not cave in and carries perfectly either a large or small stream

The Canadian Fairbanks-Morse Co., Ltd.
WINNIPEG • SASKATOON CALGARY

Martin Ditcher-Grader

It will dig a ditch, five feet deep, quicker, better and cheaper than any other tool. It is equally as useful on road work. The handiest machine yet devised for farm work.

A catalogue of valuable information on ditching mailed on request.

ments, and to equip such farms; and in the two succeeding months the applications from returned men have been so numerous as to make heavy demands on the organization in practically all the provinces of the Dominion, especially in the provinces of the Great West.

From February 10 to April 19, since the new loan provisions came into effect, 4225 veterans have been approved by the Agricultural Qualification Committees of British Columbia, Saskatchewan, Alberta and Manitoba.

At the present moment the provincial offices of the Board are receiving hundreds of new applications weekly, and the officers are working day and night in order to keep abreast of the demands for land loans.

This would seem to be an effective answer to the statement that the returned men—many of whom are farmers and farmers' sons—are refusing the opportunity thus presented of re-establishing themselves on the land.

Far from admitting the Federal Government scheme to be a failure those who have knowledge of the situation express the confident opinion that it is a pronounced success. Not all the returned young men who left the farm will go back to it. There are constant changes. The lure of the city is strong for many, and it did not need a war to start a movement to the big towns and the bright lights.

But the fact seems to be—and it is proven by the reports of the Agricultural Qualification Committees—that not only are many farmers and farmers' sons who left the farms to enlist going back to the land, but many others who were born on the farm, but moved to the city before the war, are gladly embracing the opportunity of receiving substantial

For Dependable Service

"North Star" Dry Cells and Multiples—can be relied on—always

FOR EVERY PURPOSE

Automobiles	Telephone
Gas Engines	Motor Boats
Tractors	Bell Systems

Their superior construction and quality means satisfied customers and repeat orders

WESTERN MADE FOR THE WESTERN TRADE
Your Jobber will supply you quickly

CANADA DRY CELLS LIMITED
Winnipeg, Man.

The Returned Soldier

ARE the young men of Canada being weaned from the land?

Do the farmers and farmers' sons who went overseas at the call of duty view the proposals of the Government to establish them on the land with that degree of favor which promises a general response?

An article in an American magazine was based on the assumption that nothing was farther from the mind of the average soldier farmer, who is coming back after four years of

warfare to engage in peaceful pursuits, than to follow agriculture as a permanent vocation. It was said that when the article was written more than 50,000 men had returned to Canada and—

"it is admitted that the project (i.e., land settlement), thus far, at any rate, is a failure. . . . The Ottawa government some time ago published a statement that 300 soldiers had taken up land in the West, to each of whom \$2,500 had been advanced. On the other hand it appears that of 150 soldiers who had formerly been engaged on farms in Alberta only three could be persuaded to return to agricultural life, and it is to be feared that this is a typical case."

In short, "when the returned

soldier appeared, having in his possession a permanent discharge from military service, his response to those considerate and philanthropic efforts was 'Nothing doing!'"

An investigation of the facts reveals that up to the end of February the Federal Soldiers' Settlement Board had approved loans amounting to \$1,668,105 to 1218 returned men who had taken up homestead lands. In February the Government, by Order-in-Council, increased the powers of the Soldiers' Settlement Board to permit of the granting of loans for the purchase of improved or unoccupied lands in older settle-



Scene.—Cologne—Present Day

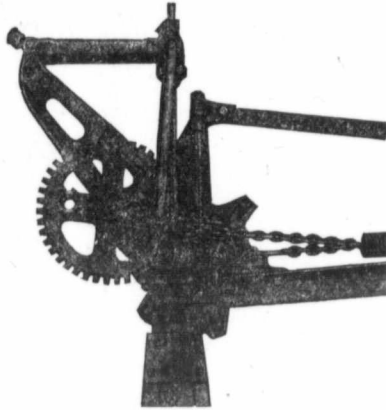
"Gie ye chocolate! Gie ye chocolate! D'ye think I've been bobbin' up and down in front o' yer auld man for four years just tae come here and gie ye chocolate!"

Manitoba Peerless Steel and Wood Wheel Windmills

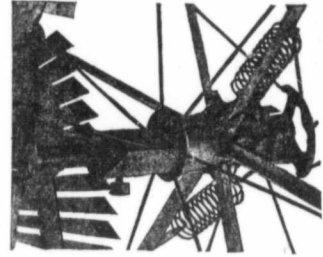
IT is important both from a **safety** standpoint and a **service** standpoint that you have just the necessary **weight** in the engine part of a steel back-geared mill.

Heft and Numerous parts do not always mean **strength** and **long life**.

Our 4 sizes: **5, 8, 10 and 12 ft.** mills are built after this design. We fear no **competition**. A Manitoba will do what any other pumping mill will do.



Our 5 1/2 ft. girted, thoroughly braced Tower withstands all storms.

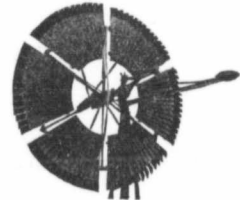


The Direct Stroke principle of pumping appeals to many. This is an improved model, the result of 30 years' experience in the manufacture of Wood Wheel Vaneless Direct Stroke Mills. This Mill proves very satisfactory in windy countries. The fact that 595 of these were sold out of Minneapolis last year, 204 out of Kansas City, Mo., 730 out of Omaha, Neb., and 150 in Iowa, should be good evidence that this Mill is gaining favor in many districts.

Special Features:

1. Tobin bronze bearings throughout.
2. Reversible steel pitmans, eliminating wrist pins.
3. Large grease cavities around shafts.
4. 1 1/4-in. shafts used where many competitors only use 1-in.
5. Extra wide and strong gears.
6. All bearings removable without taking mill down.
7. Extra heavy vane stem, vane truss and vane.
8. 20 gauge unannealed galvanized sheets used in all fans.

5300 of this same type of mill erected in the U.S.A. last year. 900 erected in North and South Dakota and Minnesota. What serves the purpose satisfactorily there, will here.



10 or 12 ft. Vaneless Mill in the Wind. Further particulars furnished on request. Let us know your needs and we will advise you our nearest agency.

Manitoba Engines Limited

BRANDON, Manitoba

PHONES 2943-2964

IDLER FOR A SMALL ENGINE

IN many small electric or pumping outfits employing gas engine power the operator is troubled by having continually to shorten or otherwise adjust the length of the belt during long periods of use. This trouble may be greatly overcome by using an idler or secondary

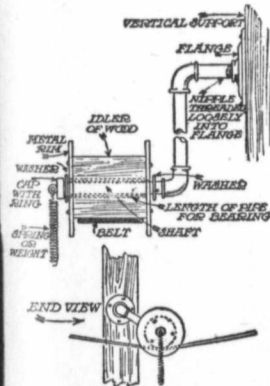
and of nearly the same diameter. The bearing consists of a piece of pipe the same length as the drum, driven through a hole in the exact center of the drum and making a tight fit. Two metal disks are screwed to the ends of the drum forming rims as shown in the accompanying sketch.

The supporting bracket is constructed of piping in the shape illustrated, using ordinary fittings for the purpose. One end of the bracket makes a running fit through the bearing in the drum, which is held in place upon it by means of washers and capped end of shaft. The top end of the bracket should be threaded loosely into a flange. The flange should then be mounted on a vertical support of some kind which will allow the idler itself to rest upon the driving belt and the bracket to incline at a considerable angle as shown in the end view.

Next, sufficient tension should be applied to the idler by means of a light spiral spring or weight fastened to the cap on shaft. When the engine is not in use the tension should be released, otherwise the belt will be subject to constant stretching.

No definite dimensions can be given, as these depend upon the size and power of the engine used.

L. B. Robbins.



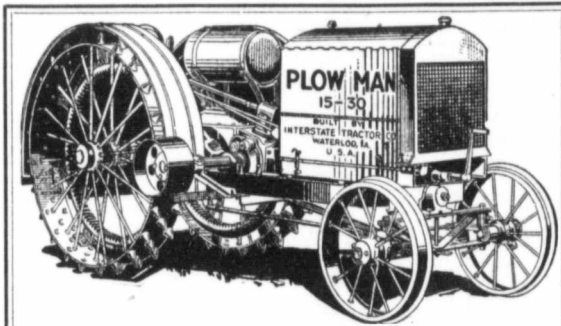
Horses and Carhartt Overalls

Surely, the things that impel a man to choose a first-class horse should also induce him to buy first-class overalls. The one big thing you will like about my Carhartt Overalls is that they are thoroughbred all the way through, and that means thoroughbred service, neat and finished tailoring and heavy denim cloth. Every seam is double stitched; every button is reinforced. Sizes are correct, extra-large handy pockets, high back, high bib and generous seat. Behind it all is my guarantee of satisfaction and 25 years of knowing how.

