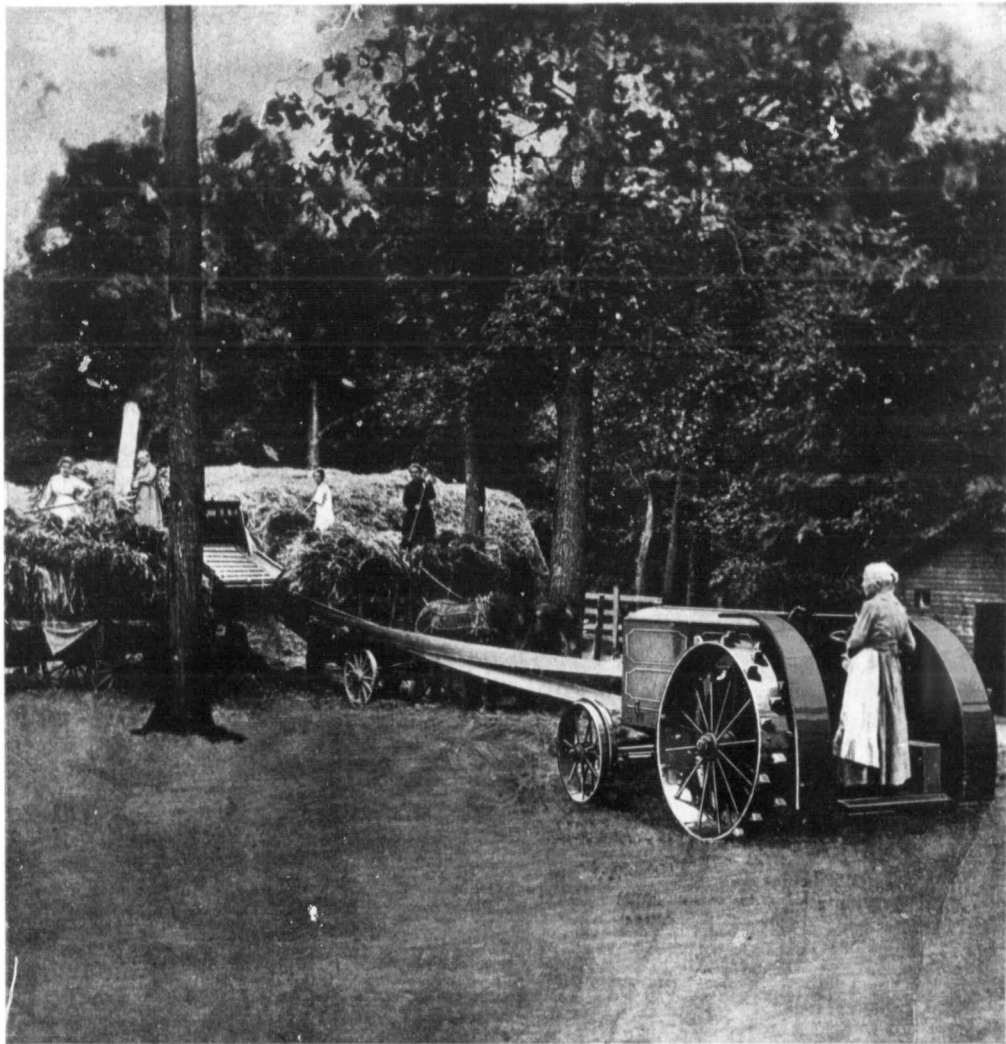


The **CANADIAN** THRESHERMAN AND **FARMER**

WINNIPEG CANADA
AUGUST
NINETEEN NINETEEN

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SEP 10 1919
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BETTER FARMING — BIGGER CROPS — BETTER PRICES



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

Steady Power

is required to pull
the **WHEAT** from
the **STRAW**



The New
HART-PARR
HAS IT.

The two-cylinder twin motor burning kerosene at all loads gives to the thresher that steady, constant power that is required to keep up the required belt speed that is so necessary in order to get all the wheat from the straw. Grain that is not threshed at the cylinder cannot be separated on the raddles.

We have been building tractor motors for over eighteen years; in fact, we built the first successful kerosene motor.

In our experience we have found that the two-cylinder twin kerosene motor for a tractor has 20 distinct advantages over the four-cylinder.

ADVANTAGES OF HART-PARR 30 TWO-CYLINDER TWIN MOTOR

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Less engine experience needed to operate. 2. Handles kerosene better. 3. More accessible. 4. Lower cost per horse-power. 5. Half the ignition trouble. 6. Half the valve trouble. 7. Only two main bearings. Cannot get out of line and break crank shaft. 8. Few bearings, and these may be oiled by mechanical oiler. 9. Less gearing because of lower engine speed and less reduction. 10. Best type of gearing may be used because of less reduction to wheels. | <ol style="list-style-type: none"> 11. Less power lost in transmission. 12. Less jacket walls on cylinder, hence more uniform cooling. 13. Easier to cool with radiator. 14. Sturdier, more rugged parts. 15. Slower speed, hence longer life. 16. Less wearing parts. 17. Heavy duty engines have always been one or two cylinders. 18. With cranks at 180 degrees, they may be very well balanced. 19. Similar to stationary engine. 20. Better belt power. |
|---|---|

WE ARE DISTRIBUTORS FOR SUPERIOR DRILLS. A FULL LINE OF REPAIRS CARRIED IN STOCK

Hart-Parr of Canada Limited

612 McIntyre Block, WINNIPEG REGINA CALGARY

Warehouse and Show Room: 47 Higgins Ave., East.

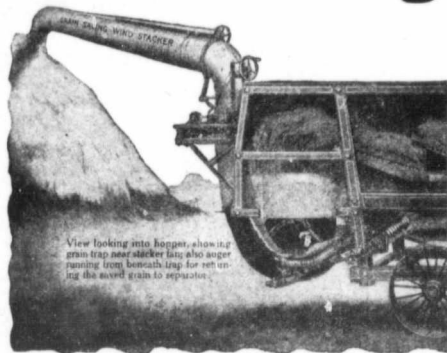
TELEPHONES

Office Main 2306-2307 Repairs Dept. Day Phone: Garry 3424
Warehouse and Sales Room: Main 691 Repairs Dept. Night Phone: Sher. 3715



This Is the Grain-Saving Wind Stacker

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



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

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

List of Manufacturers

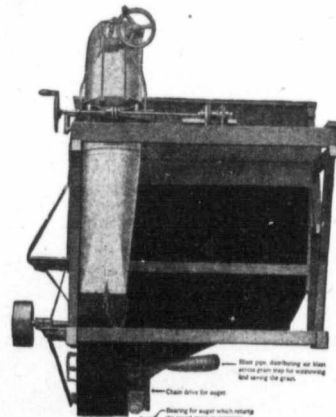
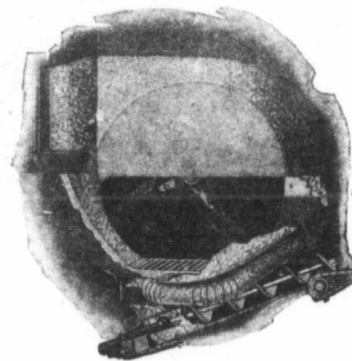
Canada

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

United States

- Aultman & Taylor Machinery Company, Mansfield, Ohio.
- Avery Company, Peoria, Ill.
- A. D. Baker Company, Swanton, Ohio.
- Banting Manufacturing Co., Toledo, O.

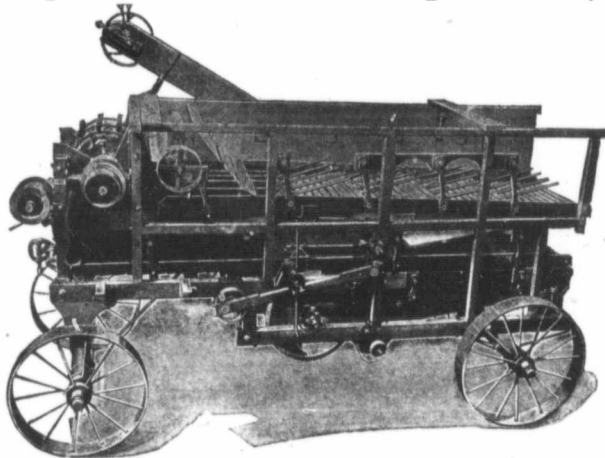
- Batavia Machine Co., Batavia, N. Y.
- Buffalo Pitts Company, Buffalo, N. Y.
- Cape Mfg. Co., Cape Girardeau, Mo.
- J. I. Case Threshing Machine Company, Racine, Wis.
- Clark Machine Co., St. Johnsville, N. Y.
- Ellis-Keystone Agricultural Works, Pottstown, Pa.
- Emerson-Brantingham Co., Rockford, Ill.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



GRAIN SAVING WIND STACKER

SAWYER-MASSEY

INTENDING purchasers should investigate the Separating Capacity of the SAWYER-MASSEY No. 1 with 22-inch Cylinder and 36-inch body; No. 2 with 28-inch Cylinder and 44-inch body. **OBSERVE** the large amount of grate surface. Deep check plate at rear of cylinder. Three wing heavy all steel beater. Floating curtain always occupying a position close to the passing straw. Four sets of adjustable agitating forks constantly tossing the straw upward and rearward.



Internal View of No. 1 and No. 2 Separator capacities from 500 to 1000 and 1000 to 1500 Bushels respectively, the above estimate being approximate, depending on the condition of the grain to be threshed.

All the above attachments perform an important function, resulting in a **COMPLETE SEPARATION**.

THE MOST SIMPLE, DURABLE and **EFFICIENT** design of Separator on the market.

NO CRANK SHAFTS and all oil holes and **GREASE CUPS** on the outside, being accessible while the machine is in operation.

The SAWYER-MASSEY 11-22 Tractor will draw two 14-inch plows or three in stubble land. Can be used to fill silos, drive wood sawing machine, grind grain for feed, or drive our No. 1 Separator fully equipped to full capacity. Is of a design that can be used to advantage and economically, on medium size farms for many purposes. It is as complete in detail as any of our larger sizes, all of which burn kerosene successfully.

On request we will mail free, special Bulletins on any of the following:

11-22 Tractor, 17-34 Tractor, 20-40 and 25-50 Tractor, No. 1 and No. 2 Separators, or **GREAT WEST SEPARATORS**, if machines of maximum capacity are required.

If interested, consult

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Head Office and Factory: HAMILTON, ONTARIO, CANADA

Branches and Warehouses:

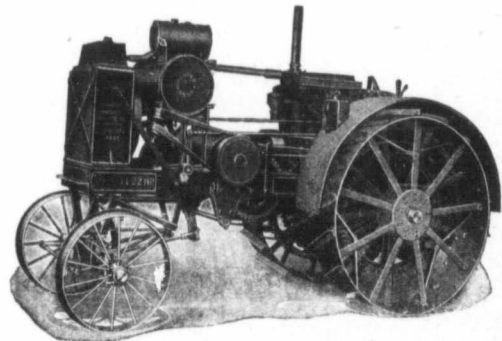
WINNIPEG, MAN.

REGINA, SASK.

SASKATOON, SASK.

CALGARY, ALTA.

Take advantage of the service we can furnish from any of the above centres.



Left side 11-22 Kerosene-Burning Tractor



Vol. XXIV

WINNIPEG, CANADA, AUGUST, 1919

No. 8

THE "impossible" is being done every new day, simply because there seems to be practically nothing in human aspirations that cannot be got at by brains, enthusiasm and well-directed labor.

Few civilians have a greater record of valuable services rendered during the war than Sir Leo Money, and because of his work on the War Trade Advisory Committee the Ministry of Munitions and the Ministry of Shipping—the wonderful story he has recently told in the "Observer"—will be all the more eagerly appropriated by everyone who has any sense of the responsibility—the individual has in all future development. He says:

"The industrial renaissance of 1915-1918 with its magnification of old industries and its speedy building of new ones, under conditions of appalling difficulty, shows that the Empire possesses talent enough to give us reconstruction worth the name if we will give it in peace the opportunity which at long last it found in war. We so organized our depleted working forces, so improved their scientific working equipment, and so diverted their labor to appropriate ends, that we caused a reduced working army to do effectively work of the kind and quantity needed—work which the much larger industrial army of 1914-15 failed to accomplish.

Sir Leo goes on to emphasize

LET US CONTINUE THE INDUSTRIAL MIRACLE

"When our labor power was at its minimum our production of food and munitions was at its maximum. This is easily the first wonder of the world."

the fact that a maximum of British production was reached with labor at its minimum. The work accomplished saved the Allies, and in its turn was saved

no less devoted civil servants. Note that the worth of this combination of men was no less before these ministries were formed; it was the glorious opportunity of

Therefore, it is urged that Labor's policy of industrial organization under public ownership and control is the only policy which can give a proper liberation to industrial power, and which can give us the quantity and quality of commodities which we need for the proper purposes of peace.

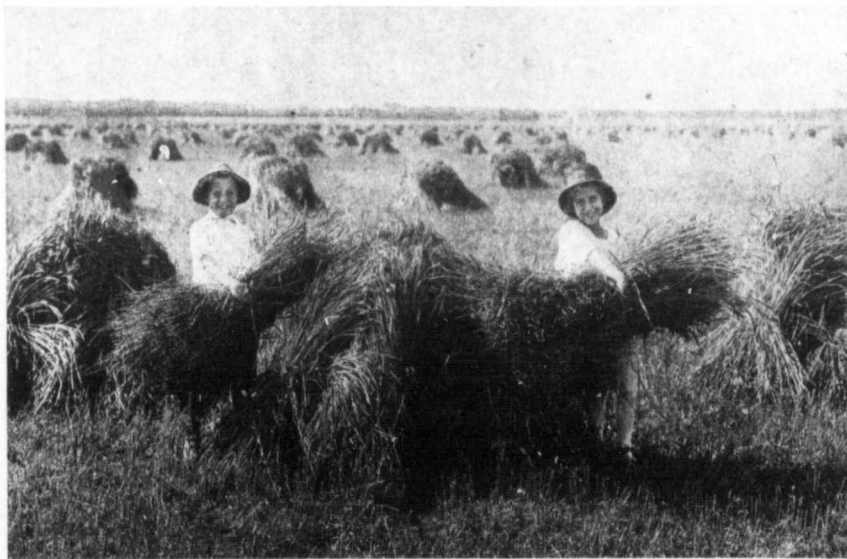
Just as in war, national direction was needed to give us the quantities of steel, chemicals, guns, ammunition, etc., so in peace it is needed to give us the houses, furniture, utensils, clothes, civic amenities, etc., worthy of a European civilization in the twentieth century; and that Labor's policy is the only path to social justice and peace can also be demonstrated.

Fewer Men, More Work

Sir Leo gives a fascinating account of how this first miracle of the labor world was achieved in war time.

"Given national organization, a nation can produce far better results than one with better gifts which rejects such organization," he says. "This was amply demonstrated during the war, within

our own borders. In 1918, when our labor power was much less than in 1914, we produced far more food and commodities than in 1914. The British working nation in 1918, owing to the devotion of nearly all our finest young men to the Army, was inferior both in point of number and quality to the British working nation of 1914; yet national organization made the British working



A 1919 Manitoba Wheat Crop

by the socialistic use of shipping. The submarine was checkmated not only by the gallant offensive and defensive operations of the Navy, but by a wise disposition of shipping, impossible under conditions of private control.

The Ministries of Munitions, Food and Shipping were manned by many of our most brilliant scientists, engineers and organizers, working in harmony with

national service which gave full value to its genius.

What Labor Asks

What the Labor Party now demands is that the nation shall not relapse into the non-national, anti-social system of private profiteering which gave us small wealth and that ill-distributed under peace conditions and which nearly brought us to ruin in war.

nation of 1918 much superior to the British working nation of 1914.

"When our labor power was at its minimum our production of food and munitions was at its maximum. This was the outcome of a hastily improvised and necessarily imperfect Socialism, and from its wonderful results we may imagine what could be achieved after demobilization, with our full working power restored, and in conditions making undue haste unnecessary. We may deduce something more from it—that we need not consent to play second-fiddle to Germany in European civilization.

Women's Work

"It is true that we called in the work of women in industry as never before, but that by no means accounts for the industrial miracle that was accomplished in about three years. I am on the side of the angels, as Lord Beaconsfield once said in another connection, and I do not underestimate the great services of women in the war if I say that for the greater part of the explanation we have to look in other directions. The number of women who newly entered work was a mere fraction of the number of picked young men who left it between August 4, 1914, and November 11, 1918."

How Work Was Wasted in Peace

What room there was for such organization may be gathered from the consideration of figures to which Sir Leo directed attention in "The Future of Work," published on the eve of the war, which demonstrated the paucity of output by our competitive system after more than a century of production by power.

In 1907, according to the Census of Production, the British population of 44,000,000 had only 10,500,000 men, women, boys and girls employed as direct producers of material commodities, including salary as well as wage earners. Of these, only 7,000,000 were industrial workers.

United Kingdom Industrial Employment in 1907

Wage Earners:—
Males aged 18 years and upward 4,250,000

Females aged 18 years and upward	1,200,000
Boys and girls under 18	950,000
Out-workers, chiefly women	100,000
	6,500,000
Salaried persons	500,000
Total	7,000,000

Too Few Producers

"Amazing as it may appear, when the war broke out we had only about 4,250,000 males aged 18 and over engaged in mining or manufacturing, and of these over 1,000,000 were miners. But our male population of 18 years and over numbered more than 13,000,000. Therefore, only one in

less, and Russia not a manufacturing country, had to furnish forth munitions against Germany, whose steel output was 19,000,000 tons a year! It was in such circumstances that we put all to the hazard of war.

Busy Wasting Time

"When a man volunteered or was conscripted into the Army it by no means followed that he counted as the loss of a producer. In more than one case out of every two he was in peace busily wasting his time from an economic point of view—clerking for a redundant broker, or calling for orders for a superfluous store-keeper, or carting round milk for the tenth milk dealer serving a single road, or opening and shutting a restaurant door, or elevating the dignity of labor in a ten-story elevator. As for the actual

making and optical glass manufacture. It expanded the aeroplane industry out of all knowledge. It introduced standardization and so made it possible for parts widely separated in their places of origin to be assembled with precision. It magnified the production here, and imported from abroad enormous quantities of machine tools. It re-distributed the working plant of the country.

Sir Leo gives a serious warning of what may happen if we despise our enemy, who is also our industrial competitor in the world markets:—

"We remain in peril of despising the enemy we have beaten. My fear is that Germany may achieve a victory which no war could give; she may, using methods which are in danger of rejection here, and relatively profiting by our subjection to private government, advance to a position so superior in point of wealth and social development as to defeat us in that eternal battle with the forces of Nature which we call Civilization. And it may come to be written that we ourselves achieved that result, in that, having freed Germany from militarism, and given full opportunity to her



Nothing so great as a good example—the Kiddies realize it

three of our men was engaged directly in producing industrial wealth.

"I do not forget the really productive work of railwaymen, school teachers, and others when I say that the facts adduced were an accusation against our competitive system as an organizer of work.

"The frustration of production and the ill distribution of wealth had diverted from industry the labor of many millions of people, to which, unfortunately, has to be added that no small part of the producers were producing not wealth, but illth—the rubbish furniture, rubbish houses, rubbish clothes, and rubbish food upon which the masses spent their meagre wages, which in rare cases reached as much as 35s. a week.

"Our production of steel was less than 8,000,000 tons a year, and this, with industrial France under Germany's heel, Italy coal-

producers who passed into the Army, many of them had become mere luxury providers, for the trades of luxury flourished as a consequence of what I termed in 'Riches and Poverty' the error of distribution.

"All this helps us to understand the reorganization performed by the Ministry of Munitions. It took what was left of our labor power, further depleted the middleman and luxury trades, and in spite of the ever-growing call for the Army, organized industrial output as never before.

"It extended old factories and built new ones. It found the labor to build and equip \$325,000,000 worth of State factories, which became the most go-ahead in the country. It enlarged our decadent iron and steel trade by about fifty per cent. It built up chemical industries which had been so neglected that we were in grave danger through lack of explosives. It established almost new industries, such as gauge-

Socialism, we were content to live in private ownership.

"And let it be observed that if thus the Germans lead us, it will not be through innate German superiority, but through the German adoption of a method which gives full play to the genius of a nation. National organization simply means the national distribution of brain-power—the devotion of the best brains to the service of all."

Our Part Lies With Power Farming

If Canada ever had an unmistakable lead given her as to the part the future opens for her, it is clearly suggested by the foregoing. Where delay and waste has prevailed in managing her wonderful resources, there must be a return to methods that will guarantee whatever is meant by economy of time and means.

That there has been a long spell of disjointed effort entirely without cohesion or semblance

of "organization" needs no elucidation. Old-time systems that have long outlived their ability to meet the times are still found in operation side by side with the most improved that enterprise and an intelligent enthusiasm can bring to play in raising crops and live stock.

Human nature is still human nature, and men are no less slow to-day to grasp the significance of an invention and to adopt it. Not so far back, for example, farmers were getting along nicely with the sickle and the cradle on their harvest fields. When the harvesters were invented there was no widespread demand for them—not for a very long time. As a matter of fact, it required a great cumulative force of sales' effort to convince the men that not only were they "a great improvement," but that they were a necessity.

The farmer, however, did and does not stand alone in his reluctance to line up with the march of progress. It is exactly the same in every industry—printing, for example, and all that is associated with it, and every other industry and applied art one might name.

But the farmer and the printer are not "calling" for these new things. It was only when the insight of a few far-seeing men (they are always in a small, sad minority) perceived the senseless delay and waste in certain operations that anything was done—everyone knows the story of all inventions.

Coming specifically to the tractor, it might be said we are still in the early cooking stages. The most cock-sure manufacturer of a really high-class engine has not the temerity to say that his machine is an "all-purpose" outfit that cannot be licked and that will live up to its reputation as an "all-purpose" tractor.

A contemporary has well put it: "Across the street from where I sit writing there is a big park with a row of tennis courts along the street. These courts are beautifully kept, and at the present time there is a man sitting on a diminutive tractor roller, rolling the courts, while out beyond him I can see another man mowing the grass with a power-driven lawn mower. Both machines are working nicely and each of them enables one man to do more work and better work than he could do with the old hand tools. Both of these little tractors were designed especially for the work they are doing. A big, heavy farm tractor on the courts could not turn in the space required, and, moreover, it would tear up the courts. Over on the greensward a light, handy, power mower is required. A heavy tractor would make deep wheel tracks and ruin the lawn.

THIS thirty-two page illustrated booklet is of vital interest to every farmer in Canada. It answers the questions you have been asking. It solves the problems you have been wrestling with. It gives you just the kind of information about tractors and tractor farming that you have been looking for. Sent free to any one. Mail the coupon to-day for your copy.

Why the Cletrac TANK-TYPE TRACTOR Best Meets Your Needs



The Cletrac is a "year round" tractor

We believe that we can prove to the average farmer that he can get *more* work out of the Cletrac *more* days in the year than out of any other tractor on the market. The Cletrac is useful in winter as well as in summer. It makes money for you in the fall as well as in the spring. It is a "year-round" machine. Send for the booklet shown above. It will open your eyes to the tremendous possibilities of tractor farming with a machine you can use *twelve months in the year.*

The Cletrac has a wider range of use

It is small enough to be used economically on light jobs, yet powerful enough to handle most of the so-called *heavy* work about the farm. It plows, harrows, plants, reaps, binds, threshes, hauls, cuts ensilage, fills silos, saws wood, and does practically all the work formerly done by animal and stationary power.

The Cleveland Tractor Co. of Canada
Windsor, Ont. Limited

The Cleveland Tractor Service Co.
Regina, Sask.

The Cletrac is built to stand hard usage

It is rugged—and powerful. It is designed and built by practical men who know what a farm tractor must stand. It is economical in its use of kerosene and oil.

Don't wait! Get your Cletrac now

Orders are coming in fast, and we are filling them as rapidly as we can. In another month we will be behind again. If you want your Cletrac promptly order it now—to-day! Don't wait! Every day's delay means a later start in reaping the greater profits that are bound to come with year-round Cletrac farming.

Send for this booklet "Selecting Your Tractor." It goes into your problems—and solves them. It doesn't do a lot of theorizing but gets right down to cold, hard facts that are of real live interest to every progressive farmer. Fill out this coupon now—and mail it to-day.

CLEVELAND TRACTOR SERVICE CO.
REGINA, SASK.

Please send me your thirty-two page illustrated booklet "Selecting Your Tractor."

Name.....

Address.....

"These two examples serve to illustrate what I desire to bring out, and that is there is no such thing as an all-purpose tractor and never can be. They are rather extreme examples, I will admit, yet general agriculture, considering the varieties of soil climate, topography and crops, presents conditions that are far more varied and diverse.

"That this matter of design bothers the farmers a great deal is evidenced by the character of the correspondence I receive from farmers all over the country. I have had hundreds of letters begging me to advise what kind or make of tractor to buy. They invariably tell me they have seen so many tractors that were not successful that they do not know which kind to choose. I can sympathize with them, but I am not

able to help them, for obvious reasons. Not only is there a great variety of types, but the truth that hurts to tell is that there are some tractors so poorly constructed that they have no right to be offered to the public.

"The bald truth of the matter is that many of the designers have not studied the country and they have not turned out a good product. In some cases—too many, I fear—they have been hampered by the sales departments. If there is any one thing the average sales manager dislikes it is a change in model. Changes are expensive, it is true, but in a new and growing industry they are inevitable. They are what developed the automobile so rapidly. Last year I pointed out that few companies had installed efficient inspection methods. This error has

since been quite generally corrected. The quality of workmanship is constantly improving. During the war it was difficult to obtain good castings; one could find excuse for many shortcomings, but the war is over and from now on all materials should be first-class. The foundry has played a prominent part in the development of the tractor and all other farm implements up to the present time, but from now forward the machine shop will have an increasingly greater share in such work.

ERROR

On page 48 of our July issue the "Gray" Tractor illustration was captioned as pulling a 3 bottom John Deere plow at Portage Plowing Match. This ought to have been 4 bottoms as clearly seen in illustration.

THE CANADIAN THRESHERMAN AND FARMER

CANADA'S LEADING AGRICULTURAL MONTHLY



PUBLISHED MONTHLY BY
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Aug.

A Blaze of Abundance

1919

OUR GUARANTEE

No advertisement is allowed in our columns until we are satisfied that the advertiser is absolutely reliable and that any subscriber can safely do business with him. If any subscriber is defrauded, E. H. Heath Co., Ltd., will make good the loss resulting therefrom. If the event takes place within 30 days of date advertisement appeared, and complaint 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."

IF 1919 is not a record year for Western Canada, there's nothing in natural growth, in recuperative marvel the world over that is likely to outclass some of the crop results in the province of Manitoba: What the average for the province will be it is hard to say; it will never be accurately known because of the sheer indifference and carelessness of some of the most fortunate or successful of the grain and garden truck growers in providing the necessary figures. The tendency to exaggerate we know is chronic and irresistible, but from close observation at many points it can be positively affirmed that just as the binders were being paraded for the great offensive, the land for the greater part was bathed in "a blaze of abundance" of all kinds of edible growth.

But there's so much of the warped and wizened in human nature that wild aeroplanes would never drag out of some people the admission that certain familiar things around their own doors were worth remarking upon or accepting as the surest guarantee for the returns on all future effort. It is one of the strangest and yet most common

peculiarities of human frailty that if one seeks for something to wonder at one must go far afield. Nothing great can happen at home; the marvellous is reserved for the unexplored remainders of Nature's dregs! And all the time, here, within an hour's walk or a trifling train fare from any man's home town in Manitoba are amazing things about which it is foolish as it is needless to exaggerate.

