

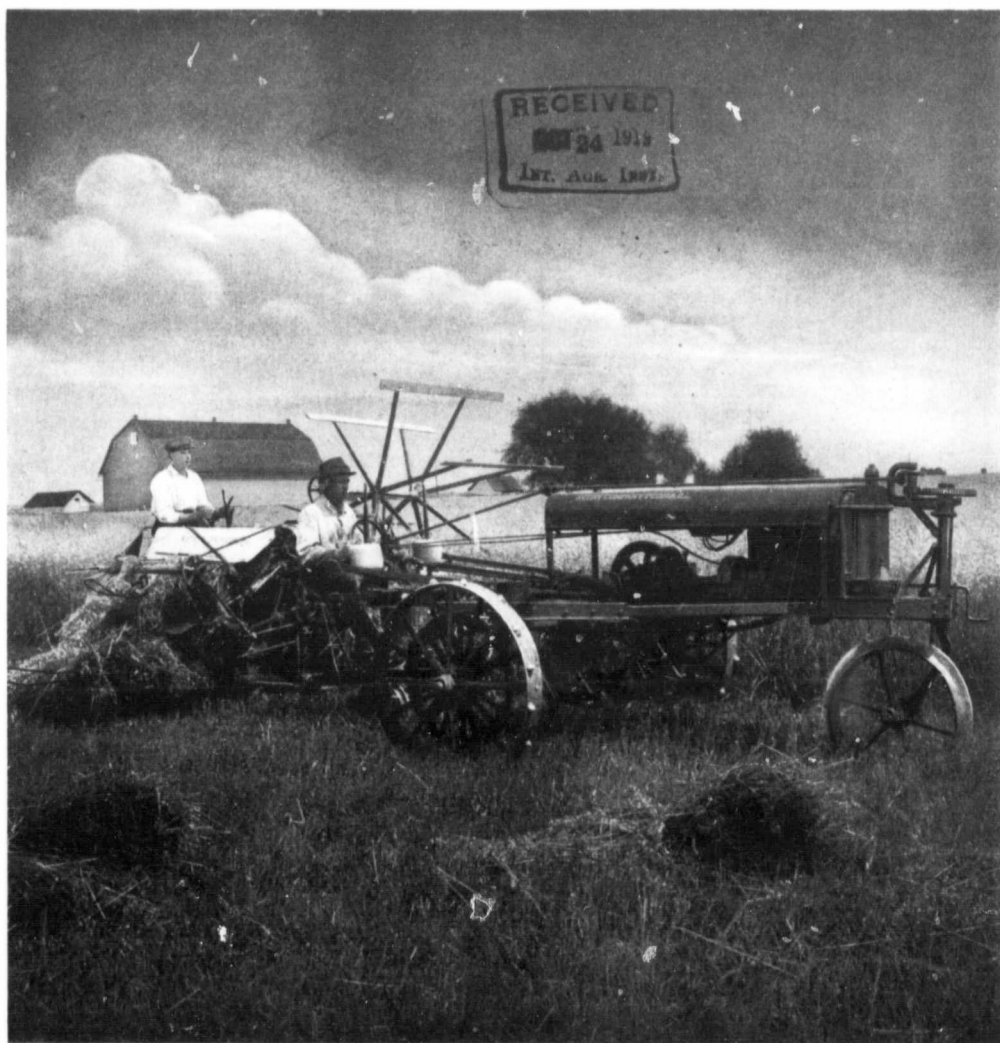
The CANADIAN THRESHERMAN AND FARMER

WINNIPEG CANADA

OCTOBER

NINETEEN NINETEEN

BETTER FARMING — BIGGER CROPS — BETTER PRICES



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

En-ar-co National Motor Oil

For Every Motor Use



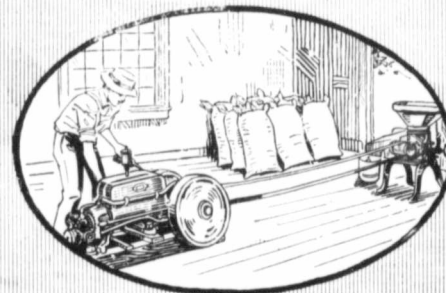
Lubricate your automobile and aeroplanes with En-ar-co National Motor Oil.



Lubricate your tractor and other motor power farm machines with En-ar-co National Motor Oil.



Lubricate your motor boat and other motor power craft with En-ar-co National Motor Oil.



Lubricate your stationary engine with En-ar-co National Motor Oil.

Scientifically Refined By Graduate Workmen

The high quality of En-ar-co Motor Oil is unvarying. This has been accomplished not only by the use of the best materials, the most perfect equipment, exact formulas, and rigid tests, but also by the highly specialized training each En-ar-co workman receives.

Each must pass through many steps of refining instruction. And not until he has received his master degree is a workman entrusted with responsible tasks.

Thus we have developed Scientific Refining. And thus have we produced an oil that is uniform—that never fluctuates in its perfect quality.

On the road, in the field, on the water or in the air, En-ar-co National Motor Oil conquers the resisting force of friction, and lightens the load. It increases the power, and by a soft, velvety cushion or film—strong and tenacious—it reduces the wear on parts.



All En-ar-co Products Excel

As En-ar-co National Motor Oil is extra dependable, so are all other En-ar-co products.

White Rose Gasoline for greater power.

National Light Oil for Tractor fuel. Also best for lamps, oil stoves, and incubators.

En-ar-co Motor Grease for every lubrication point around the motor car or tractor.

Black Beauty Axle Grease for wagons.

Tell your dealer you want to try En-ar-co National Motor Oil and other products bearing the En-ar-co label. If he cannot supply you, write us.

Canadian Oil Companies, Limited

1367 Excelsior Life Building,
Toronto, Ont.

En-ar-co Auto Game FREE

A fascinating game in which autos compete in a cross country race. Two, three or four can play. Get this game for the children. Grown folks, too, will like it. Sent free only to auto, tractor, motor boat or engine owners.

CANADIAN OIL COMPANIES, LIMITED, 1367 Excelsior Life Bldg.

Send me your En-ar-co Auto Game free. Enclosed find three-cent stamp to partially cover postage and packing.

Also give nearest shipping point and quote prices on the items I have marked.

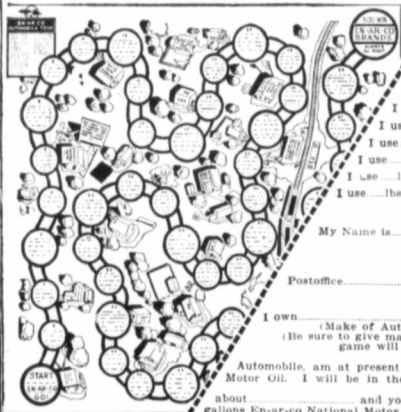
- I use ____ gals. Gasoline per year
- I use ____ gals. Motor Oil per year
- I use ____ gals. Kerosene per year
- I use ____ gals. Tractor Oil per year
- I use ____ lbs. Motor Grease per year
- I use ____ lbs. Axle Grease per year

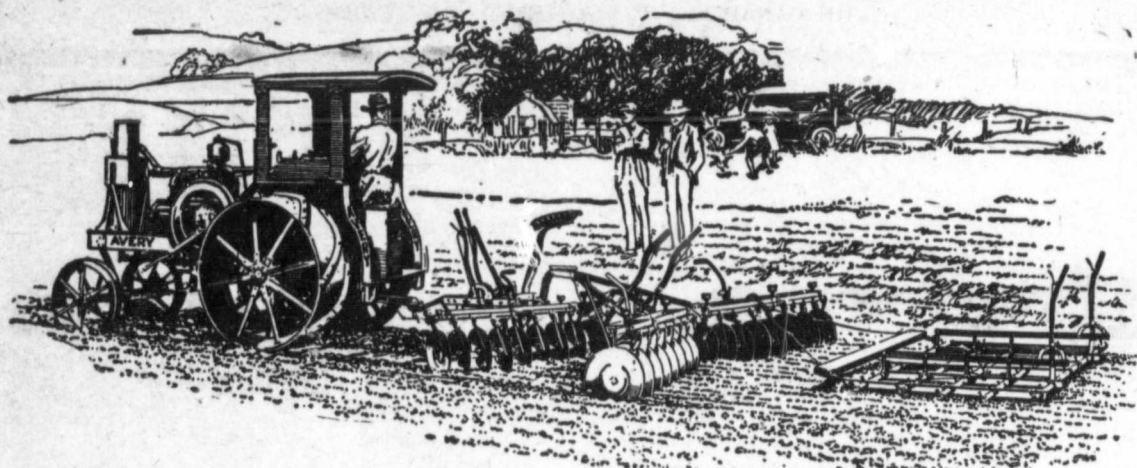
My Name is _____

Postoffice _____ Province _____

I own _____ (Make of Automobile or Tractor)
(Be sure to give make of auto or tractor or game will not be sent)

Automobile, am at present using _____ Motor Oil. I will be in the market for more oil again about _____ and you may quote me on _____ gallons En-ar-co National Motor Oil.





You Can Always Keep an Avery Tractor New

AVERY Tractors really never get old. Even after years of service, you can always make them new again. The Avery is the only tractor with which this can be done.

Avery design is the reason why. You know the cylinder walls of a tractor motor get the hardest wear of any part. In the Avery "Draft-Horse" Tractor Motor the inner cylinder walls are renewable. Think what this means. They are cast separately from the main cylinder. *Result: three big advantages.* They are made of harder material to withstand the wear; they can be turned from time to time to equalize any wear that may take place; and they can be replaced at small expense when worn. No need to buy complete new cylinders; no need to tear the motor down completely, haul it to a repair shop, rebore the cylinders and turn up oversized pistons, etc. All this trouble and expense is eliminated in the Avery by having removable walls which, whenever needed, cost but a few dollars and are easy to renew.

Always Ready for the Job

In Avery Tractors all easily broken parts are eliminated, all main parts last indefinitely and all wearing parts are adjustable or renewable. Every adjustment, repair or replacement can be

done on the farm. It's so simple most Avery owners are their own service men. They save time, money and depreciation on their investment. And what's more, they have a machine that's always on the job.

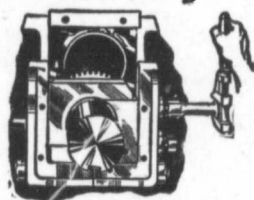
Other Exclusive Features

Averys are the tractors with the "Draft-Horse" Motor, "Direct-Drive" Transmission, Kerosene Gasifiers, Valves-in-Head, Two-Bearing Practically Unbreakable Crankshafts, Round Radiators, etc. Sold at popular prices, including complete equipment such as cab, seat, platform, fenders, etc.

Write for Avery Catalog

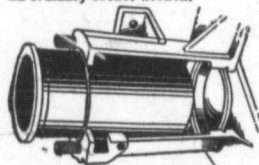
showing a size Avery Tractor for every size farm. Sizes: 8-16 H. P., 12-25 H. P., 14-28 H. P., 18-36 H. P., 25-50 H. P., 40-80 H. P., a special 5-10 H. P. for light work, the Avery Motor Cultivator, and Plows and Separators to fit any size tractor.

Also ask for special interesting Tractor Hitch Book—explains how to motorize your farm work. See sample machines at your nearest Avery dealer.



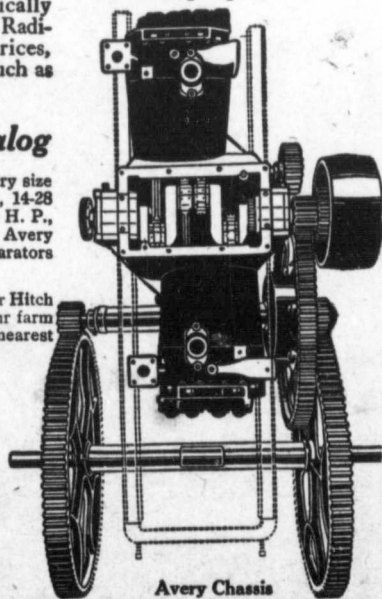
Avery Adjustable Box

One at each end of the two-bearing crankshaft. Quickly adjustable with an ordinary socket wrench.



Avery Renewable Cylinder Wall

Can be turned from time to time to equalize wear and replaced with a new one when necessary. Keeps your motor from "getting old."



Avery Chassis

Showing "Draft-Horse" Perfected Opposed Motor and "Direct-Drive" Sliding Frame Transmission.

CANADIAN AVERY CO., LIMITED

Western Canadian Distributors
Branches at Regina, Calgary, Saskatoon

MAIN OFFICE, WINNIPEG

Sub-Branches at Lethbridge and Camrose

AVERY

Motor Farming, Threshing
and Road Building Machinery

DELCO LIGHT

The Complete Electric Light and Power Plant



Lights
the
Home



Pumps
the
Water

Pays for Itself

ANY one of over 75,000 users will tell you that Delco-Light pays for itself.

In money.

They will tell you that the pleasure and comfort of Delco-Light cost you nothing.

Delco-Light does work on the farm. Saves time for more productive things. Its electric power will, in most cases, save enough time to pay for the complete Delco-Light plant in three years.

The electric light you get free.

CHORES are „non-productive work. Cut down chore time and you can do things worth money to you. Wm. Schneekloth says the electric power from his Delco-Light plant saves him 8½ hours a week on the churn, separator and washing machine alone—over 40 working days in a year. Think of the money he can make in those forty days.

On the Helms farm at Belleville they use Delco-Light power for the chores—in milking and feeding stock, in pumping water, in ironing and washing—and save 19 hours a week or about three months of one man's work in the year. Here's a hired man's work for three months which Delco-Light does. The cost of operating Delco-Light is less than the cost of oil for lamp.

But operating the small machinery around the farm is only a part of the work which Delco-Light does for you. Take the question of pumping water; with Delco-Light you can have water under pressure at taps anywhere on the farm. You can water stock easily and quickly. You can have hot and cold water in the house. S. W. Cooke and Son of Maysville, have a big herd of Holsteins. Delco-Light has pumped the water and done the milking for three years. They figure that their saving is not less than \$1,800. As Mr. Cooke says, they could pretty nearly afford a new Delco-Light plant every year. And remember this saving does not include the convenience and comfort and saving of electric lights.

J. H. Lackey raises Polled Jerseys and Poland China Hogs. He, also, needs a lot of water. His Delco-Light outfit enables him to get along without two men he formerly hired.

AROUND THE HOUSE there is a great big saving of time and work for your wife—time she can very well use for her chickens or her garden or her dressmaking. A. F. Hinnekamp tells us that Delco-Light saves his wife 416 hours of housework a year by operating an electric iron, a vacuum sweeper and a washing machine. Besides—no lamps to clean, no matches to use, no danger of fire, lots of light.

C. F. Tressin adds in the time saved from cleaning lamps and makes a total of 547 hours a year. Think of all the things your wife could do with that extra seven weeks. And then you have electric light. You can't know the joy and comfort of electric light till you have experienced it. Just press a button and release a flood of bright, clean, safe light. No matches. No lamps. No danger. Delco-Light gives four times as much light from a gallon of coal oil as a lamp gives.

DELCO-LIGHT is a complete electric light and power plant, easy to install and easy to care for. It will give twenty-four-hour-a-day electric light and power service.

Delco-Light is direct-connected. There are no belts to slip, break or be replaced.

It is self-kranking. Pressing down a lever starts the engine.

It is air-cooled. There is no water to carry, to freeze or to boil away.

There is only one place to put oil.

A simple mixing valve regulates the fuel supply. There is no complicated carburetor.)

Ball and roller bearings cut down friction to a minimum.

Long-life batteries mean economy.

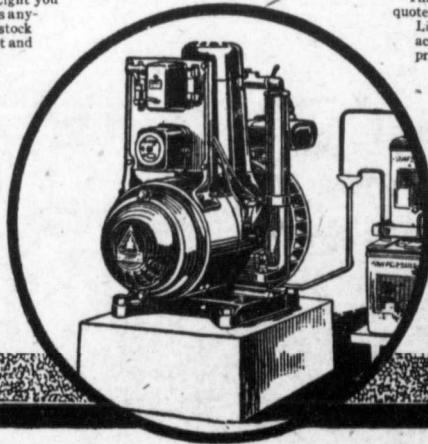
You need to know more about Delco-Light. We have fully illustrated literature showing Delco-Light in operation. Write your nearest distributor for it.

Throughout this advertisement we have quoted from letters received from Delco-Light users. Each of these letters is accompanied by an affidavit. We have prepared a folder reproducing some of these letters, and with photographs of some farms where Delco-Light is used. Your nearest distributor will be glad to send this book to you.

The
Domestic Engineering Co.
Dayton, Ohio

BRUCE L. ROBINSON
Calgary, Alta.

BREEN MOTOR CO.
Winnipeg, Man.





Vol. XXIV

WINNIPEG, CANADA, OCTOBER, 1919

No 10

THE growing and ripening season of 1919 in Western Canada, particularly in Manitoba, has demonstrated once more that practically anything indigenous to temperate or sub-tropical conditions can be raised—if not to perfection in every detail, at least to a point of quality in food value which gives it a decent front seat among "paying propositions."

The soil, mineral salts and other things are there, but there are certain absentee conditions which are needful to success, but which can, in time, be provided by intelligent and persistent husbandry. Common sense and ordinary application are the chief requisites on the part of the husbandman.

It has been seen that apples and other fruits have been grown in this province in large quantities, and of a quality that will rank with the best imported fruit the country has yet received from the southern markets.

But these apples and other fruits cannot be raised on the open prairie. They need shelter, and shelter with no restriction of

CORN IN EGYPT— LIKEWISE IN MANITOBA

sunshine has been their natural environment in southern Manitoba. What may be done with painstaking care farther north is not a matter of the least uncertainty. The facts are there in plenty at first hand and "facts are chieftains that winna ding."

At many points on the shores of Lake Winnipeg, for example, notably in the neighborhood of Victoria Beach which, on the map, looks like one of the most exposed peninsulas on the lake, plants and insects have located and found a home which are not supposed to subsist except in what is practically a sub-tropical environment. At all events they will not live, far less thrive, on a wind-swept prairie exposure.

Did the Western Canadian ever have such a season of "corn roasts" as he has enjoyed this year? We have tasted in our time what the knowing ones have

declared to be the very choicest of cook-house corn, but we certainly can remember nothing to outclass it to match the prime "Golden Bantam" grown in the home garden in this delightful summer.

Fodder corn has also had a wonderful innings and given the lie to the hastily expressed belief of at least one "authority" that Manitoba would never become a corn-growing country. Admitted that in seasons of unusual frost—unusual more by its earliness than its severity—some fine corn prospects have had a bad setback where it has been planted in exposed situations, but there has never been a year since corn was seriously entertained in Manitoba in which there were not a few prime harvestings of table and fodder corn which had received nothing more than ordinary fair play at the hands of

the grower.

This year there are some remarkable score-card records which will be published in due course. For the present may we instance what has been done at Manitoba Agricultural College under the supervision of Professor Harrison. Something like 25 acres of fodder corn have been harvested and from 6 to 8 acres in plots have been devoted to seed corn experiments and overhead the year's results are excellent.

Starting in 1915 with the "Quebec 28" variety Professor Harrison has followed up every season since then with the purpose of establishing something reliable in Manitoba ripened corn. The details of these experiments will be officially published in due course but from the splendid cobs which are now on view at the college, it may be said that for all practical purposes the end has been attained.

The idea, of course, has been to follow the practice of the Southern of "Corn" states, in using only seed which has been matured in that particular state, as it has been found that better results fol-



Small Grains' Section of Manitoba's Great Exhibit at the International Soil Products Show

low this practice than from importing seed with each recurring season which has been ripened elsewhere. So that the seed corn which is now in hand at the College is from the parent stock of

Yield per acre of Glazed Ear Corn:
 Plot No. 1—42 bus. Plot No. 2—88 bus. 34 lbs.
 Plot No. 3—84 bus.
Lbs. of Immature Ears per acre:
 Plot No. 1—3,140 lbs. Plot No. 2—428 lbs.
 Plot No. 3—480 lbs.
Stover:
 Plot No. 1—4 tons 850 lbs.
 Plot No. 2—3 tons 1,100 lbs.
 Plot No. 3—6 tons.

farmer competition, dry farming section, Larcombe got first and Hamilton second.

the first time over when your crop is small and at faster speeds when your crop is larger.

The cultivator is guided by a single front wheel which runs between the two rows. It is

A NEW IDEA IN CORN CULTIVATION

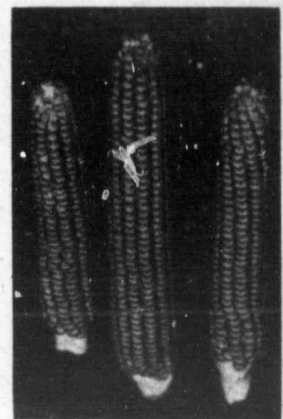
Speaking of corn and its cultivation reminds us of a wonderful motor cultivator recently developed by the Avery Company, and which is illustrated herewith.

Many abortive experiments are on record in which the object has been to build a combination machine for doing all kinds of farm work. But the attempts to build such a machine seem only to have resulted in building something which is lacking on one or both sides. If it is built with the features necessary for heavy work, it is not satisfactory for cultivating and such lighter work; if it is built for light work, it lacks things which are required in a machine for heavy work.

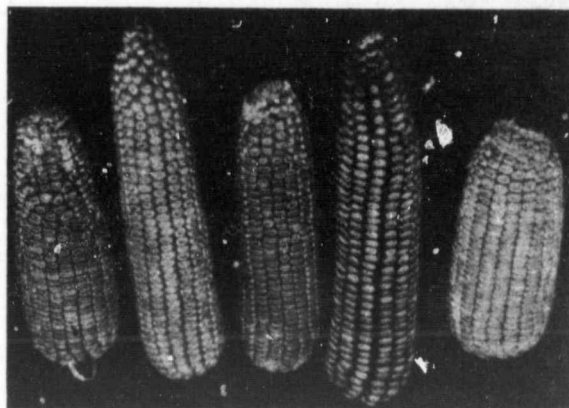
The Avery motor cultivator represents two distinct detachable machines, with the obvious advantages over a rigid combination that: (1) the fact that each machine is built with the design, strength, power, speed and all other features specially required for the class of work it is intended to perform; and (2) the fact that either machine can be attached to any tool it is desired to pull by simply using a clevis without having to spend a big lot of work and time changing over attaching parts.

The Avery motor cultivator is a two-row machine. It will, ordinarily, cultivate 16 to 18 acres a day, but it is equally adapted to beans, potatoes or any other crop planted in rows.

It has a three-speed selective gear which gives you a wide variation of speed so that you can plow as slow as necessary



Mature Flint Corn Raised M.A.C., September, 1919



Mature Dent Corn Raised at M.A.C., September, 1919

1915, handing down its progeny in the succeeding years till the present season.

The seed plot of 1-10 acre were planted on 30th May of this year and harvested on 22nd September, and the following results are calculated from duplicate rows of 62 ft. each (62 ft x 3 ft. 6 in. = 1-200 of an acre.)

Professor J. H. Ellis, who conducted the experiments says: "In calculating the yield per acre a moisture determination was made of the shelled corn, and the yields submitted are on the basis of 56 pounds of shelled corn per bushel, containing 12 per cent moisture.

"The above experiment is somewhat startling but I do not consider that it is in any ways conclusive, and we are continuing this experiment next year."

Winings at Kansas City

Western Canada won nearly all the prizes she went after at the International Soil Products Exhibition of 1919 and most remarkable, perhaps, is the fact that of the large number of corn states competing, Manitoba pulled off the first for Northwestern Dent corn, grown by John Hamilton, of Kelwood.

All told Manitoba, at this exposition, won 7 cups, 4 state championships, 2 county competitions, 34 first awards, 15 seconds, 10 thirds and a special award for wild game. These winnings include first for the most attractive exhibit by a nation, province or state. First for an exhibit of small grains (wheat, oats, barley and rye) by a nation, province or state, first for vegetables by a nation, province or state, and second for the "most comprehensive exhibit."

S. Larcombe, of Birtle, got third for a county exhibit and John Hamilton, of Kelwood, sixth. These two wins are especially creditable as they were individual farmers competing against over a dozen counties. In this competition, Larcombe got first for small grains and second for vegetables. Hamilton got second for small grains and third for vegetables. In the individual

driven by two rear wheels which run outside the two rows. A compensating gear takes care of any variations in the direction of the rows.

When the end of the row is reached the operator releases the steering wheel, which allows the front wheel to act as a caster. At the same time he takes hold of the two levers operating the drive wheel clutches, and by releasing one clutch and allowing the other to remain engaged, one drive wheel remains stationary while the other revolves around it until the cultivator has turned around in to the next two rows. The other clutch is then also engaged and both wheels begin to travel forward. The operator releases the clutch levers



Showing way in which ears of field corn have fallen over — indicating maturity. M.A.C. Sept., 1919.



Ripe Corn (Fodder Type) M.A.C., September, 1919

and again guides the cultivator with the steering wheel. This cultivator will turn around in its own length. It will turn either way, depending upon which drive wheel the power is applied.

TRACTOR DONT'S

By Joe Klein

DON'T overload a new tractor, especially the first few days.

Don't neglect loose bearings—it will ruin the engine.

Don't try to start engine unless spark throttle is retarded, or motor will kick back.

Don't fail to strain fuel to prevent clogging pipes and carburetor.

Don't operate a tractor without the air cleaner in proper position and condition.

Don't fail to have plenty of oil in transmission case to allow bevel gear to dip, especially while doing belt work.

Don't fail to keep fan belt tight.

Don't attempt to operate tractors with only two cylinders firing as it will ruin the engine.

Don't operate a tractor with the clutch slipping. Not only is a great deal of power lost, but it will heat the discs and may cause serious trouble to the clutch.

Don't use dirty water in the radiator. Clear rain water is best as it will keep water jacket free from lime.

Don't fill the radiator with cold water while the engine is running or still hot, if the amount in the radiator is low, because a sudden change of temperature in the cooling system is liable to cause the cylinder castings to break.

Don't take any chances of letting the water freeze in cylinder or radiator. Drain them in case of danger of freezing.

Don't operate a tractor unless the water is circulating.

Don't neglect to use good oil and enough of it. It is cheaper than repairs.

Don't see how fast a tractor will run on rough roads.

Don't forget to remove lubricating oil in crank case of motor, after it is useless.

Don't ever race a motor.

Don't shift gears till the clutch is pushed clear out. By remembering this you will reduce the wear and tear on the gears to a great extent.

Don't expect a tractor to give perfect satisfaction without intelligent care.

The more a woman insists that she is a "perfect lady," the more liable people are to doubt it.

