

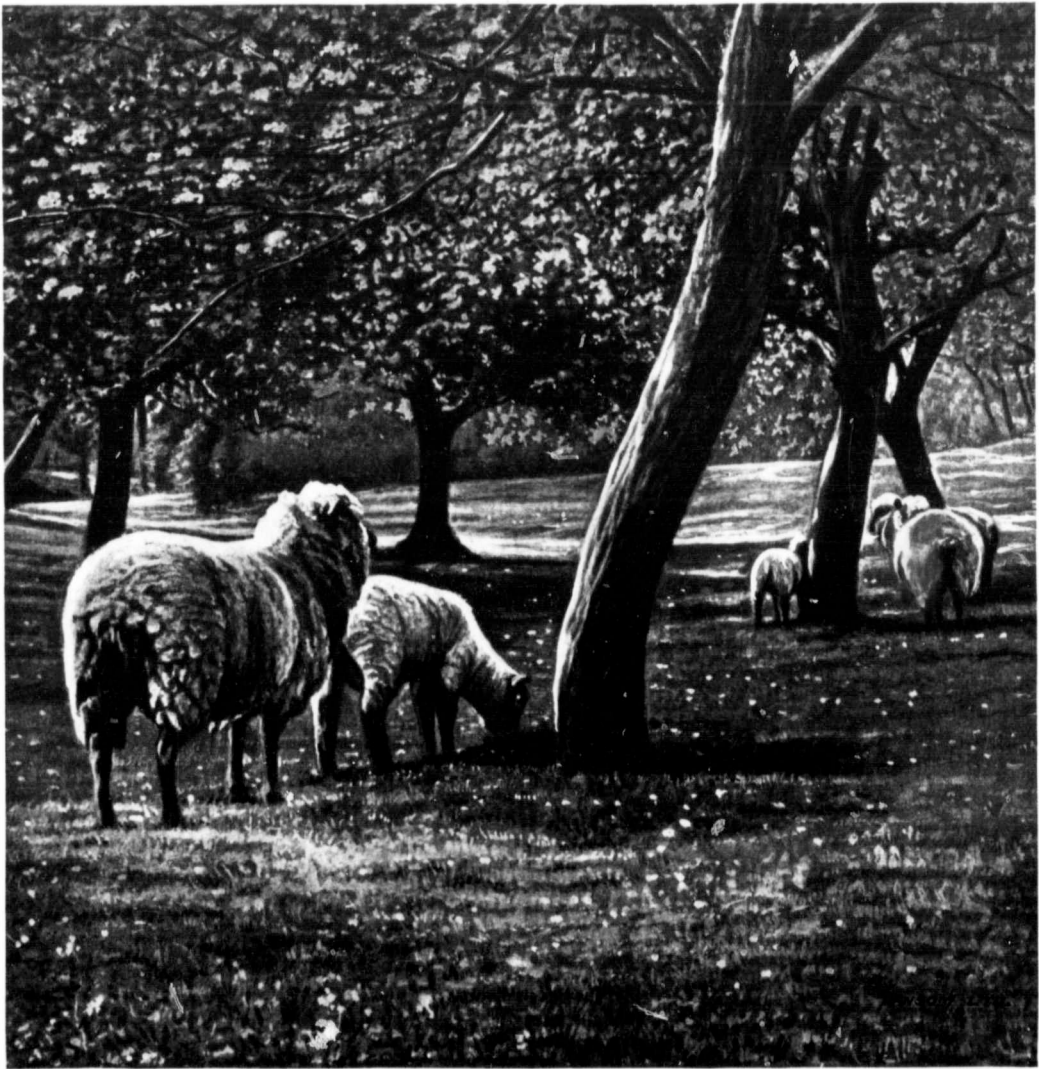
H. D. SGUDDER

# The CANADIAN THRESHERMAN AND FARMER

WINNIPEG CANADA  
JUNE  
NINETEEN SIXTEEN

OREGON  
AGRICULTURAL COLLEGE  
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BETTER FARMING — BIGGER CROPS — LESS WASTE



Published Monthly by E. H. HEATH CO. LIMITED — Our Fourteenth Year

# CASE

## CASE Machines have Many Practical Features Found on No Other

One of the features of the separator is the large cylinder. It has an enormous capacity. With its extensive concave and grate surfaces it threshes all kinds of seeds perfectly. Damp and wet grain is handled easily by the large cylinder. This means that unfavorable weather conditions won't stop the crew from working. Time means money, delays are expensive. You can't afford to let the crew lie idle.

### Large Separating Area

The straw rack with its large separating area is an example of simplicity. It is made in only one piece. No complicated parts to cause trouble. Its motion is scientifically and practically figured out for thumping and beating the grain out of the straw. These are features worked out after years of experience. They are features that increase your results, hence they increase your profits.

### More Features in Case Machines

On Case machines you will note the absence of

needless belts and pulleys that cause endless trouble. You will note the absence of complicated parts and adjustments. All working parts are within easy reach of the operator. By means of steel compression cups for hard oil and large cylinder cups raised above the pulleys, all parts can be lubricated while the machine is in full motion.

The cylinder and concave teeth are made of special steel, rolled to our own formula, annealed and tempered after being formed. They are made strong at the shank to prevent breakage. The teeth are the successful result of years of experimenting.

### Fire Proof Construction

Added to the many Case features is the fact that Case machines are proof against loss by fire. Hundreds of wooden machines are destroyed by fire each year. What is the result? The loss of a machine, an idle crew and a crippled earning power. No thresherman can afford to take chances. You will be interested in our 1916 Catalog giving complete details of all Case Machinery. A copy sent postpaid at your request.

J. I. CASE THRESHING MACHINE CO., Inc.

716 Liberty St.

Racine, Wisconsin

Canadian Branches: Winnipeg, Toronto, Calgary, Regina and Saskatoon



The Sign of Mechanical Excellence the World Over



# CASE

## Supremacy has Long Belonged to CASE Threshing Outfits

In the early days of 1842 Jerome I. Case, then a youth came far west leaving his home in New York state to settle in Wisconsin. He started then a small workshop in which to build his first threshing machine. From that modest beginning there has developed a great institution known and respected by farmers and threshermen in all parts of the world.

### J. I. Case - A Man of Wide Vision

J. I. Case believed in quality. He admired perfection. The sincerity of his intentions, his enthusiasm to build good machinery soon resulted in a steady constant growth of Case users. Threshermen passed the word to threshermen that Case threshing machines were grain savers, profit producers. For four generations this name has passed from grandfather to father to son. Today Case machines are working in the fields of United States, Canada, South America, Europe and the Phillipines.

### How We Have Kept This Faith

During all these years we have followed the principles laid down by the founder, J. I. Case. His code of business principles has been carefully lived up to. Today as in 1842 our one idea has been to maintain quality. We have made no attempt to build to meet a price. We have spent time and money to make Case machines the most efficient on the market. We believe that we have succeeded.

### Acknowledged the Leader

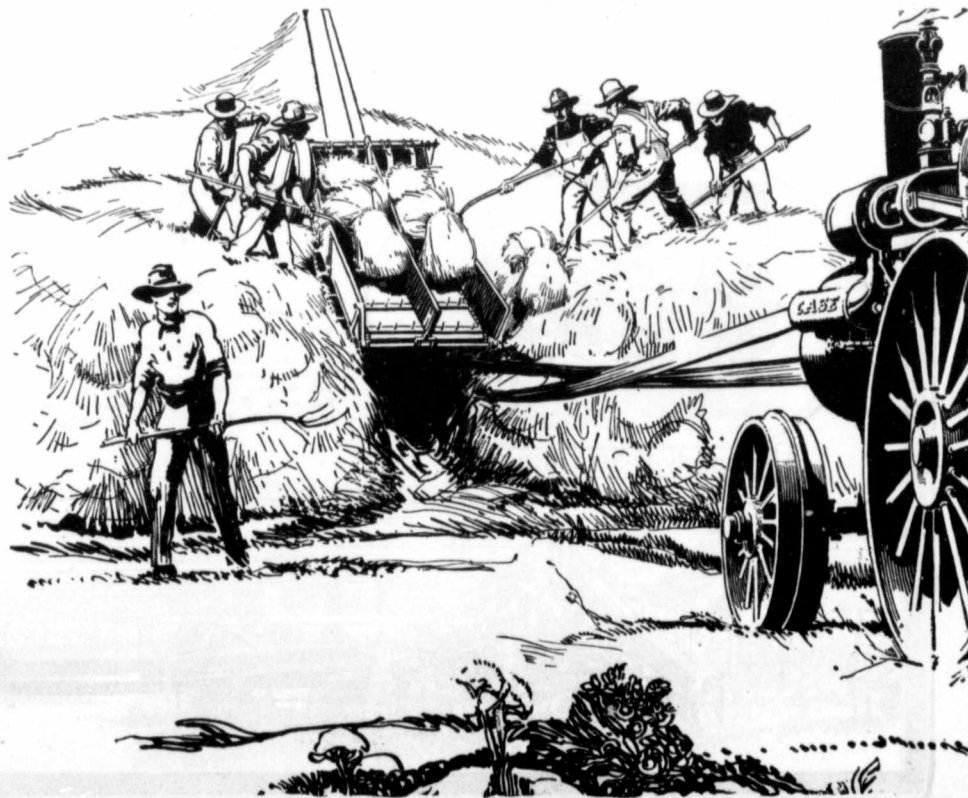
We have in the Case organization, men who for years have studied farm power problems. These men understand the threshermen's needs. They are designers, practical men. They have applied their knowledge, their experience, by constantly improving Case threshing machines, until today Case machines are acknowledged as the standard by which others are judged. Send for complete details of Case Machinery. Send for our 1916 Catalog. It contains just such information as you are seeking.

### J. I. CASE THRESHING MACHINE CO., Inc.

716 Liberty St. Racine, Wisconsin  
Canadian Branches: Winnipeg, Toronto, Calgary, Regina and Saskatoon



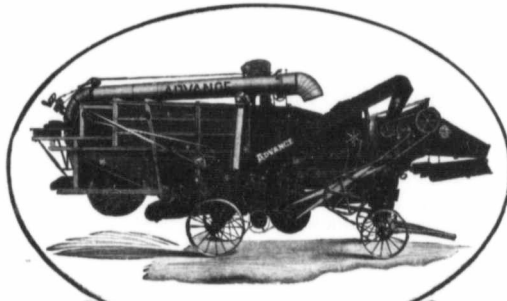
The Sign of Mechanical Excellence the World Over



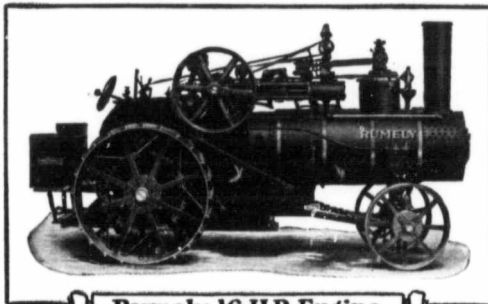


**ADVANCE**

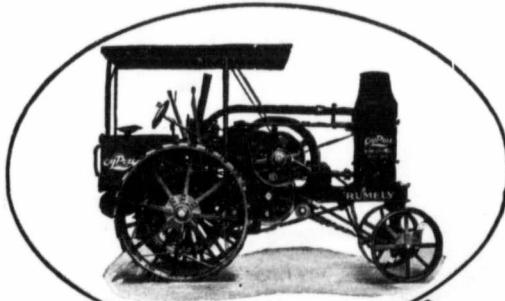
**RUMELY  
GASDULL  
LA PORTE**  
REG. U.S. PAT. OFF.



**Advance Separator**



**Rumely 16 H.P. Engine**



**Rumely 15-30 Oil Pull**

# ADVANCE-RUMELY Threshing Machinery

**Wherever Grain is Grown**

**T**HAT is where you will find Rumely, Advance and Gaar-Scott threshing outfits. Such universal recognition has not been reached by chance. It is solidly built on satisfied owners who have selected Rumely, Advance and Gaar-Scott out of preference.

Eighty years of experience and success in the building of threshing machines is the long record behind Rumely, Advance and Gaar-Scott. And the enviable reputation those many years have earned for these three time-tried lines is the result of *building* machines that best fit the thresherman's needs.

So you are not taking chances when you buy a Rumely, Advance or Gaar-Scott outfit—each one has established its dependability and “proved out”—absolutely.

We have a type and size to fit your particular needs and you can count on Advance-Rumely service back of every machine in the field.

**Advance-Rumely Thresher Co., Inc.**  
**La Porte, Indiana**

**ADVANCE-RUMELY BRANCHES:**

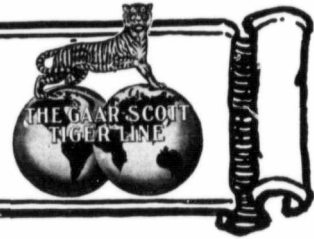
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**RUMELY**  
**OIL PULL**  
TRACTOR  
LA PORTE, IND.

**GAAR-SCOTT**



# ADVANCE-RUMELY Threshing Machinery

## Profits from Your Threshing

**I**T is not the price per bushel that determines profits from your threshing—it is the low cost of maintenance of your outfit—no loss of time in needless delays—grain saved instead of wasted.

When the thresherman say that their outfit is the biggest profit maker of any—when customers say that the machine gets all the grain and does the cleanest work—when elevator men say that the grain is the cleanest and best that comes in, you can pretty well be sure that the outfit in question can be depended upon.

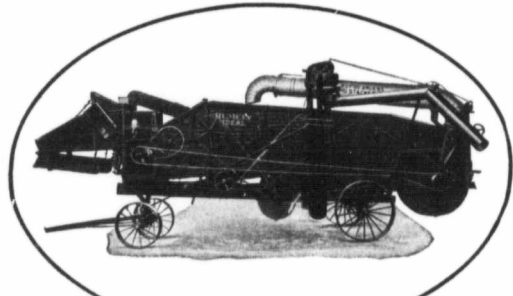
That is the kind of proof we get from owners of Rumely, Advance and Gaar-Scott threshing outfits, and the same satisfaction and profits are yours with any of these three standard lines.

Write our nearest branch for catalogs and don't fail to ask for "What Your Neighbors Say"—a collection of letters from owners in *your own state*.

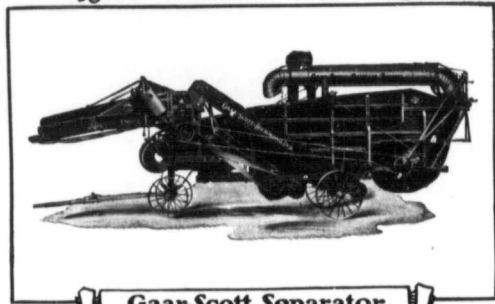
**Advance-Rumely Thresher Co., Inc.**  
La Porte, Indiana

### ADVANCE-RUMELY BRANCHES:

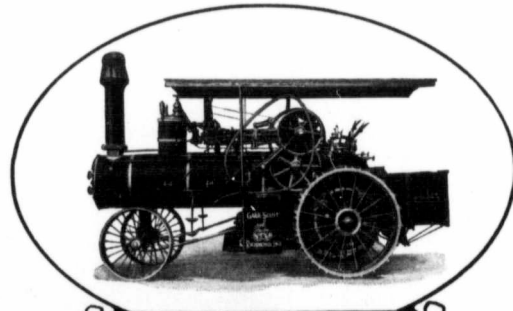
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| Battle Creek, Mich. | Lincoln, Nebr.      | Wichita, Kans.   |
| Billings, Mont.     | Madison, Wis.       | Portland, Ore.   |
| Columbus, Ohio      | Nashville, Tenn.    | Calgary, Alta.   |
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| Fargo, N. D.        | Minneapolis, Minn.  | Winnipeg, Man.   |
| Indianapolis, Ind.  | San Francisco, Cal. |                  |



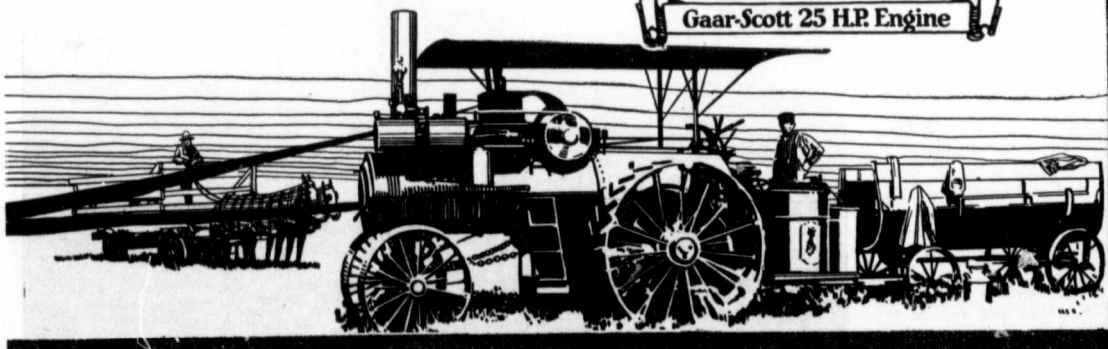
**Rumely Ideal Separator**



**Gaar-Scott Separator**



**Gaar-Scott 25 H.P. Engine**



# Light versus Heavy Weight Tractors

By C. W. HART

FOR a time tractorism has been beset with booms, fads and fancies. Careful observation, logical deduction and true leadership have been absent. It is strange and lamentable that most of our College Professors, agricultural engineers, and writers are not directors and leaders. They seem to be followers. They appear to listen to public sentiment, whether it be running in channels true or false and strive to get on to the "Band Wagon" and go with the crowd. For a couple of seasons the "Crowd" with unreasoning inconsistency, have shouted for the little tractor and voiced a prejudice against the large. The most meager knowledge of the facts and a little fourth grade arithmetic should have shown the folly of such a course. Few people, however, are able with facts at hand to figure things out for themselves. Because the crowd nearly all goes in one direction is no sign that they are right.

A little history by revealing the causes for present and past sentiment, will show why some of the unreasoning moves in tractor development have occurred. Lack in 1902 were brought out the first oil tractors which were able to hold a real place. Certain makers had taken a comprehensive survey and set forth carefully and deliberately to found a new industry. The steam traction engine was the nearest approach to occupying the field and the newcomer had to combat its influence. The adaptability of the oil tractor, not only for the existing belt work but for

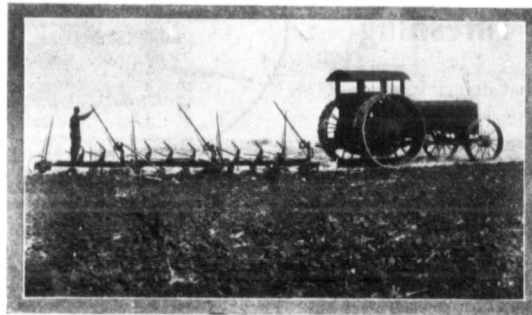
general farm tillage was surely but slowly appreciated. An industry, small in the beginning, gradually assumed headway and volume. In various parts of the world efforts to build tractors were put forth until a number of concerns were known.

The only real successful development rested with machines possessing from 60 to 70 brake horse

cultural motors and those having over a limited weight were barred from the contest. Builders and would-be builders the world over put forth their best endeavors to build a successful light agricultural motor. The collection which gathered at Winnipeg was remarkable for its number and variety. Sentiment was largely in favor of the little motor. Just as at pres-

60 horse power, pulling from 6 to 10 plows each and other work in proportion, as well as standard belt work. The old attempt to put a stationary gasoline engine on a tractor truck persisted but with diminishing force. Another bunch of manufacturers built great high wheel tractors of spindling construction, which created much furor by their wonderful ability in demonstration, but in the field were found wanting in strength and endurance. Simple rugged tractors, built as tractors from the ground up, moderate speed motors of ample capacity, with weight as light as the strength of materials would justify, continued to develop the very best results. It was this type of tractor, developing from 1902 to 1910 which brought about the success which finally attracted the attention of agriculturalists throughout the world. Like all other things, it was necessary for the public to become educated to the use of the new thing. Such education cannot be forced but goes on slowly. Accordingly, up to this time about all of the tractors were put out which could find owners or operators capable of making them successful. In such hands the success of motor farming had become evident.

Then came the most colossal mistake that any industry of real merit has had to suffer. A great corporation was organized, many millions of dollars of capital was gathered. What was supposed to be the best was hurriedly developed. In reality, an attempt was



An easy one-man job on a wholesale scale

power, which could handle the standard heavy belt power machinery of the farm and accomplish plowing, harrowing and general tillage on a considerable scale.

At about this time a little group of theorists became possessed with the idea that little agricultural motors were the thing. They shouted loudly their irrational dogma and in the year 1909 this sentiment brought about the first Winnipeg motor contest. Those who have followed this subject will remember that in this first contest it was limited to light agri-

cultured the theorists, the inexperienced, the rattle brained, the all wise, the boomers and the rainbow chasers are all found in the same class favoring little motors for agriculture. The really experienced, the men who had made success, those who had facts, reason and sound judgment could not be heard. They were, however, soon felt and in a year or two the light agricultural tractor had practically disappeared. Thereafter the most prosperous days of the tractor business developed on tractors of from 40 to

*The tractor is today the subject of much discussion. A few years ago it was Steam vs. Gas. Now it is light vs. heavy tractors. It is the purpose of this magazine to open its columns to a full and free discussion, to hear all sides, and for this reason we are publishing this article which is decidedly in favor of the heavy tractor. Mr. Hart is really the pioneer in the internal combustion tractor game, and we believe, speaks with the courage of his convictions. There is, however, a light tractor side to the tractor business that will be discussed in these columns in future issues. We ask our readers not to jump at conclusions too quickly, but to weigh both sides carefully. The tables in this article are based upon U.S. prices and require to be modified to suit Canadian conditions.—Ed.*



One of the greatest one-man jobs in industrial life



made to copy certain tractors of known success. This attempt being in the hands of men who had not mastered the subject resulted in clumsy, complicated and over weighted machines. Such machines, poorly proportioned and untried, were forced upon an eager but uneducated rural public in great numbers. This exploitation, with its five factories, and million dollar advertising campaigns, excited other organizations of its kind and stimulated other manufacturers until the tractor industry became a mad frenzy. The horse power that these tractors possessed was about right, most of them being around 60 brake horse power. A weight of 500 pounds per horse power, however, in itself brought about an inefficiency not possible to overcome. Extreme complication, inaccessibility, wrong construction, and overweight, not size, was what brought about failures.

Instead of realizing the true cause and effect, is it much wonder that out of all this cyclonic turmoil the farmer, the country banker, professor, expert and newspaper man should be somewhat mixed? Through all, the idea could not down that motor farming would survive. Because of the nature of the development which had failed it was but natural that all these good people should assign large size as the cause of failure. For a time a considerable prejudice against tractors in general existed. Then the notion suddenly took hold that failure had resulted because the tractors were big. Hard times, financial straits and inadvisability of large purchases gave more force to this idea until the prejudice against large tractors gained firm hold. Just why, if large tractors could not succeed, little ones could not one seemed to take time to investigate. However, "Down with the big tractor and up with the little tractor"

became the cry of tractordom. Some of the same people who boomed the wrong kind of a big tractor were quite ready to change and commence the exploitation of little ones. "Right or wrong, give the people what they want" was their slogan and has become the slogan of many quite respectable concerns that should know better.

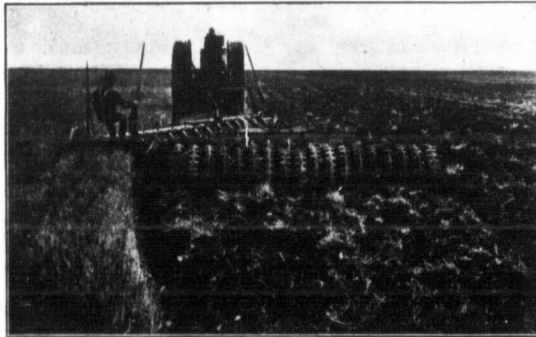
Reviewing briefly, we have seen a slow and careful development of sizeable tractors from 1902 until 1909. Then came a brief craze for light agricultural motors which quickly failed. There was a period of considerable success

for its purpose. Theoretically it seems perfectly feasible to apply such motors to tractors. Practically any such procedure is deceiving and can lead only to failure.

Another reason for the intense effort towards little tractors grows out of one of the finest traits of our American life. Everyone sympathizes with and wants to aid the little fellow. The thought having prevailed that tractors were good for large farmers, there was an intense desire on the part of the little farmer to own them. There was effort on the part of the press, college and manufacturer to have them produced. If, however,

below 300 pounds per horse power no form of wheels or cleats can be sufficient for power developed. If weight is too light it is apt to be at sacrifice of strength. Fuel of kerosene or heavier material is essential. The thought, frequently expressed, that large tractors pack the soil more than small ones is not necessarily correct. Cleat construction can be made for tractors, large or small, which, in a stubble field pulling plows, will not allow the rim to touch the ground. It is obvious that such tractors will do no packing of soil. It has been said that the starting of large tractors is much against them.

Getting with the manufacturer and studying his records and assuming that he is going to have an even line of tractors, with his large machine built well, of the best design and construction, it seems reasonable that his smallest machine should be equally good. To serve the purpose of this article we will assume that by large tractor we mean a 60 B.H.P. which is intermediate and a standard. By little tractor we will hereafter mean one of 15 or 18 B.H.P., which is a size which has been exceedingly popular and has been put out in thousands for the past two years. We might term the large one an eight plow tractor and the little one a two plow tractor. If we assume that the large tractor costs \$2,700, the proper manufacturing ratio for the little tractor, built equally well, and in five times the quantity will cost not less than \$1,000. For large tractors, as above indicated, a durability has already been thoroughly proven. The writer has had opportunity to study the tractor subject for more than 20 years and has held systematic record of thousands of tractors, noting all their repairs, upkeep and mishaps as well as their successes. From this experience, record, and judgment it is now known that certain lines of 60 horse power tractors have performed their work season by season for 13 years and are still good for several years more of useful effort. Such tractors will give at least 1,000 days work and such a life is satisfactory. The little tractor above mentioned built as well as these large ones, is more or less of an ideal and has hardly been produced. Most farmers and writers wind up the article of what is required in a small tractor by the assertion that it must be cheap. Success and cheapness in a tractor cannot go together. However, we wish to place the little tractor in the most favorable light and accordingly, we are assuming it as an ideal against the large tractor as an actuality. The writer has produced below a table of expenses of operation:



Plowing, pulverizing and packing in one operation

for large tractors. Then a frenzied production of large tractors which were failures. Buyers became hopelessly mixed in discerning the good from the bad. For no good reason all connected with the industry assumed a prejudice against large tractors. The scramble in pell mell rainbow chasing as to the little tractor has been on for the past two years. It is time for a little reason and common sense.

A little color of promise for little tractors has grown out of the development of the automobile motor into a wonderful little machine

only large tractors can be successful and little ones are a snare and delusion, the course wished for is not the wise one to pursue.

Let us study facts and figures. Extra heavy tractors have proven failures. Weight must be looked at relative to horse power. Very light tractors, big or little, and those with the light automobile type motors, have proven to be failures. True lines then for tractors, lie with machines very simple, very accessible, and very strong and rugged. Weight should not exceed 350 pounds per brake horse power. If weight falls much



Doing a Job that would tear the heart out of any horse team

# THE CANADIAN THRESHERMAN AND FARMER

CANADA'S LEADING AGRICULTURAL MAGAZINE

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E. W. HAMILTON,  
MANAGING DIRECTOR

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June

1916

## WAR WIDOWS

**OUR GUARANTEE**

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

**T**O visit the fatherless and the widow in their affliction and to keep himself unspotted from the world." That is an old time definition of "pure religion and undefiled before God and the Father" that nothing in the church or out of it has dared to "improve" upon. Nothing will ever supplant this wholesome criterion in the judgment of men. Right down in the heart of the black-gowned academic as well as the man in homespun on the street, who belongs to any or to no theological school whatever, here is common ground on which there can be no misunderstanding. The

But what we can do we will do; otherwise there's an end to our "religion." The widows and orphans shall have our first and last thought. They touch us, at the most responsive spot in human nature. Language cannot express what it means to that noble woman and those two sunny

young hearts we have seen within a few hours of the receipt of the fatal War Office telegram. There are many thousands of them and the end is not in sight. It isn't possible to overdo it in practical human sympathy at such a moment, nor can there be any second place given to the war widows in any private or national movement



John Bull, to married soldier leaving for the front: "I'm proud of you, my man."  
Soldier: "Prove it then, John, by taking care of my lass and bairns if I don't come back."

conjunction in the text is cheerfully significant. It says in effect: "You may not be able wholly to keep yourself 'unspotted from the world.' If you are not spotless, don't despair. A soiled soul is no barrier to heaven, but a soul that crowds out the fatherless and the widow cannot enter the Kingdom because the happiness, the luxury, the matchless privilege of assuaging the grief of the fatherless and the widow is the greater part if not the whole of Heaven."

A bald "belief" is one thing and probably the last thing that will save a man. A heart that finds its supreme satisfaction in lightening the burden of a neighbor's sorrow is quite another thing. It is not needful to explain it to one who has experienced it and a world of explanation would be wasted on the hide-bound slave to self because he has not the means to comprehend it. Of course, what is here called for does not begin and end with the "fatherless and the widow," but for our present purpose we are nailing it down specifically to those who have lost husband and father in the great war. We have actually visited more than one bereaved home from which the light has been taken in the person of one of the best men to whom God ever entrusted the responsibility and the joy of husband and father. And it is no strain upon the imagination to look into thousands of other darkened sanctuaries in which mere human service is of little avail.

reached a final or even fairly comprehensive plan of the proposal. Any single province of Canada could take care of ten thousand war widows and their children if the peoples' heart were reached. Moreover we need those British matrons. What a bum back-yard would not Canada be today had it not been for the women of the prairie homes! All honor to the lads who have bravely "batched" it in their comfortless wigwams, but what shall we say of the women who subsequently turned these wigwams into little palaces, peopled them with the finest race of self-helping heroes the world has ever seen, and lifted those pioneer "hottentots" to an appreciation of clean-living, self-respecting, prosperous manhood? When we know more of what is proposed we will exercise our right to say what we think of it. The idea has our whole-hearted sympathy, and in any case ours will not be of the nature of destructive criticism.

**SUBSCRIPTION RATES**

Postage prepaid, Canada and Great Britain, \$1.00 Per Year. Single copies 15 cents. Postage unpaid, United States and Foreign Countries, \$1.50 Per Year.

Failing to receive paper, you should notify the office at once, when mistakes, if any, will be corrected immediately. All Subscriptions must be paid for in advance and no subscription will be accepted for a shorter period than six months.

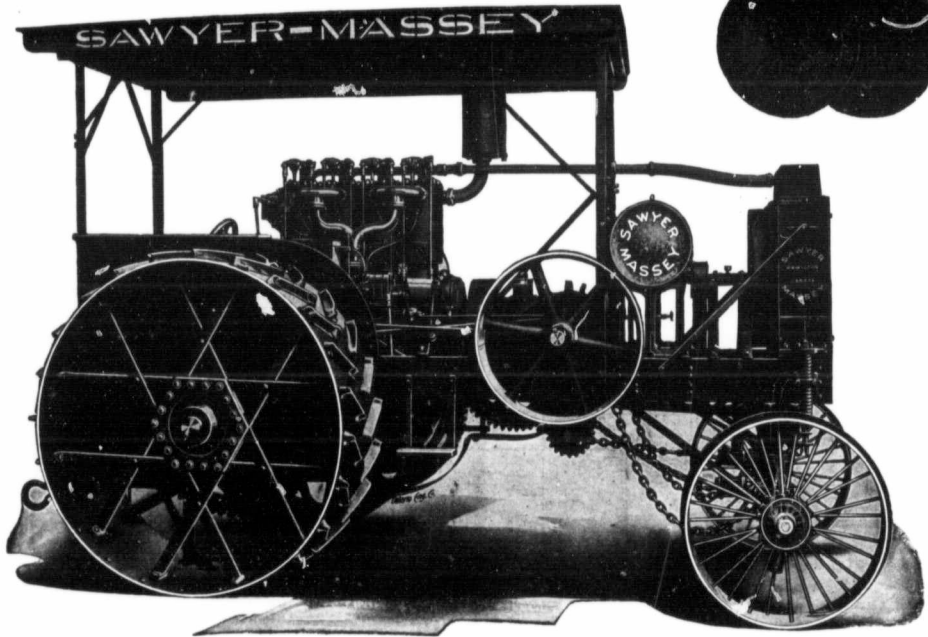
Advertising copy in order to secure good position should be in our hands not later than the 15th of the month preceding date of issue. Advertising rates furnished on application.



THE PREMIER COMPANY  
THE PREMIER GOODS

WINNER OF GOLD MEDAL  
AT WINNIPEG

MADE IN CANADA



## THE POWER QUESTION

There is no power question for many of the farmers of Canada. The Sawyer-Massey Gas Tractor has settled it. Why not let it settle your power problem too?

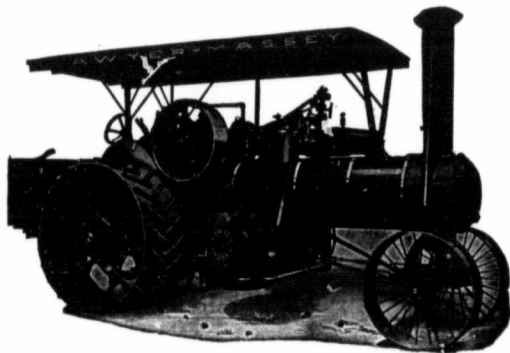
We wish you could read all the letters of appreciation we get from satisfied users of the "Gold Medal" tractor. These letters tell better than we can what it will do on your farm also. We can say this, however, that it will prove the most economical and efficient form of power you have ever used, and you will never again wish to go back to steam.

Here is what Mr. C. F. Hanlon, of Belle Plaine, says of his tractor. He bought his machine last summer and writes as follows:

"I just want to tell you it is a 'cinch' to operate one of your gasoline tractors. As you will remember, I spent part of a week at your warehouse at Regina this fall looking over your gasoline tractors. On the 18th of December I took charge of the gasoline engine end of Mr. Ed. Griesback's outfit at Belle Plaine. Mr. Griesback has one of your 27-50 SAWYER-MASSEY Gasoline Tractors and a 32x56 'Great West' Separator.

"We made an almost perfect run of thirty days, having practically no delay or trouble. The engine has sufficient power to drive a larger machine. When working to the full capacity of the separator the engine used about three gallons an hour of gasoline, and a gallon a day of cylinder oil.

"I certainly appreciate the two-speed gearing on your machine, as it enabled us to move very quickly to new jobs and on the road."



**SAWYER-MASSEY COMPANY, Limited**

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

Head Office and Factory **HAMILTON, CANADA**  
Branch Offices and Warehouses: **WINNIPEG, Manitoba; REGINA, Saskatchewan;**  
**CALGARY, Alberta; Agency, BUENOS AIRES, Argentina**

**SAWYER-MASSEY**

# PRACTICAL TALKS TO THRESHERMEN

**T**HE position of the center of gravity or point about which all the weight may be assumed to be concentrated must be rather carefully calculated for each type of machine. For if the weight of the machine is not properly distributed it will not be stable under all conditions. In the last lesson it was shown that for ordinary four wheel tractors the center of gravity should generally be located at a point equal to one-fourth of the wheel base ahead of the rear axle. If much more weight is thrown upon the front wheels, the machine becomes hard to steer and if the center of gravity is moved back until most of the weight rests on the rear axle then again the machine becomes hard to steer because there is not enough

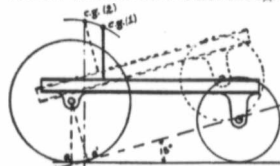


Fig. 1 showing how centre of gravity may shift from position (1) of stable equilibrium to position (2) unstable equilibrium in going up grade if carried too high.

weight in front to hold the wheels to the ground and overcome side draft.

The height of the center of gravity above the ground is another matter that merits consideration. If the center of gravity is high there is more danger that the machine will upset than if it is low. The old law of what constitutes stable equilibrium holds good. If the vertical line passing through the center of gravity falls within the base the structure will stand, while if it falls outside the structure will fall.

This is indicated in Figure 1, where the center of gravity is carried quite high. When the machine starts up grade the vertical line through the center of gravity finally falls outside of the point *a'*. When this happens, the machine will upset of its own weight but in pulling a load it would upset long before the vertical passed outside the point *a'*. It is clear from these diagrams that the height of the drive wheels has an effect upon stability since the higher they are the higher the center of gravity must be carried. It is possible, of course, to employ un-

derslung construction, which is frequently done in order to obtain the advantage of large driving wheels without overloading the front wheels on level ground.

When it comes to the designing of three wheel tractors with two wheels in front and a single driver in the rear, the condition for stability is that the vertical line through the center of gravity shall not fall outside of the triangle joining the points where the wheels rest on the ground. This condition

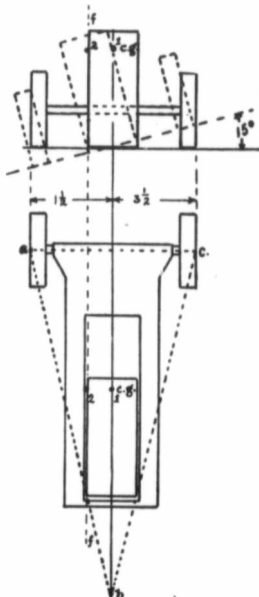


Fig. 2 showing how centre of gravity shifts on a side hill and effect on equilibrium.

is shown graphically in Figure 2. We have shown both a plan view and a rear elevation. The plan shows the base triangle a-b-c. The rear elevation shows the rear wheel and two front wheels on the level ground in full lines and on a fifteen degree side grade in dotted lines. The center of gravity in the first case is at 1 and in the second case at 2. In the plan view, the position of the center of gravity is taken at one-quarter of the wheel base in front of the rear axle and on the median line of the base triangle. When the tractor strikes the side grade, however, it is seen that the vertical through the center of gravity 2-2 comes dangerously close to the edge of the base. If the tractor were pulling a load and should attempt to turn, it would be liable to upset.

In this case two remedies suggest themselves; one is to locate the center of gravity nearer to the base of the triangle, that is, put more of the weight on the front wheels, and the other is to carry the weight as near the ground as possible.

A little figuring in this case may prove interesting. Let us assume that the total weight of the machine is four thousand pounds and that one thousand pounds rests on the front wheels. That would be five hundred pounds on each wheel. Suppose further that the rear drive wheel is two feet wide and that the extreme width from outside edge to outside edge of the front wheels is five feet. Let us suppose further that the machine is on a side hill which shifts the line through the center of gravity until it strikes the line f-f in

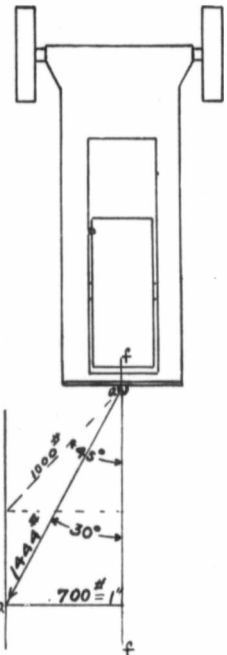


Fig. 3 Graphic method of determining magnitude of forces.

Figure 2 along the edge of the drive wheel. This line divides the front axle in two parts of three and one-half and one and one-half feet respectively. The loads on the front wheels will be inversely proportional to these distances, making the load on the left front wheel seven hundred pounds and on the right wheel three hundred pounds.

If we take moments about the center line we have a positive moment of  $3\frac{1}{2} \times 300 = 1,050$  pounds, this is the force tending to resist overturning. If the hitch is eighteen inches from the ground it is evident that it will require a force of seven hundred pounds acting at right angles to the center line of the machine and toward the left to disturb equilibrium. The two moments would then be equal; that is,  $3\frac{1}{2} \times 300 = 1\frac{1}{2} \times 700$ .

Since the pull will never come at right angles it may be interesting to do a little figuring to determine just how much of it must be to give us an overturning force of seven hundred pounds or sufficient to overturn the machine. This may be easily computed by resolving the known drawbar pull into

Continued on page 48

## MANITOBA THRESHERMEN ATTENTION!

By the time another issue of this paper reaches you the Manitoba Government will have brought into force the new Workmen's Compensation Act. Under this Act every owner and operator of threshing machines must take out a policy of insurance covering their crew against accidents—(see class 17 of the Act). This policy must be deposited with the Government.

Violation of the Act means a penalty of \$200 per day for each day operating without insurance.

Compensation to a man meeting with an accident is extremely high. Get your protection at once.

Write for rates and application blank to—

**STIDOLPH & NELLERMOE**

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EMPLOYERS' LIABILITY CO.

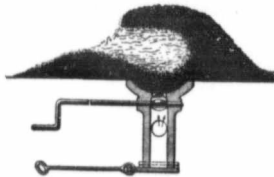
220 Curry Block,  
WINNIPEG, Man.





**ARTICLE 4  
Fuels and Fires**  
*Coal*

The fuel that is most commonly used on blacksmith's forges is bituminous coal, usually called soft coal. It is broken into small pieces, and when free from sulphur and phosphorus and of good quality is excellent for this purpose. A fuel containing either sulphur or phosphorus should be avoided, as they will be absorbed by the iron. Sulphur makes the iron hot short, that is, it makes it brittle while hot; and phosphorus makes it cold short, that is brittle when cold.

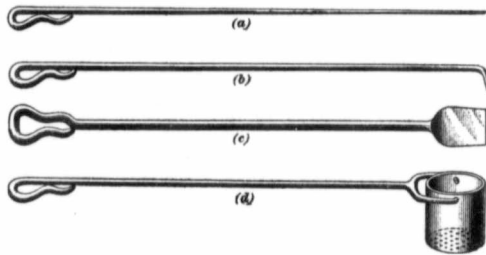


Some grades of bituminous coal burn too rapidly, and some contain too much earthy matter to give a free burning, clean fire producing a proper heat.

Anthracite culm or hard coal siftings may be used at times, but this fuel is apt to contain a larger percentage of impurities than soft coal. In order to use it careful attention must be given to the blast, and in any case it will not make a hollow fire.

*Coke*

Coke is a solid fuel made from bituminous coal by heating it in the fire or in ovens until it is volatile or gaseous constituents are



driven off, the solid portion not being consumed. If the coal contains sulphur and phosphorus, these impurities will always exist in the coke, although a portion of the sulphur may have been driven off by the heat in coking.