We heard a preacher the other day dilating on the extraordinary restorative genius of the Australian climate. He had been passing up country on his grey nag when he reached the sheep farm of a man whose entire ranch as far as the eye could reach was as bare of pasture or any green thing as were the streets of Sydney. On inquiry he was told: "We've had a great drought here, but the rain is due shortly and if you come back this way in a week or two you'll get the surprise of your life." The preacher went on his way, and a little later met the advance guard of a drenching rain storm, which continued for two days without ceasing. In about five weeks he revisited the man of the dried-up sheep ranch and found the whole landscape "bathed in a blaze of abundance" of rich, succulent pasture grass.

We had something akin to this in South Alberta the other day, and we can show even good old Australia with all her reproductive wealth many things to wonder at any season

she cares to give Canada the privilege of extending her hospitality. We are not entering into any competitive braggadocio with Australia, nor suggesting that it is necessary for her to visit our little ranch. No, but we have the strongest possible desire to get our city folks and town dwellers to take the very little trouble it means to see for themselves what is being done all the time in Manitoba. The average citizen is so confoundedly wrapped up in his environment of office, store and street car that he can have no conception of the glorious country just outside the city limits, and what it means to his own existence.

The "Old Timer" has bequeathed an unfortunate ideal of the farmer and his equipment which still hangs around and colors the whole outlook of the townsman. The average farmer is no longer the makeshift mortal he might have been in a by-gone age. He believes that the slovenly farm is no more effective than the slovenly office. He tears out the unsightly system of makeshifts that so readily betray the incompetent farmer, and replaces them with strong lasting fixtures. He abhors the broken window, the loose hinge, the rickety fence, the leaky roof and finds that it costs him little more in time and money to repair them well and without delay than it cost his predecessor to muddle with makeshifts." And he is the first man in all industrial effort to avail himself of the labor-saving devices modern development offers.

And it is largely owing to the character of the men and women that we see what we do see to-day; corn crops that were never equalled in any season in Western Canada, vegetation of all sorts that "beggars description." True, the growing and ripening season of 1919 has been an unusually good one, but the very best conditions without the skilled husbandry and the employment of effective machinery and implements would never have accounted for the quality and quantity one finds on every hand as we write. One facetious friend (by way of excusing his small effort in summerfallowing) explains that owing to the extraordinary heading out of his wheat, he had taken the precaution to "shore it up" with a crop of sow thistles!

Man! If you would get a glimpse of something that will inspire real confidence and an eternal hope in your heart, take a day off before the snow flies and see Kildonan's market gardens; or the grain fields of the Portage Plains, or the corn crop on the banks of the Red and the Swan Rivers.

SUBSCRIPTION RATES

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

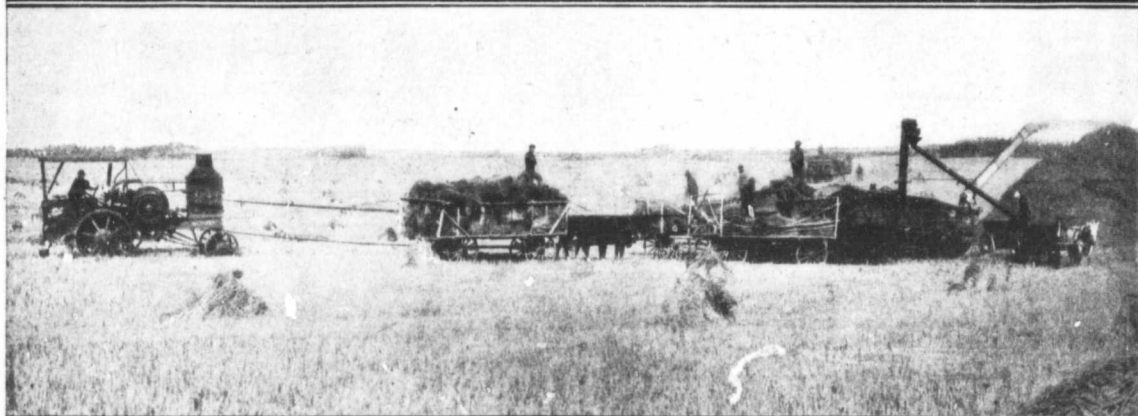
Failing to receive paper, you should notify the office at once, when mistakes, if any, will be corrected immediately.

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 Ideal-Oil Pull Combination



THE Rumely Ideal Separator is built on the principle of a *steady even flow of straw through the machine*—a guarantee of big capacity, complete separation and clean grain.

The Rumely Oil Pull Tractor is governor controlled—*automatically keeps a separator at its correct speed all day*—no speeding up or slowing down as the load changes.

The Ideal

Including the patented traveling slatted chain rake, the Ideal has the largest grate surface of any separator built.

Size for size, the Ideal has the longest straw rack of any separator built.

The Ideal has lifting fingers on the straw rack instead of common shakers.

Extra large chaffer and sieve area, with uniform wind control, make perfect cleaning sure.

All adjustments, oil and grease cups are on the outside of the Ideal, easily accessible while the machine is in operation.

The Ideal frame is one piece construction—no splicing, no bolts—it won't sag, pull apart or break.

Four sizes—22 x 36, 28 x 44, 32 x 52 and 36 x 60.

The Oil Pull

Guaranteed in writing to burn successfully all grades of kerosene under all conditions, at all loads to its full rated brake horse power.

Oil-cooled—no evaporation—no freezing no rust or sediment—even motor temperature.

Large belt pulley on right hand side—driven directly off crankshaft—no bevel gears—no intermediate gears—can line up, start and stop pulley from operator's seat.

Shifting front axle—plenty of belt clearance with no sacrifice in design or construction. Low speed heavy duty motor designed especially for kerosene.

20% overload capacity—hot riveted steel frame—enclosed cut gear transmission—Hyatt roller bearings—Madison-Kirco lubricator—Bosch magneto—all parts accessible.

Four sizes—12-20, 16-20, 20-40 and 30-60 H. P.

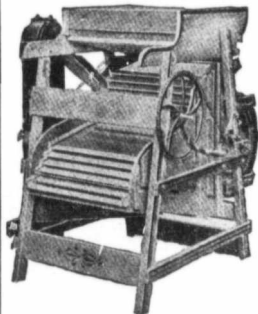
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Grain Cleaner. This cleaner gives you three times the capacity of all old types of fanning mills, and does a perfect job on any grain.

Also ask for facts on—

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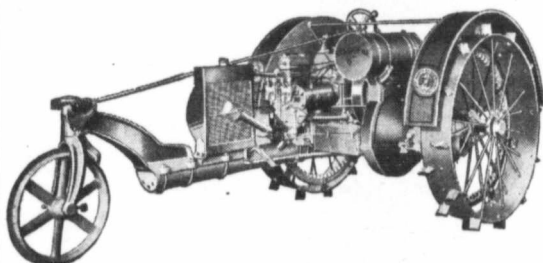
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Lincoln Saws	"Holland" Wild Oat	Macdonald Tractor
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Happy Farmer Tractor

BUY IN CANADA AT AMERICAN PRICE.



Model "F" \$1150.00 f.o.b. Factory. Model "G" \$1250.00 f.o.b. Factory.

The Happy Farmer has proven itself in Western Canadian fields for the past three years. It has proven its worth. The price is an added advantage to the farmer. Get one now and it will pay for itself before snow flies.

Gasoline Engine & Tractor Co., Ltd.
WINNIPEG CANADA

A SEED BED FROM SOD WITH ONE OPERATION
A New Mechanical Tilling Machine Leaves a Perfect Seed Bed In Its Wake

PROFESSOR Ten Eyck, the famous agronomist, once remarked that the intelligent preparation of a perfect seed

bed is the one great secret of success in farming. This remark, broadly interpreted, is, of course, a perfectly true statement, not a mere epigram. A perfect seed bed is one that supplies all the chemical and mechanical needs of the seed.

These two are so closely related that one cannot be supplied in-

dependently of the other. The liberation of plant food depends greatly on the mechanical condition of the seed bed, so that a bed chemically perfect for the seed must be mechanically perfect as well.

Intensive cultivation is essentially the preparation of a perfect seed bed. For this reason England is able to average thirty-two bushels of wheat to the acre, while America averages fourteen.

There are a dozen types of tools designed to make the perfect seed bed—the seed bed like the gardener gets; and nearly a dozen operations are necessary, and at least five are essential. The land must be plowed, disked twice, dragged and harrowed. Often it is disked before plowing, and given a final packing operation.

A tool has been invented and finally perfected that does all these operations at once. And more! It pulverizes the soil from surface to subsoil, doing away with the big air spaces that the best job of plowing leaves, and connecting the seed bed completely with the great reservoir of capillary subsoil moisture.

This machine, like all great inventions, embodies a perfectly simple principle, and every farmer that sees it work is likely to exclaim, "Why on earth didn't I ever think of that?"

The machine consists essentially of a mold board sulky plow, a rotor with steel blades from five to eight inches long, and a gasoline engine, to drive the rotor at a high rate of speed.

The rotor with the whirling blades catches the furrow slice as it comes from the rear of the share. The rotor shaft is nearly vertical, the knives traveling in horizontal planes.

The rotor is driven at the rate

of from 400 to 600 revolutions per minute, sufficient to tear to pieces the sod, trash or clods that it receives from the share. Furthermore, the trash is evenly mixed through the pulverized soil, a condition that prevents drying out of the bed, and that hastens the decomposition of the organic matter.

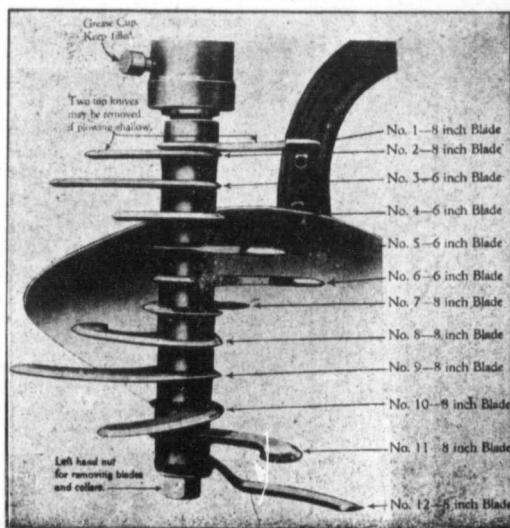
The machine can be adjusted to fit a great variety of soils. For this purpose the knives are separated by collars of different thickness, which slip onto the rotor shaft. The different adjustment of the knives makes it possible to get the right mechanical action on the light, blowy soils as well as on the heavy gumbo land.

Stones as large as a double fist pass through the knives without trouble. It may be said, in general, that the mechanical tiller will work wherever a mold board plow can get around.

The draft of the tiller is about the same as that of the sulky plow of the same capacity. The gasoline engine that drives the rotor weighs about 250 pounds, and there is that added weight to pull. But the whitling knives take the furrow slice from the back of the mold board, which lightens the draft.

The fuel consumption of the engine driving the rotor will, of course, vary with the condition of the soil it has to tear up. Ordinarily the motor will develop about 5 horse power on a medium dry soil, but a motor of 8 horse power is provided so there will be ample reserve power.

The outfit may be horse drawn or tractor drawn. There are two tractor outfits, one a two-plow and one a four-plow. The tractor engine in each case provides the power to drive the rotors.



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Every motor owner should realize the vital importance of highest quality in his lubricants and fuel. He should be content with nothing less than the best, for the degree of motor service he receives and the life of his engine is affected in a great measure by these factors.

En-ar-co products are the result of scientific refining. Nearly forty years of experience and research has made these the dependable lubricants and fuel for every motor.

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Our refining processes eliminate the possibility of residue or coke-like substances being carried in the oil. It is converted into vapor several times, condensed, subjected to extreme heat and cooled to zero. Thus carbon-forming is reduced to a minimum. The oil is all oil—oil that enables a motor to develop full power and wear long.

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One trial will convince you that White Rose has extra force and power—that it is vastly different. White Rose is a pure, dry, uniform gasoline that contains no free carbon. Buy a barrel and note the better performance of your motor.

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Black Beauty Axle Grease

Unequaled for the wagon because it contains all the rich lubricating qualities of crude oil. It insures a smooth, friction-free, wear-resisting axle. No compounds to clog or gum.



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Preserves the wood. Does not crack or blister. Put up in barrels and half-barrels.

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COCKSHUTT SWIVEL HOPPER GRAIN ELEVATOR AND CAR LOADER

The Swivel Hopper is the greatest improvement ever put on Portable Elevators, as with it the machine can be operated any place the others can work, and in many places where the old style Tilting or Rigid Hoppers cannot be used. For instance, sideways to the car, as illustrated.

The "Swivel Hopper" Elevator takes so little space that it is very convenient to load cars between the main track and the siding, which is usually level ground.

The feed can be instantly adjusted by means of a lever to suit the different classes of grain, wheat, oats, barley, etc.

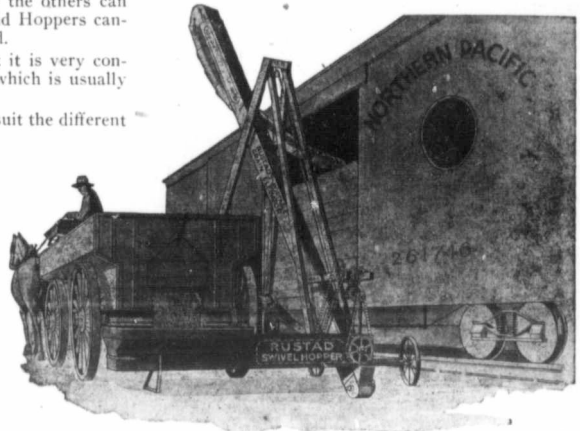
The Elevator is built on the High Speed, Over-Shot principle—the greater the speed the greater the capacity. It is 22 feet long, elevates grain from 15 to 18 feet high. Eight or ten-foot extensions can be added, if necessary, to elevate higher than this.

The Cockshutt Swivel Hopper Portable Elevator and Car Loader is a necessity on all large farms, and will pay for itself in ten days' use, in the reduction of wages, for teams, drivers and shovellers, and will speed up the handling of grain and loading of cars, and save demurrage charges.

WRITE TO-DAY FOR LEAFLET OR SEE OUR AGENT

Cockshutt Plow Co. Limited

Winnipeg, Regina, Calgary, Saskatoon, Edmonton



The only Portable Elevator that can load cars in this convenient position

YOUR satisfaction will be greatly increased if you will learn the details of your automobile. Learn to make all the simple adjustments. Don't depend upon some one else to do that which is so simply done, and which you can get such satisfaction in doing. There are no inaccessible parts that should interfere with ready adjustments. Familiarize yourself with every detail of the car, and you will have greater confidence in venturing over any road at any distance from a repair station.

The engine is a natural brake whenever the throttle is closed. Prove this for yourself in the following way: At a speed of twenty miles an hour, close the throttle and retard the spark, at a certain mark by the roadside, telegraph pole, for example. Don't throw out the clutch or the motor will have traveled from the pole by the time your speedometer registers five miles. Then over the same road and at the same speed, 20 miles an hour pass the pole

Know Everything About Your Motor

Your satisfaction will be greatly increased, likewise your confidence.

By F. H. SWEET

again, but this time throw out the clutch. You will coast much further this time before you drop down to five miles. Note the difference between this last mark and the first. This distance is proportional to the work done by the motor as a brake. By the same token the wear on your brakes will be lessened in this proportion if you let

the motor help. In short, never throw your clutch out until you have dropped down to the lowest speed at which the car will run, say two to four miles an hour. If the grade is long and steep, use the foot and emergency brakes alternately. This equalizes the wear on them.

Immutable Law Governs Car

The law is just as immutable in

that it collects as great cost for speed in a motor car as it does of any machine or of man. If you run fast, if you work hard, you require more food to sustain you. If you drive your car at a fast speed all the time, it requires more fuel—more gasoline and more oil. If you work fast and hard, you wear out more quickly, and so does an automobile. Tires, for instance, last twice as long on a car that is driven twenty or twenty-five miles an hour as they do upon cars that are driven at forty or fifty. Remember that the service your car gives you is as much dependent upon the manner in which you operated it as is your health dependent upon the

manner in which you care for it.

More accidents result from unwillingness to change gears than from almost any other cause. Most American drivers use their first and second speeds only in starting their car. They allow the machine to drift along and thus get into a tight place in traffic or too close to street cars, and be-



A Pair Sample of Western Canada in 1919

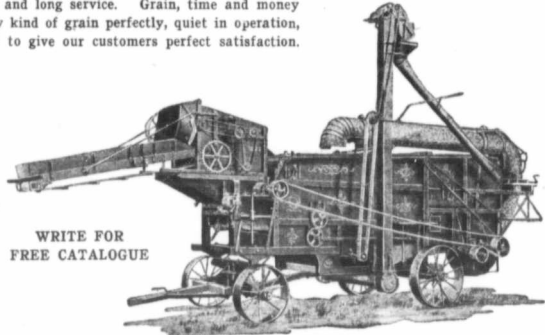
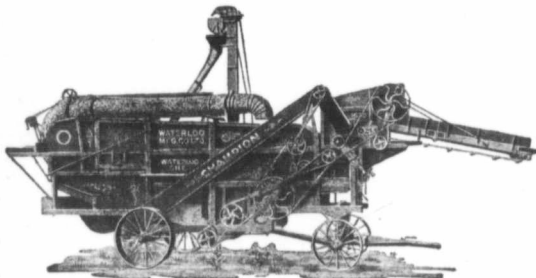
"WATERLOO" CHAMPION

SEPARATORS STEAM ENGINES AND HEIDER KEROSENE TRACTORS

ALL SOLD UNDER A WATERLOO GUARANTEE

These well known lines of machines are built in sizes to suit every farm. A full stock of machinery, repairs and threshing supplies on hand at all our branches

The name, Waterloo "CHAMPION" is an absolute assurance of dependability and long service. Grain, time and money savers. Delivers the grain in marketable shape in the sack. Will handle any kind of grain perfectly, quiet in operation, easily adjusted, well balanced, free from vibration. Every part is guaranteed to give our customers perfect satisfaction.



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"CHAMPION" GRAIN SAVERS can be furnished in following sizes: 20x36, 24x36, 24x42, 28x42, 33x52, 36x56, and 40x62.

If you are seeking a perfect threshing outfit—the best value in farm machinery and SERVICE that is invariable in its promptitude and painstaking care—get in touch with the WATERLOO PEOPLE.



Heider Tractor

Model "C" 12-20
7 Speeds Forward
7 Reverse

The Model "C" 12-20 with a three or four bottom Rock Island Gang is a complete One Man Outfit. It also has ample power to drive our smaller size Champion Separators.

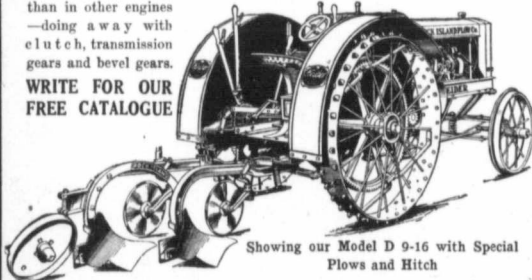
Tractor Features
4 Wheels—4 Cylinders.
7 Speeds Forward—7 Reverse.
Special Friction Transmission.
Less Gears—Less Trouble.
Simple—Durable—Economical.
Heavy Duty Waukesha Motor.

ELEVEN YEARS' ACTUAL FIELD WORK

among the leading farmers of North America is the record of the "Heider" tractor. It has no gears to strip. With the "Heider" drive, the power is taken directly from the flywheel by two large metal discs at either side—one to go ahead, the other to reverse. No jerking, no vibration. Tractor always in "mesh."

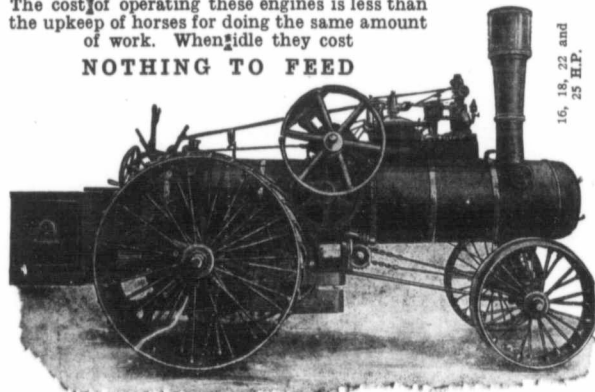
15 to 20% FEWER PARTS

than in other engines—doing a way with clutch, transmission gears and bevel gears.
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Showing our Model D 9-16 with Special Plows and Hitch

The cost of operating these engines is less than the upkeep of horses for doing the same amount of work. When they cost **NOTHING TO FEED**



16, 18, 22 and 25 H.P.

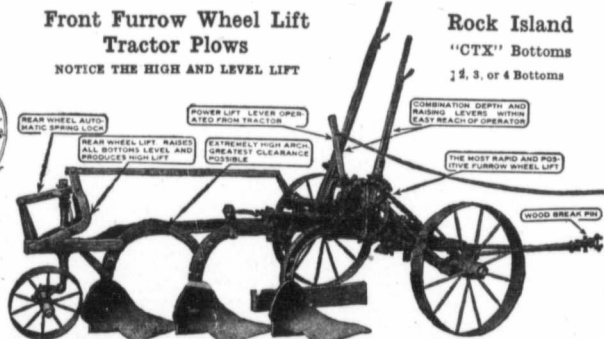
"WATERLOO" STEAM ENGINES are simple and economical and are built to conform with the statutes of the different provinces.

Front Furrow Wheel Lift Tractor Plows

NOTICE THE HIGH AND LEVEL LIFT

Rock Island "CTX" Bottoms

1, 3, or 4 Bottoms



REAR WHEEL AUTO. LATIC SPRING LOCK

POWER LIFT LEVER OPERATED FROM TRACTOR

COMBINATION DEPTH AND RAISING LEVERS WITH EASY REACH OF OPERATOR

REAR WHEEL LIFT RAISES ALL BOTTOMS LEVEL AND PRODUCES HIGH LIFT

EXTREMELY HIGH ARCH GREATEST CLEARANCE POSSIBLE

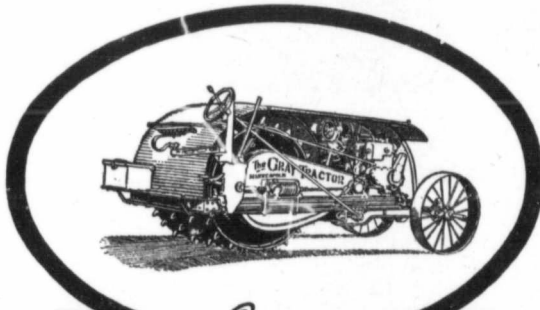
THE MOST RAMP AND POSITIVE FURROW WHEEL LIFT

WOOD BREAK-PO

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The Waterloo Manufacturing Co., Limited PORTAGE LA PRAIRIE, MAN. REGINA, SASK., SASKATOON, SASK. 328 William Ave., WINNIPEG.

UNITED ENGINES AND THRESHERS, Ltd., Alberta Distributors, CALGARY, EDMONTON.



Gray

GRAY TRACTOR with the Wide Drive Drum

THE GRAY TRACTOR has four outstanding features that specially recommend themselves to Western farmers.

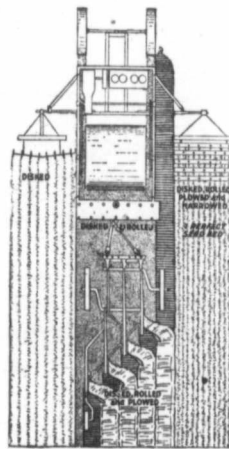
1. Wide Drive Drum.
2. Side Hitch.
3. Direct Drive Without Bevel Gears.
4. Quality Construction.

These features are appealing to the farmers of Western Canada. The Wide Drive Drum distributes the weight and puts it in the light tractor class. It will pull four plows in any soil. Over three-fifths of tractor trouble is in the differential—the Gray has eliminated the differential and bevel gears.

We would be delighted to talk over your tractor problems with you. Write us for our colored illustrated booklet—it goes fully into detail regarding construction. You can then compare the various points with any other tractor you may have under consideration.

Write for Booklet

Gray Tractor Co. of Canada Limited
 307-309 Electric Railway Chambers
 Winnipeg, Man.



How to Meet Corner Skid
 When turning a corner on asphalt pavements which are slippery, it frequently occurs that the front wheels skid. In a case of this kind, immediate action is necessary. It will usually be found that by applying the brakes suddenly for a moment so as to lock the wheels, the rear end of the car will skid in the direction in which the car is to be turned. This will help the action of the front wheels, and the releasing of the brakes and the touch of the accelerator will bring the car around the corner without any over-travel of the front end. By applying the brakes in this way, it is possible to turn the front wheels in the direction opposite to that which the car is to be turned for a moment while the rear end is skidding. When the brakes are released, it is plain to see that the front wheels will have no tendency to skid further, as they will be pointing in the direction in which the car is to be turned and the rear end will be in line with it, due to the skid. Needless to say, this manipulation requires a little more expertness than the correction of an ordinary skid on a straight road.

First of all, drive slowly when going over a greasy road or wet, slippery pavement.

As soon as you see the first sign of skidding, release the clutch immediately. If that is done promptly, the car will right itself in most cases. Apply the brakes only when the car has recovered a straight course. When you release the clutch, steer the front of the car in the same direction that the back of the car is sliding. This helps to recover a straight course and permits the application of the brakes with safety.



Temperance Gentleman:— "Tom Timpkins, if you continue like this there is only weeping and gnashing of teeth in store for you."
 The Incurrible:— "Ain't (hie) got a tooth (hie) in me 'ead."
 Temperance Gentleman:— "My friend, teeth will be provided."

cause of misjudging the speed of an approaching vehicle, or their selfish desire to crowd out another car, collisions or other accidents frequently result. It is a simple operation to change from third to second speed. It increases your power and affords the possibility of a great deal quicker acceleration as well. The second speed is incorporated for a purpose. It is seldom that we are in such a hurry that we cannot spare a moment to afford absolute safety.

Skidding can usually be avoided if one is careful and knows his car. Although the driver feels helpless at first, a little experience will soon give him confidence. Most skids can be corrected by the manipulation of the steering and brakes. Any ex-

pert driver can keep his car straight under almost any conditions, but it is difficult to explain just how he does it. Usually the rear end skids first, and in the right-hand direction, this being caused by the crown of the road. Under such conditions, the skidding action will be aggravated if the brakes are applied, the car may be ditched or continue to skid until it goes down a grade or hits the curb. The correct action is an emergency of this kind is to close the throttle to shut off the power; but not entirely so, or it will have the same effect as putting on the brakes. If the car seems to right itself, the power may be restored gradually, and it will be advisable to steer for the centre of the road again. However, if the car con-

tinues to skid sideways, steer for the centre of the road, applying the power gently. This will aggravate the skid for the moment, but will leave you with the front wheels in the center of the road and the car pointing at an angle. By doing so you can mount to the crown of the road again and the momentum of the car will take the rear wheels out of the ditch on the right-hand side. It is customary to advise turning the front wheels in the direction that the car is skidding in order to correct the action, but this can hardly be said to be true in all cases, as the amount of room on the skidding side is somewhat limited and for this reason the explanation given above will better apply.

Massey-Harris



Built for Service

The real test of a Tractor is—will it do the work? The Massey-Harris Tractor has met this test and proved itself to be the Tractor built for service on the farm.

Constructed on sound scientific principles, free from any freakish contraptions, with a strong sturdy Frame able to stand the severe strain of farm work, and an Engine with power sufficient for any ordinary farming operations.

In the field it has power to pull a 3-Bottom Plow, and for belt work it has 25 Horse-Power. The

Massey-Harris Tractor

is just the right size of Tractor for the average farm, and is so simple that any farmer can operate it.

The name "Massey-Harris" on the Tractor is the farmers' best guarantee. It stands for all that is best in Farm Implements the world over, and represents over 70 years experience in supplying the needs of farmers. This long experience has enabled the makers to embody every worth while feature in the Massey-Harris Tractor, and so offer a Tractor equipped to render power for every purpose on the farm.