Tractor's Spark Plugs

By O. C. ROHDE in "Farmers' Magazine"

AN automobile engine runs at full load and speed during only a very small part of its term of service. A tractor engine is running at full load practically all the time. Because of this and the fact that low-grade fuels are largely used in tractor engines, the problem of spark plugs for tractors differs to some extent from that of spark plugs for automobiles.

As a rule, the use of low-grade fuel means higher compression, higher temperature and more dirt and carbon. The last item is made still worse by dust taken in while working during the dry seasons.

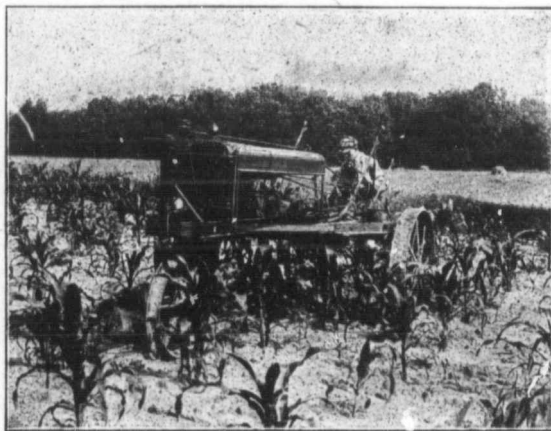
It is impossible at the present time to recommend any one type of plug for tractor work. High temperature engines require a

erred enough cause for a change to another type of plug. A few defective plugs do get out into service from time to time in spite of the utmost vigilance on the part of the plug manufacturers.

Troubles due to spark plugs may be divided into two classes—first, cutout or missing; second, pre-ignition.

A missing plug can usually be detected by shorting from the upper terminal of the plug to the engine with a screw driver. The miss may be caused by a broken insulator. If this is the case, the plug will miss fire pretty steadily both under load and while running idle. The only remedy in case of a two-piece plug is a new insulator and in case of a one-piece plug, a new plug.

The miss may be caused by an



Corn Cultivator (referred to on opposite page) at Work in Field

plug with an insulator which is exceptionally good electrically, can stand the repeated application of high heat and at the same time not have enough of the central electrode exposed to cause overheating which may induce pre-ignition. An oily engine requires a plug having an insulator with unusually long shorting surface at the firing end.

In spite of the great number of different plugs on the market, there are in reality just two types, those with petticoat or open insulators, and those with conical or closed insulators. The former can be recommended for the engines which show a tendency to foul up rapidly, while the latter are recommended only in case the extra extension of wire in the petticoat type shows a tendency to cause pre-ignition.

As a rule, the tractor owner and operator is safe in using the plug furnished with the machine by the manufacturer. Failure of one or two plugs on any particular machine should not be consid-

erated as a sign of a weak electrically. If this is the case, it will miss when under load but will recover when running idle. The remedy in this case is a new plug with a better grade of porcelain. In a case of this kind, it is not always necessary to get another make of plug, but to specify to the dealer that the very latest insulator is desired.

The miss may be caused by fouling or surface short. By this, we mean that a continuous layer of carbon or other conducting material has been deposited on the lower end of the insulator and the spark is travelling through this instead of across the gap. A miss of this kind is usually intermittent for a while and finally the plug stops firing altogether. The immediate remedy is to clean the insulator. Where plugs show a tendency to foul up in this way very rapidly, especially where a wet, slimy coating of oil is deposited, it is advisable to change to another brand of oil, which in

many cases will get rid of most of this trouble.

Pre-ignition may be caused by other things than the plugs. If it is severe, it sometimes manifests itself by a spitting back through the intake, but it is always accompanied by a loss of power. What actually happens is this: Some part of the material inside the combustion chamber—valves, carbon, plugs, etc., has become hot enough to fire the mixture before time for the spark. The piston is not yet at the top of its compression stroke when the force of this premature explosion tries to drive it back down. The momentum of the fly wheel carries it over for a while, but power is of course lost. In case of pre-ignition, the engine should first be examined to see whether there is an excessive accumulation of carbon and whether there are any particles hanging loose on valves or spark plugs.

The plugs should be looked over for rough edges on either wire or shell. If a petticoat plug is being used and no indications of this kind are to be found, it may be advisable to try a conical plug, which very often will overcome the trouble, though it may need more frequent cleaning.

Occasionally the electrode wire shows signs of pitting or burning. This is entirely due to the use of defective material and there should be very little of it. If it does occur seriously it should be reported to the plug manufacturer or the dealer.

Always bear in mind that the tractor engineers have run through tests before deciding which plug to use. The spark plug they finally decide upon is the one they believe to be the best suited for their engine. When a new plug is needed, the tractor user should insist upon the same plug his engine was originally equipped with at the factory.

In general, the spark plug manufacturer is prepared to cope with the tractor plug problem and can furnish plugs to meet all present requirements. However, present day development in engines and fuels is so rapid that the material on the market is not always the latest obtainable. The dealers are learning to classify plugs for the various conditions of service and if the tractor owner will specify clearly just what the plug is to be used on, he should have no trouble getting just the plug he needs.

No Difficulty There

"But suppose," said one of the spectators on the Common, "that the parachute should fail to open after you had jumped off—what then?"

"That wouldn't stop me," answered the parachutist. "I'd come right down."

THE CANADIAN THRESHERMAN AND FARMER

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Oct.

"Labor" as the Farmer Sees It

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."

SO far the farmer has not made a great splurge in the sea of labor controversy that has been tumbling and boiling especially since the close of the war. One reason perhaps is that he has looked upon it very largely as distinctly an urban problem. Now, however, the issue is extending to the production of food and naturally he is becoming an intensely interested party. Besides, his experiences and his views may be of some consequence, for after all isn't he the original laborer? Let it be remembered that although the farmer works hard, he is not a professional laborer and that he is about the only man left who works for himself and receives his reward not in money but in kind.

When the farmer "hires help," he works side by side with the hireling who as is often as not a neighbor, and possibly even a special friend who is "changing work." Such a man comes about as near to knowing what labor really means when reduced to its lowest terms as does any class of our citizenship. He and his labor are permanently yoked together, and his daily experience as a teamster teaches him what

happens when yoke fellows fall out and quarrel. Besides, what is the use of quarrelling with one's self, for that is what it would amount to if the farmer would fall out with the cultivation of his crops.

The general public seems inclined to regard labor as a "commodity" that ought to be bought and sold like pig-iron on the open market. The employee on the other hand seems to consider labor as a means of getting money. Differing from either, the farmer looks upon labor which he calls "work" as a means of getting things done. The public has a tendency to disregard the human rights of the laborer. Professional labor has, therefore, organized, mainly for protection, and its one means of defence is the stopping of essential work at the expense of everything and everybody. The public long retaliated by fighting the unions, but now it seems more and more inclined to follow Sambo's advice about the hornets, "Let 'em alone, dey is organized."

If the parties to the first and second part of the labor jangle would confine the scrap to their own backyards or even to the street, it would not so much concern the farmer, but latterly labor is attempting to organize farm help, and this, too, at the very time when both the laborer and the employers are charging the farmer with profiteering. He is, therefore, becoming, without any act of his own, party of the third part

to one of the greatest contests in all history, personally between capital and labor, but actually between work and the proceeds of work. The farmer knows what labor really means. With him labor is not a "Commodity," nor yet a class of people. It is human exertion, real man power intelligently and faithfully directed to specific ends and in such a way as to co-operate with and not against the forces and agencies of Nature.

Knowing this, he believes that the public is brutally wrong in its attitude towards those people of the city who work only as employees, and he believes equally that organized labor is wrong in that up to date it seeks to gain its ends at the expense of efficiency and of that loyalty to the job which alone can insure such results in quantity and quality as shall push the world ahead. The farmer is amazed, for example, at the flat union wage with no differential as a reward to skill, and he wonders how much longer the really skilled workman will continue to "tail up" the poor and indifferent worker just because he carries a union card. The farmer assures, however, that this condition is temporary.

He believes that union labor will succeed in proportion as it establishes and exacts high standards of industrial efficiency. He believes that in proportion as it does this the local unions will free themselves from the frequent rule of their own turbulent minorities, and they will prosper thereby just as the general federation has prospered and commended itself by its success in overcoming the alien agitator who would make a political party out of the labor class. For all this the farmer has abundant evidence in his own experience.

Particularly is the farmer in a position to know that continued increase in wages without regard to the true value of the work accomplished constitutes a vicious circle which not only gets nowhere in industry but is certain to react in the end upon the laborer himself through the food he feeds his family. This is shown by the very labor situation which now confronts the farmer. It is a fact that organized labor has succeeded in exacting a wage that in many cases is more than twice what the farmer has ever received for his labor. For example, the Chicago Milk Commission has just denied a price for milk which would have netted the farmer only 25 cents an hour for his labor actually bestowed on its production. Can you contradict or off-set any of these observations of one who has lost and gained by experience?

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"OLD NUMBER ONE,"
the original OilPull, in
operation at the National
Tractor Demonstration,
Wichita, Kans., July 1919



The Latest Oil Pull - The 12-20

"Old Number One" proves the dependability and long life built into every OilPull

What will your tractor be like in 1929—ten years from now? Will it show as good a record of performance as has "Old Number One"?

After ten years of the hardest kind of work that a tractor can be put to, "Old Number One"—the first OilPull—was brought to the National Tractor Demonstration at Wichita, and put right to work plowing in public demonstrations alongside tractors that were not even dreamed of until years after this machine had been turning the sod of the Dakota prairies.

"Old Number One" was a pioneer tractor in the Northwest. To date it has broken 1,750 acres of tough, virgin prairie sod, has plowed 5,600 acres of stubble land, and in 321 days of threshing—during which it operated a 40 x 62-inch separator—it has threshed over 750,000 bushels of grain. Besides all this, it has done road work and miscellaneous power jobs.

As a proof that it is still a good example of OilPull dependability, its work at Wichita was excelled by no other tractor. And, mind you, "Old Number One" was sent direct from its owner's farm to the demonstration and was not sent into the factory to be built over. And just as important, this old OilPull is now back in the hands of its owner and out on its usual Fall threshing run.

Now this proves an extremely important point—a question that is today uppermost in the mind of every prospective tractor buyer—namely, that a tractor can be built to give dependable service day after day and year after year.

And the same dependability and long life, shown by "Old Number One," is built into every OilPull that goes out of the Fumely shops. "Old Number One" does not enjoy its record alone. It is known that many others of the first OilPulls built are still working; Numbers Six and Eight are in North Dakota—Number Nine in Kansas—Number Eleven in Michigan.

And with this proof of dependability and long life, you can add one other extremely important point—economy. The OilPull is the only tractor made with which is given a written guarantee that it will burn kerosene under all conditions, at all loads, at all times.

Dependability—Economy—Long Life. These are three vitally essential points that you want to be sure are possessed by the tractor you buy.

There is a size OilPull to fit your farm—four sizes—12-20, 16-30, 20-40 and 30-50 H. P., each possessing 20% reserve power over its rating.

Ask for the OilPull catalog.

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

Toronto, Ont.



ADVANCE-RUMELY

POSSIBLY there may be a few who disagree with the idea of a machine for every farm. Probably there are instances where this would apply, in communities for instance where settlement is new and money scarce. There the custom machine must still hold sway. Again on large wheat plains where growing grain is the sole business the large custom machine may also be necessary. These, however, are not taken into consideration in this article but rather the average farmer in the older settled, communities who is established on a firm farming basis where not grain alone but stock as well are kept. The time has come when it would appear that in order to do our best work as farmers the small machine must enter as part of our farm equipment.

Labor Problem

When labor is plentiful and not too high in price the large machine certainly has advantages. A farmer can usually get the custom thresher at a reasonable season. There is no bother running an engine and separator and a few days sees the whole season's crop safely in the granary. In other words if one is not mechanically inclined a lot of worry is saved. But other things enter in. These past few years have seen short-handed seasons, help almost impossible to secure. Lots of large machines running short handed resulting in slow threshing and high cost per bushel. Farmers have to wait long periods for their turn, some not getting threshed till the snow has come, causing great loss through tough grain. And no fall work is done because the stooks were still on the ground at freezing up time. Taken altogether it proves expensive.

Weeds

When a machine moves from one farm to another one runs a great danger of getting foul seeds. No matter how careful a thresherman is a machine cannot be so cleaned out that all weeds will be taken from its mechanism. The result is that what one farmer has others get and eventually the whole community becomes polluted.

A Threshing Outfit on Every Farm

By ROBERT WHITEMAN

Were all farmers alike this trouble would be eliminated but this is not the case. One farmer may have a dirty farm while his neighbor tries to keep his clean. When the machine moves from the dirty farm a few seeds will be carried. This kept up year after year causes great trouble. Very often the machine comes in from some outside settlement making matters even worse. Teams and wagons coming on the place spread weeds no matter what care is exercised.

These things are costly in themselves. Others might be added. Very few women care to have a large crowd around for days. It takes extra work to feed a threshing gang. Often, to make matters worse, bad weather sets in and the house is kept in a turmoil for days. Considerable money is spent on food, which is no small item these days. Then there are a number of horses eating their heads off in the stable, not only eating but wasting. These things all go to run up the cost of getting the grain in the granary. No wonder the farmer wears a face of gloom on rainy days under such conditions. After it is all over and he figures out the cost he gasps.

Enter the Small Outfit

Not being a machine salesman but a farmer I do not proclaim the small machine the end of all one's crop worries. It is not. But there is no question whatever as to its being a great aid towards that end. Its advantages are a legion and the saving one makes by doing his own threshing at the time it should be done, when grain is properly dried, often makes quite a large payment on the outfit. At the present time practically every machine manufacturer has a small thresher on the market. There does not appear to be any best kind. All do good work when properly run and managed. We have all sizes from the little baby, requiring eight to twelve

horse power up to the larger ones using twenty-five to thirty horse power. A man's purchase should be made according to the size farm he operates and also his available help. Some farmers are threshing quite a large acreage with a very small outfit. It is surprising what two teams can accomplish in a few days when kept steadily hauling sheaves to the machine. These small machines are low in price and are now completely equipped with feeder, blower and high bagger. Again, we have the larger outfit, a complete counterpart of the large machines, capable of turning out 700 to 1,000 bushels of wheat per day and keeping four teams on the jump. A farm of one half section can soon be cleaned off with one this size. Very often two or three farmers can purchase one of these and all get their threshing done on time without any outside help at all.

Combination Machines

These machines are now too well known to require introduction. They have a tremendous capacity for work and are self-contained, requiring no lining up of the engine. Windy weather makes no difference to them. The belt will not fly off. Usually four to six horses will draw it anywhere. Their cost is low and they do splendid work. Many hundreds of farmers scattered over these provinces can testify as to their usefulness. However, their usefulness is somewhat limited. One cannot use the engine for many other purposes and as farming communities grow older a greater call comes for power use: sawing wood, grinding and above all plowing. Many today feel that a two unit outfit is much to be preferred.

The Tractor and Separator

After one has farmed a number of years and managed to get things running on a more stable basis he needs power for a hundred and one uses around the

farm. There is where the light tractor is coming into its own. Its power is available for all purposes and threshing time sees it right on the job driving a light separator, keep it humming away day after day. The initial cost while higher than a self-contained outfit is made up by its greater range of usefulness. It requires no greater mechanical skill because the motor is much the same with traction gear added. Time is saved moving because the teams do not need to unhitch from the wagons to move the outfit. If the granary needs shifting it is right there to do the job. And then after the threshing is over hitch it to the plows and get ready for another season.

The individual thresher has come to stay. Each year sees many larger outfits discarded because of lack of help. Farming today requires all the skill one possesses in order to show profits. Every means must be employed to save. To many the initial cost seems an awful sum but let us do a little figuring. Suppose you are a half section farmer having 100 acres in wheat, 100 oats, the rest summerfallow: 100 acres of wheat yielding 20 bushels per acre = 2,000 bushels, threshing 10 cents, \$200; 100 acres oats yielding 50 bushels per acre = 5,000 bushels, threshing 7 cents, \$350. Total, \$550.

A small tractor thresher can be bought for around \$800. Your thresh bill is not \$550 only. There is feed for men and horses to be counted. Probably your grain is damp when they thresh knocking 10 cents per bushel off the selling price; you have waited all fall to get it done with no plowing accomplished, resulting in a lessened crop yield the following year. Have you ever figured just what that threshing cost you? Chances are you have not. But if you carefully count up the items enumerated, how long would it take you to buy an outfit of your own? Once you have it years of service can be assured if care is taken. It will save its cost many times over. Your wife will think more of you. You will wear a brighter smile. Taken altogether it will have been one of your best investments.



A little one-man corner of a Manitoba grain field A.D. 1919

You Wouldn't Plant Whole Potatoes

AN ADVERTISEMENT FOR

Vessot Feed Grinders



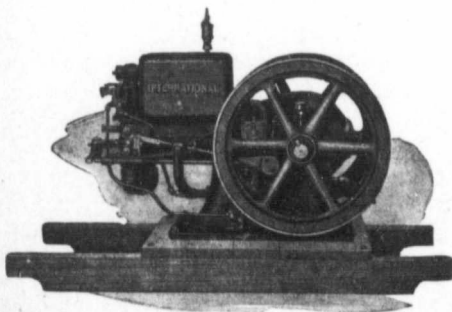
PLANTING whole potatoes would be an expensive waste of good seed. You raise just as good a crop by cutting each potato into several pieces of about 2 ounces each, each piece having one or two healthy eyes. In this way one potato furnishes seed for a number of hills.

Feeding whole grain or shelled corn to your stock is just like planting whole potatoes—there is a great deal of unnecessary waste because much of the grain is not masticated and goes through the intestinal tract of the animals undigested.

A **Vessot Feed Grinder** will make your feed go from 12 to 35 per cent further than if fed whole, because it “chews” the grain for the stock so that it is easily digested and there is no waste. “Vessot-ground” feed means that you are getting 100 per cent value for it through its ready conversion into butter fat, beef or horse power.

Vessot grinders are heavy and compact, being built to withstand hard work. They are so simple in design and operation that any farmer can operate one with excellent success—you don't have to be a miller. And you cannot find another grinder with plates that will equal the genuine “Vessot.” The plates are the most important part of any grinder. The builders of Vessot grinders challenge the world to produce a plate that will WEAR and GRIND like “Vessot.”

You will need a grinder in the coming months. Let us send you a descriptive pamphlet telling you all about the Vessot. Write the nearest branch.



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THE farm demand for small engines is growing rapidly. Engine power appeals to every farmer. We offer reliable kerosene International engines at prices any man can afford. Sizes are 1½, 3 and 6 h.p. The International is a high-grade engine, has magneto ignition for both starting and running, uses cheap fuel, is simple in design—good dependable farm power that any farmer or his wife can quickly learn to handle and that furnishes steady power economically. Here is reliable power for Vessot Grinders. Write for pamphlet.

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BELTING MATERIALS FOR DIFFERENT WORK

BELTING is about the oldest device used for transmitting power from one machine to another.

Almost everyone of us has a small power plant and some belting to turn a pump jack, root pulper, cream separator, or washing machine. As far as we can see there is not much difference in the belting material employed—to us a belt is a belt—no matter what it is made of. There are, however, purposes for which belts are used for which one material is much better than another, and it is the purpose of this article to outline purposes for which the different belting materials are most suited.

Leather is the most popular belting material and when well protected from heat and moisture will last longer than any other material. Changes of temperature will not make so much difference to the tension of a leather belt as they will to canvas ones. A leather belt must not be used in a place where it will become wet, such a belt should always be run with the hair or grain side of the leather to the pulley.

Rubber belting is the belting which will be least hurt by moisture by being exposed to the action of steam.

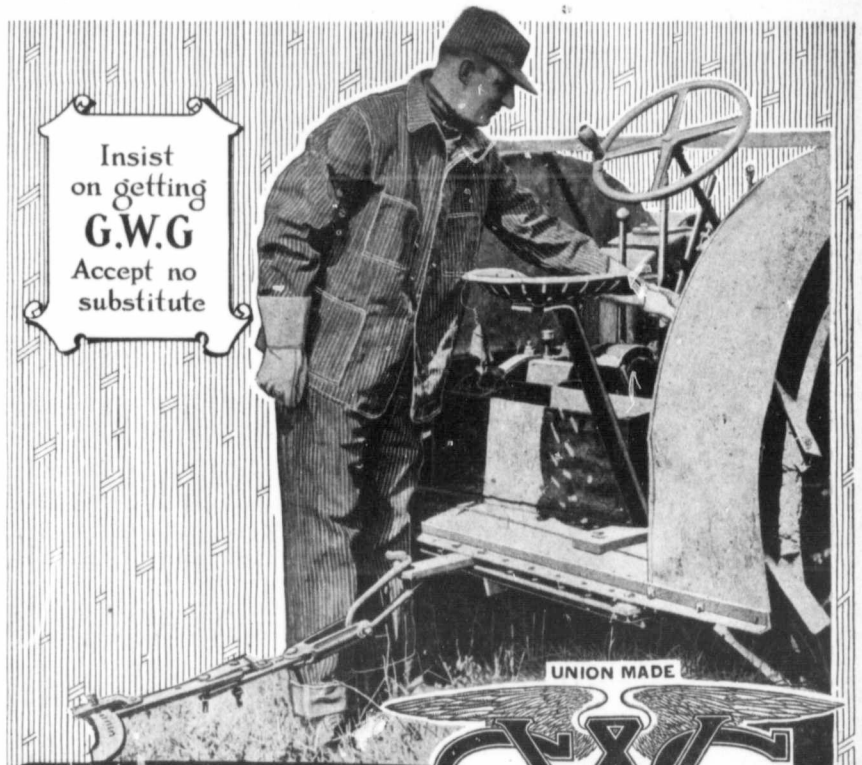
Rubber is a material which will naturally stick well on pulleys; hence no belt dressing is necessary—on the other hand it is injurious; oil and grease must be kept away from rubber belt.

A four-ply rubber belt is considered the equal of a single ply leather belt.

When we want a belt for transmitting power from a tractor or portable engine, the use of canvas for belting comes to its own. They are strong and durable and will stand hard usage.

The objectionable feature of canvas belting for pulleys at a fixed distance is its tendency to shrink or stretch as the moisture content of the air becomes greater or less. Hence their use on pulleys at a fixed distance is not advisable. They are made in different thicknesses and a belt of four-ply canvas is considered the equal to single ply leather.

After having selected the belting material which is best to use for our work the next thing is to calculate the length required. The best way to do this is to run a tape line around the pulley over which the belt runs. When this cannot be done the following rule from Kent's Engineer's Pocket-book, is a good one:—"Add the diameters of the two pulleys together, divide by two and multiply the quotient by $3\frac{1}{4}$, now add the product to twice the distance between the shaft centres.



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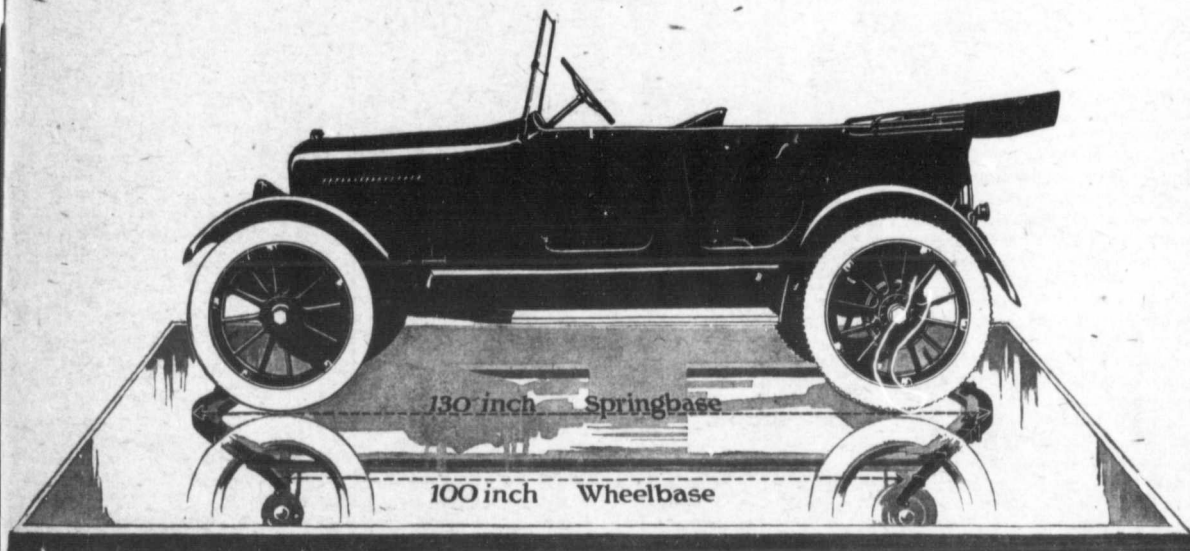
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The New Overland 4 With Three-Point Cantilever Springs, the Greatest Improvement in Riding Comfort Since Pneumatic Tires

THIS new Overland 4 has a springbase of 130 inches—yet its wheelbase is only 100 inches.

It is a brand-new type of car with an entirely new standard of riding comfort.

The springs are Three-Point Cantilever Springs of Chrome Vanadium steel, a new type of spring exclusive with this new Overland.

They give the Overland 4, with its light weight and ease of driving, the riding-comfort and roadsteadiness formerly confined to heavy, expensive cars of long wheelbase.

They end bouncing and vibrating over the bumps. They stop the usual swaying, twisting and jars that fatigue the passengers and rack the car!

The wheels and springs go up and down, following the bumps,

but the passengers and car are shielded from the blows of the road. The Three-Point Springs protect the mechanism from road injuries and prolong the life of the car.

Light weight brings great economy of tires and gasoline.

High quality materials and workmanship are used in Overland 4 throughout. Its equipment is like that of expensive

cars, complete from Auto-Lite Starting and Lighting to its Demountable Rims.

Ask the Overland dealer to show you this new motor car which has been tested more than 250,000 miles, let him explain to you its exclusive Three-Point Cantilever Springs, then—

Select rough roads that you formerly dreaded to ride over and see what it means to ride in Overland 4.

Overland 4 Touring, \$1195; Roadster, \$1195; Coupe, \$1345; Sedan, \$1995—f.o.b. Factory, Toronto, War Tax included

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



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Successful Farmers are Well Posted on Lubrication

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

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

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

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

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Power - Heat - Light - Lubrication
Branches in all Cities

both of the rings and of the cylinder walls. When carbon forms in behind the piston rings, they become fast in the grooves of the piston. This causes them to stick out and wear unevenly. When a ring does not expand due to sticking, it leaves an opening between it and the cylinder wall which allows the leakage. There are other causes for loss of compression, but they are less likely to happen than the ones mentioned. Some of these are: Leaky cylinder head gasket — improperly timed valves — scored cylinders — and poor grade of oil.