Hamilton Carhartt Cotton Mills, Limited
Toronto Montreal Winnipeg Vancouver

Hamilton Carhartt,
President.

Don't Fail to Renew your subscription if it has run out. There are Great Things Coming!



PLOW MAN

All Standard Farm Tractors

Have made their name ON THE FARM

Made it in year round honest service under all sorts of conditions—the only real way to test any tractor. The PLOW MAN has made good, and the names of PLOW MAN, "satisfied" owners in Manitoba and Saskatchewan, to whom you can write for first-hand information will be forwarded upon request. THEIR TESTIMONY will convince you of PLOW MAN SUPERIORITY as an all-round Light Farm Tractor. The PLOW MAN is BUILT FOR FARM SERVICE. It is a one man outfit, burns kerosene: its all-standard quality construction gives it greater reserve power and greater strength under strain than any other light tractor on the market of similar weight or rating.

Write to-day for full details of the PLOW MAN, its special features and record of service. Get your order in early if you want quick delivery.

Western Tractor Company Limited

509 McCALLUM & HILL BUILDING

REGINA, SASK.

Distributors for Saskatchewan and Southern Alberta

The Northern Implement Company Limited

33 WATER STREET

WINNIPEG, MAN.

Distributors for Manitoba

An Immense Canadian Seed Exchange

THERE is really nothing to gape at in the hallucination that to see great things and big things one must get away from the home town, from one's own familiar environment, whatever it is in size or character.

That has always been a universal peculiarity of the human, and the great Teacher but expressed a world-old maxim when He said that "A prophet is not without honor save in his own country."

Brandon, Manitoba, is probably like every other community in the fact that it has taken time and a lot of deliberation to awake to the fact that it houses among other considerable things one of the very largest and most completely equipped seed distributing organizations in North America; and Brandon is by no means a sleepy town.

The ordinary citizen had been accustomed for a number of years to admire the handsome structure of reinforced concrete, the city's largest and finest building, but he had little idea of what was going on inside.

The Board of Trade, however, with the public-spirited object of giving the citizens some faint idea of this unsuspected hive of industry which had been rapidly expanding under their very noses, arranged with Mr. McKenzie, president of the A. E. McKenzie Company and founder of the business, to have a public reception on Good Friday.

From Brandon City and from a wide radius on all sides of it, large numbers of interested folks took advantage of the opportunity and poured in from shortly after the noon hour until late in the day. The entire staff was on deck as well as the members of the board of trade and others who knew the geography of the plant for the purpose of directing the visitors and explaining details of the wonderful labor and time saving machinery installed for cleaning, weighing and packing seed, etc.

Specifications in "superficial area" or figures of any kind can give no conception of this splendid seed distributing centre. Its total floor space is roughly two acres, but it's the soul and atmosphere of the place that seizes one.

It is something that has grown like a great oak shooting out its far-flung branches as it felt the need to push outward and upward. It would hardly be possible to duplicate the plant, there are so many provisions made in perfect keeping with the fitness of things for the recurring afterthought, dovetailed into a com-

pass that suggests the last word in space economy.

The machinery alone in the building cost somewhere in the neighborhood of \$100,000, but the value of the seed and other stock at the date of inspection must be counted in hundreds of thousands.

The office equipment alone is an amazing tribute to business ingenuity and foresight, even the book-keeping being "done by machinery." Over one thousand varieties of seed are kept in stock, many of them representing immense bulk and value, but so perfect is the stock-keeping system that the balance carried over on each of these is known every hour.

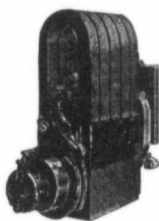
As an instance of what can be done in a brief space, a 2,000-bushel delivery of grain from the spur track can be unloaded and elevated to the top of the building, a height of 183 feet, the grain all cleaned and weighed, and the whole operation completed in an hour.

Space is not available for many particulars of surpassing interest; moreover, anything of the kind on paper gives the baldest and altogether inadequate conception of what the McKenzie seed business really means. Its rise and progress is certainly one of the wonders of Western Canada, and it takes no second rank in point of economic importance and value to the West in all that affects its agricultural progress.

Mere commercial instinct does not explain the wonderful success of this great business enterprise (although that has been strongly in evidence all through its career) but "satisfaction to the people" is the keystone of the concern.

One can't give a cast-iron guarantee with seeds, but the McKenzie Company does the very next thing to providing that security. There is no precaution that can be taken which is neglected, so that everything that comes in is individually tested before it goes out, and where a doubtful situation arises, the customer always has the benefit of the doubt.

Good seed is at the foundation of all success in growing things, and any institution that specializes in judging good seed, in finding it or growing it, is one of the greatest bulwarks of Western life, because the West hangs by the seed and the soil. To this extent the McKenzie Seed Company has earned the confidence and regard of the public it appeals to, and because it carries the load of responsibility and risk that it does, there is probably not a single gardening enthusiast or grain grower who will grudge it all it can carry in material reward.



K. W. High Tension Magnetos

TRACTOR OWNERS

Send for our Catalog of Magnetos and Parts to Fit all Makes

We repair all makes Magnetos, Coils and LIGHTING PLANTS

PROMPT SERVICE WORK GUARANTEED

Acme Magneto Works, 226 FORT ST. WINNIPEG

DO NOT SCRAP BROKEN CASTINGS

We make them equal to new at low price. Cylinders, Engine Bases, Gear Wheels, Steam Boilers, in fact any broken or cracked parts, welded and guaranteed by us. Scored or worn cylinders re-bored. Please write for our circular and estimates. We were the first to operate the OXY-ACETYLENE WELDING PROCESS in the West. Established since 1911.

MANITOBA WELDING & MFG. CO.

56 and 58 Princess Street, WINNIPEG, Manitoba

TRADE **SAWYER** MARK
Registered

STITCHED CANVAS BELTING

PLEWES LIMITED (Distributors) WINNIPEG

On sale at your local hardware store.

LOCATING AND PREVENTING TROUBLES IN THE TRACTOR IGNITION SYSTEM

Continued from page 12

a center punch mark on the flanges of the driving coupling so that the magneto can be put back in exactly the same relation to the driving shaft as before removal, otherwise the engine will be out of time, and even if it should run, a lot of fuel may be wasted besides lacking power. The operator must be very careful when lubricating the magneto to only use two drops of clean thin oil to each bearing every morning.

Avoid wrapping canvas and cloth around the magneto to protect it from rain. Most magnetos are designed to be weather proof, and the tractor manufacturer generally gives them additional protections as well. A heavy canvas or cloth cover will be a detriment, because it will get soaking wet and hold the moisture in contact with the magneto a long time after the rain has gone. If some protection seems to be necessary, a waterproof leather cover may be used, but it should be removed when the weather is dry, because these sometimes absorb moisture and rust the magneto.

The best insurance against ignition is cleanliness, and, if magneto, wiring and spark plugs are kept reasonably clean, the wiring arranged so it does not rub or fray against any part, the magneto given a little oil every morning, then, unless there is some accident, ignition troubles will be a thing of the past.

Laugh and the world laughs with you,
Weep and you weep alone;
For this brave old earth must borrow its mirth,
But has trouble enough of its own.
—Ella Wheeler Wilcox.

TOWNSLEY SYSTEMS of VENTILATION LIGHTNING PROTECTION

Pays for itself in three years.

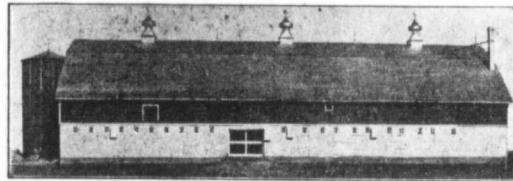


Protect your stock and buildings

Install While Building

The time to install a ventilating system is while your buildings are being erected. Each Townsley system is specially designed and constructed for the building which it serves. While the principles of ventilation are simple, their application is a scientific problem that can only be satisfactorily solved by scientific methods. We have included the best that science offers in the Townsley system, and can install while you build, a system that will add dollars to your income and years to the life of the building.