Also, in buying a Massey-Harris Tractor you buy from a Company which makes both the Tractor and the Implements for use with it, and stands back of the whole outfit. The Organization of Massey-Harris Co., Ltd. with its Branches throughout the Dominion, and its Local Agents in almost every Town and Village, assures the owner of the Massey-Harris Tractor of the most efficient service.

Some of the outstanding features in the Massey-Harris are: An Underslung Frame which gives low centre of gravity and prevents overturning; the Flexible Front Axle Connection to avoid strains on uneven ground; Short Turning Radius, although the Front Wheels are of large diameter; Transmission through Spur

Gears exclusively; Belt Drive from Pulley without Gears; All working parts protected from dust; Ready access to all parts; Easy Control. The Engine is 4-Cylinder 4-Cycle, developing 25 H.P. at the Belt and 12 H.P. on the Draw Bar and operates on either Gasoline or Kerosene.

MASSEY-HARRIS CO., LIMITED

Head Offices—Toronto, Ont.

Branches at—

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

Agencies Everywhere

GRAY TRACTOR

"with the Wide Drive Drum"



That Wide Drive Drum

No tractor of similar rating has the traction surface of the Gray. No tractor crushes the weeds and trash ahead of the plows as the Gray. No tractor of equal rating gets the traction the Gray gets under any soil conditions. This wide drive drum and the side-arm hitch features make the Gray a tractor of genuine value to farmers.

The Gray has a four cylinder Waukesha Motor, develops eighteen H.P. at draw-bar and thirty-six H.P. at belt, pulls four bottoms in

any soil, three point suspension frame, direct drive to belt pulley, K.W. ignition—no batteries, coils or switches—all steel shafting, no differential.

These are "Gray" points. Get our fifty-page illustrated booklet showing the construction in detail, sent free upon request. Write us.

Gray Tractor Co. of Canada, Ltd.

307-309 Electric Railway Chambers, Winnipeg, Man.

SERVICE

Department
Conducted By
G. WHO

Question—I have a — 20x36 separator. How many concaves should I use for threshing wheat and where should I put them?—A. D.

Answer—Four rows of concave teeth are generally enough, although five or six rows are sometimes necessary. The only rule which I can give you is to keep the concaves set up close and use as few teeth as possible and still thresh clean.

As to the placing of concaves, much depends upon the condition of the grain which is being threshed. When four rows of teeth are used, all at the top, the grain which is threshed out at the heads in the first two rows passes through the other two rows before it finds its way through to the grain pan and this is apt to cause some cracked grain.

If two rows of teeth are placed at the top and two at the bottom with a grate or open blank between them, most of the threshed grain falls through to the grain pan and only the straw and unthreshed heads pass through the second two rows of teeth. However, with this arrangement some of the straw turns crossways between the top two rows and the bottom two rows, and in passing through the second two rows is pretty well cut up. If the straw is very dry and brittle this arrangement may overload the sieve with chopped straw, which will in turn mean an excessive amount of tailings and cracked grain. It must be understood that this last condition is only found occasionally.

Question — When plowing a certain field on any farm it seems impossible to get the moldboards to clean and they work fine everywhere else on the farm. Can you give an idea as to what might cause this?—R. A.

Answer—Your trouble is probably due to the setting of the coulter. You will no doubt find that the land which refuses to scour off the boards is a little more sticky than the other land, but still is not quite as firm. With the coulter set so that it will clean in the firm land it has a tendency to lift the loose, sticky soil away from the shin of the moldboard

and thereby removes the friction which is necessary in order to make the board scour. Set your coulter a little ahead of its present position and let us know how that works.

Question—When hooking harrows behind a plow the nose of the harrow digs in all the time and the free ends ride up in the air. What's the matter with them?—D. D.

Answer—Harrows and floats, to ride flat, should be drawn by a sloping hitch. That is the chain by which they are drawn should slope upwards just as do the tugs or traces when these implements are drawn by horses. If you cannot get the hitch high enough on the plow frame, the rear truck of a wagon gear placed between the plow and the harrow will give you the elevation you need.

Question—I own a — 12-25 tractor which has done a lot of work and the compression leaks past the piston pretty bad, even with new rings in. Could I get oversized pistons and put them in and would that stop the leaking?—A. R.

Answer—Before buying pistons have the pistons and cylinder measured to see if both are badly worn. If the cylinders are badly worn, new pistons will not remedy the trouble. The cylinder blocks should be sent to a good machine shop (equipped for this class of work) where they should be rebored and fitted with oversized pistons. Oversized pistons should not be fitted in worn cylinders without reboring.

Question—I have a number of leather belts on my separator which get very hard and don't hold without a lot of belt dressing. In fact, ever since I have had this machine the belts have given me a lot of trouble. Is there any way in which I can get away from his trouble?—D. D. A.

Answer—Your belts should be kept reasonably soft by using neatsfoot oil on the flesh or rough side, which is the side which should be run away from the pulley. Using sticky belt dressing has probably made matters worse. Soften your belts and keep them clean and you probably won't have to use any sticky dressing.



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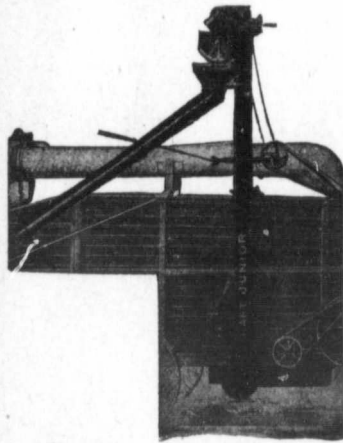
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THE WORLD'S LARGEST THRESHING MACHINE MANUFACTURERS USE AND RECOMMEND HART PRODUCTS

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Langdon Feeders are also made in large sizes



LANGDON JUNIOR SELF-FEEDER

CATALOG IS NOW READY

Hart Grain Weigher Co., Peoria, Illinois

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

MANY users of automobiles seem to be a bit mixed in regard to cotters and by that name designate the split pin by means of which a castle nut is prevented from turning round. Sometimes these little bits of steel are called "cotter pins," "spring cotter pins" or merely "spring cotters." The latter is probably the more correct name. A "cotter" is a sort of taper key or flat pin, as shown in Figure 1; the article so frequently used in automobile mechanism, as shown by Figure 2, had perhaps best be called a "spring cotter."

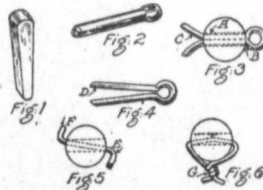
The automobile owner may use spring cotters in almost any way with good results, as compared with not using them at all; but the best method of employing them is seldom followed, because of ignorance of it. The common method of using a spring cotter is shown in Figure 3. The dotted lines show the hole and the cotter therein, at A; the cotter lying more or less loosely in its hole and the round head or "eye" not coming to a bearing against bolt or nut, as shown at B.

The points of the cotter are then spread apart, as shown at C, with the result that the cotter lies loosely in the bolt or whatever it may have been inserted in and can shake round and rattle

Concerning Cotters

as much as it pleases. The rattling of a single spring cotter is of little consequence; but when twenty or thirty of them are rattling in concert the noise is very disagreeable besides which it is usually blamed on some other part of the machinery.

After several years the holes in which loose cotters and pins



have been used will be found badly worn, often decidedly oval in section. In addition to the useless wear of the bolts, it has been found that loose cotters wear out several times as fast as do tightly fitting ones.

It is easy to fix each and every cotter so that it cannot shake or rattle in its hole. All that is necessary is to open the cotter ends before putting the cotter in place. This is shown in Figure 4. To open a spring cotter, place

a sharp cold chisel upon the cotter, with the latter resting upon something solid. Then, with light hammer blows, drive the cold chisel down between the two legs of the spring cotter until they are separated, as shown at D.

When this cotter is put in place press the legs together with a pair of pliers until the cotter has been inserted in its hole. It then may be pressed or driven home and the ends forced apart, as shown in Figure 3, but with the difference that there is no looseness of the cotter in the hole A. As the head has been driven close to the bolt or nut before the ends of the cotter were opened, there is no lost motion at B; consequently the end rattle has been effectively prevented.

Another common misuse, not of the spring cotter but of the hole intended for it, as shown in Figure 5. Here, the spring cotter having perhaps been lost or broken, a piece of hay binding wire is inserted and the ends bent over, as at E and F. This makes a rattling abomination which never should be tolerated. If, from any cause, it be found necessary to use a piece of "farmer's

friend" in place of a spring cotter, even temporarily, use the wire as shown in Figure 6, and there will be no rattle or wear of hole, provided the bit of wire be well twisted together, as shown at G. This forms a very good "first aid" when a spring cotter breaks or is lost.—James F. Hobart

When Booth Tarkington was visiting Naples he was present at an eruption of Vesuvius.

"You haven't anything like that in America, have you?" said an Italian friend, with pride.

"No, we haven't," replied Tarkington; "but we've got Niagara Falls that would put the d—d thing out in five minutes."

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Electric Starters for Tractors

By P. S. ROSE

WHEN electric starting systems were first suggested for tractor motors four or five years ago most engineers agreed they would be very convenient if they would work, but none of them believed they could be made to withstand tractor vibration. I know of several experimental installations that had to be discarded on that account.

The vibration of the tractor shook the clamping nuts loose on the terminals, displacing the spacing bars between the plates, broke down the supports for the plates and even shook the paste out of the grids. Spring suspension under the battery boxes was tried, but that did very little good. The tractor engineers concluded it was no use experimenting any further and passed the word along the line that electric starting devices for tractors were failures.

At the time these experiments were made by the tractor companies the market for such apparatus was limited and the storage-battery manufacturers thought it was not worth giving much attention. They were devoting their efforts to trucks and automobiles and other installations where business was more plentiful. Then came the war, and there was a demand for motor trucks for the Army, with starting systems of sturdier make than had been used at that time in commercial work. The army engineers made up their specifications and invited the various manufacturers to submit samples for inspection and tests. The batteries all looked well and gave a good account of themselves on stationary tests, but that was not sufficient; they had to be able to withstand the hard service of the army supply trains over bad roads, with bad care and hard driving.

In order to make sure they would be able to perform reliably under these conditions the army engineers devised a testing machine that would lift a battery three-eighths of an inch and let it fall on a hard, unyielding surface 480 times a minute, or 28,800 times in an hour. In thirty-six hours a battery received more than a million such shocks. It was a very severe test and the first batteries that were submitted went to pieces considerably under the half million point. In consequence of this poor showing none of the batteries were accepted and the manufacturers all went back home to improve their products.

A few weeks later they returned, and if I have been correctly informed, all of them went

through the tests without serious trouble. All the batteries were able to stand two million drops on the testing machine without showing any signs of distress. The manufacturers had provided rubber supports for the battery boxes, had used thicker grids, more substantial insulators and better supports and distance pieces for the plates. They used better lock nuts for the terminals and turned out much better batteries. The improvement wrought in such a brief time surprised most engineers and was the subject of no little discussion among the profession.

In discussing the matter with an electrical engineer who has had many years of experience, he said: "The battery makers knew all along how to make better batteries, but for years they had been trying to see how cheaply they could make them. Competition was sharp, and in order to get business they shaved down the thickness of the plates used the minimum of material and produced a cell that would give fair service under favorable conditions."

"At the same time they were making batteries for such service as electric lights for railway coaches, where the vibration is tremendous and the service much harder than on trucks. When they had to turn out a good product and were not hampered too closely by price, they had no trouble in fulfilling all conditions. It was not ignorance on the part of the battery people that was responsible for frail batteries, but business competition."

Shortly after the government tests were made one of the engineers read a paper before the Minneapolis branch of the Society of Automotive Engineers in which he predicted that tractors would soon come to the use of starting and lighting systems. The engineers present were skeptical and expressed lack of faith in storage batteries, even after having been shown the results of the tests. They believed tractor service is harder on a battery than any other kind.

Engineers who are acquainted with the various kinds of battery service, however, tell me that tractor service is not very difficult. It is not so severe, they say, as trucks or automobiles and does not compare with railway-car installations. The greatest difficulties arise from lack of care during the winter season when the tractor is laid up for several months.

If the battery is not kept fully charged it is likely to freeze. When a battery is fully charged

it will stand any winter temperatures to be found in this country, but if permitted to run down it may freeze at temperatures even above zero. The proper thing to do is to remove the battery during the winter season and store it in a garage where it will be properly taken care of.

Altogether about 10,000 starting systems have been put on tractors in this country, and it was my privilege recently to examine all the service sheets. Those for March were particularly interesting because that is the month when the tractors were taken out of winter quarters and put to work. Out of the total number of installations less than one-fifth of one per cent reported trouble, and in all cases this was of a very insignificant nature, such as loose or corroded terminals, which are easily repaired. Rust caused more trouble than either frost or vibration, and even that was negligible. If every other part of the tractor made an equally good showing tractors would be more popular than they are.

It is always rash to prophesy what will take place, but when one considers how rapidly starting and lighting systems have been adopted by the motor-car companies, it seems reasonable to expect that tractors will follow the same line of development. No one likes to crank a gas engine. It is not only hard work, but dangerous as well. Many broken arms have resulted from the kick-back of motors, and low-grade fuel does not make starting any easier. Most people would be glad to be rid of such trouble, and I have little doubt that before many years pass the public will demand electric starters on tractors.

This idea seems to be shared by a number of the more progressive motor manufacturers, because they are sending out their new engines with brackets to carry the generator and starting motor, and with gear teeth cut on the fly wheels to mesh with the armature shaft of the electric starter. They are not as yet adding electric equipment as a part of their standard product, but if the manufacturers of the tractor wish to use such a system the motors will not need to be changed.

Better be carried off by a burglar than by an undertaker is a good way of putting the choice between sleeping with one's windows open and the windows closed. Only that the chance of burglary is mighty slight—one in every 38,000 people, I believe—while just in proportion as we sleep with windows closed are we sure to catch cold or shorten life.

Uniform Reliability Absolutely Necessary

If it is important to buy a good tractor, it is just as important to supply the best fuel for it. Unreliable fuels are not cheap at any price. The seed must go into the ground on time. A delay of a day or two may mean the difference between a crop and a failure.

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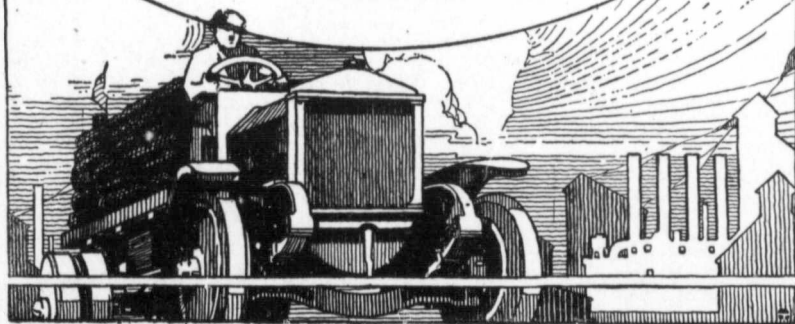
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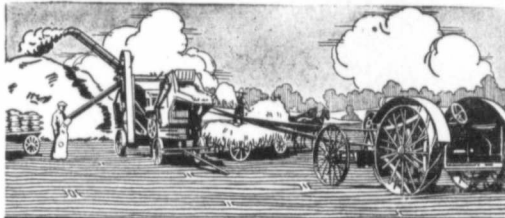
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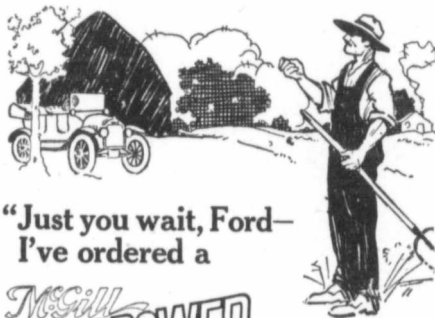
The saving of threshing bills will soon pay for it. *It may pay for itself by saving your crop this year.* The Huber is known the world over as the machine that "saves the grain." The Junior Thresher is large enough to do your own threshing and your neighbors if you like. It is small enough to be run by a 10-20 tractor. The Huber Light Four, the efficient 12-25 tractor shown above, furnishes ample power for the thresher with all attachments. Made only by The Huber Manufacturing Co., Marion, O.

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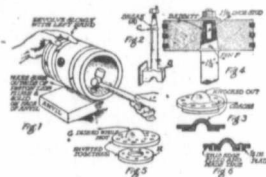
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Some Engine Repair Kinks

Some of our large-scale farmers have gone completely into power farming, using several tractors, trucks, stationary engines and passenger cars, and quite naturally with so many engines to care for and overhaul there is a farm repair shop. Recently during a visit to such a shop where the mechanic was an old hand at the work of engine repairs, I learned from him several kinks which I have here sketched out.

At the time of my visit there happened to be one of the tractors down for a complete overhaul. It was a machine that had been in service four years, and the pistons and cylinders had become worn enough to allow the pistons to cause a slapping sound when the engine was pulling a load. The slap occurred at the ends of the stroke, and if allowed to continue very long it would hammer the cylinder oval shape. The time to save much further trouble is to cure the slap when



it is bad enough to be heard plainly, and this was mostly what they had the tractor motor down for.

When I entered the shop I noticed the mechanic was hammering away at one of the pistons on the anvil. Being a mechanic myself I at once realized what he was doing, but must confess that I had never thought of the scheme. He was stretching the skirt or lower end of the piston by peening the inside of it all the way round. The trick is an old one among steam-engine operators. When they had a piston worn they peened it to fit, and here was an old-timer using his head to save a lot of expense for his employers by refitting these worn pistons to equally worn cylinders. The trick is very simple and those who read this can soon learn to make use of it.

As is shown in the accompanying sketch, Figure 1, the piston is held in one hand on the face of the anvil and while revolving it very slowly it is peened with a lightweight ball-peen hammer used in the other hand. The peening blows must be struck with some judgment with regard to the cast-iron piston—steady even-strength blows, each blow close to the other.

This peening causes the grain of the cast iron to be closed together, or in other words the molecules are hammered denser or closer and this causes the swelling of the diameter of the piston. When making use of the idea, remember to hold the piston down firmly on the anvil face, for if it is canted or uneven it will easily be cracked. Now no doubt many readers will wonder why, if the cylinders and pistons were worn enough to cause the pistons to slap, the owners did not rebore the cylinders and put in new pistons. That is just what I asked the mechanic and his answer was that it was better economy to fix the pistons; the cylinders were not scored, the rings were new and tight, the only trouble was the slapping and it cost only the labor to cure that.

I was very much impressed with the breakdown repairs that had been made by this mechanic. We got to talking and he sketched out roughly a couple of jobs that he had met with on the steam threshing engine and I have resketched them and will describe them, for there are no doubt many of the readers who will be glad to get such kinks on steam-engine repairs.

As is nearly always the case the accident to the threshing engine occurred right in the midst of the season's busy days, and there were no spare parts at hand to get round the break with, so it was a case of make repairs as well as possible at the farm shop or else be tied up until new parts could be procured in three weeks or more. The smash or breakdown was caused by the piston's rods breaking where it fitted into the piston and this break was due to that end of the rod having had a flaw in it. The rod parted, as shown in A in Figure 2, and this piece A got in behind the piston in such a way that it cracked out the center of the cylinder head, as indicated in Figure 3. This made a pretty bad mess of things and if the outfit did not have the farm shop and the mechanic with the skill they could not have made the repairs. This is how the damaged parts were put back in working order again and a serious delay was avoided:

As will be seen by reference to B, Figure 2, this rod and the crosshead were all one piece, so the repairs to the rod end were possible in only one of two ways—cutting off under the shoulder C, then welding on a piece and remachining this to the taper and shape required, or to drill out the end of the rod and tap it for as large a bolt as it



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Thoroughly made from air-dried and seasoned lumber, these wagons have a tough wearing ability that makes them stand up under all usual—and some unusual—farm strains. Felloes and spokes are white oak. Black birch hubs. Open hearth steel tires which round over edge of felloes. Straight grained hard maple axles, absolutely dry, perfectly finished to give smooth running and lightness of draft. White oak bolsters, reach, hounds and pole. Hickory trees and neck yokes. Boxes are of best southern box board with yellow pine bottom and maple and oak crossbars. Open hearth steel is used throughout, making the Reliance Wagon an exceptionally profitable investment. All wooden parts of gears, wheels and boxes are treated with linseed oil and red lead and thoroughly seasoned before painting. The painting is done with an eye to protection as well as beauty.

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JOHN DEERE PLOW CO. Limited

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would stand. This was the scheme used, as is shown in Figure 4. A one-and-one-eighth-inch stud was put in the end and then the piston was placed on and set on the shoulder, then hot molten babbitt was poured all round the stud. This was poured slowly so as to allow for expansion.

After it was cooled the excess metal on top was panned down in round the top of the stud. Then a couple of special heavy washers were put on under the nut to hold the piston.

The stud was secured from unscrewing by means of a pin drilled in as at F. The cylinder head was beyond repair, so it was necessary to improvise one out of some quarter-inch steel plate that fortunately was to be had. By using two pieces it was possible to make a good job. A large circle was roughly cut out and the center of this piece was heated and dished or belled out as shown at G, Figure 5, then a smaller ring was made as at H. After laying out the bolt holes and drilling the two for rivets they were riveted together as shown in Figure 6, then the edge where the gaskets came was hammered and filed true, and when this makeshift head was applied a thick one-eighth-inch gasket was used.

With these repairs the engine was placed back on the job six and a half hours after the breakdown and ran all right until a new rod could be obtained. This came after the threshing work was nearly done.

The cylinder head worked so well that it was left on.

ENSURING SUCCESS WITH ALFALFA

By M. O. Malte, Dominion Agrostologist

THE winter of 1917-18 was, on the whole, hard on alfalfa in the west and numerous fields were either partly or completely winter-killed. A great many lessons were taught to alfalfa growers, the consensus of them being that no chances in the handling of alfalfa should be taken if thereby the safety of the crop in any way is being jeopardized.

Choice of Variety

Numerous experiments have been conducted the last twenty years for the purpose of ascertaining the suitability of different varieties to western conditions. These experiments have clearly shown, in the first place, that some varieties are altogether too tender for the western winters and that, as a result, they are almost invariably winter-killed,

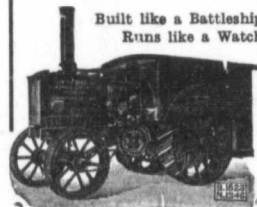
and, secondly, that at present there exist only very few varieties which, on account of being able to endure severe cold, are adapted to western conditions. Among the latter the Grimm and the Baltic are the best known. They can safely be recommended for the West.

Numerous observations, however, indicate most conclusively that the suitability of a so-called "variety" for certain districts depends to a very great extent upon the climatic conditions under which it has been developed. To be brief, an alfalfa variety developed in a district in which the winters are normally severe is apt to be more suitable to such a district than a variety originated in a district where the winters are milder. Applied to the West, it means that any "variety" originated in the West is apt to be better adapted to it than any variety originated somewhere else. Or, to put it another way, western-grown seed is likely to produce safer and better crops than seed imported from somewhere else. Anyone going in for alfalfa growing should therefore, if possible, use western-grown seed. If such seed cannot be procured, varieties such as Grimm and Baltic which are known to be hardy, should be used. It is a good economy to

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The "Marshall" Oil Tractor

Built like a Battleship
Runs like a Watch



The Dreadnaught of the Prairies

This Tractor is made in 2 sizes, 16 H.P. Drawbar, giving off 30-35 Brake H.P. on the pulley; 32 H.P. Drawbar, giving off 40-45 Brake H.P. on the pulley. They are economical, durable and reliable. Guaranteed of finest materials and best workmanship. They need few repairs.

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

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

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The design is simple, permitting of easy access to all parts of the machine. Fully equipped with self feeder, high bagger with automatic register, and wind stacker. There is one in your neighborhood—inspect it before arranging to thresh this year's crop.

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It will pay you to investigate. Write for information.

THE COMMON BARBERRY AND THE STEM RUST OF GRAINS

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

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

The barberry is a shrub which is planted on lawns and in hedges for ornamental purposes. There are no native wild barberries east of the Rocky Mountains. All the barberries commonly planted are susceptible to the stem rust except the Japanese varieties. The common barberry has spiny stems and reddish berries which hang in long clusters on the bushes all winter. The spines are usually in groups of three. The leaves have spiny teeth on the edge and are green on some varieties and purple in others. The Japanese barberry does not grow as tall as the common, but is rather low and spreading. The stems are spiny, but the spines are generally single, although sometimes three together. The leaves are smaller with a smooth edge. The fruit is red and remains on the bushes all winter, but the berries are single or only two or three together.

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

pay a few cents more per pound for seed of a reliable variety than to buy cheaper seed and run the risk of having the crop winter-killed later.

Inoculation

As is well known, alfalfa will not thrive unless a certain kind of bacteria is present in the soil. Where the soil is lacking in the said bacteria or where they occur in insufficient numbers, the alfalfa will need a much longer time to gain a foothold than where the soil is well stocked with the bacteria in question. Alfalfa, sown in the spring on land lacking the bacteria, will produce a stand of a sickly, somewhat yellowish appearance, plainly indicating that it is lacking in vigour. This lack in vigour is bound to have fatal results in districts where the winters are severe and where, as a consequence, alfalfa has little chance to survive unless the stand is healthy and vigorous from the beginning.

Where the soil is lacking in the special bacteria which alfalfa needs—and this is generally the case in soil in which alfalfa or sweet clover has not grown before—the said bacteria should be introduced artificially. This may be accomplished either by treating the seed, just before it is sown, with a special culture called nitroculture, or by sowing soil from an old alfalfa field on the land which is to be seeded to alfalfa for the first time.

Nitroculture may be obtained on application to the Dominion Botanist, Central Experimental Farm, Ottawa. Alfalfa soil may be obtained from the Dominion Experimental Farms and Stations in Manitoba, Saskatchewan and Alberta.

No Nurse Crop and No Weeds

As it is absolutely essential that alfalfa, seeded down in the spring or early summer, shall enter its first winter in the best possible condition, it follows that it should be given every opportunity to make as vigorous a growth as possible during its first year. Inoculation will promote the same, as said in the above, but inoculation alone will be of little avail if the soil is lacking in the necessary amount of moisture. In those districts where the moisture supply in the ground is scant, alfalfa should therefore be sown without a nurse crop so as to be given the full benefit of whatever moisture is available in the ground.

For the same reason alfalfa should not be sown on weedy land as the chances are that the weeds may lay embargo on too great a share of the available moisture supply and thereby choke out the young and comparatively delicate alfalfa plants.

Harold (sighing)—"I have only one friend on earth—my dog."
Isabel—"Why don't you get another dog?"



Everywhere you go—market-place and town and village—you see the Carhartt button which has become the mark of those who use the same canny commonsense in buying overalls as they do in picking separators or horses. My Carhartts have interlacing suspenders which stick together in the wash and stay on your shoulders; they are double sewn throughout, they have riveted reinforced facing, and buttons have a bull-dog grip that no ordinary strain can break. Made of first-grade denim cloth, my Carhartts wear like leather. They are generous in cut and allow plenty of freedom in action.

Samuel Carhartt
President.

Hamilton Carhartt Cotton Mills, Limited
Toronto, Montreal, Winnipeg, Vancouver.

Carhartt's Overalls

THE CARELESS FARMER IS EXPENSIVE

THERE are a lot of the old type of one-cylinder vertical engines still lying around the country, particularly in the East, and some of them are working and some are not.

I've run across quite a bunch of these old engines that were discarded because the owners couldn't keep wrist pin bushings in them and after a little doctoring, they did pretty good work again.

In the top of the connecting rod is a hole which is supposed to catch oil from the splash and this oil is supposed to keep the pin lubricated, but it doesn't catch enough oil and the bushing soon wears out.