*Charcoal*

Another solid fuel made by artificial means is charcoal. It is the best fuel because of the small amount of impurities that it contains. It is unrivaled for heating carbon steels, giving a clear, clean fire, free from sulphur and other objectionable matter. A charcoal fire is, however, not suitable for heating high-speed steels, as it is impossible to get the high temperature required. Charcoal made of maple or other hardwood is the best. Some manufacturers of twist drills, reamers, milling and other cutting tools, use charcoal exclusively. The objections to this fuel are that its cost is high and that it heats the work more slowly than coal.

*Fire and Fire-Tools*

The Fire—In the combustion of fuel (charcoal, coal or coke) the oxygen of the air combines chemically with the carbon of the fuel.

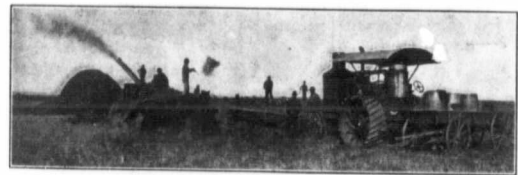
This chemical combination produces heat, the temperature attained depends on the rapidity with which the combination takes place, and the amount of heat depends on the amount of carbon and oxygen combined within a given period of time. Under ordinary conditions, the combustion would not go on rapidly enough to generate sufficient heat to raise iron or steel to the temperature necessary for working it under the hammer. Hence, the draft must be increased in order to supply more oxygen to the fuel, and thus increase the rate of combustion. It is possible, however, to supply too much air and blow out the fire

because too much cold air will chill the hot coals below the temperature at which the oxygen will combine with the carbon, or it may only lower the temperature by using the heat of the fire to warm the excess of air that passes

through it. The greatest objection, however, to an excess of air is that too much oxygen will be supplied to the fire and some of it will combine with the hot iron, forming oxide of iron, which is the black scale that falls from heated iron while being forged. A fire supplied with an excess of air is called an oxidizing fire, but if all the oxygen is used in the combustion and there is an excess of carbon, the fire is called a reducing fire.

A good way to start the fire is to heap coal all around the tuyere

to a depth of two or three inches, leaving the tuyere uncovered. A handful of shavings or some oily waste is set on fire and put into the opening over the tuyere, and a small quantity of fuel is spread over it. The blast is turned on very lightly, and as the fire burns up, more fuel is added, and the blast is increased. A conical block of wood is sometimes used. The block is put over the tuyere with the small end down and the coal packed about it. The block is then taken out and shavings put into its place, and the fire started.



This Man Threshed His Grain on Kerosene

**Not a Moment to Lose!**

**These Facts Face Every Thresherman and Farmer:**

Gasoline is an expensive fuel—Kerosene is Cheap!  
Rapid advances in raw material are Boosting prices!  
Shortage of labor in Canada demands concentrated power.

**Our Answer is—**

Hart-Parr Tractors Burn Kerosene!  
Hart-Parr Prices on Threshing outfits are still most reasonable!  
The Time to take advantage of them is right now. Don't delay.  
Hart-Parr Tractors are built in six sizes; take the place of several hired men and from 8 to 25 horses.

**Save Your Money.**

If you burn 4,000 gallons of fuel in a season's run—  
Gasoline at 30 cents ..... \$1,200.00  
Kerosene at 8 cents ..... 320.00  
Saving from Kerosene ..... \$ 880.00

A Hart-Parr Tractor will put that money in *Your Pocket*.

We write it in our contract that Hart-Parr Tractors burn Kerosene—get just as much power on it—use no more gallons of it. See that it is written in your contract.

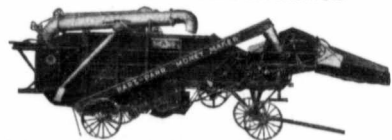
And besides, remember that Hart-Parr Tractors are backed by the oldest, biggest and most reliable firm building tractors exclusively in the world.

**\$192.00 in Extra Separator Features—**

We give you \$192.00 worth of extra features in the Money Maker separator without a cent of extra expense. A post card brings full information.

**At Every Demonstration.**  
Hart-Parr invites all threshermen and farmers to make themselves at home at Hart-Parr Headquarters during any of the big national demonstrations. Let us know which one you will attend. Write us today.

**FAMOUS MONEY MAKER SEPARATOR**



Only Separator double leather belted—double eccentric driven.

**HART-PARR CO.**

PORTAGE LA PRAIRIE REGINA SASKATOON  
Home Office: Charles City, Ia.  
Founders of the Tractor Industry—Builders of Tractors That Last

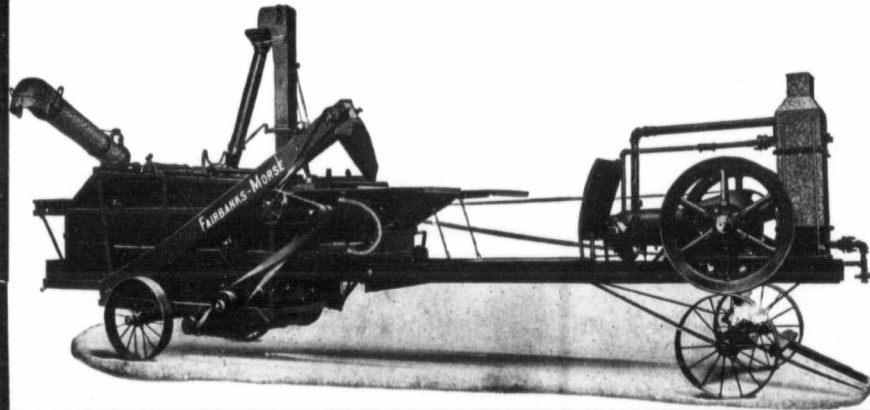
# Here's the Outfit You Need

IT'S not a bit too early to talk about threshing. Your seed is in and the green shoots showing through are evidence of a good stand this fall. Are you prepared for it? Will you continue to waste good days waiting for a threshing gang to come along or will you—this year—make a strike for independence and a

## FAIRBANKS-MORSE

24-46 Separator and 15 H. P. type "Z" Kerosene Engine with built-in magneto

Let this sturdy machine help you solve your threshing problem. Its dependability is unfailing. It is easily operated, threshes fast and clean, and its strong construction guarantees a satisfactory and enduring service.



### OUR FREE CATALOGUE

explains this machine in every detail, and it's mighty interesting reading too. A copy is yours for the asking.

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Fairbanks-Morse  
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Montreal St. John Ottawa  
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If coal is used for fuel, it is well to coke a quantity of it before putting the iron into the fire. The fire is kept from spreading by sprinkling water around the edges. The fire should not be allowed to burn too slow, because this makes it necessary to place the iron nearer the tuyere and brings the hot iron too near the cold blast. For this reason the blast must always have a good bed of fire to pass through before coming in contact with the iron that is being heated. The hot iron should not come in contact with the fresh coal. As the fuel is burned the coke is brought toward the centre and fresh fuel is added on the outside of the heap, where it can coke slowly.

The fire must always be kept clean, all cinders, ashes, and scraps of iron being removed. Care should be taken to prevent lead and Babbit metal from getting into the fire as they are objectionable, particularly if welding is to be done.

If the fire is not to be used for some time it may be held by putting a stick of hardwood into the fire and pounding the fuel down around it. The blast is then turned on gently for a few moments to liven it up well. After this it may be left without a blast for an hour or more, and can be restarted by turning on the blast. The ashes and cinders are then raked out and

blown out with the blast, or dropped into the cinder pit.

#### Forms of Fire

The fire may be maintained either open or hollow. In the open fire the combustion takes place on top of the heap over the tuyere, while in the hollow fire, a section of which is shown in the above cut the combustion takes place inside, the top being roofed over with coke and coal. A hole is left in front for the iron. The advantages of the hollow fire are that it is much hotter than the open fire, as the hot roof radiates heat as well as the hot sides and bottom, and it also heats the iron more evenly and thus lessens the chilling by contact with the outside air.

#### Fire-Tools

The following fire-tools should be provided for each forge as shown on opposite page.

A *Poker* (a) which is a rod of iron or steel about half inch in diameter and at least twenty in. long, with a handle at one end; a *Fire-hook* (b) which is similar to the poker, but has a hook bent on one end; a *Shovel* (c) which has a sheet-iron blade and a long handle, and a *Sprinkler* (d) which consists of a forked iron handle sprung into holes in a tin can, the bottom of the can having holes punched in it for the escape of the water. This is used for cooling parts or pieces of iron and for keeping the fire from spreading.

### OF VITAL CONCERN TO THRESHERMEN

On page 12 of this issue will be found the announcement of Messrs. Stidolph and Nellermeo who are inviting the inquiries of threshermen and operators of leading types of agricultural machinery to what they have to offer in insurance protection under the "Employers' Liability Act." This matter is now of the very first importance to all who are in any respect held liable under the Act.

The Act (assented to on 10th March last) to provide for compensation to workmen for injuries sustained in the course of their employment is very definite, and the requirements cannot be evaded under a severe penalty. Among others, it is obligatory (under class 17, section 1) on all engaged in "Milling, manufacturing of cereal or cattle foods, warehousing or handling of grain, or operation of grain elevators, threshing machines, clover mills, or ensilage cutters."

Briefly the Act requires: "Subject to the regulations of the board, every employer shall prepare and transmit to the board a statement of the amount of wages earned by all his employes during the year then last past and an estimate of the amount which will be expended for wages during the then current year, and such additional informa-

tion as the board may require, both verified by the statutory declaration of the employer or the manager of the business, or where the employer is a corporation, by an officer of the corporation having a personal knowledge of the matters to which the declaration relates."

At the time of filing the said statements and declaration every employer shall file with the board a policy of insurance in form satisfactory to the board, issued by a company or underwriter approved by the board, providing for payment to the board of compensation which may become payable by the employer under this part during the period covered by such statement and policy.

The crucial point, however, is in clause 5 of this section: "If an employer does not comply with the provisions of sub-sections (1), (2) or (3) he shall incur a penalty not exceeding two hundred dollars a day for every day during which such non-compliance continues, and if any statement made in pursuance of their provisions is not a true and accurate statement of any of the matters required to be set forth in it, the employer for every such untrue statement shall incur a penalty not exceeding \$500.

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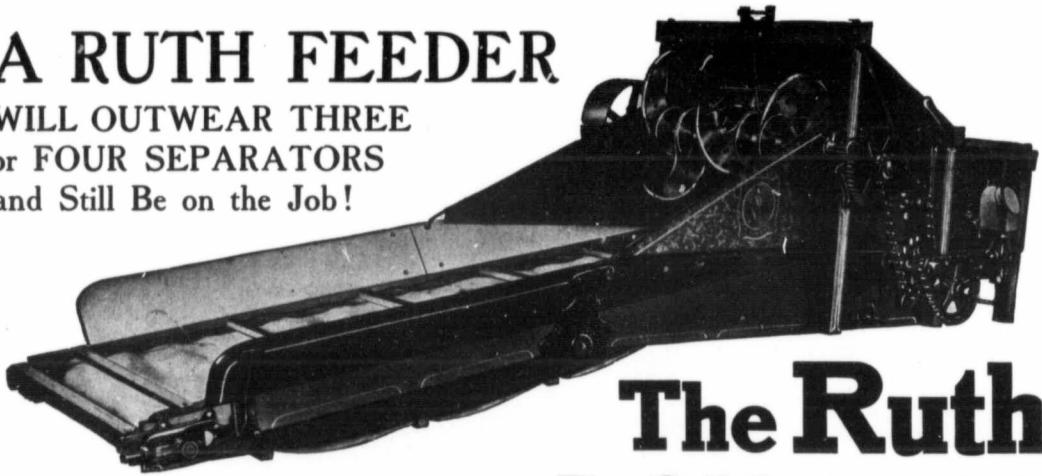


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## A RUTH FEEDER

WILL OUTWEAR THREE  
or FOUR SEPARATORS  
and Still Be on the Job!



## The Ruth

—The Self-Feeder with No

“Wear-Out” to It!

The records for astonishing durability being piled up by Ruth Feeders all over America have

never before been duplicated in the history of self-feeders. Despite the fact that they are getting the hardest, most constant, most trying use, Ruth Feeders are demonstrating almost every day that there is practically no wear-out to them.

The durability of the Ruth Feeder is as remarkable as its ability to do a wonderful amount of work—more work and better work than any other feeder you can buy.

There are self-feeders that cause all kinds of delays, disappointments, money losses, because they cannot stand up under the work during the threshing season.

We know—and probably you know of feeders that are notorious for the fact

that they *rarely* run one single season without shaking themselves to pieces. They are built flimsily. Their mechanism is weak. Their entire make-up is a mistake.

Yet—some people buy these other feeders. If one doesn't investigate, one is liable to invest in the wrong feeder—one that you'll have to replace at the end of the year, or even before the season is over. It *may* fall down on you right in the middle of the season.

### THIS GUARANTEE Protects You for Three Years READ IT!

Here is the strongest guarantee ever given with any self-feeder:—

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 whatsoever, bound, loose, straight, tangled, stack burned, wet or dry, piled on the 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 feeder manufactured by any other company in the world.

**FEEDERS can be shipped from Winnipeg, Regina or Calgary  
REPAIRS can be supplied from Winnipeg, Saskatoon, Regina  
and Calgary.**

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The Self-Feeder with an Established Reputation

THE MAYTAG COMPANY, LTD., Winnipeg:

Mail me today full information about your Ruth Feeder.

Also send me .....

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Extending the Life on The Farm Tractor } Why Good Oil is Always Cheaper Than Repairs for Tillage Tools.

H. L. Thomson

**T**HE life of a tractor is in a large degree dependent on proper and timely lubrication. In the earliest conveyances and machines of man, friction appears. The squeaking axles of the wooden wheeled ox-cart were lubricated with crude animal or vegetable fats and greases.

With the increasing use and improvements in modern machinery, with higher speeds and bearing pressures, the lubrication problem has demanded increasing attention.

In the early development of the auto, breakdowns, rapid wear and heavy repair bills were due in a great part to poor lubrication. Most of the bearings had to be "spoon fed," that is, they needed frequent oiling and attention, which, of course, they did not get.

In the tractor, with its heavy pressures, good lubrication is even more essential. Just what oil or grease do in a bearing to reduce the friction? The smoothest surfaces, when looked at under a microscope, are shown to be rough, covered with high and low spots—"corrugated." Under pressure these depressions in the two surfaces fit into one another and offer resistance to sliding motion. When an oil film is placed between the two surfaces, so that they cannot touch, the friction and wear is greatly reduced so that there is but the friction of the oil. If the bearing pressures are heavy it will be necessary to use a grease as the oil film will be squeezed out. Hence, in a bearing of light pressure and high speed, an oil of light body is used; in a slow-speed, heavy-pressure bearing, a thicker oil is used with more body, and for very slow speeds and heavy pressures a grease is used.

*The Proper Transmission Oil*

The selection of a proper oil for transmission is not so difficult as for the engine cylinders. In most cases when a considerable part of the gears and bearings are enclosed, and are intended to run in oil, a good grade of fairly heavy automobile transmission oil will do. If your transmission case leaks oil through small joints, when changing oil next time put in part grease and let it run for a short time and then add steam engine cylinder oil or auto transmission oil. This more fluid lubricant is often needed when there are ball or roller bearings to which the grease would not get to so rapidly. The grease will stop the oil leaks from the transmission case. A common light machine oil should not be used as it has hardly enough body.

Do not use a cheap machine oil. It often has some adulterant added—sometimes a cheap, soapy ingredient, to give it a body. Feeling an oil is a poor way to test its actual body unless it is put out by a well known company, and even then it is not always a sure guide.

Old cylinder oil from the engine crank case, when strained, makes a good oil to use in the bull gears. Cheap fuel oil or black machine oil is often used for this.

Another vital point in lubrication is the necessary continual presence of the lubricant in the bearing. An overdose of oil or grease at one time won't make up

oil for any use in a dusty pail. Keep the oils and greases clean and free from grit. It does make a difference.

*Good Oil is Cheaper Than Repairs*

Cylinder lubrication is a different and more difficult problem, as oils must work at higher temperatures. Poor qualities in oil show up most rapidly here. This oil must stand up to a temperature of about 450 degrees, leave no carbon deposit or gum in the cylinder and have a body of the proper weight to keep it from being blown past the piston. Few tractor operators realize how thin the film of oil is between the cylinder walls and the piston. Without oil the

rather thick. The carbon formed by improper mixtures is soft and fluffy like soot. Much material which is apparently carbon is in reality road dust and, of course, tends to damage the engine. All tractors should have a good air strainer attached to the carburetor.

If an engine continually smokes at all oil levels it is evident that too much oil is leaking up past the piston. An oil of higher viscosity is needed; that is, thicker. An oil when cold may appear thick, but when heated may be very thin. If, in spite of a very thick oil, much leaks past the piston into the cylinder, try using a lower fire test oil of the same thickness. This will allow the oil to burn out of the cylinder quickly. If the engine still smokes badly, and the cylinder floods with oil, new piston and rings will be needed and perhaps the cylinder rebored.

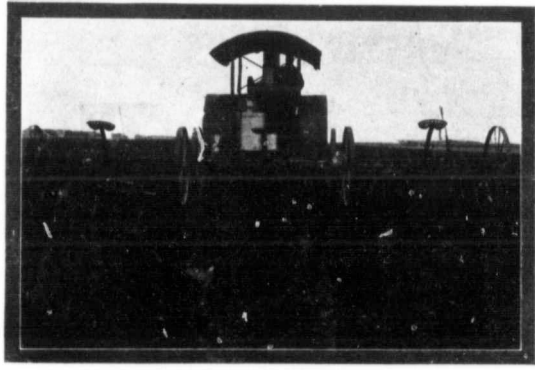
*Follow the Tractor Man's Advice*

As the engine gets older and the piston rings and cylinder more worn, thicker oil is needed. The proper oil can be determined after a few trials. But, most all tractor manufacturers have done this testing in a much better way than the farmer can. So the safest way is to be sure to use the oil recommended by the tractor manufacturer. Don't let some garage or oil man talk you into changing oils when the one the makers recommend has proven satisfactory. It may be "just as good," but experiments are expensive.

Operators of tractors burning kerosene should be particularly careful to use a good heavy grade of oil. Tractors run on full throttle a good part of the time, and a thin "light car" oil will cause trouble.

The oil in the crank case should be drawn off every two or three days of continuous work, a gallon or so of kerosene put in the engine crank case, then the engine run for about 30 seconds and the kerosene drawn off. The new clean oil should then be put in. A dirty oil, full of carbon and metallic particles, makes a poor lubricant. With a four-cylinder vertical kerosene engine this is particularly important, as some of the unburned distillates will work down past the piston and make the lubricating oil thin and inefficient.

The secret of successful lubrication is to find the right kind of lubricants needed, to keep them clean and free from grit and to use them regularly. A "lick and a promise" in lubricating a tractor is a short cut to grief.



A Dusty Job That is Hard on the Grease Cups.

for the lack of it at another. "Squirt can" methods on the important bearings of a tractor transmission are not a success.

One of the greatest advantages ball or roller bearings have over plain bearings, besides reducing the friction, is, that they carry enough oil in themselves to run for weeks at a time, and are in no danger overheating due to the neglect of the operator tightening up the grease cups every hour or so. These bearings have greatly helped to make the automobile the reliable machine it is. However, the grease cups in these bearings should be screwed down a little every day. This will work the clean, fresh grease into the bearing and work out the worn-out grease which will carry with it any of the dirt and grit out of the bearing. A good grade of grease, such as is used in automobiles, is best. The cheap grades sometimes have a little acid in them which will attack the balls or rollers and etch them, causing them to wear rapidly.

Keep the grease can cover on tight. Do not carry lubricating

tractor would hardly travel a hundred feet before the cylinder and piston would swell, score and bind.

Many confusing terms are used in describing an oil. There is the base of an oil, the carbon content, the cold test, the flash test, the fire test, the viscosity, the gravity, and the light or carbon filtered oils, and it takes an expert to tell the relation of these various terms to the suitability of an oil for a particular motor. In fact, at different periods in its life a motor demands different kinds of oil. The two main things to be looked after are the fire test and viscosity.

"Fire test" will indicate the rapidity with which any oil will be burned out if it reaches the combustion chamber in excess. "Viscosity" is a measure of the rapidity with which any oil flows to the parts to be lubricated.

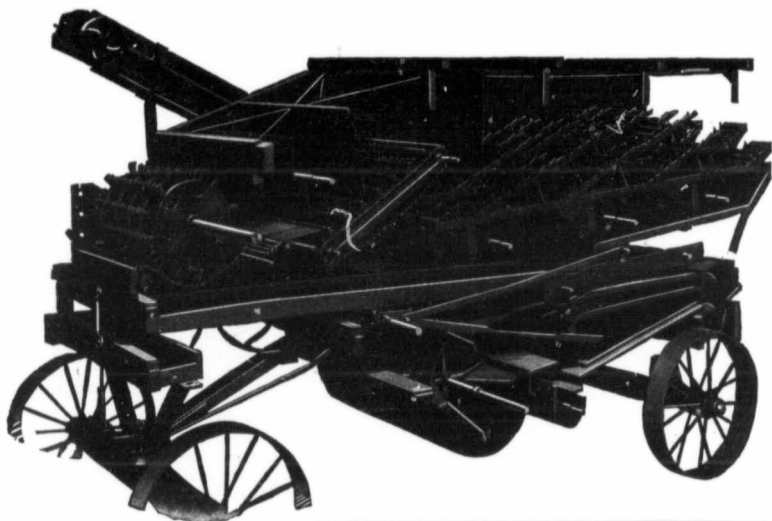
There are three kinds of carbon that may be formed in the engine cylinder. The carbon formed by high fire test, slow-burning oils is very hard, thin and glossy in appearance. The carbon formed by lower fire test, fast-burning oils is porous, dull in appearance and



**WHY TAKE CHANCES** with something represented to be "just as good" when you know that the

# "NEW CENTURY"

is the  
Biggest  
Separator  
Value  
the  
Market  
Offers  
To-Day?



Accept no  
Substitute  
Insist on  
having a  
**NEW  
CENTURY**  
It's the  
Best

What's the use of running any risk in the purchase of your separator? Base your decision on quality, rather than price—and just as sure as you do this, we'll wager that your next separator will be a New Century. The New Century is the biggest separator value the market offers to-day. Not only have quality and competent workmanship been the watchwords in every process of its manufacture, but considerable energy and thought have been expended in the development of the principles involved to the highest degree of perfection. And let us remind you right here that New Century principles are right—supremely efficient. Every feature in its construction is high grade and put there to perform a certain function. No trappy contrivances have been added for mere sales argument sake, but instead, our aim has been to perfect and simplify its mechanism from one end to the other.

Do you think that if the New Century were not a machine of unusual merit—rare qualities—that it would enjoy such world-wide popularity? Do you think that Threshermen would come back and buy the second, third, and in some instances, the fourth and fifth New Century? Do you think we could sell a thousand or more of these machines each year if the New Century were not better than the majority of machines you are asked to buy? No, not for a minute. Performance talks these days—results count; nothing else. Performance alone has won fame for the New Century.

Now we know you want a machine that ranks high; that does your work best and earns you the most profits; that not only satisfies you, but is a favorite with the farmers. Where in all this world would you find a machine that would better fulfil these requirements than the New Century? Where would you find a machine that has the ability to "deliver the goods" as the New Century does without cutting a big slice off of your earnings by reason of big repair bills. The New Century is long on work and short on breakdowns and that's the kind of a machine you want.

THESE, AND MANY MORE NOTEWORTHY FEATURES, IN THE 1916 NEW CENTURY: Large Open Grate under cylinder—at a point where most needed. At least 95 per cent of the separation in the New Century is performed here. Open Web Conveyor directly back of cylinder, insuring prompt delivery of the straw from cylinder to straw rack under all conditions, at the same time affording all loose grain an opportunity to drop through to the grain pan. Patented Rotary Rack. This rack gives the straw the worst beating you have ever seen and keeps it continuously moving to the rear of the machine in a thin layer. After the straw has once passed over this unbeatable rack it is ready for the stack with every kernel extracted. The New Century is an engine and fuel saver, because it runs from two to three horse power lighter than most machines. The days of the heavy, cumbersome machine are rapidly passing. The New Century is simple, light, compact and convenient, but strength has not been sacrificed for light weight. The New Century is a staunchly built machine—made of the stuff that stands for service.

You must feel that you want one. At least you want more information about the best separator buy the market offers. WRITE FOR FULL PARTICULARS TODAY TO ANY BRANCH OF

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# The Science of Summer Tillage

By RICHARD HASTE

**T**HE belief that cultivated land needed an occasional rest was doubtless responsible for the practice of "summer fallow"—a practice that is nearly as ancient as agriculture itself, and which is still followed by the non-progressive farmers in every community.

### The Fallow Field

The fallow field was a familiar division of the old-time farm, and the manner of treatment given this fallow field was a pretty good index of the disposition and intelligence of the farmer. But do not get the idea that this practice was confined to "old fogies" or to the less intelligent farmers in the community. On the contrary, it was taught by the agricultural experts, and in many agricultural bulletins you may still find "summer fallow" in the regular schedule of crop rotation.

The practice of summer fallow varies not only with the disposition and intelligence of the individual farmer but with the custom of the community. Here is a farmer who is convinced that his land is tired and needs a period of rest, so he allows his field a complete vacation—abandons it for a year or two to a riot of weeds and native grass; here is another, a shade more thrifty, who lets a field lie fallow, but uses it as a pasture for his sheep and young cattle. The grass and weeds are therefore kept closely cropped. Here is another who has a field infested with sorrel or some other persistent weed; being thrifty and something of a thinker as well, he not only pastures his fallow field but plows it in midsummer to destroy the obnoxious weeds by exposing their roots to the summer sun before they have had time to seed. His neighbor did the same, but his field had not been pastured, consequently a rank growth of weeds was turned under before they had time to seed. The result was a slightly increased yield in the next year's crop in both cases. The conclusions, however, regarding the cause of this increased yield were totally different. The first one concluded that the result was due to the rest given the land, and the further fact that grass and weeds were kept down. The other was sure that the result was owing to the turning under of the crop of weeds—that this acted as just that much manure and the increased yield was due to this natural fertilizer.

Thus it will be seen that the rest theory became coupled with the theory of weed fertilization in

the practice of summer fallow. No one seemed to realize that weeds, being voracious feeders, take more from the soil while growing than they can possibly give back. No one seemed to remember that the principle of compensation—that you can't get something for nothing—applies to soil culture as well as to trade.

Aside from the eradication of weeds and a slight improvement in the tilth of the land, owing to a very small addition of humus from the weed crop, the old process of summer fallow is of little or no value in farm management. In the light of modern scientific methods it is difficult to realize how the old-time farmer came to believe that a crop of grain was harder on his soil than a crop of weeds. But he did believe it, and many still believe it, in a sort of unthinking way. Even as late as 1906, in a bulletin on crop rotation issued by the agricultural college of South Dakota, Professor Chilcott, commenting on the practice of summer fallow in the experimental work, said: "The summer fallow plots are plowed in July before the weeds have ripened their seeds, and are plowed again with the other plots in the fall. They are given no other cultivation during the season."

The above may be taken as an authoritative statement of the methods of summer fallow up to that date. A complete revolution in the methods of handling the fallow field has taken place within the last ten years. Clean cultivation intelligently applied, has superseded the old method. This practice has become known as summer tillage and is as different from summer fallow in object, principle, and practice as success is from failure.

### Summer Fallow

Before going further into the subject, let us clearly understand what was claimed for summer fallow and what advantages, if any, it had over constant cropping.

The theory that land under cultivation, like a tired work animal, needed a period of rest, failed under the test of investigation. It was found that an exhausted field under certain conditions might require extra food—manure, or an application of some mineral substance in which the soil seemed deficient, in order to secure normal yields, but to allow it to rest for the mere sake of resting was on a par with the practice of planting potatoes in the moon. We, therefore, will put the "rest" theory on the shelf with the other dust covered curios—it is useful only as an index of agricultural progress.

Summer fallow, however, had some value depending on the soil conditions. If a field had become foul with noxious weeds, a plowing in midsummer before the growth had time to mature would make the cultivation of the next year's crop a much easier task. The yield was likely to be somewhat greater because of the destruction in mid-season of all plant growth, resulting in a slight accumulation of plant food in the soil. If the summer plowing was timely and had been well done, it would perhaps result in a larger and better distributed supply of moisture in the subsoil.

Crop-sick land doubtless was benefitted to some extent by the summer fallow. The change in plant growth and the exposure to the elements would naturally assist in clearing the soil of toxic poisons. The theory that the old practice of turning under a crop of weeds benefits the land by

adding plant food is, to say the least, questionable. That it adds a slight amount of humus to the soil may be true, but with most soils the game is not worth the candle. This brings us to the subject of cover crops, green manure and humus, each of which will be fully discussed in another place.

We, therefore, will pass to the discussion of summer tillage, a process totally different from summer fallow, but which, owing to a lack of definite knowledge of the principles involved, is often confused with summer fallow, many careless writers using the terms interchangeably. The student of scientific tillage is therefore cautioned to scan carefully whatever he reads about summer fallow and summer tillage, keeping in mind always the radical difference.

### Summer Tillage

While the essential scientific principles underlying the theories of summer tillage are old, their application is comparatively new. Coming as it did in response to the call of the semi-arid west, the prevailing idea is that summer tillage applies only to the regions of insufficient and unreliable rainfall. Although its application to the conditions of the more humid sections has not been fully proved, yet from results of the application of the principles in the semi-arid sections it seems reasonable to predict that the practice will prove of great value under any and all conditions of soil and climate, especially where fertility has become depleted.

### Advantages

That the readers of the Canadian Thresherman and Farmer may observe and understand the wide difference between summer fallow and summer tillage we will state briefly the objects sought to be obtained by the latter. First, an increased yield far above what is considered a good crop, not only every second year, as is popularly supposed, but when the system has once been applied and the moisture of the soil and subsoil get under control a bumper crop may be expected each year as long as the water content can be kept at the optimum, providing always that the work in the preparation and tillage of the soil is properly done. Second, the insurance of the crop against failure through drouth. Summer tillage when properly carried out under reasonably favorable conditions is an absolute guaranty against crop failure in drouthy seasons. This is brought about by the storage in the soil of

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## Too Busy About The Brasswork

"Human Energy is Limited, and if Too Much Thought is Given to Minor Things No Vitality Will Be Left for the Great Things."

AS a man thinketh—so is he. And one of the best explanations of why the German is as he is, and one of the most lucid estimates of the German mind and its limitations, is given by Mr. John Buchan in the new volume of his excellent "History of the War."

Mr. Buchan points out the curious immaturity of the German mind, which has spent so much time on its "brasswork" that it has not had enough time for the great things of life.

"The point which we wish to make is that this crude lawlessness illustrates an interesting characteristic of the German mind—its curious immaturity. That mind is like a child's, which simplifies too much. As we grow up we advance in complexity, we see half-tones where before we saw only harsh blacks and whites; we realise that nothing is quite alone, that everything is inter-related, and we become shy of bold simplicities. The mechanical may be simple; the organic must be complex and subtle. It sounds so easy to say, like the villain in melodrama, that you will own no code except what you make yourself; but it really cannot be done.

"It is not that the rejection of half a dozen or even the whole of the diffuse findings of the Hague Tribunal matters very much; what signifies is the disregard of the unformulated creed which penetrates every part of our modern life—Germany's too, in her sober, non-martial moments. To massacre a hundred unarmed people because one man fired off a rifle may be enjoined by some half-witted military theorist, but it is fundamentally inhuman and silly. It offends against not only the heart of mankind, but their common sense. It is not even virilely wicked; it is merely childish. It lacks intelligence. Nothing can be done with it, any more than with the scorching winds of the desert.

"It is a simplifying of life," in Mr. Belloc's words, "which robs life of stuff and stifles it; and I shall continue to believe, until the gods prove me wrong, and until it is time, as St. Just said in a famous phrase, "to cover our faces and to die," that this mere force of calculation is very crude, and that the manifold, the complex, the civilised will always outdo it."

### Ant-like Espionage

"The same childishness is found in many other parts of the German scheme—their elaborate espionage system, for example. The industry spent on it is more

than human; it is beaver-like, ant-like, incredible, like the slavery of some laborious animal; but it, and the hundred other things like it, will not win battles. Of course it has its effect, but that effect is in no way commensurate with the pains taken.

"The truth is that human energy is limited, and if too much thought is given to minor things no vitality will be left for the great things. We see the same weakness in many other activities of the modern German mind—immense erudition which beats ineffectual wings and achieves little that is lasting in scholarship; a meticulousness in business organisation which terribly frightens the nervous British merchant, and yet somehow does not do much—nothing at any rate, comparable with the care taken in the preparation.

"But it is most conspicuous in war. Frederick and Moltke were military geniuses of a higher order; but where is the military genius today in these beautifully thought out and superbly provided armies? He has not appeared, for there is no room in them for the higher kind of intelligence. German industry is not mature; it is like the painful, unintelligent absorption of a child.

### Unscrupulous Business Man

"Let us suppose that a man starts in business with good brains and a reasonable capital. He resolves to be bound by nothing, to get on at all costs, to outstrip his neighbors by a greater industry and a complete unscrupulousness. He will keep within the four corners of the law; but he will have no regard to any of the antiquated deencies of trade. So he toils incessantly; no detail is too small for him; he studies and codifies what seem to him the popular tastes with the minuteness of a psycho-

logical laboratory; he corrupts the employees of his rivals; no bribe is too low for him; he buys secrets and invites confidences only to betray them; he is full of a thousand petty ingenuities; he allows no human compassion to temper his ruthlessness; his one god, for whom no sacrifice is too costly, is success.

### Why He Will Fail

"What will be the result of such a career? In nine cases out of ten, failure. Failure, because his eternal preoccupation with small things ruins his mind for the larger view. The great truths in economies are always simple, but they escape a perverted ingenuity. He will not have the mind to grasp the major matters in supply and demand, and the odds are that, leaving the question of his certain unpopularity aside, he will be out-classed in sheer business talent by more scrupulous and less meticulous competitors. Commerce, of course, is different in many ways from war, but the parallel in this case is fairly exact. The German mind cannot see the wood for the trees. It knows the situation, dimensions, and value of every bit of timber; but it has not time to spare for the quagmires on either side, and it has no care for what may be beyond the forest.

"The impression left by the spectacle of this wonderful machine, the proudest achievement of the modern German spirit, with its astonishing efficiency up to a point, its evidence of unwearied care and endless industry, remains oddly childish, like a toy on the making of which a passion of affection has been lavished.

"The man who can devise the campaign of Trafalgar is not the man who is always busy about the brasswork. Undue care is, not less than slovenliness, a sign of the immature and unbalanced mind.

### Oddly Childish

"And the profession of a morality above all humble conventions, so far from impressing us as god-like, seems nothing but the swagger of a hobbledehoy. It is not barbarism, which is an honest and respectable thing; it is decivilisation, which stands to civilisation as a man's senility stands to his prime. In it all there is the mingled petulance, persistence, and absorption of an ill-conditioned child.

"Such a child cannot be allowed to play with firearms. It is too dangerous."

### TRACTORS WORK BEST WHERE ONE PERSON

Trouble with the tractor often occurs when the operator can assign no cause. This is most likely to be the case when two or three persons handle the machine and no one is definitely the engineer and responsible for the machine. It may also happen to an inexperienced engineer.

The timing of the spark and adjustment of valves are just sufficiently delicate to cause much trouble if they are allowed to shift slightly on account of a loose bolt, or are slightly changed by one operator without the knowledge of the others.

It is necessary to have one person who is the engineer and have him as well informed as possible on his machine. Every day he should learn something more about it and its operation, until he can truly say at all times just how every part is, and thus locate trouble as soon as it occurs. Real trouble, time-wasting trouble, will come to such an engineer only through unavoidable accidents, and these will be rare.

The expert sent out from the factory cannot operate the tractor as well as the engineer who operates it daily, yet he may be able to find trouble the operator could not locate. It is the expert's business to locate trouble, the operator's to avoid it. Too many are satisfied if a machine runs. That is not enough. Does it run right? Are all bearings perfectly lubricated and properly adjusted? Is there pounding, even to the very slightest degree? Is the valve and spark adjustment such as to give the highest power? No one can answer these questions so well as the operator, if only the operator knows. You can't get an operator who knows these things for your tractor, but you should get one who will know when he has been on the job for a short time.



Wounded Tommy: "Yes, they got twenty bullets out o' me! They ought to have sent me to the munition depot, not to a 'ospital."





## When the Grain is Wet and Tough and Rotten

Then is when the Avery heavy cylinder filled with Jumbo Tool Steel Teeth, the I. X. L. Separating Device, the Avery J. B.'s Wind Stacker, and all the other improved features in an Avery Thresher get their chance to prove how good they really are. Avery "Yellow-Fellow" Threshers were designed to *stand up* and do *good work* under the *worst conditions*. Here is what a few owners say about the work Avery Threshers did last year—the year that many threshermen say was one of the worst years they ever saw :

"We very successfully threshed the wet and sprouted grain which resulted from the extremely rainy summer. We have never known a season which gave threshing machinery so severe a trial and our Avery outfit cared for every demand."—L. C. Burgess, Monticello, Illinois.

"This was one of the hardest, if not the hardest, fall's threshing we have ever had. We had almost continuous wet and rain all fall, but will say that the 'Yellow-Fellow' handled it all through 37 days of threshing—some wet and some dry—without trouble of any kind whatever."—C. O. Johnson, Dazey, North Dakota.

"I found that the 'Yellow-Fellow' does not care whether the grain is damp or dry—it takes it just the same. We threshed wheat grown together so badly the pitchers could not tear it apart. We never had the blower to choke up this fall."—Wm. Wirt, Jr., Burlington, Iowa.

"You all know who threshed in North Dakota this fall, 1915, that it was a bad one—a tough one to handle, with lots of straw and lots of rain and wet weather. When you got into a field of Marquis wheat, believe me you had to have the teeth and separating system to do the work, and the same with Durum wheat, but I found that the 'Yellow-Fellow' was right there with the goods to do it, and do it to perfection."—Ole O. Undeberg, Leeds, North Dakota.

"This season has been one of the hardest for threshing there has been for a number of years, on account of almost continual rain and tough grain. Avery Separators have proved their ability this fall to handle grain under the most unfavorable conditions."—C. J. H. Uhrhammer, Montevideo, Minn.

"We threshed nearly 60,000 bushels of grain and the customers were all well pleased and some were surprised at the performance of the Avery machinery throughout all the rain, mud and tough threshing."—Wm. Webster Olson, Stanton, Nebraska.

"My separator did splendid work threshing the wet grain right along when other machines had to quit. The blower belt never flew off once all summer."—Fred Nellans, Elbing, Kansas.

"I have a 32x54 Avery Separator that has run fourteen falls. This has been one of the worst years I have ever seen in twenty-one years of threshing. I have not had any trouble in threshing this wet and rotten grain or lost any teeth, or had any come loose. Other makes of machines around here are having lots of trouble with teeth and blower trouble. I have had no trouble with my blower in wet grain."—W. A. Loudon, Schuyler, Nebraska.

"This season has been an unusually bad season to thresh on account of so much rain, yet I have used my Avery Separator when the grain was so wet that you could wring water from the straw, and yet my customers claim the work I did was perfectly satisfactory."—Antone Hertel, Hanston, Kansas.

"I bought an Avery in 1914 and ran it two years and want to say it has got all the other machines beat in every way and under all conditions it will handle wetter grain with less stopping from choking and belt slipping than any machine I ever saw."—C. W. Gurnutt, Sedalia, Missouri.

"Last Monday we finished our last job of the season and this was flax, which was cut with a mower and laid on the ground for a long time. It was dry now and rotten. Some threshermen started the job last week but couldn't do anything with it, so this farmer called on us and we finished the job—you might say without any trouble."—Attendahl & Uphoff, New Munich, Minnesota.

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## The Science of Summer Tillage

Continued from page 16

a large amount of the annual precipitation, which is so held that it is made available not only to the plant when needed, but becomes so thoroughly charged with plant food in solution that it becomes possible to carry a crop through a long period of drouth with much less water than would otherwise be required.

### Conditions

The foregoing are the primal objects of summer tillage, but these objects can not be attained by haphazard methods. There are certain conditions that must be carefully observed and their meaning understood if good results are to be secured. The storing and conservation of water is of vital importance, yet the kind of cultivation and the specific conditions of the soil at the time of cultivation are also important and must be watched. The work must be carefully and timely done if the phenomenally large yields are to be obtained.

The persistent destruction of weeds is a condition that must be insisted upon, for we have

learned by experience that even small weeds are great drinkers and pump the water out of the soil wonderfully fast. Therefore, a summer tilled field must be kept absolutely clear of weeds at all times.

### Increase Soil Fertility

The first and most important result from summer tillage is the release of the natural fertility of the soil—the inorganic elements, and to render it available as plant food. This is brought about by various chemical agencies that act with the greatest efficiency when the soil carries a certain per cent. of both moisture and air. Just what the per cent. is that gives the best results is not accurately known—it doubtless varies with the texture of the soil—but experience indicates that the water content should be near the highest limit of capillarity and that there should be sufficient air to supply the oxygen needed by the roots in the process of cell formation. To secure this ideal combination of air and water the soil composing the seed and root beds should be made fine and firm with a loose mulch covering the surface to prevent loss of moisture by evaporation, for the moment the moisture content is reduced either by direct evaporation from the surface or by transpiration through weeds, the delicate balance is disturbed and the chemical action in the soil is checked in the same proportion.

### Less Water Needed

A second result of summer tillage, in fact a direct corollary of the first, is a marked decrease in the amount of water necessary to produce a pound of dry matter. The amount is less owing to a decrease in the demand of the growing crop, due to an increase in available fertility. The effect of the liberation of soil fertility on the amount of water transpired by a growing crop will be fully discussed later on.

### Not Necessary Every Alternate Year

It must be thoroughly understood that in order to obtain the largest annual profits from your fields, summer tilling is by no means advisable each and every alternate year, except where the average annual rainfall is less than fifteen inches, and even then with certain soils and a well distributed rainfall it is possible to store the available moisture so that two and possibly three crops may be grown in succession. This will depend, however, upon the care with which you handle your soil and the persistency with which you conserve the moisture. Your guide in this matter should be always the condition of your soil and the amount of soil water you have in reserve at the close of each crop season. With a close consideration of these two points you can easily deter-

mine whether there is a sufficient amount of moisture in reserve and whether the land is in condition to grow another good crop, or whether it should be summer tilled again.

