

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

WINNIPEG CANADA  
AUGUST  
NINETEEN SEVENTEEN

*BETTER FARMING — BIGGER CROPS — BETTER PRICES*



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



**“That’s Me  
on the  
Front Cover!”**

KNOWN FROM COAST TO COAST

**MY DAD WEARS**

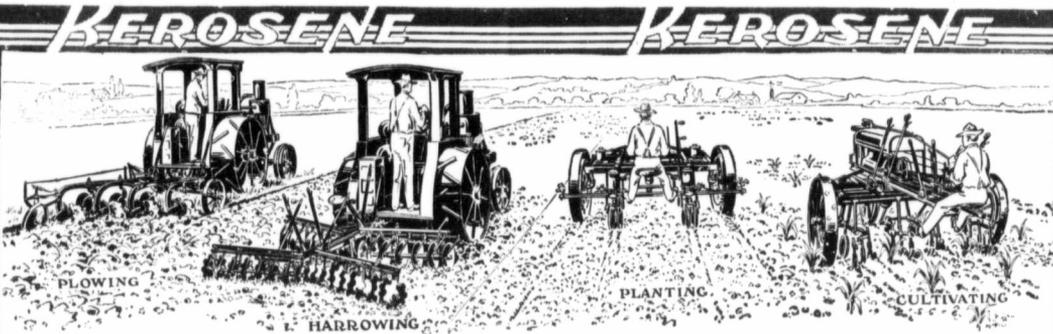
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# Raise Any Crop on Any Size Farm Without Horses

**Y**OU can now raise any crop with Avery Motor Power—corn, potatoes—any crop planted in rows as well as grain crops. Everyone knows that you can raise a grain crop with a tractor. But how to use motor power successfully for raising a crop planted in rows has been an unsolved problem. Now you can do it. Plow your ground and harrow it with an Avery Tractor—then plant and cultivate your crop with an Avery Motor Planter-Cultivator. See all this work done by Avery's at the Fremont, Neb., Demonstration, Aug. 6 to 10.

## Avery Motor Planter-Cultivator a Wonder

Plants or cultivates two rows at once. Single front guiding wheel runs between rows—double rear driving wheels outside of rows. Turns short either way at ends to go back on next two rows. Costs less to operate than horses or mules. Less work to take care of. Put through a year's test before being placed on the market. A wonderful success.

## Motorize Your Farm the Successful Avery Way

Here's the successful Avery way to motorize any size farm for raising any crop.

First, select from the six sizes of Avery Tractors the size that exactly fits your

size farm. No farm is too small or too large. The 5-10 h.p. one- and two-plov Avery Tractor fits the smallest farm and the 40-80 h.p. eight- and ten-plov Tractor fits the largest farm—four other sizes for medium-size farms—8-16, 12-25, 18-36 and 25-50 h.p.

Then get one or more Avery Motor Planter-Cultivators, as you may need, and you have the most successful combination of motor power built for raising any crop on any size farm.

## Why Avery Tractors Lead

The five larger sizes of Avery Tractors are the only make built in five sizes all of one design. **Special double carburetor and gasifier make them best kerosene burners.** Patented sliding frame makes possible least gears and shafting in transmission. Only tractors with renewable inner cylinder walls.

The 5-10 h.p. Avery Tractor is designed for use on small farms and for light work on larger farms. Intended for pulling about three-horse load. Smallest and lowest-priced tractor built.

## Prompt and Permanent Service after you get an Avery

You must insure yourself getting real service after you buy a tractor. It is your most important farm machine and you must be able to keep it running without long delays. Avery Tractors and Motor Cultivators are built by an established company with many Sales and Service Branches and Distributors, which insure your getting repairs or help promptly and permanently after you get your tractor.

Write for the interesting Avery Tractor and Motor-Cultivator Book—tells you facts about motor farming you should know. Clear illustrations of Avery construction. Write now for FREE copy of Avery 1917 Catalog and name of nearest Avery dealer.

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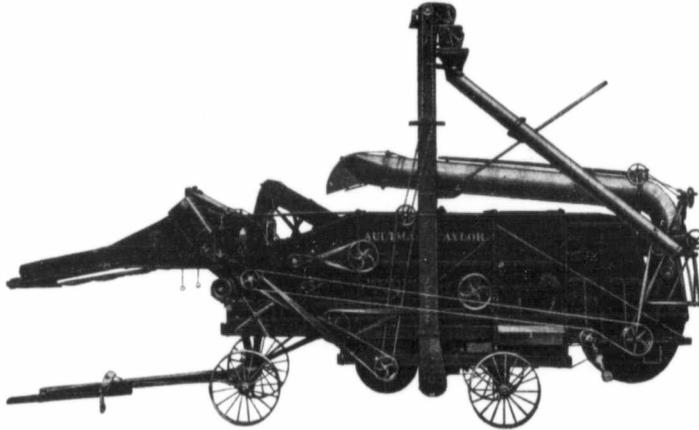
**CANADIAN AVERY CO., LIMITED** Western Canadian Distributors  
**WINNIPEG REGINA**

# AVERY

"There is a Size Avery Tractor for Every Size Farm and a Size Avery Thresher for Every Size Run."