Testing for Compression

To test the engine cylinders one at a time, put on the starting crank and open the pet cocks on top of each cylinder, except the one you are to test first. Turn the engine over, and on the compression stroke of that cylinder you should feel a good springy resistance—that is, the flywheel should react back in a springy manner. If it fails, then take off the crank case and hole plates. Try it again and listen for a hissing sound at the bottom of that cylinder.

If you hear one, it means that the rings leak. Try this same method for ring leaks on all cylinders, then test for valve leakage, and remember that most compression trouble is due to valve leaks. By removing the intake and exhaust manifolds, and listening at each opening for a hissing sound, the troublesome ones can be easily found, though with the writer it has always been found best to go over each valve lightly with grinding compound and make their tightness sure. Test around the gaskets, such as spark plug, and valve cap seats, or cylinder heads, by squirting oil around them while the motor is running. If they leak the oil will bubble or be drawn in.

Some of the chief causes of this trouble are use of low grade fuel, poor lubricating oil, or improper carburetor adjustment (generally found to be too rich a mixture). Carbon is the residue of burned fuel and oil, and when the engine has operated for a fair length of time the inside of the combustion chamber, as all the space above the piston is called, becomes gradually coated. The longer the motor is used, the heavier becomes this collection or deposit. In addition to the liability of the troubles mentioned, carbon (if allowed to go too long without removing) causes pre-ignition, overheating of the motor and the pounding or knocking sound that always accompanies an overheated engine.

It's all right for a fellow to keep a stiff upper lip, but that isn't the kind a girl likes to kiss.

Tractor, Truck and Auto Compression Troubles

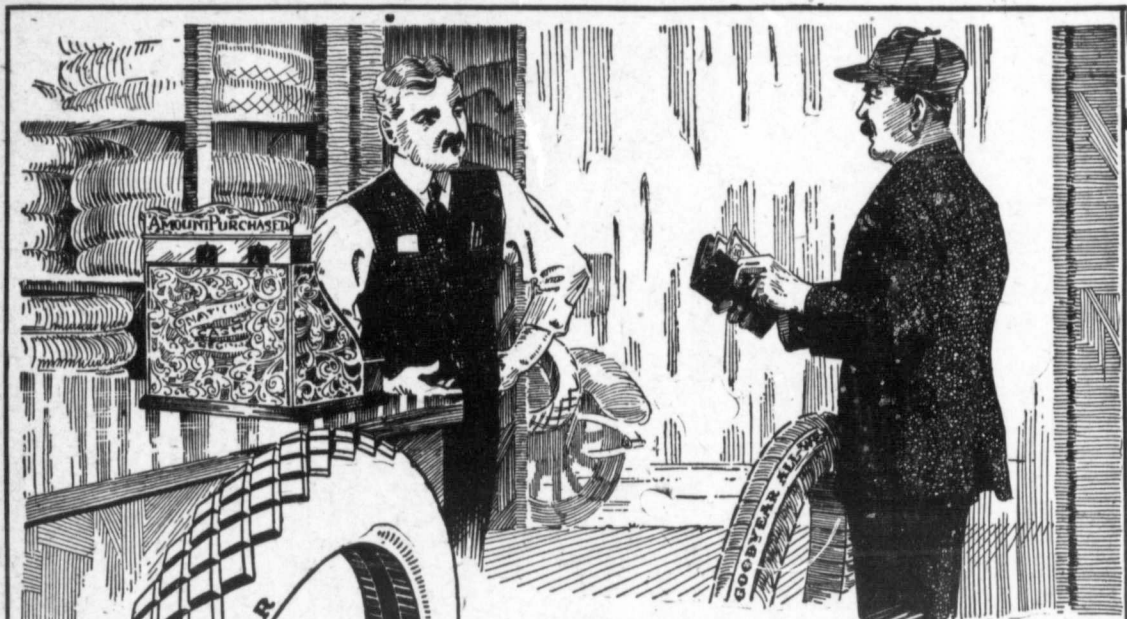
By CHAS. H. WILLEY

LOSS of power is nearly always directly traceable to lack of compression in one or more of the engine cylinders. Causes of poor compression are leaky or warped valves, broken or worn piston rings, and carbonization is mostly responsible for these troubles. Poor carburetor adjustment and faulty lubrication are causes of carbon deposits. Carbon collects on the valve seats, valve heads and stems, especially the exhaust valve, for it is through the opening of this valve that the burned gases are expelled. Small particles of carbon adhering to the valve seat cause it to remain open a small amount. When a valve does not seat properly it causes leakage. As an

illustration we will say that the exhaust valve of one cylinder does not seat, due to carbon. Just how this reduces the power and efficiency of the engine we will see by following its effect on the four strokes that the piston makes. The first stroke is called intake or suction; this is the down stroke, and the intake valve is opened by the cam. A leaky or slightly open exhaust valve will allow the piston to pull in some of the burnt gases on this stroke, and lessens its ability to draw in the proper amount of new gas from the intake valve; thus we have a poor mixture that is weak. The next stroke is called the compression stroke. The intake valve is closed, and the upward

moving piston forces the volume of gas ahead of it, up against the cylinder head and against the valve heads, thus compressing it to a high pressure. You can readily understand that if the exhaust valve leaks, a lot of this gas is forced out through it—thus we call it loss of compression.

The next stroke is the power stroke, and, of course, when the mixture of gas is exploded it exerts a great pressure. A lot of this pressure escapes through a leaky valve, though of course the greater loss of power comes through losing the gas on the compression stroke. Of course a leaky exhaust valve does not affect the next or exhaust stroke, for it is its duty to be open. Leaky piston rings have the same effect and an added trouble of allowing the lubricating oil to be forced past the piston; this aids the carbon formation. Leaky piston rings are caused by natural wear,



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But if you bought a tire the Goodyear way, you gave the dealer, say, \$40 and you got, well, 6000 miles of service. That tire cost you $\frac{10}{15}$ of a cent a mile.

We say the Goodyear way, because Goodyear Tires have always been

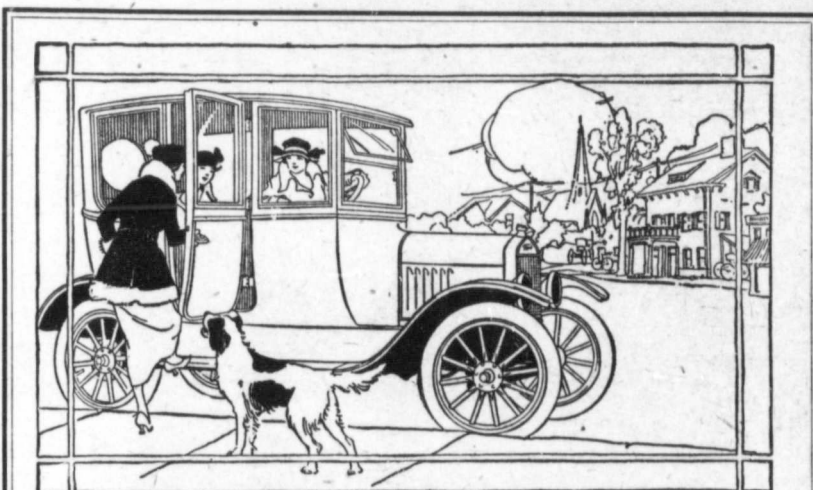
built and sold on a quality rather than a price basis.

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The Goodyear Service Station Dealer has proved it and will gladly tell you about it any time.

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THE new Ford Electrical System is as great an achievement as the Ford Motor.

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The Ford car is also equipped with the Standard Magneto to provide ignition independent of the batteries.

The whole system is controlled from an instrument board on the cowl.

It is now supplied as Standard Equipment on all Ford Enclosed Models.

If you will phone—or call—we will introduce you to the Ford Sedan. You owe it to yourself to learn why men who can afford big costly cars prefer the Ford Sedan.

PRICES—including Electric Starting and Lighting, Ford Sedan \$1175. Ford Coupe \$975. l. o. b. Ford, Ont. (War tax extra.)

"Demountable rims, tire carrier and non-skid tires on rear as optional equipment on closed cars only \$25.00 extra."

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Ford Motor Company of Canada, Limited, Ford, Ont.

Laying Out Land for Tractor Plowing

By
F. H. SWEET

IN laying out a field for plowing with a tractor, one should do away with all unnecessary travelling, as it is simply a waste of fuel and time, and wears out the tractor without giving returns. A field should therefore be plowed systematically.

One of the best ways to plow a rectangular field is by use of the continuous furrow. If this plan

is followed, the first thing to do is to set stakes along the centre line of the field. This line of stakes should extend ten or fifteen feet closer to the ends of the field than it is to the sides, which will allow for narrowing the furrows in turning at the ends.

The first tractor furrow should follow the stakes which have been set up. When the tractor

reaches the end of the stakes, the plows should be lifted, the outfit swung to the right, and then back to the left in a complete circle. At each turn the ends should be rounded as much as possible, so that after a few rounds have been plowed the outfit may be swung around the ends without lifting the plows. Thereafter a continuous furrow may be plowed.

Curve plowing, however, is rather hard on the tractor gears, and a different method is usually recommended. This method is

the back plowing or dead-furrow plowing. By this method nearly all the plowing is done on a straight line and the outfit is turned with the plows out of the ground.

To plow by this latter method, leave about forty-five feet all around the field on which to turn the tractor. With one bottom only in the ground, plow around the field to mark this distance. Then at one side of the field, set a line of stakes, sixty feet from the furrow marked off forty-five feet from the fence, and parallel with that furrow. Sixty feet from the line of stakes, set up another line, and 120 feet from the second line of stakes, set up another. The operator now has three lines of stakes to plow by—the first sixty feet from the single furrow plowed as a guide line; the second, sixty feet from the first; and the third, 120 feet from the second.

Begin plowing at the right of the first line of stakes and throw the dirt toward them. When the length of the field has been traversed and the marking furrow reached, lift the plows, turn to the left, and go to the third line of stakes. Let the plows into the ground at the marking furrow and throw the dirt toward this third line of stakes. When the opposite end of the field is reached, the tractor is again turned to the left and with the plows out of the ground driven back to the beginning. This round of plowing is continued till the land between the first and second line of stakes, and half the land between the second and third lines of stakes is plowed.

When that has been plowed, the outfit is turned to the left and the dirt thrown toward the second line of stakes. As the opposite side of the field is reached, the tractor is turned to the right, idled to the first line of stakes and then the dirt thrown toward them. These two lands are plowed in the same way as the first two—and then the plowing of the whole field continued in a similar manner. After the centre of the field is plowed, the forty-five foot border should be plowed by the endless furrow method.

Plowing hilly lands requires rare judgment. Where there is a valley in which there is no stream, the plowing may be started in this valley as though it were a rectangular field, the dirt thrown down hill from both sides and the ends idled across if it is thought advisable. Or where there is just a round knoll, it may be plowed with the endless furrow method, throwing the dirt down hill and finishing the plowing on top of the hill.





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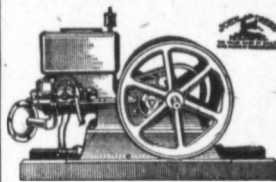


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Waterloo Boy Stationary Kerosene Engines

Built so as to give power with every stroke of the piston. There are no idle strokes between impulses. An excellent fuel system causes a steady flow of fuel to be fed to the mixer by a pump in the mixer body. Throttle governed. Equipped with in-built oscillating magnetos. These and other high grade features make the Waterloo Boy an engine that is capable of handling any farm power up to its rated H.P.—with a surplus of power for emergencies.

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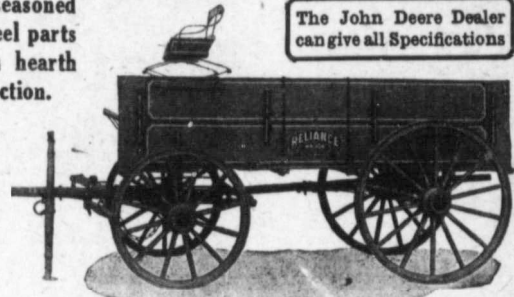
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Made from air-dried seasoned lumber throughout. All steel parts are made from best open hearth material. Perfect construction.

This wagon is built for general farm use. Rough usage has been taken care of by extra re-inforcing at all points of strain. Rough weather has little effect on the Reliance because every wood part has a linseed and lead treatment and is thoroughly seasoned before painting.

Felloes and spokes are white oak. Black birch hubs. Straight grained maple axles. White oak bolsters, reach, hounds and pole. Hickory neck yokes and trees. Southern box-board and yellow pine are used for the box. This is a wagon you can bank on outlasting any wagon you have ever had. See the construction and finish at your John Deere dealer's.



The John Deere Dealer
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The motor press is of new and better construction, built so that the engine can be operated separately as a portable. The baling of hay, straw, alfalfa, etc., is done quickly and with least possible power. Ask also about the Self-Feed, Pull-power Hay Press for use with horses.

John Deere Plow Co. Limited

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"A MISTAKE made by our neighborhood," explained a discerning settler from an outlying district, the other day, "was in going at cropping the wrong way about. Many of us tried to grow wheat from the start. What we should have done was to go in for the coarse feed grains and touch the soft pedal on wheat until more of the country was broken up and frost risks decreased."

Sound sense! He might have added that the average new settler has no business to do a great deal of experimenting nor to risk his meagre resources on uncertainties. A little experimenting is commendable for many reasons; and it is seldom wise to put all eggs into one basket by staking the year's harvest on any single crop. On the other hand, it is important to have a shrewd eye open for the main chance, to grow the surest crops and practise the safest methods, hitting some good likely line hard enough to make the effort count. The writer's case is somewhat exceptional in that he is employed to do a certain amount of experimenting, incidental to the prosecution of his ordinary farm work. This correspondence is one of the means chosen for spreading the information thus obtained.

Experiences on the Peace River

By CHINOOK

Oats the Best Crop for Northern Settlers

By far the best grain crop for most northern settlers is oats. Of all cereals, oats are the surest to mature a crop of feed grain in districts subject to frost; they may be fed to excellent advantage without threshing and in case they do not ripen, they will make very acceptable fodder for horses, cattle and even brood sows. Whether threshed or in the straw, oats are a wholesome feed. An extensive series of experiments in Wisconsin demonstrated that for breeding cattle they were second to corn and far superior to wheat, the straw of which is deficient in certain mineral constituents that parturient animals require, as well as being inferior in protein and fat. Abortion and weak progeny are believed to result from the extensive feeding of wheat straw. Horses and cattle may, if necessary, be wintered exclusively on sheaf oats or even good oat straw, with very fair results. Hogs may be wintered on oat bundles carrying only a scant proportion

of grain in the heads. Poultry will get along on mature unthreshed oats and while other grain for them is very desirable also, a sheaf or two a day in the poultry pen will provide exercise and a very acceptable addition to the ration.

Probably the best early oat is the Daubeney. In the plot tests last summer it gave us 101 bushels per acre as against 111 of Abundance and 122 of Ligowo. It ripens in the same period as six-rowed barley and though long and slender of kernel, like all other early oats, it has such a thin hull that the actual percentage of meat is greater than in the case of some standard oats which are much more prepossessing in appearance. The Daubeney would be distinctly at a disadvantage as a market grain, but for one's own feeding it is all right. To the best of my information it is a better yielder and makes rather a better sample than the much advertised Orloff, Eighty-Day and other sorts, though not quite so early as the Eighty-Day. We

used to hear about Sixty-Day oats, but the name is misleading. There is no such thing in the Canadian West. I must be candid enough to add that Daubeney and Eighty-Day are the only two very early oats with which I have had personal experience.

Limited Place for Barley

Barley is a most excellent grain to supplement oats for hog feed; but new settlers who lack threshing facilities and have, moreover, to run the gauntlet of summer frosts should have little to do with it. Bearded barleys are difficult to thresh satisfactorily by hand. It requires a great amount of tedious work to break off and sep-

(Continued on page 39)

Fistula and Poll Evil

Any person, however inexperienced, can readily cure either disease with

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FISTULA AND POLL EVIL CURE

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The Why? of Another Victory Loan

WHEN, on the morning of November 11th, 1918, the guns were hushed and glad tidings flashed across the world, there followed with the Nation's Prayer of Thanksgiving, one yearning query, which found echo in the faster beating hearts of wives, mothers, fathers, brothers, sisters and sweethearts. That query was, "How soon will our boy be home?" And, from France and Flanders, from Italy and Egypt, from Palestine and from far-off Siberia, there came an answering echo, "How soon, how soon, may we go home?"

CANADA caught the spirit of these longings, and at once resolved to satisfy them. It was an appalling task. Shipping was tragically scarce. The composition of the Army of Occupation had not then been settled. And other parts of the Empire as well as Canada were looking for the speedy return of their men.

THE problem was this. The half-million men that Canada had overseas had taken more than four years to transport to the field of battle. To bring them home in a few months was a gigantic undertaking—one to tax all Canada's ingenuity and resources. Canada solved the problem, but it meant crowding into a few short months, an expense for demobilization which it was impossible to foresee.

THEN, too besides the sentimental aspect of the necessity for bringing the men home quickly the economic side could not be overlooked. That was, to transform efficiently and speedily the nation's army of fighters into a national army of workers.

Need Divides Itself in Two Parts

The answer to the question "Why does Canada need another Victory Loan?" divides itself into two parts.

(a) To finish paying the expenses of demobilization and the obligations we still owe to our soldiers.

(b) To provide national working capital.

Obligations to Soldiers

The obligations to soldiers include: That already incurred cost of bringing home troops from overseas.

The payment of all soldiers still undemobilized. This includes more than 20,000 sick and wounded who are still in hospital, and who of course remain on the Army payroll till discharged.

The upkeep of hospitals, and their medical and nursing staffs, until the need for them is ended.

These three items alone will use up at least \$200,000,000 of the Victory Loan 1919.

Gratuities

There is also the gratuity which has been authorized, and has been and is being paid to assist soldiers to tide over the period between discharge and their re-adjustment to civil life. For this purpose alone, \$61,000,000 must be provided out of the Victory Loan 1919, in addition to the \$59,000,000 already paid out of the proceeds of the Victory Loan 1918.

Land Settlement

Furthermore, soldiers who desire to become farmers may, under the Soldiers' Land Settlement Act, be loaned money by Canada with which to purchase land, stock and implements. The money so advanced will be paid back; meantime each loan is secured by a first mortgage. Up to August 15th, 29,495 soldiers had applied for land under the terms of this Act; and 22,281 applications had been investigated, and the qualifications of the applicant approved. For this purpose Canada this year requires \$24,000,000.

Vocational Training

For this work which, with the Vocational Training and Soldiers' Service Departments, embraces the major activities of the Department of Soldiers' Civil Re-establishment, an appropriation of \$57,000,000 is necessary.

Those who give thought to our outstanding obligations to soldiers, and to our need for national working capital, cannot fail to be impressed with the absolute necessity for the

These national expenditures are war expenses. They will be accepted readily by every citizen who gives thought to the task which Canada faced following the Armistice, and to the success with which she has met it.

National Working Capital

Canada needs national working capital, so that she may be able to sell on credit to Great Britain and our Allies the products of our farms, forests, fisheries, mines and

factories.

You may ask "Why sell to them if they can't pay cash?" The answer is, "Their orders are absolutely essential to the continuance of our agricultural and industrial prosperity."

The magnitude of these orders and the amount of employment thus created, will depend upon the success of the Victory Loan 1919.

The "Why" of Credit Loans

Farmers and manufacturers (and that includes the workers on these orders) must be paid cash for their products. Therefore, Canada must borrow money from her citizens to

give credit, temporarily, to Great Britain and our Allies. Actually, no money will pass out of Canada. If Canada does not give credit, other countries will; and they will get the trade, and have the employment that should be ours, to distribute amongst their workers. And remember, we absolutely need these orders to maintain employment. If we don't finance them business will feel the depression, employment will not be as plentiful, and conditions everywhere will be adversely affected.

For Transportation

Money must also be available to carry on the nation's shipbuilding programme, and other transportation development work.

For loans to Provincial Housing Commissions who are building moderate priced houses.

These, then, are some of the things for which Canada needs national working capital. She is in the position of a great trading company, and her citizens who buy Victory Bonds are the shareholders.

Victory Loan 1919

"Every Dollar Spent in Canada"

Issued by Canada's Victory Loan Committee
in co-operation with the Minister of Finance
of the Dominion of Canada.

Plenty of Reserve Power

The guaranteed power rating of the White-Allwork is away under what the tractor will actually deliver. The big motor—5x6 inches—larger, we believe than used on any other 3-plow tractor—actually develops 32 H.P. at the belt. It delivers 19 H.P. at the drawbar. We guarantee 14 H.P.

It is the sort of tractor you would expect in "The First Quality Line."

The White-Allwork will run a 16-inch ensilage cutter and

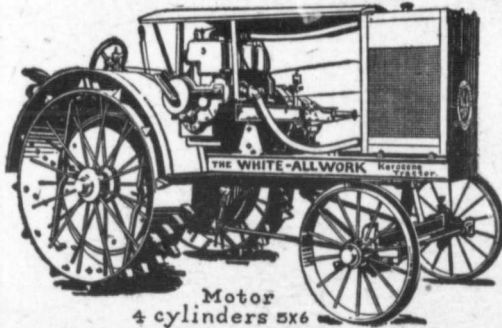
blower, or a 28-inch separator. The pulley is on a direct line with the crank shaft.

Put it on wet, heavy land or on rough land, and it has the power to go right along. Yet it weighs only 4800 lbs., won't pack the soil, turns in a 12-foot radius.

You know best what you are paying.

Let us tell you what a White-Allwork will do, and what it costs to use it. Then decide for yourself whether it will save you money or not. Write to-day for full information.

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Makers of the famous White Steam Tractors and Threshers
"THE FIRST QUALITY LINE"



Motor
4 cylinders 5x6

The White-Allwork
Kerosene Tractor

Tractor Oil Is Much Cheaper Than Steel

By A. P. YERKES

THERE is little doubt but that more farm machines are ruined from lack of proper lubrication than from any other one cause. The farm tractor probably suffers more from this sort of abuse than any other machine because lubrication is more essential for its well being than in most other farm machines. Farmers have become so accustomed to operating mowing machines, corn planters, etc., with a little oil and grease on their bearings occasionally without seeing any immediate bad effects from this sort of treatment, that many of them upon purchasing a tractor fall into the same habit of allowing it to operate without proper attention to lubrication.

In the case of the bearings on corn planters, mowers, binders, etc., there is usually very little pressure since there is not a great deal of weight resting on the bearings and in many cases no power is being transmitted through them and where power is transmitted it will not amount to more than one or two horsepower. In the case of the tractor, however, nearly all the bearings are operating under heavy pressure either from the weight of the machine itself or from the large amount of power being transmitted through them.

Where two pieces of metal come in contact with each other only lightly, they can be moved against each other without very rapid wear. The wear will increase tremendously, however, as the pressure increases. The purpose of a lubricant is to afford a thin layer of oil or grease between the two moving pieces of metal so as to keep them from touching each other and offer what is rarely a liquid surface for the two pieces to slide upon. So long as such a film of oil or grease can be maintained, no wear whatever will occur on the surfaces of the metal since they do not touch each other, and the lubricant will, of course, not cause any wear. But when, because of neglect or a poor lubricating system the two metal parts come in direct contact, a certain amount of wear takes place, which is small or great, depending upon the materials used in the bearing and the pressure upon it.

See That Tractor Has Oil Cups

Most tractors are furnished with suitable means for properly lubricating all moving parts. However, in choosing a tractor, this is one point to which considerable attention should be given in order to assure oneself that the designers of the machine have not overlooked this vital matter.

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THE REPROBATES

The Invalid: "The doctor stopped all liquor to-day, but he won't do it again!"
His Friend: "Why not?"
The Invalid: "The wife fell on his neck for joy and kissed him!"

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Western King Manufacturing Co. Ltd.
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not contain any dirt or grit which will be forced into the bearing and to see that the hole through which the grease passes to the bearing is not clogged in any way. There have frequently been cases where through faulty inspection at the factory machines have left the shop with the grease passage clogged so that no lubrication could be forced through to the bearing even when the grease cup was filled and turned down hard. Whenever it is difficult to force the grease into a bearing by means of a grease cup a careful examination should be made to see that this passage is open all the way through to the moving shaft.

Where a tractor is equipped with a mechanical oiler care should be exercised to see that this is supplied with oil at all times and that the force feed is not only working properly but that the pipes do not become clogged. The necessity for using only oil which is free from dirt in a force feed oiling system which employs small pipes or tubes to carry the oil to the various bearings is obvious. The use of a little dirty oil which may clog some of these pipes will soon cause a burned out bearing.

The problem of tractor lubrication in cold weather is slightly different from that at other times of the year as lubricating oil does not flow freely when cold and many kinds of cup grease harden from cold so that they are almost useless.

Where the working parts of the engine itself are lubricated by means of the splash system the oil will quickly become warm enough from splashing against the hot pistons to furnish adequate lubrication. It is advisable when employing this system to wait a few minutes for the oil to warm up before placing the engine under load. Where a force feed oiler is used it is highly advisable to heat some oil and pour it into the lubricator and then turn the hand crank on the lubricator a number of times before starting.

A lighter grease should be used in the grease cups in winter than in summer, and whenever difficulty is encountered in turning the grease cups down in cold weather they should be warmed sufficiently to insure a plentiful supply of grease reaching the bearings.

Only National Character

It has been well said by a soldier of Napoleon, writing of the War in Spain, that neither the Government nor the Army are the true bulwarks against foreign aggression, but the national character.

THE VALUE OF GOOD PLOWING

By R. B. Rushing

A NEIGHBOR just a few days ago asked me what is good plowing? I replied to him as follows: Good plowing consists in turning and setting the soil into nice, neat, even, clean, round, straight furrows so that the under soil will be brought up as much as possible and exposed to the sun and atmosphere. What do I mean by clean furrows? Having the weeds, stubble and grass all turned under and cutting a clean land-slide. Even? Having the furrows all of the same height. Round? So that the furrows will show a little crease between, and, unless you plow straight, your furrows will be uneven. There are so many different-shaped mold-boards, which throw the soil in different positions, that some would need to cut wide furrows and others narrow. Not only this, but some soils need shallow while others need deep plowing in order to produce the best yield. I plow a certain width and depth and get good results, but this might not apply to all farms. You might try the same depth and width with poor results. Every farmer must know the depth that will apply to his soil. If you plow shallow do not set the plow so that it will cut so wide as when plowing deep, then it will not turn the soil so flat.

I think about the first thing a man should know when he begins farming is how to do good plowing, because good plowing is more easily worked up and made ready for planting; weeds are more easily kept down, and consequently a better yield is secured. Some will say: "I do not do the good plowing you are speaking about, and yet I raise good crops anyway." That may be true, but I do not hesitate to say that you would have had better crops with good plowing.

One special reason for poor plowing is a dull plow. I have seen men actually let their plows become so dull that were it not for the weight of the man and the sulky the plow would slip out of the ground.