The remedy is to drill a hole in the piston head just over this hole in the rod and tap in a large size round-headed screw of some sort or rivet in a boiler rivet. In either case the part that projects through the piston head must be smoothed off even with the piston for, if a point is left, it will become red hot and cause pre-ignition while the motor is running.

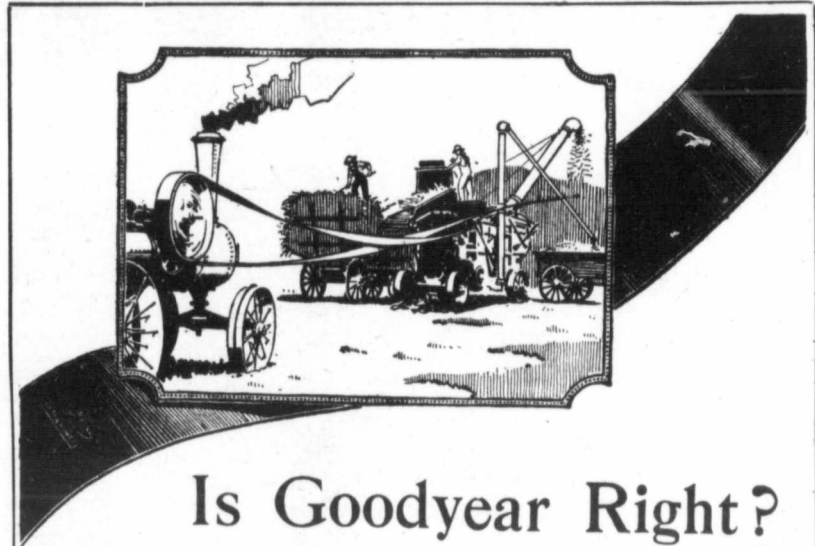
In making repairs to ignition systems, sometimes a new wire is needed and occasionally a solid wire is the only kind available. When this kind of wire is used, you want to be very careful how you use your knife, for if you use your knife at right angles to the wire and run it around the wire to make an even cut, you're pretty sure to nick the wire and a little nick in a solid wire will soon cause the wire to break with the vibration of the engine.

It seems rather foolish to tell a full grown man that one of the most important things in life is for him to read his instruction book, but I have made many a trip, quite a long distance, just because a man didn't take the trouble to read his instruction book.

I remember onetime in particular, I was away up the north-western corner of Manitoba and got a hurry-up call to get down to the south-eastern corner of the province as fast as I could to see what was the matter with a man who had a 2 1/2-mile-an-hour tractor and could only get it to go about 1 1/4 miles an hour.

I drove nine miles to the train, travelled nearly all night and found nothing wrong except that the clutch was slipping and in his instruction book there were explicit instructions for the care of the clutch.—D. R. A. Drummond in "Farmers' Magazine."

There is a touch of sentiment in anyone who will underscore with a pencil a favorite passage in a book.



Is Goodyear Right?

Why should we advise farmers to buy the most costly belt we make?

Certainly it is going against custom.

What was always sold, and is still generally offered as "agricultural belting" is low priced.

Farmers have bought it for years. We have sold it.

Then why do we urge farmers to buy "Extra Power Belting," the highest grade Goodyear belt?

Because, there is no reason why a farmer, who gives a belt harder usage than anyone else, should buy one that will not give him the very limit of service.

Because a farmer needs a better quality of belting than any other class of buyer.

Because we know he won't get the best service from ordinary "agricultural belting."

Because we know he will get the best value for his money and the best service, from Extra Power Belting.

What difference is there between a poor belt and Extra Power?

The main difference is in the rubber protection.

Extra Power is made the way you would make a belt yourself.

Now if you were making a belt you would see that enough high-grade rubber was used to protect the cotton. You would see that it was forced through the layers of cotton until the whole became a solid pliable mass. You would make that belt so strong that it would resist the roughest outdoor usage a belt gets on the farm. You would use the same kind of cotton we do in "Extra Power"—25 to 50% stronger than is ordinarily used.

That's the kind of belt you would make and it would be a mate for the Goodyear Extra Power Belt.

Then is not Goodyear right in recommending that you buy Extra Power Belting?

Next time you buy a belt, pay a little more and get "Extra Power." Demand it by name. Your implement or hardware dealer has it or can get it for you.

If you have trouble securing genuine Goodyear Extra Power Belting, send your order to us and we will fill it.

The Goodyear Tire & Rubber Co. of Canada, Limited
Toronto, Ont.

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MADE IN CANADA
EXTRA POWER BELT

FARMERS' BUSINESS



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We have helped many over the rough places, and have aided many more to the highest plane of success.

We are prepared to extend you every aid within legitimate banking practice.

Come in at any time and talk over your affairs with us. You are always welcome.

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Head Office: Montreal. OF CANADA Established 1864.

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

WRITE OR CALL AT NEAREST BRANCH.

"EASTLAKE" Portable Granary

You need it. It's got the design, the strength, the quality-materials and all up-to-date features. Made of heavy, galvanized and corrugated steel, curved—twenty-nine times stronger than flat sheets—by a firm who have been making for 30 years the goods the West wants. No cast iron to break—all pressed steel. All machine-made, therefore quick and

easy to erect or take down. Weather-tight doors big enough to climb through. Take out any roof section in 3 minutes and

You Can Fill From Any Side

After filling, replace roof section and it bolts back, absolutely rain and snow tight. Chutes, with cut-offs, at 2 heights making bag filling easy. Size 12 feet 5 inches diameter, by 9 feet 11 inches at eaves, total capacity 1015 "Imperial" bushels.

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Manufacturers - - - 797 Notre Dame Ave., Winnipeg.

Canada's Duty is Canada's Opportunity

Live stock losses in the European war area are variously estimated, but an authority places them as high as 115,000,000. Confronted with this appalling shortage abroad, the Canadian producer must immediately recognize a duty as well as a paramount opportunity. We will be glad to discuss financing problems with reputable farmers.

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Shipping Cans furnished at the following prices: 5-gals. \$4.50; 8-gals. \$5.50

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The Tungeland Creamery Co., Brandon, Man.

Fertilizers and their use in Canada

By FRANK T. SHUTT, M.A., D.Sc., Dominion Chemist

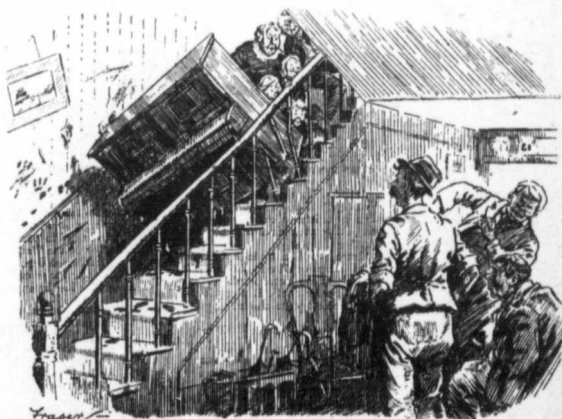
RECOGNIZING that employment of fertilizers in Canada to date has been limited, and that, to-day, their use is practically restricted to certain areas devoted to potatoes, sugar beets, tobacco, market garden or other specialized "money" crops, and further, that our experiments, from which reliable conclusions could be drawn, have been carried on at a comparatively small number of points in the Dominion and over comparatively short periods of time, it should be distinctly understood that our conclusions are, more or less, tentative in character. We do not wish to be dogmatic as to the interpretation of the results obtained and we shall be extremely cautious in the matter of prophecies for the future.

Small as our use of fertilizers has been that use is steadily, though certainly slowly, on the increase, and, doubtless, with the adoption of more intensive methods (which will follow as our country becomes more thickly settled) and with better, steadier markets for farm produce at home and abroad, this use will more and more increase. Indications are all in this direction, but it would not be wise to advocate, throughout Canada, the general and indiscriminate use of fertilizers on all soils and for all farm crops. While we are anxious that our yields should reach the highest possible profitable limit, there are no grounds for preaching the doctrine, as is the opinion of some, that this can be effected simply by the application of fertilizer.

Fertilizers are Supplementary
Fertilizers have a place in a rational system of farming; but

farmers should first clearly understand what that place is, if our land is to improve rather than to deteriorate, and if financial loss, due to injudicious purchase of fertilizers, is to be avoided. We must first have sound education, the outcome of science with practice, on the principles involved in the up-keep of soil fertility, on the composition, value, care and application of farm manures, on the desirability of more live stock on our farms and the greater consumption on the farm of the land's produce; on the importance of rotations, and especially the value of clover and other legumes in the rotation for maintaining the humus and nitrogen of the soil, on the proper working of the land and the preparation of a good seed bed. When all these matters are correctly understood and practised, then, and not before, may we advocate the judicious employment of fertilizers with advantage, in general farming. Fertilizers are no panacea for the evils of poor farming—they cannot be depended on solely to give profitable yields, to leave the land richer for posterity than when first broken, or entered upon. That is what we ought to aim at, for our native fertile soils are a great and important national asset and inheritance. Our experience has shown that fertilizers cannot profitably be used as substitutes for manure, for the growing of clover, or for good soil management, but that their role is rather supplemental to all these rational means for the up-keep of soil fertility.

I make this statement for two reasons: First, there are, at the present time, those who are urg-



AN ECHO OF OUR GREAT STRIKE

"Sorry, Mum, but I'm afraid you'll ave ter stay upstairs 'eos the Affiliated Society of Pianner-Shifters 'as called a general strike this minnit."

It Has Stood the Test of Time

MANY YEARS' work in the field, in all kinds of weather, and all conditions of grain has demonstrated that the "beating out" process used in the **Red River Special** is the only correct principle to use in separating the grain from the straw.

The RED RIVER SPECIAL Separator

is built right. The best material obtainable is used in its construction. It is built to withstand severe usage for many years.

Thousands and thousands of farmers have made signed statements that they want no other machine to do their threshing. They want the machine with the "Man Behind the Gun" and the beating shakers. See that you are equipped with a Red River Special separator this season.

The Red River Special is the first machine in the field, and the last one out, as it always has the longest run. There are no expensive breakdowns or long waits for repairs. It is the separator you are sure to use sometime. Why not use it now?

IT SAVES THE FARMERS' THRESH BILL—Write for Free Catalog

NICHOLS & SHEPARD COMPANY

(In Continuous Business Since 1848)

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

Battle Creek - Michigan

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H. P. NORTON COMPANY, CALGARY, Alberta

WINNIPEG, Manitoba

ing us to a large and practically universal, almost indiscriminate, use of fertilizers; and second, from our voluminous correspondence on the subject, it is evident that, for the most part, it is the man using poor farming methods who is clamoring for cheaper fertilizers, and who practically expects to conduct his farming profitably from their exclusive use. I feel assured we shall never see the time when fertilizers can be profitably used as a substitute for those means which science and practice alike have shown to be necessary for the economic upkeep and increase of soil fertility.

Helping the Farmers

But there is a place for fertilizers in farming, and we are helping our farmers to find it. There are those of the old school still in the land, however, who have no faith in fertilizers, those who relegate them to the class of quack medicines, as frauds and fakes, and who say they act merely as a whip to a tired horse—as stimulants and not food. The number of these persons is happily decreasing. Again, there are others who, almost as ignorant of the principles of agriculture as those just referred to, argue that if fertilizers are sources of available plant food, all that is

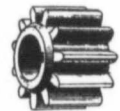
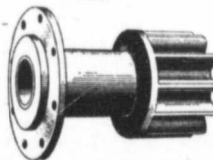
necessary to increase our crop yields is to apply them generously. These persons are ignorant of the fact that there are limiting factors to crop growth other than the presence of available plant food. We may enumerate some of them. First, there is the nature and physical condition of the soil, its capacity for holding moisture (dependent upon its texture and its humus content), in other words, its power to withstand drought, also its degree of aeration, its drainage, etc.—all those qualities of a physical character which make for the easier development of the root system. Second, the character of the season, by which I mean the amount and distribution of rain, temperature, hours of sunshine, etc. So far as we can see to-day, seasonal conditions are the most potent of all determinative factors in crop yields in Canada, as probably, also, all over the world. And, lastly, there is the inherited capacity for growth and reproduction in the crop sown. All these, with some others, are limiting factors that cannot be overlooked; they are factors which may and do profoundly modify the effect of fertilizers. For instance, upon heavy, undrained clays, what chance is there that fertilizers can play their part in nourishing the



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crops? On the other hand, as plants can only absorb their soil food in the form of a solution, how can fertilizers feed the crop, if the light soils readily dry up with a few days' drought, owing to lack of humus or want of surface cultivation? Or, again, if we are sowing a variety of oats, the prolificness of which is measured by 40 bushels per acre, can we make it yield 60 bushels by simply feeding it? Many of these limitations may be in some degree overcome through the application of the teaching of science—of chemistry, physics and biology, but they are not to be overcome simply by the application of fertilizers.

The Soils of Canada

Since no intelligent consideration of this subject is possible without some knowledge of the native and natural fertility of the soils which it is sought to improve by the application of fertilizers, a word or two must be said of Canadian soils in general. Time will not permit of more than a few generalizations, though the data we have amassed on this phase of the subject during the past twenty-five years are not only of great scientific interest but will be found to have a far-reaching importance in connection with the future of the agricultural industry of Canada.

As might be expected, there are within the domains of the Dominion, soils of many types and classes, ranging from the most fertile to be found anywhere in the world to those so poor and thin as to be practically worthless for ordinary farming, and which should be reserved for forestry purposes.

Every province in the Dominion possesses tracts of land of considerable magnitude that compare favorably with the most productive of other countries. But, in respect to the size, number and relative fertility of these tracts, the provinces differ, and in this fact will, no doubt, be found one of the factors in determining what might be termed the provincial consumption of fertilizers. Other factors to this end will be density of rural population, character of farming, proximity of markets for concentrated products, etc. It is not simply a case of relative poverty of soil, as might be at first supposed, that determines fertilizer consumption.

As is well known, the provinces of Manitoba, Saskatchewan and Alberta contain the largest and most continuous areas of the richest soils. Many of these, as our analyses show, are veritable mines of plant food; for example, the alluvial prairie of the Red River valley, the uniform fertility

of which it would be difficult to exaggerate.

Without discussing the relative agricultural values of the arable lands of our several provinces, the indications are that fertilizers will be found more particularly helpful in the Maritime Provinces, in Quebec and in British Columbia. This does not mean that profitable farming will not be possible in these provinces without fertilizers, but that they possess areas of cultivable land upon which these aids to fertility can be used profitably and to advantage when coupled with rational methods of soil management.

Climate and Fertility

A cognate feature which is frequently overlooked, but which has a more or less direct bearing on the fertilizer question in Canada, is the influence of climate on fertility. It is realized by few that climatic conditions—rainfall, temperatures, etc.—exert a profound influence on the nature and composition of soils, both in their origin and in the power to conserve their fertility. These influences may tend to the accumulation or the dissipation of those elements or soil constituents which make for fertility. In this regard, save our coastal lands with excessive rainfall, which may keep the lighter soils poor in available plant food, our country is singularly blessed. We cannot now elaborate this question, but one instance may be cited that may serve as an illustration—one which undoubtedly influences in a beneficial way the fertility of our soils. The rigorous winter that prevails over the greater part of Canada locks up for several months—practically from harvest to seeding time—the soil's fertility. The plant food that has been converted into available forms during the preceding summer and autumn and which is left over after the season's growth, is conserved for the crop of the succeeding year. The frost holds tight within its grasp plant food of untold value—especially the more valuable nitrates, so necessary for stimulating the growth of the young crop. In regions enjoying a more open winter, this soluble plant food would be lost by leaching. With all their drawbacks, our severe winters, with their almost continuous low temperatures, must be regarded, in their role as conservers of fertility, as an agricultural asset of no small value, one which must profoundly affect in a beneficial way our dependence upon purchased fertilizers for satisfactory yields.

Conclusions from Experiments with Fertilizer

We must now endeavor to present, in the most concise form possible, some of the more im-

Harvest Expectations

vs.

Harvest Realizations

Very often the crop does not come up to earlier expectations, which not only causes the farmer and his family, who have worked so assiduously, considerable disappointment, but, as a consequence the planning of months and years goes for naught. Just so through life. Every man with responsibilities hopes to leave his dependents in an independent position, but as a result of unforeseen events, is frequently unable to do so, regardless of his good intentions.



This is why the progressive farmer carries adequate Life Insurance. He knows that if anything happens, it will provide funds to complete his unfinished work. On the other hand, if he lives until the maturity of the policy, the systematic accumulations will provide a competence for his declining years.

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P.S.—Fill out the attached coupon to-day and mail it to the above address. It places you under no obligation.

I would like to save \$..... yearly through the medium of Life Insurance.

I am years of age, and am (married / single). Kindly forward particulars of plan of policy you recommend.

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portant conclusions reached by us in our fertilizer investigational work during the past twenty-five or thirty years. The amount of data we have to draw upon for these conclusions is very voluminous, but this does not, unfortunately, lessen the difficulty of the task.

The Prairie Provinces

Particular interest attaches to the question of fertilizers in the great grain-growing provinces of Canada—Manitoba, Saskatchewan and Alberta. We are very anxious to increase our north-western yields, especially in these days, when our wheat is needed to replace the frightful destruction occasioned by the late war. But we have no data which would justify us in saying that this could be profitably brought about by the application of fertilizers. For ten consecutive years—from 1900 to 1909—we carried on a series of fertilizer experiments on the Experimental Farms at Brandon, Man., and Indian Head, Sask. The series contained plots dressed with several forms of nitrogen or phosphoric acid and potash, singly and in combinations of twos and threes. The results, taken one year with another, failed to indicate any material increase in the yields of the fertilized over those of the unfertilized plots. Frequently the latter gave the larger crops, but it was seldom that the differences between the plots of the series exceeded the amount that might be attributed to experimental error. Certainly there was no consistent increase due to any fertilizer, and in no case was the increase sufficient to cover the cost of the fertilizer. These experiments, it must be noted, were conducted on excellent soil, of high quality, and wheat was the crop used.

For some years past we have carried on fertilizer experiments at a number of experimental stations in northern Saskatchewan and Alberta. So far these have failed to indicate any specific want of plant food in the soil; the results were irregular, and the increases on the dressed plots were not of that magnitude to warrant definite conclusions as to the virtue of the several fertilizing constituents employed or the expenditure for their purchase and application. On the whole, therefore, our results have been of a negative character.

With respect to the future, my opinion is that the time may come when phosphates will be found useful. My reason for this conclusion is that, of the three essential elements, these soils are least rich in phosphoric acid, and that the extensive growing of grain crops will tend to diminish the available store of this element

Pre-War Prices on Farm Machinery

An estate must be cleared at once, consequently we are in a position, for a limited time, to offer to the Farmers of Western Canada some exceptional bargains in farm implements. These implements are brand new, only the paint being dulled in some instances. By purchasing now you can save from 30% to 50%. Even though you cannot use these goods until next spring you can make a big return on your money. Compare the prices below with those you have to pay for the same goods at your local implement store. Attach cheque, draft or money order to this ad—mentioning The Canadian Thresherman and Farmer—stating what you want, and your shipment will go out at once. These goods are sold subject to approval. It will pay you to order early.



Standard Farm Wheelbarrow. Regular price \$5.50. Special\$4.00



Sickle and Tool Grinder for grinding mower knives and binder knives and small farm tools. Only \$2.50 each.

We have a list of Plow Shares, Pumps, and some lines of Farm Hardware at bargain prices. List furnished free on request.

700 Sections Standard Diamond Steel Harrows
20 teeth to section. Regular price \$5.00. Special price.....\$3.25
6-section Draw Bars. Each.....\$5.00 4-section Draw Bars. Each.....\$3.00
5-section Draw Bars. Each..... 3.50 3-section Draw Bars. Each..... 2.00

A Limited Number of Wood Boss Harrows
150-Tooth. Complete with draw bar. Only\$20.00

Root and Straw Cutters
Limited number of Root Cutters, either Power or Hand. Price, each.....\$10.00

Straw Cutters, can be used with engines up to 3 H.P. Regular \$40.00 value. Sale Price \$20.00

200 One-Horse Cultivators
With double wheel, double levers, sold at from \$12.00 to \$15.00. While they last the price is only\$7.50

Extra Long Hillers \$2.00



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Good value at \$12.00. Special price\$7.50



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that is more or less available for crop use. Moreover, phosphates may be found of value in inducing an earlier maturity of the crop—a matter of much importance in districts where early autumnal frost endangers the ripening wheat crop. The introduction of mixed farming, with the adoption of rotations which will serve to maintain the humus content of the soil, should be sufficient, in my opinion, to obviate any necessity for relying generally on fertilizers for the up-keep of the

fertility of these soils. At the present time, I feel assured that the determinative factors in crop production in these regions are the seasonal conditions, more especially as to the amount and distribution of the spring and early summer rains, and the thoroughness with which the land is prepared, which latter, of course, is intimately connected with the vital-question of the conservation of soil moisture. If our north-western lands are not to be allowed to deteriorate, mixed farm-

ing must be more and more introduced, and it is, above all, imperative in the highest degree that the humus content be constantly replenished, not only to keep fibre in the soil that will prevent loss from "blowing," but to maintain their present high capacity for holding moisture.

To be continued in September issue.

Wealth may not bring happiness; but it does give man an option about the kind of worry he will take on.

**Over There—
Over Here**

STAG Chewing Tobacco is appreciated by both of Canada's war units—those who fought in Flanders and those who served at home.

It is also enjoyed by civilians of all classes throughout Canada and is recognized as being

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QUARRY BLAST CHARGE and auto engine gas are alike to the Fiery Little Columbia. The power's in the fuel; but it takes the Columbia hot spark to set it to work.

That's a regular Columbia job—releasing energy by ignition.

THE DRY BATTERY

WHAT a marvelous little bundle of big ability the Columbia Dry Battery is! And what a multitude of uses! It makes bells jingle and buzzers buzz; whirrs the youngsters' toys into a riot of fun; gives snap to telephone talk; puts a swift kick into the ignition of autos, trucks, tractors, farm engines, and motorboats.

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IN the storage battery field the name Columbia means definite power and long life—the inevitable product of an institution long famous in battery history.

There's a Columbia Service Station or a Columbia Dealer near you.

Step in and let them tell you how the Columbia Storage Batteries are distributed, and how the Columbia Service Plan insures that the motorist shall have the full service to which his original purchase entitles him.

Columbia Storage and Dry Batteries

Canada H-40



Best ANTI-FRICTION BABBITS ON THE MARKET

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

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

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

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

Nickel Genuine	Frost King
Less than 25 lbs. \$1.25 per lb.	Less than 25 lbs.60 per lb.
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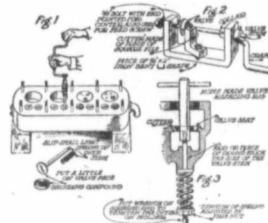
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Hoyt Metal Co. EASTERN AVE. and Toronto LEWIS STREET

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

Engine Repairs: Valve Grinding

IF you should ask several different garage mechanics, or read the instructions of as many different catalogues, as to how often engine valves need grinding, you would find that each one differs, some saying once a season, others once a month, and so on. The reason for these various replies is that there can be no set rule for length of time between periods of valve cleaning and grinding, and too many factors enter into the problem.



With the writer it has been the rule to examine the valves once a month—when using the engine for its regular amount of work. Fortunately I have a valve-in head type of engine and it is an easy matter to take off the cylinder's head block with its valves. Remove the valve springs and turn it upside down on a couple of blocks, as shown in Figure 1 of the accompanying drawing.

Nearly always the exhaust valves are found to need the most attention, for it is through these openings that the burnt gases have to pass, and naturally the valve, seat and stem will collect the carbon thicker than the inlet valves. I always remove the valves and lightly polish the stems with emery cloth. Sometimes the valve or seat is pitted so badly that reseating is needed. When this is the case, do not attempt to grind the pits out, for it only means long tedious work that results in the formation of shoulders on the valve or seat.

Figure 2 shows a simple home-made refacing device that anyone handy with tools can make. If the valve seat requires reseating, a simple affair that will answer for this work can be made as shown in Figure 3.

Both these devices can be made from material found round most farm shops. The drawing shows their construction plainly enough.

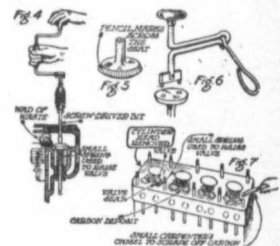
A good scheme to employ when regrinding valves is that shown in Figure 4. A small light spring is slipped on the valve stem and under the head. This raises the valve each time the pressure of grinding is let up. For valves that are in the side of the cylinders, as shown in Figure

4 a bit brace with a screw driver bit or special bit is used for rotating the valve. The correct method of grinding is as follows:

Remove and clean both the valve and seat of carbon and dirt. Stuff some waste in the cylinder opening, as at A, and apply a little grinding compound on the face of valve. Replace and rotate back and forth until the valve appears to have a good seat, as shown by a bright continuous ring round the valve face. Wipe valve and seat clean, and test the seat by marking the valve with a lot of pencil marks, as shown in Figure 5. Replace the valve, give it a turn or two and see if the marks disappear; they should if the seat is properly ground. Each valve should be marked with a light prick punch. Mark on top and on the casting near it; this insures each valve being ground to its proper seat and being assembled correctly in case all are taken out together.

When the valve grinding is completed, wash the parts with gasoline and remove all waste. A handy improvised valve-grinding tool can be made of a piece of three-eighth-inch round stock and an old door knob, as shown in Figure 6. Figure 7 shows how carbon collects round valves on top of cylinder under the head, and a way to remove it.

Sometimes due to the motor overheating some of the valves may warp. This occurs when the motor lacks circulating water,



or has been neglected in lubrication, or run too long with carbon in the cylinders, too rich a mixture, or the spark too far retarded. When a warped valve is found the best cure is a new valve, but if you have the reseating machine it may be resented.

Often when the engine has been neglected or a poor grade of oil has been used the valve stems stick; this is caused by the oil gumming, and also by carbon forming round the exhaust valve stems. This causes them to stick open in the guides. When trouble is experienced, squirt kerosene round the stem; it will loosen them up, but don't forget to get after the real trouble later

Belt Service Equals Tensile Strength!

Tension—strain and atmosphere are what prove the character of a Threshing Belt. In Western Canada the tension more often than not is of a terrific character and the weather conditions of a nature that leave no loophole for weakness or second rate quality of any material used in the farming industry. If you expect perfect and continuous service, you dare not use anything in belting that is short of the very best material and constructive skill that can be employed. You get it in the



LION BRAND
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 or the
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ENDLESS THRESHER BELT



They are unbeaten in the field of grain production

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

Gutta Percha and Rubber Limited

WINNIPEG FORT WILLIAM REGINA SASKATOON CALGARY LETHBRIDGE EDMONTON

on. Change the oil and clean the carbon.

Weak valve springs have been known to give trouble; the valves won't seat properly. Weak valve springs cause the engine to run irregularly. If a spring is broken it acts in a like manner. To find a weak spring try lifting on each with a screw driver when the engine is running and see if the added tension stops the missing.

When you locate it, remove the spring and replace it with a new one, but first make sure that it is the spring and not a sticking valve stem.

A BIG OPPORTUNITY FOR MANITOBA FARMERS

OWING to the unfortunate drying out of a portion of Alberta grazing lands, this season it will be necessary for farmers and ranchers located on these lands to dispose of many thousands of cattle and sheep through the prospective lack of feed.

As Manitoba has the assurance of a very generous harvest of hay and straw, the Manitoba Department of Agriculture will purchase a large number of these animals and will offer them to Manitoba farmers at cost price.

Agents of the Manitoba Department of Agriculture will buy

the animals for cash and will ship them to local points in Manitoba, and the Department will re-sell the animals to Manitoba applicants at cost price inclusive of the shipment charges to Manitoba.

The terms of sale are: One-third cash—balance bearing 7 per cent interest per annum, payable in equal payments in 1920 and 1921.

