

✓

Page 5

The CANADIAN 'THRESHERMAN AND FARMER

WINNIPEG CANADA
JULY
NINETEEN SEVENTEEN

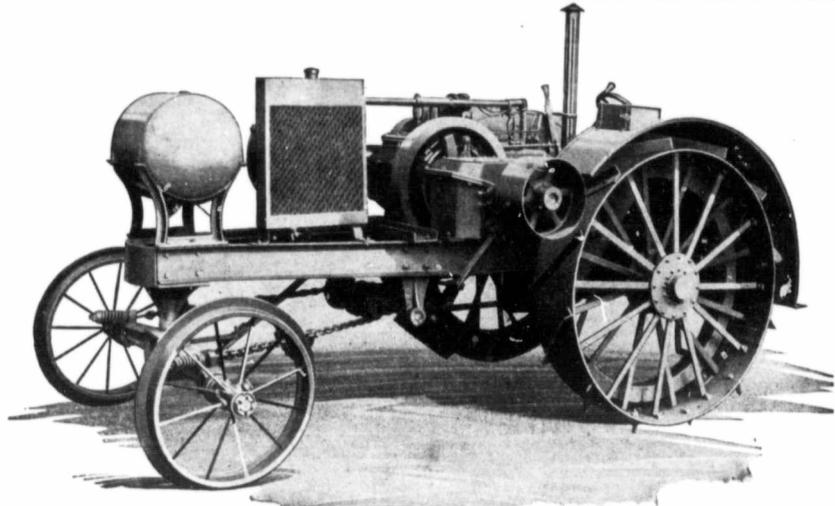
BETTER FARMING — BIGGER CROPS — BETTER PRICES



Published Monthly by E. H. HEATH CO. LIMITED · Our Fifteenth Year

Brandon Plowing Demonstration

We want every farmer who attends the Brandon Fair to see the Waterloo Boy Tractor — also the Waterloo Boy 24 x 46 Separator



**For Economic Operation—for Greater Power—
Endurance and Reliability Choose a
Waterloo Boy ONE-MAN KEROSENE Tractor**

Built for all around farm work in any season of the year. Powerful for heavy work; strong to endure continual strain; reliable because of its perfect scientific construction; and economical because it does more work in less time, at less expense, and with less hired help.

Read these figures showing a comparison of the difference between cost of Tractor Work and Horse Work:

TRACTOR		CAPITAL INVESTMENT		HORSES	
12-24 H.P. Waterloo Boy Tractor	\$1475 00	10 horses at \$200 00	\$2000 00	3 gangs	230 00
3-furrow gang	220 00				
	\$1695 00		\$2230 00		

Difference in favor of the Tractor \$635.00

COST OF OPERATION PER DAY			
1 man at \$2.50 per day	\$2 50	2 men at \$1.50 per day	\$3 00
Fuel and oil	3 60	Horse feed	7 50
Interest on investment	.32	Interest on investment	.50
	\$6 42		\$11 00

Difference in favor of the Tractor \$4.58 per 10 hour day, but the tractor can keep on working 24 hours at the same cost.

NOTE—Cost of horse feed is figured on the basis of 7 1/2c. per hour for the time the horses work, against which time must be charged the cost of feeding while horses are idle.

Now read these figures showing the difference in cost of operating a KEROSENE Tractor against a GASOLINE Tractor for one day's work.

19 1/2 Gals. Gasoline at 34c.	\$6 63
23 3/4 Gals. KEROSENE at 17 1/2c.	3 92
A saving by using KEROSENE of	\$2 71

These figures taken from the Canadian Threshesman, June Issue.

KEROSENE fills the Demand for Cheap Power

Waterloo Boy Kerosene Tractors are dollars ahead every day in the matter of economy. They fill the bill as no other power will. He is a wise farmer who chooses a Waterloo Boy Tractor. If you are interested we will be glad to send you reasons why the WATERLOO BOY TRACTOR gives more power for fuel consumed than any other tractor made.

A Practical Farmer Writes:

As we have now completed our first season with the Waterloo Boy Tractor, I will with pleasure give you any information I can regarding the amount of work done, fuel consumption, and the cost of same per acre.

First let me say that the tractor has proved to be efficient in every respect.

The cooling and oiling systems are perfect, also the situation of the carburetor giving the engine a very short intake which is most essential and also enables the operator to adjust the fuel and water with ease at any time. The magneto is the best I have ever used, the automatic fuel cutoff which eliminates all fuel waste and ensures a steady motion of the motor. This feature is noticeable particularly while plowing, when lifting the plows and thereby taking all the load off the engine; this cutoff regulates the feed and the motor will continue the same rate of speed. It works the same when letting the plows in, there is no running away and no slacking down in the motion of the motor.

We plowed close to 150 acres of summerfallow most of this 5 to 7 inches deep, using a 3 bottom 14-inch La Crosse engine gang; the tractor pulled this without any difficulty at the rate of plowing 7 to 8 acres per ten hour day, using 2 gals. kerosene per acre.

Then we broke up 30 acres of old timothy sod using two bottoms of the same plow, 6 inches deep. Here we used 2.75 gals. kerosene per acre, doing 5 to 6 acres per day. I disked this piece once and rolled it twice in a day and a half, using a 16-20 disc and a 14-foot 2200-lb. packer. I am sure I could have pulled another disc harrow, but we only had one set.

We did some cultivating on summerfallow, pulling two 8 feet Massey-Harris cultivators at the rate of 3 acres per hour, using 1 1/2 gal. kerosene per ten hour day. If we had had extensions on, I am sure we could have done 4 acres per hour.

We fall plowed about 100 acres 4 to 6 inches deep, using 2 gals. kerosene per acre; however, the last day I plowed this fall, I plowed 10 acres using 10 gals. kerosene and 2 gals. water.

We have not had a chance to try it out on the belt yet. We have run 8-inch feed grinder but this is no load at all.

We have had no trouble whatever in starting in cold weather, but if the oil is left in the crank case and left freeze the motor will run a long time before the oil will get warm enough to flow.

I think it advisable to drain the oil out of the crank case when one is through for the time being and to warm it before putting it in the next time one wants to start the engine.

At present we are using Standard Engine Oil. This oil may not stand the frost as well as some other oils, but when it is cold, say zero or below, I find it necessary to melt the oil before starting.

The cost of fuel oil and cup grease for plowing would average 45 cents per acre. The amount of fuel and oil necessary to plow ten acres would be something like this:

1/2 gal. Gasoline	at 34 cents	\$0 17
20 gals. Kerosene	at 18 cents	3 60
1 gal. Engine Oil	at 37 cents	.37
1 gal. Gear Oil	at 20 cents	.20
2 gals. Water		

Total cost of consumption for 10 acres \$4 47
I will be glad to give you any information I can at any time.

S. HANSON,
Dugald, Man.

WATERLOO BOY 24x46 SEPARATOR

A small successful machine that operates at a great saving of money and labor. It gets all the grain out of the head; gets it clean for market, does its work quickly and with the least effort on the part of man. Grain check plate immediately behind the grate ensures thorough separation—this is only one of the features that go to make the Waterloo Boy the most efficient Separator you can buy. Mail the coupon for folder which tells all about it.

INFORMATION COUPON

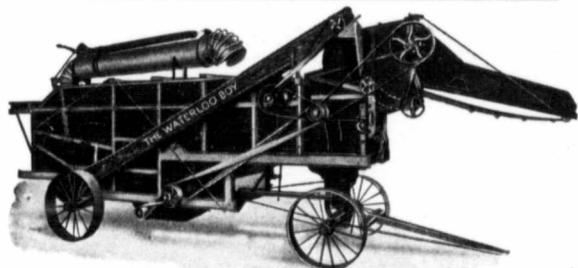
Waterloo Boy Kerosene Tractor of Canada, Limited
(Dept. B) Winnipeg

Gentlemen,—kindly send me full information regarding item marked below with an X. I expect to buy about _____ month.

TRACTOR Name

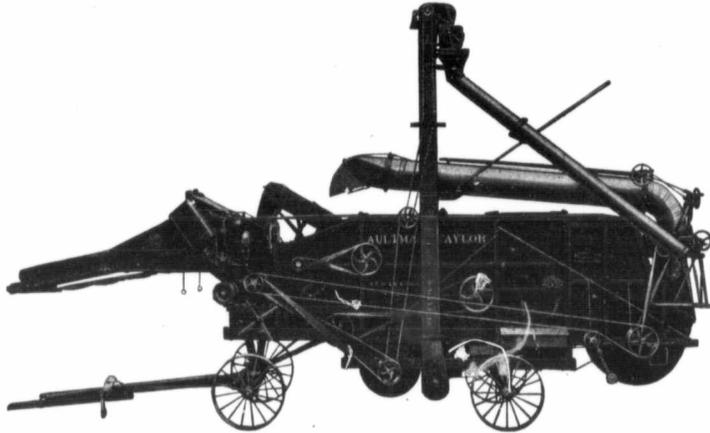
SEPARATOR Address

Mail This Coupon To-Day



Waterloo Boy Kerosene Tractor
Dept. B Of Canada Limited WINNIPEG

AULTMAN-TAYLOR



We know you are not in the threshing business for your health. You want to make money. Then, the better—more efficient—machine you operate the more money you will make. You can make more money threshing with a New Century than you can with any other. Let us prove it. We can do it.

Here's the whole secret—The New Century has advanced principles of separation that puts it in a class purely its own. Take up the construction—follow the course of the straw, from cylinder to stacker—then, and then only, will you appreciate its marvelous separating qualities. From the time the unthreshed grain enters its cylinder until the straw lands in the stack, there is not a falter in its movement. Never does the straw become compressed. Can you say this of the vibrating type of rack used in other machines?

The Universal Rotary Rack—An Exclusively New Century Feature

In no other machine will you find such an efficient rack as the Universal Rotary used in the New Century. It gets the grain out of the straw when all others fail. This rack has double the separating capacity of the vibrating type of rack. Let us take this as an example—can you not take a fork of threshed grain and extract more kernels from it in two shakes or agitations, than you can in one? Then, is it not fair to assume that a rack that kicks or agitates the straw twice with each complete revolution of the crank shaft affords better separation than one that kicks or agitates it but once? Your answers to these questions must be in the affirmative. There you have it in a nutshell. The Universal Rotary Rack kicks or agitates the straw twice with each complete revolution of the crank shaft, while the vibrating type of rack as used in other machines, only kicks or agitates it but once. Under like conditions which machine will do the best separating? We say the New Century, and we believe you will agree with us. And, mind you—this is just one of the many superior features of construction of the New Century. You want the best grain separator your money can buy. Don't waste grain—it's a crime. There's no excuse for wasting grain. You can save all of it with a New Century.

CATALOG AND FULL PARTICULARS ON REQUEST—WRITE

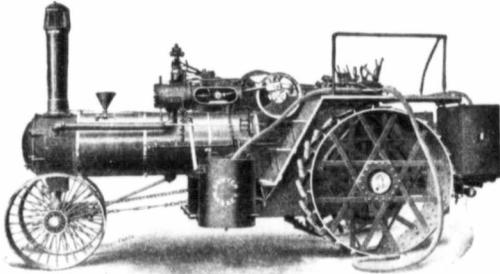
The International Harvester Company of Canada, Ltd.,
Canadian Sales Agents for New Century Threshers, or

The Aultman & Taylor Machinery Company
Lock Box No. 64, Mansfield, Ohio

Branch Houses: MINNEAPOLIS, Minn.; GREAT FALLS, Mont.; REGINA, Sask.; CALGARY, Alta., Canada



Think What an Engine Must Stand!



REARMOUNT STEAM TRACTORS

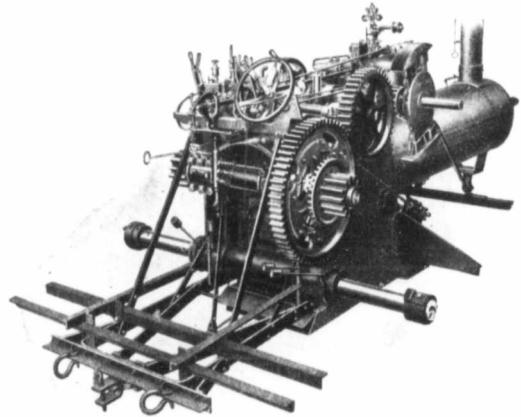
The above illustration is of our 25-rated 76-brake horse-power simple cylinder, straw, wood and coal burning, rear-mounted steam tractor. This Canadian built, steam plowing and threshing engine has been specially constructed to withstand the strain of heavy loads both at the drawbar and in the belt.

The boiler is built to conform to the Saskatchewan and Alberta Boiler Laws and carries 175 lbs. pressure. Water columns at both side and rear. Large peep hole at side of boiler for cleaning off ends of flues when burning straw.

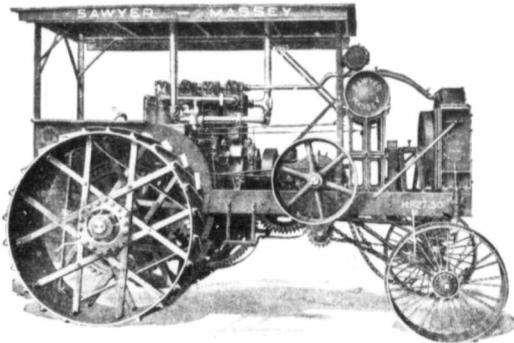
The traction drive on this tractor is to both rear wheels, through master gearing eight inches wide. The road wheels are 75in. diameter with 30in. face. The strong liberal size countershaft runs in a cannon bearing, extending the full width of the boiler. The differential gear has four large pinions. The intermediate gear shaft extends right across the boiler with a bearing on both sides. The main axle is a through and through rolling axle running in a large trundle bearing. The regular equipment with this powerful steam tractor includes balanced valve, jacketed boiler, rocker grates, straw burning attachment, Gardiner duplex steam pump.

We also build this same style Rearmount engine in a 22-rated 68-brake horse-power simple cylinder, and which is built throughout in proportion to the 25-76 horse engine.

THEN SEE THE CONSTRUCTION OF THESE STANDARDIZED CANADIAN MADE, POWERFUL, HEAVY DUTY, STEAM AND GAS-OIL TRACTORS.



REARMOUNT STEAM TRACTORS



der) and has a balance wheel on both ends of the crank shaft.

The carburetor used is the Wilcox-Bennett and is the only type carburetor we have found that will successfully burn kerosene under all loads and both in hot and cold weather. Atwater-Kent Ignition is used, which name, to a gas engineer, needs no further recommendation.

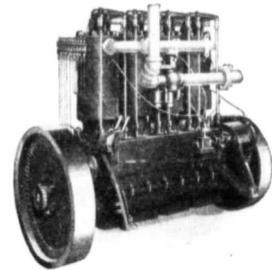
Being 4 cylinder this motor has practically no more vibration than an automobile and handles practically as easy. It is exceptionally easy to start. This is not an experimental tractor, but one that we have been building for a number of years, so that it has become standardized.

We build smaller tractors than the 27-50, illustrated above; all our tractors being the four-wheel, four-cylinder type, two speeds forward, two reverse, and all are equipped to burn kerosene.

Gas-Oil Tractors

Sawyer-Massey Canadian-made Tractors are of the four-cylinder, four-wheel, heavy duty type, two-speed gearing, 2¼ and 2½ miles an hour respectively, tubular spring-mounted radiator, set entirely clear of the frame. The traction drive is to both rear wheels through heavy wide-faced gearing.

The motor here illustrated, from our 27 drawbar 50-Brake Horse-Power Gas-Oil Tractor, has 4 separate cylinders and is of the overhead valve, or valve-in-head type, very similar to the McLaughlin Buick automobile. The crank shaft has 5 main bearings (a bearing between each cylinder).



THE MOTORS

Talk with our local agent in your town, or write for Free Catalogue and detailed information, telling us the size machinery you would like special information on.

Sawyer-Massey Company, Limited, Branch Offices and Warehouses: Winnipeg, Regina, Saskatoon, Calgary

HEAD OFFICE AND FACTORY: HAMILTON, ONTARIO

SEE US AT THE BRANDON EXHIBITION



Vol. XXII

WINNIPEG, CANADA, JULY, 1917

No. 7

Conserving the Surplus

NOT very long ago a language professor in one of our western colleges threw some unkindly hints in the direction of our agricultural schools, and wanted to know why these institutions were not setting the country on fire with a consuming zeal for "greater production."

He assumed, of course, that because he had not seen bill-board announcements or any advertising propaganda to speak of in the newspapers he is accustomed to read, the agricultural colleges and the entire faculty thereof were asleep at a time when they of all men should be awake.

The attack was ill-timed, ill-judged, and perhaps not a little ill-mannered. The Principal of Manitoba Agricultural College took the trouble to answer this young man in the public press, but his answer, complete though it was, did not go far enough in telling all the story of the work being done by the agricultural colleges and particularly by his own institution.

The fact is, these men have neither the time, the money nor the disposition to advertise their performances. Were we writing from the standpoint of the advertising enthusiast, keen for "business," we could advance a whole barrel-full of reasons why the Departments of Agriculture should spend a lot of money on advertising what they have done, what they are doing, and what they intend to do.

But as the very best advertising is always the character of "the goods," we say in all candor that our western agricultural colleges, even in these times of extensive and intensive production and conservation, owe the world practically nothing in pictorial or literary "dope" as to the history and progress of their work.

There was one detail the Principal of Manitoba Agricultural College omitted from his list of things done, or in progress, which of itself, provides a perfect answer to the criticism of the city educationalist; it was the (perhaps to him,) little side-line of the Boys' and Girls' clubs—a department

which the "Canadian Thresherman and Farmer" believes is of greater value than anything else now being pursued in the educational life of Western Canada.

Had our agricultural teachers in Manitoba nothing else to their credit than what they have already done, with and for the boys and girls of the farm homes, they

misgiving as to our attitude, we haven't the shadow of a doubt as to the supreme importance of catching the young mind, and the place which we believe the Boys' and Girls' Clubs should hold in the extension work of any agricultural college.

Every man and woman who has started out to impart know-

ledge have we faced an audience at some wayside station when "the college on wheels" pulled up, and watched the faces of some of the patriarchs as the speaker from the college sought to get home some point in better farming. "Huh! talk to me of 'better farming'; I could tell that young college chap more about it than was ever printed in his whole library of book farming."

No one was ever so rude in our hearing, as to launch the challenge at the head of the speaker, but the cynical leer on some of the upturned faces spoke the words as plainly as though they had been uttered. It's a hard, hard business this task of breaking down prejudice and preconceived notions on the part of men and women whose whole training has been in the school of "what was good enough for grandfather is all right for me." With the young people it is wholly different. In the one case the job is as hopeless as the other is full of hope.

Therefore, we believe we are not in any way distorting the proportion of things when we say to those who are championing this end of our educational interests—the Boys' and Girls' end of it—Go ahead! Your prospects of success are brighter than anything else in sight in educational effort. If you are true to yourselves and take to the work because you love it, and have unbounded faith in your objective, your reward is assured.

"Reward" in this case is never thought of in dollars. (Who can pay a man in filthy lucre who has wedded his soul to the young folks and gives up his days and nights to the sheer joy of working for, and with them?) This writer knows a man who wouldn't barter the pooled salaries of any educational staff on earth for the satisfaction he enjoys in seeing God's wisdom blessing one young person, whom he helped to stimulate and train when its orphaned steps were just on the border line between success and despair.

The pictures on these pages tell a story that beats anything done



The Coming Women of the Egg Ring

have started a line of production that will far outstrip anything that has ever been done by any effort; to quicken the souls of the older manhood and womanhood of the nation.

We have already referred to this great work, and in returning to the subject, can say that we do so, simply because our own experience and observation of its effects, impels us. We have no

ledge knows the eternity of difference between an audience of young, eager minds, and one composed of matured or "over-ripened" men and women. Since its inception and until about three years ago, the extension department of the colleges had addressed itself almost exclusively to the elders—with what heart-breaking results sometimes!

More than once within the past

or that ever will be done in conscripted service. Can't you see the greatest light in the bright firmament of human happiness in the intent faces of those boys and girls? Can't you dip back into your own memory and conjure up from that, what feelings are mirrored by these sunny countenances, as they think and think and continue to dream of what they are going to achieve from those little bundles of their stock-in-trade? Who, in the public service, would grudge anything in money or time or labor to "boost" an outfit like this with its bottomless well of great possibilities?

The kiddies in one of these pictures have just had issued to them their dole of vegetable seeds, seed potatoes and eggs for hatching, which have been provided by the Manitoba Department of Agriculture, and distributed through its Extension Superintendent (S. T. Newton) and his staff of assistants. Something like eight tons of vegetable seeds and twenty tons of potatoes have been distributed in this way in Manitoba for the season of 1917.

Canning the Main Thing

But the greatest effort is now being directed along the line of conservation. While everything that can be done, is being done to foster greater production and better cultural methods, the real work for some time to come will be in the department of canning, or in preserving all surplus products that can be preserved.

We have heard a lot recently from the women and society ladies of Winnipeg about a municipal canning plant. That would be an excellent thing, and if the women would act as enthusiastically as they talk, the whole thing could be in first rate running order before the next fruit

or vegetable crop is ripe for canning. A public subscription of a dollar a head from the folks who are able to afford a dollar for such an excellent purpose would pay for it, and there are "stacks" of women to draw upon for its successful operation under the direction of an expert or experienced person.

But we bank far more on the cumulative results of the College Extension Department in seeking to carry the canning idea right

into the farm homes—of getting the parents to train their children in the art of canning and preserving. For a long time, many of our Manitoba farm homes have been regular canning factories—for home consumption, or for the delectation of the friends of the family. There are not any canning experts who can give some of our farm women pointers in



"Many a Little Makes a Mickle"

this particular game; and yet they are the least self-sufficient of womenkind, always eager to listen to or inspect anything fresh in process or equipment.

These homes are being encouraged to pass on their knowledge to the young people and it need not be said that the young folks are taking to the idea as ducks to their swimming pond. But for

also read the daily papers, will have noted the wave of "increased production and conservation" which is sweeping over the United States. The greatest if not the whole effort of the American republic is in the direction of **Home Canning**, and in following the lead we are satisfied that our own Departments in Western Canada will be doing the best and

the wisest thing they could do, in view of all that is before us in these days of testing.

At this point we should like to quote the reports of the Extension Superintendents of the three prairie provinces bearing on this department of their work. These are from the Agricultural Gazette of June:



"Serving Out the Season's Ammunition"

the purposes of education at any point where the women folks have not yet been able to study this great concern in their domestic life, the Department has three demonstrators now actively engaged throughout the province and, that nothing should be left undone that enterprise can undertake, one other has been sent by the Manitoba government to take a special course at Columbia university.

Readers of this magazine, who

In the manual training contest 25 projects are included, consisting of milking stools, bag holders, chicken brooders, exhibition crates, bird houses, and other articles useful on the farm. During the summer vacation 18 or 20 two weeks' short courses will be held out in the country when the boys, under careful instruction, will be taught to make a large number of these articles with the tools which are available on the home farm and such material as can be obtained locally.

For the grain growing contest registered seed will be supplied to the first 800 boys who apply and comply with the conditions under which the contest is carried on. Each will receive sufficient grain of any one of the following kinds,—wheat, oats, rye or corn, to sow one-half acre, provided five boys in the one neighborhood each decide on the same kind of grain, or 10 for the whole central club.

Those who enter the pig raising contest are recommended to secure a pair of pigs from an owner who raises good pure-bred or grade animals, and the same is true in the calf and colt raising phases of this contest.

For the potato growing contest 10 pounds of registered seed is supplied free to each contestant who otherwise procures or selects 20 pounds of good seed. The idea in this contest is to demonstrate that careful selection is of even greater importance than the variety.

In the home garden work each contestant is required to do all the work himself, except that he may hire some one to do the plowing. He must plant at least six varieties of vegetables, keep accurate records, and can at least four jars of vegetables. Potatoes, peas and beans, which are supplied free, will constitute three of the varieties.

In the poultry raising contest each member is expected to secure two settings of eggs either from breeders of pure bred stock or that which is of a particularly desirable variety. A dozen eggs will be supplied to each member in newly organized clubs.

In the cookery contest one of the rules is that each contestant must at least bake 15 loaves in

Manitoba

By S. T. Newton, B.S.A., Director of Extension work

The boys' and girls' club work in Manitoba for the year 1917 includes 12 contests as follows:—Manual training; grain growing (boys 15 to 20); pig, calf or colt raising; the farm and home garden; poultry raising; cookery; garment making; canning and preserving; noxious weeds; dairy contest; flower growing, and essay writing.

the three months preceding the contest and exhibit two loaves at the fair.

In the garment making class each girl must herself make a garment, exhibit it, and write an essay on garment making.

The canning and preserving contest is connected very closely with the home garden work, and is planned to encourage boys and girls in the canning of vegetables, fruits, meats and so on which are now used in large quantities in the canned form even in rural districts.

In organizing clubs, particular emphasis is placed on gardening and canning, and a very large number have enrolled in both with the idea of helping to provide food for the nation at this time. Without the canning work a large amount of food would be produced only to be lost by reason of there being no facilities for keeping it.

Each contestant in the noxious weed competition is expected to recognize the weeds classed as noxious in the Noxious Weed Act of Manitoba. In this the schools co-operate closely with the Manitoba Weeds Commission and the Weed Inspectors.

Seeds are supplied free in the flower growing contests to those who engage in at least two other contests. It is recommended that in addition to flowers in bloom, local clubs should offer prizes for the foliage or perennial flowers or flowering shrubs suitable for Manitoba culture, because at the time the boys' and girls' club fairs are held most of the flowering blooms have ceased to bloom.

The enrolment at this date, March 17th, is particularly gratifying, the number enrolled in each contest being as follows:—manual training, 1,146; grain growing, 1,072; pig raising, 1,415; colt raising, 310; calf raising, 619; gardening, 4,810; poultry raising, 4,200; bread baking, 1,930; garment making, 2,371; canning and preserving, 1,570; essay writing, 3,420. In general, two, and sometimes three, contests are taken by the one individual.

Short bulletins are being prepared on each contest and mailed out as soon as they are off the press.

Saskatchewan

By S. E. Greenway, Director, Extension Department, College of Agriculture

In the province of Saskatchewan there is as yet no co-ordinated effort with the sole object of promoting boys' and girls' club work. This work is being carried on more or less systematically by at least three organizations; the agricultural societies, the rural education associations, and by



Some Manitoba Girls have done Wonders in Live Stock Exhibits

many of the municipal councils under the direction of the agricultural secretary or local field representative. The justification for the delay in getting the work under one management is to be found in the fact that everybody is already interested in the work, and up to the present time there has been no overlapping. There has been a natural development which it would seem wise to per-

in January a very lively discussion was devoted to the work and a resolution passed that it be co-ordinated under the management of the director of agricultural extension. The societies plan this year to offer prizes for classes of horses, cattle, sheep, swine and poultry in which only juveniles will be allowed to compete. These classes will be judged either at the summer fair or at junior fairs held under the aus-

pices of the societies later in the season. Selections will be made from among the prize winners for the boys' camp at the Regina summer exhibition in future years. The camp will be limited this year to 300 boys, who will be under camp discipline and will receive instruction in topics touching the work of the exhibition. The societies are featuring the work of school fairs this year,

The work thus far has been largely the outgrowth of the plan of providing live stock and field husbandry lectures at 50 to 100 seed fairs each winter, and giving the lecturers opportunities of addressing the pupils at the public and high schools.

Alberta

By E. S. Hopkins, Department of Agriculture

The work which the Alberta Department of Agriculture is undertaking this year with children can scarcely be classified under the heading, "boys' and girls' clubs." It may more accurately be termed home gardening for school children, because it confines itself chiefly to garden work with boys and girls in rural schools. This system possibly more so than the clubs affords an opportunity for very close supervision without which requisite educational work becomes very ineffective. Moreover, it enlarges the possibilities for uniform and permanent enrolment to the schools of agriculture.

Last year the work was started in about 93 schools; this year, while it is yet impossible to estimate the number accurately, it will probably include about 150 schools. The pupils in these schools will be given vegetable field root and flower seed which they will plant in a plot at home. The boys must take potatoes and may take in addition any four of beets, carrots, parsnips, peas, mangels and turnips; the girls must take flowers and may also take in addition a choice of any four of the above-mentioned vegetables. Five sittings of eggs are distributed to the pupils in each school; all the eggs given to all the schools in each district are from one breed of poultry.



Preparing Their Seed Spuds

mit to go on for a while, at least, until the much-disturbed social structure ceases to be at the beck and call of war, and more men are available to carry it on as it should be carried on.

The 120 agricultural societies in the province have been increasingly alive to the need of special work among the boys and girls. At the last annual convention held at the College of Agriculture

and are endeavoring to interest the trustees and pupils in school gardening, calf and pig raising, and the raising of poultry and vegetables. An effort is being made to keep the competitions from covering too much ground at first. There is a possibility that the solution of the boys' and girls' club idea may best be found in this gradual growth, as it exists in this province.

As The Agricultural Gazette goes into the hands of a large number of men employed in professional agriculture, a frank expression of all the facts may promote our mutual welfare. It must be said that the distribution of the eggs was the most unsatisfactory or at least the most unpleasant feature of last year's work. Pupils who were unsuccessful in securing a good hatch,

(Continued on Page 56)

THE CANADIAN THRESHERMAN AND FARMER
CANADA'S LEADING AGRICULTURAL MAGAZINE

E. H. HEATH
PRESIDENT
E. W. HAMILTON
MANAGING DIRECTOR
F. C. BRAY
TREASURER



E. H. HEATH COMPANY, Limited
WINNIPEG, CANADA



J. D. DUTHIE
EDITOR
J. L. MIDDLETON
CIRCULATION MANAGER

(MEMBERS CANADIAN PRESS ASSOCIATION)

Authorized by the Postmaster General, Ottawa, Canada, for transmission as Second Class Matter

July

A WORLD'S CHARTER

1917

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 is 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."

EQUAL and exact justice to all men, of whatever state or persuasion, religious or political; peace, commerce and honest friendship with all nations these principles form the bright constellation which has gone before us and guided our steps through an age of revolution and reformation." The words are those of Jefferson in his first inaugural address as President of the United States of America in 1801. They were not a party shibboleth but the heart sentiments of a great and a free people, of a strong and noble manhood. They have never been belied by any public act of the American people in their intercourse with the rest of the world in those hundred and sixteen years of their national life. From Valley Forge to Gettysburg, in every battle it has fought, there remains no humiliating sting in the memory of friend or foe. In all that is embodied in the story of Washington, Jefferson and Lincoln, the American nation still holds the white record of a blameless life.

the principles that every one of the warring nations — Germany with the rest — must sooner or later accept; he has promulgated what may be called the Charter of the Allies, wherein is set forth in terms measured, dignified and plain, the supreme objects for which they are fighting, and the conditions under which alone those objects can be achieved.

"No people must be forced under a Sovereignty under which it does not wish to live.

"No territory must change hands except for the purpose of securing those who inhabit it a fair chance of life and liberty.

"No indemnities must be insisted on except those that constitute payment for manifest wrong done.

"No readjustment of power must be made except such as will tend to secure the future peace of the world and the future welfare and happiness of its peoples."

"We hold these truths to be self evident—that all men are created equal; that they are endowed by their Creator with certain unalienable rights; that among these are life, liberty, and the pursuit of happiness."

—Jefferson, in the Declaration of Independence

We, commons of the British Empire, had long exercised our little minds as to the attitude of America's latest executive chief in this greatest of all crises which have overtaken the world. We knew a little of the President's difficulties but it would take weeks to write the mere list of things we didn't know about. We are thankful to-day that the men at the head of our national affairs are not the junkers of the times of George third, but men, who, in character and brains are a match for anything else on earth. They had knowledge and foresight and patience. They acted—and waited when they dare not act. The period of waiting was not filled in by shuffling diplomacy but simple understanding as between men whom the Almighty had knit together by those unseen ties of sound sense and the charity that "seeketh not her own."

And the result? It is simply amazing. Says the London "Daily News": "With his unflinching faculty for voicing the purposes of the allied nations with moderation, a clarity and a force no living statesman can surpass, President Wilson has recalled the world of enemies, allies and neutrals to the great fundamental issues of the war." In four sentences he states

That is a wonderfully perfect statement—delivered in splendid English but so simple that the humblest member of the English-speaking race can understand it. As one of our British journals puts it: "It is not too much to say that it is one of the most memorable documents that have issued from any State Department during the war. Friendly in tone, it is inexorable in logic, and with a sure touch it dismisses dangerous illusions and sets in their place the realities that have to be faced if the friends of freedom are not themselves to betray the cause that they proclaim." The implication of those principles are far-reaching. Russia, France, Britain and the rest of the Allies can accept them in every syllable. Can the people of Germany and Austria resolve deliberately to shed new oceans of blood to repudiate them? The American President sets the issue quite plainly. "Unless," he says, "we pour out blood and treasure now and succeed, we may never be able to unite or show conquering force again in the great cause of human liberty." That is what the Hohenzollerns see just as clearly as he does. They know that if only they could divide and baffle the present coalition, no other coalition would ever dare to stand between them and their vision of world-rule. For them and for the democracies alike, "the day has come to conquer or submit."

SUBSCRIPTION RATES
Postage prepaid, Canada and Great Britain, \$1.00 Per Year. Single copies 15 cents. Postage prepaid, United States and Foreign Countries, \$1.50 Per Year.
Falling to receive paper, you should notify the office at once, when mistake, if any, will be corrected immediately. All Subscriptions must be paid for in advance and no subscription will be accepted for a shorter period than six months.
Advertising copy in order to secure good position should be in our hands not later than the 15th of the month preceding date of issue.
Advertising rates furnished on application.

MEIKLE OF SCOTLAND

made the first practical threshing machine in 1786. Just think! 130 years have passed, and threshing machine builders have experimented all this time to solve the problem of saving grain.

Every Threshing Machine Wastes Grain

This grain can now be **saved** with

The Grain Saving Wind Stacker

IT SAVES THE **GRAIN** THE THRESHING MACHINE WASTES,
AND **PUTS IT IN THE SACK**, NOT IN THE STACK

Save the Grain!

Save the Grain!

Every thresherman can serve his country by preventing waste. Grain wasted in the straw stack results in tremendous loss to threshermen, to farmers, and to the nation, and its value will run into untold millions of dollars. Prepare to **save the grain** your threshing machine wastes. You can do so with an **automatic double-acting**

Grain Saving Wind Stacker

It **saves the grain; stacks** the straw; eliminates **back-lash**; runs with **less power** and **saves** fuel; is superior to all strawstackers, and **costs no more** than an ordinary wind stacker.

Save the Grain!

Save the Fuel!

Save the Nation!

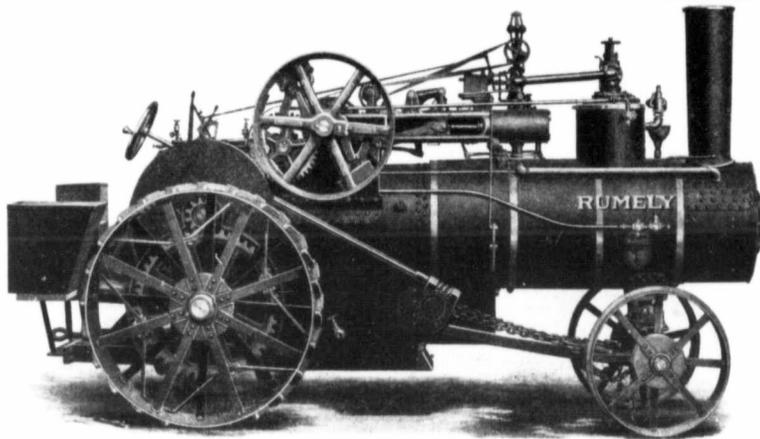
Obtain catalog from threshing machine manufacturers, illustrating and explaining how THE GRAIN IS PUT IN THE SACK and not in the stack with the

Grain Saving Wind Stacker

The Indiana Manufacturing Company

INDIANAPOLIS, INDIANA, U. S. A.

ADVANCE-RUMELY



Rumely 16 H. P. Steamer

Save Every Bushel—The Call to the Canadian Farmer

The responsibility of the Canadian farmer in this war is great. Dependence is placed on him which cannot be shifted, much less *will not be shifted*. Every bushel counts these days.

Fortunately the appeal does not work a hardship on the grain grower. For every acre sown, for every bushel harvested, the world demand is for two. Patriotism calls for whole hearted response—the law of supply and demand in-

sure adequate profits. Canada gains—*so do you*.

In the face of this world war, waste is nothing short of criminal. From the proper seed bed to the threshed grain, maximum efficiency and economy is imperative. *Good machinery must back up good intentions.*

Grain in the head is not grain in the sack. Close separation is possible only with the proper machine—select yours carefully.

There's a Leader in Every Line

In every line of machinery there is one at the top—put there by satisfied owners. Claims alone offer little, but *proved facts* are as good as a guarantee.

Advance-Rumely threshing outfits have played a part in every harvest for over three generations, and they will be doing their "bit" on thousands of farms this season.

It's a pretty simple matter to investigate Advance-Rumely machines—convenient branches carry complete stocks for your inspection, and there's probably an owner of an Advance-Rumely outfit near you.

Our 1917 catalog covers the complete Advance-Rumely line, and you'll find it worth your while to ask for it—a post card will do.

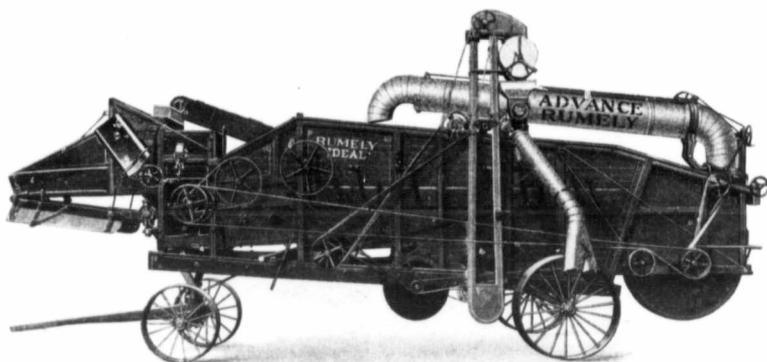
ADVANCE-RUMELY THRESHER CO.

(INCORPORATED)

LaPorte, - - - Indiana

Calgary, Alta. Saskatoon, Sask. Regina, Sask. Winnipeg, Man.

ADVANCE-RUMELY



Rumely Ideal Separator

No Better Answer than the Rumely Ideal Separator

No machinery ever made has a stronger or more loyal following than the Rumely Ideal separator—the plain result of making good. Here are a few Ideal features. You know separators—figure it out yourself:

Large Capacity—absolutely no chance of slugging, no matter how you pile it in, in any condition of grain.

Complete Separation—large cylinder, inclined chain rake, extra long straw rack (twenty-one feet from cylinder to end of straw rack.)

No Vibration—every part balances in relation to

every other part; adds to capacity and long life; less wear and tear on separator and power running it.

Thorough Cleaning—Ideal method of cleaning is positive—chaffer area oversize. Seven feet of grain pan chaffer in addition to shoe chaffer.

Easy to Operate—all oiling and adjustments on the outside. Hangers equipped with adjustable boxes. The Ideal system keeps the machine free from knocks after years of service.

Strongly Built—heavy one-piece sill; no splices to sag, rot or come apart.

Dependable Power for Your Outfit

Combine the Ideal with any Advance-Rumely steamer—Rumely or Gaar-Scott—each a proved success, with users and friends everywhere.

Take the Rumely engine. It has always had a ready sale in Canada, for the simple reason that it fits the needs of the Canadian farmer *in every respect*.