### The First Step

Summer tillage cannot be carried out in its entirety and the best results obtained until one or two crops have been grown. The first step—a thorough double disking of the ground—should be done as soon after the crop is removed as possible.

The advantages of double disking the land immediately after the crop is removed, especially if it be a crop of small grain, are four-fold:

First, by forming a surface mulch it conserves the moisture already in the soil.

Second, by presenting a loose surface the autumn rains are more readily absorbed and retained by the subsoil.

Third, the stirring of the surface soil hastens the germination of all weed seeds and volunteer grain, the young growth of which should be destroyed by subsequent cultivation.

Fourth, the condition of the soil as to water content thus produced, together with the high soil temperature of late summer, favors bacterial activity and brings about a chemical action that results in the liberation of inorganic plant food.

No time should be lost in beginning the work. In the case of a field of small grain the disk should follow the binder, for what moisture is left in the ground will evaporate very quickly after the shading effect of the standing crop is removed and the hot rays of the sun are allowed to beat upon the compact surface and dead stubble.

It is very important to conserve this moisture. The loosening of the surface by the disk checks the upward movement of the soil moisture, causing it to accumulate in the firm soil just beneath the mulch. This regulation of the water content not only increases the chemical action in the soil, but also increases the capacity of the soil for absorbing and retaining subsequent rainfall.

The importance of this early fall work is governed largely by local climatic conditions and the amount of annual precipitation that may be expected. In sections of the country where the average rainfall is less than eighteen inches it should never be omitted, as the harvest may be followed by a drouthy year, and the moisture that may be conserved by this early work may be just enough when added to the regular precipitation to carry the crop to maturity, when without it—although the amount may be small—the crop would fail. It is often the

little and not the big things that make for success or failure. It must be remembered that plant growth continues just as long as there is available moisture at hand—not that moisture is the only necessary element, but all other elements are worthless without it.

### How to Begin

As stated in the preceding paragraph, the first step in summer tillage after a crop has been removed is to double disk the land. If the crop on the field to be summer tilled was small grain the disk breaks up the surface into small lumps and mixes the stubble with the loosened soil, forming a mulch, the efficiency of which is not easily destroyed by subsequent rains, because the stubble, by keeping the mulch from becoming compact, prevents the heavy rains from completely re-establishing capillary connection with the moist under soil and consequent rapid upward movement of moisture and evaporation.

### Destroy Weeds and Volunteer Grain

When heavy autumn rains follow harvest, causing ideal growing conditions, weeds and volunteer grain will spring up wherever the seed has fallen. This growth can usually be destroyed on the land that has been double disked by the common steel harrow if the work is done quickly before the grain and weeds become too well rooted.

No time should be lost in getting into the field as soon as the weeds appear above the ground. Here a "stitch in time saves nine," for weeds are not only great drinkers, and when still very young use an immense amount of water, but every day they are left unmolested they become more firmly rooted and are the harder to eradicate. A growing weed is the most expensive thing that can be kept about a farm.

### FARM ENGINEERING COURSE POPULAR

In spite of the high price of gasoline, there seems to be a steadily increasing interest in the use of engines on the farm. Short courses in gas and steam engineering have been given summer after summer at Manitoba Agricultural College, but never before were there so many enquiries as at as early a date as this season. An enrolment of at least 50 or 60 men is expected. The courses this year run from June 13 to July 1st.

### ACTING HER PART

One Saturday a crowd of children were playing war in the back yard. Some were English Soldiers, some French, some German. One little girl who was told she was too small to play began crying audibly, and kept it up in spite of all they could do, and even after the warning: "If you don't shut up mother will hear you and make you come in the house."

Finally the difficulty was settled by a bright boy of 10. "Oh, let her bawl," he counselled. "She can be the widows and orphans."—Everybody's Magazine.



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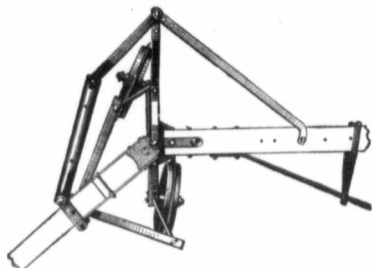
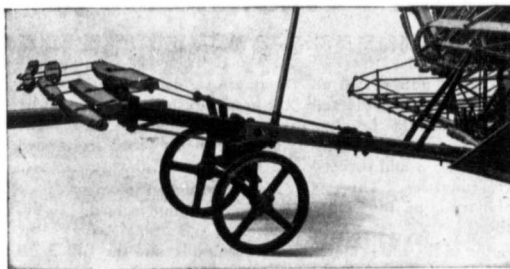
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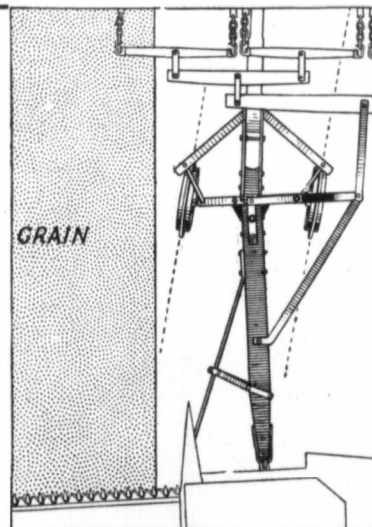
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The binder is purposely thrown out of square in this illustration in order to show clearly the steering action of the tongue truck wheels.

When the outer end of a binder platform starts to hang back, it pulls the tongue truck toward the grain.

Any movement of this tongue truck toward the grain turns the truck wheels in the opposite direction and at so great an angle that they automatically steer the binder back to its proper square cutting position, with the horses moving steadily straight ahead.

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# Fall Treatment of the Soil

By  
H. W. CAMPBELL

**T**HE prevalent notion that all or practically all of the soil cultivation should be done in the springtime must be laid aside by those who would succeed in semi-arid countries. This is also largely true in the more humid sections.

If cultivation of the soil is merely incident to farming, the old scheme will work out very well but where cultivation is the main thing, the one thing necessary to place the soil in proper physical condition, the one thing to make sure that the soil is fertile and useful, is that there must be soil tillage at other seasons of the year.

The importance of tillage of the soil in the heat of summer has been proved. There is no doubt whatever that the farmer must aid nature at a time when nature is engaged in most active work in her great laboratory. The importance attached to this fact has never been appreciated. It is in July and August with the sun's rays beating fiercely upon the earth that chemical action in the soil is most abundant if the soil condi-

tions are right. Then it is that the great, mysterious processes by which the elements are made available as plant food are carried on with wonderful vigor.

### Autumn Plowing

The wintertime is dead. In the soil there is nothing doing. But in the summertime the soil is all activity.

Now comes the autumn. It has been the custom of the honored forefathers to permit the soil to lie fallow in the fall. Sometimes there is work done in the fall, but chiefly on the theory that it can be got out of the way and be a substitute for spring work. "Fall plowing" is too often merely done in the hope that it will save so much work in the spring.

In a large portion of the semi-arid region the soil can be worked until November fifteenth and in much of the country at a later date. The two months in which fall work can be done should be utilized by the semi-arid farmers for plowing.

The thought should ever be kept in mind that the primary purpose of all cultivation of the soil whether with the plow or cultivator or the disk or harrow is—to put the soil into that condition which best promotes fertility.

You are not plowing just to kill the weeds or turn the soil over. You are not cultivating just to keep the surface loose. You are not harrowing or disking to preserve the moisture and that alone.

### Prepare for the Future

But what you are doing all the time, if you are doing it intelli-

gently, is to prepare the soil for the future crops so as to bring out the fertility and to give the seed and plants a chance. Now what can be done in these two months with reference to securing that ideal physical condition of the soil which is necessary for good crops?

The field under consideration may be grain stubble, or it may be grass land. It is possible that it has been disked when harvested or left to dry out in the sun. The preparation may be for corn land next year or for cotton. It may be for spring wheat or barley or clover or alfalfa. The plan may be to have root crops next year. Now what can be done in each of these cases and under different circumstances?

### Condition of the Soil

Let us first impress upon the farmer's mind the one fact that is always necessary to the best results of the fields—that of keeping the soil always moist. This is easily done if due consideration is given to the fields at all times. Too often the excuse is that the farmer had not the time and he could not get over all his fields. Notice the successful doctor who commands a large and profitable practice—does he neglect his individual cases and say "I have not time to attend to them?" No, if he did he would soon be doing business without profit. So, too, with the lawyer, the manufacturer, the merchant, in short, the one in any and all lines who succeeds best is he who not only looks closely after the details, but is always ready for improvement:

It is but fair to say there is no business or science that is perfect. They all can and all will be improved upon. The improvements that count most are those that decrease the cost of production and increase the quality and quantity of the output. This is true of all manufactured products and especially true of everything that comes from the soil.

There was a time when it did not pay to mine gold ore that did not run more than fifteen dollars per ton. To-day some of the most profitable mining is where the gold runs less than five dollars per ton.

### Possibilities of Farming

In no kind of business is it possible to secure greater change for the better than in farming. What you do to your soil and how you do it this year helps or hinders the crop yield next year.

Nature provides soil, heat, water and light. The soil is the base of operations. The latter four elements may be utilized and enormous crops grown if the soil is so handled that these properties are mingled in proper quantities and under proper conditions. In other words, it is within the power of the man who is up-to-date or thoroughly posted in points of tillage to grow 40 to 75 bushels of wheat per acre instead of 5 to 15, or to grow in many sections 75 to 125 bushels or corn instead of 20 to 40.

### The Disk Harrow

The disk harrow is one of the very useful tools. It should follow the removing of all crops that

Continued on page 26

*In this article the apostle of "Dry Farming" is at his best. One of our great weaknesses is the failure to realize the rapid flight of time. One season is on top of us before we have gathered the tools that were used in the one immediately preceding it. For this reason, even if it is only June, we are reproducing the above observations of untold educational value.—Ed.*



A memory that speaks in thunder-tones to the Economy and Humanity of Mechanical Power.



## TO THE THRESHERMEN:

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*Agents for the*

**STEWART SHEAF LOADER CO., Winnipeg**

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## The Indiana Manufacturing Company

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Indianapolis

Indiana, U.S.A.

the surface may be loosened. The loosening and stirring of the top soil has three important and direct advantages; admitting the air, stopping the evaporation of soil water, and affording opportunity for the more ready percolation of the later rains. There are many indirect benefits, such as increasing the nitrification by admitting air, and increasing the capillary water just beneath the loose mulch, thus putting the soil in better condition to plow.

At this point let us urge the fact that no soil plowed dry can be made to produce its highest yield. Soil that is dry is dead. If you would give it life, give it moisture. The greatest development of plant elements, commonly called fertility, takes place when the soil is carrying its full limit of capillary moisture and a high summer temperature.

When the crop is growing at its best, if it is a good crop, the moisture is drawn from the soil so that the capillary water is kept almost the entire time below the necessary point to promote the development of nitrates and bacteria. Now when the major part of your crops are matured the soil is warm and you still have some of the warmer days to come. If your soil is moist and the surface loosened by the disk harrow or cultivator to admit the air, then it is that you begin the process of preparation for a big crop next year.

If in the last few paragraphs we have rambled a little, we have done so purposely that we may lead your thoughts along the line of investigation as to why you should cultivate in the autumn season.

**What is Tillage?**

We often hear or read of some would-be leader saying, "We believe in thorough tillage." But what is thorough tillage? Scientific tillage and thorough tillage are not one and the same thing. A man may till his soil thoroughly and yet not till it correctly enough to get the best results, while if he tills it in a scientific manner he must get it correct so he can get the best results. If he does not do the work correctly so as to lead to the best results he has not done it scientifically. Scientific means but one thing, the true, the right or the correct principles.

**How to Disk**

Sometimes once over with the disk will loosen the surface amply, but as a general rule it should be gone over twice. In going over twice lap one-half. By this plan the outside fills the dead furrow left by the disk in its preceding work. Thus the surface is left practically level, while if the double disking is done by crossing the field the surface is left full of

ridges and back furrows to which there are serious objections.

After disking the surface can often be loosened by the common harrow in case of another rain that packs the surface. Above all things, don't let the weeds grow. Save the water to assist in developing plant elements in the autumn and help grow the crop next year, which may be a drier year than this one.

**Fall Plowing Better Than Spring**

Our observations have always been that fall plowing is better than spring plowing, providing the soil is in condition to be plowed, that is—moist. To plow soil in the autumn when dry is simply gambling with all odds against you. Many a farmer who plowed dry soil in the autumn of 1914 got no crop in 1915 and many more got small crops who would have gotten good crops if they had taken the precaution to have saved the moisture in 1914 to that degree that the soil could have been moist for plowing.

**The Packer**

Many a field has been made to increase its yield of grain from 10 to 100 per cent by following the plow closely with the packer.

The greater increase is obtained when the soil is plowed while moist.

Some of our college men have said that if plowing is done early in the autumn the rains will settle the soil and the packer is not necessary. This is a grave mistake. Give the soil the benefit of a good condition when the plowing is done, then let ample rains follow later and the packer would make a difference. But how about autumns with practically no rains, an open winter and a dry spring following. The successful farmer of the future will utilize what nature provides, and as it is provided, and he will never be found praying for rain.

**Co-operation Illustrated**

Aesop the famous writer of fables illustrates the value of co-operation as follows. A father had several sons who did not get along well together. When the old man knew that he would soon die he called his sons to him. He had a bundle of sticks that he asked them to break. Each one but could not break the sticks. He

in turn tried with all his strength his sons a stick at a time and asked them to break the sticks which they did very easily. He then addressed them as follows: "My sons if you are of one mind and unit to assist each other you will be as the bundle of sticks uninjured by all the attempts of your enemies; but if you are divided among yourselves you will be broken as easily as these single sticks."

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**HARROWING WITH TRACTOR**

There is one important question that must be fully settled in the farmer's mind before the tractor will be taken home and put to its waiting tasks, and that is—"Can I do my harrowing with it?" This question of tractor harrowing is not worrying farmers who have witnessed good tractors in the field with disk harrows, spring or peg-tooth harrows behind them. Nothing can be more assuring than to see one of these tractors pass up and down the field, leaving a mellow seed bed behind the harrow it is pulling.

Since the tractor furnished ample power for deep plowing, this same power is equally usable for harrowing. Deep plowing is quite likely to turn up clods of "hard pan" that horses could not successfully reduce to a good seed bed without disking more than once or twice over. By using a tractor, harrow combinations can be made that are impossible with horses. For example, a light tractor can be attached to an 8-foot disk harrow with tandem attachment for double disking the full width, and two peg-tooth sections for smoothing. Weights can be put on the front disk harrow to get deeper penetration. The peg sections will hold the tandem attachment down. This combination will harrow the most stubborn soil and make of it a good seed bed by going once over. One big advantage in this combination is that the lumps while moist are easily broken up by the peg harrow. Another is that the tandem attachment cuts along the middle of the furrows turned by the front harrow, pulverizing much better than by lapping half to double disk. The whole process of harrowing is thereby done at one time.

A great advantage in working the tractor with combinations like this is in the more simple method of hitching. With the outfit above described only two chains are needed. The chain hitching the disk harrows to the drawbar of the tractor should be a log chain, several feet long. It can be passed through the clevis on the disk harrow forecarriage and around the tractor drawbar hitching them about two feet apart. The shorter the hitch the closer the harrows will be drawn to fences and the more easily turned around. Care should be taken, however, that the clevis on the forecarriage is not so high that the pull of the tractor lifts the harrow out of the ground. The second chain is needed for hitching the peg-tooth harrow to the tandem attachment. It can be passed through the drawbar link of the peg harrow and around the tandem attachment frame. The chain must be so attached that it cannot slip to one side of the harrow frame. The harrows must always be pulled in line or the disks

of the tandem attachment may cut in the same furrows as disks of the front harrow or the teeth in the peg harrow may trail each other and the efficiency of the tools be lessened.—Tractor Farming.

**SOME CAUSES OF FAILURE IN ALFALFA CROP**

The chief causes of failure to secure a stand of alfalfa are usually three: lack of soil inoculation, acid or sour soils, and failure to treat the seed bed properly in preparation.

The peculiar form of nitrogen-fixing and nodule-forming bacteria that has the alfalfa plant for its host accepts also the sweet clover and other less common members of the same family. Any soil which will grow sweet clover well and mature good sized nodules can be used for inoculation on ground where alfalfa is to be sown.

Some soil finely pulverized can be spread on the ground and if worked in with a harrow will secure a good growth of the bacteria if soil conditions are favorable. A bushel of soil should prove ample for at least one acre of ground to be inoculated.

*Acid or Sour Soils*

If soil is not available for this purpose pure culture can be used with success if the directions are properly carried out. The bacteria will not be found to grow well and may not grow at all, in soils which are acid or sour. If such be the case, other measures must be taken before inoculation.

If alfalfa has failed on certain soil and there seems no other reason for it, the failure may usually be laid to sour soil. A great many of our soils are decidedly acid. Any acid condition in the soil will cause an absolute failure of nitrogen-fixing bacteria to grow. The presence of common sorrel in the field may be taken as an indication of sourness of the soil. In doubtful cases the litmus test can be depended upon. Procure from any druggist a piece of blue litmus paper. Moisten a handful of soil and mold it into a ball. Break the ball open and insert the strip of litmus paper and mold the ball again. Break open and examine at the end of an hour or two and if the paper has taken on a pink color the soil is acid.

To correct this condition apply per acre from one to two tons of ground limestone, at least 50 per cent, of which should pass a 10-mesh sieve. The amount should depend upon the degree of acidity. This should be sown in the fall before the alfalfa is to be sown in the summer on the next year.

*Seed Bed Preparation.*

June and August sowings have proven most satisfactory for me. If necessary oats can precede the alfalfa, as the crop will be out of the way before August.

**Provincial Exhibition**

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A single day saved in the threshing season has a real dollars and cents value to you. You know how true that is, and right here we tell you positively that you can actually save days in your busiest time of the year. Here is a machine that neither sleeps nor eats, that's on the job when you want it, that picks up the grain usually left on the ground by the hand pitchers, and besides all this, it takes the place of many pitchers and bundle teams, their wages and their board. That machine is the

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When we say it **SAVES MONEY**, Dickson Bros., of Tregarva, Sask., backs us up in this letter:

"With the Loader we need only three teams and a man. We thereby save \$1200 a day in wages, not counting the extra board saved."

When we say it **SAVES TIME**, Wm. P. McLachlan, Eskbank, Sask., proves it by telling us:

"I used a 40-64 Separator and had no trouble keeping it busy with the Loader and six bundle teams. I threshed 53,316 bushels of wheat and 1,000 bushels of oats in twenty-seven days, making an average of 2,308 bushels per day."

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When we say it **SAVES GRAIN**, Mr. C. J. Turnbull, Manager of Steel, Briggs Seed Co., Ltd., Winnipeg, says:

"There is less shelling with a loader than with regular pitchers and the work is vastly superior. I do not think on our whole 1,000 acres a wagon box full of loose straw could be raked after the Loader."

And A. A. Downey, Arlington Beach, says:

"After careful examination, I am convinced that the Loader saves at least one bushel per acre over the old system of field pitchers."

Plow the ground to the usual depth. Pulverize and pack it well, using the roller if needed to firm the soil. Then use the harrow to loosen the surface to a depth of about 2 or 3 inches, being careful to break all clods.

The seed can be sown broadcast or drilled in. If broadcasted, it should be harrowed afterwards. The seed should sprout fairly quickly and produce a growth before the freezing weather, if the moisture conditions are right. A stand will seldom fail if good seed is sown on a properly prepared seed bed.

Alfalfa will rarely do well when sown with oats as a nurse crop. Wheat is sometimes used as a nurse crop, but best results will be secured with no nurse crop. Fall sowing will destroy the host of weeds which come up each spring to choke any new crop that does not grow properly in cool weather.

L. S. V.

#### FULL OF IT

At the close of the forenoon session of a ministerial conference in Philadelphia, in announcing the opening subject for the afternoon, the presiding officer said:

"Elder Jones will present a paper on 'The Devil.' Then he added earnestly, 'Please be prompt in attendance, for Brother Jones has a carefully prepared paper, and is full of his subject.'"

#### STICK TO THE FARM

Every farmer young and old needs a vacation once or twice a year. It is a fine thing to visit the city occasionally and get the kinks out of your cosmos and the cobwebs out of your system. You can see a whole lot of interesting things in a day or a week and then you can go back home with renewed courage and a refreshed spirit. The city is a mighty good place to get inspiration but it is no place for folks to live in who have the out-doors habit.

There is only one best place to raise boys and girls and that is on the farm. In the country the ambitious boy learns to use his head and his hands and make them coordinate in what is now called "efficiency." He lives a normal life in the great out-doors and stores up good health for his future career.

The big men of the city—the world's masters of finance, of science and of engineering—have come from the farm, but nowadays farm boys learn when they grow up that they can make a living with more certainty and enjoy more independence by staying with the farm than to take chances on the noisy, dirty, ugly, smoky, flashy, crowded metropolis.

As for the girls who go to the

city—God pity them! Even in these modern days of improved rural conditions there is a girl once in a while who thinks she needs excitement. She tires of the monotony of the old home. She dreams of the attractions of the big town and thinks of the fun she will have going to places of amusement. She is lucky if she escapes the unknown pitfalls that beset a young and innocent girl in a strange place. If she has friends or kinfolks who look after her for awhile, perhaps she may succeed in getting a job as clerk in a store where she stands ten hours a day in a poorly ventilated room where the confusion gets on her nerves and pales her cheeks and saps her life blood. If she spends a long time in preparing herself she may get a position in an office where she earns \$10 to \$12 a week. That seems princely from the country standpoint, but what becomes of it? She must pay \$3 for a tiny hall bedroom in a stuffy boarding house; her meals cost her \$4 more; her washing and carfare and clothes and dental and medical bills and other necessities take the rest. She has barely enough left to buy an occasional ice cream soda or take a girl friend to the movies. If she is sick she is docked and if things go wrong she loses her place and may be out of

work for weeks. The novelty of the amusements wears off and she wishes she was back among the green fields and the quiet lanes.

There is nothing so terrible as the isolation of a great city when things go a little bit wrong. To live surrounded by multitudes of human beings who take no interest in you is real loneliness.

The average worker in the city—male and female—spends all he makes on the necessities of life. It is no place to save money especially for those who are easily led by others and who want to keep up the pace. Hurrityitis—the great American disease of the nerves—is born and bred of the city—the rushing, roaring, racking city. It is no place to lay up health. You are elbowed from morning to night by narrow walls, tall skyscrapers that blot out the blessed, life-giving sunshine, and by hurrying crowds who jostle and push in their mad rush for—something, they know not what. It is no place for freedom. It is just a devouring monster that eats up human vitality and makes people old before their time.

If you live in the country, young man or young woman, or old folks—out in the free, open, God's country in the name of all that is worth while stay there and be thankful that the good Lord has been so generous to you.



**Annual Report of Manitoba Department of Agriculture**

What looks pretty nearly like a record in the way of publishing a departmental report has been made in getting out the 1915 annual report of the Manitoba Department of Agriculture. The report was laid on the table for acceptance by the Legislature during the session recently closed, and it is now being mailed from the Publications Branch of the Department of Agriculture. The report contains over 150 pages, and in addition to furnishing the usual departmental information it is liberally illustrated with appropriate pictures of agricultural interest. A free copy may be had on receipt of a postcard request in the Publications Branch, Department of Agriculture, Winnipeg.

**More District Representatives**

The work done during the past year by the district representatives who have been operating in certain parts of Manitoba has been so satisfactory that the number has just been increased by four new appointments. Mr. W. R. Roberts has been assigned to the Birtle district, J. H. Hudson to the Swan River Valley, J. R. Bell to the Portage la Prairie district and J. Sigfusson to Arborg, where he will succeed H. F. Danielson, who has enlisted.

These young men are all of this year's graduating class at Manitoba Agricultural College, and all have had practical experience in Manitoba farm life before taking up their college studies. The district representatives are under the direction of the Extension Service of the Agricultural College.

Two of the other members of this year's graduating class have been given positions in the College service. These are M. F. F. Parkinson, of Roland, who will be assistant in the Extension Service, and Mr. F. H. Newcombe, of Deloraine, who is temporarily appointed as lecturer in animal husbandry.

One of the lines of work in which the Manitoba district representatives will be active this year is the encouragement of gopher destruction. Large quantities of gopher poison will be distributed through their offices to farmers who will use it.

Two new dairy demonstrators have been appointed to aid in the work among the Ruthenian farmers of Manitoba. These are Messrs. F. T. Boresky and A. Skorobacz, both able to speak the Ruthenian language and both students at Manitoba Agricultural College.

During the coming summer the Manitoba Agricultural College will give demonstrations in some of the towns of the province in spraying shade trees for the destruction of insect pests.

**Winter Dairying Active in Manitoba**

Never before in the history of Manitoba have the creameries done such a business during a winter as this year. Previously only a few of the creameries have operated for the full twelve months, but this season around 30 creameries out of 38 have made butter during the winter period. Last year the province exported over 50 carloads of butter, but almost all of it went out during the summer season. This year it has been exporting winter made butter, one carload going to Vancouver on April 6th, and another to Calgary on April 14th. The butter for these shipments was made at Belmont, Cartwright, Morden, Shoal Lake, Winnipeg and Souris. This butter was all graded, and Dairy Commissioner Mitchell and his assistants are enthusiastic over the confidence grading cream and butter is creating in outside markets.

At the last season of the Legislature some important amendments to the Dairy Act were passed. These refer to the regulation of skimming and cream receiving stations, and also to the licensing of factory butter and cheese makers. Copies of the Dairy Act and its amendments may be had by applying to the Department of Agriculture, Winnipeg.

**Making Money in the Cellar**

A woman in Virginia is making considerable money from mushrooms raised in her cellar. She advises all who think of trying to make money in this way, to begin on a small scale. But before beginning at all, she says, to be sure there is a market for the possible mushrooms.

In Manitoba, mushrooms have been grown in many cellars, but money has been made in such a large way in the West that the small sums made from mushroom beds, have not appealed strongly to those making larger amounts. Now that there is not so much easy money, it is possible that more people will be satisfied to take in smaller earnings.

The market for mushrooms is generally good in a large city, and very often the demand is much greater than the supply. In the winter when the mushrooms grow in the cellar, the market is the best. But those at a distance from a market are at a disadvantage, for mushrooms are better when fresh. However some of the eastern cities offer good prices for mushrooms shipped even from



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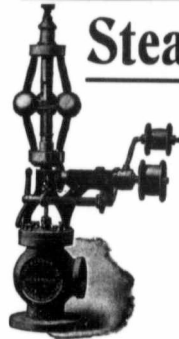
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the West. A firm in Montreal offers fifty cents a pound to a western man, who purchased spawn from them.

If the beds are properly prepared, there is no odor, so that there cannot be any objection to having them in the cellar. Of course, care must be taken to have the manure properly prepared before it is put in, and a warm cellar is necessary. One of the greatest benefits of a mushroom bed is to the housewife, who can gather a fine plate of mushroom for the table, at her pleasure.

**Eggs and More Eggs**

For many years Canada produced more eggs than we needed and we were able to make large shipments abroad. We kept on increasing our poultry, but at the same time our towns and cities were growing in size and the consumption of eggs increased more rapidly than the production. The result was, that our experts gradually disappeared, and, strange to say, Agricultural Canada became an egg importing country.

People were surprised to learn through the press that shipments came in, sometimes from Russia and frequently from China, two of the greatest egg-producing countries in the world. Of recent years enormous quantities of cold storage eggs from the United States have been brought in to make up for our deficiency.

Since the war broke out the foreign supplies for Great Britain have been seriously interfered with. Trade with Russia has been largely cut off. There was, therefore, an opportunity for the shipment of Canadian eggs to Great Britain. In the Patriotism and Production campaign of last year it was stated that there would be a deficiency of 100,000,000 dozen eggs in Great Britain, thus opening up an enormous market to Canada.

In addition to the regular consumption there has been an increasing demand for strictly fresh eggs for hospital requirements.

The call for fresh eggs has been as insistent as the call for socks and Red Cross funds. Canadian eggs inspected and graded have found a ready market. This market can be held during the war and after the war if we are ready to take advantage of it. Particular attention is given to this question in The Agricultural War Book for 1916.

The outlook as to demand and prices is such as to warrant our people in giving careful consideration to it. Thousands of families that do not keep fowl have here an opportunity. Instructions and suggestions are available in every province. The Dominion Department of Agriculture has a number of very valuable bulletins and every Province of Canada has a well organized Poultry Branch ready to give action. It is a most interesting problem.

The United States calculations are that the American hen on the average lays 70 eggs per year. Our Canadian hen, partly from climatic reasons, falls short of this, some calculate by at least 20 eggs. The profitable flock should show an average by at least 120 eggs.

**Back to Nature**

A hen is not supposed to have much common sense or tact, yet every time she lays an egg she cackles forth the fact. A rooster hasn't got a lot of intellect to show, but none the less most roosters have enough good sense to crow. The mule, the most despised of beasts, has a persistent way of letting people know he's around by his insistent bray. The busy little bees, they buzz; bulls bellow and cows moo; and watchdogs bark and ganders quack; and doves and pigeons coo. The peacock spreads his tail and squawks, pigs squeal, and robins sing and even serpents know enough to hiss before they sting. But man, the greatest masterpiece that nature could devise, will often stop and hesitate before he'll advertise.



Servant: "I can't get this 'ere tall light to burn, Sir."  
Country Doctor: "Oh, never mind. We're only going home, and I've got the constable safe in bed with lumbago."

□ □

FARM DRAIN TILE

□ □

**SEWER PIPE  
FLUE LINING  
HARD WALL PLASTER  
FIRE BRICK  
FIRE CLAY  
LIME, OF ALL KINDS  
COMMON BRICK**

**REINFORCED CON-  
CRETE CULVERTS  
WALL COPING  
WOOD FIBRE PLASTER  
PLASTER PARIS  
MORTAR COLORS  
CEMENT  
CRUSHED STONE, &c.**

QUOTATIONS AND INFORMATION FURNISHED UPON REQUEST

**Thos. Jackson & Sons**

DEALERS IN ALL KINDS OF BUILDERS' SUPPLIES

**370 COLONY STREET**
**WINNIPEG**

# Frost & Wood Mower

Hay Time is Money Time on the Farm—get a FROST & WOOD  
MOWER—it never fails you at a critical period



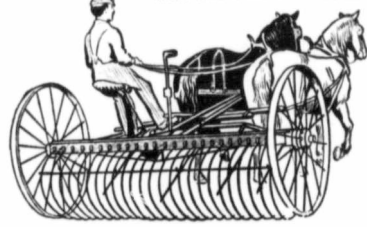
A Frost & Wood Mower starts to cut the moment the horses move

Use a cranky, wasteful, out-of-date mower and you may throw away a whole season's hay. Nearly 80 years' experience behind the F. & W. Mower makes it the surest and most economical for any hay crop.

It's a light draft machine. High quality roller-bearings ease the load at all friction points and heavy brass bushings are provided to resist wear. Cutter bar quickly raised to clear obstructions and knives keep on cutting at any elevation. An exclusive "internal gear" system keeps the transmission always in absolute alignment; no rattling of parts or snapping of cogs. Splendid materials and easy levers give long wear and supreme ease in handling.

## FROST & WOOD RAKES

Here is an all-steel, practically indestructible rake good for many years' of hardest service. Automatic dumping trip acts instantaneously. The teeth have a fine clearance and do not drag the top of the windrow.



Teeth are especially fine tempered steel, every tooth carefully tested before it leaves our factory. The Frost & Wood Rake will stand any test and has thousands of friends all over Canada.

Our nearest agent can advise you on any implement needed and give our folders and particulars on the above implements

# Cockshutt Plow Company, Limited

Winnipeg Regina Calgary Saskatoon

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# CUSHMAN Light Weight ENGINES

4 to 20  
H.P.



4 to 20  
H.P.

## For All Farm Work

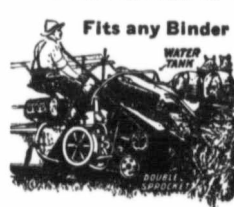
Cushman 4-Cycle Engines are built to run without trouble and to do things no other engines will do. They represent a great advantage over ordinary stationary engines, in vertical balanced design, material and workmanship. Highly efficient because of light weight, higher speed, reduced friction and lower operating cost.

Cushman Engines are the lightest weight farm engines in the world, yet they are even more steady running, quiet and dependable than most heavy engines, because of Throttle Governor, perfect balance and almost no friction nor vibration.

Direct water circulating pump, preventing overheating, even on all-day run. May be run at any speed desired; speed changed while running. Enclosed Crank Case, gears running in bath of oil. Equipped with Schebler Carburetor and Friction Clutch Pulley. Mounted on Truck or Skid as preferred.

Because of very steady speed, the Cushman makes the best power for Cream Separators or Milking Machine, or for electric lighting outfits.

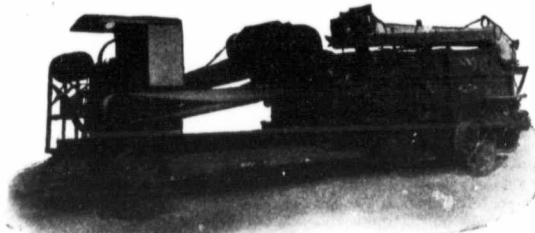
### 4 H.P. SAVES A TEAM ON THE BINDER



Fits any Binder

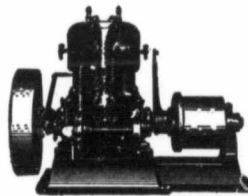
The 4 h.p. Cushman is the one practical Binder Engine. Its light weight and steady power permit it to be attached to rear of Binder.

With a Cushman you can cut from 8 to 10 acres more and with less horses. If in heavy or tangled grain, and the sickle chokes, all you need do is to stop the team; the engine clear the sickle. Binder runs the same, whether horses go fast or slow or stop. Binder will wear several years longer, as it is not jerked faster and slower by the horses. Attachments furnished for any binder.



### CUSHMAN COMBINATION THRESHER

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 Food. Equipped with the famous Cushman 2-Cylinder Engines.



8 H.P. WEIGHS 320 LBS.

Double cylinders mean not only double power, but steadier power. Each cylinder is same bore and stroke as in 4-H.P. Throttle governed and equipped with Schebler Carburetor and Friction Clutch Pulley. A splendid powerful engine for heavier work than 4 H.P. can handle, such as heavy grinding, small threshers, etc., or for any power from 3 to 9H.P.

Talk with your Dealer about the CUSHMAN LINE or write for FREE CATALOG

## CUSHMAN MOTOR WORKS OF CANADA 286 Princess Street Winnipeg, Man.

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

### THE CAUSE OF LEAKY BEARINGS

To find oil oozing out of bearings which are known to be quite sound mechanically is rather annoying. If the engine is hidden from view it may pass unnoticed for some time; but one of two things must happen—either the oil bill must go up or the engine go short. Some engines leak at several points, and the loss from the bearings goes to make up the general mess, and is suffered because the engine has achieved the reputation of being "dirty." There is one reason for leaky bearings, says a contributor, which I have never seen in print, and I have only met one motorist who has mentioned it, and that was nearly ten years ago. Before detailing it, I would say I do not consider it an absolute fault without any redeeming feature. I would also add that although I do not consider the four-cylinder exempt from these remarks, it is the twin V engine that I have observed most particularly.

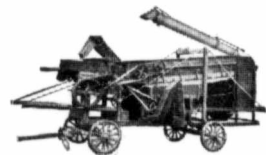
Most engines of this type, having brass bearings, take the end play or thrust on the plain surface formed by the ends of the bushes and the shoulder formed on the shaft of the boss of the flywheel. An examination of these parts will show how highly polished they become and "ground" to a very close fit. Obviously they are well lubricated so long as there is any oil on the crankcase, and this will be subjected to no mean pressure, especially if the belt or chain is out of line. In any case, there is a rapid oscillation of the crankshaft, which puts the film of oil on the thrust surfaces under pressure; as the shaft and flywheels are checked while moving from one side to the other. It so happens that, while some of the oil is engaged keeping the surfaces apart, the surplus is finding the line of least resistance. If the thrust surfaces are examined, a number of rings will be noticed. These rings are more or less a series of grooves and ridges, the ridge on one surface fitting into the grooves of the

other. Some are more definitely marked than others, but the finest offer considerable resistance to the passage of the oil as it is squeezed out from between the surfaces, and thus the pressure on it goes up. The movement of the shaft causes the bearing to scrape the oil off it and pile it up in the angle formed by the boss on the flywheel, and any oil that happens to be trapped here will be forced into and through the bearing. It is not difficult to see these surfaces, together with movement of the shaft and flywheels, constitute something akin to a pump.

I have said I do not consider it solely an evil, and it is for this reason: we know that certain manufacturers endeavor to create a vacuum in the crankcase partly because if the pressure in the crankcase becomes greater than that of the atmosphere, the oil will be forced through any bearing or joint that offers it an opportunity of egress. On the other hand, if the air pressure in the crankcase is less than that of the atmosphere, air will be drawn in via

the bearings, carrying with it the oil in the bearings, and so starving them; remembering there is air not oil drawn in. (This is obvious, as the oil cannot be made to flow against a greater pressure than that acting on it, i.e., the pressure in the crankcase.) I am of the opinion that, were it not for the pumping action mentioned above, the bearings would be starved.

### THE WONDERFUL—LIGHT-RUNNING Gilson Thresher



Saves Time—Money—Labor. Be independent of the gang. Keep your farm free of weeds. Do your threshing when you please, with a 6 or 8 H.P. Engine and the Wonderful Light-Running Gilson Thresher. Furnished with or without blower. Send for full particulars.

GILSON MANUFACTURING COMPANY LTD.  
Key Dept. D, Box 671, Winnipeg, Man.

# The Farmer and

By RICHARD A. HASTE



# His Automobile

The progress of a people may be readily determined by noting their means of transportation. In fact the facility with which man manages to move from place to place determines, to a large extent, his niche in the scale of civilization.

The invention of the locomotive and the application of the power of steam to ocean traffic made possible the development of the industrial cities that sprang up during the nineteenth century. It reduced the comparative size of the world by

money left by the late departed for a car that they might find a place in the social "swim," for without a car how could Mrs. Jones expect to find her name in the social columns? Nor would a cheap car do in this social drive—nothing less than a six cylinder, seven passenger or an electric limousine was adequate for the social stunt.

In the meantime, however, a few hard-headed manufacturers looked beyond the social horizon and saw the great field of actual utility waiting for the automobile—and

Not that he wanted to make a splash in the social pond but because he wanted to relieve the strain on his horse power, and at the same time increase his transportation facilities.

Discussing the subject of automobiles on the farm an exchange has this to say:

In the city, except for business, a car is a luxury and something to be indulged in only after having reached the stage where savings bank accounts do not have to be depleted in order to own one. The city man and his family have the street car and parks near by for recreation so that purely as a means of locomotion for pleasure a car is really not essential. This is not saying that a car is not most desirable in the city for just pleasure purposes, but it is not every city man that can afford that luxury. The farmer needs a car for business reasons, and he probably buys it for that reason as much as for the pleasure he and his family get out of it.

We have yet to see a farmer buy a car that ever regretted it, excepting in the case of those who could not afford having one, and, of course, had no right to take on the extra expense. And moreover, when one man in a neighborhood gets a car, others will follow just as sure as day follows night.

When John Jones breaks his binder, has to stop cutting for a whole day while he drives eight miles to town for repairs, he immediately realizes the need of a faster means of traveling than the "old grey mares," especially if it

before breakfast the next morning. He was out practically no time from work in the field, while Jones lost a whole day. And this is no injustice to the "old grey mares" either. They should have been home all the time drawing the plow instead of pounding along the hard roads to town. The automobile comes in for so many hurry-up trips to town and other places that it is just like the telephone. Those who now have one cannot see how they were able to live without one before.

Last year a friend of the writer's in the country bought a car. We were out to visit him in the fall and asked him how he liked his new machine. "Don't see how we ever got along without it," he said. "Almost every night after work we get in and take a drive, and it is nothing to make a trip of thirty miles, see what all the neighbors are doing and learn enough things about how we can farm better ourselves to more than make up the cost of our own machine."

In just what this man said lies the secret for the rapid increase in demand for cars in the country. It broadens the farmer's horizon, he is in touch with a bigger world, and instead of the young people wanting to leave the farm, they want to stay on it and make their farm better, like those of their neighbors whom they never knew so well before, and those neighbors may be thirty miles away. This is more or less from a very practical point of view and has nothing to do with the purely pleasureable side of car ownership.



Care Free—To go Anywhere.

bringing peoples together and facilitating the exchange of the products of different zones. It made possible the development of remote regions, it built up industrial centers and stimulated trade, but it did not help the tiller of the soil to any great extent. Remote from the great lines of steel the farmers still relied on the horse and the ox for farm power and transportation. While cities grew under the stimulating effect of congregated thousands, the farmer remained isolated, his social life consisting of neighborhood visits and an occasional trip to town. This condition prevailed until the advent of the automobile as an economic means of transportation. Today the moderate priced automobile is revolutionizing farm life. From being regarded as a means of pleasure to be indulged in by the well-to-do of the city, it has become a necessary adjunct of the farm home—a part of the farm equipment as necessary as a binder or a disk harrow.

It is scarcely five years since the automobile was accused of being one of the causes of the high cost of living. Men mortgaged their homes to secure a car for pleasure and widows spent the insurance

this was the farm. It was clear that if a machine could be made that would take the place of the extra buggy team on the farm it would not only be an economical addition to the farm equipment, but with the greater speed and comfort that it would afford, the relation of the farmer to the town as



The Business End of It.

well as his social life would be revolutionized.

As soon as the price of a five passenger car approached the cost of a driving team and buggy, the farmer began to buy automobiles.

is late in the summer and there is likely to be a frost any night. Bill Smith broke his binder the day before in the same way, telephoned the dealer in town the repairs he needed, and drove in for them

Along with the automobile has come the development in trailers to hitch on behind them. With one of these trailers a farmer can load in a sulky plow, drive to town and get

Continued on page 34



# Price Before the War \$650

# Price After a Year of War \$530

## Why Are We Proud To Advertise This?

On the very day that war was declared the price of the Canadian Ford car was reduced \$60.

But don't mistake the reason for this reduction. It was made in spite of the war—not because of it.

To understand this reason properly requires a knowledge of how prices of Ford cars are decided upon.