This is very hard on the horses, and where the ground is hard, the plow will come up out of the ground and leave the plowing uneven. I have seen men use dull plows and not know it. To look at the plow it does not appear so dull, but when it is set on a board you could see the bottom of the shear had the appearance of a sleigh-runner. Hence to get the plow into the ground you have to raise the heel of the plow that it would displace the mold-board

SOLDIER SETTLEMENT BOARD FARM LANDS WANTED

In order to facilitate the settlement of Returned Soldiers on farms in Manitoba during the Early Spring of 1920, it is proposed to consider and inspect this fall suitable lands offered to the Board. Owners having such properties for sale are requested to immediately list their holdings with the Board, giving full particulars and a price which will hold good until December 1st, 1919.

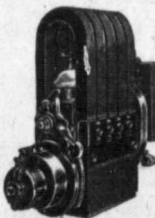
The co-operation of Municipalities in which any considerable area of idle land is located is solicited toward making such lands available for Soldier Settlement. All purchases are for spot cash.

The Soldier Settlement Act prohibits the payment of any commission. The vendor is expected to quote his lowest cash price.

As no appraisal reports can be secured after freeze-up, owners will please reply promptly in order to assist the Board in making immediate inspections.

Address all communications regarding the above to

SOLDIER SETTLEMENT BOARD
Land Listing Department
ENDERTON BLDG.
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K.W. High Tension Magneto

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Send for our Catalog of Magneto and Parts to Fit all Makes

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and turn a nice furrow. Another fault lies in trying to do too much.

I have seen men actually trying to cut from eighteen to twenty inches of dirt at one furrow. This leaves the ground too flat and some of it unturned.

I have never seen any plow that would handle this much soil and do it right. It will sometimes happen that the furrow-wheel will run on top; in such case the careless plowman will pull his team over into place and go on, thus leaving a little space unplowed. All such plowing is unprofitable. Farmers should make plowing a study; learn to do it to the best advantage. I know from experience that a little thought along this line will be time well spent.

FARMERS' THRESHING MACHINES

THE advent of the tractor was the occasion of the development of an extensive exploitation of the small grain separator, and the rapid increase in the number of tractors in use in this country is accompanied by a large increase of the smaller sizes of threshing machines.

Manufacturers were quick to realize the trend of the times and to appreciate the new opportunity for sales, with the result that whereas in the past the heavy preponderance of their product was large separators, at the present time the balance is swinging the other way. One large manufacturer said that his business in 24-inch and smaller separators had increased nearly 100 per cent in 1918 over that of 1916.

Economy of Large Separator

The question as to whether it is more economical to thresh with a big machine or with a small one is a little difficult to answer. Of course, the development of modern threshing methods—the big machine doing all the threshing for a dozen or more farmers—resulted from the need of a greater number of men to carry on the work than most farmers employed. Beginning with a "run" or "ring," including just enough men to take care of the various operations incident to the running of the machine itself, it was not long before the size of the machine was doubled, twice the number of men were required, and theoretically the time of threshing was halved.

There is no question as to the time saved with the employment of the big outfits; but, as is often the case in the larger of industries, there is a point at which the decrease in cost of production resulting from increase in size of plant stops. There are a certain number of bundles of grain to be

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Spark Plug service depends on the ability of its insulator to resist vibration, shock of cylinder explosions and extremes of temperature changes in all types of motors, in all kinds of weather, in all climates, and under every known load and road condition.



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Dependable Spark Plugs

are equipped with our new 3450 Insulator, the result of ten years of tedious research and 3450 distinct experiments.

"Champion" on the Insulator is your guide to better spark plugs for efficient service in every make of motor or engine, each guaranteed to give "Absolute satisfaction to the user or full repair or replacement will be made."

Sold wherever Motor Supplies are sold

**Champion Spark Plug Co.
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A 14 "O", 1/2-inch
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The name Imperial Oil Limited is a guarantee of quality. Imperial Royalite Coal Oil and Imperial Premier Gasoline make your tractor, engine or car powerful and easy-running. Made from selected crudes and carefully refined to conform to fixed standards of high quality. They come to you as liquid power in its most efficient and most economical form.

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For Kerosene tractors and farm engines. High grade extra refined coal oil. Always uniform—every drop is power. Clean-burning—will not clog up your engine with unnecessary carbon. Ideal for use in oil heaters and oil cook-stoves, as well as for other household purposes.

Both can be promptly supplied from conveniently located stations everywhere.

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For automobile, tractor and gas engine. Straight-distilled—unaffected by heat or cold. Every gallon contains the same and is ready to deliver the same number of power units. Does away with the necessity of frequent carburetor adjustments. Costs no more per barrel or per gallon—considerably less per H.P. or mile.



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Do you shave with a saw?

THAT question may sound funny, but you know how it is with tools; unless you hone or sharpen them regularly they get dull and lose their cutting edge.

After all, a razor is a tool. A very refined sort of tool, it is true, but still a tool. And the point we're driving at is unless a razor blade is stropped regularly it develops an edge very like a saw, as the illustration shows; and causes that pulling and after-smarting sensation of which you complain.


Not so with the AutoStrop Razor. For the self-stropping feature, you see, reforms the saw-like edge that results from shaving, it keeps the blade free from rust, and it provides you with a keen-edged blade for every shave. The beauty of it is you don't have to remove the blade from the holder to sharpen it, nor do you have to take the AutoStrop Razor apart to clean it. From first to last—stropping, shaving and cleaning—the blade remains in the razor.

Razor, strop and 12 blades complete, with money-back guarantee, \$5.

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

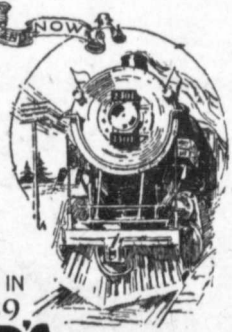


AutoStrop Safety Razor



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THEN




NOW

PRINCE OF WALES VISITS CANADA IN 1919

THE POPULAR CHEW IN 1860 - AS IN - 1919

MACDONALD'S PRINCE OF WALES PLUG CHEWING

The Tobacco with a Heart



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

FARM BOOKKEEPING SIMPLIFIED

By W. D. Albright

NEARLY every advocate of farm bookkeeping proceeds on the assumption that the method should be ample and straightway elaborates a plan that not one reader out of three follows clearly and not one in a hundred undertakes to practise. Wonder if I can do as well.

I managed a farm once where a complete double-entry system of bookkeeping was practised. Time cards were filled in by the men showing the exact amount and value of labor devoted to each crop and each class of livestock. Precise information of production costs was thus obtained and for a large, extensively organized farm the system has much to commend it. But for the busy husbandman operating on a one-man scale, with everything under his hand, it is not so necessary and is liable to prove too much of a tax upon his time and energy. In bookkeeping as in other matters one should cut his coat according to his cloth.

Our present plan is simple. I won't claim it is easy, for any bookkeeping at all is a trial to me. I drive myself to it from a realization of its importance. When I mentioned to my wife a few minutes ago that I was going to write an article on farm bookkeeping she bantered me with the come-back: "Yes, you know so much about it." But this is a case where I have a chance for the last word and my answer is that it is because I am not much of a bookkeeper that I have devised a system applicable for farmers. Here it is:



THE SANDS OF TIME

The Optimist: "Cheer up, Bert! We'll soon be back in good old Blighty!"
The Pessimist: "Tis all very well for you to talk like that, Charlie—you're one of the lucky ones. But I'll never see Blighty no more. When you and the boys go home they'll put me on to emptying the blinkin' sandbags!"

handled, and theoretically two men should be able to handle them in half the time required by one man.

On the other hand, there is a heavy investment in a large machine, and in order to make money the owner must keep it going for as long a time as possible. The more grain he threshes per day the greater his profits, since his overhead expenses is practically the same whether he threshes a thousand or five thousand bushels.

Fewer Large Outfits

Modern agricultural methods make it almost imperative that the threshing season is as short as possible; the result is "short" runs, which naturally do not bring much profit to the threshing rig owner. The natural consequence will be a gradual reduction in the number of large outfits.

The small machine has several points very much in its favor. Its employment means that while naturally it will take a little longer to do the work, it will be done at the best time suited to the farmer. He will not have to wait a couple of weeks, perhaps, for his turn, while in the meantime a heavy soaking rain comes along to rot the shocks and make the grain tough to thresh.

Make it Easier for Women

The women of the household, the mainstay of threshing time, will hang the small machine with garlands of flowers, because they do not have to feed an army of threshermen. It is no joke to operate a culinary plant at 500 per cent overbad on a day when the temperature sizzles at 100 degrees or more in the shade. Any housewife would rather cook for ten men three days than for thirty men one day.

And then a great, big reason why the small separator is a fine thing—it is just of a size that can be readily operated by the 10-20 or the 12-24 tractor that the vast majority of farmers are buying. More than half the tractors sold are of this size, and they work splendidly in running a 20 or 22 inch separator. This means that the farmer can materially reduce the cost of maintaining his tractor if he can put it to a week or two of good use in threshing his own grain and that of a neighbor or two.

The time is fast approaching when every farmer must carefully scrutinize every one of his methods to see if it is returning him a profit or not, and in many instances such a scrutiny, followed by a careful study of other methods, will result in the appearance of a nice little threshing machine as a part of the farmer's own equipment.

First of all is a business diary, or daybook. Every transaction, whether cash or credit, is noted here. It likewise contains a record of all bargains made, arrangements as to changing work, etc. Such a diary prevents many a difference of opinion. In the unfortunate event of a lawsuit it would be invaluable. Odds lie ever with the party who has precise records. Sample diary entries are:

"Sold B, 72 bushels oats for \$36.00." "Sent bank \$95.00." "Bought stamps, 50 cents." "Bought groceries I. E. G., \$60.00, Pd." Paid J. insurance premium \$32.95." "Helped W. saw wood (9 hrs.)"

Once a month, theoretically, but practically about once a year, I sit down and post into a ledger such day-book items as require entry—for instance, all items in open accounts with the neighbors. These are annually balanced up and any difference paid or received. Of course they do not all run open for a year, but any not previously settled are adjusted at time of stocktaking. I aim to have very few such accounts. At the moment there is only one and it practically balances.

To find out where the money comes from and where it goes—a more puzzling question with most of us—also to assist in stocktaking by getting down before me the items added to capital account during the preceding twelve months, I take some loose leaf sheets of scribbling paper and write various headings, such as "Living Expenses," "Business Expenses," "Improvements," "Wages Paid," "Interest Paid," "Taxes Paid," "Grain Receipts," "Cattle Receipts," "Cattle Purchased," etc. I then go through the diary from beginning to end, note down the items under their respective heads and cast up the totals.

A very minute inventory is taken on March 1st each year and typewritten in duplicate. The duplicate copy comes in handy the next year for stocktaking, as many of the items remain the same save for a pencilled revision of numbers and values. One copy of the inventory is kept unmarked for purposes of reference. The other after revision and amendment is copied in duplicate and discarded. When one commences to keep books his first inventory is liable to be rather tedious and bothersome, but the second, made with the first before him, will be comparatively easy. It usually surprises one to find how much loose property he has about him. Also it prompts him to get it together and put it to rights. He looks up the tools and grain sacks scat-



FEWER DELAYS AND LESS REPAIRS WITH POLARINE

Polarine keeps every friction surface cool and perfectly lubricated. It stands up under intense engine heat—spreads a thin, unbreakable film where metal rubs metal. It stops overheating, minimizes wear, preserves machine life. Poor oil doesn't hold together—it breaks down—lets friction gnaw away the engine's vitals.

That's why it always pays to buy Polarine for tractor, truck or automobile. It means fewer breakdowns and repairs—fewest

days lost on the job, and more and longer service from your engine.

Polarine maintains gas-tight compression, lubricates perfectly the year round.

Imperial Polarine maintains gas-tight compression, lubricates perfectly the year round.

Comes in three grades—Imperial Polarine, Imperial Polarine Heavy and Imperial Polarine A. For motors that require an unusually heavy lubricant. In one-half, one and four-gallon sealed cans—in steel half barrels and barrels. Ask the Imperial Oil Man which lubricant to use. His advice is free—may save you a lot of money and time. Imperial Polarine for sale by good dealers everywhere.



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Power · Heat · Light · Lubrication
Branches in all Cities

tered around the neighborhood, neighbors and generally gets a inventory classifies property un-
straightens up accounts with line on his business affairs. Our der such heads as:

**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



"Ever-lastingly Good"

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Your home electric light plant demands best Ignition Batteries for satisfactory service. Reliable Ignition Batteries are a guarantee of utmost battery efficiency. Made as a battery should be made. Each one a reservoir of energy that is "Lively and Lasting." Nothing better for your telephone, motor boat, truck, automobile, or door bell. A guarantee of satisfactory service printed on every battery box.

Use Reliable Flashlights and Searchlights for instant, handy, safe light. Enamelled in colors. All sizes and styles of metal and fibre Flashlights.

Reliable products are of best Canadian manufacture.

For sale by dealers everywhere.

DOMINION BATTERY COMPANY LIMITED
Toronto, Canada

"Lively and Lasting"

1. Real Estate: (a) Land, (b) Buildings, (c) Fencing.
 2. Livestock: (a) Horses, (b) Cattle, (c) Hogs, (d) Poultry.
 3. Grain and Crops; itemizing threshed grain, winter grain sown, if any, etc.
 4. Implements, Vehicles and Utensils, all itemized in detail.
- And so on.
- When the foregoing operations are complete, I condense a balance sheet, the main items of which I shall reproduce as they appear on my statement:

- Assets—**
- Real Estate.
 - Livestock
 - Grain and Crops.
 - Implements, Vehicles and Utensils.
 - Harness.
 - Miscellaneous.
 - Stock in Co-operative Co.
 - Grubstake on hand.
 - Bills Receivable.
 - Furniture and Personal Effects.
 - Cash on hand.
 - Total.
- Liabilities—**
- Bills Payable.
 - Balance March 1st, 1919.
 - Last Statement March 1st, 1918.
 - Increase during year.

From a technical standpoint the above method could be criticized severely but it enables me to know exactly how I stand with each individual, shows the channels of outgo and the main sources of income, keeps tab on all odds and ends of property and reveals our net standing from year to year. There is a great satisfaction in having such information and it well repays one for the trouble taken to prepare it. Knowledge is power as the familiar adage has it, and this applies particularly to the knowledge bookkeeping supplies. It is the sword that pierces illusions and lays open the state and trend of one's business affairs to the cold, clear light of intelligence. In this pitiless glare one finds his bearings and steers the bark of Enterprise to the sure port of Success.

lage and consolidated school has from three to ten branches.

A great deal of the success of club work is due to the close co-operation of the Departments of Agriculture and Education. The territory adopted as the unit for organization purposes corresponds with the territory which comes under the jurisdiction of the school inspector.

The school inspector is recognized as the natural club leader for his district, and is always kept posted on all developments along club lines.

In order that the little folks may have every opportunity to take part, the natural marketing centre for each district is taken as the Central Club headquarters, and the annual fall fair is generally held there.

The officers of the Club are: a club manager, president, vice-president and a committee of six.

The club manager is usually one of the bank managers or some other prominent business man or woman who has a keen interest in the development of the young folks along agricultural and home economics lines.

Club work has been given splendid financial assistance by the Department of Agriculture, school boards and business men. The Department of Agriculture, in addition to supplying Club organizers a full supply of literature, record books, judges' books, prize cards, posters for all the fairs, and from two to four judges for each of the 220 fairs, provides prize money for the fairs equal to 50 per cent of the amount actually paid out in cash prizes, provided not more than a total of 15 per cent is for school work.

Each school board provides \$10 or \$15 per room toward the expenses of the Club, and private individuals and agricultural organizations such as the Swine Breeders, the Milling Companies, Bankers, The T. Eaton Co., etc., provide funds for bringing from 75 to 100 Champion Club members into Winnipeg for a week of education, entertainment and sight-seeing.

With the return of the members of the extension service who were overseas, it will be possible to do more intensive work, and during the coming year many teams will be organized for poultry and live stock judging, vegetable and grain judging, canning and rope tying.

The coming year will also see the advent of two new divisions, namely, the Manitoba Cavaliers for the older boys, and a similar organization for the 'teen age girls.

Farming is a Business Proposition

and as such, many farmers find it profitable to mortgage their holdings to obtain funds to purchase additional equipment. The day is past when a farmer is considered unprogressive because there is a mortgage on his property. The farmer is in exactly the same position as a business firm which wishes to increase its production, but is handicapped through lack of capital. To overcome this, they issue more stock.

Much depends on the industry and executive ability of the farmer. The unexpected may happen, and in order that his dependants, very often a young wife and family, may be amply provided for, it is necessary for him to carry adequate Life Insurance, considerably in excess of his liabilities. Life Insurance is always the first asset realized on, and is always worth par.



Do you carry sufficient Life Insurance? Better write for our booklet, "Think it Over;" it shows what Life Insurance means to the farmer's family.

The Manufacturers Life Insurance Company

HEAD OFFICE - TORONTO, CANADA

Kindly send me a copy of your booklet, "Think It Over."
I am years of age (married) and would like to carry \$..... Insurance.

Name.....

Address.....

THE BOYS' AND GIRLS' CLUB MOVEMENT IN MANITOBA

MANITOBA was the first province in Canada to introduce the Boys' and Girls' Club method of teaching agriculture in the public schools, the first eight clubs having been organized in 1912. To-day there are in the province 225 central clubs, 1,600 branch clubs, and 27,000 members. Practically every rural school has a branch club, and almost every town, vil-

As the LION is Still Supreme

and his reputation undimmed as the "King of the Forest", so the supremacy of the **Lion Brand** has never been challenged in the field of **Rubber Belting**. For tenacity, adaptability to every condition in belt work, nothing can be made to outclass this particular brand of belting from any raw material or composite matter yet discovered. When anything of the kind does come to light—we will get to know of it **first**. But meanwhile, it is not possible to buy at any price power transmission in the form of belting that is so reliable and so reasonable in price as the



LION BRAND
Rubber Belt
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YELLOW
FELLOW
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

THE MAGNETO AND FARM TRACTORS

By C. K. Nelson

THE magneto can be truthfully said to be the heart of the engine, inasmuch as it performs that vital function of burning the compressed gas in the combustion chamber of the engine.

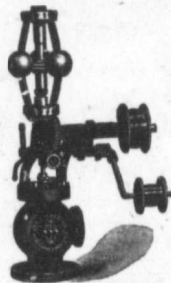
Briefly stated, on the downward or intake stroke of the engine a charge of gas is taken into the combustion chamber, and the upward or compression stroke compresses this gas into a very small space. At the instant that the piston crosses the top dead centre of this upward stroke the magneto is so timed and arranged that it delivers its maximum output at that instant. This tremendous force of electrical energy jumps the gap of the spark plug down in the centre of the combustion chamber, causing the compressed gas to ignite and explode, which drives the piston on its downward or explosion stroke.

One will readily appreciate, therefore, what a good magneto means to the tractor and the tractor owner. This gas must be fired each time that it is compressed. Therefore, the magneto must deliver a spark to each cylinder of the engine to do this, and

further, it must be delivered in sufficient heat intensity to ignite all of these gases, otherwise the unburnt portion of the charges will eventually form a carbon deposit which interferes with the proper action of the valves, clogs up the spark plugs causing what apparently is a short-circuit, but which is in reality a bridge of carbon which has formed inside of the spark plug, and naturally the electrical current seeking the path of least resistance follows this carbon rather than to jump the gap at the firing points of the plug, which is of higher resistance.

Further, it must be designed to take up the least possible space; it must not add any appreciable weight to the engine or tractor; it must be a self-contained unit, depending entirely upon its own construction to deliver the highest possible electrical output at all times; it must be of rugged construction to stand the wear and tear and intense vibration under all conditions; it must be waterproof and dustproof, and last but not least, great deal depends upon its proper installation by the manufacturer of the engine, that is, as to the correct setting or timing of the magneto, so that the spark which it delivers will be delivered at the instant when the compressed charge should be fired.

Steam or Gas Tractors



Equipped with

"THE GOVERNOR WITHOUT JOINTS"
PICKERING

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

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More than a Billion Dollars in Live Stock

At the end of last year the total value of farm live stock in Canada reached \$1,326,700,000 compared with \$725,500,000 in 1914. The farmer is beginning to realize the growing importance of this branch of his business and is increasing his holdings from year to year.

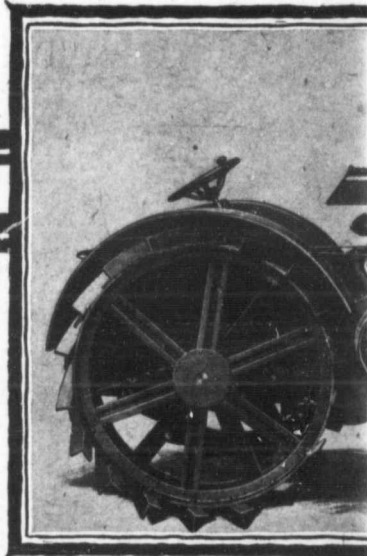
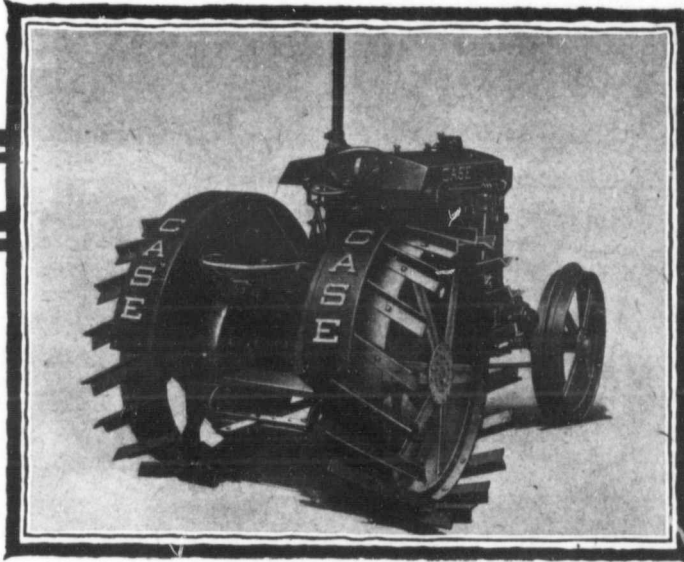
We will be glad to advise reputable farmers in the financing of their live stock business.

UNION BANK OF CANADA

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CASE



THE TRACTOR THAT WORKS THE YEAR

MEASURE the value of your tractor by its usefulness. It should be practical for more than merely plowing. Your tractor should be just as adaptable for *discing, harrowing, harvesting, potato digging, seeding, hauling, haying, road scraping or grading, threshing, hulling, baling, silo filling, feed grinding, rock crushing, drilling, sawing or pumping.* Those operations can all be done successfully, quickly and economically with the Case 10-18 kerosene tractor pictured above. This means that its hours of use per day and its days of use per year reach the maximum. It increases the earning capacity. *The Case 10-18 works the year 'round.*

The Case 10-18 is small and compact. It develops considerably more horse power than rated which means reserve power for hard pulls and on steep grades. It develops full power on kerosene and burns it economically.

The Case 10-18 has a specially designed four cylinder valve-in-head motor mounted crosswise on a one piece frame. This insures unusual rigidity and prevents disalignment of gears. It permits the use of all Spur Gears. All gears are cut steel fully enclosed.

J. I. CASE THRESHING MACHINE COMPANY, Incorporated.



PLOWING

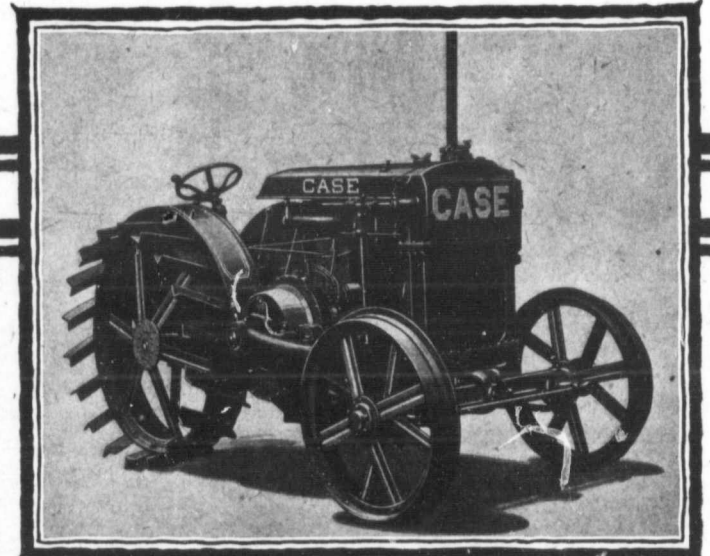
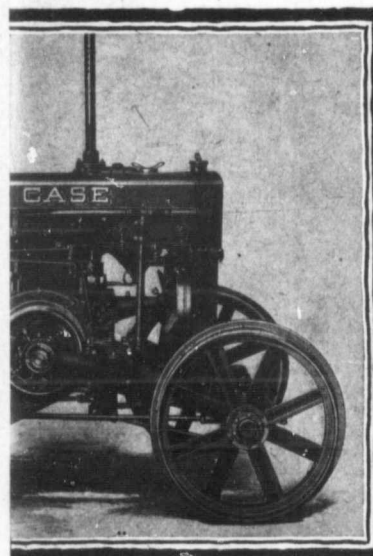


HARVESTING



HAULING

CASE



'ROUND AT THE DRAWBAR OR BELT

The belt pulley is mounted on the crankshaft, which makes it convenient to line up to all belt driven machinery.

An improved Case patented air washer is another feature of the Case 10-18. This delivers clean air to the carburetor. No grit nor dust can get into the cylinders to minimize its efficiency or shorten its life.

The Case Syphon Thermostat controls the cooling system and insures complete combustion of kerosene.

All that is latest and practical is embodied in the Case 10-18. Choose it for its all 'round adaptability. Choose it because of its economy and sturdiness. Choose it because it is built by a concern backed by long experience, capable tractor engineers, and a reputation for building the best. The J. I. Case Threshing Machine Company has 31 branch houses and 9,000 dealers.

Write for literature containing all the details.

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THRESHING



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MORE BUTTER and BETTER BUTTER

is the urgent call—not only in the Canadian home market, but from overseas, where there is a dearth of this prime necessity, which is even more acute than at any period of the war. Here's a golden opportunity for Western Canadian farmers to make money easily and quickly. Get your pasturage and surplus feed into the form of Butter or Cheese. Here's Money in chunks that you can feel and not the breath of suspicion of "profiteering" about it. Your common family of milk cows will start the game, but if you are to make the best of it, you must get a

"MAGNET"

Cream Separator—

It is the greatest labor-saving and food-conserving machine ever introduced into Dairy Farming. 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.