Fresh air means strong, healthy, better paying stock



If it is worth erecting it is worth protecting

Barn of Andrew Wishart, Portage la Prairie, Man., equipped with Townsley System

If you will send us the roughest sketch of your barn interior, giving dimensions, we will send you—without any obligation on your part—complete plan in detail of our system adapted to your barn with cost of same. It will pay you to an extent of which you have no conception if you will give this your immediate attention.

Townsley Mfg. Company, Ltd. BRANDON, MAN.

When writing Advertisers please mention The Canadian Thresherman and Farmer.

Stop The Gopher Offensive!

June 1st always brings hordes of young gophers. "My Own Gopher Poison" will save the day. Call on your dealer now for reinforcements.

LOOK FOR THE SIGNATURE OF ANTON MICKELSON THE TRADE-MARK OTHERS CANNOT USE.



OUR WOMEN FOLK

CONDUCTED BY
PEARL RICHMOND HAMILTON

Beauty
BEAUTY is the bride of morning,
When flower and web are robed in dew,
By brooding night; for sight adoring,
For creature eye when waked to view.

Come, East, in radiant glory,
Come, Voice, with richest song!
Come, Truth, and bring your story
When void to life took form.

Beauty is the bride of morning,
When youthful mind is bent to right,
So fruits sublime, in time performing
With martial glory in their might.

Come, Love and Joy and Peace about-
ing,
Come, Faith, with all your careful
testing,
Come, Good, with gentle new surround-
ing,
And march in triumph to your resting.

The above poem is rich in the expression of a mind saturated with the treasures of nature, a mind of broad culture and unusual knowledge of literature. We drag our brains so much with material ambitions that our vision is denuded to these wonderful pictures at our front door. And when one with spiritual enthusiasm paints a picture like this we pause and lament at our narrowness of vision.

Have I gone out on a morning such as described above and thought: "Life is full of gloom and ugliness—I'm discouraged." Is not this lack of appreciation of the beautiful suggestions of life's lessons about us a form of mental and spiritual profanity? We are grateful for the wonderful picture given us by the author of this poem "Beauty."

The Mint Where Gold of Character is Coined

By P. R. H.

THE convention of the Manitoba Educational Association recently held in Winnipeg was without doubt the best ever held in the Province. Many outside people were greatly helped because the program was broad and well handled by authorities on every subject on the program.

In the first place it is a splendid satisfaction to know that we have as Minister of Education a man broader than politics and personal ambition. Dr. Thornton stands sincerely for an educational campaign that will develop a better Canada. His outline for real progress emphasizes the value of educational training as necessary to real and lasting national power. We mothers who are so vitally interested in the welfare of our children realize the importance of Dr. Thornton's programme in promoting educational development in the province.

We find in our experience with boys and girls and men and women who desecrate the law that the cause is not so much due to birth as to unfit training and unwholesome social conditions in their environment.

The year before us is one of great doubt and uncertainty in almost every direction, and one fact is clear, our schools have a great and most important task before them to combat the insidious evil of Bolshevism by teaching the principles of good citizenship, in season and out of season, as they have never been taught before, and by giving every child a good understanding of the English language and Canadian ideals.

In teaching citizenship there should be a real health crusade which in rural communities can best centre in the schools. It is not enough to teach grammar and spelling, we must teach our children to

love the beauty of the English language. They must reverence it. Slang profanes our beautiful English language.

Let us teach them early some of our classics.

One time when I was teaching I announced to the superintendent that I was going to have a class of young children study "The Lady of the Lake." He asked me if I were insane. I replied, "Examine my mental condition at the end of three months when we shall have finished reading 'The Lady of the Lake.'"

We studied the beautiful language in Scott's wonderful poem, we talked about it, we sang it, we travelled in our imagination to picturesque Scotland. We learned to love the Lady of the Lake. One morning the dullest lad in the class was absent, and when he returned he asked me to tell him the part he had missed.

vividly the pictures taught me when a young child, the stomach with its sores caused by intemperance and the lungs wasted away through lack of fresh air.

Children who are healthy, well educated and soundly trained will keep our country safe for democracy. Ignorance produces chaos.

Nellie L. McClung says: "The people will rule but if we are to have a safe democracy the people must be educated, intelligent, spiritually minded citizens."

Education is the solution of this present unrest. Crime is the feverish pulse beat of a body sick mentally and spiritually. The awarding of medals in memory of our heroes is worth encouragement in our schools. For example, the Alan McLeod medal in the Stonewall school was recently won by Miss Jean Booth in an oratorical contest.



A Charming Combination: Canada's capabilities in raising fine children and fine cabbage

Then the children wanted more of Scott. All well regulated Scotch families are brought up on Scott. Let some of the rest of us take advantage of the same mental tonic. It is a patriotic tonic. Yes, Scott is a patriotic tonic. I would rather have my children read one good book ten times than ten wishy washy books once.

Last week I saw in one of our book departments a whole table devoted to L. T. Meade's books.

What a crime to the girls! There is nothing to the stories. The characters are spineless. I have found that girls who serve terms in the detention home like to read the L. T. Meade books. Is that reference not enough? The tragedy of wasted time spent in such reading!

Robinson Crusoe is a story children need, it is a good story and never grows old, and the language is real English.

I have wondered why hygiene is not taught to the children. There are books and charts so helpful in picturing contrasts of the healthy and diseased parts of the body and their causes. I remember

The medal was presented by Dr. and Mrs. McLeod in memory of their son, Lieut. Alan A. McLeod, V.C.

Major Newcombe said in his address before the Manitoba Educational Association that the whole future of the schools depended upon the attitude of the public mind and the creation of a wholesome public sentiment.

Dr. Thornton said: "In pre-war days the greatness of Canada was measured by those who would advertise her, in fine wheat lands, timber areas, mines and water-power—now her wealth was estimated in the calibre of her men who went to war and her women who nursed overseas and her women who met bravely and without complaint the war burdens and pestilence at home!

The splendid hero spirit was not confined to the men who came from the great centres or the finest schools, said the speaker, but belonged in equal proportion to the men who had been boys in the one-roomed schools of the pioneer districts. It was the spirit which the schools had bred into these lads which Dr. Thornton hoped to see instilled into

the boys and girls of this generation. The greatest task before the country is the development of the Canadian citizen. They should learn as the Romans of old had learned what it means to be 'free born.' For them had been bought with the sacrifice of the blood of heroes and the anguish of women and children the heritage of being 'free-born' citizens."

I wish we had space for a more complete review of the splendid convention. The speakers were sincere, convincing and interesting. The teachers seemed eager for information that would help them in their noble work and they were not disappointed.

Perhaps no session was more interesting than that held by the teachers of the foreign communities. The very atmosphere was charged with spirit and enthusiasm. Anyone present felt that "Life is real, life is earnest." This splendid patriotic movement was started by our Minister of Education, Dr. Thornton, and he and Mr. Ira Stratton have directed the work with splendid results. A wonderful evidence of their work is manifested by the sincere loyalty of their teachers. The fine harmony among them is very pronounced. Mrs. Rose Hamby read a very remarkable paper. There were no theories or flights of imagination. It was practical and the result of actual experience. She left her own comfortable home to do her bit for her country in a foreign community, and she is making that community Canadian from the tiny tot who goes home to sing "O Canada" and "Rule Britannia," to the father who attends night school to learn the true value of Canadian citizenship. The mother, too, feels her influence for she learns to create a Canadian home like the model of the little school cottage where Mrs. Hamby lives, and where the mothers go to learn to sew and cook and to take care of their babies as the Canadian.

There was nothing mechanical or dry on the program in that session. It was alive with human interest and accomplishment.

I am thankful our H. E. S. is planning to help these noble teachers who, in the same spirit of our soldiers, are sacrificing personal interests in the great work for our country, and let us women do everything in our power to catch the vision of the great mission of this movement. The successful school must be the community centre, the sacred temple of Canadian ideals. Let every community see to it that no ignorant person lives in their midst.

Dr. Focht in his address said there is not in Denmark a single illiterate person less than 75 years old. Dr. Focht in referring to the history of Denmark said:

"Great tracts of forests had been wantonly used up. The land windswept and arid had become 'waste.' The people of Denmark had some 150 years ago been through a devastating war and were bowed under a huge war debt. Leaders had risen up and demanded revision of the school system as the only way to put Denmark on her feet again. Their advice had been followed with the result that Denmark is to-day recognized as the world's greatest scientific agricultural nation. This had been made possible through giving Denmark the 'best rural school system in the world.' This school system had for its fundamental principle to teach the people—beginning with the children of six years old—how to make the land, honor it, to produce much from it and to manufacture the raw material produced on it."