These prices are based on the estimated production for the coming year—never on the profits earned the preceding year.

For instance, some time before August 1, 1914 the Ford Canadian executives decided that the demand for Ford cars for the fiscal year starting Aug. 1st., would be about 30,000 cars. With this production it would be possible to reduce the price \$60.

So an announcement was made to the public at large that the prices of Ford cars would be \$60 less for the coming year.

It must be admitted that this was a remarkably sincere and substantial expression of faith in the prosperity of Canada and the Empire that prompted this Canadian firm to stake their entire business on the continued prosperity of their country.

Yet the Ford Canadian executives did not allow the war to interfere with their plans in the slightest degree. They considered the prosperity of Canada and the victory of the allied cause as assured.

This was emphasized a second time last August when the prices of Ford cars were again reduced by \$60.

Profitably to manufacture the Ford Canadian car at this lowered price requires a production of 40,000 cars during the year ending Aug. 1, 1916.

To quote from General Manager McGregor's own statement:

"If this company is able to manufacture and sell 40,000 cars between August 1, 1915 and August 1, 1916, we know that our buying capacity, the production efficiency of our manufacturing plant, and the distribution of over-head expense over a volume of

this size will enable us to reduce our prices \$60 per car and still make a reasonable profit for the company on this volume."

"If we are only able to manufacture and sell 20,000 cars, the reduction of \$60 per car would not be warranted and this company would be operating at a loss. It is the profit on the additional 20,000 cars which makes the price reduction of \$60 possible."

Although to build 40,000 cars means doubling last year's business, the Ford executives firmly believe that prosperity in Canada will be of such proportions this year as to create a demand for fully this much increased business. And the sales to date and the prospects for the next few months prove that they are correct in their belief.

Moreover, this action becomes increasingly significant when the advance in price of raw materials is taken into consideration. At least one automobile manufacturer has been obliged to increase the price of his car on this account. And the Ford Company again have an added burden in the increased duty on the few raw materials that they are obliged to buy in the United States. But all of these increases have been absorbed into manufacturing costs by the Ford Company as part of its obligations and its duty in times such as these.

It is another significant fact that while prices on other products have so generally been increased, the prices of Ford cars have been decreased.

So the Ford Company of Canada, is proud to advertise this reduction in price of Ford cars because it is a substantial, material proof of its faith in Canada.

The Ford Motor Company of Canada, Limited, is a Canadian Company owned in great part by Canadians, and as such believes in Canada. It believes in her prosperity. It believes in her final triumph and the triumph of the Empire in this tremendous struggle that is now demanding so much from her manhood and from the faith and support of her people.

And this Company is willing to back its belief to the last cent.

## Ford Motor Company of Canada, Limited,

## Ford, Ontario

Ford Runabout . . . .	\$480
Ford Touring . . . . .	530
Ford Coupelet . . . . .	730
Ford Sedan . . . . .	890
Ford Town Car . . . . .	780

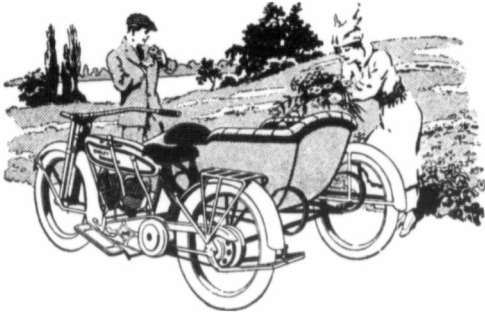
f. o. b. Ford, Ontario



All cars completely equipped, including electric headlights. Equipment does not include speedometer.

it sharpened. Or he can take the milk to the creamery, a crate of hogs or poultry to town; in fact can haul anything that will go into a wagon box. This means that the farmer must have good roads, and, just as soon as a farmer becomes a car owner, he becomes a good road enthusiast. Good roads bring

with the head of the family. The young man of the home no longer has his narrow-seated buggy and his driver with which he entertains his sweetheart Sunday afternoons. The motorcycle has taken their place. It is less expensive and more efficient. With side car for fair Ellen this modern Lochinvar can



In the Spring-time (with a motor cycle) a Young Man's Fancy Turns to Love

the farm closer to town, reduce the cost of hauling farm products to market and thus increase the farmer's profit.

We have noticed that as soon as a farmer gets a car, he and his family visit their neighbors to a greater extent. Mrs. Jones sees that Mrs. Smith has a piano. John Jones observes that Bill Smith keeps pure bred hogs instead of scrubs. He sees that he has got a system of keeping down weeds that he never heard of before. They get to talking things over and the first thing John Jones knows, he is following Bill Smith's methods of getting bigger crops and making more money. His wife can then afford the piano, they can get in an electric lighting plant for the farm, have a furnace in the cellar, water system throughout the house, and just as many conveniences as it is for the city man to have. These improvements require money, of course, but we have yet to see the man who followed intelligent improved methods that did not make money by doing so.

But the influence of this means of rapid transportation does not end

throw dust in the face of best horse ever pounded on a country road.

With this means of transportation jaunts of seventy-five or a hundred miles may be taken with as little thought as a drive of ten miles with the horse and buggy. Of course the side car is not quite so "cozy" as the narrow-seated buggy, but the motor cycle will stand without hitching and does not shy at the railroad trains.

The motorcycle too, has taken the place of the saddle horse for cases of emergency, hurry calls for the doctor, or a quick run to town for repairs in the rush of harvest or threshing.

Do not get the idea that the *Canadian Thresherman and Farmer* advocates indiscriminate buying of automobiles by farmers. Far from that, caution, extreme caution is advised. If you do not need and cannot use an automobile do not think of buying it. We would give the same advice regarding tractors or any other expensive equipment for the farm. If you can make it pay and can pay for it, buy it, otherwise look at it but let it alone.



Old Gentleman (engaging new chauffeur): "I suppose I can write to your last employer for your character?"  
Chauffeur: "I am sorry to say, Sir, each of the last two gentlemen I have been with died in my service."

# The Municipal Hail Insurance Commission of Saskatchewan

Hereby announces to all FARMERS interested in crops situated in rural municipalities operating under the Municipal Hail Insurance Act that the Commission is now in a position to extend its service by the writing of additional insurance to any amount up to \$5.00 per acre. Now that these arrangements have been completed every farmer should patronize his own institution by placing any additional insurance required with the Hail Insurance Commission.

Applications for such insurance should be made to the Municipal Secretary, the Local Agent or direct to the Commission.

Head Office:

**Farmers' Building**

REGINA

SASK.

# Warning!

The public are hereby warned against substitutes being offered for sale for "SUREDETH" Gopher Poison.

There is only one "SUREDETH." The package is readily distinguished by the picture of the gopher going over Niagara Falls in a canoe. There is none genuine without this picture on the package. Both name and picture are "Trade Marked," preventing anyone else from using them.

Other gopher poisons are being advertised by using terms in advertisements which might lead one to believe they were selling the original "SUREDETH."

Beware of substitutes! The genuine article gives 25,000 doses for \$1.00 and does 5 times the work of any other gopher poison selling at this price.

If your local druggist does not carry "SUREDETH," send direct to addresses given below and receive shipments by return mail post paid.

**Empire Chemical Company Limited** Dept. D

Saskatoon, Sask. or 708 Merchants Bank Building WINNIPEG, Man.

# Quality—Service—Value

have made the "LION" Brand of Rubber Belting and the "YELLOW FELLOW" Endless Thresher Belt what they are in Western Canada. They are the most popular power transmitters in use among Western Farmers and Manufacturers simply because they have never failed to make good, and to prove that there was *real character* behind their reputation. To save a lot of money, a great deal of time and an infinity of worry

GET EITHER THE



## LION BRAND

RUBBER BELT

OR THE

## Yellow Fellow

ENDLESS THRESHER BELT



You can get them from any thresher company doing business in Canada. They cost a little more than other fabrics that are a big risk from the day they are used in any power transmission, but we guarantee our goods against all disappointments from slippage or breaking. They are the "guards" that will never betray their trust under any pressure—at threshing or at any time.

### Gutta Percha and Rubber Limited,

NOT IN ANY TRUST OR COMBINE

Winnipeg, Fort William, Regina, Saskatoon and Calgary

#### BATTERY TROUBLES

Many gas engine owners find the batteries a source of trouble. A weak spark, due to a loose connection, worn out batteries, "frozen-up" batteries or a short circuit, gives very slow combustion and often fails to ignite the charge. In such cases E. R. Gross, of the Colorado experiment station, advises that the wire from the stationary electrode be loosened and the movable electrode scratched with it. If a bright purple spark is not produced, look for the above mentioned trouble.

Examine all connections including those at the switch and at the ignitor. The switch itself should not be loose but work tight. While the wire may be touching, and thus give a spark, there is a loss if all connections are not tight.

Worn out batteries cause trouble by weakening the spark. Usually it is only one or two cells that are worn out. A worn out cell not only does not help but actually hinders by cutting down the average strength of the series. In order to get full use of each cell an ammeter (battery tester) should be used. A good one may be purchased for one dollar and it will relieve all doubt as to the

strength of cells and save its cost in a year or two. Cells testing less than five amperes are of little value, although they may be used in cases of emergency. Such weak cells often show a tendency to become exhausted in a short time but recuperate after a rest, thus confusing the operator. The engine starts but will not continue to run. It is not necessary to test for voltage as this is not perceptibly lowered by use.

Cold retards the action within the cell, so that little or no current is given off. Hence the batteries are said to be "frozen up." Batteries that are standing out in cold weather should be thoroughly warmed before starting the engine.

A short circuit may occur at any point where the two wires come in contact with each other or the frame of the engine, provided the insulation is not perfect. In the battery box a short circuit often occurs by the cells rattling around until two zincs come into contact. It may also occur through careless connecting of cells. Such a short circuit will not only reduce the strength of the spark but if allowed to continue, will soon wear out the cells affected. Cells should be packed into box with paper, rags, straw or cotton waste to keep them firmly in place.

#### FISHING LODGE ON ORIENT BAY

The Canadian Northern Railway has under construction on Orient Bay a thoroughly modern and comfortable Fishing Lodge, which will be ready for occupation on or about July 1st. This lodge, with accommodation for twenty-five guests, will be operated as an Annex of the Prince Arthur Hotel at Port Arthur, under the same management, and can be made use of only by previous arrangement, although the manager will be pleased to combine small parties whenever possible so that those who desire may take part in the wonderful sport with rod and fly to be had on Nipigon waters, or may enjoy a simple open air life in the natural surroundings of this spacious Forest Reserve.

Summer tourist fares are in effect from all principal points on the Canadian Northern Railway; also special week-end fares apply from Fort William and Port Arthur, which will enable passengers, arriving at Port Arthur via the Great Lakes and other routes to make an inexpensive week-end visit to these famous fishing waters. For visitors over the week-end there is splendid fishing to be had close at hand in the vicinity of the Virgin Falls on Lake Nipigon and in the Castagany River.

For rates, accommodation and full particulars write, or wire if necessary, to the Manager of the Prince Arthur Hotel at Port Arthur.



## GASOLINE

We are refiners and Manufacturers of Gasoline, Coal Oil, Distillate, and all Petroleum Products

Let us quote you on any quantity from a can to tank car

# OILS

Continental Oil Co. Ltd.  
WINNIPEG

Branches: Brandon Regina Saskatoon  
Swift Current Calgary Lethbridge



Weight only 4,800 lbs.  
 Brake Test, 24 h.p.; Draw Bar, 12 h.p.  
 It is a Kerosene Tractor, built especially to operate on the heavier fuel.  
 It has Twin Cylinders, cast on bloc.  
 Ignition — High Tension Dual Magneto, with Automatic Spark Advance.  
 It has a Cooling System of the most approved type.

When plowing, is Self-Steering, and will turn in a 25-ft. radius.  
 Easy to operate—Economical on fuel.  
 All working parts are very accessible and easily kept in perfect adjustment.  
 Transmission—Sliding Gear, with Shifts for one speed forward and one reverse.

Gasoline at the end of January, 1916, was 21½¢ per gallon. The price of gas is soaring all the time. It is highly probable that it will touch the 50¢ per gallon mark before the end of the year, and at a time when you will want it most. When you buy a tractor you need to figure out the cost of operation. Fuel should be one of the chief determining factors. The initial cost of the tractor itself is but a minor consideration. With the positive advance of gasoline, farmers will naturally turn to a low-grade oil as a substitute. The Waterloo Boy One-Man Tractor, which is specially constructed to operate on low-grade oil, will give gallon for gallon equal and even greater efficiency at a consequent lower cost per acre. It should not be overlooked that the Waterloo Boy is a Kerosene One-Man Tractor, and we guarantee it to fulfill every requirement we claim for it.

The Waterloo Boy will pull a light engine gang with three 14-inch plows in stubble any depth you wish. It will pull two 14-inch plows in any prairie breaking. On your summer fallow it will handle a disc with harrows behind at from 2¼ to 3 miles per hour. It will drive a 24-46 thrasher with all attachments at a capacity of 700 bushels of wheat to 1,400 bushels of oats per day. The Waterloo Boy performs this work with efficiency, economy and durability. All in all, it is Special Value. Under the circumstances it will pay you to obtain full information, price, etc. Mailed free. Write us to-day. We also handle Gas Engines, Grain Grinders, Cordwood and Pole Saws, Electric Lighting Machinery, Hand and Power Washing Machines, Grain Elevators, Pump Jacks, Small Threshing Machinery, Belting and Threshers' Supplies. Live Dealers wanted in Territory Where We are Not Represented.

**THE GASOLINE ENGINE AND SUPPLY CO. LIMITED,**

**104 Princess Street, WINNIPEG**

## GASOLINE IS GOING UP!

That is why you should be interested in  
**The "Waterloo Boy"**  
**Kerosene One-Man Tractor**

*The Manufacturers' Guarantee Fully Protects You*

The Gasoline Engine and Supply Co.,  
 Winnipeg, Man.

Noremac, Sask., Jan. 4, 1916.

Dear Sirs:—In reply to your enquiry as to my experience with the Waterloo Boy tractor, I wish to say that I unloaded the machine at Kinderley and drove it home 30 miles. I then broke about sixty acres of very heavy land. You may judge for yourself when I say we always use 6 horses on one 14-inch plow. I pulled 2 14-inch plows at a depth of 4½ inches, which would mean a good ten-horse load, using four and a half gallons of kerosene per acre and barely a quart of Standard Gas Engine oil per day. I then diced the land, made two trips to Kinderley. In one case I hauled 310 bushels of wheat on three wagons and one empty oil tank behind, returning with three wagons loaded with lumber and oil tank containing 450 gallons of kerosene, using large pinons, making an average speed of three miles per hour.

After threshing my grain, I hauled it with two grain tanks up several steep hills to the elevator. In all, my roadwork would amount to about 250 miles.

I never had an expert, not even to start the engine. After looking at the connecting rod bearings, I took a thin piece of brass out and the other would not stand taking up at all. I never touched the main bearings and never had to tighten up a nut on the frame since I got it.

I have now enlisted to go to the front, and found no difficulty in disposing of my tractor for \$300.00, and can thoroughly recommend it to any person intending to buy.

Yours very truly, (Signed) JAMES H. GRUBB.

## The Curse of an Inheritance

(The Boy on the Farm)

*The rich man's son inherits lands,  
 And piles of brick and and stone  
 and gold,*

*And he inherits soft, white hands,  
 And tender flesh that fears the  
 cold.*

*Nor dares to wear a garment old;  
 A heritage, it seems to me,  
 One scarce would wish to hold in  
 fee.*

—Lowell.

**T**HE rich man's son is seldom the farmer's son, but the farmer too has caught the spirit of the times and is offering a life time of toil and hardship that he—no not he, but his son may inherit lands and piles of brick and stone and gold. Again and again we see some good father spend a lifetime of effort, at the sacrifice of health, happiness and perhaps a toiling wife or two, that he may be able to give to his children, at the end, of lands and gold, and in his blindness, he may truly believe that he is leaving them a kindness and a blessing. I could name scores of sons who have received these late worldly gifts, big, little and of every kind, but we merely wish to call attention to some of the average farmer's cases.

Down the road a mile there lives a young man and his small family, honest, industrious, ambitious, enjoying perfect health. He is the owner of the best farm in the neighborhood, the gift of his father. Already he is heavily

in debt, though struggling hard to turn the tide. He says, "Father did all the business, he tried to teach me how to save money but never how to make money." In fact, so anxious was his father to save and accumulate a goodly gift for his son, that the son barely received a common school education and though now owner of a ten thousand dollar farm, he has not so much as a high school education.

He is not fond of farming but gives no other vocation a single thought because this was the choice of his father, and the gift of his father, and so he may fight for years a losing fight, whereas half the value of the farm spent for an education in some special line (agriculture, if he desired) would have enabled him, with his excellent health, ambition and loving Christian spirit, to have accomplished something really great.

A little further on down the valley lives another young man, a model young man, so far as morality is concerned. From his mother, particularly, he inherited a fine voice and an extreme fondness for music. He became honored (even in his own country) at an early age for his singing. As a mere boy he was teaching vocal music to the neighbors' children and to larger classes in nearby villages. Later he left his

duties on the farm and took some special training under competent teachers and became one of the best chorus leaders we have ever heard, outside of the highly professional class. Just at this time his father, who owned a few hundred acres of cheap land, seemed to need his son very much on the farm. He offered the son a half interest in the farm. The son accepted as the right and obedient thing to do. He and his wife, who is also a beautiful singer, have had their noses on the grindstone ever since, and, instead of thrilling thousands of people with their voices at a handsome salary for doing that which they truly enjoy, they are milking scrub cows and selling country butter at twenty-five cents per pound. He, too, is the only heir of some four or five hundred acres of land

and yet is without a high school education.

In the next valley west, a father raised a large family of boys and before his death became the owner of a large body of land, well stocked and improved. The boys married and lived on the farms working for their father as hired help, the father transacting all the business. The father died. Each son received as his share a good farm with stock and implements. To-day there isn't one of them worth five hundred dollars. Their father's gift held them bound until it had slowly slipped away from them. Then they took up other occupations, one a preacher, another day laborer, one a this and one a that. One, though the most industrious man I ever knew, went down, down, until at the burning of his home, it was neces-

## Cast Iron Breakages Welded

We can save you many dollars—not to speak of loss of time and endless vexation—if you will send us all your metal breakages. We can do any repair job that can be welded by the Oxy-Acetylene process in Cast Iron, Steel, Bronze, Malleable Iron, Cast Steel, Copper, Aluminum.

WE OWN AND OPERATE THE

### Oldest and Largest Oxy-Acetylene Welding Plant in the West

Do not hesitate to send us your Broken Cylinders, Cylinder Heads, Connecting Rods, Crank Shafts, Engine Beds, Bull Pinions, etc. We will return them as good as new, and stronger, where mended, at a great saving.

We do not attempt to repair certain castings on which a saving cannot be effected. Send your inquiry now. Do not wait until spring before you have your work done. We will be pleased to give you figures on any work before sending to us.

**ENTRUST US WITH YOUR WORK—SATISFACTION POSITIVELY GUARANTEED**  
 ALL INQUIRIES PROMPTLY AND CHEERFULLY ANSWERED BY MAIL

## Manitoba Welding and Mfg. Co.

58 Princess Street

(Established in 1911)

WINNIPEG



sary for his neighbors to clothe his children for a time. This one, however, after striking the flat bottom, now, with the blood of his father in his veins, is struggling upward and if he were a young man instead of an old man, he might reach some degree of success as a farmer.

We are not mentioning the many, many cases of which we are all familiar of sons receiving large fortunes and in a short time squandering them in riotous living, but only those slow tragedies almost unnoticed in the lives of children who have truly tried hard to win.

A young man, now twenty-five or twenty-six years old, received at the time he became of age, a good, large bottom farm. (Not a high school education.) He is strong, ambitious, industrious. He had and has yet a yearning desire to follow another worthy vocation. Many times in the last four years he has attempted to sell the farm and engage in the occupation of his choice. Each time his father has learned of his intention, headed him off and persuaded him to stay with the farm. Each time he dares to step forth and accomplish something for the world outside, he is whipped back, in a way, by his father to the farm life he detests. And so the fight goes on. It isn't ended. We're watching it now. He isn't making any money. His mortgage grows larger. Sometime the farm will be gone, youth and ambition also, I fear. If he could but be freed now, he might without a penny, take up the work of his choice and become famous in the work wherein his heart is found—"the heart giveth grace unto every art," but now he labors under the curse of an inheritance.

I have no intention or desire to encourage any boy to leave the farm or any other occupation of his father, if that occupation can be his choice also. It is perfectly natural that we as fathers should desire that sons should take up our unfinished work and carry it forward to a higher degree of perfection, but we must realize also that the child's education must first prepare him to successfully handle the business and next his heart must be in the business or the business changed for the heart can rarely do so. In every man's heart there is a strong, conscious yearning desire to do something and do it well. That thing each man should be doing, for it matters not what it may be, if he is able to do that thing well or better than the other fellow, he may demand his own price. It matters not whether he may know anything else or not. If he can know more about a toad, frog or a grasshopper than any

one else, he may be and will be famous.

So much is said about keeping the boy on the farm that it would seem a crime and a disgrace for a boy to leave it. I wish to say that it would be a great crime against this nation if it were prevented. If all boys in the past who were born on the farm should have been kept on the farm, then this world would have been robbed of some of the greatest editors, teachers, preachers, doctors, lawyers, statesmen and national leaders the world has ever known. This ebb and flow of country youth to the city and back again is as necessary as the ebb and flow of old ocean's tides. Great responsible positions are awaiting to be filled in the social, mercantile and political world and there is no blood in all the universe so able to fill them as that which flows from the country side.

More and more as we see some poor lad, from an humble home, toil and struggle through hardships and poverty to secure a college education, and then in a few years time far outstrip the boy, half educated, toiling blindly upon his inherited acres, we are convinced that the latter is indeed incumbered and handicapped by the curse of an inheritance. A.F.

**WORK**

Let me but do my work from day to day,  
In field or forest, at the desk or loom,  
In roaring market-place or tranquil room;  
Let me but find it in my heart to say,  
When vagrant wishes beckon me astray,  
"This is my work—my blessing, not my doom;  
"Of all who live, I am the one by whom  
"This work can best be done in the right way."  
Then shall I see it not too great, nor small,  
To suit my spirit and to prove my powers;  
Then shall I cheerfully greet the laboring hours,  
And cheerful turn when the long shadows fall  
At eventide, to play and love and rest,  
Because I know for me my work is best.

—Henry Van Dyke.

The peevish youth examined the bill of fare critically for a moment, till he found something that was not on it.

"Waitah!" he snapped, "Do you serve lobsters here?"  
"Y—yessah, boss," the negro assured him. "We serve everybody. What'll yo' hab?"

**REMEMBER THE WORD**

**"National"**

WHEN BUYING OILS AND GREASES

"National" products are made in Canada at our Petrolia, Ontario, refinery. Superior crude and modern methods of refining, account for their superiority over competitive products.

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- WHITE ROSE MOTOR GASOLINE
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**Canadian Oil Companies**

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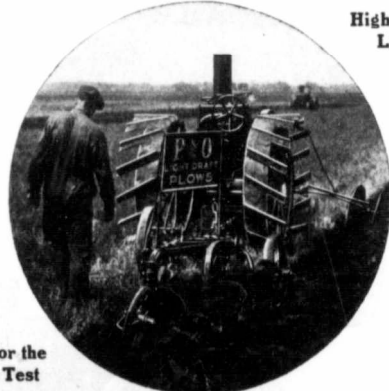
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**LITTLE GENIUS POWER LIFT ENGINE GANG PLOW**

High Level Lift



Built for the Field Test

The safe plow for you to buy for use with your little tractor is the plow that has already demonstrated its ability to do efficient work; that it is easily controlled by the engineer; and that it calls for the minimum draw bar pull from your engine. The P. & O. Little Genius has demonstrated in field test after field test, in the hands of experts, and in the hands of just ordinary plowmen, that it can and does deliver the goods. It has stood the field test, under all conditions under which plowing may be done. You should write for circular describing this remarkable little plow—or better still, write for our new "Power Plow" catalog, which describes one of the most complete line of engine plows ever built.

Made by PARLIN & ORENDORFF CO., Canton, Ill., U.S.A.

**International Harvester Co. of Canada, Limited.** Sales Agents for Canada

Winnipeg, Brandon, Regina, Saskatoon, Yorkton, North Battleford, Estevan, Calgary, Edmonton, Lethbridge

## Time flies —waiting is wasting

You who have waited—why?

Are you one of those who wouldn't get a car until you could get a *real* one—without paying too dear a price?

Your wait is over—here is a real automobile—every inch an Overland—for \$850.

Have you been waiting for a small car which you could own without apology for its appearance?

Wait no more—the \$850 Overland is a beauty.

Do you wait for a small car, which is roomy, comfortable and easy riding?

No need to wait longer—the \$850 Overland proves that comfort does not depend upon size.

Almost everyone with automobile experience has realized the many advantages of the small car.

Men who own both large and small cars use the small one constantly—drive the large one only on occasion.

But until now small cars have been only a convenience—a utility—lacking in appearance, comforts and equipment.

The \$850 Overland has changed all that—

It has the small car advantages—the big advantages of economy—the delightful advantages of ease of control and small turning radius.

But it also has the advantages heretofore found only in the larger, more expensive cars—beauty—finish—style—comfort—every convenience of complete equipment.

Nothing is lacking—not even the thrill of speed and abundant power.

Catalog on request. Please address Dept. 662

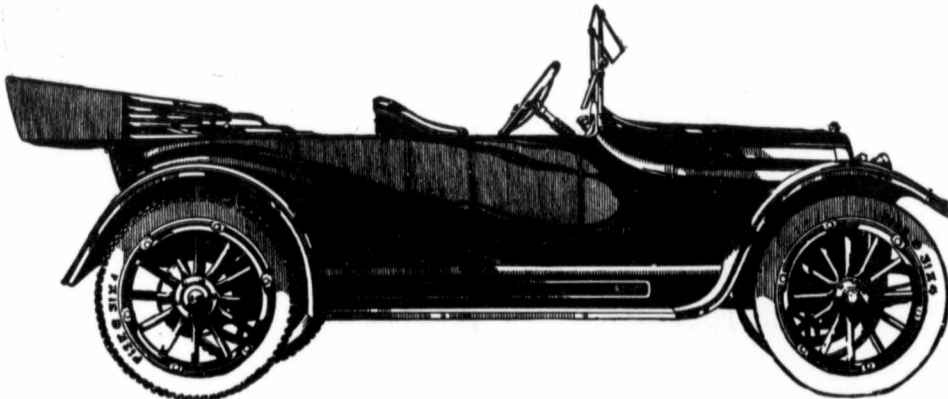
**Willys-Overland, Limited**

Head Office and Works, West Toronto, Canada

*Overland*  
TRADE MARK

**\$850**

Roadster \$825  
Model 75 - f.o.b. Toronto.



## Cheer up —get this Overland

People who have never driven a car—

People who have driven small cars— with apology and discomfort—

People who have driven the larger, more expensive cars—and counted the cost—

People with no experience—people with much experience—people of small means—people of wealth—all find this \$850 Overland their ideal automobile.

That's why it has swept the continent like a prairie fire—taxing to the utmost our enormous capacity which is easily double that of any other producer of cars of like size and class.

No need longer to ask "Can I afford a car?"

The price of this Overland is \$850 and it is absolutely complete to the last detail—there is not a single extra to buy.

And it is the last word in upkeep and operating economy.

No need longer to ask "Will I be satisfied with a small economical car?"

You will drive the \$850 Overland with pride in any company—on any occasion.

You will be proud of its appearance.

The comfortable roominess and its easy riding qualities will be another source of pride.

Its power and speed, and all round performance, will give you thrills which more than anything else arouse the owner's pride in his car.

So here's what you've waited for, there's nothing left to ask.

There's just one thing left to do.

See the Overland dealer—have him show you the car and demonstrate it.

Then place your order without delay for the buying is already heavy and there is a limit even to Overland production capacity.

*Overland*  
TRADE MARK

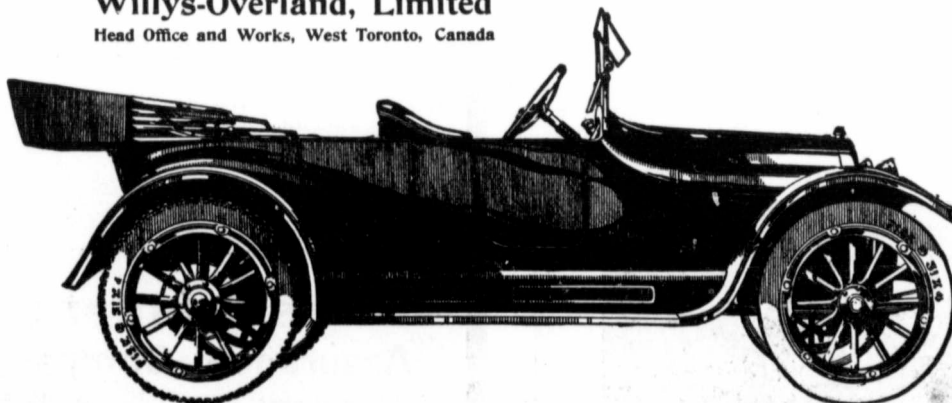
**\$850**

Roadster \$825  
Model 75 - f.o.b. Toronto

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**Willys-Overland, Limited**

Head Office and Works, West Toronto, Canada





**STARTING IN THE DAIRY BUSINESS**

To successfully start into dairying with a herd of six pure-bred cows of a pronounced dairy type, no matter what breed, would require quite a little capital and knowledge of handling to make it a success. It is possible to buy registered cows with nice sounding names and still not have any better foundation for a herd than if one starts with the best ordinary cows of the breed he prefers, then grades and builds up a herd by breeding, testing and selection. If one already possesses a number of fairly good common cows it would be best to select several of the best and replace the others by one or two pure-bred cows whose dam, grandam and great grandam have made suitable milking records, and whose sire comes from great ancestry.

A cow inherits her general qualities as a milker from her immediate ancestors and, of course, the farther back the strain of noted ancestors runs the better the type of dairy animal she will be. If this method is followed the grade cows will go a long way toward paying expenses while a strain of pure bred is being built up from the heifers of pure-bred cows, and it will be only a few years until the poorer cows of the herd will be replaced by better stock.

In case no cows at all are owned it will be necessary to buy all new stock. Here, again, I believe it would be advisable to invest a larger sum in one or two pure-bred cows of proven qualities and make up the balance of the herd from the best grade cows or two-year old heifers that can be procured in the community. The advantage in purchasing grade cows rather than heifers would be the fact that there would be an immediate income, while a heifer does not reach her full milking capacity until the fourth or fifth year. In buying the grade cows I believe it would be

better to pick up the best that can be purchased in the community rather than go where you are not acquainted. Knowledge of the herd conditions is a valuable asset in choosing healthy cows. The number of calves raised is a pretty good indication of absence of barrenness in the herd. If there is a cow testing association in the community it will be well to make arrangements to join the association and seek the advice of the man who attends to the testing.

The choice of breed should depend more on the likes and dislikes of the individual dairyman, but at all events it is not advisable to start a herd of Jerseys or Guernseys in a Holstein community, or vice versa. If a community establish a reputation for one bred of dairy cattle it will add very much to the salability and value of the young stock sold as well as permit the exchange in the use of the sire. A prepotent sire with high record ancestry is a valuable asset to the community and should not be sold out of it until its period of usefulness is past.

If in starting this herd of six cows it is not intended to purchase a sire, it will be advisable to pay a fee for the service of some good pure-bred bull in the community. If a sire is purchased it must be remembered that this one animal influences the future of the herd more than any one of the other six; and nothing could prove more disastrous than to purchase a scrub. His pedigree should be gone over thoroughly and especially his immediate female ancestry. It is to these you must look for ability to transmit quality to his progeny. Great cows among his remote ancestors are desirable, of course, but to be depended upon they must not be too removed to be a prepotent factor in shaping the character of his offspring. If he has been used it will be well to investigate the qualities he has transmitted to his heifers. An animal of this kind



**WAR-TIME PROFITS**



are not all in the hands of the grafters and the ammunition "brokers." There are profits to be honestly secured in war that will continue through all the ages of subsequent peace by the man who knows how to handle a few well-bred dairy cows and how to market the last ounce of butter-fat these cows are capable of producing. The

**"MAGNET" Cream Separator**

will do it, and in doing it will save much time, lots of money and all worry.

**THE MAGNET**

**The Clean SKIMMER**

is not the lowest priced machine made but it is the best value in any Cream Separator known. Quality, Character and the highest possible efficiency is first guaranteed by the severest tests, then a modest profit to the manufacturer is added over bare cost of material and construction.

The "Magnet" is made in Canada by Canadian engineers who have first of all gained their experience on Canadian dairy farms in all essentials to a separating machine that fits in perfectly and economically to every requirement. The result is the "Magnet"—a separator that more than fulfills the last promise made in its name.

We will easily prove what we say by showing you the "Magnet" in your own dairy. The design and construction of the machine is what has compelled us to double the output of our factory this year.

**The Petrie Mfg. Co. Ltd.**

Head Office and Factory: Hamilton, ONT.

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Assets over \$2,500,000

Losses Paid Nearly \$40,000,000

**Don't Worry Over Hail Storms!**

Protect your crop with a policy with this company. We have had over 80 years of honorable dealings with Canadian Farmers, and during this time have paid losses of nearly 40 million dollars—and every loss has been promptly adjusted.

**LET US TAKE THE RISK**

It is important that you choose a strong company, one that will settle your losses promptly—therefore choose this company for your protection. Our adjustments are fair and square and we are proud of our record for making prompt settlements.

*It Costs No More to Insure Early*

Write to-day for full particulars or see our Local Agent

**British America Assurance Company**

Hall Department

WINNIPEG



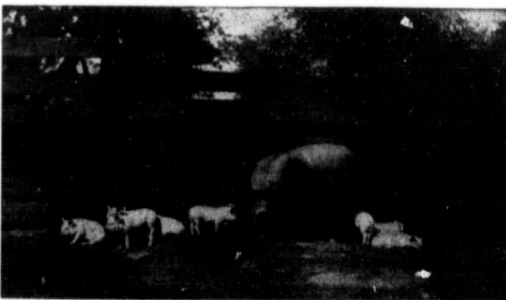
will cost more money, but he is worth it.

If I may suggest my own choice of breed, it is the Holstein. I have had experience with the Holstein, Jersey and Guernsey, and unless the community is a Jersey or Guernsey community I would select the Holstein. As a breed they are hardy, strong in constitution and good breeders. The calves are large at birth, thrifty and will make a rapid healthy growth. The milk is not quite so rich, but there is more of it, and by careful breeding and selection the herd test can be raised to a high standard. They are a larger animal, consume lots of roughage and make it into butter fat cheaper than the other breeds.

Then there is the added advantage of being able to sell the surplus heifers, steers and culls to the butcher or feeder at a good price. By-products such as these should by no means overshadow the main purpose of producing butterfat, but they must not be lost sight of in choosing a breed. As the heifers come on, each should be tested out thoroughly before deciding whether to keep her to help build up the herd or whether to pass her on with the culls. Sometimes a little variation in feeding will produce better results.

As to the number of brood sows that can be kept with a herd this size, much will depend upon the facilities for summer pasturage and production of other feeds upon the farm. The first consideration of the dairyman should be to raise his calves in the best possible manner, feeding them all the milk they require to make a healthy rapid growth; then whatever skim milk is left over should go to the hogs and enough of them kept so there will be no waste. Hogs are a profitable by-product of the dairy where cream or butter is sold and they will make a neat profit to the dairyman for handling them. If hogs are not already on the farm it would probably be well to start with only two or three sows at first and then regulate the number of sows kept each year for breeding purposes according to the conditions and feeding facilities.

Paul H. Eaton.



A mine of wealth for Canadian farmers that has barely been tapped.

### THE KIND MORE THAN THE BREED COUNTS

The kind of cows is of more importance than the breeds and by the right kind of cows I mean good cows. It is not a question of which breed produces the most butter fat, because high producing cows are found in all breeds. What we should concern ourselves with is whether we have good or poor cows. If we have good producing cows, regardless of the breed, they will return a good profit for the feed and labor.

The selection of the breed must be determined by the breed in the community and the owner's personal preference. However, I would consider personal preference last. The advantages of community breeding are such that no one can afford not to take advantage of them. Among the advantages offered, are the opportunity for the breeders to cooperate in buying good bulls and then exchanging them at the end of two or three years instead of sending them to the block. Then there is the advantage of selling surplus stock. The community becomes known as a center for that particular breed and buyers will come much quicker to a community where only one breed is kept because it is very easy to buy cattle in car load lots there. Also it is possible to form a local breed association to promote the interest of the breed in that section.

In my judgment I think the proper way to dispose of the skim milk is to feed it to the stock. One brood sow, with two litters of pigs each year for each cow kept, will make good use of the skim milk produced.

### START THE SAUSAGE BUSINESS

A few people are making a large income from their country style of sausage, sold direct to the consumer, but there is an outlet for considerably more. When the hog market gets too low there is an opportunity for the grower to make money curing his own meats and selling direct to the consumer.

# 98% Of the World's Creameries Separate their cream with a DE LAVAL

TEN YEARS AGO THERE WERE A DOZEN DIFFERENT MAKES of creamery or factory separators in use. Today over 98 per cent of the world's creameries use De Laval Separators exclusively.

IT MEANS A DIFFERENCE OF SEVERAL THOUSAND DOLLARS a year whether a De Laval or some other make of separator is used in a creamery.

EXACTLY THE SAME DIFFERENCES EXIST, ON A SMALLER scale, in the use of farm separators. Owing to the fact, however, that most farm users do not keep accurate records as the creameryman, or test their skim-milk with the Babcock tester, they do not appreciate just what the difference between a good and a poor separator means to them in dollars and cents.

NOW IF YOU WERE IN NEED OF LEGAL ADVICE, YOU WOULD go to a lawyer. If you were sick you would consult a doctor. If you had the toothache you would call on a dentist. Why? Because these men are all specialists in their line, and you rely upon their judgment and skill.

WHEN IT COMES TO BUYING A SEPARATOR WHY NOT profit by the experience of the creameryman which qualifies him to advise you correctly? He knows which separator will give you the best service and be the most economical for you to buy. That's why 98 per cent of the world's creameries and milk dealers use the De Laval exclusively.



THERE CAN BE NO BETTER RECOMMENDATION for the De Laval than the fact that the men who make the separation of milk a business use the De Laval to the practical exclusion of all other makes of cream separators.

Your local De Laval agent will be glad to let you try a De Laval for yourself on your own place. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

## DE LAVAL DAIRY SUPPLY CO., Ltd.

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

MONTREAL PETERBORO WINNIPEG VANCOUVER  
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

## Ask Any Policyholder

of The Great-West Life what he thinks of his Policy.

Over 59,000 well-satisfied Policyholders endorse The Great-West Life.

Over \$119,000,000 of Insurance is now held in force.

This must mean VALUE.

## The Great-West Life Assurance Co.

HEAD OFFICE - - WINNIPEG

Twelve Months of this Magazine for \$1.00

## Horses Do Not Reach Full Maturity Until Six Years Old

### CARE OF THE COLT

**F**OR a period of thirty years I have had more or less to do with horses. I have studied them with utmost care from colthood to maturity and what I have to say here regarding their development will be found correct. A knowledge of how horses grow is of great assistance in the production of high-class animals. They continue to grow in height up to the age of five years, but they do not reach full maturity until about six and one-half years old, although something depends upon the class of horse, as the draft breeds mature more quickly and become "set" at an earlier age than those belonging to the light-legged division.

It is often reckoned that a horse has arrived at maturity when he becomes "full-mouthed," as it is termed, but that is not the case, for at that age he is still not fully matured. Horses get their "full mouth" when the last pair of milk teeth has been shed and all the permanent incisor teeth are up, this occurring when they are between four and one-half and nearly five years old, the exact time being when the corner permanent incisors displace the corresponding milk teeth. The time varies somewhat with different animals. Those which are well-developed and were born early in the season, and have been generously fed during colthood, generally change their teeth some months earlier than horses that were more backward in their growth.

In extreme cases, some horses may be as much as six months later than others in shedding their milk teeth. Those that change their milk teeth comparatively early are commonly said to have a "forward mouth." In the gelding the tusches have begun to protrude when the permanent corner incisors make their appearance. The last are, however, only just

through the gums when a young horse establishes its claim to be described as "full mouthed" and his mouth, as regards the teeth, is not nearly "full" or perfect until the animal is five or five and one-half years old, as it takes some time for the upper and lower corner teeth to meet after their eruption and to come into wear. From three-fifths to three-fourths of the total growth of a horse is made by the foal in the first year of its existence. Of the remaining portion of the growth, about half is completed during the second year, while the rest is distributed over the third, fourth and fifth years. These facts indicate how important it is that foals and yearlings should be liberally fed and well looked after, in order to promote proper size and development. Two and three-year-olds do not require so much care, as most of the growing is done by this time, and they can get along with a relatively less nutritious diet, especially if they have been well fed and cared for during colthood and the yearling stage.

Certainly it is only during the first two years that the rate of growth can be perceptibly influenced by generous feeding and good care. After that but very little influence can be exerted in this direction, except in respect to bringing about more thickening and promoting muscular development. The legs of a colt grow very little in length after the end of the first year, as one can readily understand in view of the fact that the colt is born with such disproportionately long legs, but they increase considerably in thickness.

As young horses approach maturity, they thicken or furnish increasingly, becoming broader or more set in shape and filling out in all directions, while they also "let down" very considerably, the body becoming closer to the ground. This furnishing and letting-down



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process alters them a great deal and improves their appearance. In sizing up the make and shape of three and four-year-old horses one should always make allowance for the improvement which they will still undergo as the result of filling out and letting down. The improvement made in this direction is, to speak broadly, most marked between four and five years old, but it will very commonly continue until the animal is six and one-half years old.

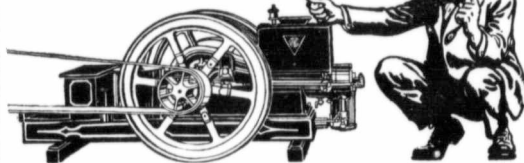
Horses muscle up a good deal after they have completed their fifth year, which serves to give them a stouter appearance. Young horses under five years old that are leggy or light in the middle or narrow in their quarters may in particular be expected to improve in their shape when they have furnished more and let down. Sometimes they will improve out of all recognition in such cases. A thin neck, too, is a fault which one may reasonably expect a young, immature horse to outgrow as he reaches his prime. To condemn a four or even a five-year-old animal as being an inherently poor one and short of constitution, when he will not put on much flesh in response to good feeding, as is sometimes done in cases of this kind, is often most premature, for there is, under these circumstances, every chance of the horse gaining normal condition, proving himself a good thriver, and filling out nicely about the flanks and belly when he is a year or two older, as the trouble is, as likely as not, merely a temporary one, due to immaturity.