The Department will be guided in its purchases by the number of applications made by the farmers. Application forms may be obtained from all municipal secretaries or direct from the Department of Agriculture, Winnipeg.

With regard to the foregoing announcement, The Canadian Thresherman and Farmer believes it is quite unnecessary to urge on its readers the duty and privilege of rendering a neighborly assistance in a case the seriousness of which it does not need to amplify.

There is a manifest advantage to the Manitoba farmers in the deal, but from all past experience of them we believe that the feeling of joy and satisfaction will predominate in the simple act of reaching out towards the help of a less fortunate neighbor.

A. Stanley Jones

THRESHERS

Saskatoon Sask.




BUY IT AT ONCE

No. 4—Combination 28x36 Separator, Hand-Feed, Wind Stacker, 11 H.P. Engine, Clutch Pulley, Oscillating Magneto, all Belts.
ALL FREIGHT PAID

Cash: \$1,149.00 Time: \$1,292.00

No. 4A—Same as above, but with Self-feeder, instead of Hand-feed.
 Cash: \$1,244.00
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Capacity, about 700 wheat and 1,200 oats per day. Fine Illustrated Catalogue Free

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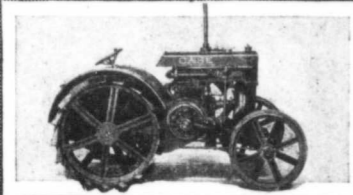
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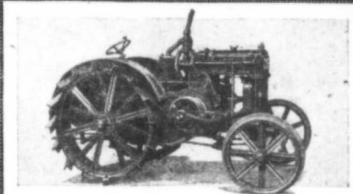
The CASE LINE OF POWER FARMING MACHINERY



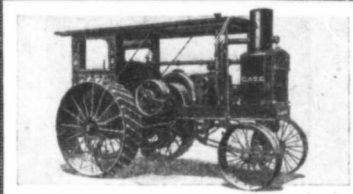
CASE 10-18 KEROSENE TRACTOR



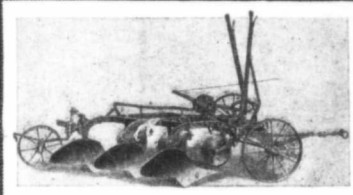
CASE 10-20 KEROSENE TRACTOR



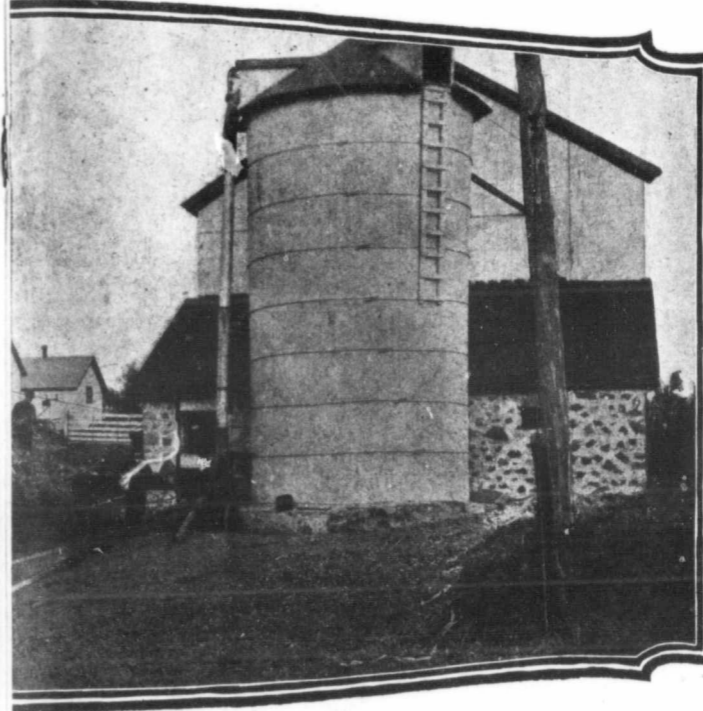
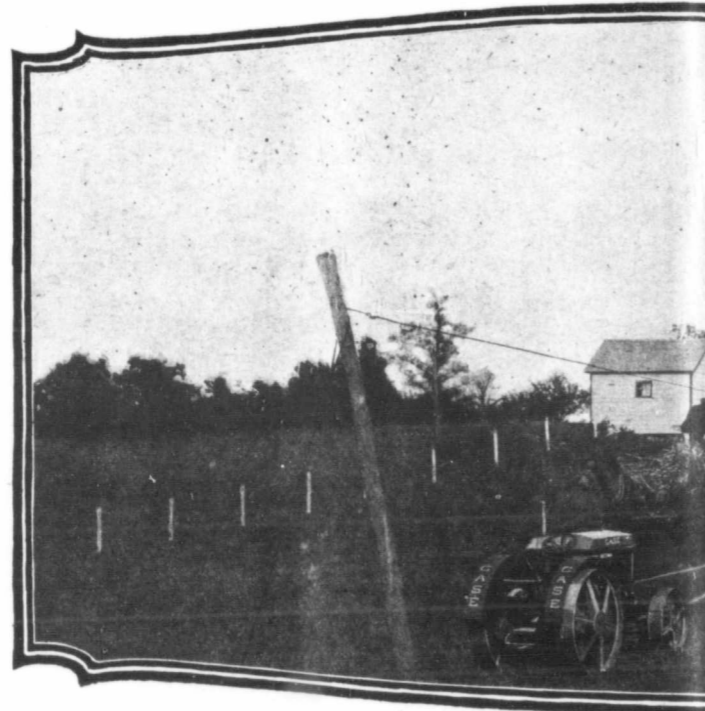
CASE 15-27 KEROSENE TRACTOR



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GRAND DETOUR PLOWS - 5 SIZES



Why a Silo?

Thirty years ago there were approximately 100 silos in America. Today they can be found in numberless thousands on farms both large and small. WHY?

Because the silo furnishes the cheaper winter feed.

Because the silo aids in fattening stock.

Because the silo increases the feeding value of the corn crop from 25 to 30 per cent.

Because the silo provides juicy feed in the winter, keeps the cows healthy and productive when green feed is lacking.

Because you can make the best possible use of frosted corn by putting it in the silo.

Because the silo gives assurance against short, drought stricken pastures.

Build a silo if you have not already done so. Silage will actually *put money in your pocket* as it has done for thousands of others.

Send for our silo filler booklet explaining the details of a Case silo filler for your silo.

Why a Case Silo Filler?

Be just as painstaking in buying a silo filler as you are in building a good silo. Choose a machine that requires the least power to operate, a machine that will *elevate into any silo* regardless of height—one that cuts your silage at the right length and makes a good clean job of it.

You will find that a Case silo filler measures up to your most rigid requirements. It is of the knife on the fly wheel type. The boiler plate construction eliminates all danger of exploding. A Case silo filler is safe.

The knives and fans, in addition to weight sections, are sufficiently heavy to furnish momentum resulting in uniform motion. This construction also saves power. Compare this type of construction with machines where knife cylinder, the fan and fly wheel are separate. Consider the extra power required to drive all of these parts separately thru additional gears, belts and chains. Compare with the Case way. Case simplicity means economy. It pays to consider these points before you make a selection.

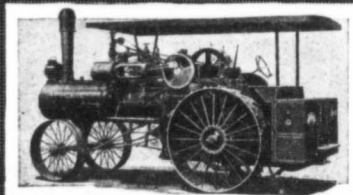
But you will want to know all the facts. Send for our silo filler booklet explaining Case silo fillers in detail.

NOTE: We want the public to know that our plows are Not the Case plows made by the J.I. Case Plow Works.

J. I. CASE THRESHING MACHINE CO., Inc. - Established 1842 - RACINE, WISCONSIN.

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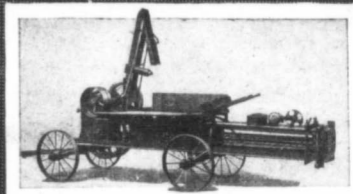
CASE
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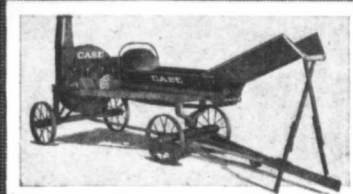
CASE STEAM TRACTORS - 8 SIZES



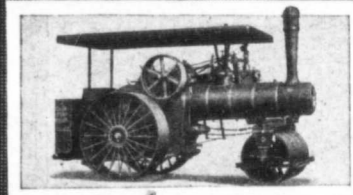
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CASE BALING PRESSES - 2 SIZES



CASE SILO FILLERS - 3 SIZES



CASE ROAD ROLLERS - 2 SIZES

Congratulations



meet us at every railway point, farming exposition and country fair we visit in Western Canada. The fact is that the "MAGNET" Cream Separator has given such unbounded and uniform satisfaction to so many people that we might spend the rest of our days on the free hospitality of our Western friends. Now, no part of this has been earned by sentiment that had no service behind it. It has been created by the magnificent service rendered by the "MAGNET" in saving and delivering the butter-fat from the milk. The

"MAGNET" Cream Separator—

is the greatest labor-saving and food-conserving machine ever introduced into Dairy Farming and they will give it you. DAIRY WOMEN know that the "MAGNET" bowl and one-piece skimmer is easily washed—sweet and clean in less than five minutes—a saving of from 10 to 15 days' labor each year over the time required to properly wash the disc kind.

MAGNET ALWAYS SKIMS CLEAN

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

because its bowl is supported at both ends, cannot wobble, and therefore will do perfect skimming for a life-time. Dairy men and women can avoid all "misery" by buying the up-to-date "MAGNET" Cream Separator. "Facts are wheels that winna ding, and canna be disputed."

The Petrie Mfg. Co. Ltd.

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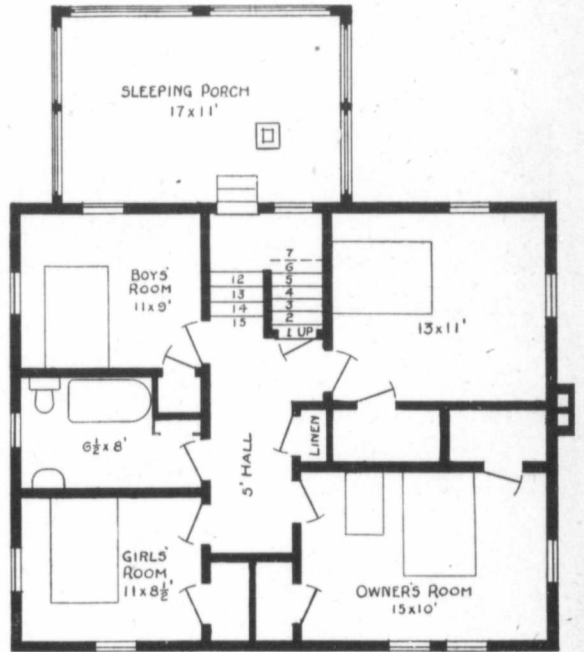


A Common-Sense Farm Home

By Prof. L. J. SMITH, Manitoba Agricultural College

THE prospective home-builder very naturally spends a good deal of time in looking over the house plans in the various popular magazines, searching for ideas upon which to base his own home. One emerges from such a search—if it is a thorough one and not superficial—with a sense of disappointment. Many of

good a home as those in the city. A well planned, modern, convenient home is the foundation of contentment on the farm. There is, however, too great a tendency to copy city houses, which are mainly designed to be built on long narrow lots. The farm house has room to allow for the better and nicer-looking home with a



FARM HOME
26 x 33'

the plans appear splendid at the first look over; but they generally have one defect which is serious to the average prospective builder—the houses are too large for one's pocket-book.

Think back over the magazine house plans which you have studied. How many came right out boldly and gave their size? That is as hard to get as the age of some people. The camouflage is complete. Never does one suspect the real size of the house until one begins to work it out from the sizes of the rooms.

The farmer should have as

wide front elevation. Instead of being 24 or 26 feet wide and 32 or 34 feet deep, lay out the home the other way with a frontage of 32 or 34 feet and a depth of 24 or 26.

The accompanying plan is an attempt to secure a well-planned interior and also a proportion which will allow for an attractive exterior. The main body of the house is not too large, 26x33 is smaller than a house 30x30. With the addition at the rear, this house is about the same size as one 30x32, yet it will look better and appear to be much larger.

In talking with women, one

Thoroughbred!

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

OVERALLS, WORK SHIRTS etc of

Stifel's
Indigo Cloth
Standard for over 75 years.



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

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

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

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The Marks of a Thoroughbred

The farmer knows the "points" of good binder twine just as he knows the "points" of his pure-bred stock.

The four Maple Leaf brands are the thoroughbreds of all binder twines.

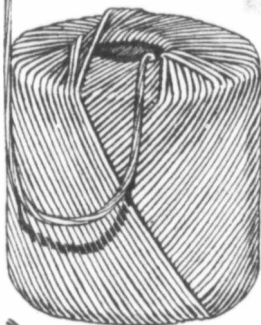
Brantford Binder Twines are standards from which all other twines are judged.

Compare them with any other. Notice their "points".

Uniformity, evenness, length,
Smoothness, firmness, strength,
No thick or thin places,
No fuzzy, bunched knots,
Perfectly spun and uniformly twisted,
A clean glazed surface.

BRANTFORD Binder Twines

have a pedigree. They come from the longest, cleanest, best fibres, prepared by special methods.



The quality of our twines is assured by rigid and careful inspection in our factory.

We have our own special mechanical devices for perfecting their quality.

They are smooth, clean, long and strong.

Every inch of the Brantford Binder Twines is tested in the factory. We submit them to a special preserving treatment to make them insect proof. Every ball is guaranteed as to length, strength, and quality.

The Maple Leaf Brands

Gilt Edge—650 Feet

Gold Leaf—600 Feet

Silver Leaf—550 Feet

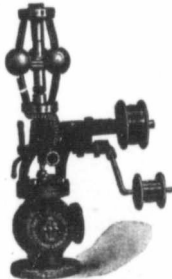
Maple Leaf—500 Feet

THE BRANTFORD CORDAGE CO.
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Western Branch
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Steam or Gas Tractors



Equipped with

**"THE GOVERNOR WITHOUT JOINTS"
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give greatest efficiency

FITTED TO EVERY BUILD OF ENGINE

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

Will increase speed 50% or more.

THE PICKERING GOVERNOR CO.

PORTLAND

CONN, U.S.A.



use the separator without going through the kitchen.

Note that the cellar stair is handy to the kitchen, yet one can get into and out of the cellar from the back porch without tracking dirt through the kitchen. This is a desirable feature to be secured in planning the country or city home.

With the exception of the boys' room, the bedrooms on the second floor have closets to gladden the heart of the housewife. Off the owner's room there is a closet for both wife and husband, a desirable arrangement not always possible in many a well-planned home.

The linen closet is not forgotten, and is equally handy to bathroom and bedrooms. With but little additional expense the bay window could be carried on up to the girls' bedroom and it would add greatly to the size and desirability of that room. It is the additional touches, such as this suggestion, which make a home worth living in—a delight to the family and their friends.

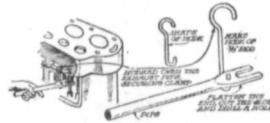
In house planning it does not seem possible to secure everything. In this instance—and one might just as well point out the weaknesses as well as the good points in the plan—the much-desired clothes' chute is missing; it is often the most difficult thing to get in the plan.

The sleeping porch is a feature of this home. One does not have to go through a bedroom to get to it.

In conclusion, do not put the house too high in the air. The nearer the first floor level is to the ground level the better the house looks. Also watch the roof lines.

A VALVE-SPRING LIFTER

From a bit of three-eighth-inch round iron rod and a short length of three-quarter or half-inch galvanized iron pipe it takes but a few minutes' work to make the handy valve-spring lifter shown in the accompanying sketch. The end of the pipe is flattened out with a hammer and a slot cut with a hack saw, then a three-



eighth-inch hole is drilled to take the lower end of the hook.

In using the tool the large hook is placed over one of the exhaust manifold dogs and the slotted end of the pipe under the valve-spring retaining washer, and then by exerting a downward pressure with the hand on the pipe, as shown, the spring is lifted or compressed.

GAME BIRDS VALUABLE FOR FOOD AND SPORT FACING EXTINCTION

IN THE PUBLIC INTEREST

IT is to be hoped that all parts of the Dominion will uphold the authorities in their enforcement of the new game Acts. If some are too shortsighted or selfish to deny themselves a little for the general good, it is well to remind them that the laws are now based upon treaty, and as such form part of an international obligation which we at least do not intend to treat as a scrap of paper, and will enforce regardless of consequences to individuals."

This is what the pamphlet "Vanished and Vanishing," written for the purpose of familiarizing the public with the Migratory Birds Convention Act, its aims and workings, says in reference to the new laws for the protection of bird life in both Canada and the United States. The pamphlet was prepared by F. A. Taverner, Ornithologist to the Canadian Geological Survey, and is issued by the Dominion Parks Branch Department of the Interior. Copies will be sent by the Dominion Parks Branch on request. It is one of a series of pamphlets issued for the purpose of making the Migratory Birds Convention Act the new international legislation for bird protection, known to all, and to teach bird protection. The Commissioner of Dominion Parks, J. H. Harkin, is the administrator of this Act.

The circular is a reminder that many game bird species, such as the passenger pigeon, the great auk, the Labrador duck, the Eskimo curlew and others, once abundant, are now extinct, and a warning that other beautiful and valuable species, like the Hudsonian curlew, the wood duck and the eider ducks, are threatened with extinction. In part, the writer says:—

Wood Duck May Vanish

"The wood duck is a species whose present progress is towards extinction. But a generation ago it bred on nearly every slack-water and overflow of our woodland streams and was the commonest summer duck within its range. Not retreating to marshes and broad wastes, where it would be comparatively safe for breeding, it was an easy prey to the amateur throughout the nesting season. In the early fall the opening of the shooting season found it numerous on ducking grounds, and its less wary habits put it to a disadvantage in relation to other hardier species. Its range does not extend as far north as that of most ducks, con-

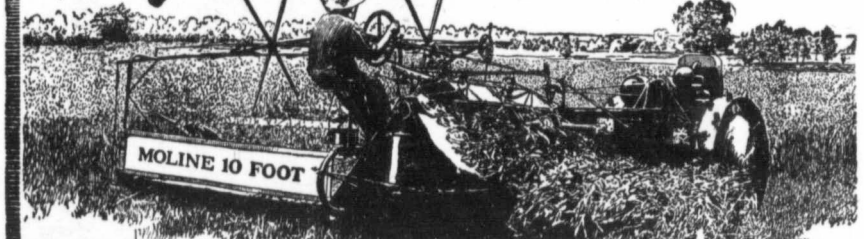
sequently there is no reservoir of breeding birds in the unsettled north from which to draw, as with them. When the breeding birds in our settled countries go, the species will have vanished. Unless care is taken, this, the loveliest and most beautiful of all our American ducks, will go the way of the passenger pigeon and the Eskimo curlew.

"The eider ducks have also been seriously reduced within the memory of man. The cause of this is not difficult to find. They nest in great numbers on the north shore of the gulf of St. Lawrence and the Labrador dogs, the local beasts of burden, have practically cleared them from the mainland within reach of even the smallest settlement, and on the small islands adjoining they are easy prey to the fishermen, who eke out their table with innumerable ducks and their eggs, killed or taken indiscriminately in and out of season. . . . At the present rate of decrease the time can be measured in decades when they, too, will be no more on this coast. The problem is rendered the more serious here as the birds furnish practically the only source of fresh meat for the residents. Properly conserved, there is no reason why the eiders and other sea birds should not form an important factor to the food resources of a country where every amelioration of circumstance is important.

International Co-operation Now

"Besides these more or less prominent cases, nearly all of our game birds have been sadly reduced. . . . Of course all of this is not due to Canadian shooting; shooters to the south of us have had a hand in this as well. In some cases we, in others they, have probably been the determining influences, and the subject is such that no permanent results can be obtained without co-ordinated effort in all quarters. . . . This has now been arranged by the International Migratory Birds Convention. . . . One of the greatest evils of the old systems of local control over migratory game has been the apportionment of the open season. Each jurisdiction had its own seasons, short enough probably for each locality if none other were considered; but as the birds gradually work their way south in th fall they found that as they moved from one political division to another they were in a continuous open season. . . . Under the new system of federal control inaugurated both in the United States and Canada, supplemented by harmonious co-operation between the two countries, much improvement can be looked for.

One Man Harvests 40 Acres a Day with this Outfit



MOLINE UNIVERSAL TRACTOR

Harvesting is quickly over with a Moline-Universal Tractor, Model D, one man with a 10-foot grain binder harvesting 40 acres a day.

The Moline-Universal attaches direct to the binder, and forms a single, compact unit with it that is controlled by the operator from the seat of the binder, where he must sit in order to do good work. The outfit is as easily handled as with horses, stopping, backing, going into corners and turning with ease. With the Moline-Universal one

man does cleaner, faster, and better work than other tractors do with two men.

Harvesting and belt work, however, are not the only things the Moline-Universal Tractor can do. With it one man plows 9 acres a day, discs 27 to 38 acres, harrows 76 acres, plants 20 to 40 acres, mows 25 acres, rakes 25 to 40 acres, and loads 12 acres of hay.

The construction of the Moline-Universal is the most advanced on the market. Perfected four-cylinder overhead-valve motor, electric starting and lighting system, and complete enclosure of all working parts are only a few of the leading features.

Write us for interesting literature.

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Manufactured by MOLINE PLOW CO., Moline, Ill.

Evils of Spring Shooting
"Perhaps the most serious detail in the reduction of game has been spring shooting. . . . In the fall we have both the adult birds and their increase, an increase always normally greater than is necessary to keep up the number of the species. This increase above reproductive requirements can be looked upon as the interest upon the principal invested. . . . The returned birds in the spring, however, . . . are the remainder that have finally survived the dangers of the season, and represent the principal upon which the next interest

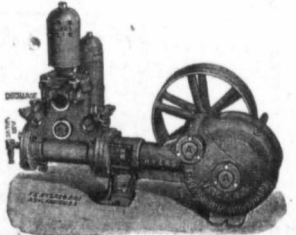
payment will be based. Spring shooting is like killing stock that has been carried through the winter and is about to increase, a policy no stockman would follow, and which should be equally avoided by the sportsman."

The Real Danger

"The summer boarders say they don't get enough to eat," remarked Mrs. Cornstossel.

"That doesn't bother me," rejoined her husband. But if you see any signs of discontent among the farm-hands let me know right off."

MYERS POWER PUMPS



Standardized, Simplified, Dependable. For home and farm service. Operation by gasoline engine motor or other power. Styles and sizes to meet all requirements. Ask your dealer. Catalog gladly mailed.
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Spring Treatment of Wild Oat Land

By G. W. A. MUNRO, Superintendent Experimental Station, Rosthern, Sask.

THE proper treatment of any weed-infested land should begin with getting the weed seeds to grow. This applies particularly to wild oat land in spring time, for this seed has poor germination powers at any other season.

The treatment should really begin after threshing in the autumn, by double disking, cultivation or shallow plowing of all infested stubble land, in order to have the seeds buried for ready germination as soon as spring opens. This land should be harrowed in the spring as soon as it can be worked, and left until the blades of the young plants are well out of the ground.

It is not always possible to work the stubble in the autumn after threshing, either because of delayed threshing operations or of limited horse-power, in which case nothing can be done until spring. It might be mentioned here that we have yet to see the farmer on the prairie keeping wild oats in check who has fewer than four horses to each quarter section of cultivated land.

Whether the land has been worked in the fall or not, the first spring operation consists of either harrowing the already covered seed, or, if it is not covered, of covering it with disk, cultivator or plow. If the farm is worked under a rotation by which a quarter or a third is in summer-fallow each year, the wild oats will have almost all germinated by the time the fallow is seeded and packed.

When the wild oats show an inch or two above ground, they should be covered by double disking, broad-tooth cultivating or, what is far better if time and power permit, by shallow plowing. This operation applies only to the land that is to be sown, and the seeding of oats and barley (it being too late for wheat), should follow immediately.

The stubble that is to be fallowed is better left after the covering and harrowing operations of early spring, until the seeding and planting is finished, which usually does not occur until early June. At this time all the fallow should be shallow plowed and packed at once. Another growth of weeds will start, and when this is well under way, generally by the middle of July, the summerfallow should be plowed deeply, packed and worked sufficiently to prevent further weed growth during the remainder of the season.

The Dominion Experimental Station at Rosthern was badly infested with wild oats when taken over by the Government and it has been found that, of several methods tried for the elimination of this pest, that described above is the only practical one that has been evolved for use under ordinary conditions.

It might be well to mention some glaring mistakes that are often made in the treatment of wild oat land.

(1) Stubbing in.—The seed grain is often sown on the stubble without any previous cultivation. Result—all wild oats.

(2) Plowing, disking or cultivating the stubble and seeding immediately. The wild oats are buried in a good seed-bed a few days before the good grain and obtain a good start. Result—nearly all wild oats.

(3) Sowing an early maturing crop.—An early variety of oats or barley is sown so as to catch the wild oats before they have seeded. Invariably there are sufficient wild oats matured to leave more seed on the ground than was there in the first place.

(4) Improper fallowing.—The fallow is often neglected either before or after plowing till wild oats come to head. Result—badly infested land for the next crop.

(5) The worst mistake of all is sowing anything but clean seed.

Summing up then, the procedure of farm work for the treatment of wild oat land is as follows:

Harrow, cultivate, double disk or shallow plow all stubble.

Seed and pack all fallow.

Plow, seed to wheat and pack all clean stubble.

Plow, pack, seed to oats or oats or barley and pack all stubble that remains to be seeded that season.

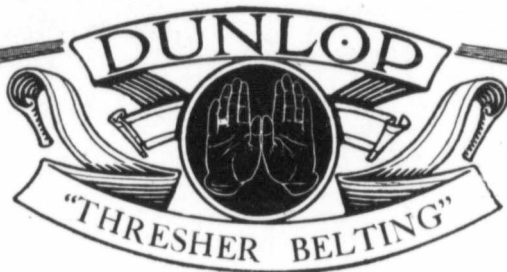
Plant potatoes and other hoed crops.

Shallow plow and pack fallow. Deep plow and pack fallow.

The street newsboy was trying to close out his stock of papers to a late passerby.

"No, no!" exclaimed the man addressed. "I've read all to-day's papers."

"Dat's alright, mister," the newsie answered. "If you've got any paterotic felin's you can take 'em along wid ye to keep de home fires burnin'."



Popular because Dependable

WHEN the threshing season begins, farmers and threshermen alike are desirous that the work go forward smoothly with fewest possible interruptions. Time is money to both. The farmer does not wish to be held up through time spent in "tinkering" with the machine, and the threshermen also are keen to be through and off to the next job on the waiting list.

For this reason the belt used on the threshing machine must be dependable—capable of performing the work required of it in steady, reliable fashion.

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ing and running off when tangled sheaves are drawn swiftly into the cylinders. "Gibraltar RedSpecial" is strong, yet pliable. It is most economical, initially and finally, when long life and superior service are taken into account. As an added feature this year, we are stitching it at no extra cost to the purchaser.