"The folk schools which are found everywhere throughout the rural dis-

PURITY FLOUR

"More Bread and Better Bread"



The best only is good enough
for those who farm.

PURITY FLOUR

tricts, develop not only men skilled in the science of farming and women skilled in housewifery," said the speaker, "but they make 'thinkers.'"

Let us, then, do everything in our power to stimulate the atmosphere of our schools with true Canadian principles. Our soldiers are coming back from their noble conquest over all that tramples down the rights of humanity, and they've brought back with them a vision of life bigger than creed and class. They understand the meaning of real religion, they have answered the question, "Am I my brother's keeper?" Yes, with a spiritual pen dipped in the best blood of Canada. What is your part and mine in this great educational movement, this mint where the gold of character is formed?

A TIP

Johnnie (to new visitor)—"So you are my grandma, are you?"

Grandmother—"Yes, Johnnie, I'm your grandma on your father's side."

Johnnie—"Well, you're on the wrong side; you'll find that out."

Notice

EVER since my childhood a deep reverence for the W.C.T.U. has made me anxious to see their organization supported with enthusiastic interest. Perhaps it is the memory of the little white ribbon grandmother always wore, or it may have been the pictures of ugly homes made happy and cheerful through their influence, or their recent efforts to create clean temperate environment for our soldiers at the camps, at any rate they always stand for splendid aid toward clean, helpful, practical patriotism. Just now they are centering their efforts toward the comfort of our returning soldiers by providing hot drinks free at the Y.M.C.A. hut.

In the beginning of this work they raised the money from the "Trinket Fund." Now that is gone and they are in need of funds. Hot and cold drinks will be provided during the summer months. Every mother of a returning soldier will feel grateful to know her son can get a drink provided by the W.C.T.U. and every other woman will be glad to know this is taking the place of the awful bar. Let us all contribute to this worthy fund. Send all contributions to Mrs.

W. J. Meacham, treasurer, District W.C.T.U., 749 Westminster Avenue, Winnipeg.

It might interest our readers to know that a group of business girls volunteer their services every Sunday to serve as waitresses at the hut where the W.C.T.U. furnish the drinks free.

Mother's Corner

OUR DAUGHTER mine, whose future is my prayer,
May thou be richly blessed with just of care

Sufficient to enable and refine
The character the sweetness that is thine'
May purity and love in thee abide,
Patience and gentleness, whate'er betide,
That, tho' thy path may lead through
woe or weal

Thy children can look up to thee and feel
Thou has been ever noble, just and good,
A perfect flower of glorious womanhood."

Our Baby Contest

HOW many mothers will send in the pictures of their babies under four years of age? A prize of \$25 is offered for first prize, \$10 second and \$5 for third. Your letter on the care of your little one may save the lives of ten babies. A mother of a sick baby asked me last week for the back numbers of our magazines that contained the letters from mothers in our last contest. She said: "I remember some of the letters, and if I could read them again I might be able to save my baby." We are conducting this contest in the interest of child welfare. Let every mother who reads this help by her experience. There are many young mothers who are inexperienced. Send all letters and photos to my private address, which is 983 Grosvenor Ave., Winnipeg. P. R. H.

This is the month of Mother's Day. Let us read the old poem.

The Old Armchair

I love it, I love it! and who shall dare
To chide me for loving that old arm-chair?
I've treasured it long as a sainted prize,



Fit Your Ford
With a
SIMPLEX

Power Transmitter

Make every jot of power count. The SIMPLEX fits perfectly rigid, and is easy on the car. Once fixed, need not be detached when on the road. Use it for running the grinder, washing machine, wood saw, cream separator, fanning mill and other light machinery. Sold with 5x4 or 8x5 pulley. Develops from 6 h.p. up. Nothing complex. Nothing to get out of order. Attached or detached in 5 minutes. Send P.C. for free circular.

Price complete (5x4 pulley), \$19.75. Price complete (8x5 pulley), \$22.00. f.o.b. Winnipeg.

Dealers wanted in unrepresented territories.

The John Murphy Co.
509 McIntyre Block, Winnipeg

STRYCHNINE
for **GOPHERS**

Mickelson's flavored Strychnine, Soluble, 50 per cent cheaper than any other strychnine. Sizes one-half ounce and one ounce. Put up in soluble capsule in cartons, labelled with full directions to use as a gopher poison and for other animals. Ask your druggist or write us direct.

Manufactured solely by

PRAIRIE CHEMICAL CO. CAN. LTD.
WINNIPEG MAN.

FREE



GIRLS!

Without a word, find a suitable penny you can easily obtain this beautiful pendant, chain, a sparkling bracelet, and a diamond ring and a handsome mounted bracelet watch, just like the finest jewelry store sell at \$5.00 to \$10.00 each. This handsome gold finished pendant is the very newest design, and has a sparkling manufactured Ruby or Sapphire setting, with lovely heart drop. The chain has fine close links and is full 15 inches long. The beautiful ring is warranted gold filled and is set with three beautiful brilliant cut emeralds like diamonds. Each girl can also win the beautiful little Watch with its reliable imported movement and porcelain dial—just the prettiest and most useful watch you have ever seen.

GIRLS, write today and get only 15 bottles of our lovely new Coronation Bouquet Perfume, a delightful blend of the most exquisite colors. Introduce them among your friends at only 15c a bottle. It's easy. They will like hot cakes. Return our \$2.70 when you sell them and we will promptly send you, post-paid, the beautiful birthstone pendants and ring just as represented, and the beautiful watch bracelet you can get without selling any more goods by simply showing your grand presents to your friends and getting four of them to sell our goods as you did.
Don't delay, girls. Write today. You take no risk as we take back unused goods and give you perfume for what you do sell. Address—1118.

THE REGAL MANUFACTURING CO.
Dept. D. 10 Toronto, Canada

SHIP YOUR FURS AND HIDES TO McMILLAN FUR & WOOL CO.
277 RUPERT STREET WINNIPEG MANITOBA
WRITE FOR CIRCULAR
WE OPEN OUR DOOR TO THOSE WHO SHIP TO US

I've bedewed it with tears, I've embalmed it with sighs,
'Tis bound by a thousand bands to my heart;
Not a tie will break, not a link will start.
Would you know the spell—a mother sat there!
And a sacred thing is that old arm-chair.

In childhood's hour I lingered near
The hallowed seat with listening ear;
And gentle words that mother would give
To fit me to die and teach me to live.
She told me that shame would never betide,
With truth for my creed, and God for my guide;
She taught me to lip my earliest prayer,
As I knelt beside that old arm-chair.

Sunday Evening

We love Sunday evening in our home, for we have an hour of Bible stories and songs that fascinate the children. Somehow the children do not get at Sunday School any more those pretty colored cards with the Sunday School lesson. I remember them so well. My twelve-year-old used to get them when she was six years old for some reason the powers that be in ordering the Sunday School supplies stopped the pretty cards. The charm of going to Sunday School was badly damaged then, as far as my little girl was concerned.

So one day I ordered colored picture cards, attractive little two and three cent Bible stories illustrated cards with the golden text to be colored, other books with Bible stories simply told and some primary song books with beautiful little motion songs. Now Sunday evening is the happiest time of the week, and the children are learning great lessons of truth in such a happy way. Last Sunday they invited a little friend in, and she asked if she might come every Sunday evening. It is a bit of home life that the children love, and they will learn something about the Bible from their mother.

MOTHERS' LETTERS

Dear Madam:—
I saw your ad. in The Canadian Thresherman and Farmer asking for a picture and card of baby, so I thought I would try my luck, and also give you my experience with him. He is my first baby. He was born on Dec. 3rd, 1917, and weighed 7½ pounds, he was strong. I nursed him and he gained in strength and flesh right along, and when one month old he began to have gas pains, I gave him peppermint in a little water in a bottle. I also gave him catnip tea, which is very good, it is also good for a cold if given in the start. I gave warm water in a bottle, always boiled water, he took two or three a day. I think water is very good. I gave him his bath in the basin of water every morning but at night I just gave him a sponge. When he was four months old I started to feed him bread and milk. I scalded the bread twice with boiling water, draining it off each time, then put on milk and a little sugar. Scalding it makes it easier to digest.