Hand in hand with the outward improvement made by a young horse as he reaches maturity, there goes an increasing access of

strength and improvement in his working capacity. In fact, horses continue to get stronger and tougher for some while after they have ceased to fill out and improve outwardly, and they do not actually attain their prime in point of strength and stamina until they are close on to seven years old, this applying at any rate in the case of the light breeds.

It is very generally considered that a horse has reached his prime and found his full strength by the time he becomes six years old, but that is hardly correct, for he is then only beginning to arrive at his prime, and not until he is seven years old, or nearly so can a horse be reckoned as fully "seasoned," although he may be quite equal to doing a full share of constant work already a year earlier. His prime continues until he is nine, as regards his innate working powers and strength, assuming that he remains sound and that he is not prematurely worn out by excessive severe work or was not overtaxed in his youth. At nine years old the horse will, of course have lost some of his erstwhile freshness of appearance, and his legs will in all probability show the effects of wear to a greater or lesser extent, so that he no longer looks his best, despite being so, while his market value will also have depreciated to a certain degree. After nine years old, the working powers begin gradually to decline, though perhaps not very perceptibly so for a couple of years. Horses, however, vary widely in regard to the age up to which they will retain their usefulness for work fairly unimpaired, and some will last years longer than others, all according to their constitution. H. W.

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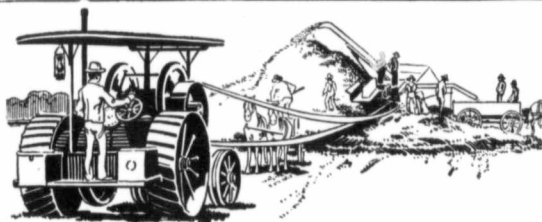
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Mike: "Tis that, Sor—a tirrible warr. But 'tis better than no warr at all."

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**USING PURE BREDS ON THE FARM**

It seems to me, in the light of my own experience, that the use of pure-bred draft mares for farm work should be more general. There is seldom any reason given for not using pure-bred mares save the high first cost. But the amount you would have to invest to stock your farm with pure-breds should have no influence on your decision, but the dividends the investment will pay should be the first consideration. I believe that if you will compare the value of the pure-bred mare as a producer with that of the grade, you will see that the former is the better investment. The pure-bred mare can do the same work as the grade mare at the same cost for feed and care, and every colt she produces has a much higher market value than the colt of the grade mare.

Suppose you pay from \$500 to \$800 for a pure-bred mare and breed her to a high-class sire. With proper feed the offspring, when four years old, will be of equal value and bring the original cost of your mare, which is all you could expect the offspring of any animal to do. Then, isn't it reasonable to consider that you can continue to raise pure-breds from your mare, likewise from her female offspring, with no more expense than you would have in raising grades, but with much greater possibilities of handsome profits? It has been proved beyond doubt that the price possible to be obtained for grades is very limited, while most breeders of pure-breds are getting advanced prices for their surplus stock that has cost them no more to raise than it would have cost to produce grades.

Most growers will take a certain pride of ownership in pure-breds that they would not feel if they were growing grades. In other words, they will be more interested in the stock they are growing if they have pure-breds than they will if they are growing grades. There is pleasure to be had in raising stock that you are absolutely sure will make a handsome return for all the care given them, and the better stock you have the more pleasure will you derive from caring for them.

All my farm work is done with pure-breds. I use both stallions and mares for work. At present I am working as a team an 1,800-pound pure-bred mare with a 2,000-pound stallion. I have learned from experience that better results are gotten from stallions when they are worked at least a part of the time than when they are allowed to go idle from season to season. Yet in spite of this fact there are many stallions that have never looked through a collar. Sometimes this is due to the fact that the owners of the stallions have enough horse power and feel that the work the stallion would do would not pay for the trouble of working him. I find that the extra service I can get from my stallion and the ease with which he is gotten ready for the breeding season more than pays for the trouble of working him. Stallions are no trouble at all to work when you once get them started. In fact, I rather think I like to work them—and I know that the team I have mentioned are practically unbeatable for their size and tractability. Everyone who has a pure bred stallion should invest in a pure-bred mare to work with him. Get the habit of working the stallion. Then he will get his exercise in the way nature intended a draft horse should—in the collar. K. P.

**EXPERIENCES IN SUCCESSFUL ALFALFA GROWING**

**M**ANY of the principles of legume inoculation are not well understood, although it is a well-known fact that legumes do not thrive as well on new soils as on soil that has grown them for several seasons. It is generally recognized as necessary to introduce the desirable bacteria into those soils where they do not already exist.

There are three general methods of inoculation in practice: The soil transfer method: Seed inoculation by means of soil: seed inoculation from commercial cultures. Each method seems to have its own advantages and disadvantages, although the success of any of the methods depends upon proper soil and seed bed preparation.

The soil transfer method consists



## Money Savers for Farmers

### Practical Parables

**A FARMER** went forth to inspect his farm. It was near the end of his fiscal year and albeit he thought he had left nothing undone he found that things were not as should be. His stock was lean, nervous and not yielding great profits. His fences were straggling and ready to fall, having rotted in the posts. His harrow and certain expensive implements were rusted for he had not painted them. His barn admitted water at the roof, and likewise his own home, and that of his poultry. And the little gutters that should carry the water from roof to ground did leak too and were in sore need of repair. And even more so, the roofs on his many buildings which had cost much gold and labor, were not attractive nor yet durable. So the farmer was exceeding down cast. And it came to pass that a more successful neighbor came unto him and said:

**"A LARGE** part of my profits are due to watching the little leaks. Barrett Money Savers helped me. Take Carbonol for instance. No farmer should be without it. It has all the merits of carbolic acid *without the danger*. Effective in a hundred different places. If you cut your hand, apply Carbonol in solution. If your live stock get bruised, Carbonol will fix them. It disinfects sick rooms, and makes house cleaning easier. Begin to economize today by buying Carbonol.

**"A LEAKY** roof means more than incoming water. It means outgoing money for repairs or damages. Begin right with Amatite, the ready roofing that needs no paint. Put Amatite on your steep roofs and sidings. Wind, rain and weather can't hurt Amatite. Its sparkling mineral surface improves the appearance of any building and guarantees durability. Made in rolls of 110 square feet, with galvanized nails and cement in the centre. Easily laid without skilled labor. I ended my roofing troubles with Amatite.

**"THE** greatest enemies to live stock and poultry are lice, mites, vermin and flies. I keep my live stock clean and happy by spraying them with Creonoid, and I spray my roosts regularly. It is the most economical and effective animal antiseptic I have ever seen, and I've tried them all. All you have to do is spray your stock once or twice and their pests will go away, leaving your hens, cows, pigs and horses healthy and happy. Be sure to follow directions carefully. There are many other valuable uses for Creonoid and you had better ask them to send you their booklet on the subject. Don't delay when the solution of your problem is so easy.

**"I USED** to help the Farm Machinery Company pay dividends until I was advised to try Everjet Elastic Paint. You see metal seldom wears out; it rusts out and Everjet positively prevents rust. It never peels, scales or cracks. There is more merit in Everjet than I can tell you of. Everjet is especially recommended for use on ready roofings because of its low price and great covering capacity. Protect your roofs and machinery with Everjet.

**"YOUR** wooden fences would have been good for twenty years if you had painted the buried parts of the posts with a good wood preservative. Why not do it now? Get some of Barrett's Grade One Creosote Oil. Tests have shown that it is the best wood preservative on the market because it penetrates deeper and lasts longer than any other. You can't beat creosote for insuring the life of the wood. Barrett's is the best creosote.

**"IF YOU** are not satisfied with your roofs, or want a covering that will keep wind and water out permanently, at low cost, you should try Everlastic Roofing. There is no better Rubber Roofing on the market. It is inexpensive, easy to lay and gives excellent service for years. Just the thing for outbuildings. Made in one, two and three ply weights. The rolls are 36 inches wide. You need some Everlastic Roofing.

**"THEN** there is a product you ought to have just on general principles. As an aid in quick repairs, Barrett's Elastigum Waterproof Cement is a wonder. And it repairs permanently too. Just the thing to join and reline gutters, whether wood or metal. It seals leaks and joints and is unobtainable for bushings around chimneys."

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of transferring inoculated soil from an old legume field to the new field. This does not mean that soil from a cow-pea field may be used for soy-bean or alfalfa. Although all three are legumes, each has a specific species of bacteria of its own. Alfalfa or sweet clover soils must be used for alfalfa, while cowpea soil must be used for cowpeas and soybean soil for soybean. It is very important to make certain that plants growing in the soil to be used are themselves inoculated and well supplied with nodules. In the case of soybean or cowpea the plant may be pulled up and the roots inspected. While in the case of alfalfa it will be necessary to take a shovel and dig around the roots. The alfalfa nodules are so small they are easily broken off if the plant is pulled up. The nodules will appear as little whitish rounded balls on the feeding roots and sometimes on the main roots also. This method calls for the transfer of 200 to 400 lbs. of soil per acre. The soil may be broadcasted or drilled, through the fertilizer attachment of the ordinary grain drill. If the latter method is followed it will be necessary to screen the soil to remove sticks and stones. This method is generally used with the smaller seeded legumes, as alfalfa, and is very successful. The soil transfer is attended by several disadvantages however, chief among them being the work attached to it. The soil transportation, screening and application involves a great amount of time and labor if a very large field is to be sown. There is also the danger of introducing seed from noxious weeds or some plant disease, most common of which are clover dodder, clover rust and alfalfa leaf spot.

*Inexpensive Successful Treatment.*

The second method, or seed inoculation by means of soil, is very successfully used with larger seeded legumes, cowpea and soybean. The seed is first dampened slightly and then finely screened soil sprinkled over it. The seed should be thoroughly stirred until each one is covered with a coat of dirt. The seed may be sown at once but if a delay is necessary the seed should be put in a cool, shady place. Direct sunlight seems to lower the vitality of the bacteria to some extent. One peck of soil will be enough for 4 to 6 acres. Although this method is hardly practical for the smaller seeded legumes, it is very successful with others. This method eliminates the necessity of so much soil as in the first case and places the bacteria in direct contact with the seed. The danger of introducing new weeds and plant diseases is also much lessened. The expense of this treatment would be very slight as compared with the former.

*Advantages of Commercial Methods.*

The third method, or that of inoculating seed by means of the commercial culture, seems to be growing in favor. This method is practical for both the large and smaller seeded legumes. These cultures are being prepared along well recognized scientific principles and are now being furnished at very reasonable prices. Fifty cents per acre is the charge made by most manufacturing companies, while many experiment stations will furnish a small amount free for a trial. Free samples have also been furnished by the U. S. Dept. of Agriculture at Washington. Directions for applying the treat-

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BRANCHES THROUGHOUT CANADA

ment to the seed will always accompany the culture. This method has all the advantages of the second one and has the added advantage of furnishing the farmer a source for securing bacteria for any desired legume, although it may not be growing in his locality.

Some farmers expect the bacteria to do all the work and do not

aid them to the best of their ability as to soil preparation and cultivation etc. Failure is very often the result of the first trial and it is too often given up as a bad job. Attention should be paid to the smallest details for the successful introduction of a legume into the crop rotation will well repay all efforts expended. V. J. M.

## Your House

Why not Build on the Installment Plan?

In every true Canadian heart is an inborn desire for a home—not merely a place in which to eat and sleep, but a spot to be beautified and hallowed by fond memories, a place that he can call his own, where he can rear his family, and instill in them his ideals, his hopes, and his aspirations.

With a city man, this is not such a difficult thing to manage, for even if he cannot find the means with

such that a part of the building can be put up at one time and part at another, and yet the house will be complete in every respect all the time.

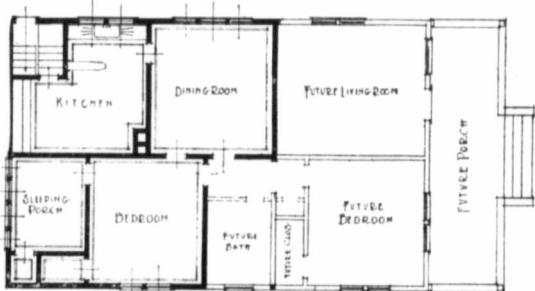
We have selected a plan of this sort for this article. The first section to be erected consists of three rooms, a sleeping porch and a small front porch. A full-size basement is reached by a stairway opening out of the kitchen, making it eas-



which to build him a house of his own, he is usually able to rent a place that temporarily becomes home to him—until such time as his dream can be realized. But too often, on the farm, the house is the last consideration. The stock have to be properly cared for, if they are to bring in money returns to their owner, so good, comfortable, substantial barns, hog-pens and chicken house are erected. And with the few dollars left in the family

of access for all purposes. Also, a door on the ground level leads directly down to the basement, and serves as the rear entrance to the kitchen as well.

The kitchen, where the housewife reigns supreme, is fitted out with many devices for saving time and steps—a point that ought always to be considered in the building of a home. There are cupboards, flour-bin, bread-board, work table, sink, drain-board and iron-



pocket-book, a little, poorly lighted, inadequate shack, without any convenience whatever, is built to shelter the farmer's household. But in this day of modern devices such a course is not necessary, for it is possible to secure house plans now,

ing board for making the work easier; and as the room is well lighted, it is a pleasant place in which to spend so many hours of the day.

The sleeping-porch and bedroom are both provided with closets,

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After all, life on the farm is worth while, in proportion to the reasonable comforts that are supplied. With inexpensive power to run pumps, feed grinders, wood saws, washing machines, churns, separators, etc., the labor of the farm is lightened. With running water in the house, the home is made as comfortable as a city home, and the cost is very slight indeed. Write us for full information.

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Paint and Varnish Makers  
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while the third room, larger than the rest, is used as a combination dining and living-room.

When money is more plentiful, or the growing family demands larger quarters, two more rooms and a wide porch are added to the front of the house, giving the household an extra bedroom and a large living-room. What was the front porch is now converted into a good-sized bath-room and hallway. A clothes closet is provided for the new bedroom, and a linen closet off the hall takes care of that particular phase of housekeeping.

As the original basement is of ample proportions, no excavating is done under the addition. Brick or concrete may be used for the foundation, and a fireplace can be built into the living room if so desired, at a nominal increase in the cost. Stained rustic siding makes a pretty finish for the outside of the house; and because it is not necessary to remove any portion of the old roof, it is an easy matter to join the roof of the new section to that of the first part built.

When the entire house is completed, it presents a very attractive appearance from the outside, as well as having a nicely arranged homelike interior.

#### SOME AUTOMOBILE RULES

In driving the automobile don't speed.

Don't run on the battery.

Don't let the clutch in suddenly.

Don't start the car with a jerk.

Don't advance the spark too quickly.

Don't run at a high speed in towns and cities.

Don't race the motor when shifting gears.

Don't violate the unwritten rules of the road.

Don't overwork the motor on hills—shift gears.

Don't abuse the brakes. Apply them gradually.

Don't shift into or out of reverse when car is moving.

Don't drive fast on wet pavements—the car is liable to skid.

Don't start on a trip without full gasoline tank and plenty of oil.

Don't descend extremely steep grades before shifting into one of the lower gears.

Don't fail to keep the brakes adjusted.

Don't use dirty water in your radiator.

Don't turn corners too rapidly. It is hard on tires.

Don't twist the steering wheel when the car is standing still.

Don't use dirty gasoline. It is well to strain all the gasoline you put in the tank.

Don't run the car if you detect some unusual sound—investigate.

Don't forget to examine the car carefully after hard run.

Don't get water into your

carburetor or on the magneto gear when washing your car.

Don't use the brakes too much. Slow down the car by means of the clutch and throttle.

Don't let your steering rods connection loosen up to such an extent as to cause wobbling of the wheels.

#### THE STEERING GEAR

No part of the car is more closely connected with the safety of the occupants than the steering gear.

Any rattling in these parts is a sure sign of looseness in connections and should be attended to at once. It tends to excessive wear of the parts affected. In the steering wheel there should not be over a quarter of a turn play. There must be some play, otherwise each little jar of the road would be felt by the driver. But this play has its limits and it is almost as hard to drive a machine with excessive play in the wheel as it is one set too close. Either is dangerous, for

the utmost ease of control is essential.

The automobile being out of order, the head of the family took the children out in the old family carriage behind a nag that was in need of exercise. When the horse began to snort and cavort, the younger boy said:

"Pop, you'd better shut off the current and fix him. He's missing fire."

There are many good reasons why the use of

## DUNLOP THRESHER BELTING

is quite general throughout every threshing community.

Threshermen are beginning to realize that Rubber Belting surpasses any other kind of Belting for the work they have to do, and

That Dunlop Thresher Rubber Belting embodies all the good qualities of an Ideal Rubber Belt.

Dunlop Thresher Belting is made in the finest, the largest, and the best equipped Rubber Factory in all Canada.

**By Expert Workmen  
In a Uniform Way  
From The Best Materials**

Wherein lies the secret of  
**Service, Quality and Satisfaction**

Ask our nearest Branch for a sample of the Belt.

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BRANCHES:—Victoria, Vancouver, Edmonton, Calgary, Saskatoon, Regina, Winnipeg, London, Hamilton, Toronto, Ottawa, Montreal, St. John, N.B., Halifax.

**Practical Talks to Threshermen**

Continued from page 10

two components at right angles to each other. The easiest way to do this is graphically as shown in Figure 3.

Here we have taken seven hundred pounds equal to one inch. We will now draw a line parallel to the center line of the machine one inch to the left. By drawing lines now at different angles to the center line we can measure directly the pull required for overturning. For example, take the line a-a, which makes an angle of thirty degrees with the line f-f. The length of this line is  $2 \frac{1}{16}$  inches. Since our scale is one inch equals seven hundred pounds it is evident that the drawbar pull must be 1,444 pounds to disturb equilibrium. At an angle of forty-five degrees the pull would be one thousand pounds. The corresponding side hill angle to bring about this condition must be almost fifteen degrees.

This in general must be the method employed by the designer to arrive at the correct distribution of weight. He can, as has been suggested, shift the center of gravity farther forward. He can use the underslung construction and lower it and by both methods increase stability and the ability of the machine to traverse steeper hillsides in safety. One thing he must be careful about and that is to so distribute the various weights like the motor and transmission gears that the center of weight falls exactly on the center line of the completed machine.

The statement is frequently made that it requires the expenditure of one horse power per thousand pounds of weight of a tractor for self propulsion. This figure is probably not far from

correct on firm, level ground but, unfortunately, we have no authentic tests of tractors. There are some tests of the draft of wagons, however, that throw some light on the subject, presented by Mr E. B. McCormick of the Office of Public Roads before the American Society of Agricultural Engineers, and published in Volume VIII of the Society's Transactions.

As a result of a long series of tests he found that the draft of a wagon on a hard dirt road averaged 106.4 pounds per ton and on a loose sand road an average of 315 pounds per ton. With a road speed of two and one-half miles an hour, the horse power required would amount to

$$5280 \times 2 \frac{1}{2} \times 106.4 = .709 \text{ h.p.}$$

$$60 \times 33,000$$

per ton.  
On loose sand the power required would be

$$5280 \times 2 \frac{1}{2} \times 315 = 2.1 \text{ horse power}$$

$$60 \times 33,000$$

per ton.

Evidently the estimate of 2 horse power per ton for tractors is not far from correct for it must be remembered that these wagons have no transmission mechanism to be operated and no grouters to tear up the soil.

Further along in the same report in discussing the effect of grades the author states:

"These results indicate very clearly that the increase in draft on grades is independent of the material of which the road is composed, of the condition of the road surface, and of the tire width. Therefore in all calculations made by the writer the corrections for grade have been made on the basis of an increased draft of twenty pounds per ton for each per cent of grade."

**When The Fire Call Came**

By ALLAN WYLIE

You've heard the cry of "Fire" come across the fields during some storm? What did you do first of all? You looked to see where the fire was—and you instinctively turned to your own buildings to see if thin wisps of smoke were coming from them. If they were safe you breathed a deep sigh of relief and then turned to help. You probably jumped on a horse and raced to the fire to help your neighbor, but you really couldn't do much for the barn was like so much tinder and the grain inside was fine fuel. You tried to save the stock and the implements, but you could do little. After the fire you turned to offer consolation and any help you could give. The fire had done its work.

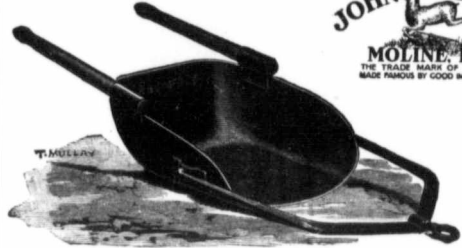
That's a little story which happens hundreds of times each

year on our Ontario farms. Barns, filled with grains and stock and representing the work of years, go up in smoke and nothing is left but charred ruins.

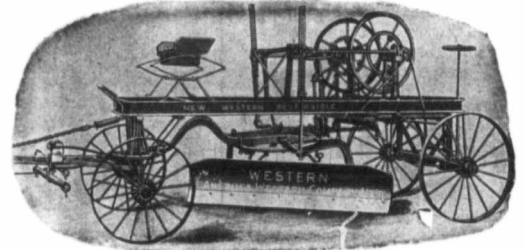
Last year I investigated over seventy fires and found that all but one were wooden buildings throughout. The one had a metal roof and wood sides. Fire in this last building was caused by a spark from a threshing engine. It caught down in one corner just above the foundation. When it was discovered it had gained such headway that there was no chance to save a thing. Most of the other fires were caused by lightning.

I just received a report for 1914 and 1915 and find that in the two years 668 barns were struck by lightning. Of these 218 were a total loss. Many of the others had to be

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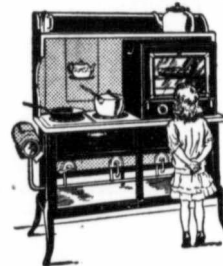
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You can have a slow simmering fire on one burner and a quick hot fire on another and also two others regulated exactly to any heat you want. Just set the levers to exactly the heat you want—you can go away for hours and find all the burners giving exactly the same heat when you come back. That is because the oil supply is automatically kept constant.



A glass bull's-eye always shows you how much oil is in the tank. The upper reservoir holds a gallon.

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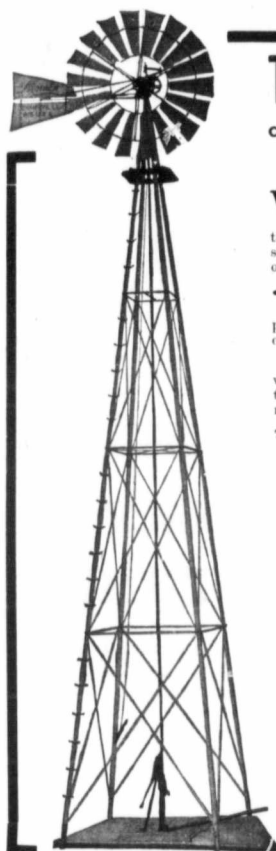
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WHEN the farmer has other work such as running a cream separator, washing machine, and any other light work on the farm, or where his well is close to a building so that an engine may be belted to a line shaft or attached direct to the pump, then a small

engine is very convenient. These engines more fully described and illustrated in our catalogue. Either style engine furnished with combined pump jack or with independent jack. Either single geared or double geared jack may be supplied.

This illustration represents one of the most reliable pumping windmills sold in Western Canada and is the only one manufactured West of the Great Lakes—always insuring prompt delivery or repairs. Wind power is cheaper than gasoline power for pumping purposes, especially for pastures or where a large supply of water is required daily.

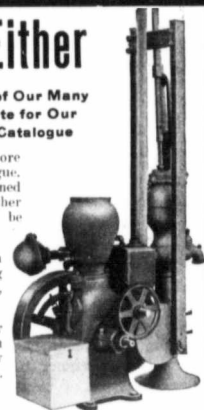
Buy a Manitoba Windmill with regulator and your watering problem is solved. The regulator will let the mill in gear as the supply of water is taken from the tank and will close it off when the tank is full. The wind in Western Canada is constant enough to make a windmill absolutely reliable. More than 110,000 of these outfits are in use today in Canada, United States and Australia.

THE ONLY WINDMILL WHICH PULLS INTO THE WIND AND THIS MAKES IT AS NEAR ABSOLUTE STORM RESISTING AS A WINDMILL CAN BE BUILT. SEE PAGES 40-46 OF OUR GENERAL CATALOGUE FOR FURTHER INFORMATION

	Weight.	Brandon.	Calgary.
8 ft. mill for mast or tower	300	\$ 28.00	\$ 30.50
8 ft. mill with stub tower	350	33.00	36.00
8 ft. mill with 20 ft. tower	650	51.00	56.00
8 ft. mill with 30 ft. tower	850	65.00	72.50
8 ft. mill with 40 ft. tower	980	77.50	85.00
8 ft. mill with 50 ft. tower	1200	92.00	102.00
10 ft. mill for mast or tower	400	42.50	46.50
10 ft. mill with stub tower	520	48.50	53.00
10 ft. mill with 20 ft. tower	820	67.00	74.00
10 ft. mill with 30 ft. tower	980	80.00	88.00
10 ft. mill with 40 ft. tower	1160	92.50	102.50
10 ft. mill with 50 ft. tower	1400	107.50	120.00

All Manitoba goods guaranteed against defects in workmanship or material indefinitely. Any part proving defective will be replaced free of charge at Factory or Branch. Any purchaser not satisfied at the end of 30 days may return his outfit and receive his money back.

**Manitoba Engines, Limited**  
BRANDON, Man. CALGARY, Alta.

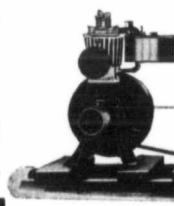


Water cooled pumping engine complete, built entirely without gaskets, substantial, strong, simple, convenient and reliable.

F.O.B. Brandon, \$17.50  
F.O.B. Calgary, \$51.00  
Can furnish engine with 20 ft. of belt and single geared independent jack at same price, or with double geared pump jack for \$2.00 extra. Weight crated 320 lbs.

Illustrating our air cooled engine belted to pump jack. Price as outfit appears.

F.O.B. Brandon, \$45.00  
F.O.B. Calgary, \$48.50  
Furnished with combined pump jack at same price or with double geared independent jack at \$2.00 extra. Weight crated, 325 lbs.



rebuilt, some were repaired. These are barns which were insured—no doubt there were many others with no insurance whatever. Besides these losses there were many barns set afire by threshing engines, sparks from house chimneys and overturned lanterns.

A year ago I picked at random the reports of 27 fires on Ontario farms. The losses amounted to \$119,000.00. I wonder just what the losses of the 218 fires would amount to. Putting the thing down in cold figures it is appalling.

I talked with one man after his fire and asked him why he hadn't built with some fireproof material, and he told me, "I figured that metal was too expensive and I couldn't afford it, but I guess I'm paying for it now. I haven't my crops insured and they are all gone. It means a year's hard work all knocked to—and I've got to start in and build all over again. And I even lost some of my stock. You can bet your bottom dollar that I'll put metal on the next barn." His story is told to the salesman of metal companies many times a year. The proof of it is shown in the increased number of metal covered barns throughout the country.

Farmers are waking up to the fact they haven't the protection given in the cities and they must

offset that by building with fire-proof materials. When John Slee of Doon lost his buildings by fire he immediately put up a metal covered barn. When the entire buildings of the Mt. Elgin Institute were destroyed by fire they were replaced by metal buildings. When Thos. McCracken of Streetsville, Thos. Curtis of Verulam, J. Baskerville of Thorndale and many others lost their barns by fire they decided that metal was not too expensive in the long run and they put up metal covered barns.

Metal is insurance in itself. It is practically absolute protection from all outside fire causes. A metal covered building properly "grounded" with wires from the corners into the ground is an absolute lightning protection. Sparks from threshing engines or chimneys can do no damage to a metal covered building—they can drop on the metal, but they die out there.

When the Wilks stables at Galt burned out a couple of years ago there was a little storage shed about fifteen feet from the main barn. It was covered with metal shingles. Fire brands from the big fire rained down on it, but when the other buildings were burned to the ground this old shed was still standing. What did Miss Wilks do? She rebuilt and she used a complete metal covering for all her build-

ings. She figured that wood buildings were too expensive an investment.

I could give you the name of thousands of farmers who have built with metal because they wanted to feel sure that their crops and their stock would be safely protected from fire and lightning. They figured the cost—not from the first price standpoint, but from the standpoint of long life and protection. They did not listen to

few who knocked and kicked about price, but they investigated and found that metal covered buildings were cheaper than wood in every case.

The protection afforded by metal should make every prospective building farmer sit down and think hard in making his plans. And when the time for the decision came there should be no hesitancy in choosing metal as a complete covering.

## LIGHT versus HEAVY WEIGHT TRACTORS

Continued from page 7

	Ideal Little Tractor	Present Day Big Tractor
Purchase cost	\$1,000.00	\$2,700.00
Size	15 H.P.—2 plow	60 H.P.—8 plow
Life	800 days	1,000 days
Tractor cost per day	1.25	2.70
Repairs	1.00	2.00
Labor of upkeep	.75	1.00
Fuel, 18 gals. @ 9c	1.62	5.40
Labor	3.00	3.00
Acres plowed	6  7.62	20  14.10
	1.27	.70½

To avoid confusion, interest and some minor items of cost are omitted, but if included would not seriously affect the results or proportions. This table assumes that the two tractors are placed at the common work of plowing. In the first line is shown the cost of each tractor. In the third line is shown the life. Even though the little tractor is of the highest grade and built in every way as good as

the large it will not last as long. Experience with little tractors is demonstrating this every day. Assuming, then, one day's work, we have in the fourth line of our table the amount which one day will use up of the cost of the tractor, same being \$1.25 for little tractor and \$2.70 for large. The cost per day for repairs is a fair estimate based upon experience. Here it is seen that the little trac-

tor requires proportionally more repairs than does the large one. Its parts, even though well built and well proportioned, are necessarily more frail. It will likely use up just as many spark plugs and just as many breaker points and many of its features will require as much in the way of renewal. The labor of upkeep which is the time which should be spent upon the tractor, outside of work hours, is very nearly as much for the little tractor as for the large. Being an ideal and almost unheard of little tractor, it is assumed that it can burn kerosene. The quantity in each case is that based upon experience for a hard day's work. To properly operate a large tractor requires no better grade of man than for the small, accordingly the labor is the same in either instance. The little tractor is supposed to get round a little faster, accordingly, it might be expected of our ideal little tractor that it can plow a little more in proportion and good work is six acres per day, with twenty acres for the large tractor. We have then the final results of \$1.27 per acre for the little tractor and 70 1/2 cents per acre for the large.

The results as shown by the above table are the very best that can be averaged from a little tractor of the size, with the first cost and all conditions balanced up to give the very best results. The showing for the large tractor is very ordinary, and that which for many years has been accomplished by well built, moderate speed, simple large tractors. It is possible that little tractors with price and form and adaptation may sometime in the future be produced which will make a better comparison.

Under conditions as they actually are there have been put out during the past few seasons many thousands of little tractors which have catered to the idea that they must be cheap. It is not well that we deal with the situation as it ought to be. We should look at it as it is. The table below represents more truly and in the writer's best judgment, born of long experience, the comparison of the popular priced, popular sized little tractor with the large tractor in its present day development. Here we have the popular price, \$650; the price of a 60 brake horse power tractor \$2,700.

	Present Day Ideal Little Tractor	Big Tractor
Purchase cost	\$1,000.00	\$2,700.00
Size	15 H.P.—2 plow	60 H.P.—8 plow
Life	300 days	1,000 days
Tractor cost per day	2.16	2.70
Repairs	1.50	2.00
Labor of upkeep	1.00	1.00
Fuel, 20 gals. @ 20c	4.00	60 gals. @ 9c
Labor	3.00	3.00
Acres plowed	5   11.66	20   14.10
Cost per acre	2.33	.70 1/2

Those who have had experience with the average little tractor will

realize that 300 days of hard work is rather more than it is good for, whereas, as stated above, the 1,000 days life is not only not unusual for a good 60 horse power tractor, but it can be stated as the average for modern builds. We have, then, as the first item of daily expense the first cost of the tractor, \$2.16 for the small and \$2.70 for the large tractor. The experience with repairs will indicate the figures are \$1.50 and \$2.00. Owing to the flimsy nature of the machine which must be built, if it is going at the price indicated, the labor caring for the little tractor will be quite as great as that for the large. As to fuel, practically all the great horde of little tractors require gasoline for fuel and require plenty of it. Twenty gallons at 20 cents per gallon is about the condition here in Iowa, which makes a cost of \$4.00, whereas, 60 gallons of kercsent at 9 cents per gallon makes up the cost of \$5.40 of the 60 horse tractor. The labor required in each instance will be the same. It is now known that self lift plows enable the operator to handle eight plows with as great a degree of ease as the two plows of the little tractor. Little tractors of the grade indicated will do very well to average five acres per day which brings the cost per acre of plowing to \$2.33 for the little tractor and 70 1/2 cents for the large one.

The writer will stand on the assertion that, here in Iowa, the cost of plowing or any other farm tilling for the two plow tractor will cost more than three times as much per unit of work accomplished as

will be the cost with the 60 horse power tractor.

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BARREL  
\$6.50**

**For Economical Shipping or Storing of Gasoline and Oil**  
Although the cost has advanced we are offering a limited number of these drums at the old price.  
This drum complies with the Railroad test; do not buy one that does not. Made of 16 gauge steel, electrically welded. Capacity 44 gallons, painted red, fitted with 2 inch and 3/4 inch bungs and 3/4 inch faucet.  
Weight, 75 lbs. Price, each ..... \$6.50  
Gasoline per gal. .... \$ .36  
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Barrels filled weight 400 lbs., and take third class rate.

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TANKS**



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Made from best grade galvanized steel, heavy steel top and corrugated sides which add strength.  
Wth. Hgt. Lgth. Capacity Price  
2 x 2 x 6ft. 5 1/2 bbls. \$ 9.00  
2 1/2 x 2 x 8ft. 9 1/2 " 12.50  
3 x 2 x 8ft. 11 1/2 " 13.50  
3 x 2 x10ft. 15 " 15.00

**Mounted GRINDSTONE**



**\$4.25**

Best quality of stone 20x2 inches, welt mounted on strong, rigid steel frame.

No. 3X—As illustrated, wgt. 80 lbs. \$4.25  
No. 4X—Heavier stone and frame, 95 lbs. 4.50

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**FOR PRIZE LIST AND ILLUSTRATED PAMPHLET WRITE  
E. L. RICHARDSON, Manager CALGARY, Alberta**

The extreme of absurdity is the advocacy by some of one plow tractors. The average cost per unit of tractor work accomplished for such a machine is four to five times that of a good 60 horse power tractor.

It is clearly seen by the above two tables that if a man is determined to invest in a little tractor he had better not look for the cheapest. He should invest enough to get the very best that can be purchased, as the tables clearly set forth the fact that such a tractor, when cost and everything is included, will do the work far cheaper than a cheap tractor.

Under the above showing it is clearly evident that there is little or no justification for the production of little tractors.

However badly a farmer may wish a tractor, unless he can purchase one of sufficient size for efficiency, he should not purchase at all. The mere fact that the little farmer wishes a tractor, and that all wish he could have one, is no reason why he should be blinded in his judgment and advised to buy something that is less efficient than his present method. Those who so advise assume a heavy responsibility. There is probably no one who more firmly believes than the writer that some day practically all agricultural work will be done with motors. Nevertheless, he wishes to see the development on true lines. Success with little tractors on any present lines is impossible.

As a solution to this problem it is more than likely a large tractor must cover the motor work of several small farms. The threshing and belt power work for many years has been in the hands of those men of each community who seem to be mechanically inclined and best fitted to accomplish such work. While at one time they were rather an improvident class, in more recent years some of the most substantial men are performing such service for their neighbors. A few years ago the state of education concerning motors was very meager. Even today in passing from farm to farm, very likely not one out of four farmers is capable of operating machinery of very extensive character. Education in motor construction and operation is growing with great rapidity. No doubt the coming generation will be better versed in motor management than the past generation was in horse management. Then even small tractors may be more efficient than horses. Large ones will be so much more efficient that when well understood all heavy farm work will be accomplished by them.

The farmer's regular work is a veritable gamble. He must stake him all in a bet upon the weather. Shortage of ample help and power for a few days' duration many

times loses a valuable crop. It is clear that no farmer can have at his disposal several times the valuable horses or number of hired men required for his average every day work. Yet, just such provision would often get his crop nicely in the few dry days during a wet spring, rush the harvest, at just the right time, to completion, or get the fall plowing done before a freeze up. The little tractor does not help this situation. It is clear that the large tractor, eating nothing and requiring no wages when not at work, practically solves the farmer's problem of great reserve power and help just when they may be needed. The gambling feature of farming will, then, be reduced to a minimum and abundant results made more certain.

It is innate in human nature to be ambitious to do large things. Accordingly, just as soon as the tractor becomes a little more stabilized and its nature better understood, larger and larger machines will be commonly used, especially when the large machines have such a tremendous advantage in efficiency. We knew a day not so very long ago when an eight horse power automobile was considered quite an achievement. If a man were to exhibit preference for that horse power for an automobile at the present time he would be considered foolish. A few years from now 100 horse power in a tractor will not be considered unusual, and everybody will ridicule a tractor with much less than 50 horse power. It will be found that such horse power worked upon a 40 acre farm will be efficient and profitable. The greatest stride of the age will be made when we learn how to apply great power to each acre. By such means, more than any other, will we gain great production.

G. W. HART.

**To Harden Cast Iron**

Many times it is convenient to make an article of cast iron that needs to be finished, and which should be very hard. Cast iron can be hardened as easily as steel, and to such a degree that a file will not touch it. Take one-half pound of vitriol, one peck of common salt, one-half pound of salt-petre, two pounds of alum, one-quarter pound prussic potash, one-quarter pound of cyanide of potassium, all to be dissolved in 10 gallons of soft water. Heat the iron to a cherry red and dip it into the solution. If the article needs to be very hard, heat and dip the second or even the third time.

**BRAVE BOY**

Johanny's mamma found him rummaging in the pantry one day. "Oh, it's you, you naughty boy," she exclaimed. "I thought it was burglars." "So did I," answered the little fellow, "and I was lookin' for 'em."

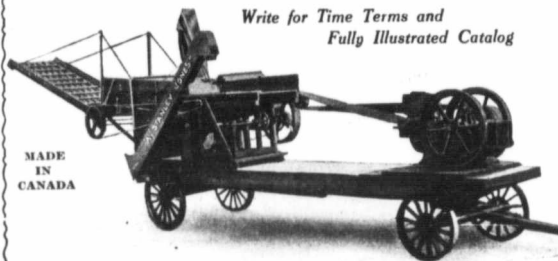
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24-in. Separator, alone, with all fittings, as shown, freight paid Manitoba and Saskatchewan. CASH	\$284.00
Complete Outfit, consisting of 8 h.p. Engine and 28-in. Separator, with all fittings, including main belt and truck, with 16-ft. reach, delivered anywhere in Manitoba or Saskatchewan, carriage prepaid, for CASH	\$670.50

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JOHN ILLINGWORTH, Esq., Roseliff, Sask., who came within three-quarters of a point of Mr. Seager Wheeler of the World's prize in 1914.

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**ORDER NOW!** My price for cash this year is the same as last and my time price is only 2% more. Other companies have advanced from 10% to 25%. You will notice I publish all my prices in my advertising and catalogue and do not have two or three different ones for the same article.

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MADE IN CANADA

All the features you would look for in buying a car are found in the Briscoe.

Individuality and appearance the last word in good taste. Economy in first cost and cost of operation and upkeep. Power sufficient for every purpose. Highest quality of construction and material, making a trouble proof car. Complete equipment requiring no outlay beyond the original cost.

Write today and we will tell you where you can see it and send full specifications and particulars.

**The Canadian Briscoe Motor Company Limited, Brockville, Ont.**

11

**FLEECE WOOL PRIZES**

Prizes for wool in the fleece will be offered at many of the large Western Fairs this summer. In Manitoba, Alberta and Saskatchewan these prizes will be divided among four classes, namely, Range Fine, Range Medium, Domestic Medium and Domestic Coarse. They should be large enough to make it worth while for a sheep raiser to preserve one or two of his best fleeces for competition. The word "Domestic" in wool nomenclature refers only to wool produced under farming conditions or in small flocks and includes generally the wool from animals having little or no Merino blood. The word is used to distinguish wool of this character from that produced on the ranch which is known as Range wool, and is of a very different type, being distinctly Merino or of a Merino foundation.

Trade names for the wool have been used in these classifications rather than breed types since wool when it leaves the sheep's back loses identity of breed and is graded entirely according to its usefulness from the standpoint of

manufacture. The Domestic Medium class will include the Down breeds and the Dorset Horn, and the Domestic Coarse the long wools, such as the Lincoln, Leicester and Cotswold. Wool from crossbred or grade sheep may be included in any of these classes although the typical cross-bred most generally grades Medium. The Range Fine will take in wool from sheep strongly Merino, and the Range Medium will comprise cross-breeds raised on the ranch.

Only long, clean wool, uniformly rolled should be held for this purpose. It is advisable to tie the fleeces with paper wool twine, and if possible to box it, following the system inaugurated by the Live Stock Branch, Ottawa. It is understood that arrangements will be made at the Exhibitions to dispose of the wool by auction, should the sheep raiser not desire to retain it subsequent to the Fair.

**Cooking of Beef**

The various cuts of beef differ in tenderness, flavor and cost according to the part of the animal from which they are taken. The nutritive value of all cuts is practically the same.

The parts which have least exercise and least connective tissue (all rib and loin cuts) are the juiciest and most tender. The shoulder portions, the rump, round, chuck are the next, while the neck and leg portion are the toughest and least desirable in flavor though their nutritive value is as great as the other.

Much money is wasted by the improper cooking of the high priced cuts. Since rib portions (prime roasts) cost more, simply because they have more highly flavored juices and are more tender, they should be so cooked as to retain as much of their juice as possible. As cooking for tenderness is not necessary the only other requirement is the development of the proper color.