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

MAGNET ALWAYS SKIMS CLEAN

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

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Head Office and Factory: Hamilton, Ont.
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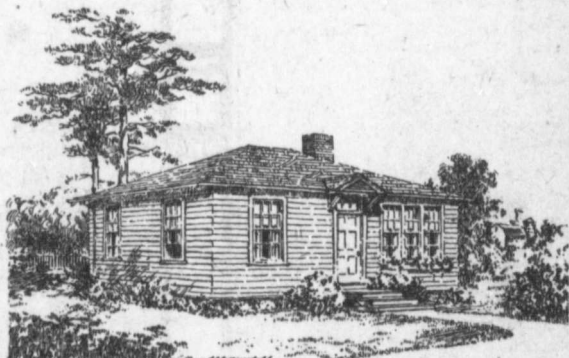


A Farm House for \$1000

By R. S. WHITING (in "Farmers' Magazine")

"YOU can build this house for \$1000" and "This house will cost \$1000" are familiar expressions, but until we have been through the actual operation of building a house, we cannot fully appreciate the meaninglessness of them both.

house, or 24 feet. Dividing 700 square feet by the determined width we have approximately 30 feet for the length. Starting with a floor area, therefore, of 24 x 30 ft., the plan must be arranged to accommodate the necessary things and more, if possible.



A Thousand-Dollar House that is Attractive and Planned Right

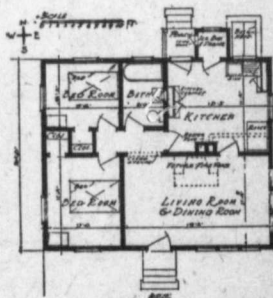
It can be done, but how can the best results be accomplished? Shall we construct a cheap, flimsy affair which may have to be rebuilt in the near future, or shall we apply some gray matter, good materials and hard work, and produce a real house? A house which may be added to from time to time, without detracting from its beauty, is always an asset.

The architect referring to some recent residential work and analyzing actual costs is able, by comparison, to determine approximately the cost per square or cubic foot. By this means he is able to say about how many square feet in floor area can be allotted for a house not to exceed \$1000. Assuming that a one-story house, with a cellar under a portion only, costs \$2000, and by computation is found to contain 1,400 square feet—a house to cost \$1000, must contain, therefore, approximately 700 square feet when built in the same locality and under similar conditions, with like materials.

The retail lumber merchant tells us that joists in 12 foot lengths are more economical than those in 10 foot lengths; therefore, we determine on twice this length for the total width of our

There should be at least two bedrooms, one double and one single; a kitchen; bath; and a living-room, dining-room, and porch—or some economical combination of the latter three.

By dividing the plan lengthwise in two bays, each 12 feet in width for economy of floor framing, one dimension of our rooms is determined. The kitchen, at the rear and north side, occupies a space 11 ft. 4 in. x 13 ft. 2 in., then the bath adjoining. The 9 ft. 6 in. remaining of the 30 feet length, gives us a small bedroom, 9 ft. 6 in. x 8 ft. 2 in., and a large bedroom, 9 ft. 6 in. x 11 ft. 4 in., allowing space for closets and entry.



Plan of \$1000 House

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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St. Louis 328 Victoria Bldg.
St. Paul 215 Endicott Bldg.
Toronto 14 Manchester Bldg.
Winnipeg 400 Hammond Bldg.
Montreal Room 400, 439 St. Paul St.

New York 260-262 Church St.
Philadelphia 324 Market St.
Boston 31 Bedford St.
Chicago 213 W. Jackson Blvd.
San Francisco Postal Tel. Bldg.
St. Joseph, Mo. Saxton Bank Bldg.

The remaining space, 11 ft. 4 in. x 19 ft. 2 in., is to be divided into a living-room and dining-room, or a combination of both. A more homey and commodious effect may be obtained by making one large room out of the living-room and dining-room. Since every farmer seems to feel the need of a back entrance, a porch is shown attached to the kitchen, combined with a built-in ice box. Plenty of glass in the southeast corner of the living-room gives a sun parlor effect, which makes this part of the house cheerful and attractive.

An entry from bath-room to kitchen enables the farmer to reach the bath without tracking dirt through the other portion of the house. The bath is also convenient to the bedrooms.

To keep the cost of the house within the stipulated sum, the fireplace shown in dotted lines in the living-room may be temporarily omitted, but easily constructed in the future. Exterior blinds may be omitted for the same reason.

The cellar may be excavated under part of the house only, for an area of about 20 ft. x 24 ft., for heater, storage of wood, coal and vegetables, but may be excavated the entire area at a very slight additional cost. When a second storey is added, a stairway both up and down might replace the present entry and bathroom, and the plumbing fixtures moved to a new location over the kitchen. The cellar can be entered temporarily through a bulkhead conveniently located outside.

Economical details of construction are important in keeping down cost. The detail drawings shown here indicate a simple method of frame construction, the stock for which the lumber dealer can furnish at a considerable saving over other methods. The following is a list of the lumber sizes required.

- 2 x 6 sill.
- 2 x 8 floor joists, 12 ft. lengths.
- 2 x 6 ceiling joists, 12 ft. lengths.
- 2 x 4's doubled for the plates.
- 2 x 6 rafters.
- 2 x 4's, 8 ft. 0 in. length for walls.

The 2 x 4 uprights in the wall framing are in 8 foot lengths, but the plates can be built up of shorter lengths by breaking points and spiking securely. This type of framing prevents rapid spread of fire in the walls and also prevents vermin from working up through the walls from the cellar.

Economy can be used in the selection of finished floors by using shorter lengths, since such floors can be purchased at a con-

siderable reduction over long lengths. The labor in laying shorter lengths has been found to be no more and in many cases less. Oftentimes enough pieces can be selected from several bundles of flooring having a particular grain or color and used as a border around a room, laying the remainder in the centre space, which is usually covered by a rug.

Careful consideration should be given the selection of windows, as certain standard sizes can be procured at a much less cost than others. The size of windows to a great extent governs the cost of frames and interior finish. Two light windows, using 24 in., 26 in., and 28 in. glass, are most practical and more economical. Small window lights make a most attractive exterior, but increase the cost somewhat.

Interior doors with four panels, or five cross-panel doors, make an attractive appearance and can be purchased at less cost than others. Plain trim, with back band, made up of light stock, such as is indicated on the detail drawing, is easy to apply and reasonable in cost.

The exterior design is given good scale by the use of wide siding and the use of well-proportioned windows, which should be selected from stock sizes carried by the dealer. Shingles make a most attractive exterior design also, and when stained some carefully selected color, harmonize with rural surroundings. Always paint exterior as well as interior woodwork; its appearance is improved and life extended. A brush coat of creosote given the sills and such other woodwork as may come in contact with the foundation walls or earth will prevent possible decay. Lap siding is ordinarily placed smooth side out, but if placed rough side out and given a brush coat of creosote it is made most attractive and is more lasting and less costly.

A house such as this can be built for about \$1000, in most localities, but should the cost appear to be running over this amount, some of the less important items may be temporarily omitted, until such time as their installation is warranted and they become necessary.

Nan—"This is one of my last photographs."

Fan—"Why 'last' dear? You'll look well in a photograph for several years yet."

Maude—"I think he is dreadfully stingy."

Gertie—"Stingy. Why that man wouldn't even tell a story at his own expense!"

Service



Trade Mark

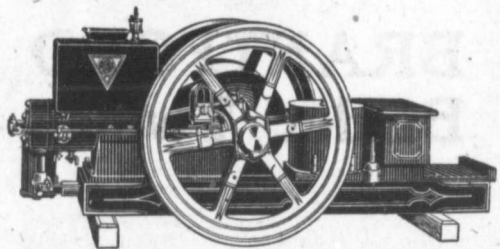
THE ALPHA Gas Engine is built for service. It does its work, without coaxing or tinkering.

The construction and workmanship employed in building it are so excellent that it will continue to render good service for many years.

The ALPHA is sold by local agents, especially selected for their ability to render service, and the De Laval Company is well known throughout Canada for its many years of unflinching service to its customers.

Branch offices are so located that every part of the country is covered by De Laval service.

If you don't know who handles the ALPHA in your vicinity, write nearest sales headquarters for his name.



THE DE LAVAL COMPANY, Ltd.

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

It works all day—every day

The Mill Wheel turns as long as there is water in the chute. You must know that your tractor will "go" as long as there is fuel in the tank.

12 H. P. on Draw Bar
25 H. P. on Belt Pulley

THE HUBER Light Four

Draws three bottoms
Turns an acre an hour

is known for its dependable service. A steady stream of power flows from its mighty motor through all spur gear direct to the draw bar. Light tractor weight combined with great tractor power; high wheels that roll easier and increase the amount of surface "grip"; center draft on all loads, preventing loss of power from side pull. The combination of all these—with a dozen other Huber features—makes the Light Four the last word in tractor dependability—and fuel economy, too.

Weight 2,000 pounds; pulls three 14" bottom plows; 12 h. p. delivered to the draw bar; 25 h. p. at the belt; Waukesha, four-cylinder motor; Perfection Radiator; Thrift Roller Bearings; burns gasoline, kerosene or distillate; center draft; two speeds, 15 and 4 miles per hour.

Write for "The Tractor in the Making", an interesting story of the development of the tractor as reflected in the successive models of the Huber for more than twenty years.

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We thrive on competition because we excel in quality. Our policy of selling nothing but the best binder twine has increased our output from 80 tons a year to 10,000 tons.

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with any other twines on the market.

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We submit them to a special preserving treatment to make them insect proof so that Brantford Binder Twines will keep perfectly from year to year.

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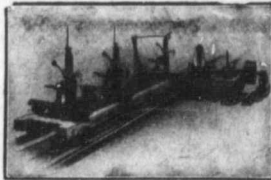
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"SAFEST AND BEST"

The Farm Car as a Source of Belt Power

By L. G. HEIMPEL, B.S.A.

THERE is no farm upon which the addition of belt power is not a convenient thing and where the purchase of an engine is not a paying proposition. There are various uses for a gas engine on the average farm and the amount of power required for each of them may range from one-quarter of a horse-power for turning a cream separator to twenty horse-power for threshing. This makes the choosing of an engine a very hard matter.

The great majority of the work on a farm requires an engine of less than four horse-power, and two horse-power is sufficient to do all the farm work outside of threshing, silo filling and grinding. Since these last named heavy

be for and what against using a car for belt purposes.

First of all a device which is to make use of the auto for belt purposes must not interfere with its serviceability as a road vehicle. The farm car's greatest asset is as a time saver and we cannot afford to let anything stop us from a trip which may have to be made at a moment's notice. Second, anything for which the car may be put to use must not subject it to any strain greater than the road strain, and it must not subject the car to any strains for which the car was not designed. Third, any device used must provide the car with additional cooling provision because a large part of any engine's cooling system depends on the speed with which it passes

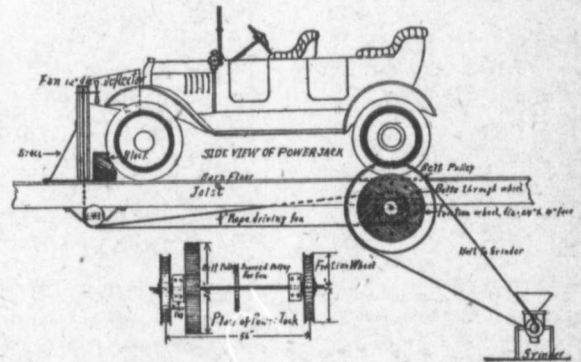


Diagram Showing the Arrangement on the Barn Floor for Power from the Car

jobs are of short duration it does not pay to keep a ten or fifteen horse-power engine in daily use for pumping water when a two horse-power would do the work. It is becoming more and more necessary that we have our own power to do this work and the only way out seems to be either buy another engine or to use the farm car.

There are several devices on the market now for the purpose of converting the farm car into a belt power plant. All of them will work, some better than others, but all are expensive, and while some are not very hard on the auto others put a strain on parts of the car such as it was not made to withstand.

In the accompanying cut we are showing a sketch of a home-made device which is giving good satisfaction wherever used, is inexpensive to make and embodies most of the good points of such a device while doing away with the undesirable ones. Let us go over these points and see what would

through the air when on the road. Any automobile engine left to do heavy work with the car at a standstill will soon become overheated. Therefore, extra cooling must be provided. Whatever is used though must not interfere with the car's mobility at any time. The device shown complies well with all these demands and it will pay any man who is mechanically inclined to look it over as a possible solution for his power puzzle.

This belt power jack will utilize the power of an auto in exactly the same way as the power is used when the car is on the road. The power is delivered to the jack through the road wheels by friction drive. The friction wheels can be made of two two-inch planks and two one-inch boards, one on each side of the boards. For friction wheels twenty-four inches in diameter the planks should be sawed about 26 inches long and the pieces bolted together to make a square piece 26 inches square and 6 inches

thick. The pulley may now be sawn out by a band saw. A groove $1\frac{1}{2}$ inches deep and 5 inches wide is now turned out on the lathe. The wheels are secured to the shaft by means of plates bolted one on each side of the wheel and keyed to the shaft. The bearings for the shaft may be of metal or good hard maple wood, and they may be set in hangers below the floor or simply bolted to the joints. In installing the shaft and using 24 inch friction wheels it is necessary that the distance from the centre of the shaft to the floor on which the car stands be two inches. This will allow the wheel to project two inches above the floor.

The belt pulley shown is 36 inches in diameter. Where such a large size is used it is of course necessary to cut a hole in the floor to allow it to come through. This size of pulley is shown because with the rear wheels of the car going at the rate of 30 miles per hour the grinder with a five-inch pulley would run at the rate of about 2,600 revolutions a minute.

There is room on the jack-shaft for several pulleys of different sizes which will supply power to different machines requiring different speeds.

For the extra cooling fan nothing will answer better than an extra fan of an automobile fastened to an upright and driven by a one-quarter inch rope from the jack-shaft. The principle of running the rope around a corner is shown in the drawing. Only one guide pulley is shown beneath the floor; two are needed and will work best when close together. The blast from the fan should be directed through a deflector of tin or sheet-iron so that the radiator will get the full benefit of it.

When using the car as a source of belt-power all that is necessary is to drive the car on to the friction wheels of the jackshaft, the front wheels resting against a large block secured to the floor so as to hold the rear wheels of the car on top and a little forward of the centre of the friction wheels. All that is needed is to set the throttle so that the engine runs the wheels at about 20 to 30 miles an hour. When the load is applied the speed may be regulated by experiment.

The use of the car for belt-power is not as hard on it as road work, because the running is very smooth, there are no jolts and no strains due to unevenness of the road. It is an easy matter to have the engine of a Ford deliver from eight to twelve horsepower with such a device.



Service is Built into This Belting

If you could see all kinds of belting being made you'd buy this belt for your farm.

Not on price or looks—on the goodness of the belt.

You know that you need a strong, husky belt for your farm—one to stand lots of work. You'd find in Goodyear Extra Power Belting fabric of extra strength made from specially selected cotton.

You know that a farm belt needs to be protected against rough weather and rough usage. In Extra Power Belting the protection is high-grade rubber—lots of it. It is forced through and

through the fabric, welding the belt into one solid unit.

The expensive cotton in Goodyear Extra Power Belting cannot be whipped to pieces by weather or work. It stands up because of this rubber protection.

We know you will get the best value and the best service from Extra Power Belting.

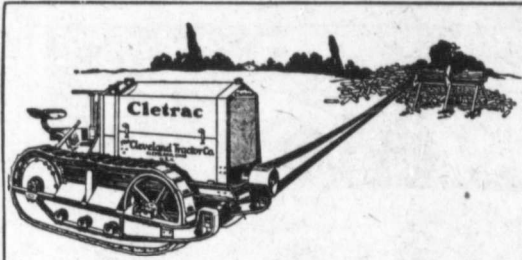
Next time you buy a belt pay a little more and get Goodyear "Extra Power." Demand it by name. Your implement or hardware dealer has it or can get it for you.

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

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THE Cletrac not only does all the "pulling" on the farm better and faster and cheaper than horses, but it will take the place of a gas engine as well.

20 h.p. on the belt pulley to saw wood, chop feed, mix cement. Steady, economical power which adds greatly to the usefulness of your tractor.

The Cletrac Tank-Type works more days in the year. It does the plowing—does it well and quickly. But it follows up. It does the discing, harrowing, seeding, harvesting.

Laying its own track, the Cletrac travels over all kinds of ground, going in all kinds of weather.

It eats up your work at 3 to 3½ miles an hour.

There are a lot of things which you want to know about tractor farming which you will find answered in our 32-page illustrated book "Selecting your Tractor." Write for it to-day. It's free.

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

The Cleveland Tractor Service Co., Limited
Regina, Sask.

Winnipeg, Manitoba, August 15th, 1919.

Dear Sir:—

As I have now had the use of a Cletrac Tractor for virtually two seasons I decided to write you of the work it has done.

The first season the machine was handled by anyone around the farm and gave most excellent service. This season we plowed very considerably in the spring and afterwards used it for harrowing and packing. On 250 acres we pulled a Christiansen Land Packer as well as a 30-foot set of harrows, and found that doing the work by Cletrac was many times over cheaper than by horses.

We are now breaking sod and find the machine handles two plows with ease. Oil and fuel consumption has been exceptionally low and we have had to have but very few repair parts.

Yours truly,

C. H. McFayden.

Cletrac

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Plumbing on the Farm

How to tackle some of the plumbing puzzles on the Farm

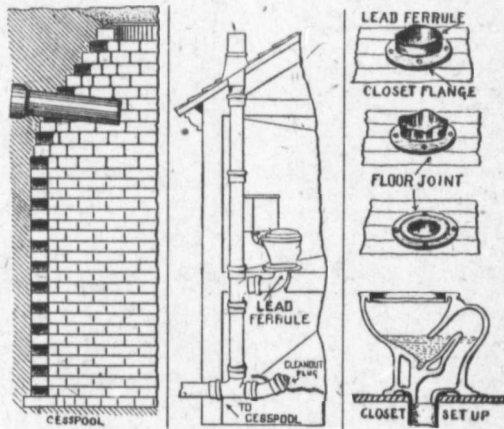
THE proper time to install plumbing in the home is during its construction, when it may be done with less work than at any other time. However, it is not a difficult matter to modernize the home in this respect, and it may be accomplished by anyone possessing moderate ability in the use of tools.

This article is confined to the installation of the toilet and construction of the cesspool, and the proper connection of the two. It is assumed that anyone undertaking such work will not require instruction in running the pipe to supply water for flushing or in arranging for water.

In locating the toilet some consideration must be given as to the location of the floor joist, and in the case of a frame house, the studding as well. If absolutely

opened up. When the job is completed cleats may be nailed along the sides of the joists and studs and the flooring and laths replaced.

A joint of soil pipe is introduced into the opening, hub up, and held there in some convenient way in a vertical position, with the hub a suitable distance above the floor; then a second joint is inserted above the other and its end placed in the hub of the first. A grommet of twisted oakum or tightly twisted newspaper is then forced down in the joint and lead—good and hot—poured in to fill the cavity. When the lead is cool it is well caked down with a blunt-ended tool, the pipe lowered and another joint added until the line is complete. The vent pipe may be a continuation upward of the soil pipe through the roof as shown, or it may be



Illustrating Some of the Problems to be Solved in Plumbing Installation

necessary a floor joist may be cut through and the ends supported by a header spiked into the adjacent joist. The most troublesome part of the job will be met with in the vertical cast-iron soil pipe which connects the toilet to the terra-cotta pipe leading to the cesspool. If the walls of the house are of masonry this pipe will be on the inside and exposed to view, unless its presence is disguised by boxing it in. It may be installed in the same way in a frame house, but the approved way is to put it between the boarding and the plaster laths. To manage this, saw out the flooring between two floor joists a distance from the wall of about two feet, and also remove the plaster and laths between the two adjacent studs to a height sufficient so that a joint of the cast-iron soil pipe may be introduced vertically into the space thus

put up on the outside of the building, as desired.

On top of the last joint of the soil pipe the sanitary tee is fitted, but before permanently securing it in place the connections leading from the toilet to it should be made up permanently with it in one piece. The sanitary bend which turns up under the toilet may be had in a combination of lead and iron; the lead end, or lead ferrule, is at the short end of the bend and makes connection with the closet as later explained. If the soil pipe is in the wall, a short piece of soil pipe will be used to join the bend or elbow to the sanitary tee. These three parts, when properly adjusted loose, should be marked and removed and the lead joints poured and finished; then replaced and firmly and permanently supported, and the joint of the sanitary tee with the soil pipe com-

pleted. The vent to the roof is made up in a similar manner to the soil pipe, the part completed being shoved up as each joint is added, the last being fitted into the upper end of the sanitary tee. A sanitary tee, with cleanout, is placed where the soil pipe enters the ground and affords a means of removing any obstruction that may form in the pipe.

This cleanout may be placed outside the foundation wall if found more convenient.

Now to return to the setting of the toilet: Restore the flooring to place temporarily, cutting and fitting it about the lead ferrule, and then, with a paper template taken off from the base of the toilet, locate and bore the holes for the holding-down bolts and drive them through from the underside. Replace the flooring permanently, taking care that it forms a flat and even surface. Next slip the floor ring over the lead ferrule and trim the ferrule off all round about an inch and a half above the ring, and peen the edges down and outward.

If the job has been well done the tapered discharge part of the toilet will fit tightly in the ferrule when the base of the toilet rests evenly on the floor. Now a little more than fill the recessed base of the toilet with painter's putty softened to the usual consistency with linseed oil, place the toilet in position and tighten on the holding-down bolts slowly and evenly, giving the excess putty time to flow under the edges all round and escape. Next set up the flushing tank and make the water connection. The amount of water used for each flush may be regulated by bending the stem of the float so as to make it close the inlet valve sooner or later as desired.

The cesspool should be excavated at any convenient place, permitting drainage to it, but should not be so close to the house as to endanger the foundation. Ordinarily a cylindrical pit about four and a-half feet in diameter and eight or ten feet deep is dug and the bottom leveled off. Then a layer of bricks, on the flat, are laid loose all round with their ends pointing toward the center, to form a footing, and upon these the wall is laid with loose bricks—that is, without mortar. The final layer of the vertical wall should be set in cement.

About this time the terra-cotta soil pipe should be laid in the trench prepared for it. The bottom of the trench should form an even slope toward the cesspool and should have a fall of not less than a quarter of an inch to the foot. Inspect the joints of the four-inch terra-cotta pipe for cracks or rough projections on



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— Everywhere*



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ONE reason why the Gillette Safety Razor has proven such a big seller among men who work with their hands, as well as with their heads, is that the "Bulldog" has a good big stocky handle — something solid to grasp. Try it yourself. You'll like it.

ASK the dealer to show you the Bulldog Gillette. Notice the neat oval case covered with genuine leather. Included in this set at \$5.00 is a full dozen of the double-edged Gillette blades, that made "NO HONING—NO STROPPING" famous all the world over.

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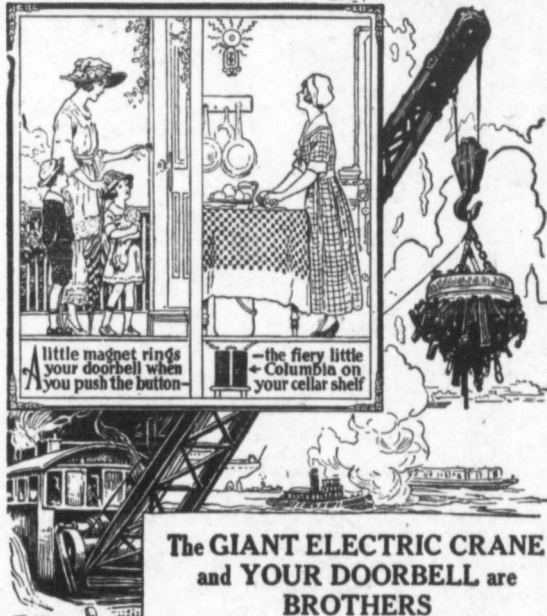
You go to your lawyer for legal advice; to the doctor for medical advice; why not to The Merchants Bank for financial advice?

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THE STORAGE BATTERY

When you buy a Columbia you buy more than just "a battery"—you buy power and endurance. . . . Step into some Columbia place and learn why thousands of motorists prefer the Columbia Storage Battery.



CANADIAN NATIONAL CARBON COMPANY, LIMITED, TORONTO

Canada G-19

the inner surface and lay loose in the trench, hub ends toward the house, and at the same time pass through the joints a small rope long enough to reach to the cesspool, the other end passing through the cleanout at the house. On this end securely fasten a wad of sacking which will fit the pipe snugly and sweep out any excess cement that may come into the pipe through the joints. Make the joint to the cast-iron soil pipe and all others with a mixture of two parts of sand and one of cement, and wipe out by hauling on the line a few joints at a time before the cement sets. The last joint should be cemented into the arch of the cesspool and should project inside about a foot. Fragments of broken brick or oyster shells are strewn over the bottom of the cesspool to prevent washing from the falling stream of water and to facilitate absorption by the earth.

The arch of the cesspool should now be constructed, the bricks being set in cement. An opening eighteen inches in diameter is left at the top in which the cesspool ring is cemented. When the work is tested and found satisfactory the iron cover to the ring should be set in cement and then covered over with earth and a notation for future reference made of its location. If the soil is porous the cesspool will not need cleaning more than once in four or five years. D. W. B.

WHAT IS THE RELATIVE FOOD VALUE OF CHEESE AND BUTTER?

THERE are several ways of arriving at an answer to this question. One is by popular demand. Taking this as our guide, we should be safe in saying that butter is three to five times more valuable than cheese, because the average family consumes three to five times more pounds of butter than they do of cheese. However, popular demand is not always a safe guide in matters of this kind. People have always used butter largely because other persons use butter on bread and consider that nothing will take its place except imitation butters of the "peanut" and "oleo" varieties. They do not know that a pound of cheese, of "Cheddar" or "Cottage" types, may substitute, in part at least, the use of butter, and be fully as nutritious; in fact, more so in respect, as cheese furnishes muscle-building material not found in butter, though the latter contains a "vitamine" not found in cheese of the "Cottage" brand, though "Cheddars," or any form of whole

milk or cream cheese, will have more or less of the "fat-soluble A" compound now declared to be necessary for popular human growth and development. This latter view of the subject is one recently developed by the school of physiological chemists, as distinguished from the analytical school, who have been our chief authorities on this question until recently.

The school of analytical chemists have usually adopted two lines of investigation in this problem. One relates to the percentage of protein, fat and carbohydrates which a food contains, and the other, to its fuel or calorific value, as determined by the calorimeter and expressed in calories or heat units.