He had his first two teeth the first week of the six month. As I was not very strong I had to wean baby, so I started when he was six months old. I gave him cow's milk (fresh) boiled water, half and half on the start and a little sugar. I gave him the bottle in the day time and nursed him nights. I had him all weaned off the breast by seven months. He also had a very bad cold in the sixth month. I only used goose grease and turpentine rubbed on his chest and back. This is very good when it is a real bad cold, and linseed oil and turpentine is good to take inward for coughs and colds, and Dr. Thomas' Eclectic Oil is very good for sore throat and cold. He also had a bad attack of eczema and I used a skin and scalp

contest I had her entered in some few months later, Professor Farmer classed her as of "decidedly superior physique and mentality, quick, sensitive, impressionable, affectionate and independent, musical talent." In a letter direct to myself, however, he, too, spoke of the weak circulation, but seemed pleased to imply there was no danger but she would develop into the tower of strength she is to-day if I would continue my fresh air system with her.

There was no surprise for me in the warning as to weak circulation, the only wonder was that she was as strong as she was, considering I had been a sufferer with hip trouble ever since a horseback accident that befell me in 1909, but I had determined for all that not to go down to my grave childless, nor having one to let it die. So even when too weak to lift or bathe her every day I gave her an abundance of fresh air, sleep and all the nourishment she could assimilate. A glorious reward was mine, so it seemed to me, the girlie never was ailing, never had a colic pain, croup or minor ailments so many babes suffer, and steadily gained until in her second summer a wave of infantile paralysis passed over us. Some dozen babies within the radius of our acquaintance died, and another we knew well left cruelly crippled. I was not frightened when mine was



Baby Earl Ellis Stinson

prescription called D.D.D. Ordinary Strength, which cured his eczema.

I have told you all about baby up to seven months and three weeks old. That is how old he is in this picture, and I have not got a late one of him. He weighed 21 pounds when picture was taken. I do not know how much he measured around chest, or his height, but he was in a healthy condition. I gave him Baby's Own Tablets when he was cutting teeth. I hope you will be able to get something out of this letter which will be useful to you.
Baby is 16 months old to-day. His height is 30 inches, chest measurement 21½ inches, without clothes on, weight 26 pounds. He has twelve teeth. He walked when he was 13 months old. I had him weaned off the bottle at 10 months old. His name is Earl Ellis Stinson.

Mrs. Roy S. Stinson

Dear Pearl Richmond Hamilton:—
Seeing the little article you gave in February Thresherman asking letters from mothers, I shall try and give what may help other mothers from my experience in caring for my own offspring.
At birth the child was apparently strong and normal in every way, but a baby specialist in Toronto with whom I communicated later, warned me to beware for her circulation was very weak. You who understand what that means realize how easy the little life could have been snuffed out. Again, in a



Bertha Maria MacFadyen at eighteen months



SALESMANSHIP

"This duck scraggy, Mum! Why, the last customer wot come into this shop says to me, she says, 'And 'ow much is that goose?'"

struck down, simply kept her quiet in a cool room, but did not allow her a doctor to call, for I had a "hunch"—being Scotch, a strong one—that once that doctor got his hands on her he would kill her surely. The only one within reach being a poor, dissipated specimen. Anyway, from all I had read and observed on the subject drugs never helped in such cases, and as to nursing her I felt the best thing one could do was trust God, and let the child rest quietly. She could not take nourishment except through a straw for a while, but after a little was able to be moved, and her daddy carried her from room to room and out into the sunshine on a pillow. Eventually she recovered, for though no material remedies were used even the nervousness that followed was overcome by following the advice of the baby specialist, I again communicated with, which was in brief to let her alone, feed all the milk, eggs, meat broth, etc., she would take, and let her play out-of-doors barefoot when weather permitted.

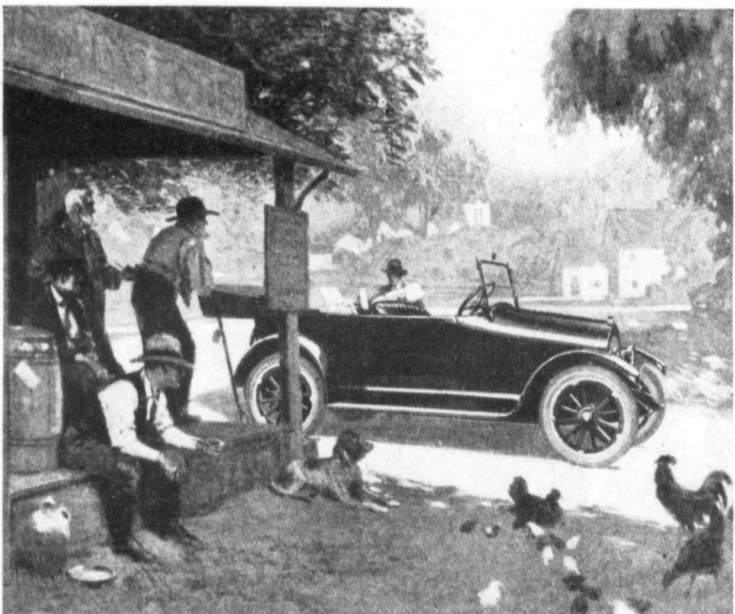
The next summer again came a little setback. I had to help in the hay field and must needs take the child along. She suffered a partial sunstroke but even that and its attendant diarrhoea were overcome in two days without material means except a little lime water I made myself and added to her drink when she

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The practical utility of the Overland Model 90, shown here, has attracted the attention of entire communities and created a sentiment of approval that is constantly increasing. In awakening public appreciation to the economical value of the automobile in general, the Overland has played an important part. Thousands of these dependable cars are to-day serving Canadian owners efficiently and economically. Many of these cars are Model 90, a car of such attractive appearance and sterling performance that owners everywhere praise its economy and practical value. Public appreciation thus won and expressed is your safe guide in buying a car.

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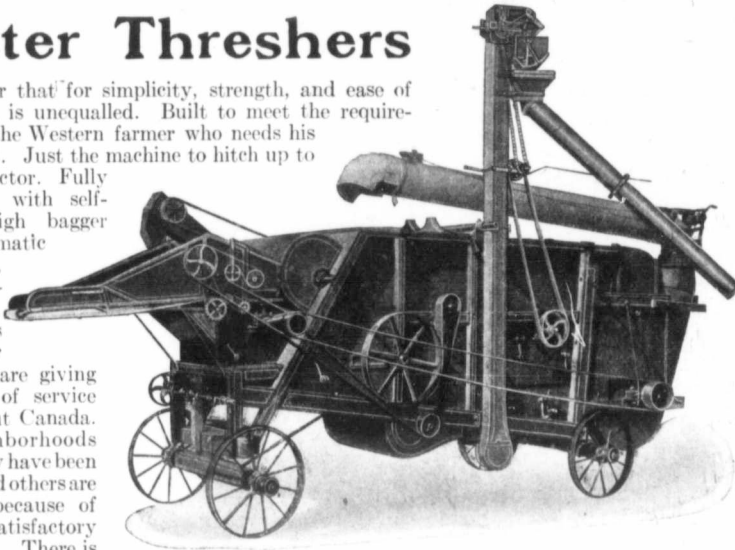
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A thresher that for simplicity, strength, and ease of operation, is unequalled. Built to meet the requirements of the Western farmer who needs his own outfit. Just the machine to hitch up to a light tractor. Fully equipped with self-feeder, high bagger with automatic register, and wind-stacker. Hundreds of our threshers are giving the best of service throughout Canada. In neighborhoods where they have been introduced others are ordered because of their satisfactory operation. There is one in your community—look it over before you arrange to thresh this year's crop.



Sizes fully equipped—22 x 36—26 x 42

Write for catalogue giving full description of this machine.

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To Our Readers

We are sure our friends will bear with us in the late delivery of this and probably the following two issues. No explanation is necessary. We have made every move that was humanly possible in our little way to avert the conditions which have been brought about. We will continue our efforts to the end that the RIGHT THING shall be done and that the generous spirit shall predominate in this day of adjustments.