The Rumely is rear mounted on a Universal boiler, meeting all Canadian boiler laws. Its boiler is large,

the engine built of ample size throughout, insuring easy steaming and long life with no danger of overworking the engine.

The Rumely is noted as an exceptionally good straw burner, though it will handle coal or wood with equal ease. Large bearings, crankshaft and counter-shaft, heavy gearing—the construction throughout makes for strength and long life.

ADVANCE-RUMELY THRESHER CO.

(INCORPORATED)

LaPorte, - - - Indiana

Calgary, Alta. Saskatoon, Sask. Regina, Sask. Winnipeg, Man.

Manitoba's First Motor Plowing Match

MANITOBA has held motor contests, tractor plowing demonstrations and tractor meets of all kinds, but it was left to Portage la Prairie to initiate the first tractor plowing match ever held in this province.

As the tractor plow is the outgrowth of the horse plow, so the tractor plowing match is an outgrowth of the horse plowing match.

The Portage plains have always been noted for their fine plowmen, due largely to the fact that the farming population of that district is generously sprinkled with Scotch, and the Scotch plowman is noted for his straight and clean furrow.

A number of the Portage farmers in keeping with the spirit of the times, after having won many honors in the horse plowing field decided that they would like to try their hand with the tractor, with the result that a very good match was pulled off on Thursday, June 28th, on the farm of C. P. McKenzie, about three miles west of Portage.

The plowing field was a nice level tract, which lay but a short distance from where the horse plowing match had been held on the previous day. The field had raised a crop in 1916, and was in a very nice mellow condition in so far as the depth of five inches was concerned, but below that was a hard pan, which had probably not been turned up for a number of years. The plowing was done at a depth of from 5½ inches to 6 inches, and was handled in a very satisfactory manner by the tractors that entered.

The following were the entries:—

A. Munro, International Harvester 8-16 Mogul, pulling a John Deere 3-bottom engine gang.

W. Bowes, International Harvester 10-20 Titan, pulling a P. & O. 3-bottom engine gang.

C. P. Lister, J. I. Case, 8-16, pulling a Case Grand Detour plow.

A. M. Brownridge, Waterloo Boy 12-25, pulling a Massey-Harris engine gang.

W. H. Rutledge, Sawyer-Massey 10-20, pulling a three-bottom Cockshutt engine gang.

C. P. McKenzie, J. I. Case 8-16, pulling a 3-bottom Case Grand Detour engine gang.

T. Wishart, International Harvester, 8-16 Mogul, pulling a 3-bottom Oliver gang.

J. W. Brydon, International Harvester 10-20 Mogul, pulling a 3-bottom Oliver gang.

H. G. Pelsue, Heider 8-16 tractor, pulling a 2-bottom Rock Island engine gang.

M. S. Burton, Heider 12-20 tractor, pulling a 3-bottom Rock Island engine gang.

Both of these Heider tractors are new arrivals in Canada and are sold by the Waterloo Manufacturing Co. of Portage la Prairie.

The basis of the score for points was as follows:—

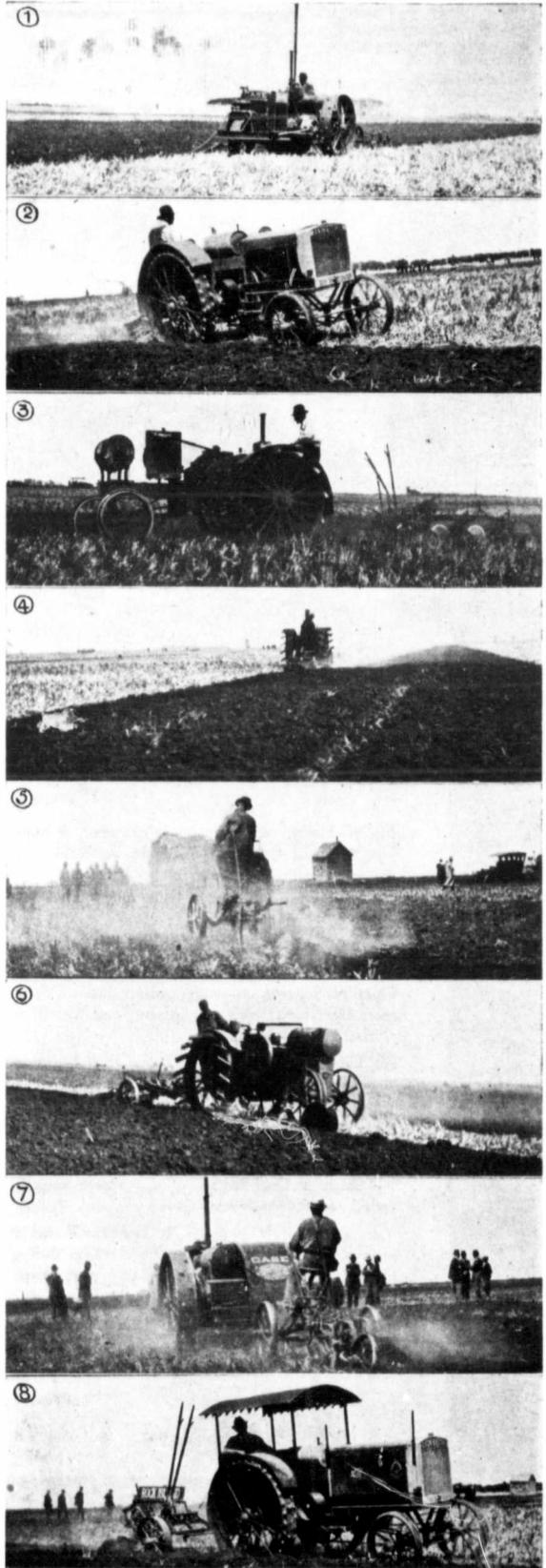
Straightness of furrow	15
Feering	15
In and out at ends	5
Depth and width of furrow	15
Evenness of surface	10
Finish	15
Covering weeds and stubble	25
Total	100

The judges, Messrs. James Sutherland of Brandon and O. Graham of Winnipeg, carefully surveyed the work that was done after the match was finished, and turned in the following score card:—

Name.	Straightness.	Feering.	In and Out at Ends.	Depth and Width of Furrow.	Evenness of Surface.	Finish.	Covering Weeds & Stubble.	Total.
A. Munro	15	15	5	15	10	15	25	100
W. Bowes	10	6	3	12	6	6	20	63
C. P. Lister	11	9	4	13	7	12	22	78
A. M. Brownridge	8	7	3	11	6	7	17	59
W. H. Rutledge	12	8	4	14	8	11	22	79
C. P. McKenzie	8	8	3	11	5	3	19	54
T. Wishart	7	6	3	12	5	4	16	53
J. W. Brydon	11	8	4	13	7	10	19	72
H. G. Pelsue	10	8	4	13	7	8	22	73
M. S. Burton	9	7	4	11	6	7	18	62
	10	7	4	14	8	7	21	71

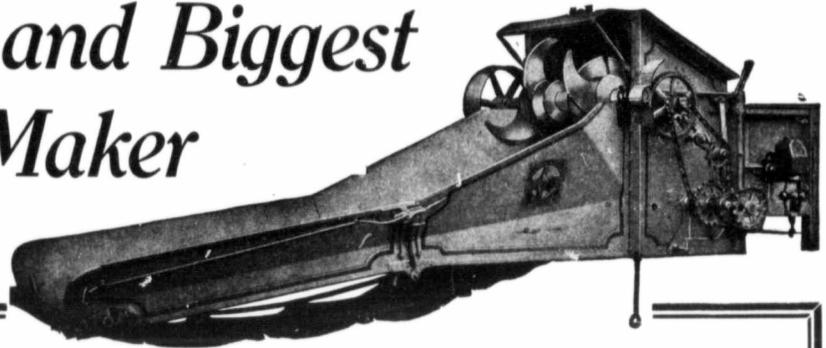
It should be distinctly understood in this connection that this was a plowing contest and not an engine contest. This statement has no reflection upon any of the engines that entered. It should, however, bring out one thing very

clearly, and that is that it takes a good plowman to plow with a tractor as well as with a horse. A tractor and an engine have no more brains than the operator puts into them. The men who did the best plowing were experienced



The Canadian Thresherman's

*Surest and Biggest
Profit Maker*



When considering the need of a labor-saving and money-making feeder, the experience of others is a natural influence upon your judgment. If you will take a lesson from the experience of thousands of threshermen in the great North American grain centers, who have used practically every known make of feeder, you will not be satisfied with anything less than

The Maytag Ruth Steel Self-Feeder

You can't afford to take chances. The Ruth is the most successful and widely used self-feeder ever built. They've been built and sold for twenty-six years, and they've seen forty other makes come and go. More than a hundred thousand Ruth feeders are to-day in successful operation in Canada and United States, and are proving themselves the biggest labor-saving money-makers of their kind ever conceived. Mechanically, the Maytag Ruth stands supreme. No other machine has so few parts and every part works in continuous harmony with the other. Takes grain faster, better and cleaner than any other feeder—takes it just as it comes, dry, wet, straight, tangled or stack-burned. You can bank on its performance every day in the season—it will never lie down on you at the most critical time.

Service—not Price—makes the Good Investment

There isn't another self-feeder on the market that will give you more dependable and trouble-free service than the Maytag Ruth, no matter what the cost. The experience of thousands of Ruth users proves the average cost for repairs and in the field to be less than \$2 a year. Do you know of any other feeder that can show a record like that and back it up? Big words built around empty claims mean nothing to you. When you part with your money you want a guarantee that speaks in plain words and is backed by a record of unquestioned performance. And that's just the kind of guarantee you get with a Maytag Ruth—a legal binding guarantee that means exactly what it says. Read it yourself.

You Can't Go Wrong on a Maytag Ruth

Face the feeder question squarely. Put your faith and money in a Maytag Ruth and it will pay you back with a record of service and profit which cannot be bought in any other self-feeder on the market. Neither money nor influence could buy the Maytag mark of approval on any machine that is not worthy of the confidence of those whom we aim to serve.

Write for our big colored folder which tells the whole truth about the best self-feeder you can buy.

FEEDERS STOCKED AT WINNIPEG, REGINA AND CALGARY

Replacement parts for any Ruth Feeder made in the last 26 years supplied by H. A. Knight, Regina; International Harvester Co., Saskatoon; W. S. Cooper, Calgary and The Maytag Co., Ltd., Winnipeg.

THE MAYTAG CO. LTD.
Winnipeg Manitoba



Here's a Real Guarantee

Such faith have we in the Ruth Feeder, that we guarantee every Ruth Feeder to feed any make or size of separator to its full capacity with any kind of grain in any condition whatever, bound, loose, straight, tangled, stack-burned, wet or dry, piled on carrier any way you please, without slugging the separator cylinder or loosening a spike, and do a faster, cleaner and better job of feeding than any other feeder manufactured by any other company in the world.

plowmen. They knew a good job of plowing and governed themselves accordingly.

The Portage tractor plowing match was no doubt the forerunner of many others. Within a very few years we shall doubtless see a number of these plowing matches put on by the farmers of the province.

All those who attended the match at Portage were of one opinion, which was that the tractor properly handled can do just as good plowing as horses, and the work that was done was the best ever. It would be hard to find a better job of plowing than that that was done on the Portage plains on June 28th. The soil was not in the best condition to plow, owing to the fact that very little rain has fallen in that section of the country this season, which left the top soil very loose and difficult to turn, so as to make the proper kind of furrow. Another condition was the looseness of the stubble. It appears that the stubble in 1916 had very little root with the result that the winter front heaved it, and it was left loose on the top of the ground, making it very difficult for the plow to cover it. It seemed to be the consensual opinion among the farmers who attended this match, that the tractor was the coming source of plowing power. They seemed to feel that in the light tractor they would have a machine that will do the work about the farm at a minimum of cost.

It is just such things as the plowing match that was held at Portage la Prairie that will bring the light tractor into its own, and give it the place upon the farm that it deserves.

The officers of the Portage Plowing Association are to be commended upon the step they have taken, and they will no doubt see the movement they have started, grow into one of large proportions. The officers of this association are as follows:—Thos. Wishart, President; H. C. Fawcett, Sec.-Treasurer; Directors: E. H. Muir, A. E. Batters, A. M. Brownridge, L. A. Bradley, Alex Brydon, D. Little, G. Blyte, L. McDermott and J. A. McArtney.

It all fairness it should be stated that the Portage plowing match was a matter of plowmen rather than either tractors or plows. This is further evidenced by the fact that the winners were in practically every case cupholders as experienced plowmen.

In considering the scores as given by the judges these points should be taken into consideration. There is no criticism whatsoever on the judges' scoring, but it is a difficult matter to judge tractor plowing by the same score card as was used for horse plowing. The tractor is neither a horse nor a substitute for a horse. It is designed to do its own work and while there are some things that the tractor cannot do to the same advantage as the horse, there are certain other things that the tractor can do that are extremely difficult for the horse to accomplish when it comes to plowing, and if these tractor plowing matches are to be carried on in the future, a score sheet should be made up that will make it easier for the judges to bring out results in accordance with the work done.

TRACTORS ENGAGED AS ILLUSTRATED ON PAGE 12

- | | |
|-----------------------------|----------------------------|
| 1. J. I. Case 8-16 | 5. Sawyer-Massey 10-20 |
| C. P. Lister, Operator. | W. H. Rutledge, Operator. |
| 2. Heider 8-16 | 6. I. H. C. 10-20 "Titan" |
| H. G. Pelsue, Operator. | W. Boves, Operator. |
| 3. Waterloo Boy 12-25 | 7. J. I. Case 8-16 |
| A. M. Brownridge, Operator. | C. P. Mackenzie, Operator. |
| 4. I. H. C. 8-16 "Mogul" | 8. Heider 12-20 |
| T. Wishart, Operator. | M. S. Burton, Operator. |



Jock (in captured trench): "Coom awa' up here. Donal'; it's drier."



Made in
Canada

Made in
Canada

"Red Wing" Thresher Belts

Stand the Hardest Kind of Service

"Red Wing" Belts are built to stand just the kind of service that threshing, day in and day out, in Western Canadian Prairies will give them. They are ready for any kind of weather in which men can thresh—ready for the varying tensions and wind-pressure, the staking, the frequent putting on and off.

"Red Wing" Stitched Canvas Thresher Belts are made of specially woven heavy Sea Island Cotton Duck, in several plies and any width desired. The layers of duck are stitched at quarter-inch intervals with Sea Island Cotton Yarn, with double stitching at the edges and for several feet at the splice.

The special oil with which we impregnate the belts, permanently lubricates the fibres, preventing friction and wear from the bending over the pulleys. The lubricant is retained, and the belt surface protected by our special red paint. The excess stretch is removed by a powerful machine, leaving just enough elasticity.

If you prefer a rubber belt, you will get maximum service and satisfaction from our

"Star" and "Lumber King" Belts

Behind these Belts stands the largest Manufacturer
of Rubber Goods in the British Empire

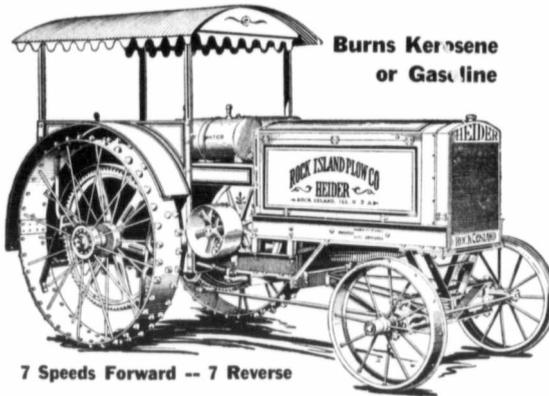
Canadian Consolidated Rubber Co., Limited
MONTREAL

Branches at Winnipeg, Brandon, Regina, Saskatoon,
Edmonton, Calgary and Lethbridge



The Famous Waterloo Line

"Waterloo Champion" Separators Steam Traction Engines
"Heider" Light Weight Farm Tractors Rock Island Plows



Burns Kerosene
or Gasoline

7 Speeds Forward -- 7 Reverse

Nine years of actual field work has proven the superiority of the **"Heider" One-Man All-Purpose Tractor**. Built in two sizes: 12-20 and 9-16.

SPECIFICATIONS--MODEL "C"

Horse Power--12-20.
 Draw Bar--12 H.P.
 Belt Power--20 H.P.
 Fuel--Gasoline or Kerosene.
 Fuel Capacity--21 gallons.
 Water Capacity--7 gallons.
 Weight--4,000 pounds.
 Ignition--Dixie Magneto, with starter coupling.
 Tractor Speed--1 to 4 miles per hour.
 Belt Speed--100 to 850 revolutions per minute.
 Carburetor--Kingston Improved type.
 Motor--4-cylinder, 4-cycle, 4 1/2-in bore; 6 1/2-in stroke. Enclosed valves. Special heavy duty Waukesha tractor motor.
 Lubrication--Splash system.
 Frame--Steel.
 Height--8 ft., including top.
 Width--6 ft. 2 ins.
 Length--12 ft.
 Wheel Base--96 ins.
 Rear Wheels--Diameter, 57 ins.; width, 10 ins.
 Front Wheels--Diameter, 30 ins.; width, 5 ins.
 Model "C" will pull three bottoms under all conditions; under favorable conditions it will pull four.

SPECIFICATIONS--MODEL "D"

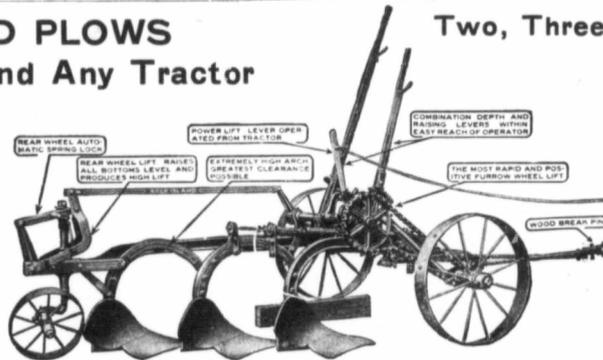
Horse Power--9-16.
 Draw Bar--5 H.P.
 Belt--16 H.P.
 Fuel--Gasoline or Kerosene.
 Fuel Capacity--7 gallons.
 Water Capacity--2 gallons.
 Weight--4,000 pounds.
 Ignition--Dixie tension magneto.
 Lubrication--Splash system.
 Motor--4-cylinder, 4-cycle; 4 1/2-in bore; 5 1/2-in stroke. Enclosed valves. Special heavy duty Waukesha tractor motor.
 Carburetor--Kingston Improved type.
 Tractor Speed--1 to 4 miles per hour.
 Belt Speed--100 to 800 revolutions per minute.
 Transmission--Heider special friction.
 Frame--Steel.
 Wheel Base--87 ins.
 Rear Wheels--Diameter 54 ins.; width, 8 ins.
 Front Wheels--Diameter, 30 ins.; width, 4 ins.
 Height--5 ft. 2 ins.
 Width--5 ft. 8 ins.
 Length--10 ft. 8 ins.
 Model "D" will pull two plows under all conditions; under favorable conditions it will pull three.

GUARANTY: We guarantee every Heider Tractor to be made of good material, and will furnish free of charge for one year any part which breaks through defectiveness when part or parts are returned, shipping charges prepaid. Rock Island Plow Co., Manufacturers.

ROCK ISLAND PLOWS Work Behind Any Tractor

These are the only light tractor 3-bottom gang plows made to which a fourth bottom may be attached, and the only plow made with front furrow wheel lift.

The power for the power lift is obtained from the wheel which is always running in the bottom of the furrow. This wheel is always on solid ground, and, as a result, can transmit much greater traction power than the land wheel, which runs on the surface. There is positively no chance of slipping when raising the plow.



Two, Three or Four Bottoms

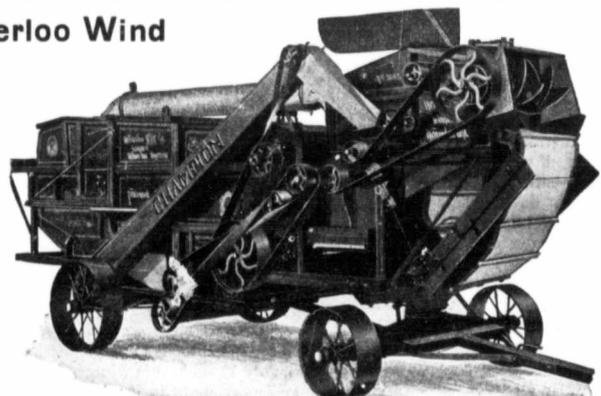
The clearance, both fore and aft and under the beam, is much greater than the ordinary plow. No chance of clogging in trashy ground. This is of great importance, for one man can operate both tractor and plow without being bothered by having to clear the plow of trash.

An exceptionally high and level lift is made possible by our lifting device giving a swing from high to low of fourteen inches. The clearance above ground is five inches. The bottoms are self-leveling and insure an even depth of plowing. Light draft is secured by distributing the weight evenly over all three wheels.

Champion Separator, with Waterloo Wind Stacker and Waterloo Feeder

Built in sizes 24-36, 28-42, 33-52, 36-56 and 40-62

Note the symmetrical lines in framing, the compactness, the bracing and the proper distribution of weight—all assuring stability, firmness, durability and a long-lived machine. No other grain separator manufactured in Canada has been so long on the market, and no other grain separator has vindicated itself in so many fields as the famous "Waterloo" Champion. It has stannish friends everywhere. Separators of many different models have come and gone, but the "Champion" bids fair to go on forever. For over thirty years we have been turning out this machine, and it is found throughout the Dominion wherever there is grain to be threshed. It not only pleases the thresherman, but it pleases the farmer as well. We are proud of its record, and we do not hesitate to recommend it to anyone wanting a machine that will thresh clean and will save all that is produced.



Our Full Line will be on Exhibit at the Leading Western Fairs

Reports have been circulated that we are not stocking repair parts for Heider Tractors and Rock Island Plows. We wish to inform all interested that such statements are barefaced misrepresentations. We have a stock of over \$100,000 worth of repairs, including parts for all lines of machinery handled by us, and will continue to give our customers service worthy of our reputation. Any statements to the contrary are untruths. We make the above assertion to counteract misstatements being circulated. Heider Tractors and Rock Island farm machinery will henceforth be included in our popular line of threshing and farm power machinery.

The Waterloo Manufacturing Company Ltd.
 PORTAGE LA PRAIRIE, MAN. REGINA, SASKATCHEWAN

THE FRUITS OF EXPERIENCE The Tractor's Story in Western Canada by men who are using it.

A Sensible Partnership

Throne, Jan 6th, 1917.

Dear Sirs—I will try to answer your questions as nearly as I can, and give you some bits of information which might interest you.

Correspondence concerning the tractor mentioned is all in my name, but there are five partners in the tractor and threshing machine. We are all farmers, and bought the outfit mainly to get our own threshing done when the weather was good, without having to wait till late in the season for an outside machine.

We have an Avery, 22-36 Separator, with self-feeder and blower. Being second-hand, the feeder is out-of-date; as it feeds the bundles too high up on the cylinder, we believe it makes the separator run harder. The company's expert said they put out that style of feeder only one year.

We believe a narrow cylinder is a mistake, and that, with the same amount of stuff going through, a 28-inch cylinder would pull no harder and probably easier. Our separator has an 2x6 picker in it, but only one straw deck, while the 28 inch Avery has two straw decks.

The tractor is an 18-36 Avery, oil or gas. It is a four cylinder, double opposed, throttle governed. It has two carburetors, one for each fuel. The cylinders are each fitted with an inner sleeve, which can be taken out when worn or scored, and a new one put in. The type of governor is fly-ball. The radiator has two hundred brass tubes, and contains about twelve pails of water. (Water should be soft, if possible.)

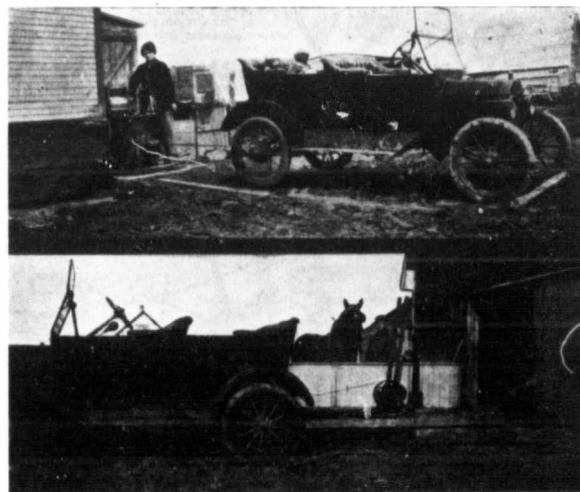
Unless the water is very carefully strained, these tubes get plugged with dirt and burst in cold weather. The end of exhaust pipe is down in middle of the circle of tubes, and thus the exhaust draws cold air up through the tubes. I think the water should be around the tubes and the air should go through them. The end of air intake pipe is a sort of sleeve which fits on outside the exhaust pipe, thus taking in warm air from around exhaust pipe. There is only one pump; it pumps oil up from bottom of crank case and sprays it over the connecting rods. There is a glass sight, and test float to see amount of oil in crank case. We use Polarine, heavier grade for warmer weather and lighter for cold. Tractor has an automatic coupler. It has a high tension magneto with impulse starter. We have

no trouble starting, if it is warmed up properly first. We put hot gasoline in priming cups, also.

At first part of season we had a 12-25 Avery 2 cylinder, but it hadn't nearly enough power, so under their guarantee, we got them to send a size larger, we to use first engine meanwhile, and they to pay freight back, and freight on new engine.

In tough grain, we have none too much power yet, but with grain in good condition can put through all separator will handle. It takes six stook teams most of the time.

We can thresh about 2300 or 2400 bushels oats in a 10-hour



THE MANY-PURPOSE AUTO

This subscriber uses his auto for many jobs after joy-riding. In the upper picture the engine is running the washing machine while in the lower it is hitched to the pump.

day, or about 1000-1200 bushels wheat. We used about one barrel kerosene a day.

As this is our first season with tractor, and we got it in threshing time, we haven't had a chance to try it on field work, but hope to do so. It is supposed to pull 6 plows in stubble, but think 4, in breaking, would keep it busy, perhaps in stubble too, with a drag harrow behind. Weight of tractor is 9250 pounds.

We expect to get a chopper, probably 12 inch, this winter, and may report about it, if you so desire.

I believe I have answered all I can, with our present experience,

Yours,

Chas. W. Ellerby,

"One of the partnership."

What About a Steam Caterpillar?

Havana, N. D., March 20, 1917.

Gentlemen—Your request is a hard one to treat with justice to

all the tractors, as I have used a number of different makes. I might state first, that the operator is about 25 per cent of a tractor's success. Therefore, the machine must be as near fool proof as it can be made.

My preference is, after using internal combustion engines, steam. While there might be more help required, the power is always there, and quicker work can be done, because more machinery can be handled by this power than gasoline or kerosene. Of those I have used, I find the Avery for fool proofness the best. For getting over the ground the steel mule has the best of it, but

Quality as Good as Average Horses

Oakner, Jan. 6, 1917.

Gentlemen—Have been farming three quarter sections of land in the Municipality of Hamiota for fourteen years, depending on neighboring custom machines to do my threshing. In sizing up the situation, I came to the conclusion that it would pay me to own a small outfit of my own. In the first place, it would cut the stacking; second, I would be able to thresh when I wanted to, and third the money I was paying for threshing would in time pay for the outfit.

In thinking over what kind of an engine to purchase, I thought it would be better to get a tractor, for, although I do not think the tractor will ever replace the horse on the farm, still the two can work very satisfactorily together. The tractor can help the horses out a lot in the hot weather in summer time.

I purchased a Case 10-20 engine last June. Plowed a little summerfallow with it. Plows would not clean, so, can not say much about that. Got a new plow, a "Grand Detour," 3 14-inch plows, and plowed some last fall with it. Worked well in every way. One man handled everything easily. I plowed about one acre per hour, as near as I can figure it, on a little over the half mile furrow. Did not keep an accurate account of the amount gasoline per acre, but seven quarts would be as much as I would use in that time. Plowed about 5 inches deep, and quality as good as the average plowing done with horses.

Have crushed quite a lot, driving one 9¼ in. plate crusher and one 12 in. roller at one time at full capacity, without any trouble.

In threshing I can not give you anything very definite, because the grain did not turn out very well, owing to the hot winds and rust.

We threshed with two teams and four men, about 250 or 260 bushels of wheat per day, wheat graded 6 northern. With the same gang we threshed 800 bushels of oats. Machine would keep 4 men with 3 teams going nicely, as we had to stop between loads. The separator was a Case 24-42 and the engine seemed to have plenty of power to keep one man pitching nicely.

Sawed up the winter's wood in the fall with the engine which operated saw very satisfactorily.

George Y. Rankin.

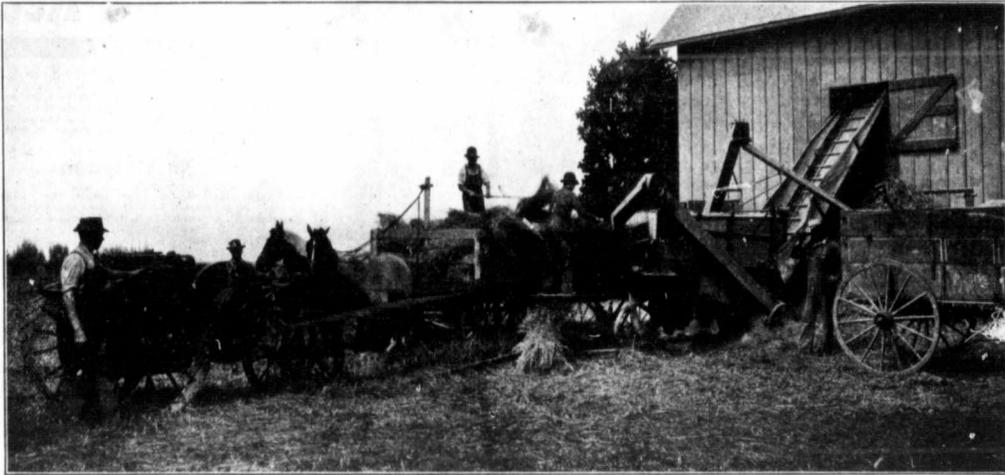
being a high speed engine, requires a competent operator. Of big tractors, nothing to date rivals the Holt Caterpillar, and in Western Canada would be the ideal machine. The Steel Mule is something on the same order.

The cost of gasoline, which is increasing, militates against these engines, hence my preference for steam. My experience teaches me that if a steam caterpillar could be constructed, such a machine would run the round wheels off the farm map.

A gas tractor's life is about four years; a steam tractor's life is as long as a good boiler with ordinary care will last.

In threshing, I have had plenty of grief and trouble with gasoline and kerosene engines, in fact, costly experience, and have had to pull out the internal combustion engine and buy a steam engine to complete the job.

Yours truly, James M. Kirk.



SAVE THRESHING MONEY

DO your own threshing this fall and save money. When you do the job yourself, using your own separator and your own tractor, you are independent of most outside uncertainties, you can be among the first to get your grain into the elevator, you can thresh without any waste, and you can use your tractor for plowing.

Own a **Mogul** or **Titan** kerosene tractor of the proper size for your work and a large or small separator. Then you can turn out a large quantity of threshed grain every day, and, as your fields are cleared, plow many acres a day. That gives you a good chance to get the fall work all off your hands before the ground freezes too hard to plow, gives you some assurance of a better crop next year, enables you to do your work with the help you have, and saves money for you at every turn.

We suggest that you write the branch house now, in order to avoid disappointment in delivery.

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.

: : : Ignition : : :

THIS important and very much misunderstood part of a gas engine can be made as simple as any other part of it. The main thing which makes ignition hard to understand is the fact that electricity is not generally understood.

If you have any doubt as to electricity being a real live and existing force, that can easily be dispelled by taking hold of a wire, which is attached to a set of dry cells and a good coil, with one or both feet touching damp ground.

There are two general systems used for ignition purposes: the jump spark system and the make and break system. Both are properly named, as both do just exactly what their name implies.

The make and break system produces a spark by making a circuit and then breaking it. The parts necessary for a make and break system are the current, which may come from either magneto or battery, the necessary wiring, a movable electrode and a stationary electrode, and the necessary means for operating the movable electrode.

The movable electrode is nothing more than a piece of iron or other suitable metal placed in the igniter frame, in such a way that it can be rotated through an arc of a circle. On the end which goes inside the cylinder is an arm extending about an inch from the diameter of the movable electrode. On the end of this short arm is a small point which is set in such a position as to match with and touch a similar point in the stationary electrode. These points are made of platinum-iridium generally, on account of its splendid heat resisting qualities, but other substances can be used. The best and cheapest substitutes for these metals is the nickel of a five cent piece.

On the outside end of the movable electrode is what is called the igniter finger. This is a small piece of metal extending from one to two inches upward from the movable electrode, or at right angles to it. The office of this little finger is to trip the igniter at the proper time to make the spark. The outside end of this igniter finger and also the end of the push rod which comes in contact with it are generally case-hardened to prevent excessive wear.

At this point it would be well to mention some of the troubles of the movable electrode. This must fit the igniter frame very close and yet turn freely. If it fits loosely it will allow some of the compressed gases or the ex-

ploded charge to escape, which will, of course, cause a loss of power. If it does not turn freely it might prevent the spark or delay it until it would impede the power of the engine.

An example will illustrate what we mean. A tractor was being used for plowing, etc. The owner tried to start it one morning without results. He removed the igniter and tested it on the outside of the cylinder with the frame touching the metal part of the engine and obtained as good a spark as one would want, but when replaced in the cylinder the engine still failed to move. An expert was called, who took with him a new igniter. As the old igniter was already out, the new one was placed in the cylinder, and the engine ran as nicely as could be expected. The old one was again tried, but failed. Then it was plain that the trouble was in the igniter. It was again placed in the cylinder and the intake valve removed so that the spark could be tested in the actual running position. The spark was evidently there. The thought then came to the expert that possibly the compression of the engine was having some effect on the igniter. A finger was placed on the end of the movable electrode to imitate the compression in the cylinder. The igniter stuck, which showed him that there was his trouble. He removed the igniter and removed the movable electrode and found that it had been corroded by the intense heat to which it had been exposed in the cylinder. When this was all remedied the igniter was put back into the cylinder and the engine worked first class.

Another instance which will help to show the importance of the igniter, and the necessity of having it in good condition, follows: A large tractor was being used for filling silos, plowing, etc. The owner reported to the general agent of the company manufacturing this particular tractor, that his magneto would not run the engine. An expert was sent out to investigate. He found a very dirty magneto which he washed and cleaned thoroughly, but this did not remedy the trouble. He then took the magneto off and tested it for magnetism and also for resistance by turning it over by hand, to see if it turned harder at one point than at another. He found that the resistance was there as it should be, that is: that at a certain point where the current is produced in the rotation of the armature, there was a tendency for the armature to turn

Biggest Value on Record

YES, SIR! The Lister 22 x 32 Ideal Thresher is the biggest thresher value on the market. You can pay a much higher price and secure an outfit no better, but you cannot get anywhere a better outfit at the same price. It is as perfectly built as our larger threshers, the only difference, it is designed to meet the needs and purse of the smaller farmer. Substantially built, it gets all the grain at the very least expense. A man and one helper can easily attend to both engine and thresher.

Drive Belt Tightener and Guide goes with Combination Outfit

No Vibration

Positively none. Unlike other outfits, the "Lister" outfit is mounted on a patented 6-wheel truck, which does away with all vibration. It is powered by a British built 3 h.p. gasoline engine which is sold the world over.



LISTER LINES

- Melotte Cream Separators.
- Pearia Tractor
- Premier Cream Separators.
- Lister Grain Grinders and Crushers
- Lister Gasoline Engines.
- Lister Ideal Threshers
- Lister Bruslon Automatic
- Lister Ensilage Cutters
- Electric Lighting Plants.
- Lister "Canuck" Kerosene and Gasoline Engines
- Lister Milking Machines

Write us about any of these lines. Also let us tell you all about this Combination Outfit. You, a farmer, being interested in threshing outfits will want to learn all about the Lister Ideal Thresher. We will be glad to tell you. Write to Dept. "D" at once.

R. A. Lister & Co., Limited, Winnipeg
 TORONTO QUEBEC ST. JOHN, N.B.

MONARCH MANILLA
BINDER TWINE

We have just received another shipment of Monarch Manilla Binder Twine, approximately 10 carloads, and are now in a position to supply this limited quantity to first applicants. If you have not already ordered your twine, do so to-day. **Send your order direct at once.** State quantity you require, and remit 1/10 deposit with order. Do not delay, as this small quantity will be snapped up in short time, and then you will pay 50% more for inferior twine. The raw material, F.O.B. New York, is selling at higher prices than we offer you the finished twine for. We guarantee every foot to be absolutely first grade. No seconds. This is exactly the same grade, made by the same mill as we have handled this year and past three; therefore, you are assured of the best. Order to-day. Fill in order form below, and mail to-day. Delay is dangerous. Monarch Manilla Binder Twine, 550 feet, F.O.B. Winnipeg

19^{ci} per lb.

The Farmers' Supply Co., Ltd.,
 Dept. C.T.F., 179 Bannatyne Ave. E., Winnipeg, Man.

Gentlemen,—Please ship me on Date Here
 lbs. Monarch Manilla Binder Twine, at 19c. pound, totalling
 \$..... for which I enclose one-tenth payment. \$.....
 balance C.O.D. on arrival. (If closed point, remit in full and allow for
 freight charges.)
 Shipping Point Name
 Post Office Address

The Farmers' Supply Co., Ltd.
 Dept. C.T.F., 179 Bannatyne Ave. E., Winnipeg, Man.

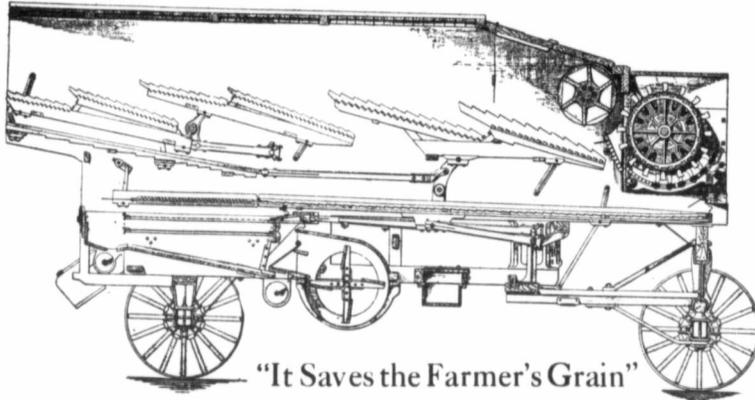
"The Great Minneapolis Line"

This year the farmers are going to insist on having their grain saved, even though they pay a little more for the service. The wise thresherman will prepare now to meet this demand. Any old machine will not do.

If your power has not been satisfactory and you contemplate making a change before the coming threshing season, by all means make your selection now and get your engine home.

Buy a Minneapolis

We must not waste



Why take a chance

Prepare Yourself NOW

"It Saves the Farmer's Grain"

If your machine is a late improved Minneapolis you are sure to have a long and profitable run because the Minneapolis separator has long since won fame and renown and established an enviable reputation for saving the grain. It is the thresherman's favorite and the farmer's first choice. The cost of upkeep is comparatively small. Investigate thoroughly.

In selecting bear in mind that Minneapolis steam engines and gas tractors have given universal satisfaction, that the demand for them has grown from year to year, and despite numerous large additions to our factory it is taxed to the utmost to supply those who prefer Minneapolis to those of other makes. There are many reasons for this increasing demand. Compare carefully.