**Method**

Heat a pan or roaster and place the meat in it, turning until all cut surfaces are well seared. Do not use a covered roaster. The searing makes a coat or crust on the outside which prevents the escape of the juices. The meat is literally "cooked in its own juices." If the roast is placed properly, the melted fat will run down the sides and baste the meat sufficiently. The degree of cooking depends upon personal taste. No water need be used. When water is used, or a cover placed on the pan the resulting steam will break the seal and allow the juices to exude. Thus the special value of the high priced cut is lost. Salt should not be added at first, as it tends to draw out the juices. Per-



26 babies poisoned in 11 states; fortunately 100% recovered.

**Save the Babies**



Catch the disease carrying fly that strays into your home with safe, efficient, non-poisonous TANGLEFOOT; not arsenic poison in an open saucer set within reach of the baby, or a can from which a poisoned wick protrudes, sweetened to attract both flies and babies.

Flies kill many babies, and fly poison more than all other poisons combined—

—But in homes where careful mothers have protected their babies from such risks by using only TANGLEFOOT, both dangers are avoided.



The Journal of the Michigan State Medical Society reports 26 cases of arsenical poisoning from fly destroyers in 1915 in only 11 states; in 1914 there were 46 cases in 14 states.

It states editorially:

"Symptoms of arsenical poisoning are very similar to those of cholera infantum; undoubtedly a number of cases of cholera infantum were really cases of arsenical poisoning, but death, if occurring, was attributed to cholera infantum.

"We repeat, arsenical fly destroying devices are dangerous and should be abolished. Health officials should become aroused to prevent further loss of life from their source. Our Michigan Legislature, this last session, passed a law regulating the sale of poisonous fly papers."

Made in Canada by THE O. & W. THUM CO., Walkerville, Ont. American Address: Grand Rapids, Mich. (65)

**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.**

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BROKEN OR CRACKED CYLINDERS, CRANK CASES, GEAR WHEELS, GEAR HOUSINGS or MACHINE PARTS to

**Hub Welding Company**  
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LOWEST PRICES CONSISTENT WITH BEST WORKMANSHIP

sons who enjoy the delicate flavor of meat prefer to season it on serving.

The above method of cooking gives a very juicy roast. On carving the juice will "follow the knife." When water is used or a covered roaster, a dry meat results—as practically all of the juice is thus extracted.—May C. McDonald, N.D. Exp. Station.

**Drilling Various Materials**

For the best results, drills for iron and steel should be run lubri-

cated, a mixture of soap and water or of soft soap being fine for the purpose. For drilling brass or copper, the drill should be run dry and at much slower speed than when steel is operated upon. Wood drills are also run dry, but the drills used for this material should be those designed for working in wood and not in metal. Glass can be drilled by giving the flutes of the bit plenty of water, and the same applies to cork. It is a waste of time to use a blunt drill on any substance except very soft brass.



**THE CHEERY OPTIMISTS**  
"We're all right, Bill. I expect the navy will be up next week."



Pointers for Poultry Beginners

By H. D. Wilson.



A YOUNG MANITOBA CHAMPION

DO you make any money keeping chickens? Does it really pay you? Perhaps the questioner, if a beginner, was to see me work with my Silver Laced Wyandottes, he would be better able to judge and answer these oft asked questions than I, even had I the use of all the printer's ink that I could de...re.

It is apparent there are two very decided stumbling blocks in the way of the beginner's making money keeping chickens or making it a paying business. One is the unwillingness to go through the school of experience. Second, the desire to begin just like some other fellow is doing who has been in business for years. Hard work, careful thought and an everlasting stick-to-it-iveness, is absolutely necessary for anyone expecting to supply poultry and eggs beyond the confines of personal needs. It is not a matter of simply keeping chickens. It is a matter of building up a business with methods similar to those required along any other commercial pursuit. The prime essential is to have the goods, the price and the market.

Often we hear of one starting in poultry keeping with grand possibilities, an over-abundance of zeal and the very best intentions to make it a "go," yet in a very little while it is all over. There comes the realization that there is too much work and not enough pay. Poultry keeping, for them, failed to prove a get-rich-quick scheme, consequently there is need of scoring another failure. There have been hundreds of just such beginnings and as many just such endings; therefore the matter of making money keeping chickens is altogether dependent upon the individual, his start and amount of perseverance possessed. It is true there have been beginnings with brightest prospects of ultimate success that have been dashed on the rocks of dismal failure because of misplaced confidence. While deciding on the kind

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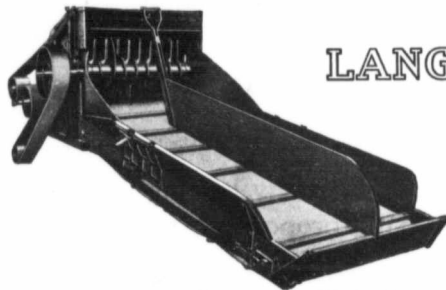
LIAR?

No one is — They are only wrong. Almost every Feeder Ad. you pick up claims that particular Feeder to be the best in the world. Perhaps they don't know differently—they have never been called upon to—

PROVE IT

The

LANGDON FEEDER



Will feed all the grain your separator can possibly thresh.—

But will never overload your engine.

THE LANGDON FEEDER will feed your separator to its maximum capacity at all times and under all conditions, yet so thoroughly separate and divide the straw that it will never slug the cylinder or overload your engine.

WE CLAIM—The Langdon Feeder—

**Governs**—so as to thresh more grain with less power, without checking the speed — Governs BEFORE instead of after the cylinder is slugged.

**Better** — divides and separates the straw—straightens the bundles—evens the load upon the cylinder and engine.

WE GUARANTEE—The Langdon Feeder—

to do all others claim to do—perhaps it will do more—but don't take our word for it. Write to us and give us a chance

TO PROVE IT

We have FIVE FEET OF PROOF which we will send you FREE. Fill out this coupon and mail to us. Don't put off inquiring about this Wonderful Governing System that is taking the place of the old obsolete types all over the world. A letter written us to-day may save you the PRICE of several FEEDERS.

Hart Grain Weigher Co.

PEORIA, ILL., U.S.A.

Cushman Motor Works of Canada, Ltd. DISTRIBUTORS WINNIPEG

Without obligations of any kind on my part, send me 5 FEET OF PROOF FREE

I run a ..... Separator ..... Feeder

Signed ..... (Name)

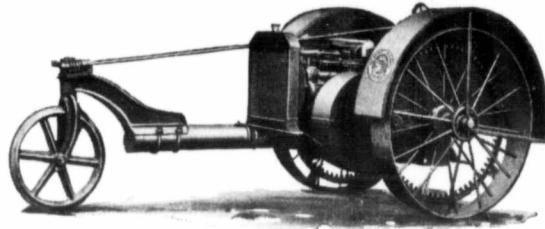
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"It's Good"

*A Tractor that Pulls  
Two-Thirds of its weight  
at the Drawbar;*

*88 per cent. of its weight  
on the  
Traction Wheels*



We guarantee 1500 lbs. constant drawbar pull.

# Happy Farmer Tractor \$795

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Price,  
Durability,  
Steel Construction,  
Power,  
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Recognized as absolutely the best by many leading jobbers who have closed contracts.  
This is a money making proposition for the live jobber or dealer.

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**WINNIPEG, Man.**

of breed is altogether a matter of personal choice in the selection of the stock, the beginner must impose implicit confidence in some breeder of the kind of birds he wants. There have been instances when the beginner did not really know what he wanted. This lack of certainty has been largely due to the want of knowing that judged according to personal wants, as birds, even of the same breed, should be show-birds, dual-purpose fowls or strictly utility strain. There is not much trouble to find a reliable breeder of show birds. The fact that there are those claiming to have birds possessing both show and egg-laying qualities and comparatively a few who make a specialty of utility breeding, makes the purchase of a high-class egg-laying strain more or less of a venture.

The show room gives the breeder of the "fancy" considerable publicity and on the winnings at the show they stake their reputation for reliability. They can show what their stock really is. This is right and proper. Unfortunately for the beginner there are some fanciers who claim their show birds are of a "good egg-laying strain," where, in truth, the fancier knows very little more about the egg-laying qualities of his birds than the prospective purchaser, for the fact that his birds

have not been subjected to a year's trap-nest test. On the other hand the utilitarian has nothing to show but records. It is simply a matter of seeing and believing the records as furnished in proof of the strength of a particular utility strain. It is reasonable to believe that there will be more successes in poultrydom just as soon as the breeders put up dependable sign-posts Fancier or Utilitarian. It cannot be doubted that these individual and correct sign-posts would be a great help to the beginner. It would enable him to know just where to go for the original stock in accord with his personal wants. As it is at the present time the sign-posts are so badly mixed up that the beginner is confused and he can only guess the way to go to get what he wants. If the fancier was to confine himself to "fine-feathers" and the utilitarian to "eggs," the beginner could easily make his choice without fear of going wrong.

Granting that the beginner has absolute assurance of having secured exactly the birds wanted, there is much preparatory work, painstaking care and attention before there is the certainty of being on the sure road of success. Proper housing and feeding with scrupulous cleanliness dare not be neglected one iota if birds are to

be the best winners or greatest layers. Possibly the modus-operandi that I, as a utilitarian, have inaugurated in the breeding of my "Silers," may give the beginner a more vivid conception of how the poultry business is a step by step progression toward the coveted goal. I started with six "Silver" pullets picked from a "bunch" of 38. These birds scored 1,291 eggs, making an individual yearly record of 215 eggs. The second year I bred the "six" with a cockerel from a heavy laying strain, giving me my second generation. At the time of writing these daughters of the original "six" have individual records of 20 eggs per month and have nearly four more months to complete their pullet year. During the first breeding season I installed 16 dual-purpose pullets produced from a most reliable breeder. These 16 laid 2,206 eggs in their first year. With two sons of the original "six" and eight of the dual-purpose hens I secured the second generation. If sturdiness and liveliness are any indications these grand-daughters give the very best promise of far overstepping the egg record of any of their relationship.

From the very start it was a fast and fixed rule with me that my birds would not go to bed over a dirty drop-board nor eat a break-

fast in a dirty scratch-pan. There is a cleaning every day of the year, rain or shine. I have never had a sick bird. In feeding I exercise common sense. There are two meals a day—scratch-feed in the morning in the litter and wet-mash in hoppers at night. Average about 2½ ounces to each matured bird at such feeding, I have full-size, full-weight and contented birds notwithstanding that they are subjected to close confinement in the back yard. My laying pen is 12x4 feet, with nests and roosts above the scratch-pen. The use of trap-nests furnishes an indisputable egg-record for each bird, making it possible for intelligent mating to the hens of the preceding generation. In this line of breeding the qualities of the sires are inherited by the off-spring to such an extent that individual traits of the parent stock are easily discernable in the youngsters, which gives proof of the genuine utility strain wanted by the beginner whose object is an over-abundance of eggs rather than an armful of fine feathers.

### SMALL CHOICE

Pat—"Yis, sorr, wur'rk is scarce, but Oi got a job last Sunday that brought me foive dollars."

Mr. Goodman—"What! you broke the Sabbath?"

Pat (apologetically) — "Well, sorr, 'twas wan av us had t' be broke."—Boston Transcript.

**ONE OF THE DIE-HARDS**  
 "Old Times" is a hard man to kill, but there's an older man than him (with a scythe), whose muscles never grow flabby, and the most venerated institution but has its day.



A Man Who Never Drove a Horse Team.

Here is an interesting snapshot of an old man of Kansas, 72 years of age, a farmer who has never driven a team of horses. All through his long life the ox has been his great stand-by for power on the farm, as well as haulage to the town. He was invited to face the camera alongside an Avery Tractor at one of a number of demonstrations given by an Avery dealer. The tractor was hitched to a plowing outfit, and the ox looked on with no less amazement than the man at the extraordinary results of an unseen power.

Incidentally it may be noted that if this venerable ox-driver decided to pension his ox and buy an Avery Tractor he would miss one great link with the past in agricultural progress—the horse age.

Canada Thistles, together with the serious problem of Couch Grass; and it is partly due to the activities of the Weeds Commission. During the past two or three months, five thousand copies of the revised Noxious Weeds Act have been put

into circulation, and demands for still more copies are rolling into the office of the Commission.

One feature of the Act that will be more carefully looked after than hitherto will be the cleaning of threshing machines as they move from farm to farm. Extracts from that part of the act relating to the duty of threshermen are being printed, so that they may be affixed to the threshing machines of the province. As there is a penalty for failing to affix the notice, the farmer will be largely to blame if the machines do not carry placards, and if this part of the Act is not enforced.

The Commission at present is attending the series of conferences with the local inspectors, municipal councillors and farmers in various parts of the Province.

**MARKETING MANITOBA'S WOOL**

The 1916 wool clip of Manitoba will very largely be marketed on the co-operative basis through the Provincial Department of Agriculture. The wool has commenced to arrive in Winnipeg, and Mr. Jennings, the Dominion Government wool grader, who graded the 1915 clip, is again busy at the Winnipeg exhibition buildings. Mr. Geo. H. Greig, Secretary of the Manitoba Live Stock Associations, who was to have taken charge of the shipments, has been seriously ill, but J. H. Evans, Acting Deputy Minister, and other officers of the Department, have the matter in hand. Last year about 70,000 pounds of wool were sold through the Department. The amount to be handled this year will likely be at least twice that quantity.

**LIVE INTEREST IN WEED QUESTION**

Never before in the history of Manitoba has there been such general interest in the weed question. This is partly because of the alarm that has naturally followed the rapid spread of Perennial Sow and

**NEW BULLETIN ON BARN VENTILATION**

At this season of year, when many farmers are erecting new barns or remodelling those already built, the subject of ventilation is worthy of very careful study. To help the builder to a proper understanding of the principles involved, and to give him detailed instructions as to how a ventilation system should be installed, the Manitoba Department of Agriculture has just published Extension Bulletin No. 2, entitled Barn Ventilation. This bulletin has been written by L. J. Smith, Professor of Agricultural Engineering at Manitoba Agricultural College. The two systems of barn ventilation that have been proven most suitable under our climatic conditions have been the Rutherford System and the King System. Both of these are described in complete detail, and diagrams are presented, so as to make clear to the eye the whole method of construction. Already the Agricultural College has individual requests for a large number of the 5,000 copies printed. Farmers and others desiring one of these bulletins should write the Publications Branch, Department of Agriculture.

**Mixed Farming Special Train**

Conducted by Alberta Department of Agriculture, assisted by Dominion Department of Agriculture, Canadian Pacific Railway Co., Canadian Northern Railway Co., and Grand Trunk Pacific Railway Co. Special Lectures and Demonstrations on all Phases of Farm Work. Subjects: Live Stock, Field Husbandry, Poultry, Dairying, Game Protection. Special Exhibits from Demonstration Farms and Schools of Agriculture. Household Science and Home Making.

Train will stop for half a day at each of the following places:

CROWS NEST LINE, C.P.R.		WETAUKIWIN	
Cowley	Friday June 23rd	Monday July 10th	Monday July 10th
Pincher	Friday June 23rd	Leduc	Monday July 11th
Lethbridge	Saturday June 24th	Edmonton (All Day)	Wednesday July 12th
Macleod	Saturday June 24th	GRAND TRUNK PACIFIC RAILWAY	
MACLEOD-CALGARY LINE, C.P.R.		Chauvin	Thursday July 13th
Granum	Monday June 26th	Edgerton	Friday July 14th
Clearholm	Monday June 26th	Wainwright	Friday July 14th
Staveland	Tuesday June 27th	Irma	Saturday July 15th
Parkland	Tuesday June 27th	Viking	Saturday July 15th
Nanton	Wednesday June 28th	Bruce	Monday July 17th
Cayley	Wednesday June 28th	Holden	Monday July 17th
High River	Thursday June 29th	Toffeld	Tuesday July 18th
Aldersyde	Thursday June 29th	Clover Bar	Tuesday July 18th
Okotoks	Friday June 30th	CANADIAN NORTHERN RAILWAY	
DeWinton	Friday June 30th	Port Saskatchewan	Wednesday July 19th
Calgary (All Day)	Saturday July 1st	Bruderheim	Wednesday July 19th
CALGARY-EDMONTON LINE, C.P.R.		Lamont	Thursday July 20th
Airdrie	Monday July 3rd	Chipman	Thursday July 20th
Crossfield	Monday July 3rd	Mundare	Friday July 21st
Carstairs	Tuesday July 4th	Vegreville	Friday July 21st
Didbury	Tuesday July 4th	Lavoie	Saturday July 22nd
Olde	Wednesday July 5th	Hanfurly	Saturday July 22nd
Bowden	Wednesday July 5th	Innisfree	Monday July 24th
Innisfail	Thursday July 6th	Minburn	Monday July 24th
Ponhold	Thursday July 6th	Manville	Tuesday July 25th
Red Deer	Friday July 7th	Vermilion	Tuesday July 25th
Blackfalds	Friday July 7th	Islay	Wednesday July 26th
Lacombe	Saturday July 8th	Kitscoty	Wednesday July 26th
Ponoka	Saturday July 8th	Lloydminster	Thursday July 27th

This Special Train will consist of fourteen cars, including two cars of Pure Bred horses and cattle to be used for judging and demonstration purposes; other cars will contain exhibits upon which demonstrations and lectures will be given on different phases of Agricultural work and Domestic Science. Amongst other things these Exhibits will include Models of Farm Buildings suitable for dairy cattle, hogs, sheep and poultry; also Veterinary Exhibits. There will be Exhibits of Game, Grains, Grasses, Weeds, Samples of Students' Work at the Agricultural Schools, Dairy Products and Farm Dairy Equipment.

**FARM WOMEN'S SECTION**  
 There will be one car containing Exhibits from the Household Science Departments of the Schools of Agriculture, and another under the direction of the Women's Institute Department, where demonstrations will be given in cooking, and in the canning of fruits, vegetables, meats and soups. A special nursery car will be provided for the children, so that the mothers may be free to attend the lectures and demonstrations.

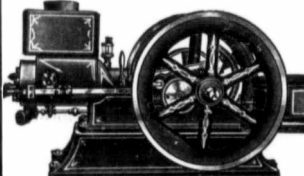
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|--|---|
| <b>DUNCAN MARSHALL,</b><br>Minister of Agriculture.                                    | <b>ALEX. GALBRAITH,</b><br>Superintendent of Fairs & Institutes.                          |
| <b>J. DOUGALL,</b><br>General Agricultural Agent,<br>Canadian Pacific Railway Company. | <b>A. A. TISDALE,</b><br>Asst. to Vice-President,<br>Grand Trunk Pacific Railway Company. |
| <b>R. CREELMAN,</b><br>General Passenger Agent,<br>Canadian Northern Railway Company.  |   |

**Liquidator's Sale**

COMPARE THESE PRICES

They are less than manufacturers' cost. The goods are perfect in every way and there is no better machinery made today for supplying power on the farm. They MUST be converted into cash within the next few days

OHIO ENGINES		INGECO KEROSENE ENGINES	
15 H.P. Standard (new)	\$325.75	12 H.P. Standard stationary (new)	\$414.15
12 H.P. Standard (new)	306.50	10 H.P. Farm Engine, hopper cooled (new)	256.35
11 H.P. Special Hopper cooled (new)	189.00	8 H.P. Farm Engine, hopper cooled (new)	197.90
12 H.P. Standard (rebuilt)	200.00	6 H.P. Farm Engine, hopper cooled (new)	148.70
8 H.P. Standard (rebuilt)	175.00	2½ H.P. Farm Engine, hopper cooled (new)	55.00
TRACTORS, STEAM			
35 H.P. double cylinder (rebuilt)		\$2,500	
25 H.P. Northwest (rebuilt)		1,000	
PORTABLE ENGINES			
22 H.P. single cylinder, portable, Geiser (new)		\$500.00	
22 H.P. single cylinder, portable, Geiser (rebuilt)		600.00	
20 H.P. single cylinder, portable, Geiser (rebuilt)		500.00	
Also have a couple of 20 to 22 H.P. portables which will rebuild and sell at about \$350.00 each.			



- 1½ H.P. water cooled (new) — \$ 40.00
- 1½ H.P. water cooled (new) — 31.00
- 2½ H.P. water cooled (new) — 61.20
- 3 H.P. water cooled (new) — 81.00
- 4 H.P. water cooled (new) — 122.00
- 6 H.P. water cooled (new) — 198.00

CASH PRICES except in case of Tractors and Portables for which reasonable terms will be considered at increased prices.

**R. S. EWING, Assignee**

200 Union Trust Building, WINNIPEG

## The Soldier as Prophet -

Sir Francis Younghusband says That Men and Women Want Something Simpler, Truer, More in Touch With Life and Reality, Than is Presented to Them as Their Religion To-day.

SIR Francis Younghusband, the distinguished soldier who led our famous expedition to Tibet, and has done service in many fields, is no longer physically able to take the field.

But as those who read his book, "Within," know, he has other interests now to engage the activity of his mind. His new book, "Mutual Influence: a Review of Religion" (Williams and Norgate London) shows that his mind is still centred on the great task of inspiring men and women with religious idealism.

To-day we all turn to our soldiers, and when the soldier turns prophet we should be doubly quick to hear. For in his activity the man of action often hears what those less active often fail to hear.

### Twenty-Five Years' Search

Sir Francis modestly says that his conclusions have "not been formed in haste. They are the result of 25 years' most earnest search under conditions where it was possible continually to test them against the experiences of actual life."

Men and women, he believes, "want something simpler, truer, more in touch with life and reality, and therefore great enough for the great times in which we live, and for the great men with whom it is our privilege to work.

"They see and recognize that the religion which inspired the life of men like Nelson, Lincoln and Roberts must have something in it of supreme value, and what is great and of value in it they would preserve as the most precious heritage of the race.

"But with the wider knowledge of things which they possess to-day, they see that there is much in the current religion which needs to be eliminated and discarded; and this wider knowledge which the labor of their predecessors has enabled them to possess fills them with a sure conviction that through the process of elimination and by this closing with reality there will emerge for their children in generations to come a purer, a deeper, and a far more intimate and human religion than any which had gone before. This purification and reconstruction of our religious beliefs must be the perpetual work of the greatest and noblest among us."

Sir Francis says that "it is not expected that a man of action should write on religion. But religion is the mainspring of action, and in action this book was conceived. It represents the views of one who was brought up in the old-

fashioned religious beliefs and who still recognizes the profound value of their inner core, but whose contact with life, especially with life among men of other faiths, and whose study of nature, incited by years spent among the grandest natural phenomena in the world, has forced him to prove all things, to seek for truth from the highest authorities, personally as well as from their books, and to form his own conclusions."

Sir Francis declares that most men, and particularly men of action, are deeply conscious of the presence of some Unseen Power at work in the world. In moments of crisis and when the fate of a nation has depended on their action, they have felt themselves under an overpowering influence which carried them high above all selfish desires, impelled them to do their utmost, and made them ready, without even a thought, to sacrifice their lives for their country and for humanity, in order that justice, freedom, and righteousness may prevail.

### The Unseen Power

"And what they have felt has filled them with the conviction that the Power makes for goodness; they have wished, therefore, to work with it, and have it working with them for what they are convinced must assuredly win in the end. As long as they do their best, and as long as they are ready to sacrifice all they have to achieve the best, they are sure they will have this Power behind them, and that, having it behind them, they are working for what must in the long run inevitably be achieved.

"All this may be seen in what to me is the most beautiful prayer without any exception which has ever been uttered, and which was written by Nelson immediately before going into action at Trafalgar:

### Nelson's Last Prayer

"*May the Great God whom I worship grant to my country and for the benefit of Europe in general a great and glorious victory; and may no misconduct of anyone tarnish it. And may humanity after victory be the predominant feature in the British Fleet. For myself, individually, I commit my life to Him Who made me; and may His blessing light upon my endeavors for serving my country faithfully. To Him I resign myself and the just cause which is entrusted to me. Amen, Amen.*"

"Men of the present day may not express themselves in the same way," comments Sir Francis.

"Yet they may be no less really religious than Nelson, and I believe that the men of the future may be even more religious. They will have the same conviction of the justice of their cause, for they will refuse to take up causes which they do not consider just . . .

"But their conception of the nature of that Unseen Power which they know in their hearts does make for good may be truer; and because it is truer their religion may have greater depth and intenser reality, and fill a larger portion of their lives. It may, indeed be that even now men are hungering for such a religion and that the momentous times in which we live may give it birth."

Sir Francis Younghusband makes a very interesting comment on the "uncertainty of touch" with which men speak of "the true nature of this Unseen Power so active in the affairs of men."

"It is," he says, "a remarkable circumstance that our statesmen in this greatest moment of our history, when the fate of the vastest Empire that men have ever had to guide was in their hands, and when they had to explain the position to their countrymen, to point out the dangers which lay before them and to indicate the objects they hoped to achieve, made scarcely any reference to such a Deity as might be regarded, in any true sense of the word, as an actual Person existing separate and apart from ourselves and controlling our destinies in the same way as an earthly sovereign exists and governs as a distinctly separate person."

### Our Statesmen's Uncertainty

"They did not in their reference to the Deity give the impression of deliberately and definitely meaning us to go for help to any actual Person as distinct from ourselves, and as willing and able as an autocrat of this earth would be who was both powerful and good. . . .

"But it does not follow from this omission that they had no religion and no sense of being in the presence of some Good though Unseen Power. On the contrary, their speeches abound in religion; they are the best possible evidence of our statesmen feeling themselves under the influence of some mighty Invisible Power which they believed to be good, for we see even so powerful a man as the Prime Minister of England and

his strongest colleagues being swept along by such a Power."

### The Nature of the Unseen Power

Sir Francis insists that it is "a deep necessity of the times" that men should know the true nature of this Unseen Power.

"Every year by his accumulated knowledge and experience, as well as by his increase in numbers, man is becoming a force of greater significance and importance on the planet. And as he has existed on it only a quarter of a million years, while there are many millions of years yet before him, the importance of his determining what is the nature of that Unseen Power which so influences his actions is sufficiently apparent.

"For we should be beginning to realise what an overwhelming force man is becoming on this planet; how much he has so far effected; what illimitable possibilities lie before him; and how greatly his future will depend upon whether he regards himself as an insignificant animalcule controlled and guided by some Being in the Heavens or believes himself, and can with proper justification so believe himself, to be master of his own destiny, able to choose his own path and to pursue his own way along that path."

All who cry "Oh, that I might find Him" will not find their answer in Sir Francis Younghusband's book. But all will know that here is a sincere and devout searcher for truth and an apostle of spiritual progress.

Sir Francis believes in self-reliance. He believes in a "Whole which is in Process, in Process of Betterment, and which is animated by a Spirit issuing from the parts, but which in turn fashions and moulds them, making and remaking the same material over and over again, but itself enduring continuously and being continuously bettered."

"If we can strike a true mean—or, rather, if we can both be expansive and openly receptive to the inrush and onrush of the great universal spirit, and also be firmly reliant upon ourselves—then, indeed," says Sir Francis, "we shall have attained the sublimest harmony of life."

To such a one, "even here and now, will come the feeling of Heaven, and with it the longing that he may so do that his children and his children's children may experience it more fully and more often in the goodly years that we must make."



# OUR BIG AUTOMOBILE CONTEST

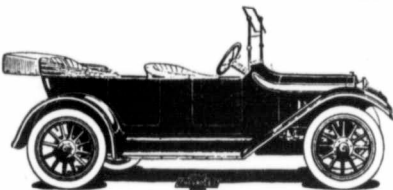
POSITIVELY CLOSES ON THE 31st OF JULY, 1916

ARE YOU GOING TO LET

\$725.00 get away from you when you have just as good a chance as any other one in the contest? There is no speculating or guessing in this competition on something which has yet to be ascertained. The kernels (weighing 3 1/4 pounds) have been placed in the glass bottle reproduced on this page, sealed up in the presence of two witnesses in the office of the Dominion Inspector of Weights and Measures, photographed and deposited in the vaults of the Union Trust Company, Winnipeg, where it will remain until the contest closes, July 31st, 1916.

Whether of your age or experience, you enter the contest on equal terms with anybody else. Don't be afraid to try. One kernel may win you the car.

This Is



The Car

WILL WE SEND YOU THIS TELEGRAM?

SOME ONE WILL RECEIVE IT — YOU CAN BE THE LUCKY ONE

On August 5th someone is going to be \$725.00 better off and it's going to be the reward of merely a little care and thought. Are you going to be the proud possessor of the beautiful Chevrolet Car, or are you going to let it go to someone who is willing to while away some idle moments? It is all up to you. May we wire you this message on August 5th?

### Canadian Pacific Railway Company's Telegraph



IN CONNECTION WITH THE  
COMMERCIAL CABLE CO. COMMERCIAL PACIFIC CABLE CO.  
BRITISH PACIFIC CABLE BOARD  
HALIFAX-BERMUDAS AND WEST INDIES CABLES

REACHES ALL PARTS OF THE WORLD

SEND THE NOTICE AND AGREEMENT ON THE BACK

Send the following message, subject to the terms printed on the back hereof, which are hereby accepted.

76.00  
S. Heath, Ltd.  
M.P.C. YOUR  
M. Heath, Ltd.  
on  
Christm. 5.00

Our Big Automobile contest closed on 31st July. You are the winner of the Chevrolet car. Will ship immediately. Congratulations. Letter follows.

E. H. Heath Co. Limited.

Winnipeg, Aug. 5th, 1916.

MAKE UP YOUR MIND NOW

that you will enter the contest to-day with the full determination to win. Don't let this opportunity slip by—it means too much to you. Send in your estimates to-day when the chance is before you. As a guide to everyone, we may state that in the "Thresherman" contest of 1908, when 15 lbs. of No. 1 Northern were used, the actual number of kernels was 257,885. In the following year 8 lbs. and 7-16 oz. gave 143,272 kernels, while in 1910 the number was 197,543 kernels in 12 lbs. of No. 1 Northern.

Don't put off another minute because the sooner your estimates are entered up in our contest records the better your chance will be to win the car.



D. D. CAMPBELL  
Dominion Shippers' Agent



J. B. ATTRIDGE  
Scale Inspector  
Dominion Weights and Measures

## HOW TO WIN THE AUTOMOBILE

We will present the above handsome "Chevrolet" automobile (1916 model) to the first reader of the Canadian Thresherman and Farmer who estimates nearest to the number of WHOLE KERNELS in 3 1/4 POUNDS

(three and one-quarter pounds) of No. 1 Northern wheat, between 1st April, 1916, and 31st July, 1916. The wheat is a fair sample of No. 1 Northern obtained from the Dominion Grain Inspector at Winnipeg. On the closing date (31st July, 1916), the kernels will be counted by the three judges whose photographs appear on this page. No one has or can have any knowledge of the number of kernels the bottle contains, because the wheat was sealed up in the bottle and locked away without being counted. The contest is open to every bona-fide farmer in Canada except residents of Winnipeg. Seven hundred and twenty-five dollars is the price of the car. It is all complete with Electric Starter and Lights, Mohair Top, Windshield, Ameter, Speedometer, Tools, etc., and will be delivered to the winner F.O.B. Winnipeg.

In This Bottle There Are 3 1/4 Pounds No. 1 Northern Wheat



This is a photograph of the actual bottle of wheat after it had been weighed and sealed. The cut shows it very much reduced in size.

Can You Tell How Many Whole Kernels There Are In It?



W. J. FIELDS  
Asst. Inspector of Weights and Measures

## HOW TO SEND YOUR ESTIMATES

Everyone who sends us a subscription direct to this office between the dates mentioned, for the Canadian Thresherman and Farmer, either new or renewal, is entitled to estimates as explained below. These estimates may be credited in whatever way you desire, and you may send in as many estimates as you wish in accordance with the schedule below. Remember every additional estimate increases your chance to win the car. Estimate now and increase your chance of winning, because it is the first one who estimates nearest to the number of whole kernels that wins the automobile. Estimates will be accepted as follows:

- 1 year's subscription at \$1.00 gives you 3 estimates.
- 2 year's subscription at \$1.50 gives you 7 estimates.
- 3 year's subscription at \$2.00 gives you 11 estimates.
- 4 year's subscription at \$2.50 gives you 15 estimates.
- 5 year's subscription at \$3.00 gives you 19 estimates.
- 6 year's subscription at \$3.50 gives you 23 estimates.
- 7 year's subscription at \$4.00 gives you 27 estimates.
- 8 year's subscription at \$4.50 gives you 31 estimates.
- 9 year's subscription at \$5.00 gives you 35 estimates.
- 10 year's subscription at \$5.50 gives you 40 estimates.

Address all communications to the E. H. HEATH CO., LTD., WINNIPEG.

## ABOUT THE JUDGES

On this page we publish photographs of the three gentlemen who will act as official judges of our Automobile Contest. We could offer no better guarantee that the contest is absolutely on the square and that every contestant stands an equal chance to win the Car, than the selection of these three men. Mr. D. D. Campbell is the Dominion Shippers' Agent at the Winnipeg Grain Exchange. Mr. W. J. Field is Assistant Inspector of Weights and Measures, while Mr. J. B. Attridge is Scale Inspector at the Dominion Weights and Measures Office.

## COUPON

E. H. HEATH CO., LIMITED, Winnipeg.

Please find enclosed \$..... for ..... years' subscription for the Canadian Thresherman and Farmer to be sent to Name .....

Address ..... Prov. .... My estimates as to the number of whole kernels in 3 1/4 lbs. No. 1 Northern wheat are: .....

If more space is required for names and estimates, use a blank sheet and attach securely to this coupon.



**WOMEN CAMPAIGNERS.**

We have just elected another woman to the Winnipeg School Board. On that Board there have been thirteen men and one woman. Some women of the city thought there should be another woman, in fact a lot more women, but there was just one by-election, so they put Mrs. A. G. Hample up as their candidate. Two men opposed her. One was a labor man, and the other, I would describe as a stand-patter. They were both nice fellows and both popular with a certain section of the voters, but the strong argument for Mrs. Hample was, that there should be more women on the Board.

That argument weighed with men as well as with women. And just here I notice that I made a mistake in that first paragraph. It was not the women who put Mrs. Hample up as a candidate. It was a committee of both men and women, and there were about an equal number of each. It is a splendid thing for the women of the prairie to realize that in their work, in a public capacity, they need not stand alone. There are a lot of fair-minded men who realize that there is a public work, woman should do, and who will help her to do it. It is the hope of the progressive women of the west, that men and women will work together for the common good.

In season and out I have advocated putting a woman on every school board in the province. The trouble has been that many women are afraid to go into a campaign. Now, from my experience in the campaign just past, I desire to say that you must take your courage in your hand and go ahead.

**The Candidate**

In the first place when you decide to run a woman for school trustee do not expect the men to withdraw and leave the field to the woman. There is no reason why they should. We have secured the franchise to put men and women on an equal footing politically, and that is all we want or expect. A fair deal and no favor, and there is no reason why a man should withdraw to let a woman have the position.

Next, do not be afraid of a campaign. In every bit of public work in which the women take part there is an education, and we all need that. The old idea that there were nasty things in every campaign is a fallacy. There can be a hot campaign without a nasty word being spoken, or a nasty thought entertained. We all know that it is foolish to expect everyone to agree with us, and it is a great thing to learn to sit still and hear the other fellow pulling our ideas to pieces and trying to prove that we are wrong. It is a great training to learn to speak and feel kindly toward the man who opposes us, just as strongly as he can, but it can be done. Women have wondered at men who fought against each other in a political campaign, and were the best of friends afterwards. It was not entirely because they considered politics a game, but because they realized that everyone has a right to their own opinions.

Then the next thing to consider is the candidate. She should be a woman who believes that she should take her place on the school-board, and do her public work in that way. A half hearted candidate is very hard to work for. Women should have the call to the school boards of the country just as strongly as any preacher ever has the call to the pulpit. There is a work to be done there, and when there is a woman in the dis-

trict who feels the call, and who can command the respect and support of many of the people in her belief, then she is the one for candidature. She should be a woman who sticks to a thing when she once begins it, a woman who is not looking for slights but is looking for the best in everyone, a woman who is not afraid to both work and pray about her candidature. She should be a woman loyal



MRS. WALTER PARLEY, Alt., Alta., President of the United Farm Women of Alberta.

to women and just as loyal to men. She should know something of our educational systems, and she should know children. I would not say that she should hold certificates or college degrees. Not at all. She should have the education that life gives an intelligent thoughtful woman, and with that she will get along very well.

But do not expect to find a perfect woman. They are not here. Everyone you can think of will have faults, if they

hadn't they would be too good for this world. A woman who reads, who is intelligent, and who has a mother-heart, is pretty well qualified to be a school trustee, if she feels the call to the work, and can count on the support of the people. The people decide these things and the candidate must be popular.

**Working for Your Candidate**

If you wish to elect a candidate to any position a good thing to do, is to ask everyone who has a vote to vote for her. This is called canvassing, and it is not exactly an easy thing to do. Rather it is not an easy thing to begin. You just need to canvas for a day to find out how many nice people there are in the world. It astonished me, when canvassing for Mrs. Hample, to find how kind and considerate most people are. I found most of the men and women much interested, and if they were not willing to vote for our candidate, they were nice about it, and I realized that they had a right to their own opinions.

There was not an unkind or nasty word spoken to me during the campaign, and there were many nice things said, and laughing words, about our candidate, and sometimes we were able to speak a word of comfort, in homes where trouble was weighing the inmates down. A word of sympathy from a stranger you may think is a cold thing, but it is not, when it comes from the heart, and at times our hearts were sore for those we met. A kind word, a sympathetic look and perhaps a pressure of the hand even from a stranger, helps a little the heart that needs all the sympathy it can get.

We were in many homes, where the language spoken was strange to us. What laughs we had trying to make each other understand. We may not have accomplished much in breaking down the barrier of language, but we broke down the barrier of nationality. We were all just citizens of the city, interested in the same problems. If anything in the world is going to make us all feel that we are brothers and sisters, no matter in what land we were born, it will be working together. I long for the time when all women on the prairie, work together for the public good, then we will be one just folks and not until then.

**We Need Organization**

When Mrs. McClung was in the city last time, she told a good story, to illustrate the fact that the time has come, when we women cannot accomplish what should be accomplished alone. We must be organized and work together. Her story was that a man with a cane was walking along a country road and as he walked he slashed everything he could reach. He snipped the heads off the flowers that grew beside the road; he swished the grass, and made a strike at a gopher, that was sitting beside the trail. But in his walk he approached a bush on which there was a wasp's nest. He kept his cane discreetly by his side, as he passed it. A friend said, "Why don't you hit the wasp's nest, as you have hit everything else?"

"Ah no!" he said shaking his head, "They are organized."

That is it. Just as long as we women try to work in our own little corner, the evil interests, can laugh at us and switch their canes at us. But just as soon as we are organized and they realize that there are thousands of us, right on the job, they will pass quietly, and do as little damage as possible. In fact, the idea of the organized women of the world strikes terror to the hearts of those who are oppressing the weak. There is such an organization of women at present, in a small way, and we hope in the near future to make it a big thing.

**The International Council of Women**

When Lady Aberdeen was in Canada she took a great interest in the various organizations of women. She took such a practical interest and worked with such a number of them that she was impressed with the idea that they were working too much in isolated units. She felt that if there could be a federation in which all the organizations of women in the world working for matters of interest to them could unite on matters of common interest it would facilitate the work and bind the women of all nations together.

Such an organization was formed and it is known as the International Council of Women. It is organized in this way. Any place where there are two or more organizations of women can form a Local Council of Women. This Local Council has an executive of all the presidents of the affiliated societies. It elects a president and secretaries, and carries on general business, brought before it by any of the affiliated societies.

Then these Local Councils in turn belong to a National Council, that includes all the Local Councils in Canada. This larger body carries on national business.

This Council is known as The National Council of Women of Canada. Every Local Council in Canada has a voice in the affairs of this Council, in fact, has an equal voice for the small local council has just as many votes on the large councils. Many other countries have similar National Councils.

Then, above that, is the International Council of Women, which includes representatives from all the national councils of women in the world. This great International body has met in Canada, in England, in Italy and other places has had representative women from all the large nations of the world. The year the International Council met in Toronto, some of the delegates took a trip through to the West Coast. I had the privilege of going with them from Winnipeg, and it certainly was a privi-

Continued on page 70

**YOU GET THE BEST HEATING SYSTEM ON THE MARKET WHEN YOU BUY THE HECLA WARM AIR FURNACE**

It is a saving and a satisfaction. It saves one ton of coal in every seven used.

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*The New* **REO "SIX"**

## The "Gold Standard" of Sixes

RECENTLY A GROUP OF GENTLEMEN were discussing motor cars—as men so often do, since there's no other peaceful topic that is of such general and such vital interest.

THEY WERE TALKING SIXES, pro and con, and "wondering whether" such and such Sixes were really good cars this year—in view of their past unsatisfactory records.

ONE SAID, "of all the Sixes made, there's just one you can tie to with certainty that it will live up to all expectations—because of its own and its makers' past record.

"THAT'S THE REO SIX—the handsomest as well as the sturdiest Six made.

"IT'S THE GOLD STANDARD of Sixes."

"WE ARE ALL AGREED ON THAT, I guess," exclaimed another—"there never can be any doubt as to the quality of a Reo.

"REO CARS HAVE BEEN the 'Gold Standard' of automobile values since there were automobiles."

HAD YOU THOUGHT OF THAT—just in that way?

IF NOT, JUST CONSIDER for a moment the tremendous significance of that fact—for it is a fact that all motorists look upon Reo as the "Gold Standard."

YOU MAY DOUBT, you may question, claims made for other cars; but you accept as a fact firmly established, that a Reo is 24-karat fine from radiator cap to tire holder.

THAT BEING THE CASE, seems as if prudence dictates only one choice for your automobile—the one Six of which you can be absolutely sure—a Reo Six.

YOU CAN'T AFFORD—no matter what your income—you can't afford to experiment in so important a matter.

FOR IT ISN'T THE PRICE—goodness knows that is lower than anyone ever dreamed a first-class six-cylinder car could ever be bought for. It isn't the price that counts.

IT'S THE UPKEEP—cost of operation and maintenance; and the still more important fact that if the Six you buy fails to live up to the glowing praises of its makers your pleasure will be marred on every trip you take and as long as you own it. And the longer, the more unsatisfactory.