E. H. HEATH CO. LTD.



GENUINE DIAMONDS

CASH OR CREDIT
Write for catalogue to-day
We trust any honest person

JACOBS BROTHERS

18 Toronto Arcade : Toronto

asked for drink. One great lesson I then learned is never give an ailing child anything in the way of food or drink unless the child requests it. Every time anyone did she would spew up and cry with the attendant pain. By the afternoon of the first day her passages were but a green slime and very, very offensive, but by that time the next day they had decreased in frequency from every few minutes to nearly normal, and by the third day was able to sit up and move about a little though very weak for the next couple of days after. Within a fortnight, however, she had entirely recovered her spirits and strength. I make special note of her good recovery because my two near neighbors had each

a child near the age of mine, who when the same summer were stricken the same way, not only resorted to drugs and doctor, but were more than treble the time in recovering strength.



Bertha MacFadyen at 4 years with her faithful pal

At birth this girlie weighed 8½ pounds and at 6 weeks had increased to 13 pounds. At birth she was 22 inches in height with broad shoulders and full chest. At 22 months we had her entered in a baby contest by the terms of which each child had to be examined by a doctor and his written report filed. Those reports were mass of detail, for each member of the child's body must needs be examined and reported on in detail from the condition of the scalp to the toe nails. I was thinking the examination of the toe nails far fetched, but the doctor explained to me that any tendency toward tuberculosis in a child first manifests

itself there. After he had the child stripped for that examination and I saw the details of the report I realized that by just such examinations many a parent was undoubtedly being made aware of any defects that might exist in their babies and act in time. At that time mine weighed 27½ pounds, chest circumference 22 inches, height 34½ inches, circumference of head 13½ inches. At present, five years old, she weighs about 50 pounds or a little over. She has not been on the scales since autumn when she weighed 47 pounds, but am sure she has gained considerably since. She stands 46 inches in heelless slippers, chest 36 inches, taken tightly over clothes.

Mrs. Agatha MacFadyen.

Bagot P. O., Man.
Feb. 1st, 1919

Dear Mrs. Hamilton:—

I see where you are starting another baby contest. I am going to enter this one.

My little girl was 17 months old when this photo was taken. She is now three years and three months. When she was born she weighed just 3 pounds. She was premature. She was always breast fed until she was 10 months old, when I weaned her. She never had the bottle after I weaned her. For breakfast she



Baby Norma Trotter (whose Brave Daddy was Killed in Action in the Great War)

had porridge and milk at 8 a.m., at 10 a.m. I gave her a cup of milk again and an arrowroot biscuit. For dinner she had a little potatoes with butter and milk and also some bread. For supper just milk and bread and baked apple. Of course, I did not give her the same thing all the time. She also had custard and other light meals.

She was always a healthy baby and very good. I always kept her outdoors as much as possible. After her morning bath I used to put her outside in the sun to sleep. Also in the afternoon in winter as well as summer she slept outside. I always put a hot water bottle at her feet when she was outside sleeping in the winter.

Some mothers believe in giving their little ones castor oil all the time. My little girl had just two doses of castor oil in her life. I gave her Baby's Own Tablets when getting her teeth, and she had no trouble at all getting them. She certainly is a healthy child. Her cheeks are like roses all the time. She has her afternoon sleep yet, and as soon as she is awake she wants to go outside and play. I believe in children being outside as much as possible.

She now weighs 32 pounds, and I think she is a well built child for her age.



Use
Old Dutch Cleanser
for quick, thorough and hygienic cleaning in the Dairy and for all general house-work in the farm home



She is my first and only child, and, of course, I had to study a lot to know how to feed her after I weaned her, but I am glad to say she has got along just fine.
Her daddy was killed in this terrible war. He was so proud of his dear little baby girl. Her name is Norma Trotter.
Yours,
War Widow.



"A Broth of a Boy"
Frank Russell Wilson at 13 months

WOMAN AND DEMOCRACY

(This article, pregnant with important problems, was sent us by one of our Home Economics women.)

I HAVE often searched our Manitoba papers for some voice in favor of the woman electorate of Canada uniting and organizing for the purpose of studying their citizenship, and of co-operating (with themselves and with the men) to make it most effective for the welfare of Canada. But I have failed, in my perhaps limited reading, to see one woman express herself in favor of it, and I have read the opinion of leaders who are very much opposed to it. So it seems rather grotesque for a simple country woman to take up her pen to defend the newly formed society that is known as the United Women Voters of Canada. This society was originally organized as the "Woman's Party," in Toronto, after an inspiring visit from Mrs. Emmeline Pankhurst, of England. But the word "party" had a bad flavor, in fact, inferred the very opposite of what the society wished to accomplish, i.e., the defeat of the party spirit, so its name was changed to the "United Women Voters of Canada."

I would like to see this organization thrive and flourish for the following reasons:

Firstly—Because it seems the only way at the present time whereby the new electorate can be united, and coordinated to accomplish something definite in the political life of Canada. It is all very well to leave legislature influence to certain societies such as the W.C.T.U., The National Council, I.O.D.E. Women Grain Growers, Federation of Women's Institutes, etc. Anyone of these might bring pressure to bear on the Government that would help to bring about certain reforms, but anyone of them, alone, represents a very small percentage of the women of Canada, and in time such a crisis might arise that any two of these organizations might be working for opposite ends. So that if all these societies, together with the individual voter had some central source from which to draw information and guidance, and through which to effect political reform and national well being, it would be a great factor in promoting political and national unity among the women of Canada. (We surely have a good deal to divide us in the way of distance, diversity of characteristics, different classes, provincial and urban rivalry). Then as a unit, the women of Canada could effectively stand against class rule, favoritism, Bolshevism and demand clean and fair legislation for the common wealth.

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The Chaffless
COFFEE

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is just one of the exclusive features of the Maxwell "Favorite" churn. No other churn has it. You can adjust the handle to centre, right or left which ever is easiest for driving.

It makes churning a pleasure. It's so easy to drive—requires so little effort to produce the butter.



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WANTED to hear from owner of good farm for sale. State cash price, full particulars. D. F. Bush, Mississauga, Man.

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Secondly—I favor the organized woman's electorate on account of what it accomplished in the last Imperial elections. There is no doubt in the world that the woman vote of England, organized under the genius and leadership of Mrs. Pankhurst, made that election the unequivocal, overwhelming thing that was, proclaiming to all the world the defeat of partizanship and Bolshevism. There was no evidence of the women trying to supplant the men, or making friction, or striving even for her own little benefits, when the welfare of the nation was at stake. The inelastic window-crushers of pre-war days were one force that gave an easy victory to the statesmen who piloted England through her disastrous days.

Thirdly—The organized woman vote of Canada seems the most effective means of preventing political friction (owing to the advent of the new electorate) and of aiding our statesmen may the word "politician" soon become cetero, to inaugurate reforms that would improve our national life. How can the parties determine the influence of the woman vote unless it is organized into a unit that will demand definite reforms of those running for power? To a true statesman, like David Lloyd George, the certainty that the woman-electorate would vote for principle rather than party, for national well-being rather than class advancement, must have proved a comfort and safeguard in running his campaign. To a petty politician, striving for power and position, or the advance and promotion of a certain class, nothing would be more repugnant than the knowledge that a strong unit of the electorate would not swing in on these things. Therefore, the party politician, rather than have women cohere and educate themselves, would prefer to leave the vote unmolested, lying around loose, hoping that she would be swayed by this and that influence to such an extent that she would count as a support to his running.

This, too, suggests the question of the freedom of the press. It is an acknowledged fact that most of our daily newspapers stand as the political organ of some party or section. Do we find any of them advocating a woman's party? If I am correct in assuming that they do not, why is it?

The claim is made that we should co-operate politically with the men. They gave us the vote, it is only fair that we throw in our lot, blend our individuality, with theirs. This, after hammering and harping away at the political blunders mankind has made from time immemorial. When a man chooses a wife does he count on her so blending her individuality and losing her personality as the political organ of her husband or wife can be distinguished as a factor in the home life. I fancy there would be few marriages if this were the case. It is only after years of struggling and achieving, joying and sorrowing together, that the married folk ripen into similarity in the sunset years of life.

To carry the analogy further, our national life should be a larger pattern of the ideal home. Home happiness consists in each member of the family, father, mother and even child, realizing his personal responsibility in making the other members of the family happy. Too long has mother been the willing slave and drudge of a selfish family, while father finds home a comfortable place in which to sleep and eat.