"OUR CUSTOMERS ARE OUR REFERENCES"

H
A
R
V
E
S
T
I
N
G



SEPARATORS		FARM MOTORS	STEAM ENGINES
24x36	Jr.		
28x46	Std.	15 H.P. 4 Cyl.	16 H.P.
32x52	"	20 H.P. 4 Cyl.	20 H.P.
32x56	"	40 H.P. 4 Cyl.	24 H.P.
36x56	"		28 H.P.
36x62	"		
40x62	"		Single
40x72	"	Plows in sizes to suit.	Cylinders

GRAIN ECONOMICALLY \$\$\$\$\$\$\$\$\$\$ CLEAN, PERFECT

Our Catalog describes the entire Minneapolis Line, and it will be a pleasure to send one to you free upon request.

Large Colored Poster or a Thresher's Account Book is yours for the asking.



H
R
E
S
H
I
N
G
!!!

THE MINNEAPOLIS THRESHING MACHINE CO.

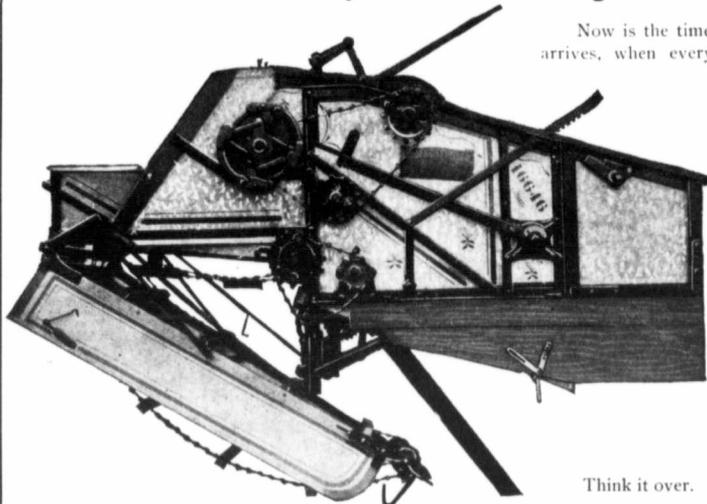
HOPKINS (WEST MINNEAPOLIS), MINNESOTA

WINNIPEG, MANITOBA

REGINA, SASKATCHEWAN

The Famous Garden City Feeder

The Only Band-Cutting and Feeding Device ever placed upon the Market that actually Feeds a Threshing Machine as it should be done.



Now is the time to prepare for threshing; don't wait until harvest arrives, when everybody is overworked. You need a Garden City Feeder attached to your machine because it will make money for you, by feeding your separator so evenly that nine-tenths of the usual stops, breakdowns and delays will not occur. It will prevent the troubles caused by careless, ignorant or mean pitchers. They may pile the grain in as fast as they please, and in any manner, the Garden City Feeder will deliver it to the separator in a constant and even flow; never too much; never too little, and every sheaf end first; thus securing the best possible work without any delays. Think what it would mean to you. No slugging; no overloaded straw racks or sieves; no clogged blower or broken belts; no cylinder to dig out; no stops; no delays; just a steady run from morning till night, day after day, while the weather remains good; your threshing done and your grain sold before winter.

Think it over. Satisfaction guaranteed or your money back.

The Garden City Feeder Co. Ltd.

Regina, Sask.

BRUCE DAVISON CO., Brandon, Man.

MART McMAHON, Lethbridge, Alta.

H. P. NORTON, CO. Calgary, Alta.

the other way. This indicated that it was right. There being another engine of the same type in the community, this magneto was placed on the other engine and tried, and worked satisfactory. It was then sure that the trouble was not in the magneto but somewhere else, so he began his investigations by removing the igniter, which was covered with a coating of carbon. It was decided to make this igniter look like a new one and see what effect that would have on the magneto. When this was done it was replaced and the engine started on the batteries and switched over onto the magneto, which took up its work and did it nicely. Now you are wondering what this incident has to do with igniters. It has everything to do with this particular igniter, for the trouble was in the igniter and not in the magneto. We want to make this very clear, as it will help you many a time when otherwise you might fail. The carbon on the igniter is a conductor of electricity. If the two points on the electrode has been perfectly connected, the engine would not have run on the batteries, but it not being of sufficient thickness allowed the weaker current from the batteries to pass through the electrodes in the usual way, but the minute the heavy current from the magneto came it imme-

diately took the partial short circuit formed by the carbon and did not go through the electrodes so that there could be no ignition. Now the point we want you to learn from this is, to see that the igniter is in perfect condition; for it is very essential that it be so to get the best results from your engine.

Let us now turn our attention to the jump spark system of ignition. The wiring is the same for both systems, so we will take that up later and go into it thoroughly after having explained both methods of ignition.

The jump spark system is also very appropriately named, as the spark is made by causing the current to jump a short gap inside of the cylinder at the time the ignition is desired.

This system consists of, beside the wiring, batteries, etc., common to both systems, a spark plug and a timing device of some kind. The spark plug consists of a shell, through the center of which is placed a piece of platinum wire, insulated from the outer shell by means of either porcelain or mica. On top of spark plug is attached a screw and nut for the purpose of attaching the wiring in a rigid manner. At the inside end of the spark plug shell is also a small piece of platinum wire extending in the direction of the center wire, but which does

Don't Guess!

Model B
12-24 H.P.
KEROSENE

On Terms
Discount for cash

Don't just "figger" you'll be through on time. Be sure, get a

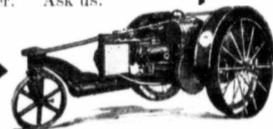
Happy Farmer Tractor

Plowing

Hauling

Belt Work

It will tackle your troublesome jobs—handle three plows draw-bar pull 2,200 lbs. Reliable, steady power on belt work—a real all-purpose helper. We'll gladly send you all particulars—free—about the "Happy Farmer." Ask us.



Canadian Representatives
J. D. ADSHEAD COMPANY LIMITED
226 Curry Bldg., WINNIPEG

not quite touch it. The space between the ends of these wires should be the thickness of a dime.

With this system of ignition it is necessary to use a vibrating

coil, the office of this vibrating coil being to intensify the spark and also to cause a number of sparks to pass the gap in rapid succession. It is so rapid that

the impression to the eye is that of a continuous fire; yet it is really a succession of sparks.

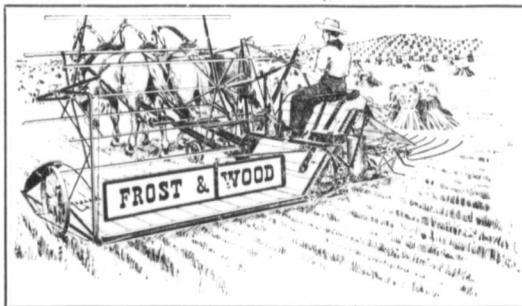
When the two points of the timer come in contact the current passes over the wiring through the center wire of the spark plug and jumps the gap to the other wire which takes it to the frame of the spark plug, and thence to the frame of the engine where it is again returned to the batteries or magneto.

There are a number of things which could cause trouble here, so we will stop a minute and consider some of the most important ones. A broken insulation on the spark plug—say a cracked porcelain or grease-soaked mica washers are common source of trouble. Here the current gets across to the frame of the spark plug without going to the points as it was intended to do; which, of course, causes the ignition to fail. Sometimes these cracks are so small that they can not be seen by the naked eye. You can take the porcelain out of the spark plug and by passing it over the metal part of the plug and watching for a spark you can always detect it by the spark which will always show when an electric current is compelled to jump a gap. This kind of a porcelain is worthless and must be replaced either by a new porcelain or a new plug. Sometimes the new plug is the cheaper way of the two.

An incident comes to mind, where an expert was sent a day's journey to see why a two-cylinder opposed engine was furnished with a magneto which was so arranged that it would throw a spark into both cylinders at each revolution of the flywheel, it was only necessary to alternate each spark each revolution. The plugs were believed to be the cause of the trouble. One was tested and it proved to be all right. The other was tested, but the spark failed to appear. The porcelain was removed and tested as above, and although no crack was visible to the naked eye, the spark came through and was visible. A new plug was inserted and the engine ran as usual. You are now asking the question why the engine would not run on one cylinder if the one plug was good. The answer is simple. Electricity always takes the route of least resistance, commonly called the shortest circuit. The broken porcelain being the shortest circuit all the current went this way, leaving nothing to go through the good plug, because that gap in the plug was too much resistance for it.

Care should be taken that the plug fits into the cylinder so tight that there can be no leak.—J. L. Hobbs, in American Blacksmith.

Harvest this Crop with Frost & Wood Light-draft Sure-tying Binders



Guard against waste this year —every bushel must be saved

A FROST & WOOD BINDER is the best insurance you can have for the proper harvesting of your crop. It has the strength and capacity to handle heavy, light or down grain in a most satisfactory manner.

Roller bearings in every working part reduce draft to the minimum and insure long life; high carbon steel and careful bracing provide strength and light weight; conveniently placed levers make its operation easy for inexperienced or young hands, and its ability to cut, elevate and tie any kind of crop, makes it the ideal Binder for this country.

You will have to place greater dependence than ever on your machinery this year. Order Frost & Wood Binders now and be ready for immediate action when the crop ripens.

Write for Binder Booklet—it contains a lot of interesting information

Visitors to the Brandon Exhibition are invited to inspect the Cockshutt Light Tractor Power Lift Plows, at work in the Light Tractor Demonstration, July 16th, 17th and 18th.

Cockshutt Plow Co., Limited
WINNIPEG REGINA
CALGARY SASKATOON

A. Stanley Jones

NORTH BATTLEFORD
Sask. Dept. F.

No other Company sells a machine that will do the work this will at anywhere near the price.



Write for Free Catalog

The Original Small Thresher

I Pay All Freight
Write for Time Terms

28-INCH SEPARATOR, 9 H.P. Engine, Trucks and all Fittings	Cash \$748	24-INCH SEPARATOR, 7 H.P. Engine, Trucks and all Fittings	Cash \$355
24-INCH SEPARATOR, 7 H.P. Engine, Trucks and all Fittings	\$672	28-INCH SEPARATOR, 9 H.P. Engine, Trucks and all Fittings	\$388

AS USED BY THE DOMINION GOVERNMENT, MANITOBA AND SASKATCHEWAN, ETC.

Johnston's Granary

Handy. Rigid. Safe.

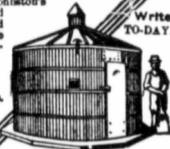
Protect your grain from fire, lightning and rodents. Set up a Johnston's Granary—metal covered and tight as a drum. The grain can't bulge the walls. You can place it where it will be handiest; and move it from place to place if necessary.

METAL DOOR—LOCKED JOINTS

Johnston's Granary is protected from fire by galvanized iron walls with locked joints. Iron bands with tension bolts hold the walls against bulging. The door is iron covered. Inside there is a sectional door to hold the grain. The sections of the roof hook together and offer a solid metal resistance to wind, water and snow.

Grains cannot heat or mildew. A 14-inch galvanized ventilator provides plenty of air. Johnston's Granary is fitted and shipped ready to set up. Full details on request.

Write TO-DAY.



DINNEN GRAIN UNLOADER.
Can be used anywhere on the farm. Send for literature and prices.
The Metal Shingle & Siding Company, Limited,
SASKATOON WINNIPEG CALGARY



Myers Tank Pumps

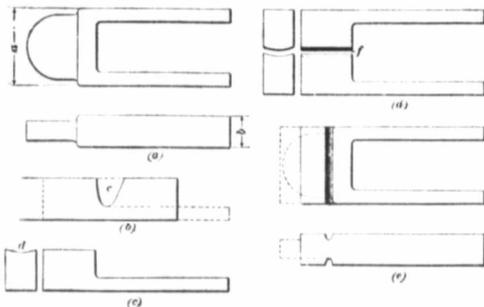
Have Capacity, Ease of Operation and Wearing Qualities appreciated by threshermen and others. Built with "Rolling Motion" Cog Gear or Plain Handle for operation by hand or gasoline engine. The name MYERS guarantees the pumping service. Circulars on request.
F. E. Myers & Bro., Ashland, Ohio

The Art of Blacksmithing

Continued from June issue

Knuckle-Joint Strap

To make a knuckle-joint strap, shown in Cut A, a short bar of stock is taken, slightly wider than one-half the width A of the strap, and of the thickness shown at B. The notch C in Cut B is made with the fuller, and the end of the bar drawn to the form



to the fluid condition of the metal at the surfaces that are joined, and the blows delivered should have only force enough to bring the surfaces entirely together. After the weld is made, the grooves shown in Cut E are made with the fuller, and the end drawn out as shown by the dotted line.

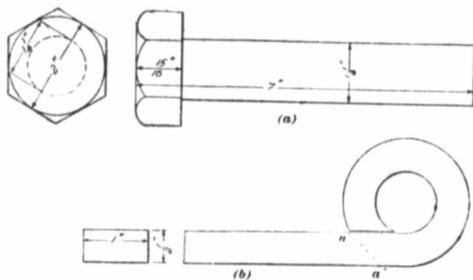
shown by the dotted lines. Next, this end of the bar is cut off at such a place as will give the piece shown in Cut C and the face hollowed as shown at D. A second piece of the same form is then made except that the face D is convex instead of concave. There will now be two pieces, as shown in Cut D; these are to be welded together, the excess of width having been given that they might close slightly at F in Cut D during this operation.

To weld them together, the two pieces are heated at the same time. When at a welding heat, the pieces are placed on the anvil in the relative position shown in Cut D, and the weld made with light blows of sledge hammers, or they may be placed between the dies of a power hammer and welded with light blows, care being taken that the blows do not draw the sides too close to each other. Too heavy blows

The end is then cut to the curved form, shown in Cut A by the use of a hot cutter, and this end finished on the anvil.

Making a Bolt-Head by Welding On a Ring

In this example, it is required to form the head of the bolt by welding a ring around the end of a round rod $1\frac{1}{4}$ inches in diameter. Cut A shows the form and dimensions of the bolt to be made. The ring should be made from a piece of bar iron 1 inch wide and $\frac{1}{2}$ inch thick. The length of the stock required may be found by the rule already given. The diameter of the ring, $1\frac{1}{4}$ inches and the thickness of one side, $\frac{1}{2}$ inch are added together, giving $1\frac{3}{4}$ inches. Then $1\frac{3}{4} \times 3.14 = 7.4 \times 22.7 = 5\frac{1}{2}$ inches, which is the length of stock required for the head. The end of this piece is upset slightly and scarfed, and then bent around, as shown in Cut



are liable, also, to spread the edges of the weld and weaken it. The piece should be turned on its side, after the faces are welded, and the sides closed before the welding heat is lost. It must be remembered that the weld is due

B; it is then cut from the bar by an oblique cut AA! The ring and the end of the rod are then heated and fluxed for welding. When taken from the fire the end of the rod is quickly placed in the ring and they are welded together by

Service that Saves

Goodyear Service to you is a saving service. It saves your tires, your time, your money, your temper, your clothes.

That is why they render Goodyear Service at no extra cost to you.

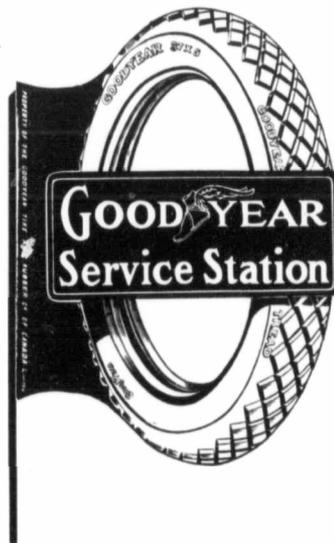
To give you this service we have secured the co-operation of a thousand business men whose places of business dot Canada from coast to coast.

—service that does for you those necessary little things about your tires that you are not generally dressed or disposed to do.

Their work with us for you is a result of belief—belief in Goodyear products and in Goodyear policies.

Goodyear Service Station Dealers are ready and anxious to render you service. They want to win your friendship by proving their value to you. Give them that opportunity.

That is why they sell Goodyear Tires, Tubes and Tire-Saver Accessories.



Drive up to the nearest garage that displays the familiar emblem shown above. 'Twill take only a minute or two. And you will drive away with an entirely new conception of what service can be.

Again we say, learn of Goodyear Service by receiving Goodyear Service. It is gladly given by men who are good for you to know.



The Goodyear Tire & Rubber Co. of Canada, Limited

light-hammer blows on the side of the ring.

For this operation, the position of the rod is horizontal, and it is turned so that the hammer may strike different portions of the side of the ring at each blow. Care should be taken that the ends of the ring are welded, as well as that the ring is welded to the rod. Another heat is taken and the head is dressed more nearly to form with the hammer, and the bolt is placed in the heading tool or the swage block to bring the under side and the top of the head roughly to plane surfaces. The head is then laid in the groove of the swage block, and the swage used to form the sides of hexagonal head.

THE EXPERIMENTAL FARMS REPORT

The first volume of the Experimental Farms Report for the year ending March 31, 1916, contains much information of value to the farmers of Canada. At such a time as this when production means so much no farmer can afford to overlook such information as this report contains when it is understood that it is available for the asking. It represents the work accomplished on the Central Farm at Ottawa and the fifteen branch farms and stations distributed over Canada. Volume I contains the report of the director, which is a general review of the work accomplished, also the reports of the Divisions of Chemistry, Field Husbandry, and Animal Husbandry. Volume II, not yet ready for distribution, will contain the reports of the Divisions of Horticulture, etc.

An interesting statement appears in the report of the director, which deals with the cost of growing certain crops, as follows: Mangels, \$1.55 a ton; ensilage corn, \$1.45 a ton; oats, 19.39 cents a bushel and hay, \$5.00 a ton. The system of farming represented in these experiments is explained in the report. It is also shown as a result of seven years' experiments that in fertilizing the soil a distinct advantage is shown in the use of barnyard manure alone over commercial fertilizer alone. The experiments suggest the possibility of combining the two profitably when barnyard manure is scarce or high priced. Referring to new strains of grain being produced it is stated that hull-less and beardless barleys are receiving close attention with the promise of some exceptional results. Earlier and more productive varieties are being sought for, while new strains of oats, peas, beans, buckwheat and flax, are being tested. Free copy of this 598 page book can be had from Publications Branch, Ottawa.

1917 Brandon Fair

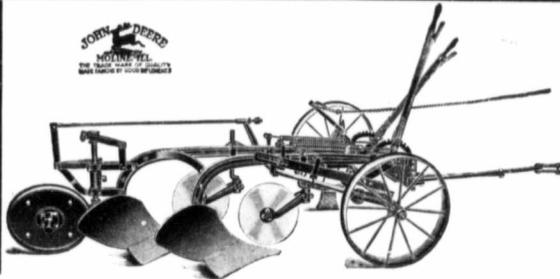
16th JULY to 20th JULY

PLOWING DEMONSTRATION

17th, 18th and 19th July

DO NOT FORGET THE DATE and BE SURE AND SEE THE

John Deere Pony Engine Gang at Work

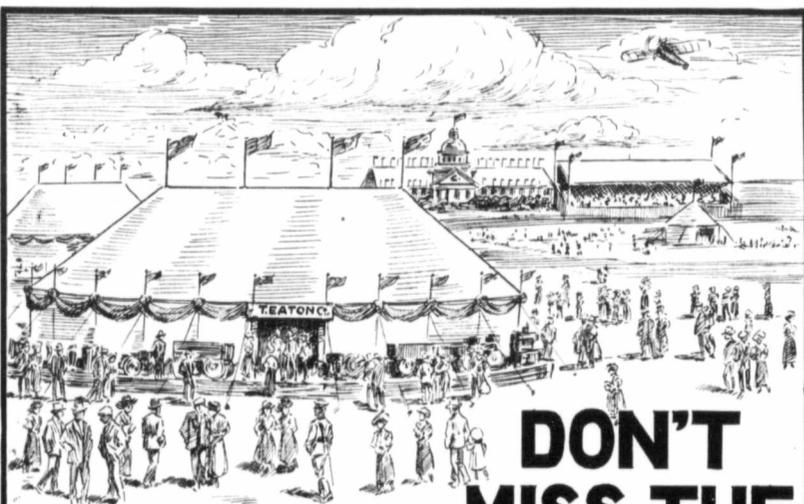


JOHN DEERE PLOWS FOR LIGHT TRACTORS
HIGH AND LEVEL LIFT, TWO, THREE AND FOUR BOTTOMS

EQUIPPED WITH JOHN DEERE QUICK DETACHABLE SHARES

High and level lift means level plows out of the ground, no cutting of ridges when crossing or turning on plowed ground. Steady running furrow wheel—does not drag or bind against furrow wheel. Stiff hitch—plow can be backed. John Deere Bottoms the standard for 78 years. **THERE IS A JOHN DEERE BOTTOM FOR EVERY KIND OF SOIL.**

John Deere Plow Co. Limited WINNIPEG REGINA CALGARY SASKATOON



PROFIT AND PLEASURE

Make your trip to the Exhibition this year pay you a profit as well as give you pleasure.

Get first-hand knowledge of one of the best lines of Farm Machinery and Implements that is being sold in the Canadian West—that with the name "Imperial." Also make sure of seeing other labor-saving and comfort-giving devices sold by **EATON'S**—on every piece of which you can safely count on the price being the lowest reasonable one that the present markets will stand.

Our exhibit contains actual articles selected from our regular stock that will give you an opportunity of seeing just how finely-made and finished **EATON** Farm and Home Equipment is.

DON'T MISS THE EATON EXHIBIT AT THE FAIR

LOOK FOR THE BIG EATON TENT

CALGARY JUNE 28th to JULY 5th	BRANDON JULY 16th to JULY 20th
EDMONTON JULY 9th to JULY 14th	REGINA JULY 23rd to JULY 28th
SASKATOON JULY 31st to AUG. 4th	

THE T. EATON CO. LIMITED
WINNIPEG CANADA

Starting Tractor Motors

By G. B. GUNLOGSON

THERE is perhaps nothing more trying than unsuccessful attempts to start a motor, especially a tractor motor on a cold morning. It involves both mental and physical exertion, often under uncomfortable circumstances. Much of this could be eliminated and time saved if the principle of the motor, the properties of the fuel and combustion and their correlations were better understood or appreciated.

The internal combustion engine derives its motion and power from the expansion of gas behind the piston, caused by the heat generated by the combustion of the charge. Under ordinary operative conditions the compression pressure at the completion of the compression stroke is about seventy pounds, and the temperature at that point is probably 400 degrees F. When the charge ignites, the temperature is raised to nearly 2,700 degrees, and the pressure is increased to about three hundred pounds per square inch, which forces the piston forward on its power stroke.

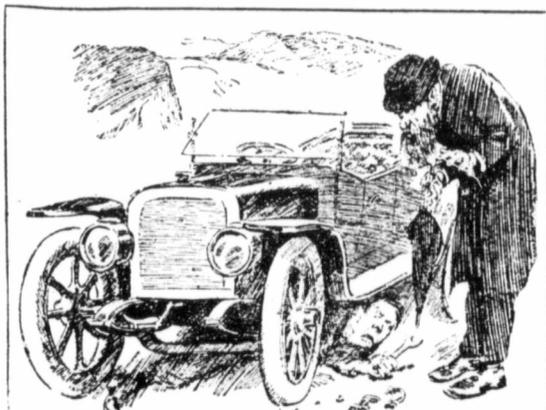
In starting a motor it is necessary to turn it over through two strokes. The charge must be drawn in and then compressed. When the piston reaches compression center, the spark ignites the charge and these operations continue automatically. A large motor, especially when it is cold, is hard to turn over fast enough to draw the charge through the carburetor, and therefore, such motors are primed by injecting the fuel through the priming cups into the cylinders. where, if conditions are right, it

vaporizes and mixes with air to form the explosive mixture.

The ignition system will not be discussed in this paper. It will be assumed that this is all right, and a satisfactory spark provided.

Before we can ignite or burn any fuel, regardless of whether it is liquid or solid, it must be vaporized or in gas form and mixed with air in proper proportions. Kerosene at ordinary temperatures does not vaporize sufficiently to burn, even if a lighted match is brought in contact with the surface. If the kerosene is heated vapor is given off, which ignites, and combustion ensues as long as sufficient heat is supplied to vaporize the liquid. Gasoline behaves much the same as kerosene, except it is more volatile and vaporizes at lower temperatures. Low grade gasoline, however, at a low temperature will not ignite under a similar experiment. If a slight heat is supplied, it ignites when the match is brought within one-half inch of the surface, and as the heat is increased the vapor increases and ignites at a great distance from the liquid. From these experiments it becomes apparent that it is useless to attempt to start a cold motor by priming with a low grade gasoline. Under these conditions it is necessary either to provide a volatile fuel or sufficient heat to vaporize the other.

Every liquid fuel has a definite temperature, below which no inflammable vapor is given off. With ordinary petroleum fuels this temperature, or flash point, as it is called, increases much as the gravity decreases. This, however, is becoming less evident



THE ROYAL ROAD

The Good Man:—"Dear, dear, can you not do without such dreadful profanity?"
 The Bad Motorist:—"Do YOU never swear?"
 The Good Man:—"Never. I am incapable of such a thing."
 The Bad Motorist:—"Well, buy a blanked dash motor-car, an' you'll blankety soon learn."

ALL THROUGH THE PRAIRIES

Our 500 prairie tank stations are located at the most convenient points to serve the tractor farmer in the busy season. There is one near you. We know something about tractors and a great deal about the lubrication of them. You are safe in taking the recommendations of our agents. They know the right oil for your engine.

For Steam Tractors—

CAPITOL STEAM CYLINDER OIL

For Gasoline Tractors—

POLARINE OIL
STANDARD GAS ENGINE OIL

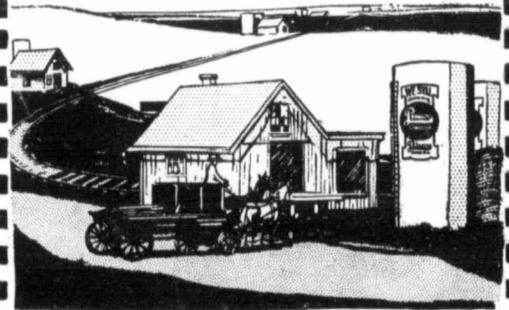
For Kerosene Tractors—

POLARINE OIL HEAVY
IMPERIAL KEROSENE TRACTOR OIL

All of our tractor oils are sold in steel barrels and steel half-barrels direct to you from all our stations.

THE IMPERIAL OIL COMPANY
Limited

BRANCH STATIONS THROUGHOUT CANADA



It will pay you to investigate and see **The New Favorite**

(Formerly Manufactured by "Fisher")

Before Buying That Separator



Equipped with Garden City Feeder, Perfection Weigher, Side-Fan Blower.

The New Favorite

The Favorite appeals to you on its merits:—

- It is a real grain saver
- It is very easy running
- It is very simple to operate
- It has a long and faithful life

SIZES:	
36 x 55	28 x 45
32 x 50	30 x 45
	24 x 38

Owners are satisfied that the Favorite is the cleanest, latest and most efficient thresher in existence. If there is not a Favorite in your district we will give a special proposition to the Thresher purchasing the first. We know that this machine in your district will be the best salesman we can have.

We can save you hundreds of dollars and furnish a better machine. WRITE FOR REASONS. Be sure and see our Exhibit during the Brandon Fair.

The Favorite Thresher & Supply Co. Ltd.
WINNIPEG

One Dependable Power Plant

Upon which You can Always Absolutely Rely

That you know will save you money instead of wasting it.

That you know will always stand ready to furnish its maximum rated horse-power.

That you know will not cost you exorbitant sums for repairs and accessories.

That you know will start when you want it to run.

That you know will run any time and all the time.

That you know will last you for many years.

THIS IS THE

Nichols-Shepard Steam Engine

This engine is built by a Company which has been building steam engines for many, many years.

It has the strongest boiler, the heaviest boiler plate, of any traction engine ever built. It is made of the heaviest material, and has the strongest gearing and shafting of any steam traction engine made.

It is built with all the conveniences which modern invention has supplied, and furnishes a steady, reliable power plant that will go out and work day after day and year after year, giving the best of results.

The Nichols-Shepard Steam Engine is not in the experimental stage. It has been tested and tried through years of service, under all conditions of weather and altitude, doing the hardest kind of work.

It does not require an expert to operate this engine, and for the man who wants reliable and ample power, whether for operating threshing machinery, plowing, grading, or any other heavy work for which it is adapted, we cannot too strongly recommend the Nichols-Shepard Steam Traction Engine—a fitting companion to the world-famous Red River Special Separator.

Write for big FREE Catalogue. It will be sent to you at once. Ask for your copy of the Home Edition of the Red River Special Separator.

NICHOLS & SHEPARD CO.

In Continuous Business Since 1848

Builders EXCLUSIVELY of THRESHING MACHINERY

Red River Special Threshers, Feeders, Wind Stackers, Steam and Oil-Gas Traction Engines

BATTLE CREEK, MICH.

BRANCH HOUSES (with Full Stock of Repairs) at

REGINA, Saskatchewan

H. P. NORTON COMPANY, CALGARY, Alberta

WINNIPEG, Manitoba



Threshermen, Read This!

We are Headquarters for

Improved VETERAN Endless Canvas Driving Belts

They weigh more because they contain better material; they are better made and will therefore wear longer than any other belt you can buy. Our prices are right, and we can save you money. Write for sample. We also carry the Veteran in cut lengths, also Rubber and Leather Belting, all sizes; Lace Leather and Belt Fasteners.

High Grade Wire Lined Suction Hose

Fully guaranteed and no doubt a better quality than you have been using. Water Hose, Packing, Gaskets, Pure Manilla Rope, Wire Cable, etc., all high quality and sold at low prices.

Myers Cog Gear Low Down Force Tank Pump

With Brass valve seats and valves easily get-at-able; double acting cylinder 3 x 3, capacity 2,000 gal. per hour. The best pump made and the easiest to operate because of the cog gear handle.

FOR YOUR ENGINE we carry Headlights, Steam Gauges, Whistles, Brass Goods and Fittings; Swift Lubricators and Mason-Kipp Valveless Oil Pumps; Tube Cleaners; Wrenches, Taps and Dies.

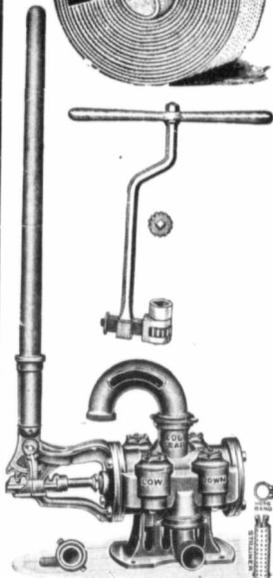
Do you use a Caswell Adjustable Separator Belt Guide so that you can set your engine 10 feet out of line, if necessary?

Do you use a Tiger Adjustable Ratchet Cylinder Wrench? You should. They are both time and trouble savers and well worth their cost in one season.

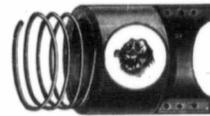
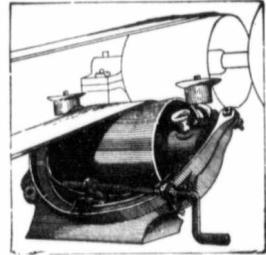
We can furnish you Tanks of all kinds and sizes at prices that will please you.

A large Stock of Stack and Thresher Covers bought right and sold right. Get our prices on High Grade Cylinder Oil, Red Engine and Castor Machine Oils before you buy.

We handle Gas Engine Oil also. Read our books:—Young Engineer's Guide, Farm Engines and How to Operate Them, Practical Gas and Oil Engine Hand Book.



The Windsor Gasoline and Kerosene Engine is the best in Canada and our prices are the lowest. Up to 8 horse-power.



WRITE FOR OUR CATALOGUE "ENGINEERS' BARGAINS"



Windsor Supply Co., Windsor, Ont.

with the fuels now on the market, which are largely mixtures of light and heavy fuels.

It has been found that the best explosive mixture is that of one pound gasoline mixed with about fifteen pounds of air. If the mixture is lean it will burn less rapidly and have less force, and if too rich similar results are observed. The limiting range is about one to eight and one to thirty-two, but the effects of much less variance from the proper mixture is noticed in starting, as well as in running. When a cool motor is primed, a small quantity of the gasoline may be vaporized and an explosion may occur, but not sufficiently forcible to carry the motor through to its next power stroke. Also, especially when a volatile fuel is used, there is a possibility of priming too much, or in flooding the motor, which is evidenced by a weak explosion and excessive black smoke from the exhaust.

If the fuel vaporizes no difficulty will be experienced in starting the motor, even when cold. It is, therefore, advisable when operating a tractor, or any large motor, when it is cold, to provide some volatile fuel for starting. Usually if a motor can be made to fire the priming charges it will

continue to run on ordinary gasoline, with proper adjustments. High test gasoline can usually be procured in small quantities in garages or oil stations, and if used for priming only it will save considerable trouble and time. Some use ether, which is also very volatile but more expensive. It may be mixed with a small quantity of gasoline in the priming can, with good results. When casing head gasoline, and gasoline manufactured from natural gas by a process of compression or absorption, can be obtained in a fairly pure state, it is very satisfactory for starting as it vaporizes at low temperatures.

Unless some such fuel is provided it is necessary to heat the motor or charge. The individual motor or type of motor, as well as immediate conditions will largely determine the best method of applying this heat. Some put hot water in the water jacket. It is often, however, that this is not to be had, and a torch or other means of applying a flame directly to the motor are resorted to.

When it is possible to turn over the motor sufficiently fast to draw the charge from the carburetor, then the warming of the carburetor and manifold is very effective, although the heating of one

without heating the other is sometimes not sufficient. If the carburetor is heated and not the manifold, the gasoline spray on its way to the motor is deposited on the cold surface of the manifold, especially where this is long. With the large motor that is difficult to turn over, this method cannot be applied with as good results, and then it becomes necessary to apply the heat to the motor itself and prime it. Care should always be used in handling the torch or fire around a gasoline engine, especially the carburetor and fuel pipe.

Some heat the fuel before priming the motor. This, however, is ineffective for the reason that the gasoline vaporizes very readily when heated, and the more volatile constituents vaporize first. It therefore cannot be heated to any great extent, and this heat is dissipated very rapidly by radiation in coming in contact with the cold metal of the cylinder and the air. Also, the evaporation of the fuel, should there be any, absorbs considerable heat so the temperature of the remaining fuel within the cylinder will soon be reduced to normal, and without a sufficient quantity vaporized to form an explosive charge. Therefore the heating of the charge itself by

heating the motor or manifold through which it passes is usually imperative.

In starting a cold motor some time should elapse between priming and turning the motor over. Many are apt to overlook the fact that some time is necessary for evaporation to take place. It is too often the practice to prime a motor and begin to crank it almost immediately after. Sometimes after a long time of useless cranking, bodily and mental exertion and aggravation, and after the operator has taken a rest, the motor starts with one turn of the crank. A hot motor, however, should be turned over immediately after priming. At a low temperature evaporation is very gradual, and becomes more rapid with increase in temperature.

A motor should be primed with the piston in crank end of the cylinder, just beginning the compression stroke, and should be turned over with a good swing of the crank or fly wheel when starting. With a four-cylinder motor no attention need be given the position of the pistons.

It should be noted here that if batteries are used, the switch should not be turned on until just before starting the motor. If the switch is left on and the contact

be made in the breaker box for any length of time, it will drain the batteries very rapidly.

When a motor has been primed repeatedly, some of the gasoline will be forced past the piston, and in doing so washes the oil away. This allows the charge to pass and renders the motor very hard to start. When this condition is noticed the cylinder should be oiled, and the motor turned over slowly until the oil has been brought in contact and formed a film between the piston and the cylinder walls. It is always advisable when a motor is equipped with a mechanical force feed pump, to give it a few turns before starting.

If a motor fires the priming charge, but the explosion is not sufficiently strong to carry it over to the next firing point, it is usually because only a small portion of the fuel has evaporated, and the charge is too lean to give a good forcible explosion. When the motor is cold and it requires a strong initial force to start it, this condition is often experienced and the only remedy is to adjust conditions so as to obtain a better proportion charge. Similar results are sometimes caused by an over-rich mixture.

If the priming charges are fired and a few explosions occur before the motor stops, it indicates that sufficient fuel is not being supplied. Either the carburetor adjustments are so that the fuel feed is too scant, or there is a lack of gasoline in the carburetor. With a cold carburetor and motor the adjustment should be for more fuel than under ordinary conditions. This is necessary until the carburetor and manifold warm up, and then readjustments should be promptly made.

The viscosity of gasoline at a low temperature and the flow through the nozzle of the carburetor is directly affected by changes of temperature. At 20 degrees (F) the fuel flow through a nozzle will be 29 per cent less than at a temperature of 60 degrees (F). A certain amount of the fuel drawn through the nozzle will also be deposited on its way to the motor, and perhaps only a small portion ever reaches the compression chamber. Even the raising of the needle valve is sometimes not sufficient immediately upon starting, but the air intake must be restricted or choked to increase the suction. When a valve is not provided in the carburetor intake, it is often necessary to place something over the intake opening momentarily or partially until conditions adjust themselves.

It sometimes happens that an acquaintance is a friend who borrowed money from you.



Quality Made Our Friends
Consistency Retains Them



Permit us to say that you can make your threshing outfit pay you bigger dividends!

Many threshermen in Western Canada have done so by equipping their outfits with **Dunlop Thresher Belts, Agricultural Suction Hose** and other Dunlop Rubber-made Goods and thus cut their operating expenses down to the minimum.

Dunlop-made threshing supplies are dependable and, being dependable, naturally they are economical.

Dunlop Rubber Thresher Belts

"Prairie" and "Reliance"

Take Dunlop Rubber Belts, for instance—"Prairie" or "Reliance," stitched—and you have the best the market affords. That's no idle boast either, for hundreds of men like yourself have attested voluntarily to the supreme worth of the Dunlop product.

HERE ARE THE REASONS WHY

- 1.—**Dunlop Thresher Belts** are superior belts for the simple reason that they are consistent in make-up—manufactured by proper materials in a uniform way and by expert workmen.
- 2.—They will not slip—the rubber surface prevents that by giving the belts a natural pulley-eling whether wet or dry.
- 3.—**Dunlop Thresher Belts** are practically immune to stretching, because every inch of the belt is made by that uniform, secret process that eliminates this evil.
- 4.—In wet or dry weather **Dunlop Rubber Thresher Belts** will pull evenly and transmit with certainty all the power the engine can develop. And by their pulling evenly they tend to minimize the jerky motion caused by tangled sheaves being drawn swiftly into the cylinders.
- 5.—To give double security **Dunlop Rubber Thresher Belts** are stitched closely by an improved method that sinks the stitches to avoid a lumpy surface. That's why Dunlop belts are noted for such smooth, evenly-balanced faces.
- 6.—These belts are built on principles that wide experience in belt-making have proven to be correct—another perfectly good reason why you should consider the purchase of a "Dunlop" this coming season.

DUNLOP CANVAS THRESHER BELTS

While we manufacture rubber belting, we cannot overlook **Dunlop Canvas Belts** which have qualities strongly recommending them for threshing use.

DUNLOP AGRICULTURAL HOSE

Dunlop Agricultural Hose is the most serviceable kind, too, because it is made especially for the purpose after we understood thoroughly the conditions affecting its use. It is supplied with a heavy Rubber Cover or with Woven Cotton Jacket.

REMEMBER THIS—

When overhauling your outfit and making notes of your requirements for the coming season, don't forget that we have one of the finest equipped factories devoted to the manufacture of Belting and Hose in Canada. The Dunlop plant is capable of turning out large or small orders at great speed, and this, combined with the fact that our branches are situated at convenient points, is an assurance of prompt and efficient service.

You simply cannot afford to buy a dollar's worth of rubber-made goods until you know the splendid qualities of the Dunlop Products. You will find Dunlop prices right, too.