THAT'S WHAT COUNTS. If it proves to be a racing car—and therefore a "gasoline hog"; or so light it will soon show its flimsiness by squeaking and creaking and groaning over the least inequality of the road;

IF IT'S ONE OF THOSE "2 in 1" affairs that looks simple from the outside but proves as inaccessible as a burglar-proof safe when you try to make some adjustment or replacement or repairs;

IF IN FACT, IT FAILS to make good on any one of a hundred counts—then it falls short of the Reo standard—and you will be grievously disappointed.

SO THE ONLY WAY to be absolutely certain that the coming year's motoring will be as pleasurable as you can desire, is to take no chances—choose the "Gold Standard" for yours.

UNALLOYED PLEASURE of ownership is assured when you select this car that all the world considers the "Gold Standard" in value at its price and in enduring qualities with the lowest depreciation from year to year—a Reo Six.

(142)

REO MOTOR CAR COMPANY Lansing, Mich.

# OUR YOUNG FOLK CONDUCTED BY Cousin Doris.

## Girls' Cosy Corner

### FOR BRITAIN

By Philip Trevor

(The word Britain is inserted for England.)

What will you do for Britain,  
Dear little British maid?  
You may be poor, weak and obscure,  
Still you can lend your aid.  
It matters so much to Britain,  
What you will try to do;  
You can, if you will, make her greater  
still  
It lies, little child, with you.

In a child's small hand lies the fate of  
our land,  
It is hers to mar or save;  
For a sweet child, sure, grows a woman  
pure,  
To make men good or brave.  
We British ne'er shall kiss the rod,  
Come our foes on land or sea,  
If our children be true to themselves and  
to God,  
Oh! great shall our Britain be.

This shall you do for Britain,  
This, child, may each one give,  
Fearless and free, pure shall you be,  
Give her the life you live;  
So make you great, our Britain,  
Child, there is much to do.  
You can, if you will, make her greater  
still,  
It lies, little child, with you.

My dear Cosy Corner Girls:—  
It has been some time since I have  
written to you, but I want to tell you  
this month about a very patriotic organiza-  
tion for girls. It is known as The  
Girl Guides. The leader of this organiza-  
tion is Miss Baden-Powell, of London.  
You have heard of the Boy Scouts, led by  
Sir Robert Baden-Powell. Well this is  
a similar organization for girls. The

Boy Scouts organization has for its pur-  
pose the making of manly boys. The  
purpose of The Girl Guides is to de-  
velop womanly women. Now Miss Baden-  
Powell says womanly women do not ape  
men. They do not want to be like men.  
You know womanly women lead men.  
They are so clean and pure and gentle  
and inspiring that men want to please  
them without realizing it.

I wish every town in Western Canada  
would organize a Girl Scout club.

The organization is a patriotic one,  
for it teaches girls how to be self helpful,  
happy, prosperous, capable women. Miss  
Baden-Powell says: "If every girl of the  
Empire were to make herself a really  
good, useful woman, our nation would  
be such a blessing to the civilized world  
that nobody would wish to see it broken  
up by any other nation. No other nation  
would want to do it. But to hold that  
position we must be good citizens and  
firm friends among ourselves within  
our Empire.

"A house divided against itself cannot  
stand. If a strong enemy wanted our  
rich commerce and colonies, and saw us  
divided against each other, he would  
think he could pounce in and capture us.

"For this purpose you must begin, as  
girls, not to think of other classes of  
girls as your enemies. Remember,  
whether rich or poor, from castle or  
from slum, you are all Britons in the  
first place, and you've got to support  
Britain against outside enemies. You  
all have to stand shoulder to shoulder to  
do it.

"If you are divided among yourselves,  
you are doing harm to your country.  
You must sink your differences. If you  
despise other girls because they belong  
to a poorer class than yourself, you are  
a snob; if you hate other girls because  
they happen to be born richer and be-  
long to higher class schools than yourself,  
you are a fool. We have got each one  
of us to take our place as we find it in  
this world, and make the best of it, and  
pull together with the others around us.



A WARNING TO THE COCK-SURE.

Here comes my young brother?  
How do you know?  
Why, by his footsteps, stupid. All our family walk the same."

We are very like bricks in a wall; we  
have each our place, though it may seem  
a small one in so big a wall. But if one  
brick gets rotten, or slips out of place,  
it begins to throw an undue strain on  
others, cracks appear and the wall tot-  
ters.

"Whether we be gentle or simple, the  
truest 'good breeding' is shown by our  
care for the feelings of others. The  
real 'great lady' is as thoughtful and  
considerate for those beneath her in social  
position as she would be for royalty."

I am sure that a Girl Guides organiza-  
tion would be a help to any town. The  
above I have quoted from Miss Baden-  
Powell's hand book for girl guides—and  
the patriotic notes in this department I  
have taken from the same book.

From now till July 15th I want our  
girls to write to our department on this  
subject, "A Patriotic Deed." Let us  
have next month our department full of  
essays on this subject. Every girl who  
writes an essay will be placed on the  
Honor Roll.

How many would like to have a Girl  
Guides organization in your community?  
Sincerely,  
Cousin Doris.

### FOR GIRLS

A girl patriot—the Duchess of Suther-  
land—when only twelve years old raised  
a whole regiment, known as the Suther-  
land regiment during the American War.  
This brave girl reviewed her men, 1,000  
strong, from the windows of her aunty's  
house in Edinburgh.

However brave or great the deed seems,  
a woman is no heroine if it cost her  
nothing to do it.

Queen Boadicea—a longago heroine  
who guarded in Norfolk—when she  
found that the Romans had taken pos-  
session of London, gathered together a  
very large army of Britons to try and  
turn out the enemy. She cleverly took  
the opportunity when the Roman chief  
had gone away to fight up in the north  
and bravely rallied a large force, and  
urged them to march on London. The  
queen led the army on, and, inspired by  
her, they attacked the Romans sud-  
denly and massacred the whole garrison.

We all want to help our country, and  
wish to be of use for the advancement  
of the Empire.



The Rev. J. Purvis, in addressing some girl guides, said, "As you are moulding your minds and your bodies at the present time, so will they act in the future, either as a drag or for the advancement of this glorious nation."  
Let every girl think of her country and help its advancement.

"Nothing in history is comparable to this enormous prosperous realm known as the British Empire, with the sea for its streets, and with a sacred duty to carry light into all the dark places over the whole world. The British Empire is three times as big as the whole of Europe."

"Hard sailing, hard soldiering, hard colonizing by our old British seamen—that is what made British character with grit in it."

"Australia happily had no wars in her conquest, but was got for us by our sailor men (like Captain Cook), who outstripped all other nations in their plucky navigation of immense, unknown oceans."

Guarding your country by a deed of valour is not out of the power of quite a small child.

A nation is made up of individuals. If each person out of a hundred is bad, then the whole hundred are bad, so, if each and every single girl and boy in Britain is good and reliable then the whole nation is good and reliable.

**CANADIAN BOYS' CAMP  
WINTER IN THE LAP O' SPRING**

It's the most pr'okin' nonsense  
That I ever heard about!  
Here's the dandelins a-bloomin'  
An' the Johnny-jump-ups out;  
Here's the cherry trees in blossom  
An' the bluebirds on the wing—  
But of Winter's still a-linger'n'  
In the flow'ry lap o' Spring.

It's enough to make a body's  
Temper fairly bile an' fizz,  
Jest to see that gray o' codger—  
Stiffened up with rheumatiz!—  
Limpin' round among the posies;  
But the most disgustin' thing  
Is to see the dotard lollin'  
In the lap o' rosy Spring.

"She's as purty as a picture!"  
Poets say, an' praise'er form,  
Claim'er eyes 're bright an' sparklin'  
An'er breath is sweet an' warm;  
But I own that it amazes  
Me to see that maiden fling  
Both'er arms around ol' Winter!—  
I'm a little down on Spring!

W'y, it's set the people talkin'  
'Bout the bold an' shameless pair,  
An' the fruit trees 're a-blushin'  
At the scandalous affair;  
W'ile the robbins 're so ashamed, sir,  
That they skeerely dare to sing—  
Fer that villain 's still a-cuddlin'  
In the lap o' balmy Spring!

**HOW GEORDIE WAS ABLE TO  
ATTEND THE REVIEW**

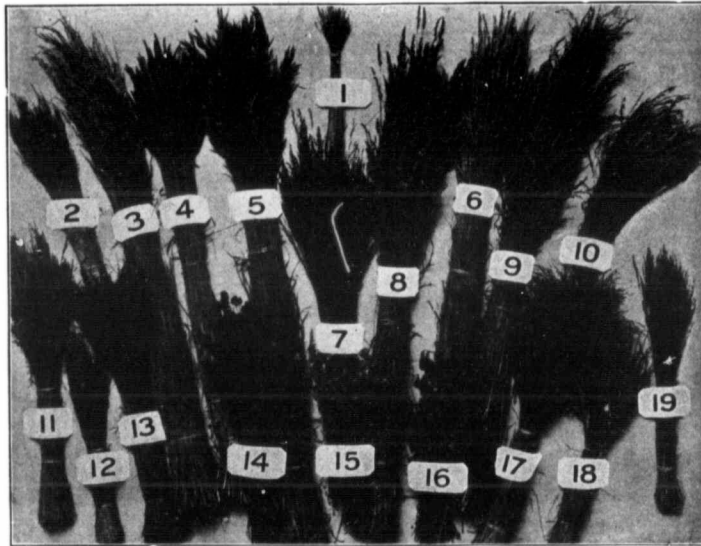
A True Story of a Winnipeg Scout  
Geordie was a newsboy and also a Scout in Troop —, Winnipeg. The Review by His Royal Highness, the Chief Scout of Canada, was called for the 22nd of September, and Troop orders were issued that all members of — Troop would fall in at Troop headquarters at 6 a.m., as they had to appear on the Parade Ground not later than 7 a.m.

Geordie had a chum—Arthur—a brother Scout, in the same Troop, and realizing that it would be impossible for him to attend the review without some aid from outside, he arranged with his chum to help him deliver his papers. Arrangements were made the previous night that the papers would be sent by the "early workman's car."

Geordie and Arthur had reveille sounded for them by the three-dollar Big Ben alarm clock at 3:45 a.m., and never was sound more welcome than the racket that that alarm made; for did it not herald in the great day when they would meet the Chief Scout of Canada?

The territory usually covered by Scout Geordie was divided between himself and Arthur, and at 6 o'clock sharp, all papers having been faithfully delivered,

**GRASS SEEDS**  
Can be sown to best advantage during the warm showery weather of June and July



**GRASSES WE ARE GROWING**

Names of the above are all listed below, corresponding with numbers. Some of these are valuable for hay purposes, and others are of greater value for pasturage.

Per 100		Per 100		Per 100	
1 Alopecurus pratensis (Meadow Foftail)	.....	8 Dactylis glomerata (Rough Cocksfoot or Orchard Grass)	..... \$20.00	15 Anthyllis vulneraria (Kidney Vetch or Yellow Sand Clover)	..... \$35.00
2 Festuca rubra (Red Fescue)	.....	9 Festuca elatior (Tall Fescue)	..... 23.00	16 Trifolium hybridum (Alsike Clover)	..... 29.00
3 Avena elatior (Tall Oat Grass)	..... \$24.00	10 Festuca pratensis (Meadow Fescue)	..... 24.00	17 Poa pratensis (Kentucky Blue Grass)	..... 20.00
4 Phleum pratense (Timothy)	..... 9.00	11 Poa serotina (Late Meadow Grass)	.....	18 Festuca duriuscula (Hard Fescue)	..... 24.00
5 Bromus inermis (Brome Grass)	..... 14.00	12 Poa compressa (Canadian Blue Grass)	..... 14.00		
6 Agropyrum tenerum (Western Rye Grass)	..... 12.00	13 Trifolium pratense (Red Clover)	..... 25.00		
7 Agrostis vulgaris (Red Top Grass)	..... 26.00				

Alfalfa ..... \$24.00 Rape Seed ..... 15c per lb. Fescue ..... \$3.25 per bus. Fodder Corn \$2.25 per bus.

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- Russian Golden Willows, at \$5.00 per 100.
- Russian Golden Willow Cuttings at \$1.00 per thousand.
- Laurel Willows, 2-3 feet, at \$5.00 per 100.

POPLARS, BASSWOOD, and all other hardy ornamental trees and shrubs. CARAGANA and LILACS for hedging at \$3.00 and \$5.00 per hundred.

100,000 hardy fruit bushes and trees at lowest prices. Write for Catalogue to

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Brandon, Man. (Established 1883) Saskatoon, Sask.

they reported at Troop headquarters. They were met with the greetings of their Scoutmaster, who had known something had taken place, and were gladdened by the good hot toast and warm cocoa that he prepared, and with the Troop they marched to the Parade Ground.  
Geordie was spoken to by H.R.H. the Chief Scout, and has never ceased talking of this ever since. He returned to school; after school delivered his papers again in the afternoon; returned home, tired, but satisfied that the day had been well spent; and after getting his home-work done, he earned, like the village blacksmith, "a night's repose."

**WHEN DREAMS COME TRUE**

Boys and girls, did you ever dream you would own a motor car? Probably you have dreamed you would own one just as lots of other folks have done. Here is a chance to make your dream come true. Turn to page 59 and read the announcement above the splendid \$725 Chevrolet Automobile we are giving away free. You have a chance to win this splendid car just as well as the older folks. All you have to do is to weigh one-quarter of a pound of No. 1 Northern wheat—count the number of whole kernels in same and multiply this by thirteen. You will then know the approximate number of kernels in the

jar. If no one estimates the correct number, the one estimating nearest to it will receive the car. All your neighbors will be interested when you tell them you are trying to win the car. Get every reachable farmer to give you a subscription for one year or more. This will entitle you to more estimates and increase your chance of winning. There are boys and girls all over the West who know that we make "motor car dreams" come true, and we hope you will do as we ask you so that we can send you an automobile free and make YOUR "motor car dream" come true. Address all subscriptions and estimates to the E. H. Heath Co., Ltd., Winnipeg.

# OUR WOMEN FOLK

CONDUCTED BY  
PEARL RICHMOND HAMILTON

## MOTHER AMONG THE FLOWERS

Of all the pictures I can find  
Of mother, hanging in my mind,  
I like a few the very best.  
They show her face the tenderest  
And most content; they show the  
hours  
That she has spent among her flowers  
I see her there and understand  
Her best; there, with its loving hand,  
Has nature painted her and caught  
The sweetest aspect of her thought.  
In the summertime she goes

So softly down her garden rows,  
Bright faces greet her all around  
Where once her fingers laid the ground  
With seeds in careful rows and plots:  
Nasturtiums and forget-me-nots,  
Love-in-the-mists and four o'clocks,  
Petunias, snap-dragons, phlox,  
Fog-gloves and spicy mignonette.  
I never, never shall I forget  
How lovingly my mother bends  
Above her little garden friends.

I think some day that she will be  
An angel of the rain. Then she  
Will send the dew and summer show-  
ers  
To gladden all the thirsty flowers.  
—Richard Hunt.

## MY BIRTHDAYS

P. R. H. on the 19th of May

This is my birthday. As the years pass, one holds with tenacity to each passing birthday. Birthdays should be happy days. The birthday in the life of a child should be an event for each member of the family to celebrate. Back into my childhood I wander to my birthdays. They came and went unnoticed by all save one. That one had little to spend of her own, yet she always made the day a red letter day for me. I did not live with her, but on that particular day I would go to see her for I knew she would have some little thing to give me. Little it seems now, but it meant a great deal to me then.

She lived a mile from my home and in those days I invented many an excuse to go to her home—the home of my grandmother—the woman whose little acts of sympathy brightened my dark childhood, for every time I think of my childhood the lack of sympathy fills me with bitter thoughts of big people working for giant dollars to pay off debts on land to buy more land—always, always there was a mortgage giant's mouth to feed and the heart pangs of little children did not really mean much to the paternal mind. How often the souls of little children are sacrificed on the altar of the dollar dragon monster!

But to return to my birthdays—grandmother always put two dozen eggs into a little tin pail and told me to take them to the store and buy what I wanted. Two dozen eggs to spend as I wished—two dozen eggs at seven or eight cents a dozen. This was the proudest day of the year to have fourteen cents for my very own.

I carried them very carefully because one cracked egg was a great loss. While the clerk counted the eggs I examined very thoughtfully the ribbons, handkerchiefs and jewelry in the show case of the little country store.

My purchase was usually five cents worth of ginger cookies, and a bran new red hair ribbon. I liked red because it showed more for the money.

Then with the little empty pail I went back to grandmother's and shared the ginger cookies with her and she would

brush my hair and tie the new hair ribbon on. People tell me I have nice hair now. I give grandmother all of the credit. She brushed it a great deal and cut the ends every new moon. In those days we thought the virtue lay all in the new moon. Nowadays we attribute it to regularity.

I remember my sixteenth birthday. Grandmother understood the tender sensitive heart of a sixteen-year-old girl. She knew that girls grow beyond the ginger snap and hair ribbon age and like brooches and rings and such things, and she did not say I was foolish when she saw me study the page of rings in the mail order catalogue book. No, grandmother did not blame me for wanting pretty pink print dresses, and once when I cried because I had to wear big heavy boots with brass toes, on the occasion of my Easter oration in the little village church, grandmother sympathized and said I should have daintier boots for that. Somehow I felt so comforted when she sympathized, for I was starved for sympathy and love, and grandmother knew. She was never too busy to listen and she did not tell me I was silly. So as I look back to my childhood, the beauty spots were associated with grandmother.

But on my sixteenth birthday—the greatest wish I had longed for four years was gratified by grandmother. On this day she did not bring out the little tin pail with the eggs. Instead, she came with a tiny little square box—the

very box I had dreamed about, and thought about, and prayed about for so long. I opened it and there was a beautiful gold ring with a band of gold flowers all around. I shall never forget that day—never, never in my whole life. Grandmother was happy, too, even if she did try to conceal it by poking the fire a bit while I fondled the ring.

I knew grandmother had sacrificed a great deal for that ring, for she must have saved her pennies a long time, because, though grandfather had considerable property, he was saving it all to leave behind him. Some people deny themselves of all possible pleasures while living that they may have the satisfaction of leaving it all behind them, so grandmother seldom had any real money she could call her own.

On the following birthdays I had little love affairs. I would tell all about them to grandmother, because she was interested, and while discussing them she dropped bits of advice and warning. It was so carefully done that I did not realize it was really and truly advice, else I might not have listened. But I believed what grandmother said was right. Somehow grandmother understood love affairs. She is gone now into the Great Beyond, but I feel she is very near me on my birthday—she was my step grandmother really—this dear, kind-hearted, sympathetic woman, who made the birthdays of my childhood living memories—bright days in a stormy clouded period of lonely misunderstood childhood and girlhood.

## Mother's Corner

### LEGACIES

By Ralph M. Thomson

Child of my heart, my wish is not,  
When reckoned with the old,  
That it may be my final lot  
To leave you rich in gold.

Nor do I in love's moments pray,  
While whispering your name,  
To tell to you on some sweet day  
The offerings of fame.

Son of my soul, when I have claimed  
Of God my mortal stake,  
I would not have you feel ashamed  
To follow in my wake!

### A HEART TO HEART TALK

Dear Mothers in this Corner:

I am so thankful to receive so many grateful letters for this corner, for if there is any class of women in this big wide world that I am interested in it is our mothers.

The woman movement that is so prominent in the public eye is doing a great deal for women. Much is advocated that I believe is right, but, on the other hand, I do not sympathize with certain parts of the movement. I think women are knocking our men too much. Our mothers have sent a mighty fine class of men into the world to fight the battles of life for us, and as far as I know men and women I think there are as many good men in the world as women and about as many bad women as men. I think they are bad equally divided. If conditions are not right it is because we have not led the men right, for, after all, we have led the men for generations. By leading I mean influencing them—for most men are susceptible to a woman's influence. The trouble is too many girls do not develop character strong enough to hold a man's admiration and respect. I do not blame men altogether for conditions that may be wrong. Dig down deep into those conditions, and you will find women at the bottom of them. You seldom read of a crime without finding a woman in it, like Lady Macbeth urging on the bloody deed—many times against the desire of the man who actually commits the crime. For ten years I have been working among the wage-earning girls of Winnipeg, and what have I found? I have found the blackest of seducers of girls—women. Heartless they are—harder than any man I know.

A young girl of my acquaintance was lured away to a house of ill fame this winter by a woman who told her she would give her a nice easy position with good pay. When the girl got there she begged to be allowed her freedom. She could not touch the hard heart of the woman—but a man customer, immoral though he may have been, listened to her and helped her.

It is all right to sympathize with girls and women who have fallen—indeed I have taken off my boots to cover their feet—but there are women so steeped in the blood of innocent girls and young men that they deserve the hardest punishment that can be meted out. One wicked woman I see before my mind's eye now—could I but call before me all of the sweet innocent girls she has ruined and young men whose manhood she has wrecked on the rocks of her alluring fascination—there would be a crowd that

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could build a community. I am thankful to know she was sentenced to the penitentiary. No stone quarry hardship would be too severe for her—for she could stand with a wicked fearful smile and demand from a girl in her teens all the money paid the girl in that house of ill-fame, could break stone for a thousand years without suffering the torture she has meted out to young girls and young men.

Another woman I have worked with for three years left a broken-hearted husband and a dear little girl, and how is she living? From the blood money she takes from boys in their teens—boys whose mothers have taught them to be brave and clean and good, but who are not strong enough to resist the new charm of a painted fascinating woman who flatters them. This woman is too cowardly to encourage men.

This winter girls have run away from home because they were urged by young married women in this city, who begged them to come along and have a good time.

"Come over with your friends. I've two fresh girls pretty well doped," was a woman's telephone message to a man this winter in this city.

I have gone down into the depths and I have seen women so black with evil that I sometimes pray—oh, women of the West reform your own sex first. These women have votes. These women go out to catch sweet innocent girls in their nets to use them for a few short years, only to throw them over to human dogs. This is plain—perhaps too plain—but no—it is not half plain enough. I could tell much more. The dangerous women are not all in the underworld. Those I fear most live in decent neighborhoods and dip into every good place they can. A man can be good, but a woman can be better. A man can be bad, but a woman can be worse. There is the other side.

They tell us we must get out away from our homes that we are not needed there all of the time. What is needed most to-day as in times past is "mothers." Define that word and if there is a real mother in every Canadian home will there need to be any outside house keeping?

Someone called me up one day to go to a committee meeting of a club. "I cannot go," I replied. "My little one needs me."

"Why do you not hire another maid?" she asked. "This work needs you."

"Why do you not hire all of your sewing done? It's foolish to waste your time sewing. You're needed in public work."

I looked at my little girl who is so proud when she puts on a dress that "mother made." She knows that love guided those stitches. There is a sacredness about that dress; it means more than a "store dress," and that very sentiment draws her closer to me. The real citizens of the future are not those children who are now hanging on the skirts of a nurse girl. It is true that one can to-day buy bread and cake and canned dinners—but they are dry and not so wholesome as the home-made.

Now when I take four big golden brown loaves of bread out of the oven, my children dance with pleasure and hang around until it is cold enough to eat. That work may not be necessary, but it all tends to bind closer to me my children and I am happy in domestic work, because it is the simple things that bring harmony into home life.

The origin of all law is reared under mental, physical, financial and spiritual management in home life.

The strength of wheat in August is determined not by the dew in August but by what was done in May and June, in the cultivation work. Just as is the strength of home life developed. It makes no difference whether the house be a sod shanty on a lone prairie or a mansion in Winnipeg, the origin of all law is in the home. The right kind of law can only be made by the right kind of mind. Then what say you must the mind of the home maker be? The average child is hungry for companionship and he never outgrows it. If he can find it in the home he will not

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MILLERS TO THE PEOPLE

go elsewhere—if he cannot he will. Then is it not necessary that girls and women develop those qualities of womanhood that shall satisfy the desire of companionship—sympathy, understanding, intelligence—the quality of being interesting.

A man cannot be happy unless he is contented—how can he be contented with a discontented wife? I fear we are commercializing the affections of man. This is a poisonous element that will injure the progress of womanhood. I can see it vividly in the social landscape of our prosperous country. There are women who commercialize the affections of men. They measure a man in terms of luxurious houses, automobiles, expensive clothes, costly trips and extravagant recreations. Their standard is the current opinion of society, and they injure whom they attract, because they are not in sympathy with the deep and noble elements of character. They develop spiritual rheumatism. They involve their husbands in questionable transactions to satisfy their yearning

desires for luxury and pleasure—thereby working the ruin of men.

Love that will last has for its foundation reverence, and if a woman would hold a man's love she must develop the qualities of the true home maker. Listen to these lines from Tennyson's "The Princess":

"For woman is not undeveloped man, But diverse; could we make her as the man. Sweet love were slain; his dearest bond is this. Not like to like, but like in difference. Yet in the long years liker they must grow:

The man he more of woman, she of man; He gain in sweetness and in moral height,

Nor lose the wrestling thews which throw the world; She mental breadth, nor fail in child ward care,

Nor lose the child like in the larger mind; Till at last she set herself to man As noble music into noble words."

**Home Economics**

Dear members of the H.E.S.: I am so pleased to have for publication this month the paper by Miss Gilrea, of Virden. It is so full of hope and optimism that I want every one to read it. I read it and reread it, then borrowed it to read to a class of wage-earning girls. Perhaps Miss Gilrea did not realize when inspired by the subject that she would cheer so many hearts, for the atmosphere of these past two years is so highly charged with heavy troubles that we need these bright helpful messages. I wish more societies would send in papers. This department belongs to you to use as you wish. I am sure the papers would help others.

Some of the societies sent in reports to the Local Council of Women that recently met in Winnipeg. The city women are enthused with admiration of your work. I wish Mrs. Dayton would tell us

all about the recent movement made which is placing nurses in Manitoba communities. Friends of Mrs. Beatty, of Miami, who was lost on the Lusitania, will recall how earnestly she worked for this cause. Her prayers are being answered.

Mrs. Brown, of Manitow, who has been an enthusiastic H. E. S. woman since its formation, has been ill for more than a year. I am sure it would be a splendid tonic to her if members who remember her would write to her. She was president of the Manitow society for some time. She is confined to her bed, and a card or letter would brighten the long hours, for she is very much interested in H. E. S. work. I am going to ask the members of the H. E. S. who knew her to send a card or letter to her about the first of July—so the first week of July will bring her a shower of messages. Mrs. Brown is a pioneer woman on a Manitoba farm and a woman who kept up with the times working always in harmony with every movement that would help the women of the West. Her address is Manitow, Man.

I hope our July number will be filled with H. E. S. papers and reports.  
P.R.H.

**SPRING**

By Miss Gilrea—Read at the Virden H. E. S.

"Gentle Spring! in sunshine glad,  
Well dost thou thy power display;  
For Winter maketh the light heart sad,  
And now thou makes the sad heart gay.  
He sees thee and calls to his gloomy train,  
The sleet and the snow and the wind and the rain.  
And they shrink away, and they flee in fear,

When thy merry step draws near."  
What a world of meaning and what a host of joys and hopes are in this spring season! How we long for the spring, and this very longing and the reviving life which follows in its train are ever the same. The wonder of it never grows old and is never bedimmed by the passing of the years. The very word itself has such a joyous sound and sends you on your way with lighter step and pulsing blood. Might it not be more natural even if our new year began with this season, when all things are being made over new.

Who would not be alive when spring is here! And where is the mortal who cannot feel the quickening and pulsating of the fresh young life in everything? It is a time of beginnings, new hopes, new strength, new life; fresh ambitions, such as reaching out after things unknown before!

Well, for us if we can lay aside all carking cares, and like the Toronto lawyer I read of the other day, who arrived late at court, and whose only excuse for so doing was that he chased the first robin of the season all over a common. If we could just live wholly in this new atmosphere, letting it work its will with us and fill us with its charm, then we too would feel new strength and vigour, for all else about us is full of the joy of living.

No season of all the year so wonderfully and so beautifully typifies the great lesson of immortality—the resurrection of all things only seeming to be dead, dead only that they may live again more fully and more gloriously. With what joy we turn always again to earth's most wonderful story. The story of the Risen Christ—which is for ever the proof of eternal life.

As we live through the last throes of the dying winter, for winter dies hard and reluctantly, already we hear in the distance the coming of the March winds. Someone has aptly said that nature sends the March winds to clean her house, to sweep out all untidy corners with her great broom, and dry up all the damp unhealthy places. March winds wakes the sap and lash the branches into new life. So when the March winds fret us, let us remember:

"Whichever way the wind doth blow,  
Someone is glad to have it so.  
Then blow it east, or blow it west,  
The wind that blows, that wind is best."

How we all watch the thaws day by day and the gradual shrinking of the snow banks and listen to the gentle drip

from the cottage eaves. "Later come those soft smoky days, when the patches of winter grain show green under the shelter of leafless woods" and the last snowdrifts reduced to shrunken skeletons of ice lie upon the slope of northern hills leaking away their life."

Then come those April days—when "between tears and smiles the year like the child struggles into the warmth of life." The rains come and every last vestige of winter is washed away and the grass at your door shows the first tiny sprouts of green and the prairie is full of the crocus. The buds on the lilacs swell and burst and all things live again. Then ever and anon come the showers and the sunshine.

"Sweet April, many a thought,  
Is wedded unto thee—as hearts are wed,  
Nor shall they fail till to its autumn brought,  
Life's golden fruit is shed."

And the restless feeling of spring is upon us all. That feeling that makes us open our doors and windows wide and sweep out all the old and let in all the new fresh, glorious air.

The fields have grown green and the trees are in leaf; the birds have come back and the flowers are in bloom, and the joy of the earth is everywhere. Then May is here!

So may we well say with the poet Longfellow:  
"Thus it was that in the northland,  
After that unheard of coldness;  
That intolerable winter;

*satisfied*  
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have proved their worth. Housewives everywhere have found that the New Perfection brings comfort, economy, safety and good cooking to the kitchen. It regulates easily, instantly and surely. It concentrates the heat on the cooking and will not heat up the kitchen.

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Royalite Coal Oil is best for all uses.

**THE IMPERIAL OIL COMPANY, LIMITED**  
BRANCHES IN ALL CITIES



Came the spring with all its splendour,  
All its birds and all its blossoms,  
All its flowers and leaves and grasses."

**VIRDEN**

One of the most enjoyable gatherings of the season was a spring meeting, held in the Court Room on Saturday, March 28th, at which a large number of members were present. The room was tastefully decorated with daffodils and pussy willows.

The opening number on the programme was "Spring heralds and eight little girls," each bearing a bouquet of daffodils and pussy willows, told in beautiful song and verse about the birds, flowers and south winds which heralded the spring.

Miss Clough rendered Mendelssohn's "Spring song" in a very beautiful and realistic manner. Other musical numbers were provided by Miss Schoeman and Mr. Price and were loudly applauded.

Miss Gilrea read a very interesting paper on "Spring" and as we listened we forgot the long cold winter just passed and felt the call of spring time calling us to new hopes and new aspirations.

L. Burge, Sec.-Treas.  
Virden H. E. S.

**SHOAL LAKE H. E. S.**

Our February meeting was held in our rest room on Saturday, February 26th, and after the business of the month was transacted, the delegate gave her report on the annual convention held that month in the M.A.C. The members fol-

lowed the summary of the papers and speeches with interest, and many hoped to be able to attend the next convention

What more refreshing message of Good Cheer to those Over-seas than a box of  
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in the new style packages? Twenty packages of thirst-allaying Tutti Frutti. A welcome boon to a soldier friend. Each stick separately wrapped in wax paper and tin foil. Opens up as fresh and full flavored as it left the factory. Any of five mellow flavors to choose from. Ask your dealer.

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to profit more fully on the many new ideas given.

In March the G. G. A. and the H. E. S. decided to have a banquet, and the two associations joined interests and a very pleasant evening was the result.

In March we had a week's visit from Miss Senior, who came from the college and gave classes for dressmaking.

In April the meeting was held in the rest room, and the programme was as follows: "Plants and How to Grow Them," Mrs. Tuelon; reading on "H.E.S. Work in the Province," Mrs. H. Sykes;

Kate E. Sykes, secy.-treas., Shoal Lake H. E. S.

AROUND THE FIREPLACE

JUST STORIES

Woman's Faith in Doctors

A man who had been badly crushed by machinery was carried to the hospital, and when the doctor, who was very busy, was called, he just looked at the man on the bed, and was going out, saying, "It's too late to do anything for him,"

"A thousand words leave less mark than the print of one deed."—Ibsen.

Those who bring sunshine to the lives of others cannot keep happiness from themselves.

Fun that gives pain is not real fun. Fun is not real unless all sides are enjoying it.

One famous man has said this about women. "I esteem every woman who raises us men up, who teaches us religion and morals, who preserves our ideals, and weaves heavenly roses in earthly life."

The woman who does not read to think develops mental constipation. The woman who does not serve others develops spiritual constipation.

By influence of the light divine, Let thy own light to others shine; Reflect all heaven's prophecies rays, In ardent love and cheerful praise.

Not as we take, but as we give, Not as we pray, but as we live— These are the things that make for peace, Both now and after time shall cease.

Delight thyself also in the Lord, and He shall give thee the desires of thine heart.

SI Automatic Hair Cutter 50c Patent Pending



The Automatic is a wonderful invention. Attaches to any comb in five seconds. Comb your hair any style you wish and the Automatic will cut it smoothly and evenly at the same time.

THE MOTHER AND HER GARDEN

By Sara Elizabeth Bird

I once knew an old gardener who could tell a perfect vegetable or specimen of fruit as far as he could see it, and he could explain, too, how much perfection could be attained.

There are many mothers today who know a good-mannered or a good-principled young person when they see one and can tell you how to bring up a child but who leave the development of their own children to other men and women or to Providence.

Not long ago a young girl called upon a wise woman, a friend of mine, and after some girlish chatter spoke of an acquaintance who had just been hastily married to save her good name.

"Whose fault do you suppose such a case as that is?" asked my friend.

"The mother's!" the girl asserted, hotly. "When we reach a certain age we're curious about things! We're bound to find out what they mean, and our mothers won't talk to us—at least nine won't. I went to mother one day and asked her a question and she said she didn't care to talk about such things."

"I think your mother should have talked to you when you came to her so frankly," the woman said, feeling her way carefully, "but you know, dear, to your mother you seem only a little girl. She doesn't want to see you grappling with big problems so soon. She knows when you've eaten of the tree of knowledge of good and evil you won't be a girl any longer."

"It's selfishness!" the girl declared. "You can't call it love. She just didn't want to be bothered."

"She isn't the only one either," she added. "Look at Jim! Poor little Jim! Did you know he had to get married too? Well, he did; and he's only eighteen. He was the nicest, cleanest boy when he went to school with me. He was as good as any girl of us. But his mother lost her 'baby,' a little girl of eight or nine, and she grieved over that until the house wasn't fit to live in."

The girl mused a moment and then she spoke again. "As soon as we're through school we seem to have to pair off with someone," she said tremulously. "The wise woman knew that the girl had 'paired off' and that she was meeting the young man of her choice away from home. Her mother did not care to have her house 'filled with boys and girls all the time.'"

So she talked to the girl and let the girl talk to her about all the "things" that had excited her interest and wonder.

The daughter's interested, changing face, now awe-stricken, now expressive of satisfied curiosity, now radiant with high resolves and pure ambitions for her own future, she felt as though she were stealing something exceedingly precious from the girl's mother. The daughter was giving to a woman, almost

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a stranger to her, that which the mother had refused, her confidence. A stranger was pulling up the weeds that the mother had refused to touch. The very suggestion of them in her child's heart had caused her to "make a face."

If you're a good gardener you won't hesitate to pull up a weed, even when it stings your hands or makes you want to cover your nostrils. The more noisome it is the more eager will you be to root it out. It isn't safe to leave it growing for some passing stranger, who may trample some good, tender plant in reaching for the one that offends his sight.

A mother told me that one day her son had come to her with a tale that had made her blood curdle. She said it was all she could do to keep from crying out with horror and pain as he continued his story. But she sat and listened very quietly and then, as quietly, talked the matter over with him until she was sure that he saw it as it was. "It nearly killed me to think that he had been faced with such a temptation," the mother said, "but I kept bracing myself up by reminding myself that he had come and told me, that I knew all there was to know."

"I remember," said a friend to me, "the first conscious mistake I ever made. After I made it I couldn't get home fast enough to tell my mother. I don't remember that she said a word, but I never made that same mistake again. It wasn't anything very terrible, but it could have borne terrible fruit. If you've the right kind of a mother, just telling her—and knowing when you're doing wrong that you will tell—is a powerful corrective."

The other day I said to a young man who has the right kind of a home, "Can't you induce some of those half-grown boys to stop hanging around the hotel and the poolroom?"

"Where do you want them to go?" he replied coolly. "Inside the hotel and the poolroom!"

"Do you know where you'll find the mothers of these boys? At a euchre or five hundred or whist club or learning the new dancing steps." The doors of their homes are locked.

"Oh, no," he smiled, "not really locked. They can get in. But what is there for them after they do get in?"

I thought of a call I had made a few days before on the mother of two charming children. The older, a boy of seven, was a close friend of mine, and I was disappointed when I heard that he was "out playing in the snow" and I thought I should not see him. My friend was going to entertain her card club that evening and so she invited me into her living room, which was in its usual perfect order, and when I left I went out by a door which led to the side porch. Here sat two happy little boys, engaged in the delightful occupation of making a snow house on the good foundation of the porch steps.

Before I could greet them the mother pointed an accusing finger at the elder. "Look at my clean porch!" she exclaimed. "Didn't I send you out of the house because I was going to entertain the club tonight and wanted things clean?"

I looked at the children and then at the mother and I said to myself, "Well, you may be able to keep them out of the house now, but I doubt very much if when they are a few years older you'll be able to get them into the house."

Someone has said, "Stone walls do not a prison make, nor iron bars a cage." The four walls of a house do not make a home, as those of us who have stayed a little into the world very well know. The most beautiful home I ever knew consisted of two rooms (a kitchen and a bedroom) and an old couple. There had been a big house but it was destroyed by fire. There was, however, a structure that could not be destroyed, builded by the mother. Her presence and her influence made a home of the two rooms.

This summer a friend and I were driving along a lonely country road when we came suddenly upon a comfortable farmhouse, upon the porch of which sat a rosy-checked little lad of six or seven years busily working at something we

could not see. I gave him a friendly greeting. Immediately up went two brown little hands, holding out a paper boat. The small face was aglow with expectation.

After we had called out some hearty praise and driven on my friend remarked, "The cry of the whole universe is the same, a cry for human sympathy!" And then I wondered if the little boy had a loving, sympathetic mother inside the door of his house. He looked as though he had. If he had not, then the farmhouse, with all its appliances for comfort and good living, was not a home.

Many a loving, sympathetic mother, who has tried to teach her child how to live has seen her boy or her girl go to the bad. How is it that weeds will grow up where only good seed has been

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The old gardener had good seed and good ground; but sometimes when he should have been weeding or hoeing, doing all that the farmer means by "cultivating," he was off to town with a crony as good-natured and as careless as himself; sometimes he was smoking on his front porch; sometimes he was stretched out under a tree fast asleep. I wonder if the mothers don't fall asleep sometimes while the weeds grow on un-noticed. I know they often run away after their own pleasure or pursue them at home as though no precious garden were entrusted to their care. The kindergartner or the trained nurse or the governess may be very much better trained and wiser than the mother, but it's the mother's blessed privilege to be needed as no teacher or

other paid helper ever was. From her alone can come the perfect care that results from blending of perfect sympathy with constant companionship and unremitting intelligent striving to be the child's sure guide.

A friend of mine was taking care of her sister's baby while the sister went shopping. As the afternoon waned the child grew very unhappy and his calls for "mamma!" became very frequent and very distressing. The aunt had exhausted her supply of toys, the child was not hungry, and it was too late to take him for another ride in his gocart. Looking about for some fresh means of entertainment the aunt discovered a red pillbox and hastily took it to the wailing baby. He was very fond of boxes, especially red ones. This time, how-

ever, the little fellow only clutched the box tightly to be sure he had it and redoubled his cries for his mother. "I didn't blame him," remarked my friend in telling me her experience. "If I'd wanted my mother I wouldn't have thanked anybody to hand me a pill-box." I think if the child could have spoken

he would have expressed what hundreds of older boys and girls have cried to deaf ears: "I like to be amused. I like good food and pretty clothes and exercises in the open air and things to play with. I like my aunts and uncles and teachers and all my friends. But I need my mother."

## In a Manitoba Garden

By Mrs. H. A. VIALOUX

The home garden has been too much neglected in this western country of ours, famous for its No. 1 hard wheat, and we are getting terribly materialistic. Surely, a plea for the growing of more flowers, shrubs and things of beauty is timely, and may help those

for them, and thus study nature. No doubt the perennial flowers are the most easily looked after, for very busy folk and there are now a goodly list of perennials which have proved themselves perfectly hardy "ironclad." In fact, delphiniums in all shades of blue and



Corner of Dr. Speechly's Garden, Pilot Mound

who delight in gardening. 'Tis a wonderful factor in making the country home beautiful, and children should be given the privilege of growing up with lovely flowers and learning how to care

purple, and peonies, which bloom so well in Manitoba. The grand beds of white and creamy pink peonies to be seen at the city park is well worth a visit there in June and early July. Great masses of crimson peonies of all shades are to be seen here, also. When well-established peonies are as hardy as rhubarb columbines, the golden glow, the old-fashioned bleeding hearts, the Iceland poppy, and the pansy should be in the perennial border of the average farm home. There are some annuals one cannot do without which are so easy to grow. The stocks, phlox, petunia and nasturtiums, a bed of fragrant mignonette, and last, but not least, the hedge of sweet peas. Surely the sweet pea should be the national flower of Manitoba, so wonderful are its blossoms here in the constant sunshine of summer. I have yet to learn why the colors in a good hedge of sweet peas are so brilliant in the West. The varied coloring is often commented upon by tourists from other lands.

Sweet peas require a good rich soil and may be planted in a trench six inches to a foot deep, placing the seed two inches below the surface and tramping in lightly. As the little plants grow the well manured earth, each side of the trench is raked in and deep roots ensured to stand a dry spell of weather will result. However splendid sweet peas are grown planted in an ordinary drill like common peas, only do not plant them so thickly. One of the most successful growers of sweet peas in the West who usually plants no less than 50 varieties is Mrs. Hodgson, of Foxwarren, who advocates the level drill made with the side of the hoe. Run the hedge from north to south, if possible. The easiest trellis to train the vines upon is 6 foot wire netting, using soft twine to bind the tiny tendrils on to the mesh wire. Shallow cultivation is best for sweet peas, and after each rain run the rake along and break up any crust forming and keep the weeds down.