**KEROSENE**

# AULTMAN-TAYLOR



## Why a New Century?

*Because it Saves all the Grain—has Greater Earning Power  
than any other and Costs Less to Operate*

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

Here's the whole secret—the New Century has advanced principles of separation that put it in a class purely its own. Take up the construction—follow the course of the straw from cylinder to stacker—then, and then only, will you appreciate its marvelous separating qualities. From the time the unthreshed grain enters its cylinder until the straw lands in the stack there is not a falter in its movement. Never does it become compressed as is the case in other machines—always becoming thinner and thinner as it moves on its way to the rear of the machine.

### The Universal Rotary Rack An Exclusive New Century Feature

This Universal Rotary Rack is of the double bank construction. That is, it gives the straw two kicks or agitations with each complete revolution of the crank shaft, while the ordinary type of rack used in other machines only kicks or agitates it but once with each revolution. The action of this rack is quick. This quick, rotating movement creates a constant movement of the straw.

### HERE'S THE PROOF

There is no question about the Universal Rack having about double the separating capacity of the vibrating type of rack. Let us take this as an example—can you not take a fork of threshed grain and extract more kernels from it in two shakes or agitations than you can in one? Then, is it not fair to assume that a rack that kicks or agitates the straw twice with each complete revolution of the crank shaft affords better separation than one that kicks or agitates it but once? Your answer must be in the affirmative. And then do not lose sight of the fact, too, that this rack produces other conditions that make for ideal separation.

In the New Century the straw has no dead point—never bunches—keeps moving in a thin stream at all times, creating the best possible separating conditions, while the vibrating type of rack used in other machines works the straw in bunches. Look into this and see if this is not true. Do you not think that a machine that keeps the straw moving in a thin stream affords better separation than one that works it in bunches? Under like conditions, which machine do you think will do the best work? We say the New Century, and we believe you will agree with us.

### Seven Sizes of New Century Machines—A Size To Fit Your Power

New Century threshers are built in seven sizes. There are two sizes particularly adapted for use with the small tractor. Equipment can be varied to suit the customer's needs. It makes no difference whether you want a thresher for individual use or for custom work, you'll find the proper size—the proper machine, in one of the seven sizes of New Century threshers.

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Canadian Sales Agents for New Century Threshers, or

**The Aultman & Taylor Machinery Company**

Lock Box No. 64, Mansfield, Ohio

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Vol. XXII

WINNIPEG, CANADA, AUGUST, 1917

No. 8

**WHAT IS A TRACTOR?** Was the Question Answered at the Brandon Plowing Demonstration?

By E. W. HAMILTON

THE above question is about as sensible, and as logical as the old one of "How old is Anne," and yet a great many of our Western Canadian farmers to-day are asking themselves: "What is a tractor?"

sign and construction. Each machine was drafted, constructed and sold to plow, to sow, to reap, to thresh; in short to provide power on the farm wherever draw bar or belt pull was required.

and then again ask yourself: "What is a tractor?"

I am not concerned with the success or failure of the Brandon Plowing Demonstration. Outside of the fact that the Brandon fair drew a crowd, which it might

carry on such a demonstration and care in organizing the proposition.

What I am concerned with however is the tractor situation as a whole. The world to-day is face to face with the problem of

**Specifications of Tractors that were entered in the Brandon Plowing Demonstration, July 17th, 18th and 19th, 1917**

NAME OF COMPANY	Brake Horse Power	Draw-Bar Horse Power	No. of Cylinders	Arrangement of Cylinders	Size of Cylinders	Tractor Road Speed	Cooling System	Size of Wheels		Full Length Inches	Total Width Inches	Full Tank Capacity	Retail Selling Price F.O.B. Winnipeg	
								Rear	Front					
Sawyer Massey Co.	20	10	4	Vertical	4½x 5½	2½-3½	Water	54x14	28 x5	133	61		\$1150	
	32	16	4	Vertical	5½x 7	2½-3½	Water	62x20	38 x8	173	80½		\$2500	
R. A. Lister Co., Ltd.	20	10	4	Vertical	3½x 5	2½	Water	60x18	30 x5	156	63		\$1185	
Waterloo Manufacturing Co.	Model C	20	12	4	Vertical	4½x 6½	1 -4	Water	57x10	30 x5		15	\$1745	
	Model D	16	9	4	Vertical	4½x 5½	1 -4	Water	54x 8	30 x4		15	\$1430	
	18	9	4	Vertical	3½x 5	2½-3½	Water	48x10	14½x5½	123	58	16	\$1250	
J. I. Case	20	10	4	Vertical	4½x 6	2½-2½	Water	52x10	30 x8	158½	67	20	\$1420	
	25	12	2	Opposed	7 x 7	1½-2½	Water	56x18	38 x8	148½		17	\$2185	
Geo. White & Sons	27	13	4	Vertical	5 x 6	1.75-2.4	Water	48x12	32 x6	137	78	10	\$1900	
Avery Co.	25	12	2	Opposed	6½x 7	1½-2½	Water	36x20	30 x8	164	80	20	\$1930	
Goold, Shapley & Muir	30	15	2	Opposed	8 x10	2½-4	Water	74x24	44 x10	162	97	35	\$2350	
Waterloo Boy Kerosene Tractor	Model R	24	12	2	Twin	6 x 7	2½-3	Water	52x12	28 x6	132	72	20	\$1475
	Model N	25	12	2	Twin	6½x 7	2½-3	Water	52x12	28 x6	132	72	20	
J. D. Adshead	24	12	2	Twin	5½x 7	2½	Water	56x10	31	142	78	11	\$1425	
I. H. C.	Mogul	20	10	1	Horizontal	8½x12	2 -2½	Water	54x10	36 x6	135	56	13	\$1275
	Titan	20	10	2	Horizontal	6½x 8	2 -2½	Water	54x10	36 x6	147	60	16	\$1400
Huber Mfg. Co.	Information not available													
	20	12	4	Vertical	4½x 5	2 -2½	Water	60x24	48 x10	180	96	25		
Emerson Brantingham	35	20	4	Vertical	5 x7	1½-x2½	Water	72x16	42 x8	196	76	35		
Advance Rumely Co.	16	8	4	Vertical	4 x 5½	2+	Water	56-	34-	192	95	17½	\$1215 with 2 plows	
Western Canada Auto Tractor	Tractor attachment for Ford cars													