Dunlop Tire & Rubber Goods Co. Limited

Head Office and Factories: Toronto

BRANCHES:

Victoria, Vancouver, Edmonton, Calgary, Saskatoon, Regina, Winnipeg, London, Hamilton, Toronto, Ottawa, Montreal, St. John, Halifax.



Here They Are—You'll Need Them Soon



Cyclone Elevator,
with 3 h. p.
Fairbanks-Morse
Type "Z"
Kerosene Engine

Manufactured by the Hart
Grain Weigher Co., makers
of the famous "Perfection"
and "Hartley"
Threshing Machine
Buggers.

Grain loading with this machine is quick and easy. Never has there been a grain elevator so strong, so easy to handle, or so capacious, as the

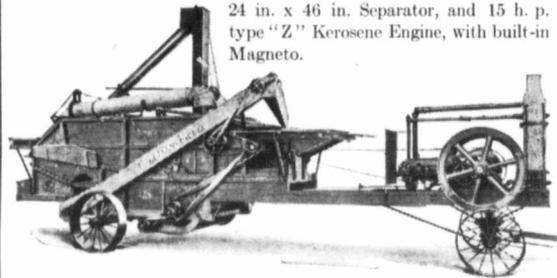
Cyclone Portable Grain Elevator

Loads Cars, Tanks and Granaries in double quick time, for it easily handles from 1200 to 2200 bushels per hour, and can be operated by an engine of from 2½ to 6 h. p. No need to do this back-breaking job by hand.

Write us now for
Descriptive Literature

The farmer who appreciates independence and wants a Threshing Outfit of his own, cannot buy a better Combination Thresher than the

Fairbanks-Morse



24 in. x 46 in. Separator, and 15 h. p. type "Z" Kerosene Engine, with built-in Magneto.

This outfit burns cheap kerosene, which means a tremendous saving in the cost of operation. It threshes clean, saves all the grain, and is easily operated.

Our new 1917 Catalog gives a full description of this Combination Outfit. Have you a copy in your possession?

THE CANADIAN FAIRBANKS-MORSE COMPANY, Limited

SASKATOON

WINNIPEG

CALGARY

THE story I am about to relate is the result of an overloaded gasoline engine and contains a lesson that should be of benefit to all owners and operators of internal combustion engines.

In the section of New Jersey where I live and do repair work, nearly every farmer owns an individual threshing outfit consisting of a small thresher and a small gasoline engine, either portable, semi-portable or stationary. The engine is in most cases too small for the work it is required to do. Thanks to the many manufacturers who strive to make their engines of the best materials and workmanship, there are very few of these engines that do not stand up to their work. There was one engine, however, that failed to stand the power which its cylinder was capable of developing. It was, I suppose, the black sheep in the family, as there are several other engines of the same size doing the same work without going to pieces.

I was called one day to locate a severe pound that seemed to come from the cylinder and piston. It was so much more severe than the ordinary thud of pre-ignition that it had its owner stumped. I found a 6 horse power engine belted to a thresher

Larger Engines Generally Needed to Run Small Tractors

By HERMAN PETTY, Jr.

that should have had at least a 10 horse power engine to drive it. The owner informed me that his engine had always pounded when it became heated up but on this day it had developed an altogether different kind of a thud and it would not pull as it formerly had. I examined the engine very carefully and found the valves in first-class order. I next examined the ignition and found the engine had been running on a very late spark. The owner informed me he had done this as it helped do away with the pounding somewhat. I began to think there was something serious and unusual that was causing this engine to run the way it did, so I began to examine it thoroughly. For a while I could find nothing wrong but I finally detected a small crack directly below the right crank shaft bearing. Upon close examination I found it to be a very large crack extending from a point at the piston side of the bearing straight down half way to the bottom of the engine frame. I called the owner's attention to

this and told him I thought that was the very thing that was causing all his trouble. The owner said he could not see how that could affect the cylinder and piston so I told him we would start the engine up without any load and I would explain it to him. We started the engine and at each impulse the crack would open up just enough to throw the crank shaft connecting rod and piston out of line with the cylinder, causing the piston to bind in the cylinder and give out a groaning sound.

It was all very clear to the owner after I had explained it to him. He had the men hired to help thresh that day and he insisted on finishing the day's work with the engine in that condition. I advised him not to use it that way as it was liable to go to pieces at any time. He called up his dealer to see if he could borrow an engine for the day but could not do so and the dealer advised him that it would not hurt the engine in the least to run it in the condition it was in because he had

never known one of those engines to break. That was enough for the owner of the engine, so he said he would make it do his threshing or go to pieces. Further argument was useless on my part so I said no more. I told him to set a day for me to do the repairing and I would do so if there was any engine left.

He asked me to stay a while and look after the engine. I warned everyone to stay as far away as possible while the engine was running and it was fortunate they did so.

After I made a few adjustments we started the engine up and the way it labored pulling that thresher was frightful. I expected to see the engine frame give away at each impulse and in about fifteen minutes my expectations were fulfilled. The fly wheels jumped off their perch like a cricket, carrying a large portion of the engine frame with them. The piston leaped out of the cylinder as though it were glad to get out. All of which was accompanied with a hair raising noise which did not lessen the excitement one bit. As the piston leaped out of the cylinder it whirled over the crank shaft and struck the floor ahead of the flywheels, breaking a 4 x 6 sill and breaking itself in two pieces, also bending the connecting rod. The fly wheels did

Coming Events Cast Their Shadows Before Them



The Hum of the Threshing Machine

WILL soon be heard throughout the farming districts. The great fields of grain will soon be ripe, and then comes the busy season for you—Mr. Thresherman. New equipment is being bought, or the old overhauled. The question of what belt to use will soon be answered by the large majority of Threshermen in selecting

TRADE **SAWYER** MARK
Registered

ENDLESS STITCHED CANVAS BELT

PLEWES, LIMITED, Distributors, WINNIPEG

not stop until they became wedged in between the thresher and a large post, doing damage to the thresher.

I am very glad to relate that no one was hurt but if someone had been standing in the path of those fly wheels it is a safe guess that there would have been a tragedy right there. All this was caused by a lack of intelligence on the part of the owner of the engine. In the first place, he ought not have overloaded his engine and in the second place he should have known enough to quit after the engine had given him fair warning.

When a man asks my advice as to what size engine to buy I always tell him to buy all the reserve power he can afford within reason, and under no circumstances to thresh with less than a 10-horse power engine unless he has one of the very smallest threshers without attachments. There are many good engines on the market to-day but they are like a good watch, they will not stand abuse.

Do not overload your engine, and if you have been foolish enough to do so, stop instantly when you find something is wrong.

Fly Poison Perils Warning Against Arsenic

In the war on flies there is peril in the use of arsenic poison. The press reports of poison cases are appalling, especially when one realizes that they show only a fraction of the actual number. But this fraction amounted to 106 cases in the past three years, a large percentage of which were fatal. All because people use arsenic fly paper or the arsenic poison cans to rid their home of flies, putting this deadliest of all poisons within children's reach.

Doctor Ernest A. Sweet, Past Assistant Surgeon of the United

States Public Health Service has this to say in a public health report bulletin, entitled "The Transmission of disease by Flies—"* * Fatal cases of the poisoning of children through the use of such compounds are far too frequent, and owing to the resemblance of arsenical poisoning to summer diarrhoea and cholera infantum, it is believed that the cases reported do not, by any means, comprise the total. Arsenical fly destroying devices must therefore be rated as extremely dangerous and should never be used, even if other measures are not at hand."

Manitoba Farm Loans Act

Repayment of Loans

Repayment of loans will be made by equal annual payment, such annual payment being composed of five per cent interest on amount loaned, plus one per cent on the amount of unrepaid principal which is to cover cost of administering the affairs of the association, and the necessary amount of principal which, if invested at five per cent per annum will amortize or retire the loan at the end of thirty years. The borrower is therefore paying five per cent interest for his borrowings, receiving five per cent interest on the annual amount of principal repaid, and is paying one per cent per annum on the balance of loan still outstanding, part of which charge may, in the event of the affairs of the Association being managed at a less cost, be returned by way of dividends on his shares.

A sinking fund will be created in which will be deposited all moneys received on account of repayment of principal on loans, and such fund will be invested by the Board under the direction of the Lieutenant-Governor-in-Council in outstanding interest bearing stocks, bonds, debentures or other securities of the Dominion of Canada, the Province of Manitoba, or any Province in Canada, or securities guaranteed by the Province of Manitoba, or any such securities issued by any Municipalities or school districts in the Province.

Capital Stock

No persons other than borrowers and the Government of the Province can own shares in the Association.

Every borrower must subscribe to the extent of five per cent of his loan, for shares in the capital stock of the Association, and such shares shall run concurrently with and be collateral security to the loan. The Government of the Province will subscribe for an amount equal to that allotted to each borrower, so that the capital stock, at all times, is owned in equal shares by the Government and the borrowers.

The shares of capital stock must not be hypothecated, and they are not transferable except to the heirs, executors, administrators or assigns of the registered owner, or, in the event of sale of the property mortgaged, to the purchaser thereof with the consent and approval of the Association, and when payment in full of loan is made, the shares must be surrendered and will be paid off at par.

The authorized amount of capi-

tal stock is one million dollars, divided into two hundred thousand shares of five dollars each, which will take care of loans to the extent of ten million dollars.

Procuring of Capital

To obtain the necessary funds to carry on the business of the Association, provision is made that the Lieutenant-Governor-in-Council may authorize and empower the board, for and on behalf of the Association, to raise such sum or sums, from time to time, by issue and sale or hypothecation of bonds, stock or other securities, but not exceeding in amount ninety per centum of the first mortgage securities held and tendered as collateral security of the same.

Such bonds, stock or other securities will be issued by the board in the name of the Association, in the form approved by the Provincial Treasurer, bearing interest at a rate not exceeding five per cent per annum, and the Lieutenant-Governor-in-Council is authorized to guarantee the payment both as to principal and interest.

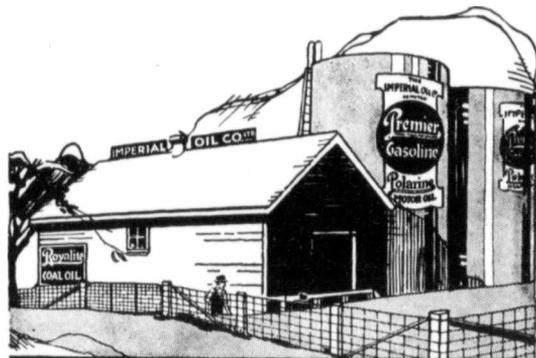
The guarantee will be signed by the Provincial Treasurer, or such other officer as may be designated by the Lieutenant-Governor-in-Council and upon being so signed the Province of Manitoba becomes liable for the payment of principal and interest on any securities so guaranteed, and in case of default by the Association the requirements of such guarantee must be paid out of the consolidated revenue fund of the Province.

In the event of the Government of the Province being called upon to pay, and paying any sums of money under its guarantee, the Province has a first lien upon all the assets of the Association, to secure the repayment of same.

All bonds, stocks or other securities issued by the board under the provisions of this Act are a lawful investment for all municipal and school district sinking funds, and for all fiduciary and trust funds, and may be accepted as security for all public deposits. All securities issued by the Association are free from Provincial, Municipal, School or other taxation except duties under "The Succession Duties Act."

Deposits

The Association is authorized and empowered to solicit and receive deposits of money repayable with or without interest from persons or corporations, and to be a depository for any Provincial, Municipal or School District funds.



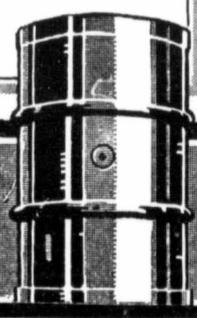
OVER 600 Imperial tank stations dot the Prairies and the Eastern provinces, so located as to give the quickest service to the farmer. There is one near you. The agent at that station will give you courteous, prompt attention, will tell you the right oil for each machine on your farm.

All our oils are supplied in steel barrels and steel half-barrels — convenient, economical. No waste. You use every drop you pay for.

AN OIL FOR EVERY FARM MACHINE

	<p>For Gasoline Engines, Tractor, Auto or Stationary POLARINE OIL STANDARD GAS ENGINE OIL</p> <p>For Kerosene Engines, Tractor or Stationary POLARINE OIL HEAVY IMPERIAL KEROSENE TRACTOR OIL <small>(Recommended by International Harvester Co.)</small></p>
	<p>For Open Bearings of Farm Machinery PRAIRIE HARVESTER OIL —very heavy body, resists cold, won't thin out with moisture</p> <p>ELDORADO CASTOR OIL —a thick oil for worn and loose bearings</p>
	<p>For Steam Cylinder Lubrication, whether Tractor or Stationary Type CAPITOL CYLINDER OIL —the standard product for steam cylinder lubrication</p>
	<p>For Grease Cup Lubrication of Bearings THRESHER HARD OIL —a clean solidified oil high melting point</p>

The Imperial Oil Company Limited
BRANCHES THROUGHOUT CANADA



TWELVE MONTHS OF THE BEST FARM PAPER PUBLISHED FOR ONE DOLLAR



you have the whole life-story of the thresher belt. For better, for worse, that interval stamps its fate. A doubtful connection at this point will ruin a season's threshing. There is **no doubt** about the



LION BRAND
Rubber Belt

OR THE

YELLOW FELLOW

ENDLESS THRESHER BELT



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, Not in any trust or Combine
WINNIPEG FORT WILLIAM REGINA SASKATOON CALGARY LETHBRIDGE EDMONTON

All such deposits are secured by guarantee of the Lieutenant-Governor-in-Council.

The Association, An Agricultural or Land Bank

From the foregoing it will be observed that the Manitoba Farm Loans Act in incorporating the Manitoba Farm Loans Association, has established for the benefit of the farmers of this Province, not only a new system mortgage corporation for loaning money at a cheap rate of interest with repayment extended over a long term of years, but has given to the residents of Manitoba an Agricultural or Land Bank. Every farmer with a title to his land has the right of making application for a loan, and in obtaining same becomes a shareholder in what may eventually prove the biggest financial institution within the Province; and every resident, whether of the city or the country has the privilege of placing his or her savings in a depository where current rates of interest will be allowed, with absolute security guaranteed by the Government, and with the knowledge that every dollar so deposited goes back to the land.

The Association is the connect-

ing link between finance and agriculture, and henceforth, the farmer like the business man, can come to his bank, and deposit his surplus cash in years of plenty, and in times of need get credit extended to him to carry on his business which might otherwise suffer. The first loan does not debar a borrower from obtaining a further advance providing, always that he has the security to offer, and it naturally follows that from the use of cheap money for productive purposes the security is increasing.

It must be definitely understood and emphasized that, in borrowing under this scheme the borrower is obtaining working capital, at a cost he can afford to pay, to develop or expand his business activities; and when in course of time the majority of the farmers have availed themselves of the advantages which will accrue by the use of this capital, every citizen in the province will feel the influence to better conditions, and more fully realize and appreciate the importance of this new departure in economic legislation for the benefit of those men whose improved conditions means everything in the hope of prosperity for the future.

Steam or Gas Tractors



Equipped with

PICKERING
"THE GOVERNOR WITHOUT JOINTS"

give greatest efficiency

FITTED TO EVERY BUILD OF ENGINE
Patent Ball Ranger Speed Changer Supplied on all Genuine Pickering Governors.

Will increase speed 50% or more.

THE PICKERING GOVERNOR CO.
PORTLAND



CONN, U.S.A.



Dr. Thomas' **Electric Oil**

Relieves all Pain in Man or Beast

25 Cent Bottles at all Dealers

CASE

Tractor Power Displaces Animal Power on Farms

The war in which the country is now engaged makes a greater demand for horses and mules than ever before. Animal power is already scarce. The United States government, on June 15th, began buying more horses. Six classes of animals will be required, ranging from cavalry horses down to pack mules.

This, added to the present scarcity, means much to farmers with foresight. It is an indication that the tractor must rapidly find its way to every farm. The farmer must choose a reliable tractor. One that fits the farm. Indications pointing to crops at bumper prices should impel every farmer to get a tractor now and make it do maximum duty. Make it earn extra profits by saving time and labor.

You can farm more acres better and obtain greater results with a reliable make of tractor than with animal power. For plowing deeper or working in the harvest heat, or any other farm operation, the tractor is always ready. Works day and night if necessary—never tires, doesn't eat when idle.



If you choose one of the five sizes of Case kerosene tractors, or one of the eight sizes of Case steam tractors, you will join a list of thousands of other Case users who already know that tractor farming is the right way with the right tractor.

You want profits—Case tractors will pave the way and save you time, labor and money.

J. I. Case T. M. Co., Inc. Liberty St., Racine, Wis.



CASE

Choosing a Case Tractor Means Satisfaction

Your farm may be 80 to 100 acres in size, or it may be a ranch of thousands of acres. That makes no difference. There is a Case tractor to fit your needs. It may be a Case 9-18, 10-20, 12-25, 20-40 or 30-60 kerosene tractor, or one of the eight sizes of Case steam tractors. But rely on this much, if it bears the name CASE you are assured of a tractor backed by experience, engineering skill, the best materials and the most complete tractor facilities in the world. Case business has been built on the bedrock of quality and honest value.

Every Case tractor, whether it be steam or kerosene, must develop horsepower in excess of its rating before it leaves the Case shops. In fact, every care is exercised to see that the customer receives dollar for dollar value when he buys a product bearing the Case name. In simplicity, accessibility and economy we believe that Case tractors are without equal. In this statement we are backed up by thousands of Case users who are in a position to know by actual experience with Case machinery. In every phase of tractor building Case employs the utmost care to give farmers a tractor better in every respect than any other.

In addition to thousands in use in the United States, you will find hundreds of Case tractors in actual use in Canada, England, France, Russia, South America, in fact wherever quality is demanded.

Let us send you literature on Case tractors. Learn how efficiently, how sturdily Case tractors are built. A postcard with your request is sufficient. We'll be glad to do the rest.

J. I. Case T. M. Co., Inc. **Liberty St., Racine, Wis.**





FARM POULTRY

The farm flock always pays when given proper care. Production here might be materially increased with very little additional labor or expense. Adopt system in your work, and put the management of the poultry plant into the hands of a boy or girl. One farmer in eastern Ontario made \$4.00 per cwt. out of his feed grain by selling it as new laid eggs. If one can do that, others can. Feed is dear, but so are eggs.

Breed from bred-to-lay strains; market the eggs when new-laid; distribute the sale of table poultry over as much of the year as possible; cull out the weaklings and feed intelligently. Increased production will follow, resulting in a larger surplus to meet Great Britain's demand for eggs.

Back Yard Poultry Keeping

Town and city back yards should be utilized more generally for poultry than is now the case. Back yard poultry keeping pays next best to farm poultry, if not as well. There are many back yards and vacant lots that cannot be used for vegetable growing, where poultry might be raised profitably. By means of a broody hen or an incubator, chicks may be hatched and afterwards brooded quite successfully on such lots. The broilers can be disposed of during the summer and the pullets kept for the production of eggs in the fall. If hatching is not practicable, day-old-chicks may be purchased. Another alternative is to purchase pullets in the fall, feed for winter eggs, and sell in the spring to make room for the garden. Only a cheap winter house is required,

and when table scraps are judiciously used in the ration, the bill for feed necessary to produce winter eggs is comparatively small. Many a school teacher, stenographer or bookkeeper might add health and variety to his or her occupation, increase the income and have the satisfaction of helping to keep home fires burning by spending leisure time producing poultry products.

To Poultry Breeders

Breeders and specialists can help increase poultry production by breeding from healthy stock so mated as to give the best fertility, by shipping only selected eggs or day-old chicks, and by endeavoring to place in good hands the eggs and chicks which they have for sale. Care should be taken that only normal eggs and strong chicks be shipped and that minimum losses occur in transportation.

Those who operate custom hatcheries should take similar care and, in addition, should warn shippers of eggs to the hatchery to be careful that the eggs shipped are fertile. Fertility can be ascertained by putting a few eggs under a hen and testing them on the seventh or eighth day.

More Eggs and Poultry

There never was a time when an increase in poultry production was as necessary as it is at present. The demand was never as good, and prospects indicate that this demand will continue for some time to come. With the scarcity of meat, Canadians are eating more eggs, and Great Britain needs all the eggs we can supply.

As a business proposition increased production of poultry products has much to commend





Never in Doubt

like the cause of the **Right**, has been the reputation of the **MAGNET CREAM SEPARATOR** since it was first sent out into the world to **Save the Butterfat** that other "separators" were passing on with the skim. That is the first "business" of the

"MAGNET"

Cream Separator

Seventeen years' constant use on Canadian farms have established beyond the shadow of a doubt that the "MAGNET" with its square gear drive and ball-bearing adjustments has shown no wear and proven that it will surely last a lifetime

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. The

MAGNET ALWAYS SKIMS CLEAN

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 chieft 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

Thoroughbred!

It pays to buy thoroughbred cattle—and it pays to buy thoroughbred clothes—

OVERALLS, WORK SHIRTS etc of

Stifel's Indigo Cloth

Standard for over 75 years.

Are every inch thoroughbred. Firm, strongly woven cloth, that resists wear and weather. Color that lasts as long as the cloth.

You can tell the genuine by this little mark  STIFEL'S INDIGO stamped on the back of the cloth inside the REGISTERED garment.

Look for it—and you'll never be disappointed in the wear of your working clothes—for it's the **CLOTH** in the garment that gives the wear.

Cloth Manufactured by

J. L. STIFEL & SONS

Indigo Dyers and Printers WHEELING, W. VA.

New York	366-363 Church St.	Baltimore	Coca-Cola Bldg.
Philadelphia	324 Market St.	St. Louis	928 Victoria Bldg.
Boston	31 Bedford St.	St. Paul	238 Endicott Bldg.
Chicago	223 W. Jackson Blvd.	Toronto	14 Manchester Bldg.
San Francisco	Postal Tel. Bldg.	Winnipeg	466 Hammond Bldg.
St. Joseph Mo.	Saxton Bank Bldg.	Montreal	Room 506, 489 St. Paul St.



it. In normal times Great Britain eats a million eggs a day. Present consumption is less than this, owing to the war having cut off many sources of supply. Canadian eggs are good eggs and are at a premium in England. Several cents a dozen more are paid for them than for eggs from some other countries.

For two years Canada has been producing a small surplus, and there is no reason why the surplus for 1917 should not be from five to ten times what it was in 1916. We have the climate, we have the feed, and though labor for other lines of work is scarce, there is plenty of labor suitable for poultry keeping.

Unfortunately, efforts to increase production will not affect the supply of eggs until the early pullets start to lay next fall. To help the egg supply in the meantime, make sure that laying hens are well fed; give them exercise and fresh air; market all weaklings and non-producers. Use vigorous males; have the fertility strong; have as few infertiles as possible; make every egg count. Aim to have hatching done between March 15th and May 25th, for general purpose breeds, and for light breeds, not later than June 15th. Give special attention to rearing the chicks.

The Housing of Poultry

These are the days when the more study is allied to practice the greater the success. In food production, as in all other things, this is eminently true. Book-learning is no longer an object of sneering by the man of practical experience. He has been forced to the conclusion that an earnest study of books, pamphlets and bulletins is a tremendous help to the beginner and often of the greatest value to himself. In bygone times poultry-keeping was of a haphazard nature. If the hens were healthy and laid in mysterious places all was well. If they didn't, the true cause was

rarely discovered and the fowl, having seemingly failed of their usefulness, were summarily dispatched. To-day much of this is changed and poultry-keeping has become a systematic pursuit permitting of research and subject to experiment, the same as any other branch of agricultural industry. A better aid to the very foundation of poultry-keeping could hardly be desired than a bulletin recently issued by the Dominion Department of Agriculture, and entitled "The Principles of Poultry House Construction with General and Detailed Plans." Mr. F. C. Elford, Dominion Poultry Husbandman, is the author and in the 55 pages of which this publication consists he has succinctly told, with abundant illustration, how poultry can best be housed and what is needed in that respect to make the birds good producers. There is little in the science of the proper housing of poultry that is not here set forth, from comparatively palatial structures and model runaways to the modest arrangement of occupants of villas and bungalows and dwellers on the outskirts of towns and cities. Besides plans of desirable structure, details of the material required and the dimensions are all given. In short, the publication, which can be had free on application to the Publication Branch, Department of Agriculture, Ottawa, is a complete text book on the matter with which it purports to treat.

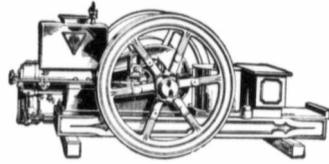


Advertising the Fact



The Padre: "Owing to a cold, Private Stayer will not be able to sing 'From Saturday Night Till Monday Morning' as intended, but Sergeant Stickett has kindly consented to play 'For All Eternity,' and as it will then be getting rather late we will conclude with the National Anthem."

ALPHA



—the Engine that takes the work out of farmwork

An Alpha will saw more wood in a day than you can saw by hand in a week.

It will pump water all day long without watching.

It will run your separator, churn or washing machine.

It will run a thresher, feed cutter, or silo filler.

There will not be a day when you cannot find some way in which your Alpha will save time, money and labor for you.

Owning an Alpha is cheaper than hiring someone else's engine. The money you now have to pay out for engine hire when you need power, and the greater amount of work you could do if you had an engine of your own would soon pay the cost of an Alpha.

The Alpha is a simple, powerful engine that will give you more reliable service and cause you less trouble than any other engine you can buy.

Ask for catalogue, prices and complete information. Made in eleven sizes, 2 to 25 H.P. Each furnished in stationary, semi-portable or portable style, and with hopper or tank cooled cylinder.

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 Buttermakers. Catalogues of any of our lines mailed upon request. MONTREAL PETERBORO WINNIPEG VANCOUVER 50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

"Oh, What Lovely Bacon!"

Isn't it though? Did you ever, anytime, anyplace, taste bacon so delicious—so tender—so mild? That's the famous **Sweet Clover Brand Bacon**—quality all the way through—just like the Sweet Clover Brand Ham and Lard.

Be sure to order these products **By Name.** All good dealers sell Sweet Clover Brand Products.

GORDON IRONSIDE & FARES CO. LIMITED
WINNIPEG ROOSE JAW

Weed Out the Male Birds

(Experimental Farms Note)

The worker bees put their house in order by killing off all the male bees as soon as their services are no longer required. What a great benefit it would be to the poultry producer and the poultry product consumer if the hens of the flock would likewise dispose of the male birds in those flocks that are indifferently managed. The worker bee permits no star boarder to loaf around and consume the product of her labor. The hen is not like the bee in asserting her rights. If she were, then her verdict would be, "Rooster, you must die."

There are over two million five hundred thousand roosters of the various breeds of chickens kept for breeding purposes by the people of our country. Of this vast army perhaps one hundred and fifty thousand have a right to live for another year of service. One hundred and fifty thousand may be good enough as individuals and in breeding to be used in the increase of their kind. What of the two million three hundred and fifty thousand that are usually permitted to live, birds that consume feed, worry the hens and reduce the quality of market eggs?

The function of the rooster is to develop and distribute germ cells, during a short period of three months, February, March and April. These germ cells should be distributed only to such egg-laying individuals as are desired to perpetuate the breed. The germ cell is a living organism capable of starting a chain of development, and here is where the mischief lies, if they are distributed where they do not serve their proper function in race perpetuation.

The function of the modern hen is to produce eggs, ten per cent of which may be desired for

the increase of the breed, and the remaining ninety per cent for human food. Nine eggs are used for human food, where but one is used for hatching. Only one-tenth of the eggs that a hen lays require fertilization. Why fertilize the nine-tenths of the product that is used for human food? The addition of a living germ cell to an egg that is produced for human food, does not add anything to its value, and may set up a chain of embryo development that will make the egg quite unfit for human food.

Eggs gathered from flocks where the roosters are permitted to run after the hatching season is over, are not desirable for storage. They are not desirable in the pantry during periods of warm weather, as high temperatures will start incubation. Eggs in the first stage of decay are not desirable for human food.

It is an easy matter to prevent the fertilization of eggs. If the male bird is just an ordinary one, an axe and a block of wood will prevent further mischief. If the male bird is possessed of such merit as would warrant his being boarded for a year to be used in the next season's breeding operations, then give him an enclosure of his own and see that he stays in it.

The cost of the feed consumed by an ordinary rooster is about twenty cents per month. Can you afford it? If you keep poultry with profit as your object, can you afford to keep a star boarder for nine months and perhaps have him doing mischief all the time?

The two million, three hundred and fifty thousand odd, unnecessary male birds are costing the country about three and a half million dollars per year while enjoying life. These unnecessary birds are at the same time doing about ten million dollars damage to the egg-producing business. If every person owning a rooster would manage him as a



Tommy (to Officer who has only arrived in the trench by accident): "If you're a-looking for the buried cable, sir, it's further along."

Let's Go ———— Where?

Provincial Exhibition

BRANDON, Man. July 16, 17, 18, 19, 20, 1917

THE FARMERS' ANNUAL HOLIDAY WEEK.
This year's exhibition will be the best ever.

PRIZES ARE OFFERED for Live Stock, Poultry, Agricultural and Dairy Products, Fine Arts, Ladies' Work, School Exhibits, Butter Making, Milking Tests, etc.

GOVERNMENT EXHIBITS. Dominion Government, Live Stock Branch, Experimental Farms, Provincial Government and Agricultural College. Provincial Board of Health Exhibit. Canadian Pacific Railway. These are all educational features, and are worth coming hundreds of miles to see.

INDUSTRIAL EXHIBITS. Farm Machinery, Farm Implements, Labor-saving Devices of all kinds. This Exhibit is always attractive and will be bigger and better this year.

FARM TRACTOR DEMONSTRATION. You will see thirty outfits doing actual work on Farm close to Fair Grounds.

ATTRACTIONS AND AMUSEMENTS

HORSE RACES. AUTOMOBILE RACES. MULE DERBY RACES.

Grand array of Platform Attractions and Amusements. A Fair for Education, Pleasure, and Vacation.

Single fare railway rates from all points in Manitoba and Saskatchewan.

EVERY DAY A BIG DAY

P. PAYNE, President

W. I. SMALE, Secretary

The Townsley System

Will Guarantee Protection From Electric Storms

You will also save the cost of thorough protection by reduction on Insurance Rates, if your buildings are rodded by the **TOWNSLEY SYSTEM** of Lightning Protection. NOW is the time to make inquiry as to how, at an infinitely small cost, you can safeguard the lives of your family, your live stock and your property. Write us for full particulars—refer to "The Canadian Thresherman and Farmer."

See page 50 of this Issue of this Magazine for some Startling Particulars

Canadian Lightning Arrester and Electric Co., Ltd.
BRANDON, MAN.

male bird should be managed, the poultry industry would be benefited by additional profits, many millions of dollars.

Where a Tree Feeds

A tree sends its roots at least as far as the branches above the ground. It is the newly-developed roots that take up the nourishment, and these are at the ends of the new roots just as the leaves are on the new branches. This means that water or manure to do the most good must be spread over a surface reaching out at least as far from the tree as the overhang of the branches. Where the rainfall is light grass and weeds should be kept from growing over the roots of the tree, as these will get the moisture first when it rains and there may not be enough to allow any to pass to the tree roots. There are few places so dry that a tree will not make a good growth if it gets all the moisture that falls on the ground occupied with its roots.

Hustling the Corn Crop

Shallow cultivation is one way of hustling the corn crop. The surface soil warms up first and contains the most available plant food, so that is where many of the corn roots go. Deep cultivation will cut these roots which results in a set back for the corn plant.

Kinds of Sweet Clover

Two kinds of sweet clover are commonly grown, the white and the yellow. The white is considered to have the greatest value both for hay and pasture. It grows larger than the yellow and is more leafy. The seed of the white sweet clover is of a bright olive green color and about the same size as alfalfa seed. The seed of the yellow sweet clover is much the same size, shape and color except that under the microscope it has a mottled appearance and not unlike a turkey egg.



This Family Earns its Living

Massey-Harris Service

Talk No. 4.—A Square Deal.

NO higher compliment can be paid a man than that he is "absolutely square," and what is true of the individual, applies with equal force to a group of men organized into a company. From the very first, the men who have directed the policy of this company, have been men of the highest standing, and the same high principles which guided them individually have been applied to the management of Massey-Harris Company, Limited.

This spirit of square dealing plays a big part in the manufacturing end of the business.

Massey-Harris implements are good all the way through—nothing is slighted because it will not show—the materials and workmanship are of the very best, regardless of whether they are in some inaccessible part of the machine or may be covered up by paint, and it is a well-known fact that paint can cover a multitude of evil. Each and every part of every Massey-Harris machine is built on honor, and you can absolutely depend on it.

Then, in our dealings with our customers, the same

straightforward policy prevails. Our implements are sold on business lines, everything open and above board, and every machine carries a guarantee backed by a company with both the desire and ability to make good under that guarantee.

The steady development from the little country blacksmith shop to the immense organization of to-day, with its system of factories and branch houses doing business all over the world, is conclusive proof that honest methods have prevailed, both in the manufacture and sale of Massey-Harris implements.

And, when all is said and done, what a source of satisfaction it is to buy from a firm with the full assurance that you are getting a square deal.

MASSEY-HARRIS CO., LIMITED

Head Offices—Toronto.

Factories at Toronto, Brantford and Woodstock.

Branches at:—Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Yorkton, Calgary, Edmonton.

AGENCIES EVERYWHERE

WE'LL BUY YOUR TIME

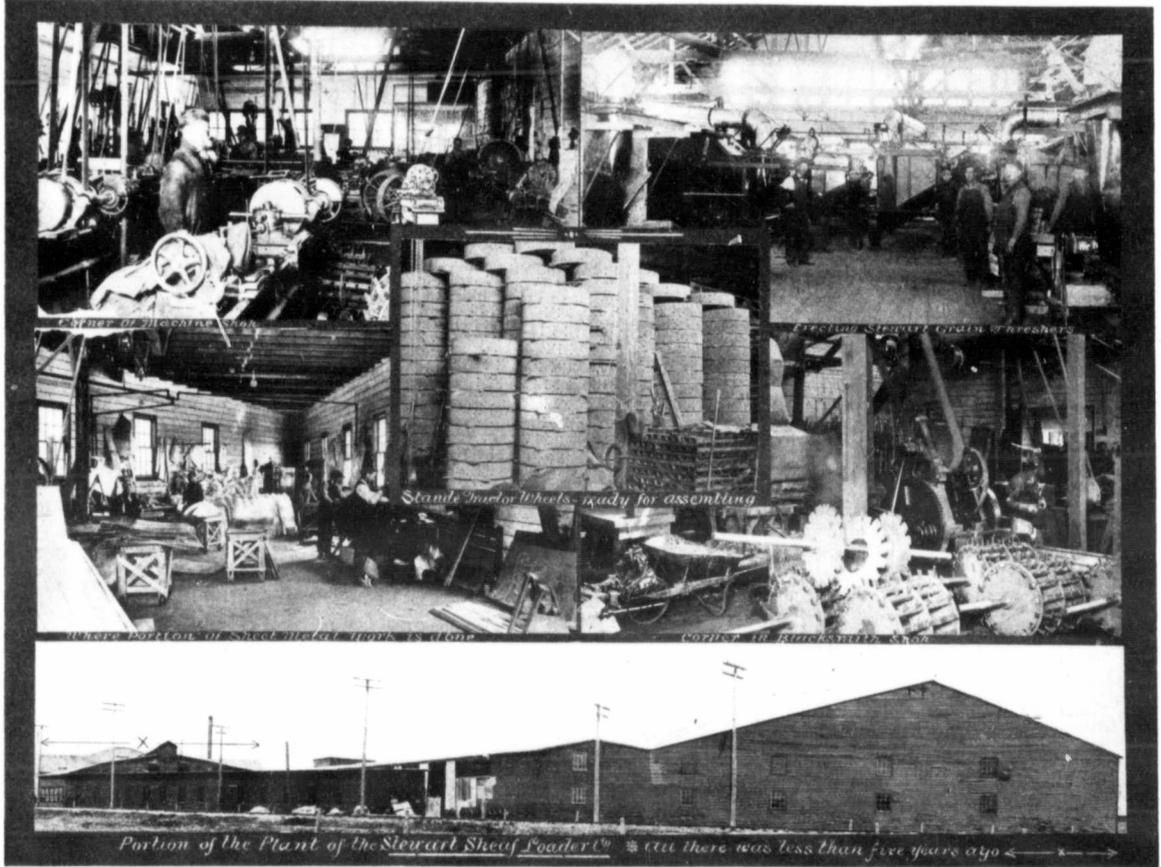
Thresherman and Farmer at present subscription prices.

Several Canadian farm publications have been obliged to increase their prices on account of the increased cost of paper. Considering this fact The Canadian Thresherman and Farmer should be the greatest and easiest sold magazine for the farmers to-day. We particularly desire farmers who are well known in their localities. These men can conduct a vigorous campaign with our help to their decided profit.

Applications should be sent immediately to the Circulation Manager.

E. H. HEATH CO., LIMITED, WINNIPEG, MANITOBA

this summer. The plans for our summer subscription campaign call for 300 more men. The opportunity is particularly big in view of our continuing to sell The Canadian



THE above illustrations show a few corners of the plant of the Stewart Sheaf Loader Co. of Winnipeg.

This plant dates back to 1911 when the first fifty Stewart Loaders were constructed, sold and operated in the threshing fields of Western Canada. Since that time, many hundreds of loaders have been built for the farmers of the Canadian West, and not a few have been built for farmers on the American side of the line.

About two years ago, however, the company decided to enlarge its sphere of usefulness and engaged in the manufacture of grain threshers. So successful have they been in this particular line that over 400 machines will be built and marketed through some of the leading Western Canadian jobbers in 1917.

One thing leads to another. The Stewart Sheaf Loader Co. found that in order to play the game of "safety first" and to protect themselves against any contingency that might arise through the shortage of material, that it was necessary for them to construct a foundry in order that they might do all their own casting. Accordingly, ground was broken and within the very near

Saving Battalions for War Service

future one of the largest foundries in Winnipeg will become that of the Stewart Sheaf Loader's plant.

With the foundry would naturally come a capacity in excess of

fifty or more of these machines per day. This machine is an attachment whereby a Ford car can be converted into a two plow farm tractor.

Few people in Winnipeg, in fact in Western Canada, realize that right here in their midst there is growing up a farm implement manufacturing concern of no mean proportion. The company realizes that Western Canada will always raise grain to a very large extent, and they have devoted themselves to the building of grain raising and grain handling implements.

J. F. Menzies, a cut of whom appears on this page is the man responsible for the remarkable growth of the Stewart Sheaf Loader Co. Far seeing, discerning, imbued with implicit faith in the Canadian West, Mr. Menzies has brought his company through many difficulties.

During war times the policy of most concerns has been to retreat, but the Stewart Sheaf Loader Co. has made most of its

development since the war began. For several years to come we shall need to force production in Western Canada to the utmost and the implements manufactured by the Stewart Sheaf Loader Co. will undoubtedly contribute towards this increased production in no small manner.

To Help Save the Foals

There has been a strong demand for the bulletin, "Management of the Brood Mare and Foal," written by Dr. C. D. McGilvray, and published two months ago by the Manitoba Department of Agriculture. The farmers of the Canadian West are alive to the possibilities of horse raising at the present time, and the foolishness of permitting wastage through bad methods of handling the breeding stock.

A splendid sequel to this bulletin, entitled, "Common Diseases and Disorders of the Foal," also by the same author, is now ready for circulation.

The bulletin contains a separate article on each disease. Free copies are obtainable from the Publications Branch, Department of Agriculture, Winnipeg.



J. F. MENZIES,
Manager Stewart Sheaf Loader Co.

their everyday requirements. Accordingly the company began to look for something that would fill in and keep the foundry running up to full capacity.