I would reverse this comparison to our state life. Too long has man been bearing the political burden, wielding the broom of legislative power, sweeping out a little circle of cleanliness in the room, leaving dirt and dust in the corners and under the furniture and calling his work "well done." Should he not pluckily surrender this broom part time, or better still provide another broom and hand it over to the woman electorate, providing he knows her to be a capable and altruistic housekeeper? (Would not an organized and informed electorate represent the desirable housekeeper?) Woman has a true housewifely instinct regarding the hygienic, social and moral condition of our times, and reforms along these lines are admittedly sadly needed.

Then the last and least reason I would urge for a united and organized electorate is what woman can accomplish for her own well-being. Just now the U. W. U. is devoting itself to the solving of the "mistress and maid" problem, and to



Anxious little Faces



Hurrying Feet



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Don't disappoint the little Tots

Take Home some

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Clerk—"For yourself or for her?"
Male Shopper—"What difference does that make?"
Clerk—"If it's for yourself, it's beef; if it's for her, it's lace."

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evolving plans whereby the ordinary housewife will be relieved of much of the drudgery of her endless work. (Surely it would be a long time before the men would legislate on this vital part of a woman's lot, though we must ascribe much gallantry and consideration to them in not wishing us to soil our fingers with the political mud.) This organization can work out the legal intricacies of effecting laws relative to woman, property, child guardianship, equality of pay for labor, divorce laws, etc.

The U. W. U. will, I hope, help to avert the women of Canada from falling into political divisions, though I regret to say it is too late to prevent this. Already there is a Liberal Club for women, if not a Woman's Conservative Association. The farm women of Canada have organized into an Inter-Provincial Society of Women Grain Growers. I do not criticize them for this as I hope to see the rural women of Canada an intelligent and forceful element of our national life. But I do criticize them for one item of their constitution, i.e., to support their husbands politically. (I would like to be corrected in this if I am wrongly informed). No doubt, the farmers of Western Canada have a just political grievance, but it means that a large section of rural women have bound themselves down to the unequivocal support of a distinct section in Canadian politics. Who shall say that the agriculturists shall not in time prove to be a dominating political party, and who shall say that it would prove an untold boon to Canada, if they should have the ruling voice in our national life. Does it not seem that some of the leaders in this new organization have sold their birthright as national women leaders to serve the interests of a particular section?

Perhaps you ask how the U.W.U. is to avoid becoming biased by party bias how is it to transcend provincialism and become the open forum of any class of Canadian women, rich or poor, employer or employed, cosmopolitan or isolated, the busy housewife or the woman of large public affairs. It will need trusty leaders, it will need a trusty leader. But it will be just what the women of Canada make it. Is anything too hard for the woman of Canada? The last five years have proved that Canadian women, with her intelligence, ability, her deft and quick sense, her unerring instinct for righteousness and mercy, has grappled with and conquered situations that she would have deemed insurmountable in pre-war days. The crisis is just as important now, though it may not appeal to us so concretely. Are we frightened? Are we disheartened? No!

And it now remains with the woman of Canada to guide and direct her new power, to nobly surrender pre-conceived and individual ideas of method, and grasp the principle that will make her voice a loud, melodious, harmonious demand for righteous democracy in our Dominion.

Our Young Folks

IT WOULD interest all boys and girls to know the winners of the agricultural contests in Manitoba.

There are now under S. T. Newton, 200 Boys' and Girls' Clubs in Manitoba, with a membership of 35,000. They were recently the guests of the T. Eaton Co., The Bankers' Association, and the Swine Breeders' Association, in Winnipeg.

The many branches in which the children are being interested through various competitions include the raising of live stock, poultry, gardening, baking, sewing and fancy work, canning, wood-working, grain growing and noxious weeds.

These are the winners' names:—
Winners of the Swine Breeders' Contest—Russell Walton, Stonewall; Donald Dalgleish, Grandview; Alva Hayward, Virden; William Mason, Otfield; Ada McFadden, Glenboro; Stanley Hocken, Brookdale; Jacob Esau, Winkler; Milford Preston, Pilot Mound; Edgar Van Wyck, Roland; Kathleen Robbins, Rivers; Clarence McManan, Gladstone; Claude Johnstone, Hamiota; Mary Rickart, Charleswood; Aubrey Lowe, Ninette; Sammy

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BOYS AND GIRLS—This is the best and most complete Scholar's Outfit you have ever seen. It would cost you a small fortune to go into the store and buy all these useful and necessary articles. **Just read what it contains:**—One large size English school bag, boy's or girl's satchel, three gold finished pens, big complete printing outfit with three rows of type, type holder, typesets, and everything ink lock, one dozen high grade lead pencils, a fine pencil box with lock and key, a fountain pen, a fine quality fountain pen, a fountain pen with a fine pocket drinking cup, a box of fine crayons, a box of paints containing a good color, a twelve inch wooden ruler, a set of six blotters, a dandy hundred page scholar's memo pad, a point protector for your lead pencil, a fine self filling fountain pen with a package of ink tablets sufficient to make five bottles of fine quality fountain pen ink. **It is a wonderful Outfit.** Send us your name and address today, and we will send you, postage paid, a free sample package of "Jainties"—our delightful new, whipped cream, dairy-cream, Unsweetened and just what you need.

packages to introduce among your friends. From your free package and ask your friends to try a "Jaintie." They'll like them so much that everyone will want a package or two at once. Just one little "Jaintie" will purify the mouth, sweeten and perfume the breath, and they are irresistibly delicious. Everybody loves them. You'll sell them all in an hour or two.

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First Day:—
Horse Plowing
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Thursday, June 12, 1919

Second Day:—
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Competitions.

Largest Tractor Plowing
Competition in Canada.

Provincial Cups and \$2,400 in Prizes
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Prize List will be furnished on Appli-
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POSITIVELY CLOSE 7th JUNE,
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Lawn Social and Concert on
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Horses will be furnished Plowmen com-
ing a distance providing their applica-
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on or before June 6th, 1919.

THOS. WISHART,
President.

D. H. DOWNIE,
Secretary.

Got Gophers? Kill-Em-Quick

For Information See
KILL-EM-QUICK
Ad. on Page 42 of this Issue.

Banks, Benito; Ira Wells, Gilbert Plains; Herbert Kirkpatrick, Belmont; William Hill, Makinak; W. McCulloch, Portage; Willie Hartry, Waskada; Ross Oatway, Dominion City.

Provincial Winners in the T. Eaton Contest—Gordon Halloway, Balmoral; Mabel Miller, Roblin; Miss E. Russell, Virden; Lillian Coulston, Oatfield; Vera Dewart, Stockton; Russell Hill, Morden; Willie Smith, Darlingford; Eric Bailey, Emerson; John Tookey, Gladstone; George Bridle, Souris; Winnifred Yuill, Melita; Jack Kemp, Hamiota; Edna McCulloch, Portage; Lloyd Lowry, Mather; Sylvia Burt, Benito; Iris Diamond, Makaroff; Jean Patterson, Miami; Mary Hyrunchuk, Dauphin; Mac Baxter, Transcona; Ada McFadden, Glenboro; H. Pople, Minto; G. Willet, Treherne.

Winners of the Bankers' Contest—Mabel Penrose, Virden; Ernest Ronberg, Oak Lake; Sam Siple, Elkhorn; W. Dunsenth, Brandon; Leslie Muir, Portage; Fern Palmer, Treherne; Elia Clarke, Virden; Edna Tucker, Dauphin; Melvin Griffith, Carman; Allan Brothers, Grandview; Holly Best, Gilbert Plains; Victor Johnston, Elgin.

As the guests of the three firms these children have had a most enjoyable and also instructive week's holiday in Winnipeg.

The "Boys and Girls' Clubs," of which there are over 200 throughout Manitoba, embracing a membership of 35,000, are under the supervision of the Agricultural Extension Service.

What a wonderful opportunity our boys and girls have in the country!

Will the members who read this department write and tell us about their work? It will help other boys and girls.

Oak River, Man.,
Jan. 30, 1919.

Dear Cousin Doris:—Having been reading the letters of your club for quite a while, I thought I would try to be the winner of the two dollars. We have been getting the Canadian Thresherman and Farmer for some time. Both my father and brother get this book.

I go to the Consolidated School of Oak River. I am in grade 7. But the principal of our school is going to give us examinations at Easter to see if we are fit for grade 8, if I pass I will be trying for my entrance at summer holidays. There are seven vans that bring the children on the farms to school. My father drives number four van. He has been driving the van ever since Consolidated School.