Comparing cheese and butter under these heads, we find that cheese contains the protein or muscle-forming compounds in quite large quantity—nearly one-third of its weight consisting of proteins of exceptionally high food values. Recent investigations have shown that the proteids of milk are much more valuable than the proteids of grain. This is the most valuable physiological "find" in recent years, so far as the food value of cheese is concerned. It also has a fair quantity of heat-formers if made from whole milk or cream. In the matter of chemical compounds required for sustenance of mankind, cheese is more valuable than butter.

Turning to the relatively fuel values we find, according to Bulletin No. 377 of the Department of Trade and Commerce, Canada, that the food values per pound of leading dairy products are:

	Calories.
Normal milk	281
Skim-milk	146
Condensed milk	1,425
Evaporated milk	622
Condensed skim-milk	1,392
Cream	760
Evaporated cream	1,056
Butter	3,379
Cheese	2,847
Milk powder	2,268
Skim-milk powder	1,615

According to fuel values, the relation of cheese and butter is 2,847 to 3,379, or about 1:1.2.

Considering, then, the chemical composition and relative fuel values, cheese and butter should be more nearly the same price, and we may expect these to get nearer together when popular demand for cheese increases, as it will, if consumers understand more clearly the question of foods and their relation to rices. The old ratios of 1:2.5 are gone forever, which is well for the Canadian cheese trade.—H. H. D.

"Yes," said the millionaire, "I not only made hay while the sun shone, but I made it from the grass that grew under other people's feet."

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"Empire" corrugated Iron

"EMPIRE" Corrugated Iron is made with deep corrugations fitting closely and snugly; it makes a splendid, strong, rigid wall that withstands all storms. Remember—building with Metal gives you fire-proof, weather-proof and lightning-proof buildings.

Our "Metallic" building materials—the Quality First kind—may cost a little more than other building materials, but they're permanent. "Eastlake" Galvanized Shingles; "Metallic" Ceilings; "Metallic" Lath and Brick-face and Clapboard Siding; Roof-lights and Ventilators, Silo Tops, etc., save you money.

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- 1.—Seams double stitched.
- 2.—Every button riveted.
- 3.—Points where hardest strain comes doubly reinforced.
- 4.—Angular rule pocket.
- 5.—Pockets roomy and convenient.
- 6.—Five-and-take suspenders.
- 7.—Tough, durable denim cloth that wears like leather, and ignores washing and rubbing.

You can be sure of getting my overalls by looking for the car-heart button.

Spurlock Carhartt
President.

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

FARMS, BRANDON, MANITOBA—We have an excellent list of improved farms in this famous agricultural district for sale at \$35.00 to \$50.00 per acre. Farmers enjoy all the advantages of a high-class community, situated close to a good city. Write for particulars. O. L. Harwood, Brandon, Manitoba.

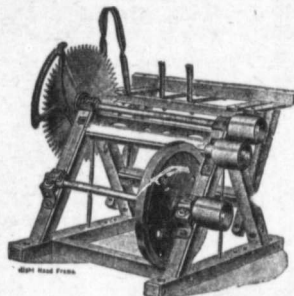
EXPERIENCES ON THE PEACE RIVER
(Continued from page 20)

arate the awns. Without threshing, barley is a risky crop to feed to any class of stock because of the awns. It is very susceptible to late summer frosts. A temperature which will leave oats unscathed (so far as filling of the grain is concerned) will badly blast a crop of barley, resulting in many shrunken and meatless kernels. If the frost occurs while the barley is just nicely headed out, it may kill the heads while the beards are still soft and pliant, and the crop may then be cured into good, safe cattle fodder; but the frosting is more likely to occur at a later stage, in which case one must thresh the crop in order to make the straw safe to feed. Of course, there are beardless barleys, to which this statement does not apply, but none of the beardless barleys are reputed to be good yielders. I had the Success once, but found it anything but a success. It yielded poorly, rusted and shattered badly. I believe, though, that in a neighborhood without threshing machines I should prefer it to the bearded sorts. Cattle eat it greedily from the sheaf. One objection to it is that once grown on a farm it will keep on volunteering indefinitely, owing to its earliness and tendency to shatter readily. The best all-round barley I have found is the O.A.C. No. 21, a six-rowed kind. Manchurian is also good, but shatters too easily in a wind. Early Chevalier is an excellent two-rowed variety, producing a fine large sample of grain, but not yielding quite so well as a rule. It has, however, the advantage that in a high wind it will lose many of its beards rather than shelling out so many of its kernels.

A Hardy Spring Wheat
Wheat is a crop on which new settlers in northern regions should go light. A little may be tried, for at the worst it may be fed in the sheaf, and if matured it will make breadstuffs and chicken feed. It should usually be sown as early as possible on land well prepared the previous season. I have found Huron a hardier and more prolific variety than Marquis. In four years' tests it has outyielded the latter by thirty per cent, the difference being especially conspicuous in frosty seasons. It is a red-chaffed, bearded wheat, not extra difficult to thresh, yet never giving me any trouble from shattering. It will not make so white a loaf of bread as Marquis, but is supposed to be a passable bread-making variety and just as valuable as Marquis for producing pork or eggs.

(Continued on page 41)

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The Sensation of the Fur Market

THE fur market might be said to be the most spectacular of anything to be seen on any of the world's exchanges at this date. Inside or outside, there are surprises and things to astonish, far too numerous to recite within reasonable space, but the following brief synopsis will outline some of its more striking departures:

Before the war, London—the hub of the British Empire—might be said to have also been the bull's-eye of the fur market. Now, by reason of several things but chiefly the trend of fashion in North and South America, the big trading centres of North America are, for the time being at all events, governing the exchange.

Supply and demand have here set down the arbitrary rules that govern price, and some of the "prices" obtaining as we write are enough to awaken a whole cemetery of sleeping souls to a full consciousness of many unsuspected things about furs, not the least being that the pelts of certain animals are not necessarily worn for their warmth as was the case when these dead ones took their walk abroad.

Today in some of the hottest of tropical and sub-tropical Southern States, one will find every devotee of fashion wearing something of the nature of fur embellishment, if it is only a piece of trimming to a ball costume, insignificant in bulk but ridiculously "large" in point of costliness.

Practically everything in the shape of outer-garment (cloth, silk or lace) has its decoration of

fur; why? For no other reason than that it is simply "the thing" and when an idea becomes "the thing" or *le dernier cri*, as the French have it, nothing in market manipulation or legislative enactments can alter it.

Well, in addition to the above fact, there is the growing tendency to expend much of the war's wealth in augmented incomes on fur specialties—not only for the ordinary purposes of warmth and attractive winter clothing, but as mere speculation. That certain types of furs will continue to soar for a long time to come is about as certain as the recurrence of the seasons.

In a recent report of the fall auction sale of one fur exchange in St. Louis, we cull the following interesting particulars:

9,055 Alaska sealskins were sold at an advance of 30 per cent over sales of April last; 1,332 Blue fox at an advance of from 100 per cent to 135 per cent; 189,000 ermines at an advance of 40 per cent for American pelts and 50 per cent for Russian. Silver fox advanced 75 per cent; muskrat 70 per cent and marmots 75 per cent; chinchilla went up 100 per cent; raccoon 25 per cent; skunk 20 per cent and beaver 40 per cent, all on top of last April prices. All types of fur knocked down in this fifteen-million-dollar sale either made a most substantial advance or remained unchanged from last record; the only drop being in Russian sables which went down 25 points.

The one inconvenience manufacturers are experiencing is a shortage of skilled labor, and this factor will also have its dominating influence on prices.

Reports from all fur-producing countries continue to show an absence of surplus stocks, and the greater portion of the furs disposed of in this particular sale were bought for the present fall and winter's consumption, before the new catch can reach the market.

From the above particulars, our readers who have pelts to sell will decide for themselves whether to ship or to hold; as to those who contemplate buying furs or fur garments, there can be no doubt that it will be a very long time until such a thing as a slump occurs, and that if anything in life is certain it is that prices will continue to stiffen. It cannot be otherwise in the case of many popular types of fur in view of the scarcity of supply and the insatiable demand for those particular luxuries.

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Dog Remedies NEW YORK, U.S.A.

May we point with something of pardonable pride to the big and absolutely safe market in Canada for the purchase of furs and for the sale of manufactured fur garments. Our pages this month contain the announcements of several leading houses — buyers of raw furs and peltries as well as sellers of high-class fur specialties — as to the integrity and financial standing of all of whom we can speak in unqualified terms.

**Experiences on the Peace River
(Continued from page 39)**

Winter Rye Promising

Winter rye is a crop that would seem worthy of more attention than it receives. It will come through safely where fall wheat kills out. It remains green later in the autumn and commences to grow earlier in the spring than any other crop we know of. We had plot yields last year of over fifty-seven bushels of good grain per acre. A spot of crude, raw, subsoil yielded thirty bushels of wheat. Though responding to good soil it will endure adversity better than most crops. My experience with rye is limited to a single season, but we are encouraged to experiment further.

A Hundred Dollars for a Wild Oat

"If I had one wild oat on my homestead I would gladly give anybody a hundred dollars to find it," remarked a shrewd farmer last fall. He was a Dakota man, who, like many others among us, had left that state partly because of the foul condition of so many farms there. He was not what one would call an "over particular" farmer, but he knew wild oats to his sorrow. The lesson of his experience should not be lost upon settlers in new districts. It were a thousand pities to soil the new nest with weed filth from the old. Examine purchased seed grain with the utmost care and caution. Keep the homestead clean as possible. There are plenty of native weeds to cope with and plenty of others will come with the best of care, especially when one commences to buy grass seeds. Eternal vigilance—

Test All Seeds Out

Most Western settlers understand tolerably well the relative effect of frost upon the viability of various grains, but a word of caution will not be amiss. Oats are the most deceiving cereal as regards germination, for a plump sample, looking attractive to the average man, may have sustained frost injury which has gravely impaired its germinating qualities. Experienced farmers know better than to trust appearance on seed oats. They test them as a matter of course. If disinclined to make the test themselves, they may

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RAW FURS

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send to the Dominion Seed Laboratory at Calgary, or to the Seed Laboratory, Ottawa, according to their location, paying postage on the samples in the former case.

The viability of wheat may be fairly well judged by appearance. The germ of wheat is less easily injured by frost than is the germ of oats, while, contrariwise, the market sample of wheat is much more easily affected than is the market sample of oats. Wheat that looks reasonably plump, and some which looks pretty dark and shrunken, is likely to germinate a good percentage, providing it has been properly harvested and

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stored. It is good practice to test all seed grain, but especially important to test oats and barley. Barley is susceptible to frost injury both as to sample and germinating percentage. A good-looking sample of barley is not necessarily safe seed. Test before sowing, and get plump, strong-germinating seed if possible. It gives the plants a good start and enables them to overcome setbacks whether of drouth, wet, cold, wind, frost or insect attack.

Of field roots we find turnips the only class meriting much consideration. They are the easiest to grow, give decidedly the largest yields, and need not be harvested until towards the middle of October. Sometimes they would be all right until early November, but it is extremely in-

advisable to leave them thus. Last year we had a severe cold snap in mid-October which spoiled for keeping all roots not lifted in advance of it. Beet roots not only fail to yield as well as turnips for us, but they are susceptible to frosts that sometimes occur in September. In 1915 I had mangels spoiled by an unusual dip of weather about the tenth or twelfth of that month. Thus danger necessitates early harvesting to ensure against loss of the crop. Because of their protruding crowns, mangels are more risky than carrots or sugar beets. Speaking generally, we find that field roots call for more hand labor than it is profitable for us to devote to the production of forage. By the majority of us a few turnips must be made to fill the

bill. (I hope no cheese-maker reads this paragraph.)

Of garden crops, potatoes stand first, of course. For northern districts, choose a precocious variety like Early Rose, and plant the bulk of the crop fairly early to allow sufficient time for the tubers to mature. As a second string to the bow, a few rows may be planted later, lest the first planting might sometime be ruined by a June or July frost.

"Mamma, did you ever notice how Uncle James eats?"

"No, dear; it is impolite to watch your uncle while he is eating."

"But you won't have to watch him, mamma, you can hear him eat."

A FALL CAMPAIGN AGAINST GRASSHOPPERS

By Professor F. W. Brodrick, Manitoba Agricultural College

IN view of the fact that reliable authorities have found large numbers of grasshopper eggs laid on the roadsides and in the fields throughout the districts in Manitoba where they were most prevalent this year, it is highly advisable that definite action be taken this fall to prevent, as far as possible, an outbreak next spring. Judging by the large numbers of eggs that have been laid this fall, it is quite possible that an outbreak may occur next spring of greater intensity and of more widespread distribution than the one which occurred this year.

Grasshopper eggs are laid in masses, and eggs which are laid this fall will winter over in this condition and will hatch next spring. Deep fall plowing or deep discing of affected land will break up large numbers of the egg masses, and by exposing them to the frost will prevent them from hatching next spring. To be effective, plowing must be deeply done.

Large numbers of eggs have been laid in high, dry places along the roadsides and in the adjoining fields.

Concerted action by municipalities would be much more effective than disconnected individual action.

Summarized briefly, the following control action may be taken:

(1) Have communities well organized so that they may take action this fall and in the spring at the first appearance of grasshoppers.

(2) Plow or disc deeply this fall all stubble land to break up egg masses and destroy the eggs.

(3) Work summerfallows this fall as late as possible to destroy any eggs.

(4) Plow or disc deeply all roadsides or division lines where eggs may have been laid.

(5) Burn over grassy or weedy patches which may provide harboring places for grasshoppers, and thereby prevent a spring outbreak.

(6) Have supplies of poison and other ingredients for poison mixture put in this fall or during the winter that immediate action may be taken next spring.

Lost Opportunity

"My first patient called on me to-day," said the young doctor. "He's rich, too."

"Congratulations!" replied the elderly doctor. "What was the matter with him?"

"Nothing. I couldn't find a thing wrong with him."

"Ah! my boy, you still have a great deal to learn about your profession."

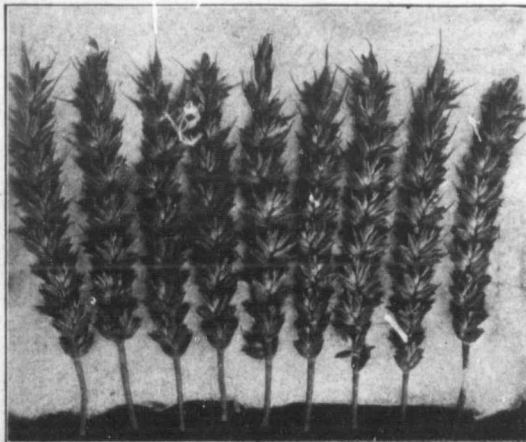
Wheat Growing in Northern British Columbia

MR. John Kennedy, of the United Grain Growers, who has recently completed a tour through Northern British Columbia, brings the following particulars which will be found of special interest to our readers: "The sample of wheat (of which a photographic reproduction is given on this page) was secured at Fort St. James, which is situated at the head of Stuart Lake, B. C. Fort St. James is 40 miles north of Vanderhoof on the Grand Trunk Pacific, about 60 miles west of Prince George and a little over 300 miles east of Prince Rupert. There is a good car road from Vanderhoof to Fort St. James and a splendid belt of land all along the Stuart

Homesteads

I understood all this land will be open for homestead at an early date. It is already surveyed, and no doubt a branch of the Grand Trunk Pacific will tap this country from Vanderhoof in the near future. I was informed that the P. & G. E. Railway from Vancouver is likely to change its routing from that to Prince George, going through Ootsa and Lake Francois, which is on the south side of the Grand Trunk, going up there to the Peace River on the lines just outlined.

"Fort St. James being situated at the head of Stuart lake, is bound to become a central point, because of its being at the head of a great waterway through



Note that part of the centre heads are twelve rowed. The wheat is Marquis. The wheat was grown by the Hudson's Bay agent at Fort St. James.

river, which empties Stuart lake into the Nechako river.

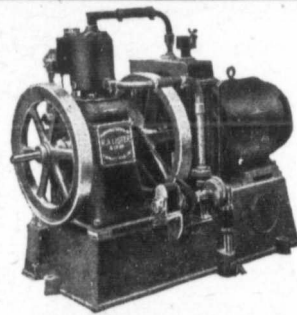
Mr. Kennedy says: "I made a survey 20 miles north of Stuart lake and found the same kind of land continuing, and from information I gathered from trappers, miners, survey men and Hudson Bay men this kind of land continues for probably 100 miles north of that, and then reaches the head waters of part of the Peace river, which I believe contains much good land all the way down to the Peace River settlement.

"I believe all this district will grow such wheat as is shown here. There is very little open land indeed, but there is much of it that is easily cleared, being burned over some few years ago and is now covered with white poplar and some spruce. Much of the poplar is small, and in many places there are small openings here and there over the district.

lakes and rivers up many miles into the country. Stuart lake is between 40 and 50 miles long, seven or eight miles wide, full of fish of many kinds of the highest quality—rainbow trout, grey trout, sturgeon and whitefish. I caught some of the rainbow trout myself.

"It has many valuable timber limits with splendid timber and miles and miles of poplar, white poplar and spruce. The country north of there is rich in mineral, and many trappers are making from \$2,000 to \$5,000 a year in trapping fur. Fort St. James is quite a stirring place and is a Hudson's Bay post with quite extensive buildings and cultivating much land. There is also an Indian village situated there with a large number of inhabitants on the east side of the Hudson's Bay post and on the west side of the company's post is situated an Indian mission with church and large schools.

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Winnipeg, Man.

"There are a large number of Indians here in this Indian mission who all speak English. There is also quite a little village started just west of this Indian mission, several business places and fair hotel accommodation, and the parties are getting ready to build a large summer hotel next summer at this point.

"The climate here is ideal, which will be readily recognized when you take up a map and find that it is about 400 miles west of the Peace river and from 100 to 200 miles south, and I believe there is room for 50,000 + 100,000 homesteaders in this district, as it is very hard indeed to tell how large the district is.

"Some of these heads of wheat came from Telkwa, which is nearly 150 miles west of Vanderhoof, and it is fully as good as the sample from Stuart lake. I account for this extraordinary sample by the climatic conditions from April to September for growth, and by the fact that the weather is never extremely hot and the nights are very cold with sufficient moisture. This easily accounts for the wonderful filling of the wheat. I also have a sample of oats from Stuart lake and that is equal to any oats that can be found in any part of Canada."

TO CANADIAN FUR SHIPPERS

A. B. Shubert, Ltd., are pleased to announce the opening of their Winnipeg office at 324 Donald Street, Winnipeg, Manitoba, Canada. "Shubert" requires no introduction to the Canadian fur shipper, having been in the field for over thirty-six years. This connection in Canada is for the sole purpose of a more mutual relationship between the "Canadian fur shipper" and "Shubert" and to give the "Canadian fur shipper" unexcelled service. Canadian fur shippers are kindly requested to address all inquiries or communications to A. B. Shubert, Ltd., 324 Donald Street, Winnipeg, Canada.

Lowered Percentage

Donald: "D'ye ken Mac fell in the river on his way hame last night?"

Willie: "Ye dinna mean tae say he was drowned?"

Donald: "Not drowned, but badly diluted."

"Can I have a piece of pie, mother?"

"Say 'May I,' Johnny, not 'Can I.'"

"Well, mother, may I have a piece of pie?"

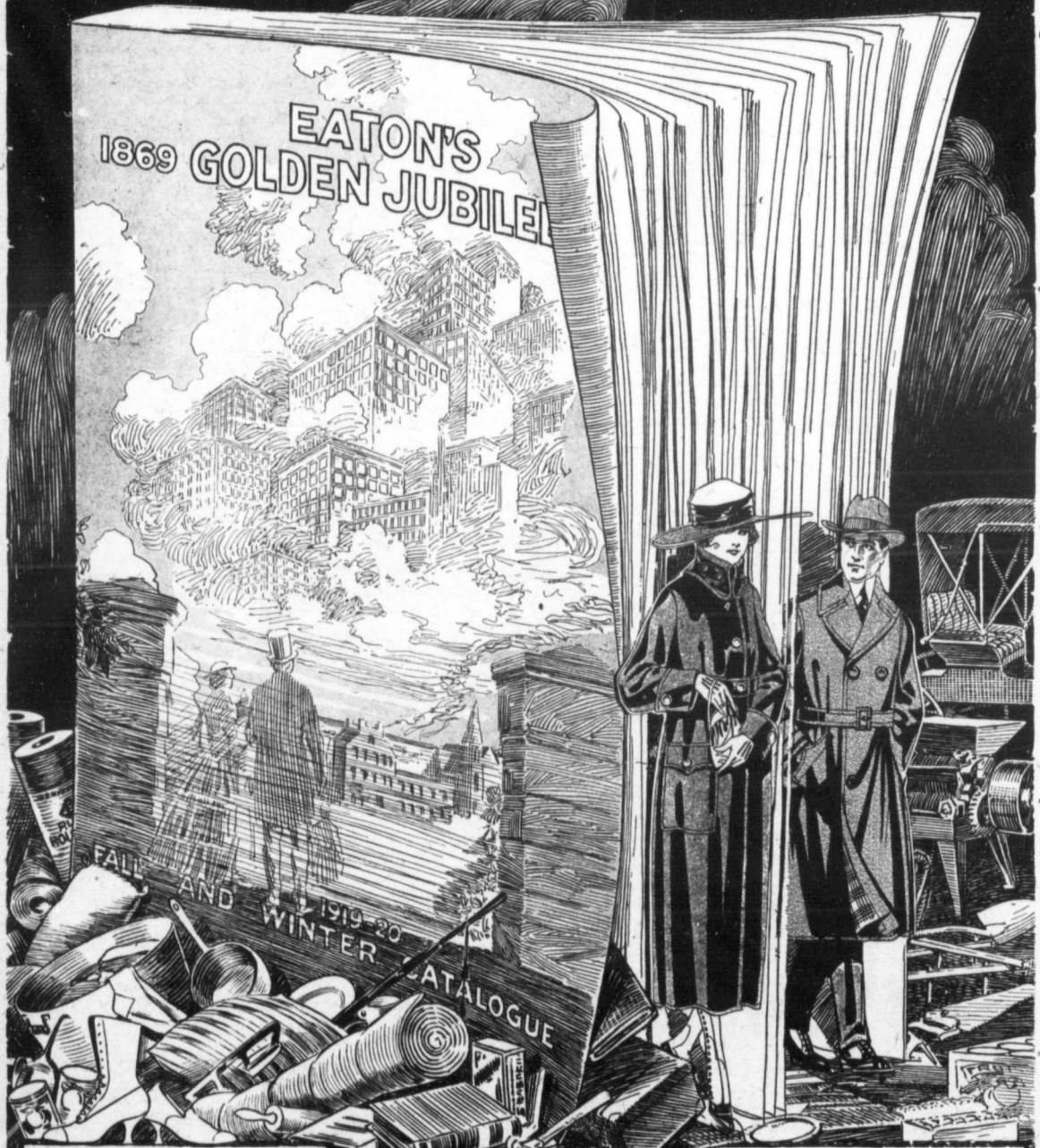
"No, Johnny, you can't."

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The "Vanguard" is a 25 jewel movement, adjusted to temperature, isochronism and 5 or 6 positions, case in gold, gold filled or nickel with 12 or 24 hour dial as desired. An extra refinement of the "Vanguard" is the winding indicator which prevents the watch running down unawares.

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Waltham, Mass.

Repair Vehicle Springs

THE mending of a broken automobile spring is not so hard a job as it looks, and it is quite easy to fix a spring in which one or more of the leaves are broken. But, to be more accurate, there is no such thing as "repairing" a broken automobile spring. The broken parts are replaced by new ones.

The first step is to procure bar steel of the width and thickness required to replace the broken leaves. Ordinary spring steel may not answer for this purpose. A steel is made for automobile springs—body springs—which requires no tempering, and this kind of steel must be procured from a dealer. With the proper steel the rest is quite easy and may be done in any shop that possesses a smith's outfit.

Remove the broken leaves and place one of them on edge upon a smooth board or bench. Proceed to form up jig A, to fit the laid-together spring leaf. The jig may be made from a piece of old wagon tire, but a new piece of one-half-by-three-inch new tire is preferable, being smooth on both sides with four square corners. Shape the jig to fit the laid-together broken leaf, then place to one side, ready for use.

Make a center-punch mark a certain distance from the end of the bar of spring steel—say twelve inches. Then forge one end D of the new leaf which is shown clamped to jig A in the accompanying sketch. Punch the teat hole G, the same as in the broken spring; then measure from the twelve-inch mark to the end of leaf at D. Perhaps the distance is now thirteen and a quarter inches, which shows that the steel was lengthened one and a quarter inches in forging end D.

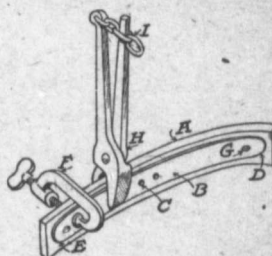
The proper length of steel for the leaf may now be cut from the bar, making the piece one and a quarter inches shorter than the old leaf. When the end E has been plated out by sledge and flatter upon the anvil, the new leaf should be the same length as the broken one. Drill the bolt holes B, and do any other fitting the broken leaf may call for. Sometimes there are edge clips to be removed from the old leaf and placed upon the new one.

Though one of the outside leaves—supposing the spring is an "elliptic"—will carry end bolt clips, the other outer leaf will have its ends turned up to receive the bolts, and these turned-up ends may be formed over a bit of bolt of proper size, finishing the ends in swages—top and bottom—of the proper size, and using the hat cutter to tuck in the tip end of the new leaf snug to the bolt. Proceed in the same way with the

turned-over outer leaf, making the twelve-inch mark as before in order to determine the allowance for short-cutting the other end of the leaf.

Having finished the leaf, filing or grinding the sharp corners away as required, proceed to heat the leaf to a good deep red. This may usually be done by building a pretty large fire on the forge and pulling the leaf back and forth until it is very uniformly heated red along its entire length. Then place the leaf B against jig A, and clamp it fast along its entire length, acting quickly so as to have the leaf securely clamped before it loses its red color.

Common C clamps may be used for the purpose, but they are slow things to apply and the leaf is apt to become too cold before all the



Mending a broken automobile spring

clamps can be put in place. When C clamps must be used for this purpose, open each one—there should be six clamps at least to an ordinary leaf—to just the right distance to slip over jig and leaf when laid together as shown in the sketch. Then grip jig and leaf with a pair of tongs, squeeze them together and apply a C clamp close to the tongs.

If many spring leaves are to be made, it will pay to procure or make sets of special tongs as shown at H. These tongs are used by many spring repair men and they each have several links of chain permanently attached as at I, so that after the leaf and jig have been squeezed together by a pair of these tongs, the link I may be slipped over the tongs' leg as shown and the tongs left as a clamp.