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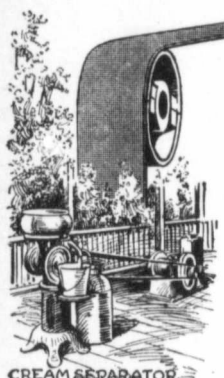
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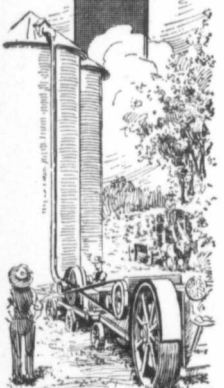
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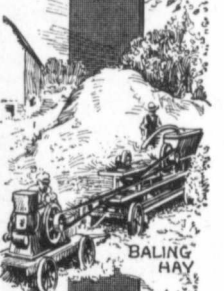
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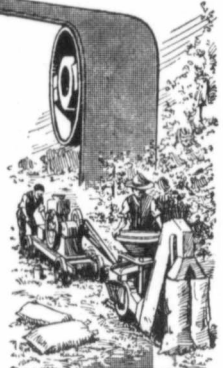
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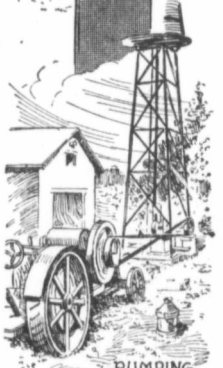
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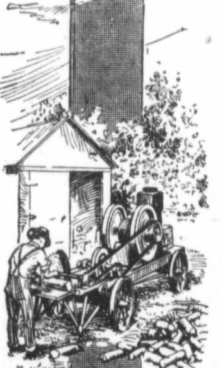
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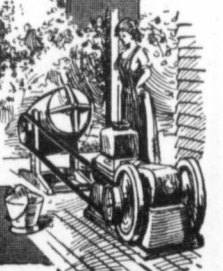
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Can Reduce Cost of Pork Production

Special Bulletin from Experimental Farms shows use of Pastures.

THE cost of the production of pork can be materially reduced by the use of pastures. Under ordinary conditions where a pig is fed on grain alone, it takes careful feeding and a very thrifty kind of pig to make 100 pounds gain from 500 pounds of grain, and more frequently 600 to 700 pounds of grain are consumed. Experiments with pasture and self feeders at Brandon Farm, states an Experimental Farms note issued by the Department of Agriculture, have shown that it is possible to make good gains at the rate of 300 to 400 pounds of grain to the 100 pounds of pork with the addition of pasture. Pasture cannot be used satisfactorily to replace grain, but it may very profitably reduce the grain consumption by one-third. As the pasture can be grown very cheaply and the pigs do the harvesting themselves, the cost of producing a pound of pork may be reduced 20-25 per cent. This may mean the difference between profit and loss.

There are a considerable number of crops that may be used for pig pasture. The ordinary grain crops such as wheat, oats, barley and rye are quite suitable. Sown in the spring, these crops are ready for pasturing at the time that spring pigs born in March and April are old enough to use pasture to advantage. Spring rye is the first of these crops to be ready to use. The pigs eat it well and produce good gains on it. However, it soon passes the most palatable stage and becomes more woody as it shoots into head. Oats and barley are about a week later than rye in reaching the proper stage for harvesting, but are relished rather more by the pigs and continue in a suitable condition for pasturing for a longer time. Wheat also produces good pasture, but is no better than other grains and the seed is more expensive.

For later summer, and fall pasture, there is nothing better than rape. Sown in early spring it is ready for pasture about the middle of July, or, if sown later, it reaches pasturing stage in about six weeks from the date of sowing. Pigs like it very well; it produces a large amount of feed and stands pasturing well. It is one of the best plants for hog pasture.

Another good fall pasture is fall rye. If sown in midsummer it is ready to pasture in a month from the date of sowing. It produces a good grade of pasture un-

til severe frosts come and does not head out in the fall.

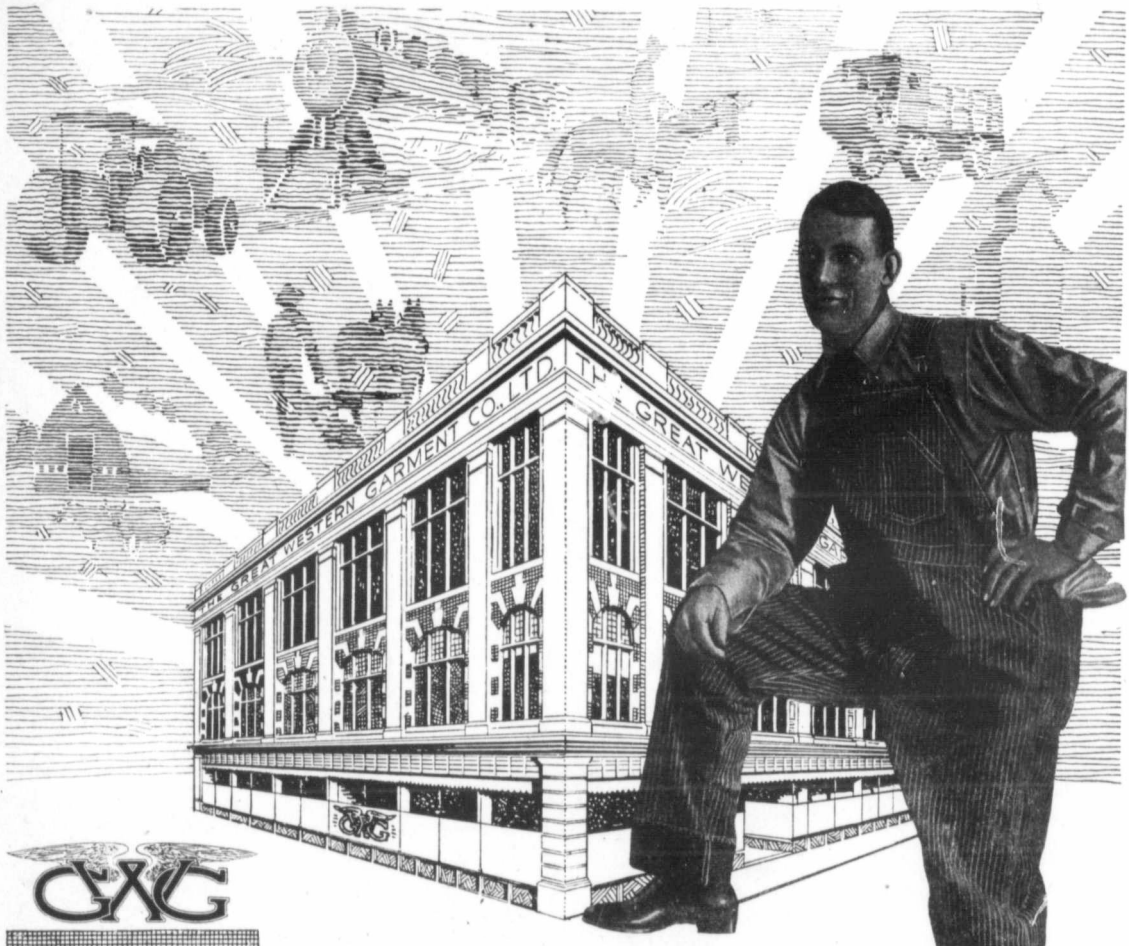
Perennial crops may also be used as pig pasture. Alfalfa will produce more pasture per acre probably than any other pasture crop. Pigs do very well on it, and produce economical gains. However, it costs more to start with alfalfa as the land must be prepared two years ahead and sown one year ahead of the time it is to be used. Also, its greatest growth is in May and June when on the average farm there are few pigs to use pasture as the spring litters are too small, and very few fall pigs are raised. The second crop of alfalfa comes in well for later summer pasture for spring pigs. Pigs root out alfalfa and soon destroy it if allowed to. It is advisable to put rings in their noses when they are pastured on alfalfa.

The ordinary grasses such as brome and timothy make first-class pig pasture in the spring months. But, as in the case of alfalfa, there are usually not many pigs to use pasture at that time. In midsummer and fall when pigs need pasture most, the grass pasture is often dry and harsh and not so suitable for pigs.

Pastured pigs should be confined to pens for a few weeks at the last before shipping to market. While on pasture they take a great deal of exercise, especially if of the more active breeds, and as a result grow well and make good frames with plenty of lean meat but may not put on enough fat. By shutting them up for about three weeks at the last, they make amazing gains in weight, thus increasing the profit, and get into a more finished condition for market. Pigs of the more sluggish breeds may be finished on pasture.



Old Lady (taking a soldier in to billet for the first time).—"Dearie me, what a load! Are you sure you come by all them things honest, my boy?"



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EDMONTON, ALTA.

8

I WAS plowing corn one afternoon and the sun was fairly pouring out its heat on me. Back in the west a thunderhead was muttering threateningly. The flies and gnats were bad, and the horses were contrary. I used my whip freely, and I didn't care if it hurt.

Over in the next field I could hear my neighbor Hale storming at his horses, but I didn't care how much trouble he had. At the turn we came close together, but I didn't look up. Hale had cheated

me out of nearly a thousand feet of lumber on a partnership car, and I was through with him.

Down in their garden I could see Mrs. Hale hoeing, while the two Hale youngsters crawled along on all fours weeding onions. On our side of the fence my wife was diligently slaying the weeds in our garden. There were two worth-while women, I thought.

After the Storm

By FRED. L. LAWSON

It was a shame that Mrs. Hale got coupled up with such a narrow-minded man.

A World Made New

Then my meditations were broken by a clap of thunder overhead, and I trotted my team into the shed just in time to escape the rain. I soon saw that I could plow no more that day, so I unharnessed my horses and went into

the house to read. But I couldn't get interested in my magazine; I kept thinking of Hale and his meanness in beating me out of the lumber.

I knew the storm was over when I heard a meadow lark out on the gatepost begin telling the world he was a happy bird; and as cheerfulness attracts companionship I put on my hat and went outside. Away in the east the black cloud rumbled on, but overhead the sun shone brightly; and on the gatepost the lark stuck his

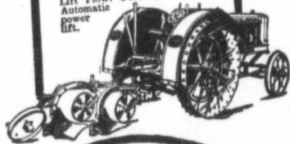
Illustration by...

Heider

No Gears to Strip

Rock Island One-Man Outfits

Heider Model D 2-16 with No. 9 Rock Island C.T.X. two-bottom Power Lift Plow, directly attached. Heider Model C 12-20 with Rock Island No. 13 C.T.X. two-three bottom Power Lift Plow. Foot-lever control. Automatic power lift.



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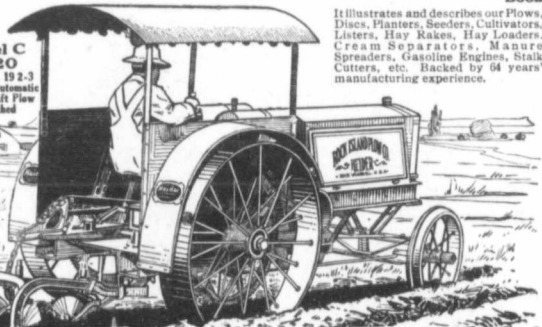
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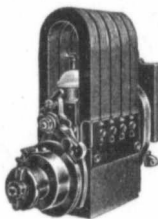
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ed back and forth in the gentle breeze the blades seemed to me to be caressing one another.

On my way back I passed Hale's potato patch, and I thought: "This rain is sure good on those potatoes. It'll make Bert at least a hundred dollars more." But then I caught myself. What did I care whether Hale's potatoes did well or not?"

I had planned a trip for the Hales and us down to the new steel bridge next time it was convenient, but that was before the lumber deal. Now we would go alone. I told my wife to get ready while I filled the radiator.

Hale didn't have a car, and as I looked mine over before I ran her out, I thought to myself: "This will be lesson Number One for Bert. They'll miss these rides!"

But a black-bird out in the barnyard changed his song to "No eneme-e! No eneme-e!"

I glanced out and saw him ruffle his feathers and peck at a choice morsel, while his mate walked proudly round with the cut-worms sticking out on each side of her beak. And I thought to myself: "What a blessing birds don't fall out with each other over the division of Nature's gifts!" And then as my thoughts went further I added: "But it was Bert's fault!"

I had intended to drive right past Hale's place and never halt; but they were all out in the front yard, so it was too hard. I stopped and took them with us.

The trip was nice, only I couldn't talk with Bert. But on the way home he slapped me on the back and said: "Say, brother, you'll have to keep an eye on me or I'll beat you out of something. The wife and I got to figuring last night and saw that you lacked nine hundred feet getting your part of that lumber. It's too wet to plow to-morrow, so I'll bring it over."

I told him all right and then I added: "That rain was sure good on your potatoes, wasn't it, Bert?"

"Yes, it was," he said. "I believe they'll make me a hundred dollars more because of it."

"Just what I was thinking this afternoon," I told him.

When we drove on up the road the Hales were strolling up their walk, hand in hand, swinging their arms back and forth like a pair of care-free sweethearts, and Bert was whistling a tune that was popular with the young folks ten years ago.

And as we turned in at our place and our horses whinnied their welcome to me, I thought to myself: "How peaceful and pleasant everything is, and how good one feels after the storm!"

black-and-yellow breast out at me and warbled his song boldly as if to say: "I'm n afraid of you! You're my friend, but aside from that I can't see that you amount to much!"

I walked on out toward my field to see how my corn looked. Every little hollow was a brimming pool, while here and there little rivulets carried off the overflow. The grass was a clean-washed green, the flowers were waving in the breeze, and one beautiful primrose nodded to me and turned up its petals as if to say: "See, I'm white through and through! Don't you wish you were?"

"Well, I am whiter than Hale," I thought.

I went on out to the field and leaned against the fence. My corn looked happy. Where it had been twisting in the afternoon heat, it was now straight; and as it wav-

Profitable Use of Capital on the Farm

By Prof. BENTON, Manitoba Agricultural College

NO one factor is a greater handicap to better farming than the lack of capital. Again and again this statement is made by farmers: "I know that I am not farming right, but I cannot get the capital to do what I know should be done." Banking institutions and banking practices have all been developed to serve the needs of the business world, but they are not adapted to meet all the needs of the farmer. To meet the need of farmers in Europe, more than a century ago co-operative associations were founded to make long time loans on farm lands. Later other organizations sprang up to give the farmer the needed short time credit for improving his land and purchasing supplies and equipment. In Manitoba organizations have been formed by the Government to meet these needs. The Manitoba Farm Loans Association furnishes a long time credit on farm mortgages at a reasonable rate of interest on an amortization plan to meet the need for capital in developing farming. The Rural Credits Societies make loans to their members for the improvement of land and the purchase of live stock, machinery, feeds and supplies. The Winkler Cow Scheme also aids needy settlers to secure dairy cattle by furnishing credit and requiring small payments. Such co-operative organizations, coupled with the opportunities offered by the chartered banks, give farmers the opportunity to borrow money needed.

Now comes a problem equally important to that of securing money—that of making productive use of the money secured, so that the interest can be met and the principle repaid.

In the investment of capital in farming two mistakes are frequently made which reduce profits or cause losses: One is owning land which is not all being productively used; the other is having machinery and buildings which are not used to full capacity. The difficulty with owning land which is not all being productively used is that the burden of getting the return for the whole investment is thrown on the part in use.

It may be a good real estate venture to hold land that is not suitable without clearing or other improvements, but it is a poor farming enterprise; and, in fact, it is not farming at all. The difficulty of having buildings and machinery which are not used to

their full capacity is that whether used or not they are a constant source of expense in the matter of interest, depreciation and insurance. Assume that a man with 320 acres of land builds a barn for his stock at a cost of \$1,200, and that he has six horses and ten head of cattle to shelter, the annual expense on the average value of the barn allowing 7 per cent interest, 3 per cent for depreciation, 1 per cent for repairs, 1/2 per cent for insurance, would be as follows: Interest, \$42; depreciation, \$36; repairs, \$6; and insurance, \$3, making a total of \$87. The expense divided by the number of live stock housed would give \$5.43 per head. This is a fairly high charge and should be reduced if possible by making the barn shelter a larger number as the expense goes on whether the barn is fully used or not.

Farm machinery is even more expensive than buildings as the repairs and depreciation are proportionately greater. Take, for example, a grain binder costing \$250 when new. Under average conditions a binder does not last more than 10 years, or, in other words, there is an average depreciation of 10 per cent each year. Again, calculating interest at 7 per cent, repairs and oil at 4 per cent, and insurance 1/2 per cent, the amount would be as follows: Interest, \$8.75; depreciation, \$25; repairs and oil, \$10; insurance, 62c—or a total of \$44.37. If 100 acres of grain were cut each year, the binder cost alone would be nearly 44.4c. per acre. If only 50 acres were cut the cost would be approximately double.

In marked contrast to investment in machinery and buildings, is investment in productive live stock. Hogs, sheep, cattle and brood mares offer an opportunity for increasing the capital invested. Appreciation instead of depreciation may be looked for, and labor expended is paid for in the returns secured. Investment for productive purposes as in live stock, improved seed, and in the clearing of land offers an opportunity to increase the net income and secure profits.

Farm capital should be so distributed among the various parts of the farm business that the minimum consistent with efficiency is invested in machinery, buildings and equipment that add fixed expense as interest and depreciation.

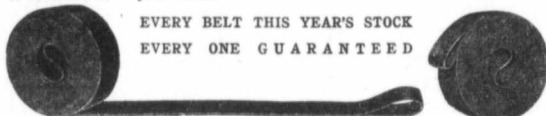


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100 ft. 8-in. 4-ply... 83.00	150 ft. 8-in. 4-ply... 123.60	120 ft. 8-in. 5-ply... 103.50	
100 ft. 8-in. 5-ply... 122.50	150 ft. 8-in. 5-ply... 147.00	150 ft. 8-in. 5-ply... 124.50	
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120 ft. 7-in. 6-ply... 93.00	160 ft. 9-in. 5-ply... 183.50		



SPECIAL QUALITY RUBBER BELTING

- 2-in., 3-ply...per foot 18c
- 2 1/2-in., 3-ply...per foot 19c
- 3-in., 3-ply...per foot 22c
- 3 1/2-in., 4-ply...per foot 26c
- 4-in., 4-ply...per foot 44c
- 4 1/2-in., 4-ply...per foot 50c
- 5-in., 4-ply...per foot 59c
- 6-in., 4-ply...per foot 60c
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SEND FOR OUR NEW MONEY SAVING SPECIAL SALL CATALOG

High Quality Farm Supplies

MACLEOD'S LIMITED WINNIPEG

Direct to the Farm at fair prices.



Fiction vs. Fact

Have you been deceived and led to believe that Machinery "Made in Canada" is higher in price than the imported article?

WHAT ARE THE FACTS?

The price of our 24-40 Imperial Separator with Self-Feeder Wind Stacker and High Loader and Register, as per our published price list, is \$95 less f.o.b. factory in Ontario than a 22-36 (smaller) Separator with similar equipment and \$129 LESS than a 28-40 Separator with same equipment. f.o.b. factory in Michigan, as shown in regular price list issued by the manufacturer. The SAVING IN PRICE, f.o.b. Winnipeg is \$370 and \$420 respectively.

The price of our 15-30 Imperial Super Drive Tractor, f.o.b. factory in Ontario, is no more than a Tractor very similar in size and design is sold for f.o.b. factory in Illinois. The difference in price f.o.b. Winnipeg is HUNDREDS OF DOLLARS in favor of the Imperial Tractor "Made in Canada."

And this, notwithstanding the fact that we pay duty on some of the materials that enter into the construction of this machinery. We invite comparison, not only in PRICE, but in QUALITY.

How can we do it? Because of a thoroughly up-to-date plant, equipped with new automatic and other high grade and special machinery, and improved methods of manufacture.

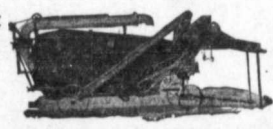
Why, then, allow your money to go out of the country, where it is needed to build up our own resources, and repay the enormous expenditure of four years of war, when you can buy CHEAPER and BETTER machinery "Made in Canada."

Write for descriptive circulars and prices of our IMPERIAL LINE—Threshing Machines, Kerosene and Steam Tractors, etc.

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BEAVER
KEROSENE
TRACTOR
The Drive that Pulls
 SEVEN SPEED FRICTION TRANSMISSION
No Delays

There are no delays caused by engine trouble when you thresh with a Beaver. The Waukesha motor operates satisfactorily day after day delivering a steady stream of power. The supplying of fuel and oil is all the attention it requires. The seven speed friction transmission makes it as easy to operate as your car and saves valuable time in setting and lining up.

It has power to spare driving a 24 inch thresher equipped with blower, feeder and all attachments. A reserve of 50% surplus power guarantees satisfactory operation under all conditions.



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 56 and 58 Princess Street, WINNIPEG, Manitoba

Is not Twelve Times the Contents of this issue Worth the Subscriber's price for a year of the Canadian Thresherman and Farmer—\$1.50—or \$2.00 for two years?

Soldier Settlement Scheme

THE new Soldier Settlement Bill which was lately introduced in the House of Commons by Honorable Arthur Meighen, Minister of the Interior, consolidates the Soldier Settlement Act of 1917 which provided exclusively for the granting of homestead lands to returned soldiers and for loans upon the security of such lands, and the various Orders-in-Council which have supplemented the Act, and which have enabled the Soldier Settlement Board to settle large numbers of veterans upon improved lands this year.

The loan features of the bill are briefly:

1. The Board will loan a qualified soldier settler up to \$4500 on the purchase of land for agricultural purposes and for the discharge of incumbrances on land purchased for soldiers.

2. Up to \$2000 for the purchase of live stock, implements and other equipment.

3. Up to \$1600 for the erection of buildings.

The first and third loans are repayable in 25 equal annual instalments with interest at 5 per cent on the amortization plan. The \$2000 loan is repayable in four equal annual instalments, beginning the third year. On this loan no interest is charged for the first two years. The rate is also 5 per cent.

These privileges are extended to the following classes of soldiers and sailors:

1. Any member of the naval or military expeditionary forces of Canada, United Kingdom or any of the self-governing British Dominions or Colonies during the present war who served in an actual theatre of war, or who left the country in which he enlisted

and who has left the forces with an honorable record. Service in the United States or Bermuda is deemed to be service in Canada.

2. Any British subject resident in Canada before the war who has been engaged in active service in an actual theatre of war in the naval or military forces of any of His Majesty's Allies in the present war and who has left the Forces with an honorable record.

3. The widow of any such person described above who dies on active service.

4. In the case of the Canadian Expeditionary Force, any person who served in Canada only and received pensionable injury or disability due to service; or the widow of any member of the C.E.F., who dies while a member of such Force before leaving Canada.

The Soldier Settlement Board has qualification committees in the dispersal areas of the Dominion and an applicant who is eligible according to the terms above outlined is required to appear before a committee and prove his ability to make a successful farmer. The committees are instructed to settle only those men whose best interests will be served by engaging in farming. While an applicant may not possess these qualifications it may be found that he is the type of man to make a successful farmer, and if he lacks only sufficient farming experience to become a successful farmer, the committee will undertake to supply the need. A number of training centres are being equipped where a soldier applicant may be given a good practical training for a period of up to three months, during which time subsistence allowance for himself and his family will be



THE WORST OF IT

Mother:—"George was always a terrible one to clean 'imself, but the army do seem to have made 'im worse."
 Father:—"Ah! 'E gives way to it."



Whatsoever a man soweth—

WHAT would you think of your hired man if he saved you a chunk of money on putting in your crop?

- Suppose he sowed only half the seed—and saved half.
- Suppose he didn't fertilize the land—and saved that expense.
- Suppose he spent only half the time working the land—a big saving in labor.

You might have a fair looking field, one which cost very little to sow—but you wouldn't expect a crop.

You'd think you had a pretty expensive hired man.

Now, if you drive a car, you are hiring some firm to make tires for you.

What you are looking for is:

- not a tire which *looks* heavy.
- not a tire made to sell at a low figure.
- but one which will give you a bumper crop of mileage.

Do you want your tire-maker to say,

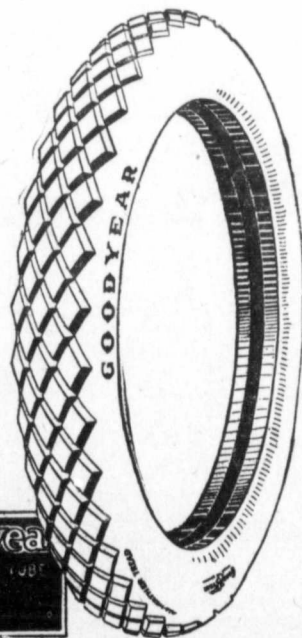
"Here is a tire on which I am saving you price."

—or

"Here is a tire built for final saving through long mileage."

Every Goodyear Tire is offered you on this basis. Every Goodyear Tire is like a field well-prepared and well-sowed. Into it are put *big* value in materials and workmanship. Out of it you can get *big* value in mileage.

When you are in town, ask the Goodyear Service Station Dealer about this mileage question.



GOODYEAR
MADE IN CANADA

The Goodyear Tire and Rubber Co.
of Canada, Limited



IN making the 100,000 McClary stoves in 1919, vast quantities of iron and steel must be handled every working day.

Yet every casting is even more rigidly inspected to-day than in the early days when only a few small stoves went out from the plant to create a name for McClary's.

Not an operation in the whole plant is allowed to be hurriedly or carelessly handled.

This rigid principle of manufacturing has made McClary's the greatest stove and furnace works under the British Flag.

To-day, if you are thinking of buying a heating or cooking device of any nature, you should consult McClary's.

Any of this list of Booklets on heating or cooking will be sent, if you mention this paper.

"Service from the kitchen"—about the Kootenay Steel Range.
 "Magic of the Pandora"—about the Pandora Cast-Iron Range.
 "Comfort in the Home"—on heating with the Sunshine Furnace.
 "Satisfaction"—dealing with McClary's Gas Ranges.
 "McClary's Electrical Appliances"—on cooking with electricity.
 "Household Helper—Canning Edition"—describing McClary's Florence Automatic Oil Cook Stove.
 "The Story of a Range"—McClary's Simplex Combination Coal and Gas Range.

60 tons a day!

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London, Toronto, Montreal, Winnipeg, Vancouver, St. John, N.B., Hamilton, Calgary, Saskatoon, Edmonton.

See your local paper for name of McClary's dealer. 18

only as to its soil fertility, but also as to its location and other matters. It is the policy of the Board not to settle soldiers on the prairies at a greater distance than 15 miles from a railway and in more closely settled communities 8 miles from a railway.

So far the activities of the Board have met with considerable success. There have been 9626 applications in March and April, and of these 6922 have been approved by the qualifications committees. The figures are: Alberta, 1901; Saskatchewan, 1264; Manitoba, 1535; British Columbia, 946; Ontario, 426; Quebec, 115; New Brunswick, 189; Nova Scotia, 114; Prince Edward Island, 104.

These are the main features of the legislation. Investigations have been held in some of the provinces looking to the desirability of settling returned men, particularly those in receipt of pensions, on small holdings near towns and cities. Reports from the committees of investigation in Ontario and the Western provinces favor such suggestion and present various options which might be taken up by veterans of the class mentioned. For instance, for the prairie provinces, one option is for a plot from two to five acres for market gardening; another of five to fifteen acres for market gardening, combined with poultry; the third of from twenty to eighty acres for market gardening with poultry and dairying, with pigs or bees. These are some of the questions that are to be worked out and there are hopes that the Board may be able to settle partially disabled soldiers in this way.

In British Columbia the soldiers are organizing co-operative systems of settlement. The Soldier Settlement Board agreed with representatives of the Empress of Asia veterans to reserve a block of land, if available, and to settle only veterans of that organization within that block. The reservation of a portion of this land in the centre of a group of farms will be made for the purposes of the farmers who may wish to organize a community village with public hall, church, market place and other conveniences, but the soldier settlers will be held individually responsible to the Government for their own holdings.

"G'wan, nigger, you-all ain't got no sense nohow."

"Ain't got no sense? What's dis yere haid for?"

"Dat thing? Dat ain't no haid, nigger; dat's jes er button on top er yo body ter keep yer backbone from unravelin'."

paid by the Board. After the period at the training centre the Board will arrange for him to go on the farm of a successful and selected farmer in the neighborhood in which he proposes to settle, where he will not be regarded merely as hired help, but as a student keen for knowledge and anxious to succeed.

Such a course of training should qualify eager young men for the work which they propose to undertake. After an applicant is qualified he will appear before a loan committee, which may purchase for cash the farm he selects and loan him up to \$4500 for its

purchase, and also loans as outlined above for equipment and buildings.