One weed pest that bothers me in the garden is the nasty clinging bindweed. I find it sucking the life out of nasturtiums and golden glow, and sometimes have to fight it in amongst the sweet peas. Every little plant of bindweed seen in spring time should be rooted out of the flower beds as soon as it appears. Personally I am very fond of a



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### ANOTHER JOURNEY


The "Tommy" on leave from the front had been given a free railway pass to take him home to see his people, and he utilized part of his brief holiday to get married. On the return journey, when the ticket inspector asked to see his

pass, he produced by accident his marriage license.

The inspector handed the paper back with a glimmer of a smile.

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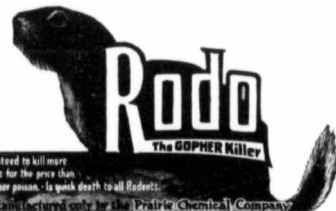
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real old-fashioned garden where borders of the dear old favorite flowers appear between the rows of vegetables. Beauty and utility, side by side teaching us a lesson.

It was my privilege to spend a delightful day in just such a garden last summer out West. The gardener, a cheery old soul of 75 years of age, deated on his garden and had made it a veritable beauty spot, as it had a good location and was well sheltered. He did all the work in it himself and supplied a town near by with green peas, corn, squash, etc., as well as red and black currants and gooseberries. Here were great spreading currant bushes, red and white and black laden down with fruit, ripe and delicious. Manitoba currants are very hard to beat in flavor and do well in any garden with little care. We were invited by our genial host to sit down and pick as many currants as we could carry away. Under the shade of the currant bushes were sweet williams in thousands, as hardy and strong as the fruit bushes themselves. In one corner grew thrifty clumps of pinks, next the rows of feathery carrots. The ground was carpeted with a great bed of pansies in all colors, lifting their sweet lovely faces to the morning sun and giving a delightful perfume. This bed had been blooming each season for twenty years, and growing such large pansies. Needless to say good cultivation had been given the plants, old roots removed and seedlings transplanted in the bed. All this splendid garden was laid out, for the useful horse hoe and a steady farm horse grown old in service cultivated it, regularly, but the gardener believed in keeping his hand hoe bright by constant use. "There's nothing like well rotted manure worked into the soil, and lots of hoeing and raking to make a garden pay anywhere," ruminated the old chap.

"You see I make my living from the garden truck and I just love the flowers! Having no time to fuss, I grow them altogether and enjoy working here all summer. Of course, there were hedges of sweet peas, and not far from the large patch of splendid onions grew the fragrant mignonette. The white silver skin onions were the best I saw all summer, growing in clumps, as it were.

"Yes, sir, 'them's purty good.' I don't believe in much thinning among the onions, and look, not a thick neck in the lot. I will market 60 bushels from that bed.

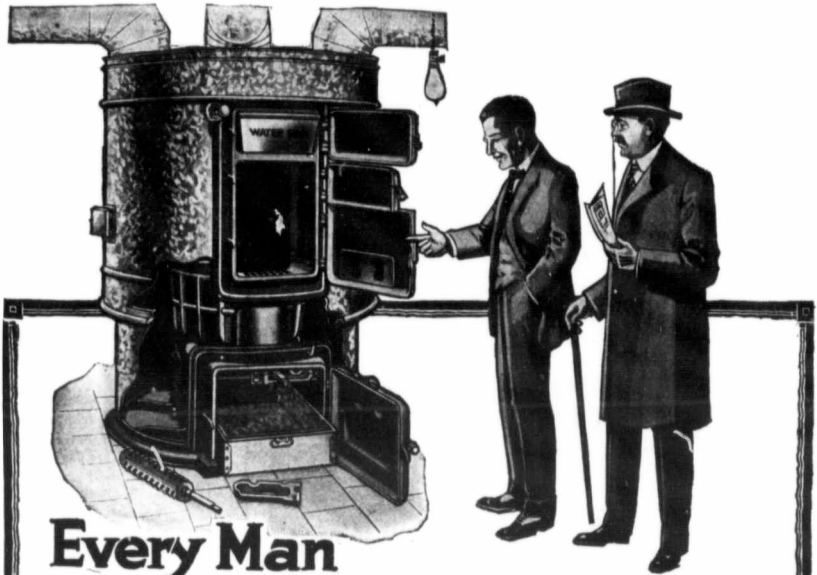
"I pass on the tip in regard to onions and thin culture. Now there are greenhouses nearly everywhere buying bedding out plants, such as stocks and asters, etc., is quite a simple matter. I like to grow my own in a hot bed and be independent. In any case do not put out these tender plants too soon because the weather seems warm. The climate is a 'fickle jade' sometimes and about the first week in June, when we are dreaming of roses soon to bloom, a cruel hard frost, 'Jack's spring special' comes and nips off all tender plants, including our tomatoes. Therefore I do not set out tender plants, flower or vegetable, until the 7th of June is past.

"I nip them myself a little and keep them growing lusty and strong in the cold frame and they make a rapid growth when planted in a warm seed bed out of doors in June and mature in a wonderful way. Always shade them well, plant firmly, pressing the earth down with the hand around the seedling and if the weather is dry water freely when the evening comes on."

The beautiful view of a flower garden shown in the photo is a real Manitoba production. The picture was taken in Doctor Speechly's garden at Pilot Mound and demonstrates what even a busy professional man can accomplish in a few years when he possesses energy and skill. The doctor, who is the president of the Manitoba Horticultural Association, has made his home a bower of beauty famed all over Southern Manitoba.

**A WOMAN'S TALK TO WOMEN**  
Continued from page 60

lege. There were some of the most brilliant women from Italy, Austria, Germany, France, Sweden, Denmark and other countries including, of course England and the United States.



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One thing I noticed was that most of those from other countries could speak our language, a little at least, while most of the Canadians on the train, and some of the English, could speak only their own language. And a great gable it was, and a great body of women, simple as children the majority of them, for they had too much brains to be anything else. And if you will believe it, one of the most brilliant speakers was a German woman. A Swedish lawyer won her way closest to my heart, for she was both brilliant and big hearted. I have heard since that she is dead. The knowledge brought a real pang.

It is the dream of some of us that this great body of women will help in no small way to bring the nations of the world together in closer sympathy, and when we all understand each other there will be no more war. The Executive of the International Council is composed

of women of many nations, some we now call enemies, and all those women have worked together in sympathy and understanding, and they can never hate each other. This is the time when we must all do our part to break down the barriers that keep people apart in a misunderstanding that leads to hate and slaughter. The International Council of Women should be a great help in adjusting international relations.

**United Farm Women of Alberta**  
It is with pleasure that I publish the picture of the president of the United Farm Women of Alberta. Mrs. Parly lives at Alix, is a farmer's wife, does her ordinary work like thousands of other women on the prairie, and makes a capable president of a large organization of women, that is gaining in numbers and effectiveness all the time. A lady who heard Mrs. Parly give an address to a gathering of women said she not

only spoke well but brilliantly and under her management no doubt the organization will go ahead by leaps and bounds.

The organization of farm women of Alberta is only a year and a half old, and requests for organizations from all parts of the province are in the hands of the executive. So far the work done has been largely organized, but the dreams in the minds of the women are big and they are dreams that can be realized. The great objective is the farm home. It must be made a place worth while, a thing of beauty inside and out, to quote the president.

The farm women have realized that if the young people are going to stay on the farm they must find the farm a good place to be, and if the farm is going to be a good place to be there must be amusement, wide interests, better con-



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of the feeder; therefore you should be sure that your feeder is a real feeder, not merely a contraption to cut the bands and carry the grain to the cylinder.

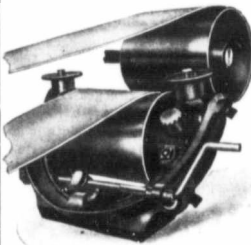
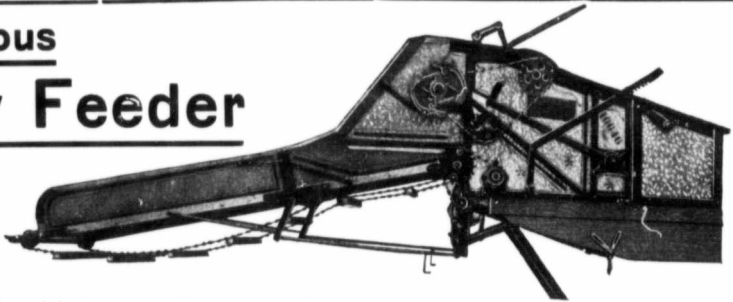
The Feeder that Has Brains is equipped with a Governor that acts before the grain gets out of the feeder and prevents any reduction of the cylinder speed. The Governor on other feeders acts after the grain has been dumped upon the cylinder and after the damage has been done.

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ditions inside and out, and it will take the combined brain of men and women to accomplish the work of bringing in the desired conditions in many districts.

One object of the women is to have some system of maternity nurses for the outlying districts. How this is to be accomplished has not yet been decided upon, but that it must be accomplished the women feel strongly. It is long since the women in the homestead districts began to ask that something be done for them, but it has taken long to get to it. Many a mother has wept as she saw death approaching, not that she was afraid for herself, but her heart was sore for the children left in the little homesteader's shack, with no woman to care for them.

A letter I received from a woman on a homestead stays in my mind. She said that she was too ill to go to town, it was twenty miles to a doctor and they had nothing but oxen, and her husband could not well spare the time to pay for the money to pay for the doctor, and she was so weak that she could not control her nerves and she cried all the time. She had not been taught anything about her physical being; she was in terror of the time before her, and there wasn't a woman near to whom she could talk. I sent her a little pamphlet on maternity, and she wrote back in joy, saying that it was the fear caused by ignorance that had so upset her, but as soon as she read about her condition and found that all her symptoms were normal she was satisfied and happy. It is time the women took into their own hands the education of the future mothers of the country and their care when bearing children. This is a task that the farm women's organizations must and will take up at once.

### VERY SIMPLE

Interested Party—"You say this boat can not upset?"

Inventor—"It's impossible. The tanks are filled with writing fluid."—Buffalo Express.

## PASSING OF THE OLD "BARN-RAISING"

### A STEEL TRUSS BARN

A book has recently been published on the subject of Steel Truss Barns, of which the author is Mr. C. Dolph, President of the Metal Shingle and Siding Company, of Preston, Ontario. A copy of this fine work on barn building has been presented to us and we are desirous of giving readers of the Canadian Thresherman and Farmer an impression of its main features, because of their exceptional interest and value to anyone contemplating the erection of house or cattle barns.

As indicated, its purpose is to demon-

strate the advantages in time, money and labor saved in a steel trussed building as compared with the old time timber frame, the only "set-off" to which is probably the sentimental one of the celebrations and harmless rioting associated with the historic function of the barn-raising.

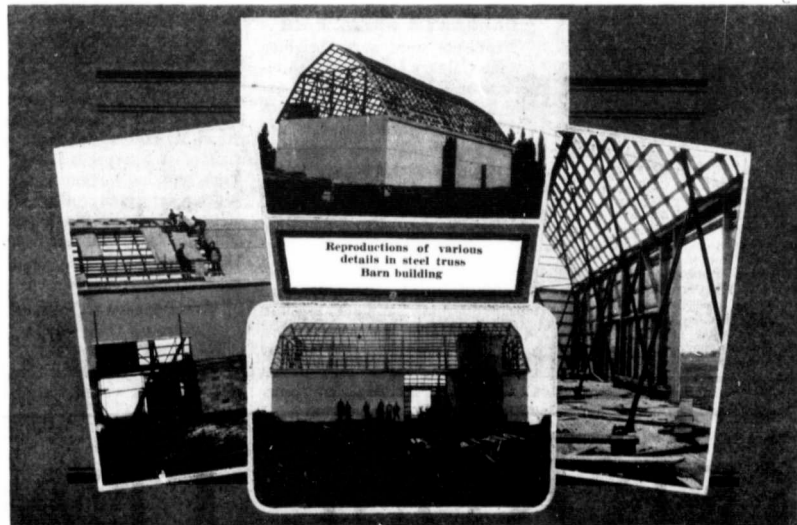
The book is admirably written. There isn't a useless paragraph in it, but it does not depend on its letterpress. It is splendidly illustrated with scale drawings and photographic reproductions of completed barns of many designs and structural details of every description.

The steel trusses, which are the piece de resistance of this barn are built up of heavy iron, reinforced at all the joints, and knit the frame together so

that it will never give way at any point. Each truss is made up of a series of struts and braces—each one being made of heavy angle iron rivetted together, all rivets being driven in red hot, so that all joints are solid and secure.

There is nothing in the way to hinder the settling of the hay or grain. The knee brace of the truss extends but a short way into the barn and takes up no space worth mentioning, while it greatly adds to the strength of the barn.

These steel trusses are manufactured to standard dimensions and templates, so that when a barn is constructed with them, it must be absolutely plumb, the roof must have the correct pitch, and everything is sure to fit neatly into place.



The steel truss is attached to the wood post by means of eight heavy iron bolts which go completely through the post, and are secured with a washer and nut. The foot of the steel truss is secured to the cross sill just at the bottom of the post by means of four heavy lag screws and the knee brace, which extends out into the barn a short distance, is also secured to the cross sill with four heavy steel lag screws.

The purlin plate is secured through the back strut of the steel truss by means of two iron clamps which go completely around the plate, bracing it on three sides, while the fourth side lies securely against the back member of the steel truss. These clamps are threaded like a bolt at both ends, and the ends pass through holes in each of the angles, which constitutes the back strut in the truss, and are secured in place with nuts and washers. By tightening up these nuts the clamp draws the plate down solid into position, so that the truss can never slide along the plate, neither can the plate shift on the back of the truss. This brings the load directly on the truss.

By the use of these steel trusses the whole interior space of the barn is available for storage. This is the member which prevents the side post from springing out from the weight of the roof or the contents of the barn. At the same time, these knee braces being built of rigid steel angles, are just in an ideal position to brace the outside wall against wind pressure from the outside, so that the Steel Truss Barn when empty is as solid as when full, an advantage which is possessed by few, if any, other barns.

The main steel strut, which extends from the top of the truss right down to the bottom of the side post, brings the whole load of the roof right on the foundation wall of the barn, and at the same time the incline at which this member is set offsets the outward thrust of the top roof so that the load as well as the thrust of the roof is transmitted to the foundation wall.

This is the proper place on which all loads or thrusts should come, and in designing this barn much careful thought has been given in order to gain this advantage. The designing of a truss that will give ample strength, take up little space, transmit the loads and thrusts to the proper point require careful consideration, and the success here is self-evident.

The ends of the barns over 36 feet wide require some support because an immense amount of material is piled against this part of the wall, and unless a truss or some tie is introduced the walls will surely spring at these places. This is provided for by a special end truss which not only prevents springing out but also acts as a strut and guards against any possibility of the ends being blown in by high winds.

We strongly recommend this book to the careful perusal of our readers. A copy of it can, no doubt, be had from the company under whose auspices it is published.

The style of barn under review has met with remarkable success among Eastern farmers, and having regard to its obvious and proved advantages over the old timber-ribs, there can be no reason why it should not enjoy the same popularity out West.

**A REAL ACHIEVEMENT IN MUSICAL RECORDS**

It has just been our privilege to listen to a demonstration of an entirely new departure in musical instruments of the phonograph species. This is called the "Vanophone" and is being introduced into Western Canada by Turner & Walker, 425 Henry Avenue, Winnipeg.

Everyone at some time or another is dragged in to endure the vile performances of so called musical reproductions by one or other of the many types of that wonderful effort of Edisonian genius. The sounds to a musical ear are of a nature that cannot be described

in language, and imagination shivers when they are recalled. These, however, are the effect of a crude and cheap attempt to embody the grand idea. They are but a ghastly travesty on the original, which after years of patient effort, has now been perfected to a point of delicacy that seems to have reached the last attainment of human skill.

Briefly, the "Vanophone" gives the very best results of those high-priced drawing-room and concert instruments that are a positive delight to listen to, and it costs but a fraction of the figure which must be paid to secure one of these that are worth listening to.

When the writer (who has handled probably every detail of the kind that has come into the market) heard the claims of the "Vanophone" described, he was naturally skeptical, but can now say that they are not in any way exaggerated. The secret is in the patented "Riceite" diaphragm and the fact that instead of the usual flimsy sheet-metal base, a solid cast iron standard is used.

Band selections and fine orchestral parts are reproduced in a way that few would credit who have experimented with ordinary low-priced machines, but the supreme test is found in the records of the human voice. There is nothing whatever of the metallic or tremulous waves that everyone is familiar with or the excruciating reminders of a buzz saw negotiating a knot hole.

The selections we heard included the familiar "Tommy Atkins," sung in a perfect Basso-Baritone by Robert Howe (with orchestral accompaniments) and "Silver Threads Among the Gold" in a pure tenor, by Harry McClaskey. But for the fact that we were in the presence of the instrument it would have been impossible to say that the actual voice was not the only medium.

Another wonderful selection that served to bring out the finer shading capabilities of the instrument included a vocal medley of such old time favorites as "Believe Me If All Those Endearing Young Charms," "Last Rose of Summer," "Ben Bolt," "Come Back to Erin," "Annie Laurie," and "Way Down Upon the Swanee River," etc.

\$15.00 is the inclusive price of the instrument, and it can be "cabineted" in any style (or in no style) to suit the owner. The wonderful little machine need only be placed on a table or on any solid foundation out of doors to do its perfect work. Given a good or a first rate record, it will certainly give results no less satisfactory than are obtained from an instrument costing ten times the money. If fitted into a cabinet, it can be removed and taken in a small grip to any point desired, and is really the only transferable cabinet instrument of the kind to be had at the date of writing, that looks like a drawing room fixture and at the same time can with perfect facility be taken to the garden party or picnic.

**CALGARY'S GREAT FAIR**

Prospects were never brighter for the Calgary Industrial Exhibition than for the forthcoming exhibition to be held June 29th to July 5th. Enquiries for prize lists and for space have been numerous, and much interest is being displayed in connection with the working out of the new basis of payment of prizes according to number of entries. Prizes in the live stock and grain departments increase in number as well as in value as the entries increase. A stated amount is offered in prizes and if this amount is not won, the balance is added pro rata to each prize. Considerable increase has been

**No Cure—No Coin**



DR. HUGH J. MUNRO

If any reader of "The Canadian Thresherman and Farmer" — of either sex, and of any age—is suffering from physical pain or chronic malady which the ordinary physician or surgeon cannot overcome, I believe I can, quickly and without surgery or drugs of any description, restore them to the enjoyment of perfect health by means of

**CHIROPRACTIC ADJUSTMENT**

This Magazine has personally investigated a large number of the hundreds of grateful patients who have passed through my hands, and will be glad to give its unqualified testimony to any inquirer or correspondent.

If I do not firmly believe I can successfully deal with your case I will not undertake it. In any event, there is nothing to pay unless I am completely successful, in which case my modest charges are what the POOREST PATIENT can easily meet.

If you are living at a distance—write me the briefest details of your trouble. If you can conveniently call, so much the better. THERE IS NO CHARGE FOR A TALK WITH ME. YOUR HEALTH IS SURELY WORTH A FEW MINUTES' CONSULTATION.

**DR. H. J. MUNRO**

31 STEEL BLOCK Phone Main 234 WINNIPEG, MAN.

made to the dairy department prizes, and a handsome amount of \$1,300 is being offered for bread and cooking classes. There are special classes for white and brown bread made by residents outside of the City of Calgary, and similar classes for residents of Calgary.

The attractions are undoubtedly the best ever engaged for the Calgary Industrial Exhibition, and include such features as war trophies, munitions, trenches constructed as in actual use in the present war; a spectacular feature the March of the Allies, Miss Katherine Stinson, the 19-year-old girl aviator, who has already looped the loop 500 times without an accident, and who on the 7th and 8th of May astounded thousands of visitors at Sheepshead Bay, New York, with her wonderful work.

There are many other features of special merit which will undoubtedly make the exhibition of 1916 a memorable one.

**Of Vital Concern to Thresherman**

Continued from page 12

We regret we have not space to give complete details of this scale at the present writing, but one or

**Important to Mothers**

Every mother should know there is made in Winnipeg a food for the baby which can always be obtained fresh, pure and wholesome at a reasonable price.

Porter's Food is growing more popular every day. Mothers who use this food for the baby are well satisfied because their babies are thriving well on it. The most delicate children can take Porter's Food because it is so easily digested. In the hot weather when cow's milk gives the baby diarrhoea, Porter's Food is just the very thing to make it well again, and affords sufficient nourishment to bring the baby through the dangerous Summer season. There is no danger of infection with Porter's Food. Special directions with each tin for Summer Complaint.

It is sold in tins, 15c, 25c and \$1.00 at all drug stores. Get a trial tin and be prepared in time of need, or send for free trial sample with booklet from the manufacturer, George Porter, 205 Victor Street, Winnipeg.

**BETTER BABIES**

Baby's weight in Gold



Every Young Mother and Expectant Mother that has her Baby's welfare at heart, should have a copy of DR. TWEDDELL'S Young Mother's Guide. It tells all about Baby's care, needs and diet, and how to keep Baby well and strong.

DR. TWEDDELL is considered one of the foremost Child Specialists of today. His advice to Young Mothers given in this Little Guide is well worth many times the price asked for it.

For Baby's sake, WRITE TODAY FOR A COPY. Simply enclose one dollar bill in an envelope, giving name and address, and mail same at our risk, with the understanding that if you are not well satisfied with this valuable Little Guide, you can return it at once and we will refund your money. Don't delay. "Do it now." Not sold at stores. Just address

WYTHEN'S GUIDE ASSOCIATION, Dept. P., 306 Kyrie Bldg., TORONTO, ONT.

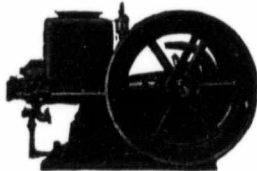
**RED ROSE TEA "is good tea"**

5 H.P.  
Crushing Outfit  
Complete  
**\$161.00**

# Complete Crushing Outfits

7 H.P.  
Crushing Outfit  
Complete  
**\$223.00**

## 5 H.P. ENGINE



**\$130.00**

## STOVER GRINDERS

7 in. only

**\$29.00**



**LOW DOWN WELL BUILT**  
Crushes every kind of seed.  
Fine or coarse plates.

## GRINDER PLATES

7 inch, per pair..... \$1.50  
8 inch, per pair..... \$1.75  
10 inch, per pair..... \$2.25  
12 inch, per pair..... \$2.50

## The Engine You Really Need

7 H.P. Price **\$185.00** Equipped with self-starting Webster Magneto

This Engine will use less fuel than any engine of the same rating, and is guaranteed to develop more horse power than any engine of the same or nearly the same rating.

**BETTER ENGINES ARE NOT MADE**

## GUARANTEED PLOW SHARES

Prices subject to change without notice. If money is sent in good faith goods will be shipped.  
12 in. Shares, each, \$2.00 14 in. Shares, each, \$2.25 16 in. Shares, each, \$2.50  
13 in. Shares, each, \$2.25 15 in. Shares, each, \$2.50 18 in. Shares, each, \$2.75  
Give number and letters stamped on share—and name of plow—we do the rest.



**\$2.00**

Fully Guaranteed

**Plow Shares**

will steadily advance in price. Send in your order at once and be on the safe side.

## Channel Steel Harrows

A very popular high grade harrow at a very low price.

## Thresher Belts

at Money-Saving Prices.

## Saw Blades

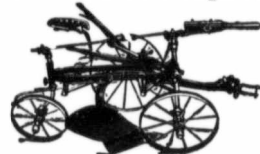
From \$6.50 up

## Harrow Teeth

Guaranteed Quality, 5c

**WE HANDLE**—Cordwood Saw Frames, \$18.00; Power Straw Cutters' \$35.00; Wheel Barrows, Pulpers, Pump Jacks, \$5.50 and \$7.50; Dry Cells, 50c each.

## Celebrated Eclipse Plow

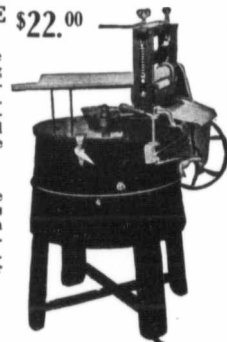


Write for Special Prices on Gangs and Sulks.

## STOVER POWER WASHING MACHINE

**\$22.00**

Our complete Power Washing Outfit, consisting of 1 1/2 H.P. Engine, Washing Machine and Belt. Complete at **\$60.50**.



All gears are covered. Has safety release on wringer. Reversible Wringer. Pure Rubber Rolls.

# THE CANADIAN STOVER GASOLINE ENGINE CO. Ltd.

BRANDON, Man.

CLEAN YOUR GRAIN WITH  
CANADIAN STOVER **\$38. 00**  
1 1/2 H.P. ENGINE

two main features will suffice. In case of death, for example, \$75.00 is scaled for the necessary expenses of funeral. Widow or invalid husband receives a monthly payment of \$20.00 for life and \$5.00 in addition for each child under 16.

### Returns of Accidents

(1) Every employer shall, within three days after the happening of an accident to a workman in his employment by which the workman is disabled from earning full wages, notify the board by registered post of details.

(2) For every contravention of sub-section (1) the employer shall incur a penalty not exceeding \$50.00.

Our friends will gladly supply, free, complete information on every point. We strongly urge all our readers to get in touch with them at once, as the matter costs so very little, having regard to the heavy risk it provides for. Mr. Nellermoe is an old friend, a practical thresherman and farm machinery man, who is well known to a very wide circle of the farming community of Western Canada. The business rating of the firm is of the very best, and we can give an unqualified assurance that in any business relationship our readers may enter into with them they will meet with satisfaction in every respect.

## FREE EDUCATION FOR THE FARMER AND HIS FOLK

We are glad to direct the special notice of our readers to the announcement made by the Alberta Department of Agriculture, on page 55. This is in keeping with the persistent progressiveness of Alberta on its agricultural side, and will prove of exceptional interest to a very large number of our readers who will find it quite convenient at one or other of the many points covered to take in the fine programme of educational matter arranged by the Extension Department under Mr. Alex. Galbraith, Superintendent of Fairs and Institutes.

A special train of fourteen specially fitted cars (including two cars of pure bred horses and cattle) will be taken over the greater part of the province by the Canadian Pacific the Canadian Northern and the Grand Trunk Pacific Railways—the purpose being to give special lectures and demonstrations on all phases of farm work as well as in Household Science and Home Making.

Second to nothing else in its vital importance to the farming community is this splendid offer of "Free Education on Wheels," and it is to be hoped that not a single individual who can avail himself or herself of it will neglect the golden opportunity it presents.



**SAVE MONEY**

BY KEEPING THE SCALE OUT OF YOUR BOILER

U. S. G. CO.'S

# Mexican Boiler Graphite

"The Guaranteed Scale Remedy"

is positively guaranteed to prevent old hard scale of long standing, so that it may be easily removed, and to prevent further hard formation.

It does this by MECHANICAL—not chemical—action, working equally well in ANY water and under all conditions, making it ideally suited for traction boilers which draw water from different sources every few days. It is far superior to chemicals or chemically-acting compounds, because the former attack and weaken the metal while Mexican Graphite acts on scale only and cannot injure the boiler in any way, shape or form.

The cost is so slight—ONLY A FEW CENTS A DAY—and the saving in fuel and repairs so great in comparison, that no traction operator can well afford to be without it.

USE THE ONLY GENUINE U. S. G. CO.'S

# Mexican Boiler Graphite

Manufactured by The United States Graphite Co., Saginaw, Mich.

MONEY REFUNDED IF IT DOES NOT PROVE ENTIRELY SATISFACTORY, and refund will be made without question, upon request.

The U.S.G. Co.'s MEXICAN BOILER GRAPHITE is put up in 50 pound kegs especially for the traction engine, which is sufficient for an average season's run.

Write for booklet on "The Care of Traction Engines," to the MATTAG CO., LIMITED, WINNIPEG, CANADA, who have a large stock on hand at all times and are prepared to fill orders promptly.

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Conducted for the benefit of Dealers, Threshermen and Farmers who have anything to sell or exchange. Five cents a word for each insertion.

**FOR SALE.**

Second hand rebuilt machinery at our Winnipeg Branch, consisting of:  
Steam engines of all sizes, both traction and portable;

Gas and oil engines, also  
Second hand rebuilt separators.

If you are looking for second hand machinery, it will pay you to get in touch with us. We can save you money. Our machinery is rebuilt in our own shops by competent workmen. We have a bargain for you. For particulars, address:  
**J. L. CASE THRESHING MACHINE CO.,**  
Princess and James Streets,  
Winnipeg, Manitoba.

**GEINER SEPARATORS** 40-60, 35-55, 30-45, 27-35 and 24-32, new and rebuilt. Must be sold by liquidator this season. Will sacrifice at much less than makers' cost. R. S. Ewing, 209 Union Trust Bldg., Winnipeg.

**TWO 45 H.P. GASOLINE TRACTORS**, one new and one rebuilt, \$2,200 and \$1,700 respectively. These prices are far below what the material would cost at present date. This is a rare opportunity. R. S. Ewing, 209 Union Trust Bldg., Winnipeg.

**O.A.C. No. 72 OATS**—The great new oats introduced by Ontario Agricultural College. The greatest oats for yield and quality ever introduced into the West. We have the genuine article grown from registered. Price 75c. per bushel. Eureka Pedigreed Seed Farm, Melita, Man.

**"IMMORTALITY CERTAIN"**—Svedenborg's great work on "Heaven and Hell" and the life after death, over 400 pages. Only 25c. postpaid. W. N. Law, 486-G, Euclid Ave., Toronto, Ont.

**ALL-PURPOSE GASOLINE ENGINES** for sale at much less than manufacturers' cost. "Vado" (4 1/2 h.p.), air-cooled, rebuilt, \$110; 1 1/2 h.p. "Badger", standard stationary, rebuilt, \$150. You cannot buy the quality goods anywhere at anything like the price. R. S. Ewing, 209 Union Trust Bldg., Winnipeg.

**FEED GRINDERS**, 6, 7, 8 and 10 inch iron bases in each case. Will sacrifice at very low prices. You cannot get these grinders elsewhere at anything near price I am prepared to take for them. R. S. Ewing, 209 Union Trust Bldg., Winnipeg.

**FOR SALE**—30-50 Aultman-Taylor Gasoline Kerosene Engine and Gulch; Eight Bottom Deere Plow; 36-60 Avery Separator. Two Tanks, run two seasons. Terms to reliable parties. Paul Edwards, Shaunavon, Sask.

**"GEINER" PORTABLE ENGINES**, single cylinder, 20 and 22 h.p., one new and two rebuilt. Liquidator offers these at knock-down prices to effect an immediate clearance. Write for particulars. This is a record opportunity to get the best power machinery made, at less than cost. R. S. Ewing, 209 Union Trust Bldg., Winnipeg.

**A GENUINE SNAP — FOR SALE OR EXCHANGE** — 1 Reeves 25 h.p. cross compound engine, rocker grates and extension wheels, in good repair; 1 Reeves 40-63 separator blower, feeder, high bagger. This outfit can be seen at Indian Head, Sask. For price apply to F. E. Campkin (agent), Indian Head, Sask.

**GASOLINE ENGINE** with plows, also 32in. and 36 in. Advance Separators in good condition, discs, binder and other implements for sale. Easy terms. "Y" this paper.

**ONE 6-FURROW 14in. Cockshutt Engine Gang**, with stubble bottoms in good shape. J. C. Logan, Carnduff, Sask.

**FOR SALE**, 20 H.P. portable international Gasoline Engine, in good condition; only been run 60 days; cheap. Apply Richard Airey, Foreman P.O., Alberta.

**STATIONARY GAS ENGINES**—Have six splendid new, water-cooled engines in perfect order, running from 1 1/2 to 6 h.p. at prices from \$40 to \$198. Must realize within a few days and am offering at less than makers' cost. R. S. Ewing, 209 Union Trust Bldg., Winnipeg.

**GASOLINE TRACTOR**. Five year's experience, first class references. Open for engagement. Give full particulars. Claude R. Green, Perth, N.B. Vic. Co.

**WTL EXCHANGE**, 100 Acres Mixed Farming Land for Separator, about 24in. cylinder; must be complete and in good running order. Sykes, Russell, Man.

**FOR SALE**—1 30-60 Hart-Parr Engine, 1 20-60 Sawyer-Massey Separator, Set of Emerson Engine Disc Plows, 14 Discs, 2 Sets Emerson Engine Disc Harrows, 1 Cuddy Steering Device, 1 Stewart Stook Loader. All in first class working order. Three thousand dollars cash takes the lot. A. Tuxford, Tuxford, Sask.

**FOR SALE**—"Big Fair," 30-60 Gas Tractor in good running condition. Address R. F. O. Box 3164.

**FOR SALE**—110 H. Case Steam Tractor, 40-62 Steel Separator, 10-Furrow Cockshutt Gang, Stubble and Breaker Bottoms; three 24in. Deere Jubo Breakers; bargain. Candy & Co., Edmonton, Alta.

**WANTED** — Information regarding good farm or unimproved land for sale. R. G. List, Minneapolis, Minn.



**SYNOPSIS OF CANADIAN NORTHWEST LAND REGULATIONS.**

**T**HE sole head of a family, or any male over 18 years old, may homestead a quarter-section of available Dominion land in Manitoba, Saskatchewan or Alberta. Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District. Entry by proxy may be made at any Dominion Lands Agency (but not Sub-Agency), on certain conditions.

**Duties**—Six months residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions. A habitable house is required except where residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price \$3.00 per acre.

**Duties**—Six months residence in each of three years after earning homestead patent; also 50 acres extra cultivation. Pre-emption patent may be obtained as soon as homestead patent, on certain conditions.

A settler who has exhausted his homestead right may take a purchased homestead in certain districts. Price \$3.00 per acre. **Duties**—Must reside six months in each of three years, cultivate 50 acres and erect a house worth \$300.

The area of cultivation is subject to reduction in case of rough, scrubby or stony land. Live stock may be substituted for cultivation under certain conditions.

**W. W. CORY, C.M.G.**,  
Deputy of the Minister of the Interior.  
N.B.—Unauthorized publication of this advertisement will not be paid for.—64388.

**Well Drills**  
For Drilling  
**WELLS or BLAST-HOLES**  
Built 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.

**Lump Jaw**  
The first remedy to cure Lump Jaw was  
**Fleming's Lump Jaw Cure**  
and it remains to-day the standard treatment, with years of success back of it, known to be a cure and guaranteed to cure. Don't experiment with substitutes and imitations. Use it, no matter how old or bad the case or what else you may have tried, if your money back if Fleming's Lump Jaw Cure ever fails. Our fair plan of selling, together with exhaustive information on Lump Jaw and its treatment, is given in  
**Fleming's Vest-Pocket**  
Veterinarian Adviser  
Most complete veterinary book ever printed to be given away. Durable bound, indexed and illustrated. Write us for a free copy.  
**FLEMING BROS., Chemists**  
13 Church Street - Toronto, Ont.

**\$120.00 SURE** Congenial work at home among church people. Man or woman. 60 days or less. Spare time may be used. No experience required.  
**INTERNATIONAL BIBLE PRESS, Spadina Avenue, TORONTO**

**What Do You Need?**  
WE WILL TELL YOU IN A PERSONAL LETTER

Where to get the things you want, but don't know where to find. Our Service Bureau will answer by mail, free of cost, subscribers' inquiries concerning anything they wish to buy.

First carefully scan the advertisement columns; then if you cannot find a description of what you want to buy, or don't find the address, write us telling your needs.

Describe fully what you want to buy, so we'll know what you need. We will reply by personal letter, advising you where to get the article.

If you see anything advertised in any other paper—which doesn't guarantee the reliability of its advertisers as does the *Canadian Thresherman and Farmer*—send it to us with the name and date of paper in which it appeared and what information you desire.

We have no merchandise to sell, but we will gladly tell you where to get whatever you want.

MAIL THIS IF YOU WANT OUR HELP

CANADIAN THRESHERMAN AND FARMER,  
Service Bureau, Winnipeg, Man.

Where can I buy .....

Name .....

Town .....

Province .....

**HER NEW PUMP IS A MYERS**  
The housewife can perform her daily tasks with one-half the effort, if she has modern labor saving conveniences. A **MYERS HOUSE PUMP** will bring water to the kitchen and save her many steps. These pumps operate easier than others on account of the **PATENTED COG GEAR HEAD**. Send your name on a postal and ask for circular showing Myers House Pumps in actual colors.  
**F. E. Myers, Bro. Ashland, Ohio**  
Ashland Pump and Ray Tool Works

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**WRITE FOR AGENCY**  
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**CHALLENGE COLLARS**  
WATERPROOF ECONOMICAL ALWAYS DRESSY  
NO EXPENSE FOR LAUNDRY BILLS  
DULL FINISH, JUST LIKE BEST LINEN  
AT YOUR DEALER'S, OR DIRECT, \$25c  
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We buy Old Brass, Copper, Zinc, Lead, Auto Tires, Bones, Rags, Tailors' Clippings, Rubber Boots and Shoes, Hides and Furs  
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**Get a Farm of Your Own**  
TAKE 20 YEARS TO PAY  
The land will support you and pay for itself. 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 from \$35. Terms—One-twentieth down, balance within twenty years. In irrigation districts, loan for farm buildings, etc., up to \$2,000, also repayable in twenty years—interest only 6 per cent. Privilege of paying in full at any time. Here is your opportunity to increase your farm holdings by getting adjoining land, or secure your friends as neighbors. For literature and particulars apply to  
**ALLAN CAMERON, General Supt. of Lands, Desk 17, Dept. of Natural Resources, O.P.R., CALGARY, ALTA.**



# YOU THRESH TO GET THE GRAIN

There is but ONE way to do it successfully

## BEAT IT OUT

BUY OR HIRE A

## RED RIVER SPECIAL

*Its Principle is Right*      *It BEATS OUT THE GRAIN*

*Its Work is Fast*            *It Saves the Farmer's Thresh Bill*

*Its Results are Sure*        *It Gets the Money*

*No other Separator does equally well*

Send for the Home Edition of the Red River Special and read the opinions of your own well known neighbors on every point that we name. This truth-telling little publication is free, so is our Big Catalog that reveals more truths about really successful grain threshing. Any kind of request, with your name and address will get them.

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**THRESHING MACHINERY**

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

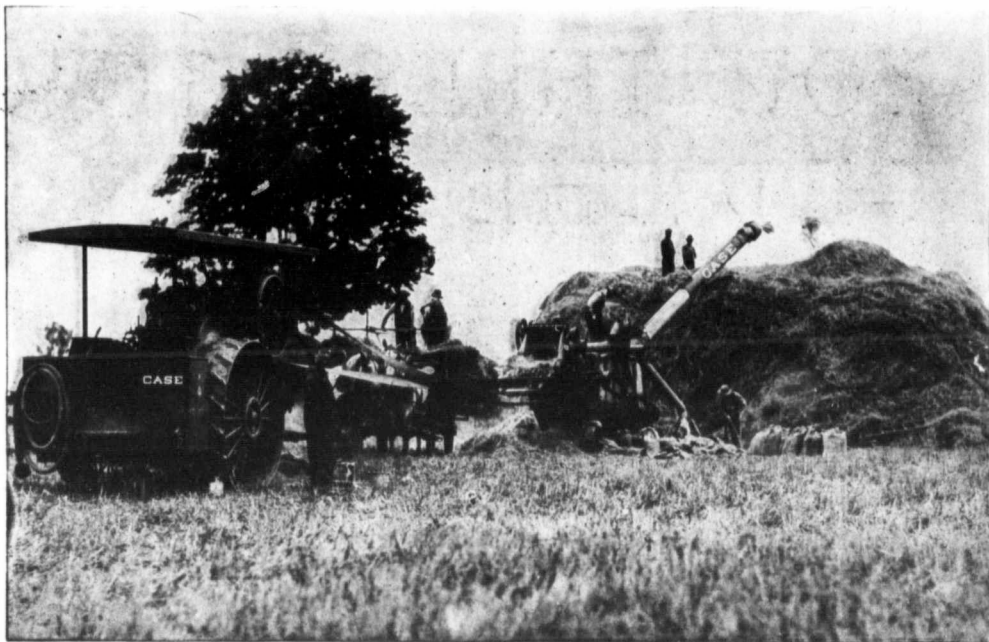
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BRANCH HOUSES (With Full Stock of Repairs) At

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H. P. NORTON COMPANY, CALGARY, ALBERTA



## CASE STEAM TRACTORS

### *Reliable & Economic Power for 40 Years*

We have always maintained that in certain localities and for certain kinds of work steam is and always will be the most satisfactory power.

Remember, please, that some gas tractors are also practical successes and that Case tractors, which have proved their ability as time, money and labor savers are numbered among the few.

But if your requirements demand steam, remember the good old line of Case Steam Engines. No engines have ever equalled them for simplicity, durability and power developed.

In the enthusiasm for the gas tractor, many neglected their steam product. Not so with Case. Each year new refinements and improvements have been added while at the same time we have also kept in touch with the latest developments of the gas tractor. Today Case Steam Engines represent all that is good in steam engineering practice. As a result thousands of users in the U. S., Canada, Europe, South America and the Phillipines attest to their efficiency.

Here are a few reasons why:

1. Main frame of one casting to which cylinders of engine are bolted. This feature insures perfect alignment.
2. Main bearings run in interchangeable babbitt lined bushings and can be easily replaced in cases of wear.
3. All gearing made of Special Ferro Steel. Transmission completely housed to protect against dust and dirt.
4. Case Boilers are designed so that they meet the most rigid requirements of every country in the world. That means Case engines can be successfully used anywhere.
5. Spring mounting of the boiler to the rear axle and spring differential and draw bar is an exclusive feature of Case engines. This takes all strain and shocks from the working parts of the engine. This is an especially good feature in traveling over rough roads.

Generous size firebox makes firing easy and effective. Case engines develop more power per pound of weight than any other make.

Case builds seven sizes of steam tractors 30 - 40 - 50 - 65 - 75 - 80 and 110 horsepower. Sizes for every farm.

#### *An Album of Information for the Power User*

If you are interested in steam for power you will be interested in knowing all the features that Case steam engines possess. You will be interested to know how carefully Case steam engines are constructed. These facts are all explained in our 1916 Case Machinery Catalog. It is an album of information and a book of reference that should be on the reading table of every power user. A copy will be sent postpaid on request.

**J. I. CASE T. M. CO., Inc. 768 Liberty St. RACINE, WIS.**