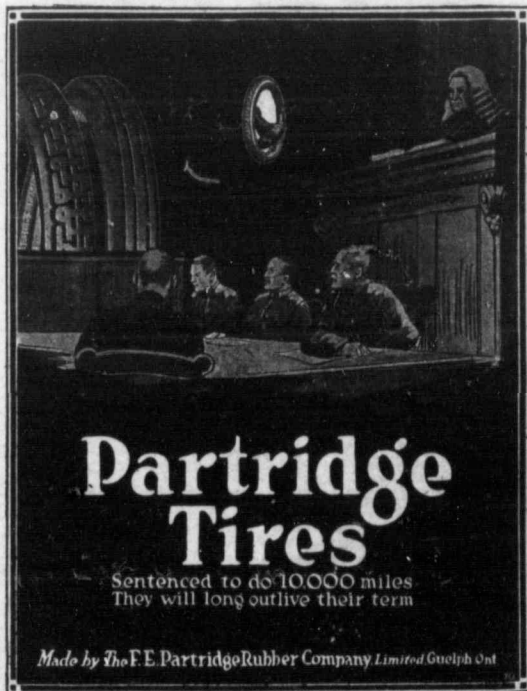
Clamp the leaf as quickly as possible, and in cold weather have the jig well warmed before clamping. Let the new leaf remain on the jig until cold, then remove and put in place in the spring.

James F. Hobart.

The Moth and the Clothes

Society Woman: "I see by today's papers I am referred to as one of 'fashion's butterflies.'"

Her Husband: "Considering the way you go through clothes I should think moths would apply better."



**Partridge
Tires**

Sentenced to do 10,000 miles
They will long outlive their term

Made by The F.E. Partridge Rubber Company Limited, Guilford, Ont.

CHEAP HOUSING AND LABOR SAVING IN THE WINTER FATENING OF SWINE

ONE of the most common losses in connection with winter swine management is due to crippling or rheumatism. That this malady, easy to contract and difficult to cure, may be practically eliminated, or rather, prevented, in breeding stock, wintered out-of-doors with open shelters, has been demonstrated beyond doubt. No ill effect has cropped up to offset this advantage. With several individuals in a small, well-bedded cabin, there is no apparent discomfort to the inmates even during the most rigorous months of the Canadian winter.

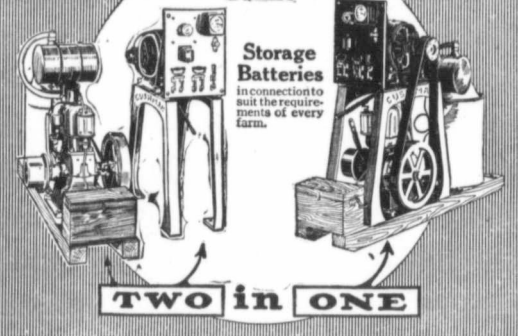
The fattening hog, heavily fed, required to make maximum gains in minimum time, would seem to require warm quarters. The energy required to offset cold would thereby be utilized for growth and

fat production. Less feed would be required. While the latter promise proves true, the fact of the matter is that the swine feeder is confronted with the choice of two apparent evils—a comparatively cold house, that because of its nature, is practically like outdoors and therefore dry, or a more expensive, tightly-built, warmer structure, that, even if ventilated, usually proves more or less damp. Crippling in hogs will appear to a greater or lesser degree under bad or good management. Damp quarters undoubtedly predispose to it. Add to this, heavy feeding, with occasional over-feeding, and the result is frequently that of several more or less crippled pigs, the whole or partial losses from which will seriously affect the winter's profits. On the other hand it has now been pretty well proven at several points in the Experimental Farm system that such losses from outdoor-fattened hogs are practically negligible and that the evidence of thrift and quality resultant, very greatly overbalance the extra cost of outdoor feeding. Cold air should in itself have no virtue. Nevertheless the open-air hog is more vigorous and healthy than the one fed in warm, dry quarters. Constantly pure air and a certain amount of exercise would seem to be responsible.

The use of the self-feeder during winter has also proven a success. The feeder or feeders must be protected by a shed, as suggested. There is no trouble from frozen troughs and the general inconvenience and waste of slop feeding in winter. Much disagreeable labor in the cold is avoided; in fact, the man who uses the self-feeder for the winter work finds it even more of a convenience than it proves in summer. As to gains and cost to produce, tests have proven it usually superior to the hand-feeding method. Whole, cracked or ground corn, ground barley or barley and oats may be fed. Shorts, bran, re-cleaned screenings, etc., may be mixed with the above, or following the American plan, fed separately in compartments. Where corn enters heavily into the ration, tankage should be fed in a compartment by itself. Charcoal, woodashes, slaked lime, salt, etc., or a mixture of these should be available. If nothing better, supply plenty of ashes, both coal and wood. Where dairy by-products are not available, water, preferably slightly warmed, must be supplied. Some form of watering device including a tank heater, home-made or purchased, will prove useful where many hogs are kept. A rough rack along one side of the shed near the trough or feeder should be kept filled with well-cured clover or alfalfa hay.

Cushman "Does-More" Light Plant

Light and Power
The Unit Belt Type Electric Lighting Plant in One Plant The Standard 4 H.P. All Purpose Power Plant



Full particulars and agency offer. Write to-day.

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Distributing Warehouses: Toronto, Ont. and London, Ont.
Builders of High Grade, Light Weight, High Power Engines for General Purpose Farm Work

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NOURISHING DELICIOUS ECONOMICAL

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Write to-day for illustrated recipe book — over 100 dishes described. Catelli's Macaroni makes a satisfying and nourishing meal. Cooks quickly. Have you ever tried it? Write for that book.

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If you want quickest returns and most money for your Furs, Hides, Wool, etc., ship them to

FRANK MASSIN
Brandon Manitoba

Write for prices and shipping tags

FOR SALE—20-40 H. P. Case Tractor, only plowed 450 acres, practically as new; and five-furrow Cockshutt Plow, stubble and breaking bottoms, and about 25 shares. Would trade for cattle. Owner must sell on account of leaving Canada. H. F. Cole, Masonville P.O., Saskatchewan.

MALTESE CROSS TIRES

TRADE MARK

Users Believe in Them

THE unprecedented number of used cars with full Maltese Cross Tire equipment, is the best proof of the staunch faith motorists have in

"The Tires That Give Satisfaction"

Gutta Percha & Rubber, Ltd.
Head Offices and Factory - TORONTO

Our Women Folk

CONDUCTED BY
PEARL RICHMOND HAMILTON

PRAYER

(By Anna M. Henderson)

Dear God, I ask not that along my way
The path be smoothed; nor to direct
my tread.

The trail be blazed, a chart before me
spread,
Nor that the dark too soon be turned
to day.

The untried virtue, shrinking in dismay
From life's turmoil, its bitterness and
dread,

I cannot praise. Where strength and
men are bred
In dust and heat of conflict let me
stay.

Teach me the truth that triumphs over
pain.
Grant that to me the sweat of toil be
sweet,

I ask no rich reward, I only crave
A spirit singing to the lashing rain—
A lifted heart that never knows defeat.
God help me to be strong! God make
me brave!

(The Canadian Magazine)

"There is one thing stronger than
armies, and that is an idea whose time
has come."—Victor Hugo.

TIRED? NO!

By P. R. H.

"And let us not be weary in well doing,
for in due season we shall reap, if we
faint not."

THERE are many women who are
tired—very tired. I am thinking
of them today. Perhaps they have
worked the past few years in serious
war-work. It may be they have led clubs
in civic affairs—or church societies or
some of the scores of other strenuous
out of home affairs. At any rate they
are tired. Some are discouraged; others
are determined to give up, saying,
"What's the use?"

Then there are our tired mothers. For
oh—we do get very weary at times from
our work. But it is all worth while.
Any work for good is our mission in life.

We have so much to do these days.
Outside interests come to the home,
whether home-makers go outside or not.
A vast number of our home-makers are
helping outside interests. And we must
not faint by the wayside. One writer
says: "When we are inclined to think
that life in our times is rather complex
and the outlook for the future not any
too assuring, it is fine, I think, to look
out in our own doorway, up the road and
across the fields, and see how nature
has provided for us."

Spinning through space in orderly
precision, encircled by the wonders of sun,
moon and stars; resting, as within a
cool blue globe of a velvety night, our
great green world has for us all that we
need have to live, all that we need have
for our delights, all that we need for our
growth.

It is only a laggard faith or a thought-
less neglect in searching our own hearts
when we fail to see about us those many
provisions for really and truly living
that a kind and loving Creator has so
thoughtfully placed within our grasp.

It seems almost like childish petulance
for us to complain about life, or the
world, or even the strange ways of men—
for I do think that in the end the best
there is in man comes to the fore, and
though we wander off in the by paths

and forget, and lose our way, we all
get merrily back onto the high road
again.

The great cure for the great restlessness
is the great calm, the quiet, thoughtful,
sincere consideration of your own
relation to the life that is about you—to
nature, to your fellow men and to life.

The unrest, whatever there is is not
out in the world. It does not show itself
in the fruits on the trees or the flowers
in the field. The disquiet is in someone's
heart, selfish persons, I think, who might
feel they could separate themselves from
responsibility to their own kind and the
rest of the world. But humans can no
more do it than one tree can separate
itself from another or the great golden
sunshine choose the cheeks upon which
it will fall."

"So let us not be weary in well doing,
for in due season, we shall reap if we
faint not."

A health campaign has started, and
let every one of us do all we can to help.
We must save our babies.

What does it cost to bury a baby?

What does it cost to save a baby?

Do you see the futility of trying to
keep babies alive if mother's themselves
are under-nourished and too weak to
care? Unintelligent care will not keep
babies alive.

We cannot vote air clean. We cannot
vote mothers intelligent. But we can
conduct an educational campaign that
will make it hard for mothers to be
ignorant, and make it easy for every
mother to know what saves babies, and
what destroys them.

"This great war was fought, and won,
for the sake of the children—the men
and women of tomorrow.

It is our duty to the child to assure
the best possible physical and economic
surroundings, to furnish proper food, to
secure protection from disease, and to
provide every means for growth and
development of a healthy and perfect
body."

No factor is of so great importance
in this reconstruction as the proper care
and protection of the rising generation.

I wonder why hygiene is not taught
in schools.

When I was a small child we were
taught hygiene. The teacher's charts
pictures the human body in healthy
condition and also the same body diseased.
I shall never forget the picture of the
healthy stomach, and the diseased caused
by intoxicants. I shall never forget the
picture of the lungs and other organs
pressed in by tight clothing. Why is
hygiene not taught in our schools?

We women must assist in every possible
way in the health propaganda.

Our educational system of course, is a
matter of intense importance. The
Minister of Education deserves the sympathetic
support of every earnest minded

woman in the province. It is splendid
to know the H.E.S. is taking an active
interest in the work among the foreign
schools. I have a photograph from one
of the teachers that must stir to action
every patriotic woman who sees it.
Several foreign boys are standing back
of a big Union Jack flag. Only the faces
of the boys can be seen. The boy at each
end is holding the flag in place.

By the way here is a little children's
hymn to the flag:

"Dear flag, on thee we fix our hope
That earth may yet be free,
Give little children equal scope
And opportunity.

Where'er the colors are unfurled
Between the farthest poles,
Give all the children of the world
Strong bodies and strong souls.

Let no child toil in mill or mine,
Or languish in a slum
Let school and play and health divine
Our heritage become.

Dear flag, we long to serve thee well,
O, shield us while we grow.
In strength and wisdom we would dwell,
Teach us the way to go."

For some time The Daughters of the
Empire have been helping in a magnificent
way the work in our rural schools.
I wish I could tell the members personally
of the teachers' appreciation of
their support. I trust other women's
clubs will add their active contribution
of sympathetic service to Dr. Thornton's
important educational propaganda in developing
a higher type of citizenship.

The Educational Conference that meets
in Winnipeg in October is an important
event, and we trust that a forward
movement will be made of true educational
value.

Education for good citizenship is the
most important work before us today.
"Let us not be weary in well doing."

As Dr. Thornton said in his address to
the Legislature of Manitoba in January:
"No one should receive the rights,
benefits and privileges of Canadian
citizenship unless he or she is willing
to assume all the duties, burdens and
responsibilities which go therewith."

A BOOK FOR EVERY HOME

CAROLYN Cornell has been writing
a series of articles on Canadians
who won special distinction at the
front. These articles are without doubt
the best that have been written. We
are pleased to know she has decided to
have them published in book form, and
hopes to have it out before Xmas. Let
us keep this in mind. The book should

be in every home in Canada. It is history
—our own history; every boy and girl
needs to be familiar with the deeds of
these brave men.

Mother's Corner

BABY CONTEST

THE Baby Contest will extend to
the first of December. We trust
we shall be able to publish pictures
of fifty babies from now till the
end of the year. A prize of twenty-five
dollars will be sent to the mother who
sends in the best letter on the care of
her child, with a photograph of the little
one. Our last contest was so successful
that we hope to have this one just as
helpful to mothers. Some mothers are
still writing of the assistance the letters
in that contest gave them. Give weight
of child at birth and at the time the
picture was taken.



Cecile Mary Bertha Cordal at four months.

Some mother needs your help, my
reader. Perhaps she is inexperienced.

I like to receive letters from mothers
whose families are grown. We need
their help, too.

Let every mother who reads this page
offer a helpful letter to other mothers.
You may save a baby's life or a serious
illness.

Help our mothers.
Send all communication to Pearl Richmond
Hamilton, 983 Grosvenor Avenue,
Winnipeg.

Girvin, Saak,

Canada.

The Canadiana Thresherman and Farmer
We have only been taking this paper
a very short time, but I am very much
interested in the Mothers' Corner as I
am a mother, too, and as natural, love
little folks.

I have one baby boy, two and a half
years old, 2 ft. 10½ ins. high; 10½ ins.
chest measure, and 30 lbs. in weight.

His worst trouble was constipation. I
was worried about him, and was worried
still more when my mother told me I
was the same way when I was a baby,
for I knew this trouble had been with
me all my life. After having used num-
bers of doctors' medicine and home
medicine, nothing doing good only for
the time being. I decided to let nature
take its place. Well, that didn't work
either, he would only get cross and ill.

I didn't know what to do, he was then
six months old, and his bowels had never
moved naturally, bathing seemed to make
him weak, also the purgatives. He would
sleep so sound when he took the treat-
ments and medicines. We read an advertisement
for shredded wheat, the best



BERT



VESPER

Twin Babies of Mrs. P. T. Cawell

PURITY FLOUR

"More Bread and Better Bread,"

Perfect -
From
Sheaf to
Sack



19

and truest advertisement there is, that I ever read.

We tried a box, and then another. It was used for some time before it began to prove its good name. But in three months time baby and I both had better health than we were born with. We both have good health now, and never take purgatives unless baby eats something I am afraid won't agree with him, then I give Castoria.

Boiled water is a help to children, too. I don't believe in giving too much strong medicines. Mothers should find the food that agrees with her baby best, as the food is also the body builder. Now my baby eats a little of every thing, except hard fried foods, which I don't think is even good for grown-ups.

Shredded wheat has saved me so much trouble and doctoring for both baby and myself. Will send a picture of baby later. Respectfully, Mrs. T. M. Sargent, Girvin, Sask, Canada.

Lensford, Sask.
Dear Mrs. Hamilton:—I see you are

starting another baby contest. I am sending photo of my twins. My twins were 8 months old when photo was taken. At birth Bert weighed 7 pounds, Vesper, 5 pounds. At 8 months he weighed 20 pounds. He was sick for a while I had him on malted milk, then I put him on cow's milk. I think it the best; he is very good. I give him Castoria every day; castor oil for a cold. He has no teeth yet. Vesper has two teeth. I put her on the bottle at two months. She never minded it a bit; she is 16 pounds. Both sit alone; will soon be creeping around. I have 5 children besides the twins, older; so I know what caring for babies is. I find when they are cross there's trouble some place. I think, as a rule, boys are worse than girls. As I am not well I like baby on the bottle best. I am not in a rush taking the bottle from them, for they get so much comfort out of it. Yours truly, Mrs. Pem. T. Cawell.

I would not give Castoria often.—
P. R. H.

Halkirk, Alta.
Dear Mrs. Hamilton:—Here's another young mother that wants to join your Baby Contest. We have been getting The Canadian Thresherman a little while ago, and I thought I would try my luck in sending my little girl.

She is my only daughter. At birth she weighed 8 pounds, and now at 4 months she weighs 11 pounds. I cannot give you her height or her chest measurement because I haven't measured her yet. She is a very healthy baby; also big and strong. Most of the time I put her in her little baby cart and put her outside. She never cries and she is never bothered with her teeth or anything like that like some other babies.

I cannot write very much about her as I have to learn much more yet. I nurse my baby now, and sometimes I give her some when she wants any. I feed her with milk three times a day; also bread and butter.

I must close my letter now. Hope to see my letter in print in the Thresherman. Wishing Mrs. Hamilton and all mothers

every success. Yours sincerely, Mrs. M. Cordel, Halkirk, Alta.

"INASMUCH"
THERE is a little Khaki Club in Winnipeg that needs assistance in farm produce, such as vegetables, butter and eggs, as well as money. This is a little home for children whose fathers gave their lives for us overseas. Can we do too much—can we do enough for these little ones? Any contribution of vegetables, fruit, jams, eggs, butter or clothing will be gratefully received.

The chapter of the I.O.D.E. that has undertaken this work deserves the sincere assistance of every citizen. Let us not forget this big issue that is very small and helpless. Send all contributions to Khaki Club, 65 Furby Street, City.

"The offspring of noble men and women will be superior to themselves, as their aspirations are. By their deeds they shall know them."—Women's Century.



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Illustrating and describing all the new
Fashioned Features in furs for
the coming season.

OUR REPUTATION, backed by years of trading in only high-class furs, stands back of any purchase you may make. We guarantee satisfaction. All goods are shipped express prepaid, and if not entirely satisfactory on arrival may be returned at our expense and money refunded.

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YES, the New Edison Amberola—Mr. Edison's great new phonograph with the Diamond stylus reproducer and your choice of all the brand New Diamond Amberol Records on free trial without a penny down. Now, on this offer, you can have the finest, the best that money can buy at a price very much less than that at which imitations of the genuine Edison Amberolas are offered. Seize this opportunity.

Rock-Bottom Offer Direct Let us send the New Edison Amberola to your home on free trial. Entertain your family and friends with your favorite records—everything from Grand Opera to the latest city song hits, Comic Vaudeville and roaring Minstrel Shows—then if you choose send the outfit back to us at our expense. But if you wish to keep Mr. Edison's superb new instrument, send us only \$1.00 after the free trial. Pay the balance on the easiest kind of monthly payments. Don't miss this wonderfully liberal offer. Write at once.

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Gentlemen:—Please send me your New Edison Catalog and full particulars of your free trial offer on the new model Edison Amberola.

Name _____
Address _____

DOMESTIC CASUALTY
This conversation was overheard in an English munition canteen after a serving of some heavy and half cooked pudding.
Sam: "This 'ere puddin' ain't 'alf 'eavy stuff."
Bill: "That's nothing. My missus made some one day that we couldn't eat, so she gave it to our ducks. A few minutes later a little boy knocked at our door and said: 'Mrs. Jones, yer ducks have sunk.'"

Mrs. Bangs—"If I 'ad a face like your's I'd go and 'ang myself."
Mrs. Wangs—"An' if I had one like yours I'd walk backwards for the rest of me natural."

Lady Teacher—"What is it, Tom?"
Tom—"Jimmy's swearing."
Lady Teacher—"What did he say?"
Tom (after a long pause)—"Well, miss, if you say over all the bad words you know, I'll tell you when you come to it!"

"Great Men Are Impossible Without Great Women"

RICHARD LE GALLIENNE Writes on the Woman Behind the Man

Yet was there never a strength but a woman's softness upheld it,
Never a Thebes of our dreams but it rose to the music of woman—
Iron and stone it might stand, but the women had breathed on the building;
Yea, no man shall make or unmake, ere some woman hath made him a man.

GREAT men are impossible without great women. Behind all masculine greatness there is always present some woman as a part of the process," writes Mr. Richard Le Gallienne in "Munsey's Magazine."
"Sometimes it is a woman who might well have been great on her own account, had she not preferred to submerge her own gifts and ambitions in those of her husband, or brother. Into the mysterious crucible of genius she has chosen to throw as a most precious ingredient her own heart's blood, and too often her tears. She has been content to be the unseen oil that feeds the glittering flame, and far too often this ministry of hers has been taken for granted by its beneficiaries, or has been acknowledged in some patronising footnote in the biographies of the great."

Brain Children
"No man has ever been great merely by his own strength. The greatest brain would lie idle without woman to supply it with motive power, either by her beauty, or her goodness, or her own spiritual and intellectual influence. Creation even in the world of the mind is a dual process. However solitary the thinker, his thought is not born of himself alone. The brain of man would seem to need the impregnation of feminine influence in some form or another before it can give birth to its brain-children."
"Without women nothing is possible," wrote Castiglione, himself, inspired by Elisabetta Gonzaga, one of the great women of the Italian Renaissance, 'either in military courage, or art, or poetry, or music, or philosophy, or even religion. God is truly seen only through them.'

J. S. Mill's Inspiration
"And in our own time John Stuart Mill formulated, from his own experience with his remarkable and dearly loved wife, this theory of the genesis of thought by feminine suggestion:—
"Who can tell how many of the original thoughts put forth by male writers belong to a woman by suggestion, to themselves only by verifying and working out? If I may judge by my own case, a very large proportion indeed."

"The noble dedication to his great book 'On Liberty' makes this inspiring acknowledgement of his indebtedness:—

"To the beloved and departed memory of her who was the inspirer, and in part the author, of all that is best in my writings—the friend and wife of whose exalted sense of truth and right was my strongest incitement, and whose approbation was my chief reward—I dedicate this volume. Like all that I have written for many years, it belongs as much to her as to me."

"Were I but capable of interpreting to the world one-half the great thoughts and noble feelings which are buried in her grave, I should be the medium of a greater benefit to it than is ever likely to arise from anything I can write, unprompted and unassisted by her all but untroubled wisdom."

"This must not be taken merely as a burst of affection. There is no doubt that it represented the actual experience of one whose life from childhood had been an unusual training in hard thinking; and it may be taken as representative, rather than exceptional, in the history of men of genius."

Galileo's Daughter
"No less lofty a scientist than Galileo owed a debt scarcely less great to a well-loved daughter, a vivacious young nun, Sister Celeste, whose delightful letters to her father were published in 1891.
"I pride myself," she says in one of

these, 'that I love and revere my dearest father more, by far, than others love their fathers, and I clearly perceive that, in return, he far surpasses the greater part of other fathers in the love which he has for me, his loved daughter.'

"The letters are not merely full of gay daughterly tenderness and womanly 'mothering' touches, but reveal, too, the active intellectual sympathy between father and daughter, and the very real strength and inspiration she brought him in dark hours, when, but for her, he might have faltered before the menacing superstitions he was to destroy. Her death clearly revealed how much he had leaned upon her, and his own soon followed."

"I continually hear," he wrote to a friend, 'myself lled by my dearly beloved daughter.'

These Angels
"How much have great statesmen, from Pericles to Gladstone and Disraeli, owed to the devotion and intellectual frater-

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- 1 Can you compose a good business letter, and spell well?
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nalism, so to say, of women! Even Bismarck attributed his successes to his wife, Johanna von Puttkammer. The men of iron and all the men of the moon alike have been eager to admit that it was woman that made them, and not they themselves. It is more than likely that Columbus would never have discovered America, had it not been for the championship of Queen Isabella of Castile; and such wisdom as was in the pompous head of Louis XIV. was rather Mme. de Maintenon's than his own.

"Mothers, wives, sweethearts, and sisters—as history over and over again illustrates—it is to these angels that Nature has given charge concerning those strange children, its men of genius; be they soldiers, statesmen, poets, artists, or even saints.

St. Clara and St. Francis
"What Pauls and Eustochium were to St. Jerome was the Italian maiden, Chiara Schiffi of Assisi, known as St. Clara, to St. Francis.

"She defended Francis," says the saint's biographer Sabatier, "not only against others, but against himself. In those hours of dark discouragement which so often and so profoundly disturb the noblest souls and sterilise the grandest efforts, she was beside him to show the way. When he doubted his mission and thought of fleeing to the heights of repose and solitary prayer, it was she who showed him the ripening harvest twining with no reapers to gather it in, men going astray with no shepherd to herd them, and drew him once again into the train of the Galilean, into the number of those who give their lives as a ransom for many."

"Similar is the story of St. Benedict and his twin sister Scholastica.

Renan's Sister

"Another son of the Church, whose estrangement from her was more superficial than fundamental, and whose criticism of the letter of Christianity has long since resulted in an aggrandisement of its spirit, Ernest Renan, would never have been able even to begin his life-work had it not been for the devotion of another 'sister friend,' his own elder sister Henriette. One of the most beautiful things in literature is Renan's record of that devotion in his memoir of her, accompanied by their letters to each other.

"Although," he says, "lives nobly lived stand in no need of recollection, save by God Himself, I should be all the more to blame were I to leave this duty to my sister Henriette unperformed, because I alone know all the treasures of that elect soul. Her timidity, her reserve, her fixed opinion that a woman's life should be a hidden one, cast a veil over her rare qualities which few were permitted to lift. Her existence was one succession of acts of devotion, destined to remain unknown."

Angels Housekeeping

"Of Emerson's life with 'Lidian'—his pet name for his second wife, Lydia—it has been said that it was as if two angels had set up housekeeping together. In the delicate art of living with a transcendental philosopher, Mrs. Emerson was more than matched by Mrs. Bronson Alcott, wife of probably the most helpless idealist ever brought face to face with this perplexing world."

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Name _____ Address _____

Bigley—"He's a pretty bright sort of fellow, isn't he?"

Figley—"I should say he is. He has to wear smoked glasses every time he looks at himself in the mirror."

Mr. Simpson—"Ah, they have just dropped their anchor!"

Mrs. Simpson—"Dear me! I was afraid they would; it's been dangling outside for some time."

TRAGEDY OF GENTEEL OCCUPATIONS

"THERE are abundant proofs that the economic order is changing," says the British Weekly.

"The occupations for which we have to use that detestable adjective 'genteel' are to be paid much less on the whole than those which involve manual labor.

"For example, the new Utopia will need scavengers, and a leading Socialist long ago laid it down that this occupation should be made tolerable by very short hours and very high wages. On the other hand, more agreeable occupations were to be for long hours and comparatively small payments. The same principles were to be run through all the re-valuation of the different kinds of labor.

Education Which Fails

"All this has come to us at a time when there is a real, and indeed intense, belief that the education of the country, and especially such education as is practically reserved for the privileged, is most unsatisfactory in its results. It is believed, rightly or wrongly, that it turns out good sportsmen and is really a training in athletics, but does not send out pupils who are capable and versatile in the work of the world. It is still the pathway to certain forms of employment and emolument, but has a precarious tenure of these.