They decided that the thing for them to build was the Staudemak-a-Tractor, and within a very short time they will be turning out



Tackle The Annual Threshing Siege

this year in a better way. With the development of the wheat farms of the West, the farmers have found that a great deal of labor was required to get the sheaves to the threshing machines and various inventions have been tried to overcome this difficulty. The threshing machine that could travel from place to place and pick up the stooks has been tried on some places but it has met its difficulties.

That it might be possible to have a machine to do the loading on a plan similar to that of

the hay loaders was the dream of inventors for some time. This dream was realized some years ago when the Stewart boys got their heads together and invented the STEWART SHEAF LOADER. It is little wonder to-day that the sales are going on faster than the manufacture, for when a farmer sees anything that will make him money, he is not slow to accept the idea. Of all aids to successful, profitable farming, the latest and the greatest is the

Stewart Sheaf Loader

It puts harvesting on a new basis. The man who owns one is in a better position than was ever possible before. It loads his grain in the wagons, quicker, better and cheaper and gets his threshing done in record time with a much smaller gang. It overcomes the annual drawback of scarcity of harvest hands because it does away with all the field pitchers and half the bundle teams.

The Men Who Own One Are The Men Who Know!

"I threshed 56,316 bushels of wheat and 1,000 bushels of oats in twenty-seven days, making an average of 2,308 bushels per day. Your STEWART SHEAF LOADER gave entire satisfaction."—Wm. P. McLachlan, Eskbank, Sask.

"We can save \$12.00 a day and 25 bushels of grain a day with the Loader."—Klotz Bros., Denzil, Sask.

"We have used one of your Loaders in 1915 and we find that we saved the price of three teams and four men. This would mean that we saved about \$21.50 per day. We also claim that we saved the farmer about \$1.00 per acre by taking it up cleaner than can be done by hand forking: also the board of the three teams."—Geo. W. Weese & Son, Kelfield, Sask.

"I run a 40 x 64 Gaar-Scott and fourteen stook teams always until this year, but with the Loader six teams kept her flooded. In regard to the draft, four horses will pull it and gain. The pick-up is wonderful. This is my seventh outfit and the Loader is the best labor-saver I ever had."—E. Maxwell, Portreeve, Sask.



When attending the Fairs at Brandon, Regina and Saskatoon, you will have an opportunity of visiting our exhibit and seeing our Stewart Sheaf Loader, together with our Threshing Separators and our Staud-Mak-a-Tractor. We will be there to answer any questions and to explain these machines to you in every detail.

Stewart Sheaf Loader Co., Ltd.

WINNIPEG

Man.

Real Estate Wrinkles

By MARK LANE

OF the vast sums irrevocably lost in real estate ventures in this western country, a goodly part disappeared, because certain precautions were not taken by purchasers to protect their interests on the score of title—they blindly accepted a Sale Agreement without question, when it was merely a "scrap of paper." At the moment we are not concerned with the merits or demerits of real estate speculation, but in the legitimate purchase, sale and transfer of realty, which even in war time is a business of considerable proportions, there are certain danger signals and safeguards which are readily available to-day, as the fruits of the bitter experience of many who found that ignorance or guilelessness may often spell loss. Lawyer's bills are usually paid with a grudge, but it is "better to be safe than sorry," and the man who, as a matter of business policy, will consult an experienced and trustworthy legal adviser as occasion arises, will avoid many losses which befall the unwary.

While our land title systems are simple, compared to those of older lands, yet there are many pitfalls, and a purchaser before parting with his good money should safeguard his interests—not simply accepting as gospel what the vendor or real estate agent may say—but obtaining from his own solicitor a written report certifying that the title is in order, and that the vendor is legally entitled to make the sale. For preliminary investigation it is not always necessary to consult a solicitor, as any person can search a title at the Land Titles office, or obtain an abstract of the title at the trifling cost of one dollar. When the sale is "on time" and has been completed, the purchaser's solicitor should at once register a caveat with the District Registrar, which in effect notifies the existence of the Sale Agreement and forbids further registrations, except as subject to the purchasers interest. A caveat does not give absolute protection, as it cannot affect past registrations, but it would prevent future irregularities, which the vendor might attempt to commit, e.g., putting another mortgage on the property. Evidence as to taxes is also important.

When a purchaser buys "on time" from a party who had also bought on the same basis, and who still owes part of the first sale consideration to the titleholder, the second purchaser

should stipulate in his agreement for his protecting the titleholder's claim, before paying over moneys to the intervening party, or he should satisfy himself at each time of payment, that the first agreement is in good standing, and that the balance outstanding thereunder, is less than the amount he owes to the second vendor. In many cases second purchasers have innocently paid up their agreements in full, only to find afterwards that they would have to satisfy the balance owing on the first sale, in order to secure title.

In buying realty from an estate, care should be taken to ascertain if the trustee or executor has power to sell—indeed the best precaution is to insist if possible, on securing a transfer, and having it registered before the consideration money goes beyond recall—a deposit in the joint names of the vendor and purchaser would permit of the transaction being executed in this way. If part of the purchase price be in deferred payments, the purchaser can give a mortgage back for the unpaid consideration. In Manitoba the Registrar requires in cases of intestate estates, to satisfy himself of the necessity and wisdom of selling real estate, before he will permit registration of a transfer, and if he holds up the matter, the purchaser might be caused serious inconvenience. The extra cost of giving back a mortgage is trifling, compared with the satisfaction of having a valid and marketable title to the property.

In Saskatchewan the registration of a transfer renders the new title holder liable for prior encumbrances on the title, and in all cases the precaution should be taken of having a special clause inserted in the transfer negating the purchaser's liability for such encumbrances.

The recent imposition of a land increment tax may doubtless be easily defended, but it is a hardship upon an innocent purchaser has to pay the increased dues, while the vendor who made the profit gets off scot free.

Land titles in the west are of two kinds—the old systems title and the torrens title. Under the former the chain of title begins with a grant from the Crown, and thereafter consists of the various transfers, mortgages, sale agreements, etc., which pertain to the particular piece of property down to the present date. In the older settlements of Manitoba this system is mostly in vogue, but an

FORETHOUGHT IN YOUTH

means comfort in old age.

How is it that about eighty per cent of persons over sixty are dependent upon others for support? The remedy lies in suitable LIFE INSURANCE. There is no safer or more certain provision for old age than a carefully chosen Life Policy. Meantime there is the comfortable assurance that dependent ones are protected.

The Great-West Life Policies are issued on most attractive terms. Personal rates on request; state age.

The Great-West Life Assurance Company

Dept. "U"

HEAD OFFICE - WINNIPEG

UNION BANK

OF CANADA

Bank by Mail and Save Long Drives

If none of our 200 Western Branches is near your home, mail us the cheques or cash you receive, with your Passbook and we will return it with the Deposit credited. Then you can pay your bills by cheque, which we will honor, or if you want the cash yourself send us a cheque in your own favor and we will forward the money by return mail.

BRANCHES IN SASKATCHEWAN

Abbey, Adanac, Aleski, Arcola, Asquith, Assiniboia, Bounty, Buchanan, Bruno, Cabri, Canora, Carlyle, Craik, Cupar, Cut Knife, Dinsmore, Dunsmuir, East End, Esterhazy, Estevan, Eyebrow, Fillmore, Gravelbourg, Gurnsey, Gull Lake, Herbert, Higinson, Humboldt, Indian Head, Jansen, Kelfield, Kerrobert, Kindersley, Landis, Lang, Langdon, Lawson, Lemberg, Lovrina, Lumsden, Lunenburg, Macklin, Major, Maple Creek, Maryfield, MacFlore, Melfort, Milestone, Moose Jaw, Moosomin, Morse, Netherhill, Neudorf, Ogema, Outlook, Osbow, Pense, Perdue, Piplot, Plenty, Prince Albert, Qu'Appelle, Regina, Rosbart, Rosetown, Rosetown, Saskatoon, Scott, Scripps, Shannavan, Simpson, Sintaluta, Southey, Strassburg, Swift Current, Tessier, Theodora, Togo, Tompkins, Vanguard, Viceroy, Vidora, Wapella, Wawota, Watrous, Webb, Weyburn, Wilkie, Windhorst, Wolsley, Yorkton, Zealandia.

Head Office: Winnipeg
Total Assets over
\$109,000,000
Deposits over \$85,000,000

FARMS FOR SALE

Belonging to Estates which must be closed out.
Send for Particulars.

UNION TRUST
STRENGTH — FIDELITY
COMPANY LIMITED
REGINA, SASK. WINNIPEG, MAN.

235

PACE HARRISON Ltd.

WINNIPEG.

General Agents

**Yorkshire Fire Insurance
Co. of England**
LIVE STOCK DEPARTMENT
SPECIAL FARMERS' ACCIDENT POLICY
FIRE INSURANCE
AGENTS WANTED



WE'LL BUY YOUR TIME this summer. We want about 300 men, who, for first-class remuneration are willing to represent us in their own neighbourhood. For full particulars, write to the circulation manager.

E. H. HEATH CO. LTD., WINNIPEG

owner may have his "old" title brought under the torrens system, and frequently when a purchaser insists upon getting a torrens title, the cost of "torrensing" it which may run up to \$100, is borne equally by vendor and purchaser. The weakness of the old system is that there may be a defective link in the chain of title, and as there is no government certificate of validity, the title may be declared defective by a purchaser, who might thereupon decline to proceed with the transaction.

The torrens system, on the other hand, provides a title about which there can be no ambiguity, inasmuch as the Registrar is responsible for the validity of documents presented for registration, and the certificate of title he issues is practically indisputable. The title-holder is not concerned with the previous history of the ownership—the certificate guarantees his title to be absolutely good, and according to the record, as of the date of title.

Most mortgages provide for three months' additional interest.

as bonus should the mortgage not be promptly paid off at maturity, but in Manitoba a statute passed a few years ago, declares this provision is not enforceable. Manitoba mortgagors, who contemplate having their mortgages taken over by the Government Farm Loans Association, need not worry on this account if the matter cannot be completed promptly at maturity of the present mortgages, and if interest and taxes are in good standing, the moratorium act would protect them against legal proceedings.

A case was recently brought to the writer's notice, where a Winnipeg firm of solicitors strenuously endeavored to collect a three months' bonus on past due instalments of a mortgage from a poor woman, who by her outside work had paid off the sale agreement and also all current interest, taxes and insurance, while she might have availed herself of the protection of the moratorium act. These hunnish tactics were promptly challenged, but in too many cases the borrower foolishly pays up when one letter from his solicitor would settle the matter.

Steps in Repairing Blowouts

When a tire receives an injury extending through all the plies of fabric the repair must be in the form of a section.

First buff the inside of the tire for a distance of 5 in. on each side of the break. Cut through the tread 3 in. beyond the injury on one side and skin it back to a point the same distance from the other side. Lay the tread back so that it will not interfere with the work. Remove the side wall on the injury side for the same distance.

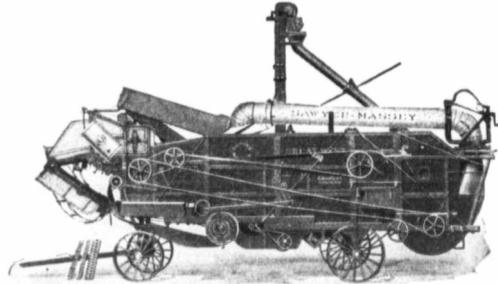
Remove one chafing or bead strip below the injury, starting 1/2 in. inside the limits of the section. A second ply is then removed, starting 3/4 in. above the first ply on the reverse side and running one inch inside the first ply on both ends. Then bevel out the remaining plies around the injury, and thoroughly roughen all surfaces to be repaired. The job is now ready for cementing and building.

Cement For Patching Rubber Boots

A cement for patching rubber boots and which will also unite leather to leather, India rubber, etc., consists of 15 parts rosin, 100 parts finely chopped India rubber and 10 parts shellac. Dissolve the ingredients in carbon disulphide. The vessel in which the preparation is made should be kept tightly sealed and should be shaken from time to time. Carbon disulphide is highly volatile and must not be exposed to a naked flame.

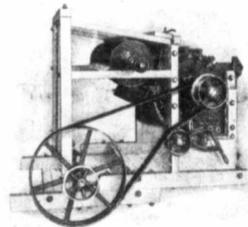
Large Capacity Great West Threshers

FOR BIG CROPS



Right side view of the new model 16 bar cylinder Sawyer-Massey Great West Thresher

This new model Sawyer-Massey Great West Separator is built in three sizes, 32 x 56, 36 x 60, and 40 x 64. These are our strongest, fastest and greatest capacity Separators, and are designed not only for doing a farmer's own threshing, but also to do custom work, handling a large amount of grain in a short time, and doing good work, fast.



The cylinder has sixteen double bars fitted with specially heavy No. 20 teeth on which are used strong washers to prevent nuts coming slack. This cylinder has a very heavy shaft and only runs at 865 revolutions per minute, permitting the use of a very large drive pulley. The concaves are of very heavy material supported by steel braces underneath and are operated by a worm concave lifter. The grate extends very high, coming up on a level above the top of the cylinder shaft. This acts as a special check plate. Above this is a four wing beater with heavy teeth, which teeth come within half an inch from the check plate and comb the straw, separating all lumps, and spreading the straw evenly on the straw racks. Behind the beater is a hinged steel apron preventing the straw from shooting to the rear of the machine before being properly agitated.

J. H. and Peter Holstein, of Box No. 35, Rhein, Saskatchewan, wrote us under date of December 16th, 1916: "Thinking that you would like to hear from us regarding the 32 x 56 Great West Separator and 22-68 rear-mounted engine purchased from your agent, W. J. Duncan, at Rhein this season, we would say that we threshed over two thousand acres and averaged THREE THOUSAND BUSHELS per day, and never had any trouble at all. We were always ready to go when the grain was fit to thresh, and may say that we gave all our customers perfect satisfaction. We have had two machines before and they did not give us as good satisfaction as this one. If you wish to use this as a testimonial you are at liberty to do so. We would strongly recommend any person who is in the market for a machine to look the Great West Separator and Sawyer-Massey Engine over carefully first before purchasing, and anything we can do to help them to decide we will only be too pleased to do it."

We build smaller size individual Threshers, also a complete range of Gas-Oil Tractors, Rearmount and Sidemount Steam Tractors, and Road Machinery. Write for more detailed information, stating which size or style machine you would like special information on.

Sawyer-Massey Company, Limited

HEAD OFFICE AND FACTORY: HAMILTON, Ontario

Branch Offices and Warehouses

WINNIPEG, REGINA, SASKATOON, CALGARY

SEE US AT THE BRANDON EXHIBITION

WANTED

LIVE ENERGETIC AGENTS for a new and progressive Life Assurance Company whose policies are based on the SCIENTIFIC SYSTEM and are therefore easy to sell. Let us tell you of our 15 powerful reasons why our policies are superior to others. Do YOU want a Profitable Agency? Write us for particulars.

THE NORTHWESTERN LIFE Assurance Co. Canada's Only Scientific Life Company Bank of Nova Scotia Bldg., Winnipeg

Money to Loan

on improved farm property

Lowest Current Rates

Apply through our representative in your district or direct to our nearest office.

National Trust Company Limited.

323 Main Street WINNIPEG

TORONTO MONTREAL EDMONTON REGINA SASKATOON

Stop that Knocking

THERE is a Bowery missionary who tells his audiences that "every knock is a boost"; that may be true of verbal knocking, but I am inclined to think that auto knocks do not do much boosting, but have a contrary inclination, says H. C. Brokaw, principal West Side Y.M.C.A. Automobile School, New York.

Do not imagine if your engine starts knocking while you are out on the road that your cylinders are filling up with carbon, or that the main bearings are worn loose. The knock may be from a totally different source. In fact, there are so many different kinds of knocks that even an expert cannot tell always just where it comes from without totally disassembling the engine. Even then it sometimes puzzles him a lot by its elusiveness.

Most engines have a knock of some sort which annoys the driver, which might vary from a barely perceptible click to a blow that may be heard by persons standing on the sidewalk. A great many of the knocks do not do any harm; that is, they are not causing any damage to the engine parts; but there are some knocks which require immediate attention to prevent the demolition of the engine or seriously damaging it. Some of these are loose connecting rod bearing; cylinder loose on its base, lack of lubrication and consequent overheating; and a broken revolving or reciprocating member, which might tear things up if allowed to run. The spark advanced too far puts an excessive strain on the crank shaft and a short circuit in the ignition system does the same.

On the other hand, there is no immediate danger if there is a piston slap, though pretty noisy; nor is there when the oil pump gives a thump or loud click at the valve seating. But on general principles when there is a knock its cause should be ascertained at once and expert advice obtained as to whether it is dangerous. If so, it must be fixed before running further. It is only a minor knock the repair can be left to a more convenient time.

So many of the knocks are only a matter of annoyance; that is, they do no more harm than to cause the driver unnecessary nerve jars and to spoil the pleasure of riding. But he will bother the various garage men and everybody else he can get to listen and then will not accept the assurance that the knock is not doing any harm.

As a matter of fact there are knocks peculiar to certain makes of engines that the manufacturers have not seen fit to eliminate because they are not harmful. Among these is the so-called "gas knock." Now I do not know what a "gas knock" is, and I doubt if anybody else does. But it is a common term for the kind of a knock which cannot be located anywhere and it is laid to some action of the gas.

Sometimes the knocks are hard to locate. One of our cars needed a new cam shaft gear to replace a worn one which produced a knock. It was put on, but when the engine was started it was found that there was a worse knock than before. It took a long time to find that it was the new gear. It fitted very tight on the shaft and had to be forced on. Without being noticeable the forcing had cracked the hub and this cracked through the rim, so that two of the teeth were out of true and had spread enough to pound when that portion of the gear came into mesh.

Another knock difficult to locate is caused by sticking exhaust valves. One of the valve stems has been oiled and this has been allowed to burn to a nice sticky paste. Now, when the push rod opens the valve and starts down, the valve does not follow closely. The spring brings it down, of course, but more slowly than it should, because of the sticky stem, and when the stem and push rod meet there is a thump.

It is ordinarily said that a lean mixture or an overadvanced spark will cause knocking. As a matter of fact, they do not do anything of the kind; but it is true that these things bring to our notice other faults, such as worn piston or cylinder wall and consequent side slap, or they magnify some other worn part so that it becomes audible. As a matter of fact it is possible to advance the spark so far that it will try to reverse the engine and not have a particle of knock. And it is possible to have so lean a mixture that it will hardly run the engine, without a knock; but if there is something else wrong it will bring that out.

Some of the causes of knocking discovered at the school have been collated and are given for the instruction of the novice:

Mechanical Looseness, Due to Improper Adjustment or Wear

Loose connecting rod bearing, crank pin end.

Crank pin bearing out of round. Main bearings of crank shaft loose.

Cushman Combination Thresher

Don't Wait until your grain is damaged in the shock—until hundreds of bushels are shelled out and lost—until the rain and snow cuts down the grade. Your grain is worth too much money to waste.

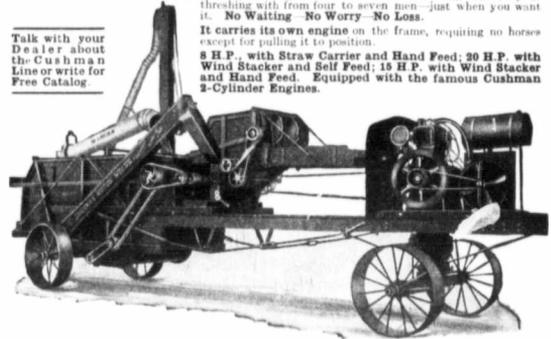
JUST WHAT YOU NEED

Here is a Threshing Unit that you and your neighbor can afford to own—that will do your threshing with from four to seven men—just when you want it. No Waiting—No Worry—No Loss.

Talk with your Dealer about the Cushman line or write for Free Catalog.

It carries its own engine on the frame, requiring no horses except for pulling it to position.

8 H.P. with Straw Carrier and Hand Feed; 20 H.P. with Wind Stacker and Self Feed; 15 H.P. with Wind Stacker and Hand Feed. Equipped with the famous Cushman 3-Cylinder Engines.

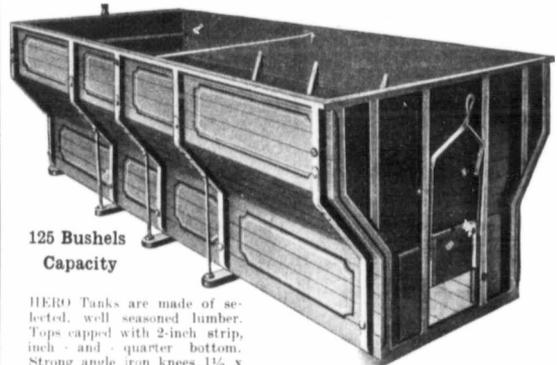


CUSHMAN MOTOR WORKS OF CANADA, LTD.

Dept. A, Whyte Avenue and Vine Street, WINNIPEG

Builders of Light Weight Engines for Farm and Binder use. Distributors of Reliable Power Driven Machines, such as Fanning Mills, Grinders, Saws, Power Washing Machines etc. Also Barn Door Hangers and Mountaineer Neck Yoke Centres.

Hero Grain Tanks



125 Bushels Capacity

HERO Tanks are made of selected, well seasoned lumber. Tops cupped with 2-inch strip, inch and quarter bottom. Strong angle iron knees 1½ x 1½ x ½ inch. Lined with hardwood. Angle iron joint between sides and bottom ensures flax-tight construction. Braces are adjustable to overcome sagging—an exclusive feature. Large stock on hand.

If your dealer does not carry this line write direct to

Hero Manufacturing Company, Limited

WINNIPEG

(Under New Management)

CANADA

Cast Iron Breakages Welded

By the Oxy-Acetylene Process

WE ARE THE PIONEERS OF THIS PROCESS IN THE WEST

Our repairs are permanent and our welds absolutely guaranteed. Prices reasonable. All machinery parts welded. We operate a machine shop in connection with the welding department. Worn or scored engine cylinders rebored and fitted with oversize pistons and rings.

INQUIRIES CHEERFULLY ANSWERED

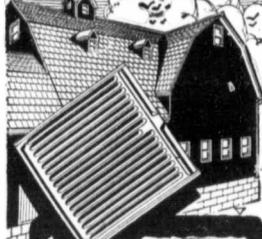
Manitoba Welding and Mfg. Co.

(Established in 1911)

55 PRINCESS STREET

WINNIPEG

PEDLAR'S "GEORGE" SHINGLES



THE roof of your barn is the first part to feel the effects of wear and weather. Make your roof wear-proof and you add many years of better service to your whole barn. Pedlar's "George" Shingles not only offer the safest protection against weather, wind, fire and lightning, but the way they lock together, tight on all four sides, makes them practically indestructible. Impossible for wind, rain and dampness to get beneath shingles and start to rot and decay your roof. For a permanent barn roof, Pedlarize now. Write for "The Right Roof" Booklet C.T.

THE PEDLAR PEOPLE LIMITED
(Established 1861)
80 Lombard Street WINNIPEG

Executive Offices and
Factory
OSHAWA, Ont.
Branches:
Regina, Moose Jaw,
Calgary, Edmonton,
Vancouver.



E-B (GEISER) THRESHER

Here is a small thresher with big capacity. Small enough for your own use and large enough for profits in custom work. Equipped with Wind Stacker and Feeder, can be operated by light tractor. We manufacture all sizes and styles of threshers. Write for catalog. Look for the E-B trade mark. It's your guide to better, more profitable farming. Ask for E-B literature.



Please send me free literature on articles checked:

Flows	Letters	E-B 12-20 Tractor
Harrows	Gas Engines	Imerson Model 12-20
Calculators	Wagons	Big Four "20" Tractor
Mowers	Cannons	"40" Tractor
Sprayers	Auto Tractors	Engine Plans
Drills	Power Machinery	Steam Engines
Planters	Saw Mills	Threshers
Hay Tools	Baling Presses	Corn Shellers

Name _____
Address _____

PATENTS TRADE MARKS AND DESIGNS

Write for booklet, circulars, terms, etc.

FETHERSTONHAUGH & CO.

FRED. B. FETHERSTONHAUGH, E. C. M. P.
GERALD S. ROXBURGH, K. A. SC.

36-37 Canada Life Bldg. WINNIPEG

- Bearings too tight.
- Wrist pin loose in piston.
- Wrist pin loose in upper end of connecting rod.
- Wrist pin not in line with crank shaft, causing side slap.
- Piston pin loose in slot or broken.
- Cam follower guide worn.
- Cam loose on shaft.
- Cam shaft bearing worn.
- Worn cams (flat spot).
- Flywheel loose on crank shaft (old models with keyed on wheel).
- Flywheel out of balance.
- Timing gears loose on shaft.
- Worn or broken timing gear teeth.
- Cylinder loose at its base.
- Engine loose from frame.
- Piston too small for cylinder, causing side slap.
- Poor push rod adjustment—gap too great.
- Exhaust or inlet valve sticking in guide.
- Spark plug touching valve.
- Magneto coupling loose.
- Fan belt coupling striking a pulley.
- Fan blades striking something.

Faulty Ignition

- Spark advanced too far.
- Spark too late, causing overheating.
- Short circuits in ignition system, causing irregular spark.
- Spark plug points constructed wrong, causing them to overheat.
- Spark plug in poor position.
- Wrong timing of ignition system; too early, too late, or wrong order.
- Dirty distributor, misdirecting the current.

Faulty Carburetion

- Preignition, due to excessive carbon deposits.
- Rich mixture, causing overheating.
- Lean mixture, in conjunction with worn parts.

Faulty Lubrication

- Lack of oil.
- Lubricants of poor quality.
- Excess of oil, causing carbon deposit.

Overheating of Engine

- Fan not working.
- Pump parts not revolving.
- Radiator clogged.
- Pipe lines clogged.
- Rubber hose defective inside, blocking flow of water.
- Ignition timed too late.

Faulty Compression

Engine designed with too high compression, causing preignition. There are, of course, many other causes which contribute to the little noises which accompany the car along the road, but the novice will find here the most common ones, and by a process of elimination may arrive at his particular bane; to find it naturally suggests the cure. Therefore, stop that knocking.

"Power-Economy-Saving"

The foundation of most every big fortune is Economy, Saving and Wise Investment.

Beginning with little things—cutting out the waste. Coal, oil and machinery cost too much money these days to waste, wear out and abuse.

The modern dividend-paying manufacturer would discharge an engineer for operating his engines with the old slide valve. Why? Because the profits are not made that way.

Economy is His Watchword

The most power at the least cost is what he wants. He has been using balanced valves for years. He considers it an investment—and a wise one—because it saves him the cold, hard cash.

Gould Balance Valve Company

Established 1902 Incorporated 1905
Kellogg, Iowa

"We Guarantee Value Received"

ON YOUR SUMMER TRIP

TRAVEL CANADIAN NORTHERN

Pacific Coast

SUMMER EXCURSION FARES TO
VANCOUVER, VICTORIA, NEW WESTMINSTER, SEATTLE
PORTLAND, SAN FRANCISCO, LOS ANGELES, SAN DIEGO

On sale, June 15th to September 30th. Final return limit October 31st. Stop-over allowed.

SPECIAL FARES
North Pacific Coast Points Jasper Park and Mt. Robson
June 25, 27, 30; July 1 and 6—Two months' limit May 15 to Sept. 30

TO EASTERN CANADA

ROUND TRIP 60 DAYS. SUMMER TOURIST
FARES JUNE 1st TO SEPTEMBER 30th.

Standard Electric-lighted Trains carrying Compartment, Observation, Cars through the Mountains and Winnipeg to Toronto. Through standard Sleeping and Tourist Cars.

Pamphlets and full information gladly given by any Canadian Northern
R. CREELMAN, G.P.A. W. STAPLETON, D.P.A. J. MADILL, D.P.A.
Winnipeg, Man. Saskatoon, Sask. Edmonton, Alta.

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 neighbours' repairs. We give free instructions to purchasers. **SEND YOUR BROKEN CASTINGS**

Scored 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



These little talks are from the pen of an expert engineer of long experience who has made the Gas Tractor literally his hobby. We strongly recommend them to the careful perusal of our readers. They are full of "meat" and the racy manner in which they are dished up will create an appetite for more of the same food.—Ed.

Talk No. 1

THEY tell me I'm a crank on power farming, maybe they think I'll get mad about it, but I'm quite conceited over it, for cranks make things go round, for instance the one on the front of a Ford.

However, I guess the fact remains that I'm a crank on power farming, and why shouldn't I be when I know how much easier and cheaper it is to do work with mechanical power than what it is to do it with horses. Now, don't think that I want you to sell all your horses and buy half a dozen tractors. You'll need most of the horses you have, and still be able to keep the tractor busy; you might even keep half a dozen tractors busy if you have land enough.

When I talk power farming, about the first thing I get thrown at me is "You can't work a tractor early enough in the spring." Before you throw that argument at another man, get up on top of the barn and take a look around you. You'll see that most of later models of light tractors are out in the fields pretty nearly as early in the spring as your horses are.

This last spring I watched both tractors and horses working. When the tractor operator came to a soft spot, he generally went around it, but when the teamster came to one he let the horses lug the implement through it and then cussed because his disc plugged up or his drill got full of mud.

When the teamster went through these mud holes, it didn't look to me as if his implement was doing its work, but I don't pretend to be a farmer, so I asked these same teamsters about it, and nearly all of them said: "No, it doesn't, but we've got to get through somehow. Driving an implement over wet ground like that packs it so hard that it isn't much good anyway; when it dries it cracks, and is eventually the driest part of the field."

However, even if the implement was doing its work, you'd find that the light tractor would go almost any place that the horses would.

Don't take my word for this, but go out and find it out for yourself before you try to convince a

man that a tractor is of no use to you in the spring.

There is another point along this line; the small tractor rarely gets stuck in the mud unless it is pulling a good-sized load and about the heaviest work it does is plowing. Now, if you got as much plowing done as you wanted to last fall, how much plowing did you want to do very early this spring?

"Oh," you say, "but I didn't do as much as I wanted to last fall and I wanted the tractor to help catch up with the work this spring."

Yes, that's just it. You either didn't have a tractor last fall or else you didn't get as much out of it as you should. That's one of the biggest troubles we have here, is that same business of not getting the work done at the right time, and that is one of the best arguments in favor of the small tractor. If your work is managed properly the small tractor is the best help you have to get your work done at the right time.

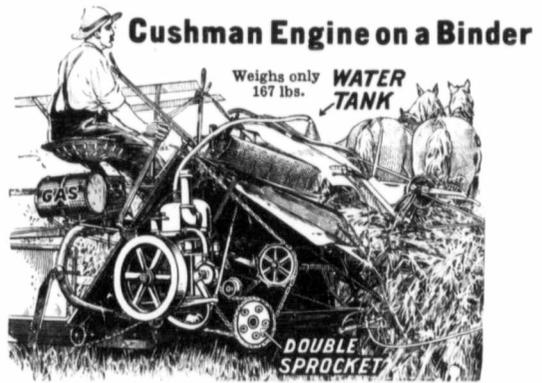
Figure it out for yourself and if you get stuck, come back and I'll tell you some more.

Talk No. 2

EVER since I can remember, I have been told that "seeing is believing," but I'm thinking that some of us have an awful time believing what we see.

It has been proven time and again that the traction engine is practically a necessity, that it does the work, the heavy work, better and cheaper than horses can do it. We are short of horses, and it has been proven many times that the gas tractor can make up this shortage of horse power and, at the same time, make up for part of the labor shortage. There are a lot of other things that the tractor will do, but what I'm after is to try and show where we're cutting our own throats and complaining because we are weak from loss of blood.

We are certainly short of horses and men and, in consequence, we aren't producing as much food as we would like, to help the world-wide shortage of food. A great many farmers have, this year, suddenly discovered that they need tractors



Cushman Light Weight Engine Saves a Team on the Binder

The 4 H. P. Cushman is the original and successful Binder Engine. Thousands are in use every harvest—saving horse flesh and saving grain. A binder is not complete without a Cushman Engine.

It saves a team, because engine operates sickle and all machinery of binder, leaving horses nothing to do but pull binder, out of gear; also takes away side draft. Therefore, two horses easily handle 8-foot binder in heavy grain.

It saves the grain, because it runs at uniform, steady speed, putting grain on platform evenly, allowing platform and elevator canvas to deliver it to packers straight, and thus it is tied without loss, saving a large per cent of the natural waste of binder.

It saves the crop in a wet season, because slipping of bull wheel or slowing up of team does not stop the sickle, and it never clogs. You can cut wet grain same as dry.

It saves time because you can move right along all the time in heavy grain without killing

the horses, and with no choking of sickle, elevators or packers.

It saves the binder, because it operates at same regular speed all the time—no jerking of machinery by quick stopping and starting of team, or when bull wheel drops into a rut. That's what tears a binder to pieces. With a Cushman Engine, your binder will last twice as long.

The Cushman is water-cooled by a simple engine-driven circulating pump. Cannot overheat on all-day run in hot harvest field like engines not properly cooled. Water tank sets on front of binder, balancing weight of engine on rear; thus binder is not thrown out of balance.

Get the Cushman—the one binder engine that is used in the grain fields all over North America—the one binder engine that has ten years of successful field work behind it; the one binder engine that has proper attachments to fit any make of binder in use. Don't experiment with an imitation or a make-shift; get the Cushman and be sure your outfit will work when you need it.

WHITE FOR FREE BOOK ON LIGHT WEIGHT ENGINES
CUSHMAN MOTOR WORKS OF CANADA, LIMITED
 Dept. A. Whyte Avenue and Vine Street, WINNIPEG
 Builders of Light Weight Engines for Farm and Binder use. Distributors of Reliable Power Driven Machines, such as Fanning Mills, Grinders, Saws, Power Washing Machines, etc. Also Barn Door Hangers and Mountaineer Neck Yoke Centres.

Paint particularly manufactured to withstand time and weather—in a word "climate-proof" is none too good for your out-buildings.

Stephens'
 BARN and ELEVATOR PAINTS

Strong, solid paints—made honestly that cover well, give long protection and come in colors most suited to the various jobs. Your hardware dealer has them.

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

Twelve Months of this Magazine for \$1.00

to get their work done and, at the same time they discover that there is a shortage in the supply of tractors. If they succeed in getting the tractor they want, they find a shortage in operators; if they can operate their own tractor, or manage to find a good operator, they find they are short of time to do the work in. There now, there's a whole bunch of shortages and a whole lot of them could be pretty well overcome by getting rid of another shortage—organization.

I don't know anything about governments, or how many wheels have to turn before a government can do anything, but it kind of seems to me that the government could work up the organization at a very small expense and do a whole lot of good for the nation.

However, as I say, I don't know anything about governments, so we'll leave them out of the question. There is a certain amount of work that should be done from the time the binders start until after freeze-up—cutting, stooking, threshing, plowing and, maybe, some discing and harrowing. The plowing is necessary in order that the land may be in shape for next year's crop and next year's crop is going to be just a little more important than this year's.

Speaking roughly, there is enough power tied up in tractors in these three western provinces to do the work very nicely, providing the power was organized and each unit of it were worked to capacity. This would, of course, call for a steady pull for all hands.

President Wilson's appeal to the people of his country resulted in 4,000 tractors in the state of Kansas working day and night and other ideas are being worked out in different places.

If the farmers of these three provinces would put their heads together, form an organization which would govern prices for work done, and then if every tractor owner would enlist his tractor to fight against the food shortage, it would be more than doing a "bit," it would be doing a whole lot.

Right now, as I write, there are hundreds of farmers who, being short of power and labor have had to overwork their horses and then not get their work done. The horses are thin and tired, the summer-fallows aren't properly worked because there is a scarcity of power and labor and all the time there are hundreds of tractors sitting in sheds and corners dreaming about the work they should be doing.

Yes, some of us have an awful time believing what we do see.

M A D E I N C A N A D A



KODAK on the Farm

A Kodak fits into farm life from the pleasure side, from the business side and as a recorder of the familiar events that are so full of interest—the sheep washing and shearing, the haying and harvest scenes, threshing time, and apple picking.

It gives pleasure on every holiday—the grange and Sunday school picnics, the fishing and hunting trips, the circus and the fair—then there are the familiar scenes around home; the children and their friends, the family pets—there is good fun in photographing them at the time and afterward the pleasure of the pictures in the Kodak album.

And on the business side the Kodak helps to keep the important records in a business-like way—the building and ditching, the live stock, the orchard, the crops. Pictures of these things with an autographic record made on the film at the time of exposure are invaluable to the business-like farmer.

It's all very simple with a Kodak and less expensive than you think.

Ask your dealer or write us for free Kodak catalogue.



CANADIAN KODAK CO., LIMITED
TORONTO, CAN.

**NEW PERFECTION
OIL COOK STOVE**

FRESH HEATED AIR

Follow the arrows and see how fresh heated air, used only once, circulates freely around the bread and bakes it from all sides at once. Proper oven ventilation prevents "sogginess."

This scientific oven should place the NEW PERFECTION OIL COOK STOVE in your kitchen. The New Perfection takes up little room and doesn't overheat the kitchen. The Long Blue Chimney makes the flame "stay put" with no smoke.

With Royalite Coal Oil the New Perfection will cook your meal for from 5 to 10 cents.

THE IMPERIAL OIL COMPANY
Limited

BRANCHES IN ALL CITIES

Talk No. 3

EVERY day there are new men looking into the tractor proposition to see what there really is in it, and about nine million times every month we answer the same questions and meet the same arguments.

Sometimes I don't wonder that a farmer has such a time choosing a tractor, for he has so many to choose from and there are so many different principles in connection with them that, by the time he has spent a day at a tractor demonstration, he is apt to go home with his head full of a jumble of "drive wheels in front" and "drive wheels in rear," "three wheels" and "four wheels" and "no wheels at all"; "four cylinders," "three cylinders" and "two cylinders"; "perfect compensating gear" and "no compensating gear," and a whole lot of other combinations until he knows less than he did in the first place.

Hundreds of times I have been asked whether a four-cylinder motor was as good or better than a two and the main argument against the "four" is that there are twice as many things in a "four" to go wrong.

Now, I'm not going to tell you here whether you should buy a "two" or a "four," but if you will look at the average four-cylinder motor, you'll find that the working parts of the motor are all put away out of the dirt and pretty well out of reach of your fingers and you'll also find that the adjustments are made in such a way that you don't have to touch them. However, this doesn't mean that a "four" is any better than a "two"; you can get good work out of either, in fact. I've only seen two engines in this country that wouldn't work.

But, to get back to the subject, when these questions about cylinders, wheels and a dozen other things come into your mind look around and decide the question for yourself. A good salesman might convince you of anything if you let him talk long enough, that's his business, but look around and decide for yourself. When manufacturers change a principle, there is generally a pretty good reason for it, and when they change a design there is good reason for that too, so don't let your prejudice against two or three wheels make you buy something that you don't want, just because it happens to have something you want in it.

The main thing in buying a tractor is to get one that will do the work under the conditions which exist on your farm and it is pretty much a case where you have to decide for yourself, for if a man were to go around the

country telling farmers what engines to buy, the manufacturer would soon hang him up on a telephone pole.

Watch what's going on around you and find out why it's done.

Doug. R. A. Drummond.

Tractor Experience Letters

(Continued from Page 18)

Another Fine Record

Brandon R.R., No. 4,
June 31st, 1917.

We have been using a Sawyer-Massey 4-cylinder 45 B.H.P. gasoline tractor for two seasons threshing and one season plowing with very satisfactory results. Threshing we have been driving a Sawyer-Massey 32.56 Great West separator. We use six stook teams and four pitchers in the field.