After the soldier is settled on the farm the Soldier Settlement Board by a system of supervision and by the assistance of advisers will keep an eye on the settler and help him in whatever way seems to be desirable to make a success of his undertaking.

In addition to these advantages, the Soldier Settlement Board undertakes with the aid of experts to purchase live stock at the best prices obtainable and resell them to settlers at the same prices. It has arranged with agricultural

implement firms and harness and wagon manufacturers for specially low prices to be charged soldier settlers for these commodities. The same with lumber. Fifteen hundred lumber dealers in the Great West have agreed to give soldier settlers lumber at little over cost price. The Board also provides plans for standard houses suitable for soldiers at cheap prices.

With regard to the granting of loans, the loan committees are instructed to settle soldiers only on land that is suitable to be made a first-class home. They have experts who appraise the land, not

Cool Comfort



It's Sunday morning—blazing hot, and pretty near a whole day before you for rest and recreation.

First, then—a shave. Whether you are going for a spin in the car, taking the family to church or visiting a neighbour, you cannot go with a day's growth of beard on your chin.

The thought of shaving won't be irksome if you own a Gillette Safety Razor—rather, you think of five minutes' cool comfort with the highest type of shaving edge ever developed. No man in the world can command a keener blade than the one you slip into your Gillette.

And if Gillette shaving gives you an added joy to your Sunday, why not take five minutes every morning for a clean shave as the start for a better day's work.

Gillette

Safety Razor



For \$5.00—the price of the Gillette Safety Razor—you have your choice of the Standard Gillette sets, the Pocket Edition sets (just as perfect, but more compact), and the Bulldog Gillette with the stocky grip. Ask to see them TODAY at the jewellers', druggists' or hardware dealers.

525

YIELD AND MATURITY

By G. G. Moe, Assistant
Dominion Cerealist

THROUGHOUT the larger part of the prairie provinces, the need of early productive varieties is acute. They are needed not only to guard against losses by frost but also as a protection against rust. Early maturing varieties are less liable to attack by this disease as they seem to have passed beyond the stage at which they are most susceptible at the time infection usually takes place.

If early varieties are a protection from frost and disease, the question arises, why has their introduction not been hastened and their use become universal on the prairies? The reason is that no very early varieties are known that do not give a lower yield than those that mature at the general time of ripening.

There is a balance between yield and earliness, and if the scale is tipped toward yield, it lengthens the period of maturity,

and if tipped toward early maturity the yield decreases rapidly. The aim of the plant breeder is to move the centre of balance toward early ripening and remove the accompanying disadvantage of lower yield.

The problem of combining high yield and earliness is most difficult. Any great advance in earliness in the past has been made at the expense of some other characteristic essential to the welfare of the variety. None of the early varieties grown at present are free from serious weakness. They are generally inferior in length of straw, length of head, size of kernel and drought resistance. These are all factors having a most important bearing on yield and must be given careful attention if our early varieties are to meet the various demands upon their adaptability. Other essential features are, high baking strength, tight chaff, well-shaped kernels, strength of straw and freedom from beards. Early maturity alone is easy to obtain as it exists already in several very

early varieties of grain that are not grown commercially on account of their low yield, but no extremely early variety is known (and by this is meant, a variety of wheat, or oats, or barley, that will give a much higher yield twenty days in advance of Marquis wheat, Banner oats and Manchurian barley) that gives a yield approaching that of our standard varieties.

It is not considered possible that varieties can be produced that will mature well in advance of our standard sorts and give an equal yield, but it is considered possible to produce varieties that will give a much higher yield than some of the early varieties now in commerce. While the whole problem is an intricate one, recent advances in plant-breeding methods have led to such unexpected success in the last ten years, that it is reasonable to assume that the next decade will be an era of similar advancement. Several things should be clearly understood in this connection. No varieties can be expected to

withstand such a frost as swept the northern prairies July, 1918. Also, no variety, however excellent, can overcome deficiencies in soil preparation. Further, the evolution of the perfect variety will be a gradual process. The peak cannot be attained in a single bound but only by a series of steps. The early varieties we now have will be succeeded by better sorts and these in turn will give away before other superior varieties. Miracle varieties and wonder grains should not be expected; they have not been found in any country and we need not expect to find them in Canada.

The question before the grain grower to-day is this:—Shall he grow a variety that will mature each season in safety but giving a smaller yield than later maturing sorts which ripen perhaps two seasons out of three and are more susceptible to rust? The Experimental Farms are endeavouring to solve this problem for the grain grower by the propagation of early, high yielding varieties.

WHEN a man insures his life he does well. When he insures his **PURPOSE** he does better. A man ordinarily takes insurance to protect his family. When he sees to it that the Policy is drawn to most surley effectuate that purpose he renders his family the soundest possible service.

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Send us your name, address and date of birth and get a copy of the Farmer's Account Book—free on request. Your **Income Tax** can be accurately figured by the use of this book.

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



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

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

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Capital \$250,000.00

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Salted Beef Hides	.28-.32	Horse Hides, each	\$7-\$12
Salted Kip Hides	.35-.40	Wool	.43-.46
Salted Calf Hides	.55-.60	Prime Seneca Root	\$1-\$1.10

Top prices for Sheep Pelts

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Head Office: WINNIPEG "SAVINGS AND PROTECTION"

Flax Fibre Outlook in Canada

ONE of the very brightest of quite a few encouraging prospects in new developments in Canadian agriculture is the utilization of the flax straw which so far has found its way to the flames or some no less inglorious end.

In dealing with questions relative to the flax growing industry in Canada raised in the House of Commons a short time ago, the Minister of Agriculture informed the house of the action that the government has taken in support of the industry. He stated that the quality of fibre produced in Canada is fully equal if not superior to the best produced in any of the European countries and pointed out that the future of the industry depended to a large extent on the development of labor saving devices for harvesting the crop and for manufacturing it into the finished fibre.

In Russia, Holland and Belgium, the Minister stated, where labor is cheap, it is a comparatively easy matter to get the necessary laborers to pull the plants from the ground and attend to the further processes of retting and scutching. In Canada where labor is much more expensive, we are at a disadvantage. Officials of the Department have been able to develop a flax pulling machine which has been tested and improved until it can do the work satisfactorily. This machine can pull from four to six acres of flax a day and thus do the work of twenty to thirty hand pullers. The question of retting is also being given attention by the Department.

An experimental flax mill has been established at the Experimental Farm. In this plant tests have been conducted with a view to determining the best method of water retting and dew retting. The ordinary method of retting commonly prevailing in Ontario is to take the plant after it has been pulled and spread it out on the ground so that it may get the rains from heaven and the dews of night until it has been sufficiently retted. That process was subject to the vicissitudes of the weather. The energies of the officials of the Department are being directed to the investigation of water-retting under Canadian conditions. These experiments, in this connection, it was explained by the Minister, are progressing satisfactorily but they are not by any means completed. Work of this nature usually has to run for a series of years in order to fairly test various methods to ascertain which is the best.

The next process is the scutching, and until very recently no machine had been discovered to take the place of hand scutching, by which every particle of flax straw that is scutched has to be handled by the hands of the operator. About two months ago the head of the Division of Economic Fibre Production of the Experimental Farm was sent to Ireland to investigate a machine for this purpose. This machine gives promise of usefulness and it has been decided to purchase one. The machine will be located in the experimental flax mill at the Experimental Farm and with it the various classes of fibre grown in Canada will be treated to see to what degree of perfection the machine will do its work.

The question of making use of the straw of flax that is grown in Western Canada for its seed is also receiving the attention of the Department. Each year hundreds of thousands of tons of this straw are burned in cleaning up the fields. Experiments conducted by private individuals indicate that a twine could be prepared from the fibre of this straw. Last fall the Department began the study of this question. Several carloads of flax straw grown in Western Canada have been treated and this year will be spun into twine. In this way it will be ascertained whether or not the production of twine from such fibre as is produced where flax is grown for seed is possible and profitable.

Up to the present the market for Canadian flax products has been chiefly in the United States. It was expressed by the Minister that if we can provide labor saving machinery that will handle the various processes referred to, Canada can be reasonably assured of occupying a position in this industry that will not be surpassed by any other country in the world. Until we can do that experiments will have to be continued.

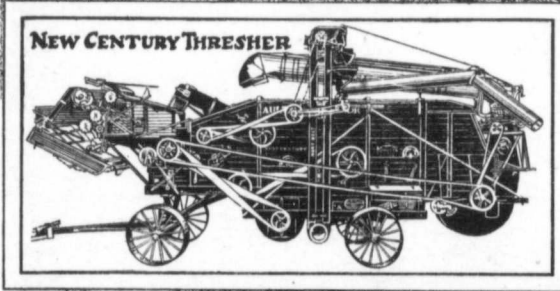
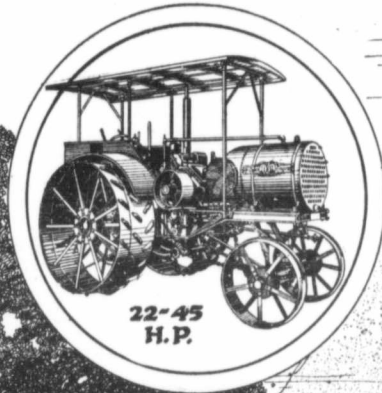
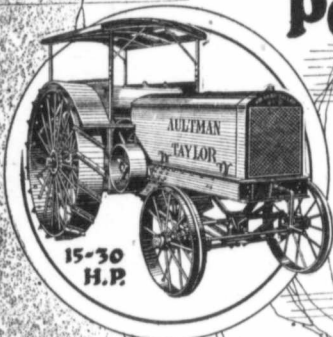
Where Do We Go From Here?

"The destroyer Jacob Jones had been sunk by a German 'U' boat. Those of her crew who had survived were swimming about," says the New York World. "Among them was Lieutenant-Commander Worth Bagley, last seen to leave the vessel. A seaman battling with the waves recognized his commander. He spat out a mouthful of salt water and grinned impudently.

"'Say, Cap'n,' he yelled, 'where do we go from here?'"

AULTMAN-TAYLOR

POWER FARMING MACHINERY



Nearly every day brings forth a new tractor or a new thresher. Being new, many of these machines cannot help but be experiments. Time alone will determine their worth to the user. But who wants to buy an experimental tractor or thresher? Who wants to pay their good money for something that may prove absolutely worthless?

A successful tractor or thresher cannot be worked out overnight. Time and experience are required to perfect machinery of this nature.

You can avoid this needless expense and much trouble and annoyance by buying your tractor or thresher from the old reliable Aultman & Taylor Machinery Company.

TIME TRIED—TIME PROVED

Time has proved the Economical Superiority and Absolute Dependability of Aultman-Taylor Tractors and Threshers. Fifty-four years of knowing how is built into each tractor and thresher. The experimenting has all been done and paid for by us before you buy.

You need only to refer to the many thousands of Aultman-Taylor tractors and threshers in operation in the field to firmly convince yourself that Aultman-Taylor Tractor and Thresher performance (service) is a definite, tangible thing. You know beforehand just what you are getting. You eliminate every element of chance.

These machines are so good that we cannot build them fast enough to meet the demand, so let us suggest that you order well in advance. Write today for FREE CATALOG.

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How Much is a Clean Farm Worth?

The Moody Catches Every Weed Seed



There is no possibility of foul weed seeds escaping the Moody. Every one is caught and bagged separate from the grain. The ground you thresh on is as clean as your fields. ALL the grain—not most of it—is saved for sale, and so perfectly cleaned that it is ready for the market or seeding. The grain will grade higher and bring larger returns both in volume and in quality when you thresh with a Moody.

POWER REQUIRED:
 No. 6A, 24-32 requires from a 10 to 14 H.P. No. 2, 30-38 hand feed and wind stacker requires 14 H.P. No. 2, 30-38 with wind stacker, self feeder, 16 to 18 H.P., just the right size for a Fordson or 10-20 Tractor.

Can You Beat These Prices?
 No. 6A, 24-32 inch Moody Separator, hand feed attachments and straw carrier, \$528.00. No. 6A, 24-32 inch Moody Separator, hand feed attachments and wind stacker, \$630.00. Self Feeder for No. 6A, 24-32 Moody extra \$165.00. No. 2, 30-38 inch Moody hand feed attachments and wind stacker, \$740.00. Self Feeder for No. 2, 30-38 inch Moody, \$174.00.

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BRANDON, MAN.

Some Peace Problems and Peace Victories

Following is the substance of an address delivered to the Alberta Industrial Congress, Calgary, August 13-14, 1919, by Finley P. Mount, president of the Advance Rumely Co. Because of its informative and thoughtful character and the issues involved in what it covers, we earnestly commend it to the careful perusal of our readers.—Ed.

THE most vital problem of all, remaining as an inheritance from the great war, is in my judgment, the simple primal one of food. From that fateful day five years ago when war was let loose upon a busy world down to this present hour, food has been the great outstanding factor in the catalog of human needs and most controlling in the course of world events. Notwithstanding the slogan that "Food would win the war," we must admit that the war was won by men; men armed with courage as well as cannon; men armed with right as well as rifles; yet food in the last analysis was the one thing these men dared not lack. And in the production and furnishing of that food for our sons and our allies at the front, the people of your country and my country, blood brothers, so successfully co-ordinated that the war was won, and these two nations are today closer together in spirit and co-operation than ever before. And why should we not be? Our international aims and aspirations are alike; our language is the same; our laws flow from a common origin, and, however much we each have

been diluted by strange additions to our melting pot, we each are true to our North American instincts for law and order. We each have our immigration questions, but each of us, I trust, has learned and now is well determined that aliens who come to us must come to work and not to agitate; that foreign peoples will be welcomed to our lands and admitted to our industrial families when they come in good faith with a good intent to become citizens and follow closely this intent with the accomplished fact. Springing from a common stock we have preserved our common ideals of human worth and success, and though we stretch from the semi-tropics of the South to the frozen reaches of the North, our two countries have destroyed the old illusion that latitude and longitude, mountains and plains, inevitably create racial differences and disagreements, and while the nations of the older world are yet concerning themselves with frontier fortresses and defenses, there still remains, and please God, always will remain stretching from the Atlantic to the Pacific across our continent the

longest international boundary line in the world with not so much as a popgun or policeman standing guard thereon.

One does not need to read the harrowing accounts in the daily press to be convinced of both the fact and the cause of the food shortage in Europe. There were

the land has been stripped of its fertility; the food producing equipment is destroyed; the cattle, sheep and swine, and most of the draft animals are gone, and reconstruction and rehabilitation can take place only after and not before these people are fed. The needs of Europe today are greater than when the armistice was signed. Revolution, disorder, disorganization, chaos, has prevented in a great measure such effort to feed themselves, as might reasonably be expected from a people however distracted, if only divorced from these inevitable consequences of hunger. Because all European countries, excepting Russia, Hungary and Roumania, are importers of bread grains, we are apt to overlook the fact that Europe produces more food grains than all the rest of the world combined. It is a fact that those European countries, including Asiatic Russia, who were actually engaged in the war and over whose territories the war was actually fought produced in 1913, the last complete statistical year, over sixty per cent of the entire bread grains of the world. Taking the four bread grains, wheat, oats, barley and rye, for the year mentioned, the figures strikingly reveal the situation, which we of the Western world are called upon to meet:

1913—Austria-Hungary, Belgium, Bulgaria, Finland, France, Germany, Italy, Roumania, Russia, Servia, Turkey.

	Bushels	Entire World Production
Wheat	2,059,733,000	4,127,437,000
Oats	2,642,079,000	4,697,437,000
Barley	1,002,345,000	1,650,265,000
Rye	1,748,448,000	1,880,387,000
	7,452,605,000	12,355,526,000

These countries produced one-half of all the wheat produced in the world; a little over one half of all the oats produced in the world; more than 60 per cent of all the barley produced in the world and more than 93 per cent of all the rye produced in the world.

When we consider that the total of these four grains exported from the United States and Canada together in 1913 amounted to only 280,000,000 bushels, and that the total of these four grains exported from all the countries in the world, not included in the war-ridden countries above mentioned, amounted in 1913 to only 624,000,000 bushels, and that on the above basis we would still have a shortage of considerably over one billion bushels of bread grains to feed the people of Europe, you begin to appreciate the force of Mr. Hoover's statement, and the size of the problem which is now confronting us.



FINLEY P. MOUNT, President of the Advance Rumely Co.

approximately 300,000,000 people east of the western front concerned with this war. How many there are now no one knows, for besides millions directly killed in the war, untold thousands have died from actual starvation, and this lack of food must continue for many years to come. All Europe, both East and West of the old fighting line, is bare. The stocks of food are consumed and

Nor can we expect recuperation rapidly to make up this last 23 per cent shortage. That it takes a devastated and war torn country a long period of years to get back to normal production is abundantly shown by the experience of the Confederate States of our South after our Civil war.

The supply of meats and dairy products has been greatly curtailed and will require a greater length of time to overcome than the shortage of grains. It is a well known fact that governmental commissions from Belgium, Holland, France, Denmark, and the Scandinavian countries have for some time past been in our country arranging for the purchase and exportation of herds of pure-bred dairy cattle to replenish the herds which have been killed during the war, either for human food or because of the lack of fodder to support the same.

Here, then, is our problem. These people must be fed, and their country and their power to produce must be restored; not only for humanity's sake, not alone for their own safety, but for our safety as well. Upon whom may the world better rely than on the American and Canadian farmer and to meet this demand in the future we would say emphasis should be laid upon the agricultural resources of Canada, for here indeed is the greatest room for expansion in production. Here you have in your prairie provinces three great empires with possibilities of development so vast the human mind cannot encompass them. You are a great agricultural country now, but will be greater. Your people will increase, your fields broaden, new homes will spring up, your herds will multiply; your farmers will diversify their crops; your methods of production will improve until your great neighbor on the South may well look to her laurels for agricultural primacy on this continent, and you and we will again take our places in the ranks shoulder to shoulder to fight in peace as we fought in war this time against hunger, the most powerful enemy of mankind, the destroyer of peace, the scourge of the world.

And as successful agriculture constitutes the very foundation of a nation's prosperity, your future is well assured, and all the things which go with success and prosperity are secured unto you.

With agricultural development must come industrial development; the one is the concomitant of the other. It was so with us. It has always been so with our race. It must be so with you. You are especially blessed with the requirements for a great in-

Stinson—the real four plow tractor

The first Stinson manufactured plowed 100 acres of heavy black Red River Valley soil in 85 hours. This performance stands as a world's record; no tractor of any size or weight has equalled it. It was only possible because of the wonderful efficiency and power conserving construction. By setting the engine cross-wise on the frame the gears are reduced to four, and a great waste eliminated compared with ordinary transmissions. The belt pulley operates direct from the engine, delivering every ounce of power.

The Saskatchewan Grain Growers after most thorough investigation and numerous tests decided that the Stinson was the tractor best suited to Western needs. That the machines they have sold have more than made good may be gathered from the following extract from their letter:

"Regarding the satisfaction the Stinson has given, might say that some of these men (list given) have operated their tractors almost continuously since they bought them, and the amount of repairs required has

been practically nil. The Beaver motor is at the top of the class so far as giving honest service, and the motor uses kerosene most economically. The whole tractor is better protected from dust than anything on the market.

"Further, in some tests made at University of Saskatchewan, Saskatoon, week ending Saturday, June 21, the motor was able to deliver on the brake 37.8 horsepower with motor running 1000 revolutions per minute. The manufacturer does not object to this motor being run 1200 r.p.m., and, therefore, we had 200 r.p.m. in reserve.

"At draw-bar work it pulled eighty sixteen-inch discs and delivered 21 h.p. draw-bar. The footing was of the worst, as it was very dry, and the ground was very loose on top, but it was able to make three miles per hour—the same motor speed as on the brake.

"In conclusion, might say that we do not know of any tractor in Saskatchewan that can give the farmer better general satisfaction."

Catalogues and full information will be forwarded on request by any of the distributors named in this advertisement.

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International Thresher

To own an individual threshing outfit makes you independent. It takes a big burden off the shoulders of the women folks who otherwise must prepare food for a big crew at a heavy expense to you. It enables you to choose your own time for threshing, and cheat the weather of the toll it takes when grain is kept waiting for the custom thresherman.

PAYS FOR ITSELF.

The money you lose by not owning one of these threshers would soon pay for it. Hooked up with an International or Titan kerosene tractor, your thresher finishes the job quickly and thoroughly—no waste—no loss.

For information about details of construction, quality of work, steadiness of operation, special equipment, or, in fact, any other feature connected with these machines, write the nearest branch house below or see a nearby International agent.

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OUR WOMEN FOLK

CONDUCTED BY
PEARL RICHMOND HAMILTON



THE HOURS THAT DRIVE US TO OUR PLACES

The new "Hutchinson's Story Magazine" contains a poem in honour of routine and regular tasks. It opens thus:

TO HIM who made the Heavens abide and gave the stars their motion,
To Him Who tames the moonstruck tide twice a day round the ocean—
Let His Name be magnified in all poor folks' devotion!
Not for Prophecies and Powers, Visions, Gifts or Graces,
But the weighed and counted hours that drive us to our places;
With the burden on our backs, the weather in our faces.

WHY THE ANGELS FITTED HER

AT SCHOOL she wore old clothes
Given her by the neighbours
Who meant well without doubt.
She always had a draggled, down-at-the-heel look,
And hurried thru with her studies
To get home to look after
Innumerable little brothers and sisters.
For her mother was forever ailing
And her father was usually drinking
And always vicious.
I do not think her body was very strong.
For her great eyes always looked weary.
At any rate she died quietly one day,
And the neighbours chipped in and bought her a casket dress.
It was the only new thing she had ever worn.
I'll warrant,
And it was not beautiful,
Being selected for neatness,
And because it was cheap, having been marked down for a sale.
And so she was buried—never having once complained
At not having pretty things "like other girls."

And now I think of happy chattering girl angels
Snipping and fitting,
Busy about her,
Lengths of sun-lace cloth,
Scarfs of moon glamour,
And gorgeous draperies of flaming cloud.
Her great eyes sparkle like the stars
Enmeshed in misty hair.
Her poor tired heart catches the lilting laughter
Of the maids
As she surveys herself in Heaven's mirage
Made beautiful at last,
A glittering drudge.
Maybe I only think of her thus,
Because it makes me more comfortable.

LO, I MAKE ALL THINGS NEW

HERE in a Picardy field,
Turned to the scream of the shells,
Laughter of children at play
Comes, with the chiming of bells.
See, in the derelict trench
Daisies their petals unclose!
Over the half-buried gun
Clambers and blossoms the rose.
Sound us your "Hail and Farewell,"
Bugle and trumpet and drum;
The time of the springing flowers
And singing of birds is come.
Here in a Picardy field
God's promise, I find, holds true,
And He that sat on the throne,
Said, "Lo, I make all things new!"

TO AN UNKNOWN BABY

IPASSED you in the Flower Walk,
With your fur cap all awry;
You viewed me and my terrier
With a not unfriendly eye.
You waved a silver rattle,
I almost raised my hat,
But nurse drew your attention
To a black and woolly cat.
You surveyed the sawdust creature
With a disconcerting stare;
At me you slightly squinted
Thro' a lock of curly hair.
Then suddenly you dimpled,
You crowded aloud in glee;
For some mysterious reason
You laughed, I think, at me.
And the music of your laughter
With me forever stays,
While a fragment of your sunshine
Still brightens dreary days.

SHE IS 104 YEARS OLD — AND ENJOYING LIFE

ONE hundred and four years old,
and still enjoying life and helping others to enjoy it! That is the best way to describe Mrs. Louisa K. Thiers, of Milwaukee, Wisconsin, the oldest living Daughter of the American Revolution.

In 1779—one hundred and forty years ago!—her father, Seth Capron, then a boy in his teens, enlisted as a private in Washington's army. Under the command of Lafayette he fought through the campaign at Newport. He served under Washington at West Point, where he was given charge of his commander's barge. When Washington left West Point to bid farewell to his soldiers, Seth Capron was the last man to take his hand.

Lafayette's friendship toward the young American grew out of an incident at Newport in 1780, when a bullet intended for the French general narrowly missed killing Capron.

"One of my earliest recollections," says Mrs. Thiers, "is the departure of my father for West Point to meet General Lafayette when he returned to America on a visit. I was a little girl, but I remember well the preparations for his journey. I knew he was going to meet

the great French general who had been his friend since the days of the siege of Newport."

Mrs. Thiers has lived to see America victorious in four wars. She remembers the opening of the Erie Canal, and how wonderful it was considered to be able to travel four miles an hour. She rode on the first steam railway from Schenectady to Albany, and recalls how the train was let down with a stationary engine because the road was so steep. She had seen Halley's Comet twice. The first time was in Baltimore in 1835, and to this day she carries a vivid impression of how long and loud the negroes prayed believing the world had surely come to an end.

Think of the changes Mrs. Thiers has seen in America's way of living! Think of having watched the evolution of lighting, from the tallow dip to the incandescent lights of to-day! Think of being able to recall the days when cooking was done at an open fire, when there wasn't such a thing as a stove! She remembers how excited the women-folk were when the first cook stove was introduced—a plain box, with the fire underneath and the oven above, the heat reaching it through two holes. These stoves, she says, had the happy faculty of burning the bread on the bottom while failing to bake it through on top. Our present-day ideas of conservation are not new, according to Mrs. Thiers, for she can tell of the days when time, energy and fuel were saved by preparing the food for the entire week—roasts, beans, pies, bread—all in one baking.

Most of the changes of modern times Mrs. Thiers believes, are for the best. She likes the way children are taught the wholesomeness of fresh air, to sleep with windows open, instead of being taught to consider the night air poison, as children were when she was a girl. She approves of the modern society girl, who finds frivolities insufficient and makes for herself a place in the world of work. She believes in suffrage. She is overjoyed at the success of the prohibition movement, whose approach she has watched for almost one hundred years! For, as early as 1822, her father banished spruce beer, wine, and brandy

from his household, and preached prohibition.

Last winter, when the thirty-sixth state had ratified the prohibition amendment, Mrs. Thiers called the Milwaukee "Journal" by telephone and said: "To think that I have lived to see the fulfillment of my father's hopes for prohibition! It is one of the greatest joys of my life. We shall have a better nation because of it."

Mrs. Thiers took the keenest interest in the recent war and did everything she could to help win it, from buying Liberty bonds to knitting innumerable pairs of socks. She has the distinction of being the oldest subscriber to the Liberty Loan and is proud of the letter Secretary McAdoo sent her when she made her first subscription. Commenting on that fact he wrote:

"It is a thrilling and inspiring thing to receive a subscription from an immediate daughter of a soldier in the Revolution, and it is significant of the fact that almost within the span of one human life was our liberty achieved and that within the same relatively brief period of time that liberty is threatened by an autocratic military power. And so you have lived to see a new war for liberty, this time a war for universal liberty throughout the world.

In response to a request written from the trenches, Mrs. Thiers adopted as her godson a French soldier, Marcel Joly. He had been deeply stirred by reading of her interest in the war, the hundred pairs of socks she had knitted for French babies, and by the fact that through her marriage she was connected with the old French family of Thiers, which gave to France one of her presidents.

One realizes how beautiful old age may be when talking with Mrs. Thiers. Seated in her rocking chair, dressed in a gown of delicate gray, with her soft white hair tucked under a cap of lace, her feet clad in tiny gold-buckled slippers and her fingers busy with pink and white yarn, she makes a picture that symbolizes old age at its loveliest.

"What is her secret?" you ask. This is what she says:

"I attribute my good health and long life to a light diet and careful eating. I eat many vegetables and plenty of fruit, but little meat except an occasional bit of chicken. Lots of nuts and raisins are included in my diet. It is only within the last few years that I have really dieted, and then it was because simple fare seemed to agree with me.

"I wake about six and breakfast at seven-thirty. Before rising I go through some exercises in bed. This keeps me active both mentally and physically.