I am thirteen years old, but I am fourteen years old on June 3rd; King George the fifth's birthday. I have four sisters and six brothers. I had two brothers overseas. My one brother returned home a year ago. My other brother was killed in action, on June 2nd, 1917. It nearly happened on my birthday. I wish he was coming home, but I guess not. I have other brothers and sisters dead.

We have about one hundred and fifty pupils in our school. There are four rooms in our school. The names of the teachers are as follows:—

Primary room teacher's name is Miss Beggs, who came from Winnipeg at Christmas. The intermediate teacher's name is Miss Stewart, who came from Carberry last summer holidays. My teacher's name is Miss Svienbjorason, who came at Christmas time. My teacher's name before Christmas was Miss Ferguson, of Hamiota. She taught me about two years. I liked her fine. And the high room teacher's name is Mr. Johansson; he has been here about two years. We have four toboggan slides at our school. One for each room. They were just built this winter. One girl broke her wrist on the slides, but it was her own fault. But we are not frightened to slide down the slides.

Our school is closed on account of Spanish Influenza. It is pretty thick around here. There has been two deaths around here. One was Mr. Waldon, a well-known blacksmith of the district, the other was Mrs. Cunningham, a farmer's wife; they live about three miles south of here. They have six children. Mr. Cunningham had the flu, and also the children. We all had the flu, but my

father and sister. My sister is at Dauphin. I was in bed a week. There is one boy who had the flu, his name is Melvin Wilson. He had the flu one day and got up and went outside in the cold, without a cap on and he took a relapse, and is not expected to live. Hoping I will win the prize of two dollars. I remain, your friend, Beatrice Cleaver.

P.S.—Excuse writing as I am just over the flu, and I am not very strong. I will try to do better next time.

Vanguard, Sask.,
Jan. 30, 1919.

Dear Cousin Doris:—For some time I have been reading with great interest the prize letters in the "Canadian Thresherman and Farmer," and as I notice two dollars are given each month for the girl or boy who writes the most interesting letter, I am going to give my "life ambition."

I was born and raised on a farm in Ontario—on the outskirts of Owen Sound (about 3 miles) in the township of Sydenham in the County of Grey.

I was two years old when we came west to settle in township ten, west of the third in the district of Vanguard, where I have spent many happy days playing with the gophers, until I was able to go to school. I started when I was six years old, and am in grade three, senior, and expecting to go into grade four next year.

I am going to try very hard to be a school teacher or a music teacher. I am getting an organ or a piano next fall if our crop is a good one, and I am going to do my best to play the instrument.

Last summer, before I went to school, and after coming home, I would get the cows and milk one or two, sometimes. I liked the milking, sometimes, and sometimes I didn't.

We have twenty-eight horses and three little colts, whose names are Beauty, Nell and Nancy. I used to drive to school with one of our work-horses; her name is Lady.

Well, I guess I will bring this letter to an end because it is getting longer, and I want to leave room for some other girl. I hope to see mine published, and wishing Cousin Doris all kinds of success. I am, yours sincerely, Annie McDonald (age 11½).

Senlac, Sask.,
Feb. 10, 1919.

Dear Cousin Doris:—I have been an interested reader of your page for some time. I saw you were giving a two dollar prize every month for the best letter written to you, so I thought I would try my luck.

I go to school, and am in the fifth grade. This year our school won the silver cup at the school fair, and we are very proud of it.

The crops out here were not very good last year, what was not dried out was frozen, but let us hope there will be a better one this time.

When I am old enough I think I would like to be a teacher. I do not think I would ever get tired of teaching.

I think I will close now, as my letter is too long already. Your loving cousin, Mary Thwaites.

P. S.—Will some one please write to me?

Coronation, Alta.,
Feb. 2, 1919.

Dear Cousin Doris:—This is the first time I've written to your club, so I thought I would try my luck in earning the \$2, as my greatest ambition is to earn the two dollars, as Madame Swedburg said.

I'm going to tell you now what I'm doing. As there is no school now, I have stayed home and done my chores, and in spare time I carry water for the house, and a few other things. Some boys and girls don't want to do their chores, they would sooner be idle, but why not work and help make your home happy, and when our mother's and father's get old, get a nice home for them. I am writing to much, wishing all good luck. Manfred Martinson, age 13.

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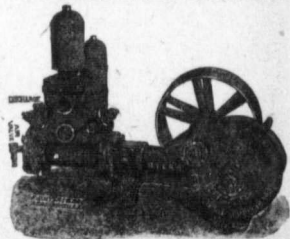
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Steenerson Brothers, of Preeceville, Sask., say the Moline-Universal Tractor has saved them at least 2 men, 10 horses, and can be operated and maintained for less than it costs to keep 3 or 4 horses.

Statements such as this from Moline-Universal owners—and we have many of them—support our claim that the Moline-Universal enables one man to do twice as much work at about half the expense as is possible with horses.

With a Moline-Universal you can plow 9 acres a day, double disc 27 acres, drill 35 acres, mow 25 to 35 acres, and harvest 30 to 40 acres. Figure out for yourself how long this would take you with horses. Then keep in mind that in case of necessity you can work night as well as day, because the Moline-Universal has complete Remy electrical equipment, including electric lights and self-starter.

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Read what other Canadian farmers say about the Moline-Universal Tractor:

"I broke 160 acres and used only one quart of fresh water daily."—T. J. Polley, Calgary.

"I threshed 70,000 bushels of grain with a 22-in. separator and had no trouble."—O. D. Cook, Mirror, Alta.

"In every respect the Moline exceeded all expectations. Without any previous experience two boys ploughed nearly 120 acres of land in 3 weeks."—J. D. McAra, Calgary.

"I don't know any tractor that can do better work or be more satisfactory to the customer than the Moline."—H. E. Hutchings, Edmonton.

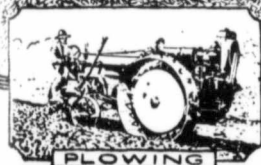
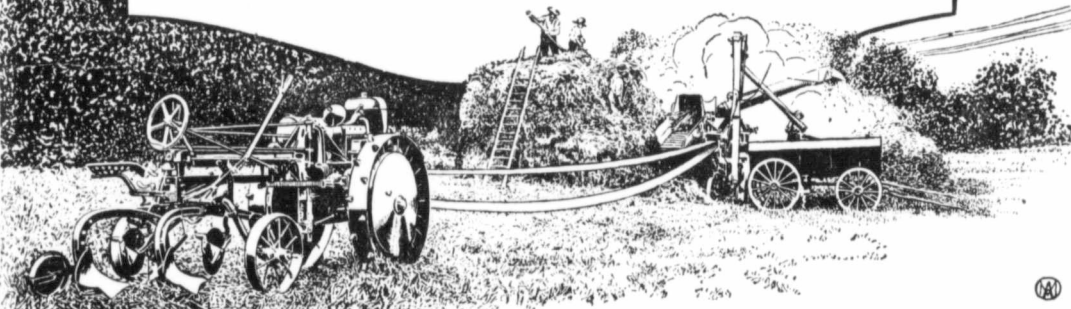
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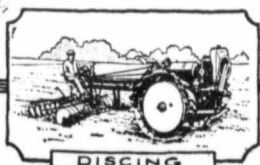
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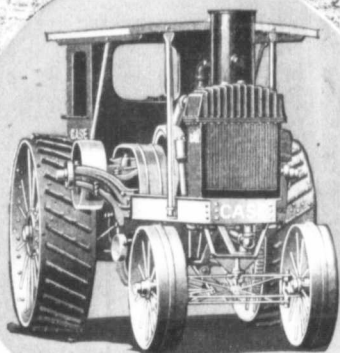
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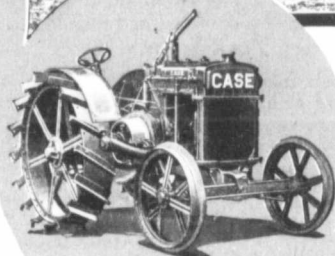
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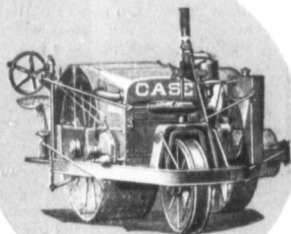


20-40

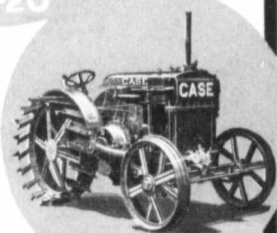


15-27

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A SIZE FOR
EVERY FARM**



10-20



10-18

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