In an ordinary season with this outfit the most wheat we ever threshed in a ten hour day was 1,539 bushels, but we figure on around 1,300 as an average day; of course, last season our grain was badly rusted and we threshed as low as 300 bushels per day. Under ordinary conditions we find that we have ample power, but on damp days or mornings after a heavy frost in long tough straw we could use more power.

If we were buying another engine with the intention of doing much custom threshing we would get one of 55 or 60 B.H.P. to drive a 32 in. separator, although as a general purpose engine ours is big enough. For threshing we have never used any fuel but gasoline, and we find the best is the cheapest as it is cleaner, the engine will start easier on cold mornings and use less than of a cheaper grade. Doing this class of work our engine uses 3 gallons of gasoline per hour and 1 gallon of gas engine oil is sufficient for any ordinary day's run if the engine is setting fairly level. If it is not standing level it uses slightly more on account of the position of the overflow pipe in the crank case.

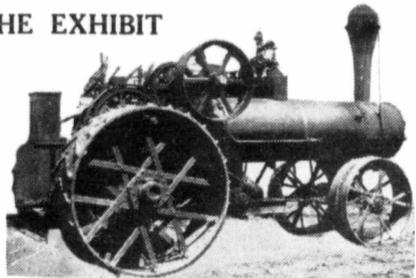
We use very little machine oil, a small hand oiler full does for two or three days to oil valve lifters, governor, gear shifters, etc., and half a pound of grease a day. When we got our engine the bevel gear case was sufficiently filled with oil and since that time in two seasons' run we have added about two gallons of steam engine cylinder oil.

As our engine is radiator cooled after it is once filled, which takes about 30 gallons, water is only a secondary consideration and if leaks in the connections and pump packing are prevented half a pail of water a day is plenty; some days we have not used any. We were out threshing the fall of 1915 until November 20th, when it was

VISIT THE EXHIBIT

OF THE

George White & Sons Co. Ltd.



at the Brandon Exhibition, and become conversant with the

First Quality Line

Also see the famous WHITE "All Work" Tractor at the Plowing Demonstration.

Write TODAY For This Handy Oil Can FREE

Prove for Yourself the Tremendous Success of National Motor Oil

WE want you to have one of these Handy Long-Spout Oil Cans FREE. You'll find it most convenient and useful with all your machinery. Mail the coupon today.

Thousands of farmers everywhere are using one every day with National Motor Oil, which was introduced to them first when they sent for one of these cans. This first-quality motor oil is the highest achievement of many years expert experience in making supreme petroleum products. It is your best insurance against repair bills caused by faulty lubrication. Also try

White Rose Gasoline. Always uniform. Every drop is continuous power. Pure, dry, carb-on-free.

En-ar-co Tractor Oil. Especially made for modern tractors. Proper body to lubricate most efficiently—saves cash in machinery depreciation.

National Light Oil. Bright, clear light for lamps. No smoke, odor, charred wick or chimney. Best for oil heaters and all purposes.

Black Beauty Axle Grease. Insures a smooth, friction-free, wear-resisting wagon axle. No compounds to clog and gum. Goes farther than ordinary grease. Buy it by the pail.

National Motor Grease. For all purposes. Differential, compression cups, transmission, all around the motor car. No longer necessary to have several kinds of grease.

Sent FREE To AUTO and TRACTOR Owners

Order TODAY—Decide Now to Buy National Products. We will see that you are supplied, no matter where you live.

Canadian Oil Companies Limited

36 BRANCHES
Dept. B1
2-12 Strachan Ave.
Toronto, Ont.



CANADIAN OIL COMPANIES, Limited
Dept. B1 2-12 Strachan Avenue, Toronto, Ontario

I own..... tractor (Give name above)
and machine (See 2-cent stamp). Send me Handy Long-Spout Oil Can FREE. Please give correct shipping point and quote prices on items I have marked. I will be in the market about.....

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. (For Wagons)

My Name is.....
Address.....
Post-Office.....

MAIL THIS COUPON TODAY

NOTE—This can will be sent to owners of Tractors or Automobiles only, and when you fill out coupon complete. Not for boys or girls.

FOR SALE AT BARGAIN—One 45 h.p. 4-cylinder gas tractor, rebuilt, excellent condition, \$1,200 cash. Also one of same second-hand at \$1,000 cash. Apply P.O. Box 178, Winnipeg.

FOR SALE—Threshing outfit, 10 h.p. Manitoba engine (portable) and Sawyer-Massey Eclipse separator, straw carriers. This outfit is in excellent condition and may be seen any time. Reason for selling is I have got a bigger outfit. Price \$650.00 cash. H. Staniforth, Aldersyde, Alta.

FOR SALE—Or would exchange for a good portable of 20 or 25 h.p., a Rumely oil pull tractor, 25-45 h.p., complete with extension rims and self steerer. Been run two seasons. Good reason for selling. W. Garnet Leflar, Dropmore, Man.

WANTED—Gear mounted steam engine, with or without plows; must be cheap and in first class shape. State lowest cash price and particulars in first letter. Apply Box 20, Binrie, Man.

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 60.70 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. **STEAM ENGINES**, all kinds, 2 to 2,000 H.P., also Boilers.

Marshall, Sons & Co. (Canada) Ltd.

ENGINEERS
Saskatoon Canada
P.O. Box 1564 Telephone 3393

very cold here with a lot of snow for the time of year.

The only difficulty we experienced with our engine, besides moving, was the oiling system. In cold weather the oil freezes in the pump and small pipes which convey it to the bearings. We overcame this difficulty by using automobile oil, which gave good satisfaction for the cold weather.

When we were plowing we drew a six bottom 14-inch John Deere engine gang and a set of harrows plowing at a depth of six inches on rolling land with plenty of power. When we first started using our engine plowing we used gasoline as fuel, then we tried a mixture of gasoline and coal oil half and half, but we did not save anything financially and did not find it very satisfactory. On a nice day when everything was running good and we got good carbonation we got slightly more power than from gasoline alone, and the quantity used was about the same. As our engine is built for gasoline only we have but one fuel tank which had to be emptied every night and sufficient gasoline put in to run the engine in the morning until it warmed up, usually taking about five gallons. Then we had to stop and fill the tank with the mixture. If we stopped through the day for any reason, or at noon, and allowed the engine to cool off when we started up again, one cylinder would probably not take hold just at first, then it would become flooded with kerosene and we would have trouble starting it to fire.

On very warm days when using kerosene we had to use more lubricating oil as being an upright engine a certain amount of kerosene would leak down past the pistons and rings, cutting the oil from them and the cylinder walls, causing loss of compression; then it would run down into the crank case and be pumped back with the oil to the crank shaft bearings and make them heat. Besides this we found the kerosene soon sooted up the inside of the cylinders, and to keep the engine running good we had to clean the cylinder heads, valves and piston ring grooves after it had been working about two weeks.

After using the kerosene and gasoline for a short time we tried Rex motor spirits and found it satisfactory in every way. In warm weather when we were plowing, the engine started just as readily on this fuel as gasoline, and had as much power while the engine was cold. We have never used it for threshing, so could not say how it would work in cold weather. For plowing we used three gallons of fuel per hour plowing one acre, of



**Have You Ordered
YOUR
COAL?
IF NOT,
ORDER NOW**

See Your Local Secretary or Write Central

**The Saskatchewan
Grain Growers' Association
Farmers' Building REGINA**



**MAKES
HARNESS
STRONG & TOUGH**

EUREKA HARNESS OIL makes harness strong and tough.

This mineral oil not only takes dirt off but keeps dirt out. It fills the pores of the leather.

That is why a harness treated with Eureka is tough, pliable, shiny and new looking.

**THE
IMPERIAL OIL COMPANY
Limited
Branches Throughout
Canada**

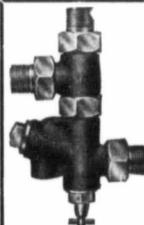
**THE MARTIN
DITCHER AND GRADER
DIGS YOUR DITCHES
GRADES YOUR ROADS**

**EASILY
QUICKLY
CHEAPLY**



**DOES THE WORK OF 50 MEN
SEND FOR FREE BOOKLET**

**THE PRESTON CAR & COACH CO. LIMITED
74 DOVER ST. PRESTON CANADA**



**The Finest Engine made
is the most expensive of
"WHITE ELEPHANTS"
if it is not equipped with a
Perfect Injector**



THE INJECTOR FOR ALL CONDITIONS IS THE

Desmond Model "U"

Model "U" is flexible, and will do anything an injector is expected to do and do it perfectly. Starts low at 20 to 25 and works high to 175 lbs.

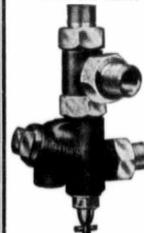
The Model "U" will fit all connections. There isn't a single awkward feature about it; no "Rights and Lefts," "Fronts and Backs." The two-piece body connected with a Union Nut performs the trick. You loosen the nut, turn the connections to meet your piping at whatever angle is most convenient. No need to wait until your dealer can secure an injector to fit your piping. If he has but one Model "U" in stock it is a dead certainty it is the right one.

Special high pressure injectors with a range from 60 to 235 lbs. can be furnished when desired. The Model "U" lifts water 25 feet; handles water at 130 degrees and delivers to the boiler at almost 212 degrees.

Absolutely automatic, it will not "buck" or "break" under any circumstances. The drip cock of the Model "U" permits draining the injector and piping in freezing weather and makes convenient place for drawing hot water when in operation.

Every injector is thoroughly tested before leaving our hands and carries an unqualified guarantee to do perfect work under any test. If your dealer cannot supply you, write us direct and give us his name.

We will see you are supplied.



**DESMOND STEPHAN
MANUFACTURING CO.**

Urbana, Ohio



gasoline, gasoline and kerosene, or motor spirit, the same quantity of either and one and one-half gallons of gas engine oil per day of ten hours, making one-and-a-half gallons of oil to thirty gallons of fuel.

For the same length of time we used one-half gallon of black oil for the traction gears, one-half pound of grease and one pound of axle grease. Half a pail of water a day was plenty to keep the radiator full. We were drawing the six plows and a set of harrows on both spring plowing and summer fallow, the running expenses being about the same for either, although the ground is harder summer fallowing than spring plowing, requiring more power. It also offers a firmer footing for the engine than the moisture soil of the spring, and we found the one counter balanced the other.

There were always two of us with our outfit and we found it was a two-man job. One of us drove the engine, the other operated the plows, greased and oiled the engine while we were working, watched bearings to see that they were running cool and kept lubricators, pumps and everything in general working properly, beside keeping the harrows and plows free from trash, watching for soft places and staking out new lands. Altogether, last season, spring and summer we plowed and harrowed 360 acres with our engine which is the only work we ever did with it besides threshing and moving a few portable granaries.—Yours truly, Jas. P. Davis.

Should Revolutionize Farming in the West

Viewfield Farm, Oak Bluff, Man., 2nd, January, 1917.

Dear Sir—In reply to your list of questions of 27th ult.: I desire to say—without prejudice:

- 1.—12-24 "Waterloo Boy."
- 2.—Plowing, discing, cultivating and threshing.
- 3.—24-inch Geizer separator, complete with May-tag feeder and blower—sufficient power.
- 4.—3-furrow, John Deere Gang 14 inches, about 6 inches deep, 7½ acres in 10 hours; one man only required; kerosene, 20 gallons per day, oil 1 gallon, grease, small quantity.
- 5.—2 discs, 8 ft. each (Bissel Harrow) 2 cultivators, 8 feet each; Sylvester & International Harvesters.
- 6.—
- 7.—This tractor is in every way satisfactory; it weighs less than 5000 lbs; It will cultivate 30 acres of summer fallow per day; the cultivator shoes being placed deep in the ground.

I, myself, operated both engine and separator during the thresh-

ing, and I am not an experienced engineer; although, I believe I have a certain amount of "common sense."

The ignition is by a Dixie H.T. magneto; no batteries.

I am glad that the Canadian Thresherman and Farmer is interesting itself in such matters.

These tractors should revolutionize farming in Western Canada.

Yours faithfully,
J. W. Anderson.

Will Quit When He Must Return to Horses

St. Louis, Mo., Jan. 9, 1917

Dear Sirs—It is with the greatest of pleasure I write you concerning the Case Gas Tractor, 12-25. I bought it a year ago last July. I have had no trouble with it so far, and I don't expect any, as it is built like a battleship, and all gears run in a clean oil bath at all times. I think the light tractors that are put on the market now, show that the manufacturer and farmer are getting acquainted with each other, at last. I have never done any big work in a very short time with it, and I have never run it on fresh plowed land. I pull 4 14-inch Cock-shutt plows, or about 10 acres per day, and 3 plows in breaking.

As it was too hot for the horses in heavy grain, I hitched the engine on the binder and run it a few days, but I found the speed too slow for a binder. I run a 36-58 Case thresher with it, and have plenty of power, by putting a larger pulley on the cylinder. I never used more than 15 American gallons of gasoline in one day, and one gallon of cylinder oil. I always run the engine myself. As for threshing, grinding and cutting wood, I find it runs as steady as steam. When I have to go back to horses for all my farm work, I will quit.

I think the light tractor has come sure to stay.

Yours truly, J. W. Brimacombe.

Refitting Valve Caps

As a general rule it will be found that valve caps when cold will be covered with carbon and a gummy oil and as a result screw into place very sluggishly when being refitted. To remedy this it is often advantageous to lubricate the threads with a little paraffin. By so doing the caps can often be screwed into place down on the copper and asbestos washers with the fingers, requiring merely a final tightening with the wrench. It is always advisable to do this thoroughly, especially with the intake valve caps, not only as a guard against compression leaks, but to prevent the cap unscrewing instead of the spark plug when removing the latter.

TALKS ON TRACTOR FUELS

By The Imperial Oil Company, Limited

THE more kerosene you use in your tractor, the more gasoline you leave available for your automobile. You save on tractor fuel and relieve the demand for gasoline and help to keep the price of it within limits.

SILVER STAR
KEROSENE and
ROYALITE GOAL OIL
are the standard brands of kerosene in Canada. You can get them, also PREMIER GASOLINE, direct from one of our 500 prairie tank stations.



**BEST
ANTI-FRICTION
BABBITS
ON THE MARKET.**

With forty years' experience in manufacturing alloys for all classes of machinery, the HOYT METAL CO. has evolved two alloys which are unsurpassed by anything of the kind now in use.

HOYT'S NICKEL GENUINE Babbitt is especially designed for heavy duty gas tractors.

HOYT'S FROST KING Babbitt is especially designed for threshers, separators and stationary engines of all classes.

If your dealer does not carry these metals in stock, send your order direct to us. In order to insure prompt delivery, send postal money order.

<p style="text-align: center;">Nickel Genuine</p> <p>Less than 25 lbs. 85c per lb.</p> <p>25 lb. box 85c per lb.</p> <p>50 lb. box 75c per lb.</p>	<p style="text-align: center;">Frost King</p> <p>Less than 30 lbs. 40c per lb.</p> <p>30 lb. box 37c per lb.</p> <p>60 lb. box 35c per lb.</p>
--	--

Delivered to your nearest express or post office station.

Hoyt Metal Co. Eastern Ave. and Lewis St.
TORONTO

FACTORIES—London, Eng.; Toronto, New York and St. Louis.

STEAM TRACTORS—One 35 h.p. double cylinder Geiser (rebuild), just like new, runs like a watch, \$2,000.00 cash; one 25 h.p. North West, single cylinder, rebuilt, \$1,000.00 cash; one 20 h.p. Nichols & Shephard, good order, \$800.00 cash. Apply P.O. Box 178, Winnipeg.

OHIO GAS ENGINES—15 h.p. standard, \$325.00; 12 h.p. standard, \$300.00. Apply P.O. Box 178, Winnipeg.

BARGAIN—8 h.p. Ohio gas engine, hopper cooled, rebuilt, good order, \$150.00. Apply P.O. Box 178, Winnipeg.

HIGH GRADE SHEET MUSIC—The entire stock of a wholesaler, all attractive selections, biggest values; five assorted copies 25c., 14 for 30c. Order quick. They won't last long. Home and Office Supply Co., Music Dept., Montreal.

SEPARATOR—36 x 56 Geiser, good as new, all rebuilt, with self-feeder and blower; a snap at \$350.00. Apply P.O. Box 178, Winnipeg.

PORTABLE ENGINES—On very strong and substantial trucks, both new and second-hand; 20 h.p. and 22 h.p. at prices from \$300 to \$600 cash. Apply P.O. Box 178, Winnipeg.

Borrowing or Lending for Manitoba's Development

NOTHING since Confederation has been placed on the statute book of Manitoba which has done, or will do so much to encourage the legitimate development of the Province as the Farm Loans Act.

The fact that a farmer owns and resides on a piece of land, does not necessarily mean that he is a producer and an acquisition to the community in which he lives. He may, owing to lack of capital to carry on his farming operations, become an unproductive consumer. Many a man is idling away his time and wasting his energies, and his land is a millstone around his neck for want of financial help at a reasonable cost.

Quoting part of a recent editorial of the "Canadian Thresherman and Farmer":

"To finance with any hope of success, we must have something to finance with, or a line of credit that we can obtain as a right and not as an obligation that carries with it a load of apprehension and worry, that often sends the strongest men to a premature grave. Possibly the greatest obstacle to high-class immigration into Western Canada, has been the financial peculiarities of the country—more particularly as they affect the farmer, for between the farmer and the city business man there exists a wide spread in the minds of banks and financial corporations in appraising the 'stability' of these two types of borrowers."

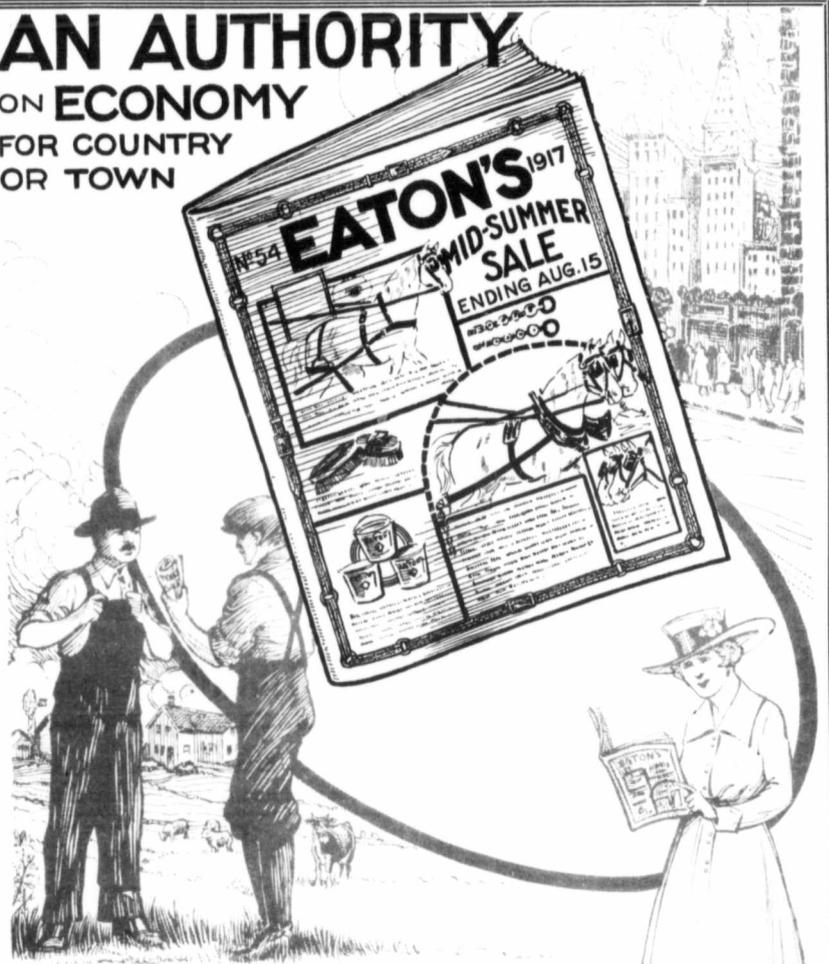
The "Manitoba Farm Loans Act" now makes it not only possible, but very easy for any farmer, who may be entitled to financial assistance, to receive it without unnecessary delay. But, the act also offers an exceptional opportunity to investors as well as borrowers.

Arising from this provision, there has been incorporated the "Manitoba Farm Loans Association" or "Manitoba's Co-operative Land Bank."

While the Manitoba Farm Loans Act was primarily intended to foster and encourage Agriculture by providing cheap money for the farmer, it was also conceived that the principle of co-operation could be carried much further.

The great bulk of money required will no doubt be obtained outside the province in the principal financial centres of Eastern Canada and the United States. But there is on deposit, in banks and other institutions, a very large sum, made up of the savings of wage-earners, trust funds and temporary deposits, earning a

AN AUTHORITY ON ECONOMY FOR COUNTRY OR TOWN



EATON'S MIDSUMMER SALE CATALOGUE

Is a book of bargains, one that you need more than ever in this season of high and increasing prices.

Generally difficult as it now is to procure regular stocks of goods from the manufacturers, it is a considerable achievement for us to be able to offer the big selection of Household and Farm Goods that we do in this latest of our Annual Mid-Summer Sales.

There is something shown in this book of interest to every one in the family—Wearing Apparel, House Furnishings, Paints, Hardware, etc.—a collection of seasonable, useful goods at much lower than general prices.

You can have a copy of this book for the asking. Make sure your name is on our list. Send it in now. The Catalogues will be mailed around the middle of June.

T. EATON CO. LIMITED
WINNIPEG CANADA

DON'T SCRAP YOUR BREAKAGES

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.**

HUB WELDING COMPANY
253 SHERBROOKE STREET, WINNIPEG

Lowest Prices consistent with Best Workmanship.

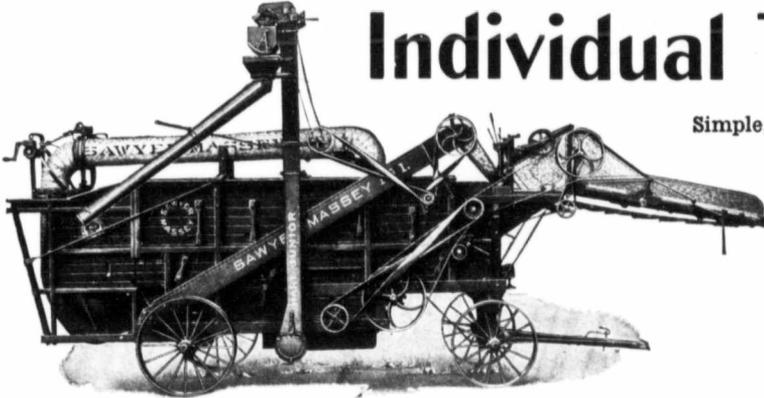
ARE YOU LOOKING FOR A NEW FARMING LOCATION?

Let me tell you about the Stonewall-Balmoral-Teulon District. Unexcelled for Mixed Farming.

R. W. RUTHERFORD
309 Merchants Bank
Winnipeg Manitoba

Twelve Months of this Magazine for \$1.00

Individual Threshers



Simple, Large Capacity, Light Running, Strongly Constructed Separators for your own work and that of a few of your neighbors.

In two sizes : 20 x 36 and 28 x 44

The No. 1 Separator, fully equipped with Feeder, Wind-stacker, Elevator and Automatic Grain Register, has a capacity of 800 to 1000 bushels of wheat per day. We couple this Separator with our 10-20 Gas-Oil Tractor. We also mount this No. 1 Separator, fully equipped, as a Combination Thresher, with the 4-cylinder, Gas-Oil motor from our 10-20 Tractor. The No. 2 Separator, 28 x 44, fully equipped, we couple with our 16 x 32 Gas-Oil Tractor.

These Separators have Worm Concave Lifter, Belt Guide, Belt Keel, 12 Bar Cylinder with High Grate. Back of the top of the grate is a three wing beater, which runs within one-half inch of the top of the grates and which takes out all lumps and spreads the straw and chaff evenly on the deck.

The Main Deck in this Separator has a swinging motion, and as it swings, forks raise up tossing the straw upwards, just the same as it would be done with a pitchfork by hand. The Lower Deck swings in directly opposite direction, balancing the machine up. The frame of the Separator is very strongly constructed, the same style as our large custom machines.

Read this letter from James Cummings, Neepawa, Man., dated April 28th, 1917:—"I am writing you about the No. 1 Separator which I bought last fall. I have not given this Separator a fair trial yet, the grain was not in good shape from the time I got it, but I am well pleased with it; it cleans the grain well, and I can put through 1,000 bushels of wheat a day, and 1,500 bushels of oats, with three teams and a pitcher. I threshed 100 acres of flax with it and put through 700 bushels a day. I would just as soon go into a field of flax as a field of wheat. Men who have threshed for years tell me they never saw a Separator like this one. I had no trouble with this Separator at all, just took it out to the field and started, and I can do the same this fall without any trouble."

We manufacture Steam Tractors, Gas-Oil Tractors, complete line of Road Machinery and complete range of Separators from the No. 1 Thresher (illustrated) to the large 40 x 64 custom machines. Talk with our local agent in your town, or write for free catalogue and detailed information, telling us the size machinery you would like special information on.

Sawyer-Massey Company, Limited

Branch Offices and Warehouses:
Winnipeg, Regina, Saskatoon, Calgary

Head Office and Factory: HAMILTON, Ontario

MEET US AT THE BRANDON EXHIBITION

nominal rate or no interest at all, which could be brought into profitable use by the Association, not only for the benefit of the farmer borrowers, but also for the owners of the money.

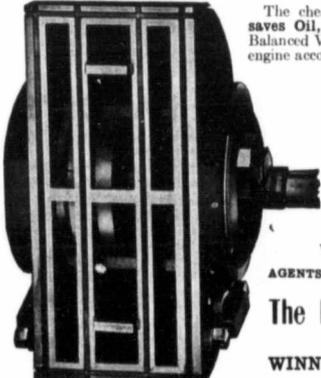
With this end in view and in order that all classes in the community might share in the advan-

tages of this progressive scheme, it has been decided to pay a rate of four (4) per cent interest on deposits and to issue, by way of security, Certificates of Deposits, secured by first mortgage bonds of the Association, guaranteed unconditionally both as to principal and interest by the Province



THE FIRST LINE OF FARM DEFENCE
(From Kansas City Star)

THEY WIN THEIR WAY BECAUSE THEY PAY



The cheapest H.P. you can buy. Also saves Oil, Fuel and Water. The Baker Balanced Valve will increase the power of an engine according to the following:

- 15 H.P. Engine 3-6 H.P.
- 20 H.P. Engine 4-8 H.P.
- 25 H.P. Engine 6-6 H.P.
- 30 H.P. Engine 6-7 H.P.
- 35 H.P. Engine 7-8 H.P.
- 40 H.P. Engine 8-9 H.P.

"Wilson Lake, Sask.
"I am very much pleased with your valve, it does all you claim for it."
"Nov. 29th, 1916."
"Carl G. Rofe."

WRITE FOR CATALOG
AGENTS WANTED IN EVERY LOCALITY

The Baker Valve Company
100 JAMES STREET
WINNIPEG MANITOBA

Beware of the Dangers of Labor Shortage, use a



MAX PORTABLE CORRUGATED GRANARY

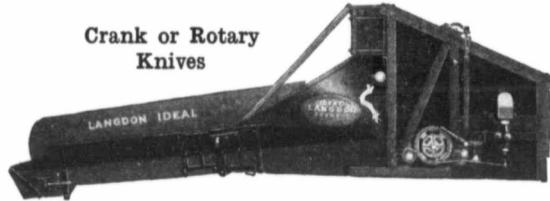
Twelve years' satisfactory service in Western Canada fields prove its claim of highest merit. Write to-day for full particulars.

Winnipeg Ceiling and Roofing Co. Limited
P.O. Box 3006, C.T. 5 WINNIPEG, Man.

The Better Feeder

LANGDON IDEAL FEEDER

Crank or Rotary Knives



Don't Delay—Get Your Order in at Once

NEVER before has the necessity of efficient machinery for handling the grain crop been so urgent. From the thresherman's viewpoint every angle presents an argument in favor of the LANGDON IDEAL SELF FEEDER. Conservation of fuel—economy of labor—the saving of every possible kernel of grain—the importance of speeding each outfit up to its utmost capacity, are features that have been provided for in this "BETTER FEEDER." This has been accomplished through years of manufacturing experience and by the perfection of the Langdon gov-

erning system. No matter how careless the pitchers or how badly tangled or how wet the grain may be, the Langdon feeder with its perfect governing, will keep your separator working to full capacity and making use of every ounce of power. If the grain is tangled or wet it will feed it to the cylinder slowly—if straight and dry it will feed as fast as the machine will take it, at all times keeping up a smooth, uniform flow. It is impossible to accomplish more by hand or mechanical feeding. It is impossible for any other feeder to do as much.

The material situation is uncertain and we urge purchasers to get their orders in at once. If you delay and are disappointed in not getting your feeder it will mean a loss of dollars to you and your customers. Write to-day for free catalog.

Cushman Motor Works of Canada, Limited, DISTRIBUTORS FOR CANADA, **Winnipeg**

HART GRAIN WEIGHER CO.—PEORIA, ILL.

"Makers of Better Feeders"

of Manitoba. These Deposit Certificates are issued in denominations of \$25.00, \$50.00, \$75.00, \$100.00 and multiples of hundreds up to \$1,000.00, interest to be paid semi-annually. They are payable on demand at any time with interest added to date.

The security behind these certificates is absolute, and the rate of interest adds 33 1/3% more to depositors' earnings than what is generally paid.

For those looking for a stable investment with unassailable security, **Five per cent. First Mortgage Coupon Bonds** of the Asso-

ciation, unconditionally guaranteed by the Province of Manitoba, may be purchased in denominations and for periods from one year upwards to suit purchaser, at the offices of the Association.

In the space now at our disposal the foregoing brief synopsis must suffice for the present, but we strongly urge on anyone interested either in investing under the most favorable conditions or in borrowing for development purposes to get in touch with the Association whose announcement will be found on page 65

Weeds Commissioners Keep Busy

The members of the Manitoba Weeds Commission have just concluded a very extensive series of meetings throughout nearly every portion of the province. One hundred and twenty meetings were attended since New Year. As a rule, two meetings were held each day. The attendance varied greatly, but was usually good. The subjects discussed, included the identification

and eradication of weeds, the injury caused by weeds and the most suitable methods of cultivation for their eradication. The Noxious Weeds Act and the manner of its enforcement were also explained at each meeting.

The commission believe that these farmer's gatherings will prove of immense value as a means of educating the public in regard to the injury caused by noxious weeds. Farmers will also be stimulated to greater effort towards weed eradication. The Noxious Weeds Act will also be

better understood and its enforcement simplified.

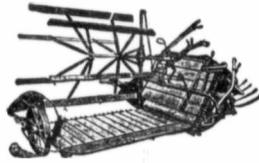
During the summer months the members of the Weeds Commission will visit each municipality and in company with the local municipal weed inspector drive over a portion of the district. This plan gives the commission an opportunity of getting in close touch with local conditions, and, besides, they can often greatly assist the local inspector in enforcing the Act.

Conserving the Surplus
(Continued from Page 7)

no matter from what cause, invariably complained of the inferior quality of the eggs. Now enthusiasm and optimism are necessary in dealing with children and special effort should be made to insure a good hatch. Eggs secured locally hatched on the average better than the eggs shipped some distance; possibly supplying day-old chicks, though it has some defects, might obviate this difficulty.

In the summer, fairly close supervision is exercised over the pupils' work. A number of visits are made to the schools before the vacation commences and one visit is made to the home of the pupil to see the plot and to discuss the work with him (or her) and with the parents.

In the autumn a fair is held at which the pupils exhibit the products of their summer's work. Last year these fairs were held at the schools of agriculture at Claresholm, Olds and Vermilion and at Argyle, Sedgwick and Stony Plain; this year there will be a larger number of fairs. Five of the school fairs held last year were held alone as separate fairs; one was held in conjunction with



You can save at least \$5 on a set of Binder Canvases by ordering direct from us. Guaranteed in every way. Order early, as these prices are lower than you can buy elsewhere. We guarantee prompt shipment.

Numbers and sizes listed below correspond with those printed on the canvases received with your new machine. State size and name of binder, number and size of canvas and whether for upper or lower elevator. If impossible to find numbers and sizes of old canvases, measure width, also the length from buckle to last hole in strap.

For MASSEY-HARRIS BINDERS

No. 3 Binder		
S1106—Upper Elevator 50 x 84	.....	\$5.25
S1107—Lower Elevator 53 x 88	.....	5.35
S1109—6 ft. Platform 41 x 138	.....	6.00
S1110—7 ft. Platform 41 x 162	.....	6.35
S5033—8 ft. Platform 41 x 188	.....	6.75

No. 4 and No. 5 Binder		
S1106—Upper Elevator 50 x 84	.....	\$5.25
S1107—Lower Elevator 53 x 88	.....	5.35
A1260—6 ft. Platform 39 x 138	.....	6.00
A1261—7 ft. Platform 39 x 162	.....	6.35
A5013—8 ft. Platform 39 x 186	.....	6.75

For FROST & WOOD BINDERS

No. 3 Improved Binder		
B2543—Upper Elevator 45 x 96	.....	\$5.00
B2524—Lower Elevator 55 x 82	.....	5.25
B2544—6 ft. Platform 44 x 138	.....	6.25
B2546—7 ft. Platform 44 x 162	.....	6.50
B2547—8 ft. Platform 44 x 186	.....	7.00

We give you better quality goods at lower prices than any other mail order house in Canada and guarantee prompt shipment.

For McCORMICK BINDERS

B65—Upper Elevator 47 3/4 x 93	.....	\$4.00
B66—Lower Elevator 51 x 97	.....	4.50
B467—6 ft. Platform 45 x 136	.....	5.50
B468—7 ft. Platform 45 x 160	.....	6.25
B469—8 ft. Platform 45 x 184	.....	7.00
B835—Lower Elevator 94 x 51	.....	4.50
H865—Upper Elevator 54 x 90	.....	4.75
H729—Lower Elevator 54 x 98	.....	5.00
H770—6 ft. Platform 38 x 141	.....	5.50
H771—8 ft. Platform 38 x 168	.....	6.25
V224 1/2—Upper Elevator 43 3/4 x 97 1/2	.....	4.25
V226—Lower Elevator 51 x 102	.....	4.75
V229—6 ft. Platform 38 1/4 x 136 1/2	.....	5.75

For DEERING BINDERS

E1552—Upper and Lower Elevator 54 1/2 x 96	.....	\$4.50
E1549—Adjuster 7 3/4 x 62	.....	1.00
E1550—6 ft. Platform 47 1/2 x 144	.....	5.50
E1551—7 ft. Platform 47 1/2 x 166	.....	6.50
H4562—Upper Elevator 47 x 91	.....	4.00
H3199—Upper Elevator 43 x 90	.....	4.25
H1775—Lower Elevator 50 x 90	.....	4.50
H1772—6 ft. Platform 43 3/4 x 136	.....	5.50
H1773—7 ft. Platform 43 3/4 x 156	.....	6.25
H3791—8 ft. Platform 43 3/4 x 182	.....	6.75
H2207—Adjuster 7 3/4 x 54	.....	1.00

For the best line of Implements, Farm Power Machinery, Harness and Hardware, see our Exhibit at the Brandon Fair

C. S. JUDSON CO., LIMITED - Winnipeg, Canada



Officer (superintending party that is trying to extinguish a fire at French farm).—"Good heavens, corporal, what are you doing up there?"
Irish Corporal.—"I'm watchin' the straw doesn't catch a-fire, sor."
Officer.—"Well, take care. Is it an easy place to get you out of?"
Corporal.—"It is that. You might get through the floor, anywhere, sor."

the local fair of the agricultural society. It is difficult to decide which is the wiser plan; the former concentrates all the attention on the school work and consequently promotes it more effectively, but the latter ensures a larger attendance and gains the co-operation of the members of the agricultural society, and many of whom are the best men in the district.

Other classes at the fair include sheaf and threshed grain, calves, colts, sewing, cooking and school collections of weeds and insects. Two classes which will be dropped this year are (1) regular school work such as writing, drawing maps, reed and raffia work, and (2) gopher tails. The former class lies somewhat beyond the province of agricultural work, while the latter class, though aiming at a splendid object—to exterminate the gophers

Diamond Tires

SQUEEGEE TREAD, made of "Velvet Rubber." These are the famous Black Tread red wall tires manufactured by the DIAMOND RUBBER CO., of AKRON, Ohio, U.S.A. Forty-five years' experience in the compounding of rubber have brought to light this TIRE OF TIRES—MADE TO WEAR. The tread, on account of the "compound" of Velvet Rubber, is extremely tough and resilient.

WRITE DEPARTMENT "A" FOR FURTHER INFORMATION

The Motor Car Supply Co. Limited

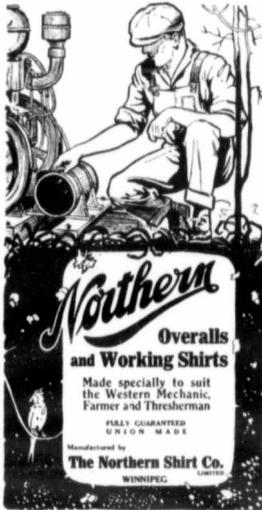
Drawer 2195 Department A CALGARY, Alta.

tends to induce fraud, some exhibitors being known to store their collection from one year to another, thus discouraging others from attempting to make any collection. Addresses are delivered at the fairs by men from the departments of Education and Agriculture and a musical programme and sports are also arranged.

The work is a success. Many persons have written asking that

it be extended to their localities and while the policy of the Department is to make extensions as rapidly as it can, it is firmly resolved to limit it to an amount which can be supervised by properly trained men.

Good judgment often consists in finding out what kind of advice a man wants, and then giving it to him.



GREASE IS GREASE

It may be any old kind
but

MICA

IS

AXLE GREASE



THE
IMPERIAL OIL COMPANY
Limited
BRANCHES THROUGHOUT
CANADA

There's a Reason

We would be glad to send you our booklets, prices and particulars of any of the undermentioned goods, if you will kindly place an X against any you are interested in. We know we can sell you these Articles at a less price and give you better quality, and at the same time give you more money for your HIDES and FURS than any house in Canada.

- Harness, Halters and Leather Coats
- Ladies' Hudson Seal and Muskrat Coats
- Tanning Hides and Furs for Robes, Coats, Rugs, or Lace Leather
- Mounting all kinds of Game Heads and Birds
- Prices of Hides and Raw Furs

Wheat City Tannery
Tanners and Manufacturers
BRANDON, MAN.

Straw as Feed

GRAIN cannot be raised without the production of a large amount of rough feed. Roughage cannot be utilized except by livestock. Roughage is of course sold off the farm, but at such a sacrifice of soil fertility that the net income is less than when it is kept. This is clearly shown by investigations in five counties of Indiana, where it was found that farms having large numbers of livestock produced an average net income of \$1,384 compared with an income of \$305 from farms on which small numbers of livestock were kept.

The most common roughage, and one of the hardest for which a profitable use can be found, is straw. Formerly no attempt was made to utilize this product. At threshing time the countryside was lighted at night with burning heaps of straw. Untillable spots on the farm were converted into receptacles for this so-called waste product. The object was to find a means for its disposal without reference to its utility. Such a method employed on high-priced land, where the struggle to maintain soil fertility under heavy cropping is ever becoming keener, will result in enormous loss. The general method now employed for disposing of straw is by using it as bedding for stock. But its use need not be so confined.