"Then, you see, I have the papers and magazines to read, in order to keep up with current events. I write my own letters and do my own telephoning. When I tire of reading, I love my sewing and knitting. I think the idea of men learning to knit is a good one. I have always maintained it was a shame that men sat so many hours with hands idle. Knitting keeps one out of trouble, gossiping trouble, I mean. Men are not immune to this any more than women are, although they claim to be."



"IF THINE ENEMY—"

Vicar to parishioner who has violent quarrels with her neighbor: "Mrs. Crabbe sent a message that she has quite forgiven you. What message can I take to her?" Parishioner: "You can say I 'ope she'll die 'appy."

NOT GUILTY OF COMPLICITY

The Doctor—"Half our troubles are due to the alimentary canal."
She—"Well, my husband always was opposed to Roosevelt and Goethals digging it."

Pastry
(that)
Appeals



PURITY FLOUR

"More Bread and Better Bread"

10

THE DOOM OF AN OUTLAWED MAN

The Daily Doings of the Ex-Kaiser at Count Bentinck's Castle — on a Shore of Unvisited Monotony

"Whatever the Kaiser may think will be history's verdict on his part in the war, no one knows better than he that for the rest of his human existence he must live the threatened life of an outlaw. A strong tide in the souls of men has borne him out of the ocean of great trafficking and cast him up as a piece of broken wreckage on a shore of unvisited monotony."

MR. HAROLD BEGBIE has been to Count Godard Bentinck's Castle at Amerongen, in Holland. He has talked with the host of the exiled Kaiser, and describes his daily round within the confined limits which he dare not leave.

"I am writing at an open window of my sitting-room in the Oranjestein

Hotel. Spring has come suddenly. The sun shines with warmth and radiance; the air enters through my open window with softness and sweetness; the lime trees below me are full of noisy sparrows," says Mr. Begbie.

"I am conscious above everything else of Amerongen's indifference to the notorious man whose presence here has conferred upon it a world fame. This little village, like the sparrows in its lime trees, is too happy to bother its head about fallen kings and outlawed emperors. It has its domestic business to attend to, and clearly it is better to be free and cheerful, however poor, than a Kaiser who never puts his nose out of doors and must surely have something on his conscience which a man who believes in God would rather be without.

The Prisoner's Host

"Count Godard tells me that he was actuated by two motives in receiving the Kaiser; as a good citizen he felt he ought to obey the Dutch Government, and as one who humbly endeavours to be a

faithful Christian he felt he ought not to turn his back on a homeless stranger. Let me say that I believe him and honour him.

"I should like the reader to have a clear idea of the Kaiser's host, who most unwillingly has found himself forced into a position of notoriety. Count Godard is a widower, 61 years of age, who all his life has avoided politics, and in perfect contentment has lived the life of a country squire. In appearance he is a middle-sized, thick-set, well-preserved man, with prominent brown eyes, a broad, dark moustache, combed straight out to the ears, and a good-sized humorous chin. He is fastidious in the matter of linen, dresses with taste, and looks as if he would be at home in all the capitals of Europe.

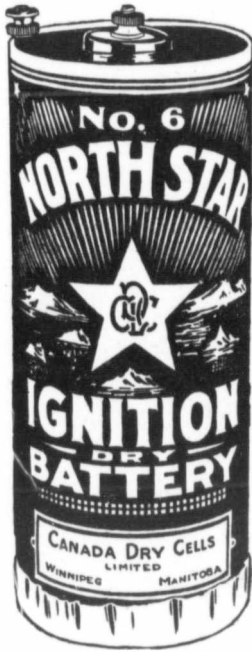
"But this appearance is somewhat misleading. Count Godard is a man of the simplest mind. He is an unquestioning son of the Dutch Church, he has family prayers in his castle, and he earnestly believes the primitive dogmas of Christi-

anity. He is a man of genuine good nature, with a friendly voice, a most human eye, and charming manners.

The Fallen Emperor

"The glory of the fallen Emperor has diminished almost to the point of evanishment. His staff consists of three gentlemen—a general, an adjutant, and a doctor. The suite of the delicate Empress is reduced to one lady. . . . To-day he seldom goes out of doors, and when he does leave the house it is only for a brief walk round the inner moat.

"But it is quite untrue that he is a bowed and broken old man. You may see him on one of his occasional after-breakfast walks round the moat, dressed in plain clothes, with a cloak thrown over his shoulders, striding forward, his head up, his arms swinging, the whole body of the man still electric with that nervous energy which made him something of a whirlwind in former days. His eye keeps its fire, his lips their firmness, his voice its ring. But there are changes. His hair is white, the



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TO get the most out of your engine and fuel you must have North Star batteries. Delays caused by poor ignition are inexcusable and never occur with the dependable North Star. They deliver a sure, fat, hot spark that ignites every particle of the gas vapor, giving maximum power for the engine. This perfect fuel consumption also minimizes the collection of carbon—thus saving valuable time usually devoted to cleaning and grinding.

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avert war. As for being put on his trial, he laughs at such an idea. There is no power on earth that can try him. If he thought he was to be arraigned before an international tribunal he would destroy himself—not out of any fear of the result of such a trial, but because he would regard such an ordeal as insufferable to his dignity.

"As to the character of the war, he hotly resents the charge of organized atrocities, and steadfastly refuses to believe that any evidence worthy of the name exists for such monstrous wickedness. He says of the stinking of the Lusitania that it was 'a great blunder' and one that he will never cease to regret; but he says that England's policy of 'attempting to starve the women and children of Germany' had driven his people out of all patience and quite maddened them against England.

Confessions of Mistakes

"I have made mistakes," he will say; "I see now where I might have done better; but consider my difficulties. I came to the throne too young. I really succeeded my grandfather. The hundred days of my father's reign do not count. I succeeded my grandfather, and I found myself surrounded by his statesmen. They were all old men. They regarded me as a boy. They treated me with the amused tolerance which old men in those days employed towards their youngsters. It was really insufferable.

"I determined to assert my power. I determined to be the leader of young Germany, a true King of a great people destined to be a mighty nation and the strong rock of law, order, and culture in the centre of Europe. The opposition I encountered made me headstrong. I can see now how bad it was for me. I became impatient, intemperate. But in spite of my faults, I did help Germany to grow to great power; and I kept the peace for many years; and if Russia had not betrayed the world there would be peace now. I have made mistakes, but no man is more innocent of this war than I."

"These two human beings, tasting their drop of the universal agony, discuss the world across their fireside, and are more remote from that world than the village policeman lounging in front of the castle gate. They are prisoners. And the gaoler who has turned the key on their liberty is the wounded and broken-hearted world which they discuss in their prison cell."

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W. SPENCE, Registrar,
University of Manitoba, Winnipeg.

pointed beard which he has grown adds ten years to his appearance, he has lost all that boisterous hilarity which sometimes made his friendliness a little difficult to bear, and the spirit of the man, while it is still cheerful in company, is more subdued, perhaps even more gentle and considerate.

At Family Prayers

"Somewhat to the inconvenience of Count Godard's household, the Kaiser rises every morning at 7-30. By nine he is downstairs with a list of the hymns which he wishes to be sung at morning prayers; it is one of the pleasures of his present life to choose these hymns and to join heartily in the service of family worship. He says very often how greatly the burden of his imprisonment is lightened by the religious atmosphere of the castle. 'I have stayed in many houses,' he says, 'which professed to be religious, but in which it was impossible to feel the spirit of Christianity; here on the other hand, one breathes the very air of religion.'

"After prayers, if the weather is fine and he is in the mood, William the Second throws a cloak over his shoulders and takes a swift walk round the inner moat, this walk never extending beyond half an hour. He then retires to his

own room, and is not seen by the Benteck family till dinner at eight o'clock in the evening.

Man and Wife

"Suffering and sorrow have brought Emperor and Empress into an intimacy which before the war was perhaps impossible. They are now seldom apart. The Empress is not more anxious and devoted in her ministrations to the Emperor than the Emperor is anxious and devoted in nursing the Empress through her frequent and often very painful heart-attacks. They have become thoroughly bourgeois in their affection, sharing the same room, sitting by day at the same fireside, and manifesting towards each other all those little gestures and phrases of endearment which we associate with middle-class domestic happiness.

"The Empress on one side of the hearth will sit with a piece of needlework in her hands while the Emperor on the other side reads aloud to her from a book which has reached him either from Germany or England.

Entirely Impenitent

"The ex-Kaiser is entirely impenitent. He is not only convinced of his innocence; he sees himself as one who strove harder than any man in the world to

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A. Roy MacKenzie,
PRINCIPAL

Our Young Folks

STORIES OF THRIFT BY BOYS

ONE great lesson which Canadians have learned from the war is Thrift. We have surprised ourselves by the ease with which money has been made and given for various war charities or invested in Victory Loans. Canadian boys have learned that they have the power to earn money.

The Earn and Give campaign which was promoted by the Y.M.C.A. among the boys of Canada has been a wonderful incentive to boys to earn money, yes and to give it to help forward a great work for the benefit of others. When many of the boys pledged themselves to give ten dollars to this fund, they had no idea how they could earn the necessary money. However, they did have a firm determination to fulfill that pledge, which thousands of them have done. The various ways in which they earned the money makes interesting reading. Canada's men in the future will be better because, through this campaign, as boys they acquired the power to earn and were stimulated to give to worthy causes. Read how some boys made their money.

Acted as Janitor

One boy in the absence of the caretaker of his church took the position. In addition he looked after, fed and watered eighty chickens.

He agreed to drive cattle to and from pasture for water and milking throughout the summer months. This meant early rising where farmers breakfast at seven and do the milking before that repeat. Then he made one dollar picking potatoes, all of which amounted to ten dollars.

Housecleaning for Money

A doctor's wife in an Ontario city phoned to an Earn and Give director as follows:—"I am stuck; I am in the middle of housecleaning and I cannot go any farther. I want someone to clean the winter's ashes out of my cellar and paint the ceiling of the kitchen."

One boy, fifteen years old, undertook the proposition. He went up on Saturday and worked steadily for seven hours. That doctor's wife phoned another morning that her neighbor wanted that boy to whitewash her cellar next Saturday, and that he was such a good worker she was recommending him to all her friends.

Charlie and Donald

Charlie and Donald were seven and nine respectively, but they managed to

earn ten dollars, as follows:— They started in cutting lawns, afterwards sold rhubarb and asparagus, and found a good demand for the former. They also made a canvass with service flags and sold quite a number.

Real Sacrifices

That the boys were in earnest is proven by the following instances of real sacrifice:

One boy sold his hantams and gave half the money. Another boy sold his bicycle for ten dollars and when he heard of Earn and Give he offered the money on a pledge.

Money in Hens

A girl of fourteen gave her experience as follows:—

"My grandfather gave me two nice laying hens, my father gave me a lovely house and run. I bought some grain, and immediately awaited results. The hens arrived on a Friday, on Saturday there was one lovely big white egg. Sunday I only got one, too. The following week the other hen started to lay. I sold the eggs at about 60c. a dozen, to mother. Some weeks there would be two eggs for 9c. I got around 90 eggs, up to about August 31st.

"I think I made \$4.05. The rest was made up by different odds and ends. (Signed) Tom Boy."

Various Methods

One boy raised chickens. Another rowed a lobster fishing boat, while a cripple boy hoed turnips.

Mowing lawns proved a source of revenue to several boys. One boy sold one hundred dozen tomato plants. A good many made money out of selling papers. One had a little express wagon and went into the cartage business.

Three years ago, about a dozen boys decided to pool their spending money instead of spending it for odds and ends, and with the fund so created, to start in the business of earning money. After the pennies and nickles were dug out of pants' pockets and counted, it was found that all they could scrape up was fifty cents. "We began to fry and think," said one of the boys, "of some way we could earn money to add to this sum. We decided to split kindling-wood and to sell it in the village at ten cents a bundle. We peddled the kindling in the village and sold all we could make. When we counted our receipts, we found that we had eight dollars and fifty cents."



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A DUTIFUL BUT VERY EXACT SON

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"It wasna ma turrn tae write."

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**BOY HEROES IN PEACE AND WAR—
CANADIAN BOY HEROES IN ITALY**

THE greatest lesson Canadian boys have learned in the war is their power of achievement. Out of our four and one-half years' experience, we now know that our boys can perform almost any task given them in any part of the world.

A rather unusual example of this ability comes to us from Italy. Fifteen lads of whom the majority were Canadians, with three officers, were sent at the request of the British Government by the British Red Cross Society to Italy as a British Ambulance Unit, immediately after the Italians entered the war. They were to show the Italians how closely interested Great Britain was in their success.

The boys forming the Unit were all volunteers and were mostly Canadian lads who had never driven a motor car in their lives. They succeeded in passing their tests and started for Italy with fifteen motor ambulances. They operated as a stunt Ambulance Unit. That is, wherever an offensive or fighting was taken place, this unit was moved to that area. Consequently they have been through all the fights on the Italian Front. Driving on roads newly built through the Italian Alps that were so narrow that cars could only pass at certain fixed switches, and that were so dangerous that the drop to the valley below was anywhere from three hundred to three thousand feet, operating constantly under the observations of the Austrians on the opposing heights, they were only permitted to use these roads at night, and to avoid discovery at night by search-light, huge screens thirty to forty feet high were stretched all the way along the roads. Unable to use lights and in all kinds of weather, through the inky darkness, the pelting rain or the driving snow storm, these fifteen lads, under constant Austrian rifle fire and machine gun fire have travelled with their cars over one million kilometres, and they carried over 160,000 wounded Italian soldiers.

Through the great retreat of 1917 they cleared out every wounded soldier from the hospital, and did not give up their task of carrying back the supplies till they were overtaken by the Austrians and lost their cars. The men escaped with their lives, were equipped with new cars and returned to their tasks. They have lost everything they possessed, but they never lost a wounded man. They have gone into the battle fields of the Piave and Asiago and for brilliant courage and daring these fifteen boys have, during their term in Italy, won twenty-two of the highest awards for valor in the gift of the Italian nation. They are the pride of the Italian Front and throughout Italy stories are told with delight of the brave Canadians. Beginning in ignorance, of even the equipment of their cars, they have accomplished almost superhuman tasks as you look at the record of their duty done for Canada, for the Empire and for humanity.

AN ITALIAN BOY HERO

WE ARE accustomed to read with a bit of disbelief stories about boys of sixteen or seventeen who perform acts of valor in battle. On the battle front in Italy there is a boy named Patriarcha, twelve years old, who has been decorated twice for valor. Twelve years old! He was a refugee, had fled from his home before the Austrian advance, and has been adopted by the fierce and terrible Arditi. He wore their uniform and was a part of their regiments. He went out on patrol with some of his comrades. They became separated. As Patriarcha crept along he saw before him an Austrian officer and six machine gunners with their guns strapped to their backs. He crept closer, hurled a bomb in their midst, killing the officer and one of the men. Then he leaped to his feet, a bomb in each hand, and advanced. Threatening the remaining five machine gunners with his bombs, he took them prisoners and marched them and

With this money they bought an incubator and started in the chicken business. There were only partly successful and decided to sell out. They disposed of the whole outfit, and after paying all their debts had twenty-five dollars in the bank.

Kindling had proved profitable, so they decided to return to it. They invested in a horse. They sold all they could make and bought feed for the horse. He began to fatten up and by spring he was in good condition. A man offered sixty dollars for him and the boys parted with their horse. This money and what they had made on the kindling gave them a fund of nearly a hundred dollars.

The next investment was in pigeons. The boys now have more than two hundred old birds to supply squabs, and they can sell all they raise at a handsome profit right in the village. Since starting with pigeons, the boys have added Belgian hares to their pigeon-raising and these two investments are proving the best of any. The profits go to the boys in a common fund, which is going to help them pay for their college educations when they get through the public school. The fund has now reached three hundred and fifty dollars, and it is still growing steadily.

THE WOMAN WHO DID

At a military tribunal in the Border district one member asked the applicant, a shepherd, if he knew of any reason why his work should not be undertaken by a woman.

"A woman once tried it," replied the applicant, "and she made a mess of it."

"Who was she?" inquired the chairman. "Bo-Peep," answered the shepherd.

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HOW HE GOT ON

Harold, the only son of a wealthy widowed mother, was drafted and duly arrived at the camp where he was to receive instruction in the manly art of warfare. In this he became quite proficient, however, as the following quotation from his letter shows:—"Dear Mother,—I put in this entire day washing dishes, sweeping floors, making beds and peeling potatoes. When I get home from this camp I'll make some girl a mighty fine wife."

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their guns back into the Italian lines. This is a true story. It shows, perhaps, that our Canadians will do well to regard more highly than ever the boys of the beautiful land of Italy.

INTERESTING INFORMATION BOYS WILL LIKE
Curious Taxes

CANADIAN boys have heard a great deal about taxes, and as rate-payers, in a few years will be brought into even closer relationship to them. Taxes are inevitable, and every boy as he grows into manhood should recognize his responsibility as a Canadian citizen and cheerfully undertake his share. Taxes are not a new institution. They have existed in some form or other almost from the beginning of humanity. A perusal of the taxes during the time of Queen Elizabeth and her father, Henry VIII, and even during later times, will convince you how much sner are our taxes than were theirs.

When Henry VIII taxed beards and graduated the taxes according to their amount and style, many people of the time thought that this was almost outrageous. We are told by the records of Canterbury that the sheriff was forced to pay the sum of three shillings and four pence because his beard was both extra long and extra handsome. A little later this was modified and a man was allowed to go unshaven for two weeks.

Queen Elizabeth decided that it would be a good scheme to tax every child that was born according to the social status of the father; so we find that a duke who was a proud father had to pay thirty pounds for that privilege, while a commoner was taxed only two shillings.

It would not do any good to refuse to get married, because bachelors and widowers were compelled to pay quite a sum for the privilege of single blessedness. Queen Elizabeth also decided that the country's turn of mind was not religious enough, and so she imposed a tax on all people who stayed away from church on Sunday.

One of the most peculiar taxes, as well as one of the oldest ones, was the window tax, which was commenced in the reign of William III, and not discontinued until 1851. By this every house that had more than six windows was heavily taxed. Houses with fancy windows were, of course, taxed at a higher rate. It is very amusing to read of the curious ways that people used to escape the window tax, such as extending one window across two houses, with a wide division between the two panes of glass. Another way was to put a partition between two rooms at the middle of a window, thus making one window light two rooms at once.

Other curious taxes of old English times were those on hats, gloves, perfumes, and all sorts of toilet articles, stone bottles, and bricks, clocks, and watches, and it was only because of a serious protest that this tax was reduced



Wounded Soldier (to Sweetheart Visitor).—"What's the matter dearie. Don't you recognize me with this mous-tache?"

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and finally dropped. Employers of servants of all classes were taxed, with a low rate for a single servant proportionately increased up to ten in a family. But by all odds the most curious of old English taxes was that on raisins, because at Christmas time so many of them were used in plum puddings. We are told by some authorities that this was done because plum puddings were regarded with aversion by the Puritans. But others tell us that it was simply because taxes were placed upon all articles which were in great demand.

GOOD GROUP GAMES

WE STRONGLY urge every boy to get a Trail Ranger's and a Tuxis Boy's Manual, which each contain seventy group games which may be played with little or no apparatus. Here are two group games which are easily played and which do not require any equipment. Try them some time when the bunch is standing around wondering how to fill in a few minutes. Perhaps you have a good game to suggest. Let the Canadian Boy Builder have it or pass on to the other fellows.

Ham-Ham-Chicken-Ham-Bacon

This game is played by the youths on the streets, using the curbs as goals. The game as can well be applied to the gymnasium or hall, however, using the mats at either end of the floor or a chalk line at either end.

All the players congregate on one side. One player in the centre endeavours to make them step off the curb by shouting "Ham-Ham-Chicken-I-am-B-a-c-o-n," the word "bacon" being the signal for all to cross to the other side, while he endeavours to catch one. The one caught must help him catch the others. If any one steps off before the centre man says "Bacon" he has to go to the aid of the catcher. For instance, the trick is adopted of shouting "Ham-Ham-Chicken-Ham" and stopping short and causing some one to step off. Or of substituting other words for "Bacon" which may draw some one from their base. When all are caught the game begins anew.

Skin the Snake

Players stand in line at "front dress." Each player stoops over, putting his right hand between his legs and grasping the left hand of the player behind him. At a given signal, the last man in the line lies down on his back, putting his feet first between the legs of the player in front of him. The line walks backward striding the bodies of those behind, and immediately lying down upon having no more to stride. Upon completing the transformation, all are lying on their backs. Then the last man who laid down rises to his feet and strides forward up the line, the rest following as fast as their turn comes. During all these manoeuvres the grasp of the hands has not been broken. Upon performing rapidly, this presents a peculiar spectacle, yet is very simple.

ORIGIN OF THE RED CROSS BADGE

THE Red Cross is a household word to-day. But if you were asked the origin of the badge or emblem could you tell it?

Some years ago a great meeting was held in Geneva, Switzerland, to arrange matters between nations so as to lessen the horrors of war. It was then declared that nurses and doctors and ambulances must never be fired upon. (Germany participated in this meeting.)

It was decided that they all take as their badge of safety the cross which was on the Swiss National Flag. The Swiss flag is a white cross on a red ground, and the Red Cross Emblem is a red cross on a white ground.

ANCIENT ARITHMETIC

IN a papyrus roll that was discovered in Egypt, and that bears the title, "Directions how to attain the knowledge of all dark things," there are equations and arithmetical examples that may have puzzled the Egyptian school-boys of 1700 B.C.

"There are seven men," one of them reads. "Each one has seven cats; each cat has eaten seven mice; each mouse

has eaten seven grains of barley; each grain of barley would have yielded seven measures of barley. How much barley has been lost!"

A DEAF BAND PLAYS FOR THE DEAF

THE idea of musical training for the deaf may seem absurd, but experience has shown that music is a factor even more important than education of deaf children than in that of hearing children. The principal of the New York Institute for the Deaf and Dumb, E. H. Currier, worked this out after he had observed that the children in his school delighted to beat against the wall or some other solid with a club, and had learned that they did this because the resultant sensations gave pleasure and enlivened the body. He therefore concluded that music might be used to advantage with the deaf.

After he reached this conclusion, he tried it out. First he added the drum as an aid to the military drill to which the children was accustomed. He found that the marching and the manual of arms improved very much when the drummer was "hurling sound waves against the battalion." Next, he added fifes and then bugles, and they were even more successful. He kept on until now he has a trained band of between forty and fifty members composed entirely of pupils of the school. Their repertoire includes 185 selections. The work done by the band is so good that it is often invited to participate in high-grade concerts given by hearing musicians.

The pupils in the New York school rise in the morning to the call of fife and drum. Led by the band, they march to their meals and to school in perfect step and time. When the band plays, they crowd around it just as hearing persons assemble around a body of musical performers. They do not hear the music in the ordinary meaning of the word. They receive no more sensation through the auditory apparatus than through other parts of the body; but it has been ascertained that their entire system responds to the series of harmonious sound-waves. As a result their minds become more alert, and they are more ready to take initiative action.—H. E. Zimmerman in Illustrated World.

FOOLISH QUESTION

Aunt Eliza came up the walk and said to her small nephew:
"Good morning, Willie; is your mother in?"

"Sure she is," replied Willie trulently. "D'you s'pose I'd be workin' in the garden on Saturday morning if she wasn't?"



ANOTHER "STRIKE" MEMORY
"Where you bin this hour of the night?"
"I've bin at me union, considerin' this 'ere strike."
"Well—you can stay down there an' consider this 'ere lock-out."

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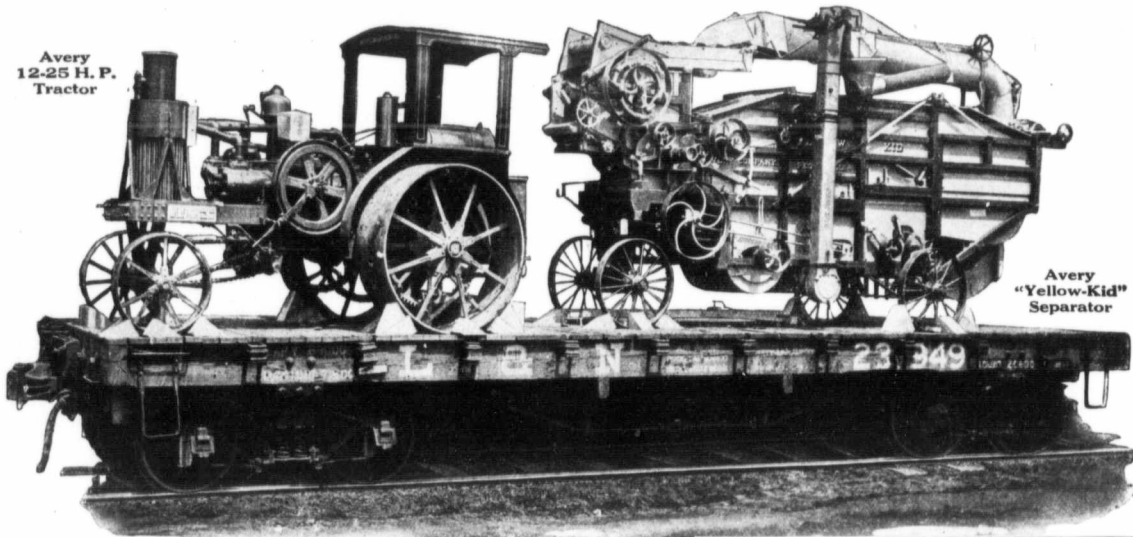
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This Avery "Yellow-Kid" Separator is a champion grain-saver. Built just like our big "Yellow-Fellows"—the separators that beat the government

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This 12-25 Avery tractor and "Yellow-Kid" separator make just the outfit you need to Averyize your Fall work. If it will not fit your size farm, there are other sizes of Avery tractors and threshers that will. Avery tractors are built in six sizes: 8-16; 12-25; 14-28; 18-36; 25-50; and 40-80 H. P. All of the same design. Also a special 5-10 H. P. Avery for light work. There is a size Avery thresher and plow for every size Avery tractor.

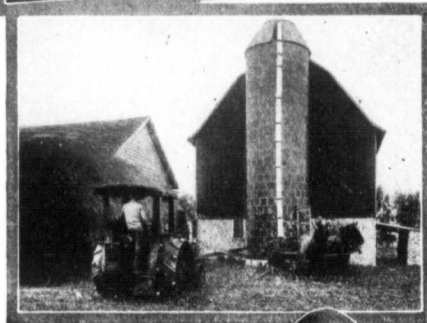
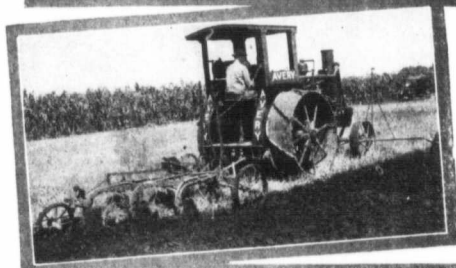
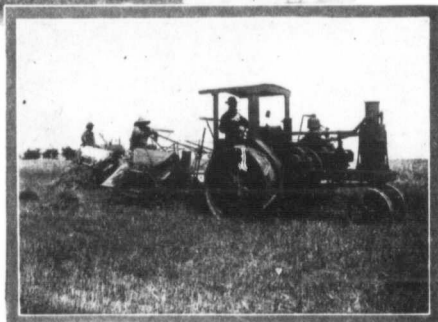
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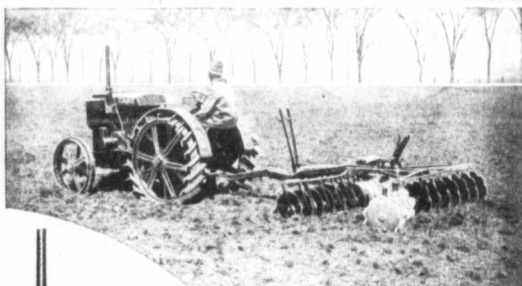
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