Professions Threatened

"The professions are threatened. The clerical profession has been, and always will be, one of the sacrificial professions. The farm does not apply in a very large number of instances, but it does apply in the case of the great majority of ministers. The sacrifice has abundant compensation, but it exists. We know ministers of working-class churches who receive far less than their average members. The disparity is growing. Ministers can never go into trade unions, though they may find ways of supplementing small incomes.

"Doctors sometimes talk formidably about striking, but the man who refuses to save life when he has an opportunity will be considered and treated as a murderer by the democracy. What is far more likely is a National Health service, employing doctors at a moderate salary and offering no great opportunities of rising.

To Everyone His Trade

"Teachers, we rejoice to see, are to have better incomes, but the limit will soon be reached and the ratepayer has his vote. It is most unlikely that teachers will be paid in the future more than the average working man. Of barristers and lawyers generally we can only say that they are very numerous. There is a general impression that many barristers are largely unemployed, but they often find an income in other occupations for which they are better fitted.



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"Not me! Try it yerself an' see how old-fashioned she'll look at yer."

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"What can be done? It is of very little use to talk widely and vaguely. We must have practical proposals, and we venture to make ours. We suggest that at school every boy and every girl should learn a trade.

"In the matter of education we are all utilitarians now. There are science men and classical men, but each argues for his own branch being genuinely useful. We are not going into that controversy, but we contend that the precious school hours and years should send out the pupils into the world masters of a trade. If it be necessary trade it is available anywhere and in almost all circumstances. It may never become necessary to practise the trade. On the other hand, it may become necessary even for those who least anticipate such a state of things. Much of the pioneer work of the future—and it is certain, however things may look at the present moment, that millions of new workers will betake themselves to the pioneer life—will be done best by those who can put their hands to almost anything.

Snobbish Objections

"The objections to teaching a trade from the bourgeois point of view are: (1) The usual snobbish objection to any work that makes us take our coat off; (2) the generally accepted view that culture and manual work are antagonistic to one another; (3) the very common dislike of professionalism; and (4) teachers of a certain type have a special grudge against a trade on the ground that it is what they call 'uneducational.'

"We have important information from mistresses of some of the best ladies' schools that wealthy parents are increasingly anxious that their girls, in addition to accomplishments, should learn something by which they could make a living if need be."

GUIDING THE BOY IN HIS TEENS.

Twelve is the Danger Line—Twenty is Safety, be your Boy's Friend then if ever.

By Mrs. Frederic Schoff

EVERY boy passes through the most critical period of his entire life in the years when, leaving childhood behind, he enters youth. Many boys' lives are wrecked during these years, simply because boy nature is not understood as it should be. And as a mother of boys and an acquaintance of hundreds of boys, I plead for a better chance for those who are boys today. This will come only as parents, teachers, and the community realize and understand that so-called bad boys are, in most instances, the direct result of failure to understand boyhood's needs, and of the consequent mistaken methods of discipline and education.

In a wide acquaintance with boys whom the world called bad, I have never seen one whose heart could not be touched and his higher nature brought out through sympathetic understanding and confidence. I have seen so many boys driven from home, causing heartbreak to their parents and ruin to the boys, because their fathers and mothers did not understand these critical years of adolescence; I have seen so many boys driven into criminal lives because of ignorant, mistaken treatment of boyish faults, that I know of no greater need than to promulgate faith in boyhood's nobility and its possibilities for useful manhood. And with this faith should go the knowledge of how to guide the boys through the maelstrom in the stream of life into the smooth current of manhood.

Those who have studied child development claim that children do not reason according to adult standards before the age of fourteen. Therefore, before then, it is not just to hold them responsible as one would an adult. Aristotle fixed the beginning of the age of reason at fourteen. Then the youth is no longer willing to submit without question to the commands of parents nor to take unquestioningly any statements.

The relationship of parent and child should at this time begin to change into that of friend and companion. The home-nest becomes too restricted, and unless the parents are wise enough to

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CANADA'S own and beloved Mary Pickford is about to produce one of the greatest moving picture plays of her career. It is a story abounding in love and humour, pathos and happiness.

Miss Pickford's big problem now is to select a capable actor who will be suitable as her leading man in this great production. She can pick from all the greatest moving picture actors of the world, but her selection is now down to the five favorite movie actors whose pictures are shown above. One of these five will be chosen by her to play the Leading Man's role in this great new movie production.

Do you know the Names of these five Favorite Players? The object of this contest is to recognize and name these five most prominent movie-actors. After you have recognized them, and in order to help you name them correctly, we have put their right names under-

neath their pictures in jumbled letters. Unscramble these letters, put them into their right order and you will have their names. In case you are not familiar with the names of the most popular moving picture actors today, the names below will help you.

Names of Some of the Favorite Players
 Fred Huntley, Allan Sears, Owen Moore, Milton Sills, Jack Pickford, Charlie Chaplin, Charles Ray, Elliot Dexter, Wallace Reid, Francis Ford, Dustin Farnum, Henry Walthall, Warren Kerrigan, Jack Gilbert, Harold Goodwin, William S. Hart, Thomas Meighan, Antonio Moreno, Stuart Holmes, Francis X. Bushman, William Farnum, Robert Harron, Douglas Fairbanks, Earl Williams, Ralph Lewis, Tom Moore.

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- 9th Prize, \$10.00
- 10th Prize, \$10.00
- 11th Prize, \$10.00
- 12th Prize, \$10.00
- 13th Prize, \$5.00
- 14th Prize, \$5.00
- 15th Prize, \$5.00
- 16th Prize, \$5.00
- 17th Prize, \$5.00
- 18th Prize, \$5.00
- 19th Prize, \$3.00
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EVERYWOMAN'S WORLD is so popular everywhere that it now has the vast circulation of 100,000 copies a month, but our motto is "Everywoman's World is Every Woman's Home." We want more Canadian readers to become acquainted with this famous publication. Therefore, when we acknowledge your entry to this contest, and you know your standing for the prize, we shall send you a copy of the very latest issue, a review of many of the fine features soon to appear, without any cost to you. We shall also send, free of charge to all qualified contestants, a charming photo of Miss Mary Pickford with reproduction of her autograph in her own handwriting. Then, in order to qualify your entry to be sent on for the judging and awarding of the big prizes, you will be asked to assist us in carrying on this big introduction plan by show-

ing your copy to just four friends or neighbours, who will appreciate this really worth-while Canadian magazine and want it to come to them every month. You will easily fulfill this simple condition in a few minutes of your spare time.

How to Send in Your Solution

Use one side of the paper only, and put your name and address (stating whether Miss, Mrs., Mr. or Master) in the upper right-hand corner. If you wish to write anything but your answers, use a separate sheet of paper.

Miss Mary Pickford, as Honorary Judge and three independent judges, having no connection whatever with this firm, will award the prizes, and the answer gaining 250 points will take first prize. You will get 20 points for every name solved correctly, and 40 points will be given for general neatness, punctuation and spelling; 10 points for hand writing, and 100 points for fulfilling the conditions of the contest. Contestants must agree to abide by the decision of the judges. The contest will close at 5 p.m., May 31st, 1920, immediately after which the answers will be judged and prizes awarded.

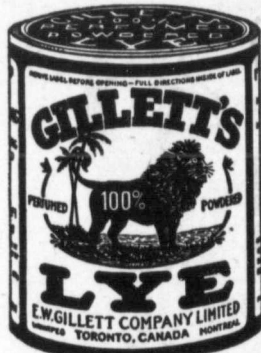
DON'T DELAY! Send your answers to-day. This announcement may not appear again in this paper. Address your entry to—

Movie Editor, Mary Pickford Contest, Dept. 226 EVERYWOMAN'S WORLD, TORONTO, ONT.

understand and meet the change in the boy's life they lose their hold on him. Often friction and rebellion result because the parents still treat the boy as a child, and they lose any possibility of helpfulness to him. Often, too, their attitude drives him from home. Never will the boy stand in greater need of wise counsel than now, though he is unconscious of it. Wiser and older heads should recognize that his confidence in himself and his desire to argue about everything are a part of his normal development. No one who wishes to retain the confidence and friendship of a boy can ignore the strong tastes, the likes and dislikes, that manifest themselves at this time. Ridicule is fatal;

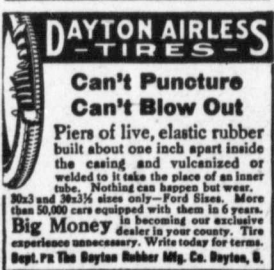
solding and harshness are almost as bad. The physical changes which bring to him the powers of manhood often bring mental changes requiring most careful, loving counsel by parents if the transition is to be made safely. It is the time of all times in life when it is the parents' duty to explain to the boy what each individual should know about himself. High and pure and noble ideas of life should be laid before him, and he should be taught to cherish and not to debase the man that is in the making. Practical explanations of physiology and hygiene should be given, including the use of the different parts of the body. In such teachings one

should hold up the ways to ensure normal healthful conditions, rather than the consequences of abuse, in the hope that fear will prevent such abuse. It is impossible to overestimate the wrong parents do their boys by failing to give right ideals of life and true teachings concerning themselves. Every boy receives, during adolescence, impressions that will influence all his future. It counts eternally whether they are true or false, whether they are given by those who from experience of life and pure living can impart high ideals, or whether they are given by those who have perverted and low views of life. Happy is the boy and thrice happy are the parents, when they have



ABOUT RIGHT
On his teacher's request that he give the class his ideas on the subject of "Bravery," little Johnny delivered himself of the following:

"Some boys is brave because they always plays with little boys, and some boys is brave because their legs is too short to run away, but most boys is brave because somebody's lookin'."



kept near in spirit to their boy, so that it is to them he looks for the most sacred and holy lessons of life.

The education of boys should recognize their natural tastes for things that are in action, that are developed by human brains and hands, and that will keep mind and body occupied in most useful ways. Scientific papers should now replace the books and magazines designed for children; they will be read and studied with avidity. What the boy reads will have much to do with shaping his life. Stories of young men who have done great things are always inspiring. Travel and adventure always appeal, for the desire to see the world, to know other places, is strong in nearly every boy's heart.

The ancient Greeks devoted half of their education-time to physical development for they reasoned that moral and mental perfection would be best developed in a healthy body. Training in athletics and in swimming is especially valuable for boys. To be physically strong becomes an object worth self-denial, and is far more effective than any prohibitions of parents can ever be.

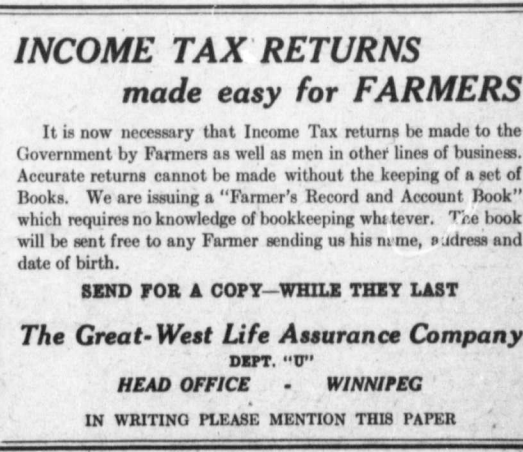
While the physical changes from childhood to youth are great, the mental and spiritual nature is going through processes of growth equally rapid and important, and requiring sympathetic understanding by parents and teachers. One of the first things to be learned by parents is to have faith in the boy, to believe that he wants to do what is right, and to expect it of him.

At no time in life does one aspire to do noble deeds, to give great service, more than in the dreaming days of youth. The dreams give the vision which may light the path of their future lives, or which may be dimmed and shattered because in the uncouth, awkward boy the dreams and the visions are buried deep from the sight of those with whom his life is cast. Don't forget it, though, the dreams and the vision are in the heart of every boy who has had half a chance, and only need the touch of inspiration to come out into deeds and acts. It is then that a man or woman, friend or teacher who can see beneath the surface may stir into action the aspirations so deeply hidden. It is then that God becomes real, when the life of Jesus may be made an ideal which will be the inward guide all through life.

Many are the boys who leave school before reaching high school or soon after entering it, but that does not necessarily imply that they are dull or stupid. It does signify that the school is not interesting them as much as other things are. Some of the world's greatest men were counted as failures by their teachers. James Russell Lowell was suspended from college for negligence and inattention. Wagner was a failure in school. So were Byron, Schiller, Wordsworth, Humboldt, and Huxley, while Goldsmith's teacher said he was the dullest boy she ever taught. Isaac Newton was frail and delicate physically, and preferred to make toys rather than to study. Parkman was another of the delicate boys who did not fit into the educational scheme of the school. Countless others could be named, who, if judged by the verdict of their teachers, were dull and stupid and failures, but who, in the school of life, touched the spark of a living interest and became men who gave the world things that were original and worth while. Individuality must be taken into consideration and reckoned with. Because a boy does not fit the prescribed mold is no reason for declaring him stupid.

There are great secrets of God and nature yet to be revealed to men, and they, too, will be given through the living interests of youths who will not walk in the beaten track, but who strike out for the discovery of something that has come to them and which they will strive to develop.

No greater injury can be done to a youth than to map out life for him and force him to fit a certain plan. No outsider, not even a parent, can decide the future or the vocation that a boy should choose. To develop physical perfection, to give true principles of life, to lay the foundations of mental growth, to keep the spirit of comradeship, and to encourage individual choice as to the life work, is the part parents should take. Information they may give, full discussion of all the pros and cons of different vocations is valuable; but in the final



moment the boy should be free to choose for himself.

The social instinct of boys is very strongly developed in the years of adolescence. The choice of companions at this time is a matter in which parents may have a guiding hand, provided they use it quietly and unostentatiously, for bad company has caused the downfall of many a good boy. By making the home the centre of his social life, by making his friends welcome, by knowing those with whom he associates, a protection can be given which means much at this time of life.

Interest in his personal appearance develops in the boy now. Careless habits are superseded by well-brushed hair, clean hands and face, a desire to have well-pressed clothes. Ties and hosiery assume an importance never before accorded to them. Girls, for whom he has had but little use, now begin to interest him. The greatest injury is done by grown-ups who speak flippantly and lightly of these boy-and-girl fancies and who, by their tactless remarks, inject self-consciousness into what would otherwise be natural friendship.

Now is the time when mother and father may save much future unhappiness by placing before the boy the ideal of true marriage, with all it involves to make the relation happy for both. It should be held before him as something which gives the greatest happiness when entered into with true affection, an unselfish desire to be real helpmates, and the same standard of morality for both. The failure of parents to give any instruction in regard to this, and the tendency to speak lightly of it, if at all, should give place to the definite implanting of pure standards of thinking and living and a true conception of all that it means to found a new home.

Indeed, it is quite as much the duty of parents to prepare children to meet the duties involved in these vital relations of life as to prepare them for business or profession. The temptations that are placed in the way of boys are many. To resist them, every boy should be protected by high ideals and standards set before him by his parents. Distaste and disgust will then prevent his yielding to the lures that are set in his way. The day is past when the world recognizes one code of law for boys and another for girls. Hereafter, they will stand or fall together.

Happy homes and happy marriages depend as much on the disposition of the husbands as of the wives. Parents should therefore cultivate under the home roof the qualities which are essential to comfortable relations with other people. Thoughtfulness of others, courtesy, and regard for others' wishes are the oils which make many hard places smooth and lessen opportunity for friction. Unhappiness in marriage often has its beginning in little thoughtless acts and words. The courtesies of life are not arbitrary conventions of society, but have come with reason in the development of civilization based on Christianity. Boys may ridicule them as foolish, but when they go out into the world they will surely be at a disadvantage unless they are drilled in the forms and language of well-bred people by the every-day use of them in their own homes.

Mothers render a most important service to their sons in requiring of them the observance of all the habits of refined society. The good son makes the good husband, and the mother trains the son to be a good husband by constant requirement of the manners and deeds which she herself recognizes as necessary in making home life happy. Self-made men who rise above the conditions of their early life deserve all credit, but, unless it were better for youth to have the teaching and guidance of parents in shaping character, the Creator would not have so planned the universe.

The mother who educates her son to respect and reverence womanhood, to feel that he should treat all women with the courtesy and respect he would desire for his own mother or sisters, has done much to ensure his future happiness and true nobility of character.

There are other lessons for boys to learn before passing from youth into the responsibilities of manhood, and these the home should give. Intelligent citizenship, animated by the principle of regard for the general good, rather

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than personal advancement, political or financial, is what is needed in Canada. It is possible in the home to give that trend to the ideals of youth which, in manhood, will develop in the life. There are many ways of doing this. Current events bring into the public eye men whose lives spell service to their fellow men; there are others whose deeds and principles evidence the purpose to grasp every opportunity to lift themselves, regardless of the sacrifice of others and of the common good. The object-lessons are before us all the time. The application can be made in the discussion of live issues, bringing out in strong light what is high and fine, in contrast to the lower types of citizens. The history of other nations, their rise and fall, and the reason for the same, broadens the viewpoint and gives the benefit of others' experience, enabling one to avoid the pitfalls into which they have fallen. Fathers and mothers who take no interest in public affairs, who are indifferent to the great questions before the nation, cannot do what they should in preparing their boys to become the highest type of citizens. It is the indifference of those who care nothing for the political questions which decide so many of the conditions under which we live that is a real menace to the country.

In the years of youth, when the heart is open to high aims and noble purposes, the inspiration should be given to every boy to become an all-around man, animated by the love of God and of his fellow men, desiring to fill well his place in every department of life.

LIGHT AND POWER FOR THE FARM HOME

ELECTRICITY, cheaply produced, and at an investment cost far below that of some of the luxuries he now enjoys, is now at the disposal of the farmer. This was not true half a dozen years ago, but it is today. Realizing that there would be too long a wait before country people could enjoy the convenience and economy of electric current as furnished by the Hydro companies, rapid as has been their growth in recent years, far-sighted manufacturers have designed complete and easily operated equipments which can be set down in the farm dooryard more easily than a threshing engine. In prosperous communities a very large proportion of the farmers own automobiles. Many must have a new model every year. These machines cost anywhere from \$500 to \$2,500. Yet on these same farms in the majority of cases, the kerosene lamp and lantern—wasteful, slobbering and dangerous—are still doing service. Hand or dog power drives the churn, the separator and the grindstone. Chamberlaine steam engines operate the threshing machine and the silage cutter.

Asked why such an economical electric current is not used for these purposes, the owner will probably say that it would cost too much and in addition that there would be no one to operate the plant, and that electricity is a dangerous thing to handle. At one time these arguments might have had force, but not at present.

With one of these lighting outfits, in addition to being able to furnish from eight to fifteen 16-candle power lamps, it is possible to operate the following motor driven appliances: electric fan, sewing machine, washing machine, suction cleaner, pump, circular saw, lathe, ice cream freezer, cream separator and churn. Of course, the plant is not large enough to operate them all at once, but this latter necessity never arises. Besides, the freezer, churn, separator, etc., may be installed in the engine house and driven direct from the engine through a line shaft, so that no motors will be required for them.

For the operation of the lighting plant, less skill is required than to run the simplest automobile. It consists of a gasoline engine, an electric generator or dynamo, a storage battery of sixteen small cells, which can be placed on a shelf, and a simple switchboard.

The cost of lamps and wiring will be about \$3 per lamp, more or less, depending on the conditions and grade of materials employed. An estimate of

materials and wiring may be obtained from a local electrician or contractor.

In deciding whether or not to install an electric plant a good business man will inquire into the cost of operation to see if his investment will bring returns in the form of actual cash saved over old methods and in increased convenience and safety. Let us examine a plant. It consists of a 2½ horse power engine, dynamo for generating current, switchboard for distributing and controlling the current and storage battery. The storage battery bears much the same relation to a dynamo as does a water tank to a pump. It stores electrical energy in the form of chemical energy, giving the energy back again in the form of electric current for the lights when the engine is shut down.

A 50-light outfit may at first sight seem unnecessarily large, but when one begins to plan just where she should put lights, it will quickly be seen that the manufacturers have calculated carefully and well. A six-roomed house, for instance, would require, say, four lights for the parlor, three for the dining room, four for the sitting room, three for the kitchen, one each for bedrooms, bath and pantry, and one or two porch lights. Add to this the lights required for barn, dairy, granary, and other outbuildings; places are soon found for all the lights. Of course, while all these lights will be needed at some time or other, it rarely, if ever, happens that all will be burned simultaneously, which leads naturally to the point we have in mind, which the prospective purchaser is deeply interested, namely, the cost of operation.

The most efficient and, therefore, the least expensive method of operation is where the lights are burned direct from the dynamo, as this prevents the slight loss occasioned by use of storage batteries. Of course, where a very few lights are in use, as during the day or in the very early morning, the storage battery serves a very useful purpose, and really makes for economy. The costs are figured, however, for evening lighting, with the lights burning direct. Assuming, for convenience, that all 50 lights were burned at once, the figures shown are interesting. The 2½ horse-power engine, which furnishes the power, will use about a quart of fuel an hour, so if the lights were turned on at 5 o'clock, a fair estimate for winter lighting—the actual amount of fuel used for the evening lighting would be just a little over a gallon.

Besides using current from the dynamo for light and power, one will usually arrange a line shaft to be driven by the engine and use power therefrom to run the washing machine, mangle, pump, grindstone, root cutter, feed grinder, etc. This work will usually be done during the day, and at the same time the engine can be charging the storage battery. Less than one-third the power of the engine will be required to do the latter, hence it has easily ½ horse power available for other work. This point should be considered in figuring the cost of operating a lighting system, as in the average case it would be unfair to charge the total cost against the plant as a lighting plant alone. It has been abundantly proven that a small engine on the farm pays big returns, so that one can almost subtract the engine part of the electric light plant and charge it to general farm expense.

STILL UNEATEN

The sergeant-major had the reputation of never being at a loss for an answer. A young officer made a bet with a brother officer that he would in less than twenty-four hours ask the sergeant-major a question that would baffle him.

The sergeant-major accompanied the young officer on his rounds, in the course of which the cook-house was inspected. Pointing to a large copper of water just commencing to boil, the officer said:

"Why does that water only boil round the edges of the copper and not in the centre?"

"The water round the edge, sir," replied the veteran, "is for the men on guard; they have their breakfast half-an-hour before the remainder of the company."

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this winter in the Pacific Northwest—British Columbia, Washington and Oregon—and you will return home with renewed health and vitality and a greater capacity for work.

Take the opportunity of learning something of the great empire to the west of you.

The magnificent mountains in their winter garb; the open seas and green fields; the mild climate; the sea and the mountain air insuring a sound, refreshing and nerve-restoring sleep; all await you in a trip to the Pacific Northwest.

See our interesting and growing modern cities, dairies creameries, experimental farms, orchards, our fruit, vegetable and fish packing houses and canneries. Premier Oliver of British Columbia in an address a few days ago said that he had just left a meeting of growers of small fruits in which it was stated that they had received one thousand dollars per acre from their crops this season.

The orchards are becoming more prolific every year so that during 1919 it has taken over \$500,000 to pay for the paper in which the individual apples are wrapped.

You will find the intensive farming on small acreage in the Pacific Northwest interesting and instructive and at the same time you will be able to enjoy a real change and to indulge in motoring over some of the wonderful scenic highways, golfing on the evergreen links, and the other outdoor recreations.

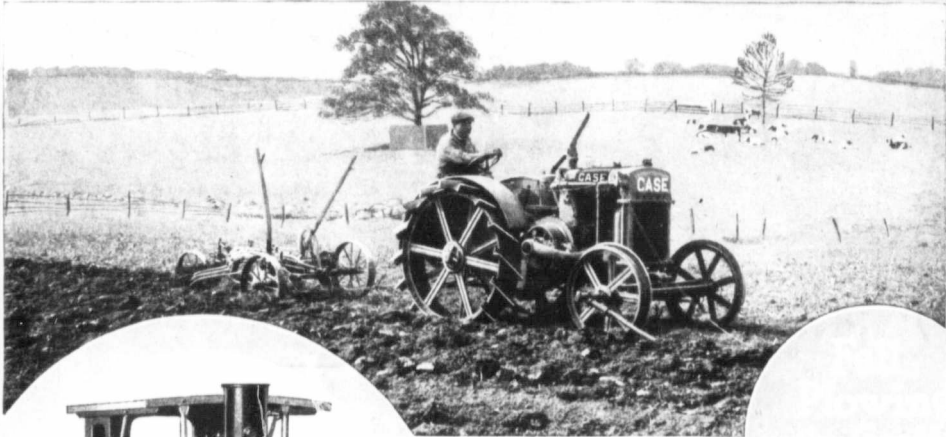
The hotel, apartment and boarding house rates are reasonable and the accommodations quite sufficient to meet your requirements.

Write for illustrated booklet to Herbert Cuthbert, Executive Secretary, Pacific Northwest Tourist Association, maintained by Government Funds, 2. G. Smith Bldg., Seattle, Washington.



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KEROSENE TRACTORS

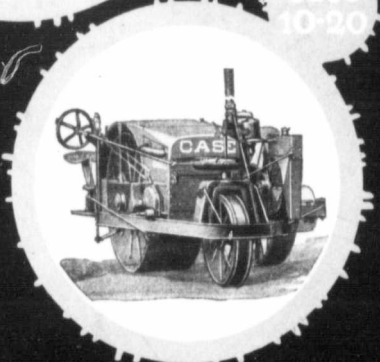


FIVE QUESTIONS—FIVE ANSWERS.

Now that the tractor has demonstrated its success as a practical necessity on farms, the vital questions you want answered are these:

- Q. WHO MAKES IT?
A. A concern of long standing in the agricultural field. The J. I. Case T. M. Co. is in its 75th year of doing business. Three quarters of a century experience in understanding farm conditions and farm requirements.
- Q. WHAT IS THEIR REPUTATION?
A. To build a machine for efficient service and one that will stand up for years is a Case standard. To sell something cheap has NEVER or NEVER WILL BE a Case policy. Because of Case buying power and modern manufacturing facilities we build high quality tractors, selling at reasonable prices.
- Q. HOW LONG HAVE THEY MADE TRACTORS?
A. Case built its first gas tractor over 27 years ago. By long and close contact with the internal combustion motor, they have always incorporated the latest and most practical features. Case engineers have always been just a step ahead.
- Q. WILL THE TRACTOR BURN KEROSENE SUCCESSFULLY AND ECONOMICALLY?
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- Q. WHAT WORK WILL THE TRACTOR DO?
A. Case Tractors will successfully plow, disc, harrow, seed, harvest, haul, operate threshers, balers, silo filler, feed grinder, in fact they do all draught and belt work. In Case Tractors the belt pulley is mounted on the crank shaft, making it an easy matter to line up to all belt driven machinery.
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