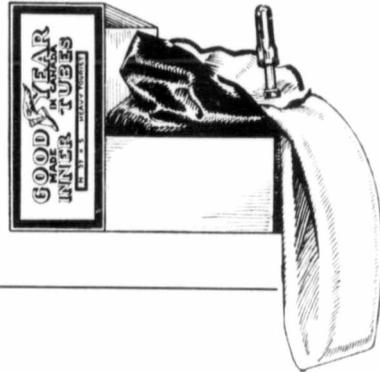
Straw is a valuable feed, and under certain circumstances is as valuable as the most highly prized roughage grown. This has been shown by accurate trials. November 17, 1911, the Purdue Experiment Station began feeding ten steers on a ration of shelled corn, cottonseed meal, corn silage and oat straw.

At the end of 160 days they had consumed 22,200 pounds of corn, 4,467 pounds of cottonseed meal, 40,410 pounds of corn silage and 3,695 pounds of oat straw. During this feeding period they gained 3,843 pounds. The total cost of feed and cattle was \$927.89. The value of the cattle was \$1,116.23, thus returning a profit of \$188.34, or \$18.83 for each steer.



FORCE OF HABIT

Farmer.—"If you've finished ploughin' this 'ere field what're you doin' scratchin' about with that stick?"
C 3 War-worker (formerly humorous artist).—"Oh, just signing my name."



A Poor Tube is Expensive

The price of a tube is comparatively small. But poor tubes may easily become the most expensive item in your motoring cost.

Not that the cost of tubes may mount unusually high. But a poor tube can ruin an expensive casing. The greatest cause of tire failure is under-inflation. Slow seepage of air through poor tubes causes inconspicuous and insidious under-inflation. To prevent this dangerous fault we use the lamination process in making Goodyear Tubes.

Rubber of the highest quality is rolled out tissue-thin. Only in such thin rubber can careful inspection detect and eliminate every flaw, every bit of foreign matter.

Layer on layer, Goodyear Tubes are built up from this inspected rubber. We make them extra thick by using extra layers. They are extra pure, extra durable, air-tight. They are well nigh perfect.

When you buy tubes say "Goodyear." Because as tubes, they give longer service. Because, as tire savers, they are worth many times their price.

The Goodyear Tire & Rubber Co. of Canada, Limited

Goodyear Tubes, along with Goodyear Tires, and Tire-Saver Accessories are easy to get from Goodyear Service Stations everywhere.

GOOD YEAR
MADE IN CANADA
TUBES

Ruth Feeder Canvases

Made from No. 4 extra heavy cotton duck, superior canvas belting and hardwood slats, secured by large-headed bolts. We manufacture these ourselves.

	28 inch	32 inch	34 inch	36 inch	40 inch
Price complete.....	\$19.00	\$20.00	\$20.50	\$21.00	\$22.00
Duck, for repairing old canvases	1.20	1.35	1.40	1.50	1.65

AUTO TOP & SUPPLY CO. LTD.

Phone M. 5045 424 Graham Avenue, Winnipeg

OUR WOMEN FOLK

CONDUCTED BY
PEARL RICHMOND HAMILTON

WORDS OF CHEER

"Then let your secret thoughts be fair,
They have a vital part and share
In shaping words and moulding fate;
God's system is so intricate."

"Truth is within ourselves, it takes no
rise
From outward things, whate'er you may
believe.
There is an inmost centre in us all,
Where truth abides in fullness."

"I hold it as a changeless law,
From which no soul can sway or swerve,
We have that in us which will draw
Whate'er we need or most deserve."

"The poem hangs on the berry-bush,
When comes the poet's eye,
And the whole street is a masquerade
When Shakespeare passes by."

"Some of your griefs you have cured,
And the sharpest you still have survived,
But what torments of pain you endured
From evils that never arrived."

"It is the mind that makes the body
rich."

"Make yourself nests of pleasant thoughts,
Fairy palaces we may build of beautiful
thought, proof against all adversity."

"Comfort one another,
For the way is often dreary,
And the feet are often weary,
And the heart is very sad.
There is a heavy burden bearing,
When it seems that none are caring,
And we half forget that ever we were glad."

"Comfort one another
With the hand-clasp close and tender,
With the sweetness love can render,
And the looks of friendly eyes.
Do not wait with grace unspoken,
While life's daily bread is broken—
Gentle speech is oft like manna from the
skies."

"Let there be many windows in your soul,
That all the glory of the universe
May beautify it." Not the narrow pane
Of one poor creed can catch the radiant
rays
That shine from countless sources. Tear
away
The blinds of superstition; let the light
Pour through fair windows, broad as
truth itself,

And high as heaven. Tune your ear
To all the worldless music of the stars
And to the voice of Nature, and your heart
Shall turn to truth and goodness as the
plant
Turns to the sun. A thousand unseen
hands

Reach down to help you to their peace-
crowned heights,
And all the forces of the firmament
Shall fortify your strength. Be not afraid
To thrust aside half-truths and grasp the
whole."

HOME ECONOMICS AND HOME- MAKERS' CLUBS

The Supremacy of Home Economics and Homemakers' Club Work

During the first week of July the district conventions of the Home Economics societies will meet to discuss their work and make plans for the future. These district conventions will mean much to the women socially and intellectually; they will enable the women to get closer together in working out the vital problems

that concern the home and the nation. At the yearly convention the delegation is so large and the programme so full that the members cannot have time to discuss the work as much as they would like. The big yearly convention is so complete in splendid suggestions that the members feel they must not let the year pass without carefully discussing the work outlined in February. For this reason the district conventions will be a strong power in cementing and advancing the great work the Home Economics have done and are now accomplishing. While speak-

Not only have many of our women and girls become better housekeepers—but they have become happy homemakers, inspiring family companions and influential citizens under the influence of these societies.

A vast economic waste has been made through wives suppressing their talents. Homemaking is an art greater than that in any other line of human endeavor. The most ideal homes must express the finest ability and the broadest education our women can give them.

"As the farmer has scarcely scratched

OUR FRONT COVER

The box of beauty on this month's front cover is made up of a number of the young women of the farm homes who graduated in Domestic Science at Manitoba Agricultural College, 1916. We are proud to send the pictures of these representative young women all over the world as worthy types of Western Canadian young womanhood.

ing of the Home Economics societies I mean the Homemakers' clubs of Saskatchewan and Alberta as well; they are all doing the same work, they are doing the work of true homemakers. Of all women's clubs none appeal to me so much as these clubs, for they represent the best women of the West all working in unity for home and country.

Where is the stamina and solidity of character, the stalwart manhood and pure womanhood of the future to come from if not from the well-managed happy homes of just such intelligent, progressive and efficient women as these women who belong to the Home Economics and

the surface of the hidden possibilities of mixing brains with the soil, so our wives and mothers have as yet hardly entered the outer chamber of the beautiful edifice of the ideal home of the future. It is the holy of holies of evolution, and in it lies the very secret of human progress," says Morden.

No motive has ever had such a grip upon the human mind as the dream of a home of one's own. It has been the sublime incentive of the ages.

Last winter I spent an evening with the girls at the Manitoba Agricultural College. I looked into the faces of those fine ambitious girls and felt thankful for the

a reorganized home. Just as in the scientific reorganization of business, incompetence, unscientific methods, slovenly management had to go, so is it true in the home, and our girls must realize that the muscle age and the drudgery age are giving way to the mental age, when the mind shall change drudgery in housework to a fine art. Not only efficiency is needed by the homemaker but diplomacy. There is no public work so important to civilization as the homemaker.

One writer says: "If every woman's club in America were to devote the next two years to the study of household economics I believe the domestic problem would be solved." Dr. Green says that "The home has not made the progress we see in every other direction. Homes are still unsanitary, food is still wasted, our cooking is making dyspeptics, many homes breed disease."

A new world is opening up for the capable wife and mother. Woman's sphere is an atmosphere—she who creates an ideal home atmosphere need not worry about her boys and girls when they are growing into men and women.

Last month I attended a Chautauqua on the other side of the line where men and women representing the very pulse of the nation lectured to large audiences. I expected to hear much of the feminine movement—the Woman in Public—but I heard nothing. Every speaker emphasized the great call of the homemaker. Judge Ben Lindsay, Mrs. Sarah Tyson Rohrer, Dr. Nan Sperry, and many others, voiced the general questions:

"What's the matter with the American mother? What's wrong with the home life? Where are our homemakers?"

"Perhaps some of our readers are saying, 'You're speaking of the American woman.'"

I grant that we are more conservative in Canada, and the Old Country homemaker can teach the American wife much, but we are constantly chasing new vocations for women because they have them on the other side of the line. There is danger of the pendulum swinging too far the other way, that such is the case was emphasized by these speakers when they asked the above questions.

Mrs. Sarah Tyson Rohrer, who for many years edited the department of Home Economics in the Ladies' Home Journal, and who is one of the greatest living authorities on the art of living said: "I believe in women having the vote, I am a suffragist, but I do not believe in women leaving the home as they are and taking many of the positions men should occupy. Why in New York I see girls in their teens working as police officers, and their faces are harrier than the girls they arrest."

Mrs. Rohrer has a son in the trenches, a man forty-seven years of age. Her soul is alive with devotion to patriotism and she believes that the home is the localized centre from which initial impulses go out in all directions like the point in a pond where a stone is dropped. From that tiny point are started wavelet circles which never stop until they have visited every inch of the shore, so does the atmosphere of one home spread out to the ends of the earth.



Our Returned Soldiers Boys Cultivating an acquaintance with the soil at Deer Lodge

Homemakers' societies? These societies have been the means of enriching our communities and our nation by bringing out the superb special talents of women whose lives before had been stilled in a monotonous routine of housework. They have enabled women whose natural self expression had been smothered to rise in hope and ambition till they can be companions with their progressive husbands and boys and girls, working shoulder to shoulder for supremacy in their chosen callings. This development of home companionship I consider the very greatest work our agricultural colleges are accomplishing. They have sensed the pulse of the nation's need, and through these societies are solving the nation's greatest problems. Under the influence of this stimulus the tonic of achievement is strengthening every community where these societies are working.

promise of such well-equipped future homemakers.

Just think of the possibilities of the Canadian homes if every girl should prepare for marriage and housekeeping as she does for any other profession, and if on her marriage day she should dedicate herself to her chosen vocation and enter on its duties with the same zest and thoroughness, the same ambition and enthusiasm, the same scientifically trained intelligence as the earnest young man enters into his profession.

Who can estimate the loss to civilization caused by one inefficient wife? Household management, household thrift, mixing brains with dollars, learning to stretch a small income to the best possible advantage, these are some of the problems our girls at the agricultural colleges are learning to solve.

The ideal of modern efficiency demands

Mail this notice along with 20c. to the Winnipeg office of Western Canada Flour Mills, and a handsomely bound 180 page cook-book will be sent containing a collection of recipes and valuable information on the preparation of wholesome and necessary foods, and written in the non-technical and easily understood language of the home kitchen.

“When e'er you bake
 A dainty cake,
 And PURITY is your brand;
 You'll smile with me
 And quite agree
 It's best in all the land.”



JELLY ROLL RECIPE:
 1 cup PURITY Flour. 3 Eggs.
 1 teaspoon Baking Powder. 1 cup Sugar.
 2 tablespoons Cold Water. ½ teaspoon Salt.
Flavor to suit. Roll when hot.

PURITY FLOUR

More Bread and Better Bread 

WESTERN CANADA FLOUR MILLS COMPANY LIMITED
 MILLERS TO THE PEOPLE 

The coming of the real new woman does not mean the death of love. It means the birth of a bigger, better, brighter love. The real new woman is not the woman who hates men, nor is she like an American club woman I heard remark this: "I abominate children and cooking paralyzes me." Neither is the new woman like the late Empress of Austria who had no love for her children because their coming had impaired her beauty.

No! the new woman is the home-making woman whose love creates an atmosphere that extends far beyond the walls of her home—out into the community—far, far out into the nation. She may not be a physical mother, but she is a mother in the true sense of the word if she mother human life. This is the fine ideal that inspires our Home Economics societies to accomplish the great work they are doing; the work that begins at home, extends out into the community, yes, to the far off ends of the earth where men are fighting for justice and honor.

Women are needed in civic work, but the women for this work must understand the art of mothering. Our men are disappointed when hard lines take the place of love lines. I have been much interested in the work of the most successful women in civic work in the States. In almost every instance they who have done as much for the public welfare have stated that they believe themselves selected by a Divine agency for their particular work and accountable to the Divinity for success.

Sophie Wright, whose death a few years ago bereft New Orleans of its most useful citizen, said: "If God did not help me and want me to do this thing, how could I, a sickly cripple, accomplish so much?"

The sense of a power beyond themselves, impelling them onward is general as is a great faith in the help of prayer. The real women who are doing the greatest work are working as "divine agents of God to minister to His people." "These women are working not for fame nor glory, nor for the joy of personal expression, but for the service of humanity because they believe that God wants them to," says the biographer, Helen Bennett.

Among these remarkable women is Caroline Bartlett Crane, of Kalamazoo, Michigan. Her type of work is ministering to municipalities, a work that stands for a new type of community usefulness, a new kind of social service, and for a new conception of the sphere of home for women. At first she was a preacher in Kalamazoo, then she became interested in municipal sanitation. Fifty-nine American cities have asked her to "come and look their town over." When a city desires her services it calls upon her as a professional municipal expert, and places the keys of the municipality at her disposal. She arrives at an appointed time and personally investigates the water supply, sewers, street sanitation, garbage collection and disposal, milk supply, meat supply, markets, bakeries, food factories, school houses, tenements, homes of the poor, hospitals and jails, studies the city's resources, its system of public

health administration. Then she addresses mass meetings of citizens, reporting conditions and suggesting improvements. These reports are printed in a booklet which serves as a municipal text-book for years. It took twenty years' experience to develop Mrs. Crane into what she calls a "professional sanitation."

One time as chairman of the committee on Household Economics in Kalamazoo she tried to secure a speaker on meat inspection, but the officials were all busy, so she herself started out to inspect the abattoirs and meat markets in her home town and those about her till she presented a report that shocked the whole state, and they passed a bill granting each city could make their own meat inspection ordinances, thus making a marked improvement in slau litter houses and meat conditions. She did not hunt up a book and read up on meats.

Demands for sanitary inspection grew till Mrs. Crane decided to put a price upon her services and to form a definite professional plan which she called a "sanitary survey."

In Rochester, New York, the Mayor, Chamber of Commerce, Board of Education, all the women's clubs, and many other societies forgetting class creed or office, asked Mrs. Crane to help them go forward. The state of Minnesota, through its State Board of Health, State Federation of Women's Clubs, and Commercial Clubs of Minneapolis and St. Paul and Duluth, engaged her for a thorough survey covering the seventeen leading cities.

Mrs. Crane has constant requests for her services, but let me give you a glimpse of her as a home-maker, for she says she is first of all a home-maker, and refuses to leave her home for more than two months a year. She has been house-keeping for seventeen years, and in that time has had four maids who were married in her own study and left to start homes of their own. The machinery of her home is invisible. Every duty is carefully planned and the entire household co-operates. When the curtains are drawn at night, Mrs. Crane sits at her piano, her husband in the chair opposite, then there is apparent that atmosphere that not even the most perfect house-keeping can bring, that deeply spiritual feeling that makes home because love abides there.

Then there was Sophie Wright who for twenty years had educated the men and boys of New Orleans in the most wonderful night school the country has ever known, supporting her night work with the product of her labor by day. She it was who made possible a home for crippled children in New Orleans and the city built her a home as appreciation for her services to the city. For twenty-five years she conducted the night schools for the poor and foreigners, and boys and girls who had gotten on the wrong track. She was honored with the office of honorary vice-president of the National Congress of Mothers.

In her work in New Orleans she never asked for anything but an opportunity

to serve. After Miss Wright, who from the age of three had been a crippled sufferer, had ended her work, an Italian boy came to her and said: "I come to your school." "But I haven't any school now," she said gently. "You know the city has many night schools which take the place of mine." "Yes," he said, "I know, I been there. But oh, Miss Sophie, they no care for ma heart like you do."

The most popular woman in America we know to be Jane Addams. Hull House is her contribution to history, her expression of herself, her art and her gift to humanity. Her father was a miller, and one day when Jane was seven years old he took her to a neighboring town. His journey led him to a mill in the poorest quarter of the little city. Little Jane looked at the poor little houses. "Why do people live in such horrid little houses so close together?" she asked. When her father explained their miser, she exclaimed: "When I grow up I shall, of course, have a large house, but it shall be built not among other large houses but right in the midst of horrid little houses like these."

Through the years that idea of the "large house among the horrid little houses" colored and directed the final period of her education, and in 1888 it crystallized into a definite determination to open a settlement, a relief station not only for the poor but a field of work for girls of good families who needed an outlet for activity. She has always believed that harmony can come only from people working together. This resolve of a little child of seven, a gem of home training has reached in its benefits to humanity, to the ends of the world. Her fame rests not upon mental brilliancy nor versatility, although she has both, but on twenty-five years of steady daily service to the people about her. Her position is a revelation of the ideals of the true woman movement.

I like to think of Kate Barnard, of Oklahoma. In that State where women do not vote, she helped to plan twenty-four of the planks in the constitution and was elected to the first State office in the world occupied by a woman. She is the strongest individual force in the State of Oklahoma. Ask any politician who is the best vote getter in the state, he will answer "Kate Barnard." Ask an ordinary citizen who can boast of the greatest personal popularity; he will answer, "Kate Barnard." Ask any working man who is the best friend of labor he will answer, "Kate Barnard." This State force is thirty years old and weighs eighty-five pounds, but every pound of the little woman radiates dynamic force.

When she was a little girl she lived alone in a room but in the woods, shy and half afraid, for her father placed her on this little claim while he went to the city to make a living. Her mother was dead. When she was a young lady she went to the city editor of a Louisiana paper and said: "I am Kate Barnard of Oklahoma, and I expect to make a career. I am interested in poverty and crime. I want to cure them. Please send me into the slums to look into the matter." She is using her force for good in behalf of the weak and unfortunate.

"If you want to know what is the matter with this old world, go out into the woods and see how God made it," she advised an audience. "God has nothing to do with our evils. The fault is with our forefathers." This is a breath from her forest home in early childhood. This most powerful State force says: "I am more interested in saving the poor, destitute, blind, deaf and insane than in securing political office," proving that her work means more to her than her office, the work of mothering humanity.

I heard Dr. Nan Sperry last month. She is Assistant Labor Commissioner of Missouri, and a champion of the working girl, and is Factory Inspector of Kansas City. She has accomplished great results that she is regarded as one of the vital moral forces of the southwest. As I listened to her lecture full of tender, beautiful experiences of home life, I could see the beauty of the mother instinct in her face. I will close with a story she told as follows:

"I like the Italian people. They are affectionate in their homes as a rule. One day I went into a little Italian home where they were poor, very poor.

Mr. Edison's Wonderful Phonograph

Only **\$1.00** After Free Trial

You may keep this new Edison—Thomas A. Edison's great phonograph with the diamond stylus—and your choice of the balance 3-gram of records for only a few cents a day. Try this New Edison in your own home before you decide to buy. Send no money—merely ascertain your friends with your favorite records.

Write Today! For Our New Edison Book, One-100 your name and address for our book and pictures of the New Edison phonograph.

F. K. BARSON, Edison Phonograph Distributor, 225 Park Ave., Room 917, Winnipeg, Man.

CAUTION—SEE THAT

GOLD STANDARD

THE CHAFFLESS COFFEE

Gold Standard

THE CHAFFLESS COFFEE

De-licious!

31

Gold Standard Mfg. Co. Winnipeg

BOOK ON DOG DISEASES And How to Feed

Mailed free to any address by the Author

H. CLAY GLOVER CO., Inc.

118 West 31st Street, New York

America's Pioneer Dog Remedies

CLASSIFIED

EXCHANGE QUARTER-SECTION for small threshing machine. George Wyer, Clearwater, Man.

30-60 TRACTOR—Will sell cheap for cash or what have you to exchange? In good condition, cheap for cash. Also plow nearly new. E. C. R., Box 3184, Winnipeg.

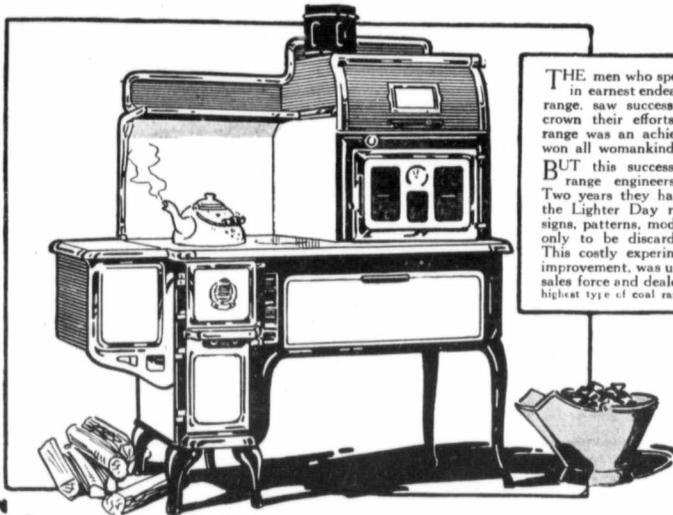
WANTED—To hear from owner of good farm for sale. State cash price, full description. D. F. Bush, Minneapolis, Minn.



BAD OUTLOOK FOR THE FAIRS

Short.—"We must wait till the boys come marching home, and then the profits 'll go up."

Codlin.—"Oh, will they? Mebbe that bombin' 'll have made 'em pretty tidy shots."



THE men who spent years of their lives in earnest endeavour to make an ideal range, saw success beyond all thought crown their efforts. The Lighter Day range was an achievement. As such it won all womankind.

BUT this success only spurred these range engineers to greater effort. Two years they have toiled to improve the Lighter Day range. Countless designs, patterns, models, have been made, only to be discarded for better ideas. This costly experiment, this search for improvement, was undertaken to give our sales force and dealers in every town the highest type of coal range that can be produced.

Clad in blue and white this *NEW* Lighter Day Coal Range

THE Lighter Day gave to women a handy-height oven for baking with coal.

That was two years ago.

In the days before coal, stoves had high ovens.

But when coal came for cooking, and for forty years after, range-makers could not make a coal range with an oven at handy-height.

For forty years women toiled at bend-over ovens. Fine-looking ranges they had, good in many ways—well-built, and durable—but BACK-BREAKERS every one of them. A day's baking was a hard day's work. The stooping, stooping, stooping made baking day a day of aching backs. It was not coal alone that went into these old style ranges. Health, strength, and youth were the fuel consumed.

Science Turned to Kitchen Reform

Clare Bros.' engineers solved the baffling problems of heating a handy-height oven with coal. The Lighter Day was invented. A lighter day dawned in thousands of Canadian kitchens.

The Lighter Day was a marvel range. Engineering skill never did more for womankind.

To Canada's women this Canadian invention seemed perfect. They have written it in letters, thousands of them. But Clare Bros.' engineers studied, criticized, improved. There followed two years of constant experiment, countless tests. Thousands of dollars were spent on new designs, new inventions, and finally new patterns.

To-day a New Lighter Day Appears

If the old Lighter Day was a marvel range, see now what science has created. Every dollar spent, every month of experimenting, is more than repaid by the labour-and-money-saving improvements now added to the Lighter Day Range.

Cut the Cost of Fuel

Lighter Day engineers have invented an entirely new way to avoid loss of heat. Coal never was known to produce heat at such low cost. The oven is ready for baking a few minutes after the fire is started. The fire is under perfect control, holding the oven temperature steady for hours. Lighter Day construction will upset all old ideas of range building. It will save money in thousands of Canadian homes.

No More Blacklead

The new Lighter Day is clad in blue and white porcelain enamel. Specially toughened enamel had to be produced. To make a range that would require no blacklead, new processes of enamelling had to be found. The cooking top is polished brighter than steel. Other cast parts are japanned. A damp cloth will clean any part of this wonderful range.

Greater Cooking Capacity

The cooking top is made wider and deeper. There is room at the back for kettles or saucepans that require only moderate heat.

The oven has been moved back to leave a shelf. Now one may draw out dishes for basting or testing. The warming closet

is directly heated. It serves as a second oven for baking pies while the roast is cooking in the oven. In addition to the four outside pot-holes, there are holes in both the oven and warming closet. Turnips, cabbage or other strong vegetables may be shut in while being cooked.

The large hot water reservoir is of porcelain enamel.

No Steel Parts Exposed to Rust or Intense Heat

To make a range that would be almost everlasting called for big changes in construction. No steel range ever made could resist the wearing action of heat and rust. The flues rusted out or burned out. The Lighter Day is built with flues of porcelain enamel—absolutely proof against corrosion.

The fire-box is lined at the back with four ordinary fire-bricks, such as are used in smelting furnaces. If they should become broken, they may be replaced anywhere for a few cents.

Right or Left Oven

The New Lighter Day has the oven at either the right or left side. Ovens are made 18 or 20 inches wide. Pot-holes 8 or 9 inches.

Clear Illustrations of the New Lighter Day

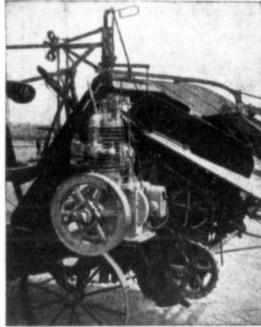
If your local range dealer does not sell the Lighter Day range, write for a handsome folder showing every labor-saving feature of this marvel range. Every woman should see for herself what we have done to lighten her kitchen work. Mention this paper and your copy will go to you promptly.

new LIGHTER DAY range

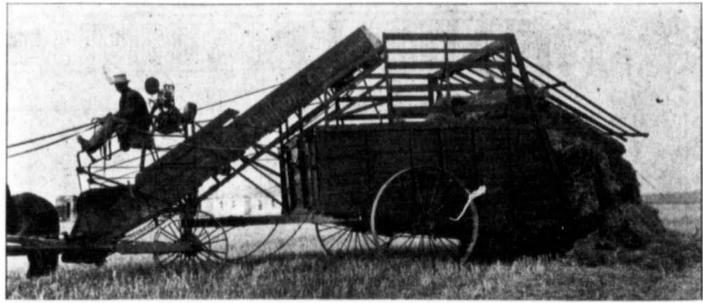
Clare Bros. & Co. Limited, PRESTON, WINNIPEG, VANCOUVER

The Gade 4-H.P. Light-weight Internal Air-cooled Binder Engine, Built-in Magneto, Friction Clutch Pulley, with Spark Shift Lever, Variable Speed, Schebler Carburetor.

The most successful binder engine built, because the troubles of other engines have been done away with. Be sure and try this engine on your binder this year; it will save you its price over and over again. It can also be used for many other purposes on the farm. It has the big tractor liked a mile.



No Water
No Batteries



The Jackson Combination Sheaf Loader and Carrier, with Gade 4-H.P. Binder Engine attached, will be on exhibit at Brandon, Regina, and Saskatoon Fairs.

We invite every one who fears a shortage of labor and desires more efficient threshing methods, to inspect this machine at some of the above fairs. The price this year \$1,050, at least \$500 cash with the order; or \$1,000 cash with order. Sold only on these terms. Think this machine over

FARM MACHINERY MANUFACTURERS, Ltd. SASKATOON CANADA

The mother was the plainest, most repulsive woman in appearance that I had ever seen. Oh, I thought she was so painfully plain. A little girl was playing with some broken dolls. She was playing that she had a christening service. Now the very highest honor an Italian can bestow on one is to name a child after one. So I asked the child to tell me about her christening play. 'Who are you naming this one for?' I asked, picking up a doll all dirty and broken. 'I'm not naming that one for any one. No one would like that doll named for them, it's so ugly,' explained the child. Then I picked up other dolls and she told me all about the people they were named for. But there was one beautiful doll. It really looked out of place among the others. I really wondered how it came there, but the child said it came in a mission box. 'Why are you leaving this beautiful doll till the last?' I asked. 'Oh, that is to have the best name of all, I am naming her after my mother,' answered the child."

Mrs. Sperry said she looked at the child and then at the mother, and immediately the mother became beautiful to her. The child's simple explanation had defined the most beautiful tribute to womanhood.

I always feel badly when I hear women from rural communities remark, after hearing a popular woman on the platform, "Oh, how I would like to do the good that woman does!" I feel like saying, "My dear friend, you in your home-making are doing far more good than the woman before the public eye, for the supreme artifice is she who infuses into a home the spirit of love." Sometimes I hear women envy these women who have reached fame. Shall I tell you what I heard Dr. Nan Sperry tell a woman after her lecture was over? "I would give all I have for a child. I do love children and I long to be a mother."

"To make a happy household clime
For weans and wife,
That's the true pathos and sublime
Of human life."
Pearl Richmond Hamilton.

NOTICE.

Reports of the district conventions will be in our next issue.

What do you want in this department? The editor will appreciate any suggestions from our readers that will make this department more helpful to them. This month we are beginning a page on fancy work. The woman who has been engaged to conduct the fancy work dept. has many new original ideas, and we hope our readers will find her page a satisfactory feature. Let us know if you want it continued.

Mother's Corner

Mother o' Mine

If I were hanged on the highest hill,
Mother o' mine, O mother o' mine!
I know whose love would follow me still!
Mother o' mine, O mother o' mine!

If I were drowned in the deepest sea,
Mother o' mine, O mother o' mine!
I know whose tears would come down to me,
Mother o' mine, O mother o' mine!

If I were damned of body and soul,
Mother o' mine, O mother o' mine!
I know whose prayers would make me whole,
Mother o' mine, O mother o' mine!
—Rudyard Kipling.

Hundreds of stars in the beautiful sky;
Hundreds of rocks on the shore together;
Hundreds of sea-birds go winging by;
Hundreds of leaves in the autumn weather;
Hundreds of dewdrops to greet the dawn;
Hundreds of lambs in the purple clover;
Hundreds of butterflies on the lawn;
But only one mother the wide world over.

Loyal Hearts

There are loyal hearts, there are spirits brave,
There are souls that are tried and true;
Then give to the world the best you have,
And the best will come back to you.

Give love, and love to your heart will flow,
A strength in your utmost need;
Have faith, and a thousand hearts will show
Their faith in your word and deed.

For life is the mirror of king and slave;
It is just what you are, and do;
Then give to the world the best you have,
And the best will come back to you.
—Madeline Bridges.

Your Child To-day and To-morrow

If you will look among your acquaintances, you will find that those who get really intelligent obedience from their children are the ones who make the least ado about it, and perhaps never use the time-worn phrase, "Now you must mind me." It is the weak person who is constantly forced to make appeals to his authority. It is the weak person who is constantly threatening punishment. Another fearful habit is to make children obey through fright. When my little child was two years old, a maid told her that a dog would bite her if she did not go to sleep. To this day she shudders

when she sees a dog. All through her life she will be afraid of dogs. It made her very nervous for months when she went to bed.

The fear of punishment leads directly to untruthfulness and deception, parents who rely upon affection and good-will to assure the right conduct of the children get better results than those who, terrorize them. Fear and hatred are closely connected. Fear cramps and paralyzes; it never broadens or stimulates. All the progress made by our race has been accomplished by those who were not afraid; the men and women of broad vision and independent fearless action. Every mother has lurking in some corner of her heart the fond hope that her children will in some way contribute to the advancement of humanity, to make our life here better worth living. To contribute in this way our children must be without fear.

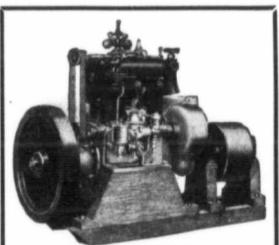
Experts do not know your child; they have studied the problems of childhood, and their results you can use in learning to know your child. Your problem is always an individual problem. The problem of the scientist is a general one. From general results we may get suggestions for the solution of our individual problem.

A large amount of disobedience arises from the fact that the child's attention and interest are so different from an adult's. The little girl who is said to have given her name as "Mary Don't" illustrates this. The child is a bundle of impulses. Well organized play and team work are making wonderful transformations in the character of boys and girls. Little girl who wants to help mother should be encouraged, even if she does dirty a few more dishes in trying to cook. We sometimes do not realize how well they can do. My little ten year old girl wanted to make a cake yesterday. I let her try and her cake was delicious. The little hearts are aching for appreciation and an outlet for their vitality.

From "The Care and Feeding of Children,"

By L. Emmett Holt, M.D.

As requests have come in for advice on the artificial feeding of babies, I have decided to take from the above highly recommended book, the chapters on the preparation of cow's milk. This will be continued in four issues of the magazine. Meanwhile if a young mother requires the entire information at once I shall be pleased to send it on request. Send to my private address (983 Grovenor Ave., Winnipeg). I can give no personal experience on artificial feeding as my own children were not given artificial food. Mothers who have used such foods would greatly aid other mothers by giving their experience. (P. R. H.)



Model DS, 10 H.P.

Horses are Scarce and Less Efficient on Your Harvester or Thresher than a Gray Vertical Throttle-Governed Engine

Three Sizes 10, 15 and 20 H.P.

Threshermen and farmers are feeling the scarcity of horses at a time when the importance of bumper crops was never greater. Their scarcity would be a most serious matter were it not for the discovery that Gray vertical throttle-governed light weight engines are more efficient and economical than horse labor. Extremely powerful, light but strong, suited to a wide range of speed, free from vibration, dust-proof—these engines may be relied upon to stand up under the severe, exacting service of threshers, harvesters, and large binders. Used successfully on combined harvesters and threshers, on stationary threshers, and for all general farm work requiring constant power.

DELIVERY—For a limited period we can ship any size engine within three days of receipt of order.

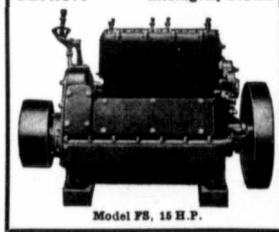
Model DS, 10 h.p., 2 cyl., weight 330 lbs. Speed range r.p.m. 300-1200.	Retail \$295
Model FS, 15 h.p., 4 cyl., weight 400 lbs. Speed range r.p.m., 375-1600.	\$330
Model DS, 20 h.p., 4 cyl., weight 530 lbs. Speed range r.p.m. 375-1600.	\$395

(Price F.O.B. Detroit) Express charges to Winnipeg—\$4.25 per cwt.

All these engines are provided with throttle-governor control giving a steady and constant speed as a steam engine.

Order a Gray To-day and Save Real Money

GRAY MOTOR COMPANY
641 Oakland Avenue
DETROIT Michigan, U.S.A.



Model FS, 15 H.P.

Manitoba Legislation of 1917

Special Interest to Farmers

The following brief references to some of the newer Provincial Acts now in force in Manitoba, are intended to indicate only in the broadest way the general lines on which recent important legislation (especially affecting the farmers) is framed.

The intention of this article is not to offer information in detail, but to stimulate enquiry for the Acts themselves, which may be had from the offices respectively indicated.

Legislation of 1917

AGRICULTURAL SOCIETIES ACT (New)

During the year 1917 an entirely new Act respecting Agricultural Societies was passed. This Act provides definitely for the encouragement of many lines of agricultural enterprise not previously indicated as among the work of the Agricultural Societies. The following activities are now definitely indicated as the work of these Societies:—(a) Holding exhibitions; (b) Seed grain fairs; (c) Standing crop competitions; (d) Good farming competitions; (e) Horticultural shows; (f) Live or dressed poultry shows; (g) Flowering matches; (h) Summer fallow competitions; (i) Importing or owning pure-bred live stock; (j) Providing for the circulation of literature relating to any of the objects mentioned in this section; (k) Offering prizes for essays relating to agriculture; (l) Taking approved action to eradicate animal, insect and weed pests; (m) Co-operating with other organizations already in existence in promoting the progress of any branch of agriculture; (n) Importing and otherwise procuring seeds and plants of new and approved specimens; (o) Carrying on experiments which have for their object improvement in methods of agriculture; (p) Holding meetings for the delivery of lectures and discussion of subjects connected with agriculture.

Provision is made that legislative grants shall be paid on several bases, these relating to the membership of the Society, the number of its activities, the amount of money actually paid out in prizes, the number of pure-bred male animals kept for breeding purposes, the expenditure of money for agricultural periodicals, the expenses of speakers.

THE CATTLE BRAND ACT (Amended in 1917)

The Cattle Brand Act provides for the registration in this Department of cattle brands and for exclusive use of these brands by the owner so registering them. Severe penalties are provided for the misuse of brands.

During the last session of the Legislature amendments were passed for the purpose of automatically cancelling the ownership of brands after they have outrun a certain period of time; but provision is made whereby ownership of brands may be renewed by the owner. Also, if a brand lapses through lack of renewal by the owner, the same brand shall not be allotted to anyone else within a period of five years.

MANITOBA FARM LOANS ACT (New)

This is a new Act the purpose of which is to provide money for farmers on long-term land mortgage loans at the lowest rate of interest. In order to carry out that purpose, the Act incorporates an Association to be known as The Manitoba Farm Loans Association, which has all the powers and can do and perform all such acts and things as bodies corporate can usually do and perform.

The administration and management is delegated to a Board of five members, presided over by the Commissioner, who is the chief executive officer of the Association.

The Board of Management is appointed by the Lieutenant-Governor-in-Council and is composed of representatives of agriculture, municipal and business interests, and passes on all applications for loans.

Loans will be made to persons residing or intending to reside on farm lands, and money so loaned shall be used for the purpose stated in application for said loan, and must be utilized to pay off prior encumbrances, to make improvements, or for productive purposes.

The security for such loans must be a first mortgage on the land; any encumbrances have to be removed from title out of the amount loaned. The mortgage will be for a term of thirty years, but may be paid off at any annual payment date, at or after the end of five years from date of such mortgage.

The amount loaned will not be more than fifty per cent. of the appraised value of the land together with the buildings thereon, and the value of the land will be based on the earning ability or productive value for purposes of agriculture only.

FIRES PREVENTION ACT (New)

This is an extensive Act, of which not even the principal provisions can be summarized here. It provides for the prevention of hay stacks; and regulates the kindling of fires and permitting them to run.

Provision is made for the appointment of fire guardians, who are authorized to call upon other men to help in extinguishing fires. The dropping of burning matches, ashes of a pipe, lighted cigar or cigarette, or any other burning substance are subject to specified penalties.

Certain parts of the province, indicated as "wooded districts" are subject to special regulations.

GAME PROTECTION ACT (Amended in 1917)

This Act with the 1917 amendments contains a great many provisions. A few of the leading ones are in the direction of altogether prohibiting the hunting of elk or wapiti; imposing new regulations as to big game; prohibiting the shooting of prairie chicken, partridge or grouse of any kind; prohibiting spring shooting of wild geese; prohibiting entirely, until 1927, the shooting of several birds of the pigeon, crane, duck, swan, snipe, and other families; further protection of muskrats; licensing of fur traders, and imposing the necessity of securing a permit to export or ship live animals protected by this Act.

INSECTIVOROUS BIRDS ACT (Amended in 1917)

This new Act prohibits attempts to catch, wound or destroy any of the insectivorous birds known as bobolinks, catbirds, chickadees, cuckoos, flickers, flycatchers, grosbeaks, humming-birds, kinglets, martins, meadow-larks, night-hawks or bull bats, nut-hatches, orioles, robins, shrikes, swallows, wax-wings, whippoorwills, woodpeckers, wrens or any other perching birds which feed chiefly on insects; also any of the migratory non-game birds known as auks, auklets, bitterns, fulmars, gannets, grebes, gull-trents, gulls, herons, jaegers, loons, nannies, petrels, puffins, shearwaters and terns, or any other non-game bird, whether resident or migratory, except as in this Act provided.

Also the destruction of nests and the taking of eggs are prohibited. Regulations are imposed as to exporting privileges.

One section of the Act states that eagles, falcons, goshawks, sharp-shinned hawks, duck-hawks, pigeon hawks, cooper's or chicken hawks, crows, ravens, blackbirds, rusty grackle, purple grackle, and English sparrows are not among the birds protected by this Act.

HAIL INSURANCE POLICY ACT (New)

This is an Act to regulate hail insurance companies. It provides for prompt acceptance or rejection (on same day as received) of any application for hail insurance, and also prompt advice as to acceptance or rejection being sent to the applicant.

Other provisions govern the limitation of liability of the companies, proof of loss, conditions in policies and other matters.

NOXIOUS WEEDS ACT (Amended in 1917)

A few minor alterations were made in this Act. An added section permits any city, town or village council to extend the operation of the Act within said municipality by including in the list of noxious weeds the name of any weed not enumerated in the Act but considered noxious to the well being of the municipality.

RURAL CREDITS ACT (New)

This Act provides for the organization by Manitoba farmers of Rural Credit Societies, through which the individual shareholders of such societies may be enabled to secure short term loans for carrying on or extending their farming operations. Such loans will be secured on the security of the crop for the production of which the loan is secured, or the live stock, or the machinery bought with the money thus borrowed. The money will be

secured from the bank at 6 per cent. and the borrower will be charged 7 per cent., the difference going to pay expenses of the society and augment the guarantee fund.

The Act provides specifically that short term loans secured for members for paying the cost of farming operations of all kinds and increasing the production of farm products shall be for any of the following purposes:

- (1) The purchase of seed, feed or other supplies;
- (2) The purchase of implements and machinery;
- (3) The purchase of cows, horses, sheep, pigs and other animals;
- (4) The payment of the cost of carrying on any farming, ranching, dairying or other like operations;
- (5) The payment of the cost of preparing land for cultivation.

It is also provided that the Rural Credit Society may act as agent for the members in purchasing supplies and selling products, and it may also take steps to promote co-operation for improvement of conditions of farm life, and to extend the application of the society's activities to all residents of the district.

Any further information required will be sent on application to The Acting Supervisor, Rural Credit Societies, Parliament Buildings, Winnipeg.

SHEEP PROTECTION ACT (New)

This is a new Act intended to protect sheep owners against loss caused by dogs worrying sheep.

It provides that any dog may be killed by anyone if seen pursuing or wounding sheep; also the owner or occupant of a farm or his servant or member of his family may kill any dog without lawful permission on the farm, if barking at and terrifying sheep.

A certain amount of liberty is given to kill dogs straying at night over farms where sheep are kept. Unless, however, there is reason to believe such dog is likely to worry sheep, it may not be so killed if it belongs to the occupant of adjoining property, or if it is muzzled or accompanied by or within reasonable call of some person having it in charge.

On complaint that any person is the owner of a dog which within six months previous has worried or destroyed any sheep, a police magistrate may summon such dog owner, examine evidence, and, in case of conviction, order the owner to kill the dog.

The Act further provides that where the owner of sheep killed or injured is unable, after securing conviction before the police magistrate, to collect the amount ordered to be paid, the municipality shall pay two-thirds of the amount. Also, provision is made whereby the municipality may be called upon to pay part of the loss in case the ownership of the dog or dogs cannot be ascertained.

THRESHERS' LIEN ACT (Amended in 1917)

This Act, which provides for the protection of the men on threshing gangs by enabling them to file liens for wages with the farmer or person for whom threshing has been done, was amended at the last session to make the right to lien include fuel used by the threshing outfit while same is engaged during the threshing season on the farmer's premises.

WOLF BOUNTY ACT (Amended in 1917)

The Wolf Bounty Act, which provides for the payment of a bounty of \$5.00 for each timber wolf and \$2.00 for each prairie wolf, or coyote, killed in the Province, was amended to make this bounty applicable to animals killed in the unorganized territory of the Province south of the 53rd parallel of north latitude.

The person killing animals is required to produce the head or pelt with the ears on before a commissioner for taking affidavits, or a justice of the peace, or a police magistrate, within the Province, and, on making a statutory declaration or affirmation according to the Act, will receive a certificate on which the bounty will be paid by the Provincial Treasurer.

List of Acts and Amendments

Although many other Acts beside those enumerated below are of interest to farmers in their business relationships, the following short list that are of most direct concern to them.

- Agricultural Societies Act, 1917**—Free from Department of Agriculture.
- Animals Act**—(Chapter 7)—King's Printer, Parliament Buildings. Price 10 cents.
- Animals' Diseases Act**—(Chapter 8)—King's Printer, Parliament Buildings. Price 10 cents.
- Boundary Lines Act** (re line fences)—(Chapter 19)—King's Printer, Parliament Buildings. Price 10 cents.
- Cattle Brand Act**—Free from Department of Agriculture.
- Co-operative Associations Act, 1916**—Free from Manitoba Department of Agriculture.
- Crop Payments Act, 1918**, with 1916 amendments—King's Printer, Parliament Buildings. Price 10 cents.
- Dairy Act, 1918**, with 1916 amendments—Free from Dairy Branch, Department of Agriculture.
- Fires Prevention Act, 1917**—Summarized in April, 1917, issue of Manitoba Public Service Bulletin. Free copy from Publicity Commissioner's Office, Parliament Buildings.

- Foul Brood Among Bees Act, 1914**—Free from Provincial Apiarist, Department of Agriculture.
- Game Protection Act**, with all amendments to date—Free from Game Branch, Department of Agriculture.
- Grist Mills Act**—(Chapter 81)—From King's Printer, Parliament Buildings. Price 10 cents.
- Hail Insurance Policy Act, 1917**—April 7 Supplement to Manitoba Gazette. From King's Printer's Office, Parliament Buildings. Price 25 cents.
- Home Economics Societies Act, 1916**—From King's Printer, Parliament Buildings. Price 10 cents.
- Horse Breeders' Act**—Free from Department of Agriculture.
- Insectivorous Birds Act**—Free from Game Branch, Department of Agriculture.
- Manitoba Farm Loans Act, 1917**—Summarized in April issue of Manitoba Public Service Bulletin. Free from Publicity Commissioner's Office, Parliament Buildings.
- Master and Servants Act**—(Chapter 124)—King's Printer, Parliament Buildings. Price 10 cents.

- Noxious Weeds Act**, amended to date—Free copy from Weeds Commission, Department of Agriculture.
- Rural Credits Act**—Free summary from Acting Supervisor, Rural Credit Societies, Parliament Buildings.
- Settlers' Animal Purchase Act, 1916**—Free from Manitoba Department of Agriculture.
- Sheep Protection Act**—Free from Department of Agriculture.
- Threshers' Lien Act**—(Chapter 197)—With amendments of 1914 but not of 1917—From office of King's Printer. Price 10 cents. Also 1917 amendments, in April 7 issue of Manitoba Gazette.—From King's Printer, Parliament Buildings. Price of Gazette, 25 cents.
- Wolf Bounty Act**—(Chapter 95), 1915—with amendments of 1916 but not of 1917—From King's Printer, Parliament Buildings. Price 10 cents. Also April 7 issue of Manitoba Gazette, with 1917 amendments.—From King's Printer, Parliament Buildings. Price of Gazette 25 cents.

Manitoba Department of Agriculture - Winnipeg, Manitoba

The Modification of Cow's Milk

Can cow's milk be fed to infants without any changes?

No; for although it contains similar elements to those in mother's milk, they are not identical, and they are not present in the same proportions.

Is this a matter of much importance? It is of the greatest importance. There are few infants who can digest cow's milk unless it is changed. To change cow's milk so as to make it more nearly resemble mother's milk is called modifying cow's milk.

How is this milk whose proportions have been changed distinguished from the original unchanged milk?

The changed milk is usually called "modified milk"; the original unchanged milk is known as "plain milk," "whole milk," "straight milk," or is referred to simply as "milk."

What are the principal differences between cow's milk and mother's milk?

Cow's milk has a little more than half as much sugar; it has nearly three times as much proteids and salts; its proteids are different and much more difficult of digestion; its reaction is decidedly acid, that of mother's milk is faintly acid or neutral.

Are there any other important things to be considered?

Yes; mother's milk is always fed fresh and is practically sterile. Cow's milk is generally kept twenty-four hours and sometimes much longer. It is always to a greater or less degree contaminated by dirt and germs, the number of which increases rapidly (1) with the age of the milk; (2) in proportion to amount of the dust or dirt which enters it; (3) with any increase in the temperature at which the milk is kept.

It is just as important for success in infant feeding that these conditions receive attention as that the proportions of the different elements of the milk are right.

How is the acidity of cow's milk overcome?

By the addition of lime-water or bicarbonate of soda. If lime-water is used, one ounce to twenty ounces of food is generally required; if soda is used, twenty grains to twenty ounces of food.

If there is a tendency to constipation the milk of magnesia (Phillips's) may be used; from one half to one teaspoonful being added to each twenty ounces of food.

How is the sugar best increased?

By adding milk sugar to the food; one ounce to each twenty ounces of food will give the proper quantity for the first three or four months. This will make the proportion about the same (between 6 and 7 per cent) as in mother's milk.

How should the sugar be prepared?

Simply dissolved in boiled water; if the solution is not clear, or if there is a deposit after standing, it should be filtered by pouring through a layer of absorbent cotton, half an inch thick; which is paced in an ordinary funnel.

Will not cane (granulated) sugar answer as well?

Not as a rule; however, there are many infants who get on very well when cane sugar is used. It has the advantage of being much cheaper. A good grade of milk sugar is somewhat expensive, costing from twenty-five to sixty cents a pound,

and cheap samples are apt to contain impurities.

If cane sugar is used, what amount should be added?

Considerably less than of the milk sugar. Usually about half the quantity (half an ounce to twenty ounces of food) is as much as most infants can digest. If the same quantity is used as of the milk sugar, the food is made unduly sweet, and the sugar is likely to ferment in the stomach and cause colic.

Is not the purpose of the sugar to sweeten the food in order to make it palatable?

Not at all; although it does that, its real use is to furnish one of the essential elements needed for the growth of the body, and the one that is required by young infants in the largest quantity.

How do we know that this is so? By the fact that in good breast milk the amount of sugar is greater than that of the fat, proteids, and salts combined.

We have seen that cow's milk has nearly three times as much proteids (curds) and salts as mother's milk. How are these to be diminished?

By diluting the milk.

Will it be sufficient to dilute the milk twice (i.e., add two parts of water to one part of milk)?

Not for a very young infant. Although this will give about the quantity of proteids present in mother's milk, the proteids of cow's milk are so much more difficult for the infant to digest, that in the beginning it should be diluted five or six times for most infants.

If cow's milk is properly diluted and lime-water and sugar added does it then resemble mother's milk?

No; the mixture contains too little fat.

What is the easiest way of overcoming this?

By increasing the fat in the milk before dilution. It may be done by using top-milk or a mixture of milk and cream.

What is top-milk?

It is the upper layer of milk removed after standing a certain number of hours in a milk bottle, glass jar, or any tall vessel with straight sides. It contains most of the cream and some of the milk just below.

The strength of the top-milk is measured by the fat it contains—e.g., a 10-per-cent milk contains 10 per cent fat; 7-per-cent milk contains 7 per cent fat, etc. These are the two strengths of top milk most used in infant feeding.

On what does the percentage of fat in top-milk depend?

1. On the length of time the milk has stood.
2. On the manner in which the top-milk is removed.
3. On the number of ounces removed.
4. On the richness of the milk used.

Unless these are known it is impossible to say even approximately how strong in fat the top-milk is.

When and how should top-milk be removed?

If milk fresh from the cow, or before the cream has risen, is put into bottles and rapidly cooled, the top-milk may be removed in as short a time as four hours. In the case of bottled milk it makes little difference if it stands a longer time, even until the next day. The best means of removing it is by a small cream-dipper*

Every Woman will Appreciate the Non-rusting Enamel finish of



The Banner Spiral Spring

It won't mark the mattress in any way, because its Enamel Finish is

GUARANTEED NON-RUSTING

The Banner Spiral Spring rests the whole body, because its 100 steel spirals support every tired muscle.

GUARANTEED FOR 20 YEARS

Your dealer sells it or will get it for you if you ask for it by name.

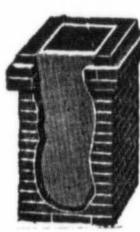
The Alaska Bedding Co., Limited
Makers of Bedsteads and Bedding

Calgary WINNIPEG Regina

ALASKA BEDDING
Made in Canada

"Alaska on an article means High Grade Every Particle"
135W

Chimney Flue Lining



ALL CHIMNEYS should be lined on the inside with hard burned flue lining. Not only does the lining of a flue add to the safety of a flue from the standpoint of the danger of the flue cracking, but also from the possibility of soot fires. The inside of the flue being smooth it leaves no place for the soot to gather, and for this reason it is almost impossible to have a chimney fire.

FARM DRAIN TILE

Some of the most fertile land is kept out of cultivation because it is under water at planting time. It is worth while to convert a worthless marsh into a fertile field and to do it right.

Our facilities for turning out this material are so unusually good that we feel safe in the assurance that not only will our farm drain tile be found the highest in quality but the lowest in price.

WRITE US FOR INFORMATION AND PRICES

Thos. Jackson & Sons
BUILDERS' SUPPLIES OF ALL KINDS

370 COLONY STREET WINNIPEG



THE COMFORTER

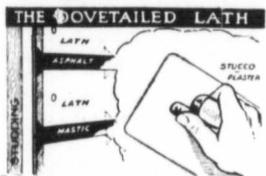
Lance-Corporal (in charge of footsore Tommy who has fallen out on the march).—"You're nothing to grouse about. You're gettin' your own back from the government. Ain't you wearin' out their blinkin' boots?"

Twelve Months of this Magazine for \$1.00



The Way to Grown-Up Town

By toiling and trying we reach that land—
A bit with the head, a bit with the hand!
'Tis by climbing up the steep hill Work,
'Tis by keeping out of the wide street
Shirk,
'Tis by always taking the weak one's part,
'Tis by giving our mothers a happy heart,
'Tis by keeping bad thoughts and actions
down,
That is the way to Grown-Up Town.



**BUILD—
Inside and Out—the
BISHOPRIC way**

Whether it's a house, a barn, a garage or a granary you're planning, Bishopric Stucco and Lath Boards will save 25% to 50% of the cost, and give you a warmer, dryer, better building all round.

**BISHOPRIC
STUCCO BOARD**

is made of kiln-dried lath, bevel-edged, embedded under terrific pressure in toughened Asphalt Mastic, surfaced on the other side with sand sulphate fibre board. It comes in sheets 4 ft. wide and 4 ft. to 25 ft. long, ready to be nailed direct to the studding, lath side out, as a foundation for stucco outside the building or plaster inside. It takes the place of sheathing lumber, building paper, furring strips and lath. The dovetailed spaces between the lath make perfect keys, and the wall is really permanent.

**BISHOPRIC
LATH BOARD**

is just the same except for the keys. It is applied, fibre-board side out, as an interior finish for walls and ceilings, saving lath and plaster.

Being air-tight and moisture proof, Bishopric Boards make buildings that are free from draughts, warm and comfortable. At the same time they make a big saving in cost of material and an even bigger one in time and work.

Write for samples and full information about Bishopric Boards to

Bishopric Wall Board Co. Ltd.
529D, Bank St., Ottawa, Ontario

holding one ounce; although it may be taken off by a spoon or siphon. It should not be poured off.

"Obtained from any of the Walker-Gordon milk laboratories, from James Dougherty, No. 411 West 59th Street, New York, and from many druggists. Price, 20 cents.

How can we obtain a 10-per-cent top-milk with the different kinds of cow's milk?

From a rather poor milk (containing 3-3½ per cent fat) by removing the upper eight ounces from a quart, or one fourth.

From a good average milk (containing 4 per cent fat) by removing the upper eleven ounces from a quart, or about one-third.

From a rich Jersey milk (containing 5-5½ per cent fat) by removing the upper sixteen ounces, or one half.

How can we obtain a 7-per-cent top-milk with the different kinds of cow's milk?

From a rather poor milk, by removing the upper eleven ounces from a quart, about one third.

From a good average milk, by removing the upper sixteen ounces, or one half.

From a rich Jersey milk, by removing the upper twenty-ounces, or about two thirds.

What is cream?
Cream is often spoken of as if it were the fat in milk. It is really the part of the milk which contains most of the fat. It differs from milk chiefly in containing much more fat.

In what ways is cream now obtained?
(1) By skimming, after the milk has stood usually for twenty-four hours; this is known as "gravity cream." (2) By an apparatus known as a separator; this is known as "centrifugal cream"; most of the cream now sold in cities is of this kind. The richness of any cream is indicated by the amount of fat it contains.

The usual gravity cream sold has from 16 to 20 per cent fat. The cream removed from the upper part (one fifth) of a bottle of milk has about 16 per cent fat. The usual centrifugal cream has 18 to 20 per cent fat. The heavy centrifugal cream has 35 to 40 per cent fat.

(To be Continued Next Month)

Our Young Folks

GIRLS' COSY CORNER

This department wishes to feature the work done by the Boys' and Girls' Clubs. The girl who sends in the best account of her club's work will receive a prize of one dollar. Send to 983 Grosvenor Ave., Winnipeg, Girls' Department. We wish to make our boys' and girls' sections an interesting feature of our magazine. Let us have as many letters as possible before August 1st.

The Time to be Pleasant

"Mother's cross," said Margaret, coming out into the kitchen with a pout on her lips.

Her aunt was busy ironing, but she looked up, and said:

"Then it is time for you to be pleasant and kind. Your mother was awake a great deal in the night with the poor baby."

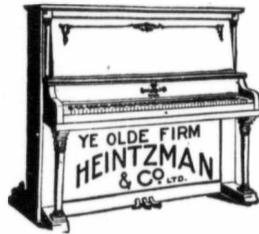
Margaret made no reply. She put on her hat and went for a walk in the garden but a new idea had come to her mind.

"The very time to be helpful and kind is when other people are cross. Sure enough! That would be the time when it would do the most good," thought Margaret. "I remember when I was sick last year, and was so nervous that if any one spoke to me, I could not help being cross. Mother never got angry with me nor out of patience, but was just as gentle as could be. I ought to pay all that back now, and I will."

Margaret sprang up from the grass where she had thrown herself, and turned toward the house with a face full of resolution. She went at once to the room where her mother sat, soothing and tending a fretful, teething baby.

Margaret brought the pretty ivory balls which the baby loved to play with, and dangled them before him. The baby stopped crying, and a smile dimpled the corners of his lips.

"Couldn't I take the baby out for a ride in his carriage, mother?" asked Margaret. "It is such a lovely morning."



**Extraordinary
Bargains in Used**

PIANOS

The unusual demand for Heintzman & Co. Pianos obliged us to take in trade many excellent pianos and player-pianos. Some of them are practically new, every one of them has been put in first-class condition; every one has our full guarantee and we offer them now at exactly the price we allowed for them when we took them in exchange. Call at our store and you will be convinced that these instruments are most unusual values for the prices we are asking.

- Player Piano**—Latest style, only used short time. Sells now at \$950. With music rolls and bench **\$650**
- New Colonial Design, Mahogany Case American Piano**—splendid tone; almost like new **\$315**
- Weber Piano**—Used only in our music department for demonstration **\$310**
- Fielding Piano**—Splendid practice piano **\$175**
- Capero & Co. Piano**—Good practice piano **\$65**

We have a number of bargains to offer in Pianos, Organs and Victrolas, on easy terms.

CALL TO-DAY

De Old Firme

Heintzman & Co.

1859 Scarth Street

Phone 5023

FARMERS!

TEACH YOUR BOYS AND GIRLS
THRIFT AND CO-OPERATION

INVEST THEIR SAVINGS IN

Deposit **4%** Certificates

OR

"Food" **5%** Bonds

OF

The Manitoba Farm Loans Association

SECURED BY GUARANTEE OF THE PROVINCE OF MANITOBA

Write for Explanatory Booklet.

Offices: **Scott Block, 274 Main Street, Winnipeg**

ADDRESS ALL COMMUNICATIONS TO THE COMMISSIONER

The Manitoba Farm Loans Association, Winnipeg

*WE have still a few Copies left of our
unique collection of*

PATRIOTIC POEMS

One Dollar for this finely printed book containing 103 Gems of Heroic Verse, and it also pays for One Year to "The Canadian Thresherman and Farmer."

E. H. HEATH CO., Box 3164, WINNIPEG

COMBINGS!

LADIES—We make your combings into switches, any quantity for \$3.00 Satisfaction Guaranteed.

New Hair added to Combings if desired from \$1.00 worth up.

We carry a full line of TOILET GOODS 10c. postage for mailing

Elite Hairdressing Parlors 207 Enderton Building WINNIPEG



Best for Baby

After many years' use by parents of all classes, in Royal Nurseries and humble homes, Savory and Moore's Food has the reputation of being a thoroughly reliable food for infants.

The experience of parents, nurses, and medical men all goes to show that babies do thrive remarkably well on this famous food, that its use prevents infant ailments, and that it builds up a strong constitution, so important in later life. You may therefore bring up baby on Savory & Moore's Food with the assurance that you are doing the best you can for your child.

MOTHER'S GUIDE FREE

Savory & Moore's Little Book "The Baby" is full of useful information on Infant Management and contains hints on Feeding, Teething, the Toilet, Infant Ailments, and many other subjects. It is just what a young mother needs, and will prove invaluable in the home. A Free Copy may be obtained on application to Savory and Moore, P.O. Box 1601, Montreal.

SAVORY & MOORE'S FOOD
Of all Druggists and Stores

Well Drills

For Drilling WELLS or BLAST-HOLES

Build to stand up under heavy work. Most economical and rapid drillers made. Styles and sizes for all purposes, with or without power.

Write for Circular WILLIAMS BROS.

428 West State Street, Ithaca, N.Y.



MAKE YOUR BIKE A MOTORCYCLE

at a small cost by using our Attachable outfit. FITS ALL BICYCLES. Easily attached. No special tools required. Write today for our FREE BOOK describing the SHAW Bicycle Motor Attachment. Motorcycles, all makes, one and second-hand, \$25 and up.

SHAW MANUFACTURING CO. Dept 199 GALESBURG, IANS., U.S.A.

"I should be glad if you would," answered her mother.

"I'll keep him as long as he is good," said Margaret. "And while I am gone, mother, you must lie down on the sofa and try to get a nap. You are looking so tired."

The kind words and the kiss that accompanied them were almost too much for the mother. The tears rose to her eyes, and her voice trembled as she answered:

"Thank you, dear, it will do him a world of good to have the ride in the fresh air, and I shall feel so much better for the rest."

Margaret's heart beat happily as she trundled the little carriage away. She had done real good by giving back a little of the forbearance shown, and help given her so often. She had made her mother happier and given her time to rest. She resolved to remember and act on her aunt's words: "The very time to be helpful and pleasant is whenever everybody is tired and cross."—Bass's Selected Stories.

CANADIAN BOYS' CAMP

Dear Boys of the Camp.—What a fitting title our department has, and we name it long here in the west. Some of these days we think constantly of boys and men in camps—our boys, the bravest in the whole wide world. Was there ever a time when such courage and pure patriotism was displayed as during these past three years? When our men and women are so brave, surely every boy and girl in the land must be strong and noble for the whole world depends on the future character of our boys and girls. It is a great privilege to live in this Western land.

"Great Western land, whose touch makes free, Advance to perfect liberty, Till right shall make thy sovereign might, And every wrong be crushed from sight, Behold thy day, thy time is here. Thy people great, with naught to fear, God hold thee in His strong right hand, My well beloved Western land."

I am sure every boy has in his mind a splendid story of heroism. To the one sending in the best story we will give a prize of one dollar. Send in stories before August 1st.

(Address P. R. H., 983 Grosvenor Ave., Winnipeg.)

Dear Cousin Doris: We fellows like a good scrap, and the one who comes out best is king of the crowd. Work boys and men never lead the gang. Do the boys of the camp realize that we've got to hustle to be the men our fathers and big brothers are? They're showing us how to fight, and we've got to take mighty good care of the country they are saving for us. The boy who smokes cigarettes has got to cut it out, especially while he's growing. I knew a boy once who got all pale and wobbly and thin because he smoked cigarettes when he was a kid about fourteen, because he smoked behind the barn to smoke cigarettes. He could not lift his feet off the sidewalk when he walked—he just wobbled along like a duck. When he grew up he didn't know anything—he just lived in dirty dens.

Then, too, we boys must cut out slang and vulgar stories, else we'll never be employed by big men of business. They like strong fellows, and a fellow can't be strong whose mouth spits out filthy stuff. Once my mother washed my mouth out when I said a bad word—washed it out with soap and water. Ugh!

Sometimes I think the town should have a public scrubbing outfit to clean the mouths of boys and men—but I guess its better to go farther than that—down to the heart, because every boy has a heart.

You know Sir Galahad, that fellow with the dandy horse, said: "My strength is as the strength of ten, because my heart is pure." Think of it; one boy with a pure mind can be as strong as ten boys. Every boy in the universe likes to read about Sir Galahad and every hero that did great deeds, but some of us forget that we've got to begin these things when we're boys. You know an engine will not go if the machinery is made of poor stuff. Well, it's the same with men and boys.

We're never going to be big men if we're going to get in groups and tell

rotten stories and smoke and swear and lie. No more!

Our thoughts have got to be clean if we're going to be big men. I see ten weak, silly boys coming to me for a scrap I can make every one of them mind, because I am clean.

Now I am going to close by copying a story about how knights used to be trained. Is it any wonder that men with British blood in their veins are so brave and splendid when this chivalry is the foundation of their history?

"A boy had to pass through long years of training before he could become a knight. This training usually began at the age of seven years, when the child left his father's home and went to the castle of some lord of higher rank or greater reputation, sometimes to the court of the king. He was taught: 'look with great respect upon the man who trained him to be a knight, and to show him great reverence."

"From seven to fourteen years of age, the boy was called a page. He was taught obedience, chivalry, gentleness, courtesy, and the use of light arms.

"At the age of fourteen the youth became a squire and entered upon more serious duties. He became the attendant of some knight, whom it was his duty and pleasure to follow into many a thrilling adventure. He attended to his master's weapons and armor, and rode with him to battle or tournaments. When in battle, it was his duty to keep near to his master, and render him whatsoever aid he could. If the knight dropped his weapon, the squire must be ready to pass him a fresh one. If the knight was unhorsed, the squire must catch the horse if necessary, and help him to mount; and if the horse was wounded seriously, the squire must have another one ready or must bring forward his own. If the knight was taken prisoner, the squire must rescue him if possible; or if wounded, must carry him to a place of safety.

"Every year brought the time nearer when the young squire was to be made a knight, the goal of his ambition. The act of conferring knighthood was very important, and was generally attended with impressive ceremonies. The young candidate, now twenty-one years of age, had to fast and confess his sins, after which he spent a night in prayer. The next morning, after bathing himself as a sign of purification, and donning costly robes, he was escorted to the church, where he was examined, that it might be seen if he were worthy to receive the degree. So sacred and exalted were the vows King Arthur required of his knights that, when they arose from their knees, their faces bore witness to the solemnity of the ceremony. Kneeling at the feet of Arthur they swore by the cross—

"To reverence the King, as if he were— Their conscience, and their conscience as their king.

To ride abroad redressing human wrongs To speak no slander, no, nor listen to it, To lead sweet lives in purest chastity."

"Those who were truest and best, the flower of Britain's chivalry, crowded about King Arthur on his coronation day, and desired that he knight them with his wonderful sword, Excalibur. As Arthur looked upon them, his own truth and purity seemed mirrored in their faces; and one who saw it says, 'I beheld, from eye to eye, through all their order, flash a momentary likeness of the king.'

"The different qualities that a true knight must possess should be brought out, unselfishness in service, defense and aid given to the weak, the helpless, the oppressed and injured, courtesy, gentleness and purity.

Very truly,
Dick Jones.

I heard a very funny story about a boy's experience in one of the Boys' Clubs. He was planting corn, and was called away. When he returned the corn was gone. A rooster standing near-by looked very guilty, so the boy killed the rooster, got the corn and planted it. It was said that the corn brought a prize. This story was told at the Manitoba H. E. S. convention by one who is the leader of a club. Perhaps some of our club members can tell some of their experiences with their club work. With sincere interest. Cousin Doris.

THE C. P. R. GIVES YOU TWENTY YEARS TO PAY

An immense area of the most fertile land in Western Canada for sale at low prices and easy terms ranging from \$11 to \$30 for farm lands with ample rainfall—irrigated lands up to \$50. One-tenth down, balance if you wish within twenty years. In certain areas, land for sale without settlement conditions. In irrigation districts, loan for farm buildings, etc. up to \$2000, also repayable in twenty years—interest only 6 per cent. Here is your opportunity to increase your farm holdings by getting adjoining land, or to secure your friends as neighbors. For literature and particulars apply to Allan Cameron, General Superintendent of Lands, Department of Natural Resources, 912 First Street East, Calgary, Alta.

CHALLENGE COLLARS



STEAM PLOWERS-ATTENTION!



HIGHEST GRADE STEAM COAL PRODUCED IN CANADA

Canadian Coal for Canadian Farmers Equal to the best American Steam Coal. Semi-Anthracite. Smokeless. Sparkless. Low Ash. 14491 B.T.U.'s. Ask your dealer or write us for descriptive circular.

Birnie Lumber & Coal Co., Ltd.

General Sales Agents CANADA



Synopsis of Canadian Northwest Land Regulations.

THE sole head of a family, or any male over 18 years old, who was at the commencement of the present war, and has since continued to be, a British subject or a subject of an allied or neutral country, may homestead a quarter-section of available Dominion Land in Manitoba, Saskatchewan or Alberta. Applicant must appear in person at Dominion Lands Agency or Sub-Agency for District. Entry by proxy may be made on certain conditions. Duties—Six months residence upon and cultivation of land in each of three years.

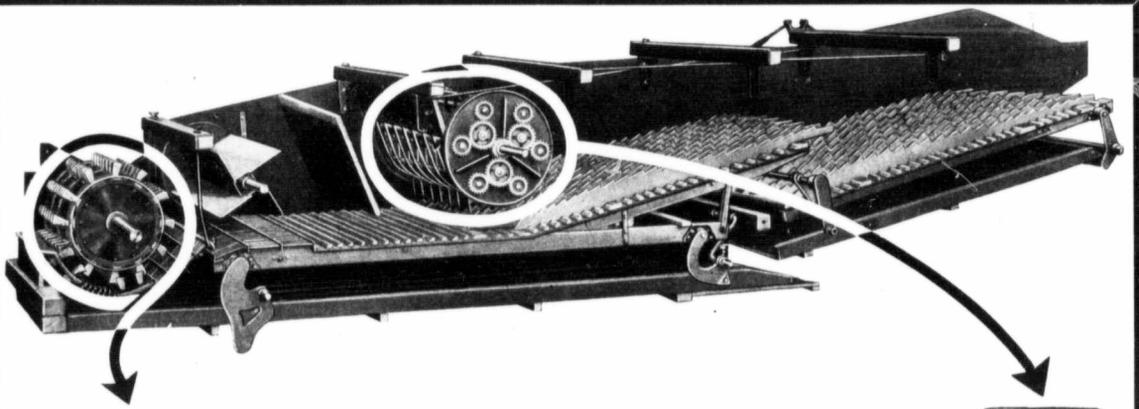
In certain districts a homesteader may secure an adjoining quarter-section as pre-emption. Price \$3.00 per acre. Duties—Reside six months in each of three years after caring homestead patent and cultivate 30 acres extra. May obtain pre-emption patent as soon as homestead patent on certain conditions.

A settler after obtaining homestead patent, if he cannot secure a pre-emption, may take a purchased homestead in homestead districts. Price \$3.00 per acre. Must reside six months in each of three years, cultivate 30 acres and enter.

Holders of entries may count time of employment as farm laborers in Canada during 1917, as residence duties under certain conditions.

When Dominion Lands are advertised or posted for entry, returned soldiers who have served overseas and have been honorably discharged, receive one day priority in applying for entry at local Agent's Office (but not Sub-Agency's). Discharge papers must be presented to Agent.

W. W. CORY, Deputy Minister of the Interior. N.B.—Unauthorized publication of this advertisement will not be paid for.



The TEETH and the FINGERS That SAVE the GRAIN

Here they are. Life size. The tooth and the finger that do such good work for Avery threshermen and their customers in getting the grain out of the heads and separating it from the straw.

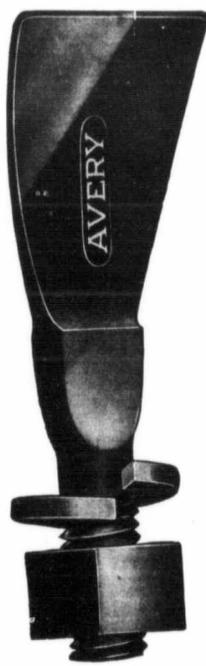
Every tooth in an Avery Thresher is genuine tool steel. They are hammer forged from square tool steel bars. The wearing corners are tempered. You can judge their quality by the fact that they are the only teeth on which you get a guarantee for life against breakage.

Every Avery Thresher is regularly equipped with an I. X. L. Grain Saving Separating Device. The fingers dip into the straw 750 times a minute, tear it apart, spread it out and thin the layer of straw as it passes along so that the loose kernels can easily drop out. It's because of this device that Avery Threshers made their never equalled record of 99-9/10% grain saved in 27 canvas tests.

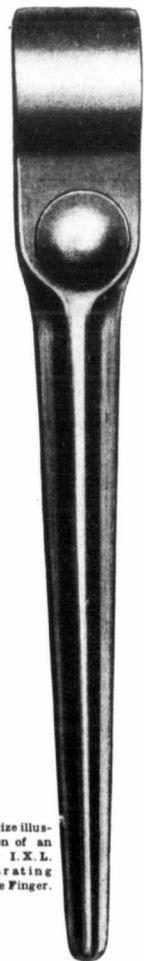
There are a lot of other features also in an Avery Thresher you should investigate before you buy any machine. The rubber feeder carrier, heavy slip tongue, conical belt guide, compressed paper cylinder pulley, handy belt tighteners, heavy wind stacker fan, etc. You'll find them all clearly shown and described in the complete Avery Catalog.

The Avery Catalog is an interesting book. Besides the Avery Thresher it also tells about Avery Gas and Oil Tractors, Steam Engines, Engine Gang Plows, Motor Cultivators and Water and Oil Tanks.

Get ALL the Facts. Write for complete 1917 Avery Catalog and advise what machinery you are particularly interested in.



Full size illustration of a genuine guaranteed for life Avery Jumbo Tool Steel Cylinder Tooth.

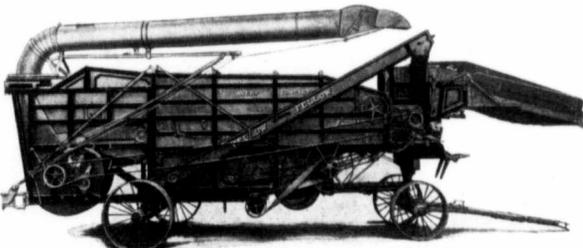


Full size illustration of an Avery I. X. L. Separating Device Finger.

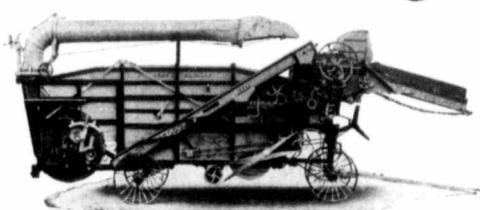


AVERY COMPANY
685 Iowa St., Peoria, Ill.

ADDRESS—
Canadian Avery Co. Ltd.
WESTERN CANADIAN DISTRIBUTORS
WINNIPEG [REGINA]



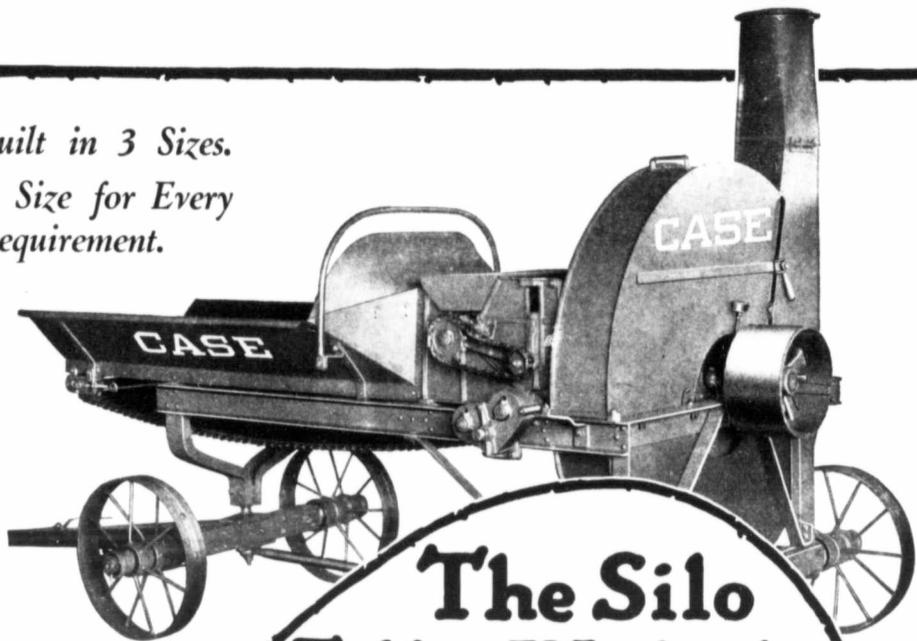
"Yellow Fellow" Thresher. Built in sizes 28x46, 32x54, 36x60 42x64 and 48x70 inch.



"Yellow Kid" Thresher. Built in sizes 19x30, 22x36 and 25x40 inch.

DU
AY
tile
e at
ing
with
p to
if
In
out
ion
etc.
nty
ere
our
ing
as
ar-
on,
ds,
es,
ita.
ARS
DE IN
NADA
SY
BLINGTON
CANADA
WIND
PULLEY
S-
L
COAL
A
mers
Semi-
w. Adv.
rite us
&
NADA
F
west
ny male
the com-
as since
a subject
omestical
on Land
ria. Ap-
dominion
District
ian conce-
ce years
er may
applying
as pre-
Duties—
ara after
ivate &
n patent
in condi-
l patent.
y take a
districts
& months
acres and
e of em-
a during
in condi-
rtised or
who have
ably dis-
applying
not Sub-
presented
Y.
Interior,
this ad-

*Built in 3 Sizes.
A Size for Every
Requirement.*



The Silo Filler With the Big Capacity...

Big capacity is important in buying a silo filler. It not only enables you to do *good, fast work*, but it gets the *feed stowed away while in proper condition*. The throat capacities in Case machines are *extra large* and insure the best work in the least time.

In the busy season there is a *big strain* on a silo filler. The machine is many times crowded to capacity. In Case Silo Fillers we have provided for these strains by use of the best materials and by improved features in design. Case machines have a shear cut which requires a minimum of power.

Case Silo Fillers are of the *knife-on-the-fly-wheel-type*. The knives and fans are all on the flywheel giving the required momentum for easy cutting. Knife wheel is made of a *solid flanged steel boiler head* which absolutely *prevents* breaking or exploding. There are two fan wings to each knife, this insures elevation and prevents clogging of blower pipe.

The tool steel cutting plate is reversible. It has four cutting edges. Gear shifting arrangement makes it possible to get four different lengths of cut. The feed rollers are reversible by a convenient hand lever.

The Channel steel frame construction, shafting and bearings of liberal size, safety stop lever, and other features guarantee maximum results and a machine made to give hard and long, lasting, satisfactory service.

Case Silo Fillers are built in 3 sizes; No. 12, No. 16 and No. 20. The No. 12 has a capacity of 8 to 12 tons; No. 16, 15 to 25 tons and the No. 20 has a capacity of 20 to 30 tons per hour. Sizes for every requirement. Get more details. Write for literature today, sent free on request.

J. I. Case T. M. Company, Inc.

859 Liberty St.

RACINE, WIS.

CASE