At the Brandon Plowing Demonstration, which was held July 17th, 18th and 19th, there were twenty-two machines all designed for the same purpose, and yet very unlike in their de-

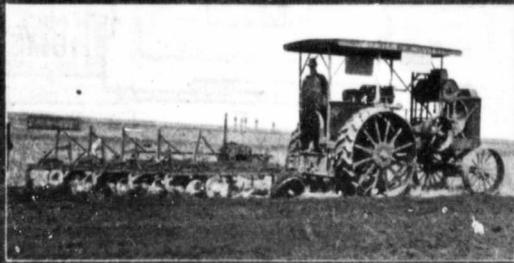
I will not go into detail as to the various machines, but will ask my readers to carefully go over the table of specifications as given herewith. This done, go over the two pages of illustra-

have been difficult to get together otherwise, such a demonstration as that given at Brandon might be put on at any time, anywhere, the only thing necessary being a knowledge of what is required to

food production. Millions and millions of men have been taken from the ranks of production and poured into the ranks of destruction, and a world that has in general always been comfortably

# Brandon Plowing Demonstration

JULY 17-18-19, 1917.



Samyer Massey 16-32 — PULLING 3 BOTTOM COCKSHUTT ENG. GANG



J. I. Case 9-18 — PULLING 3 BOTTOM CASE ENGINE GANG



Avery 12-25 — PULLING 4-BOTTOM AVERY ENGINE GANG



Gold Shufly & Massey 16-32 — PULLING 3 BOTTOM COCKSHUTT ENG. GANG



Mayer 12-24 — PULLING 3 BOTTOM COCKSHUTT ENG. GANG



Heider 12-24 — PULLING 3 BOTTOM ROCK ISLAND ENGINE GANG



Moore 10-20 — PULLING 3 BOTTOM (14 INCH) CASE PLOW



J. I. CASE 12-25 — PULLING 4 BOTTOM GRANDE DE TOUR ENG. GANG

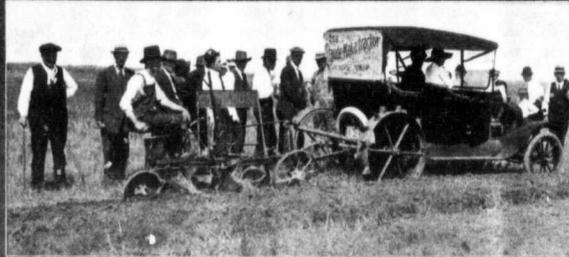


Winterslow Roy 12-24 — PULLING 3 BOTTOM JOHN DEERE ENG. GANG



Heider 9-16 — PULLING 2 BOTTOM ROCK ISLAND ENG. GANG

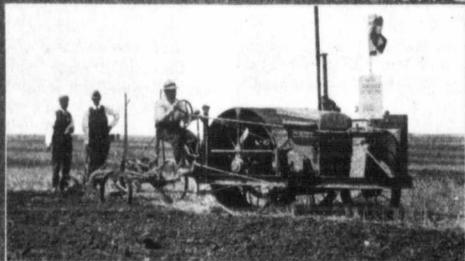
# Brandon Plowing Demonstration JULY 17-18-1917



Stander Mather-Tractor - PULLING 2 BOTTOM  
COCKSHUTT ENG GANG



J.M.C. 10-20 TITAN - PULLING 3 BOTTOM  
OLIVER ENG GANG



J. J. Case 10-20 - PULLING 3 BOTTOM  
GRANDE DE TOUR ENG GANG



4-BOTTOM JOHN DEERE ENGINE GANG, PULLED BY A  
WATERLOO BOY 12-25 TRACTOR



White 12-25 - PULLING 3 BOTTOM COCKSHUTT  
ENGINE GANG



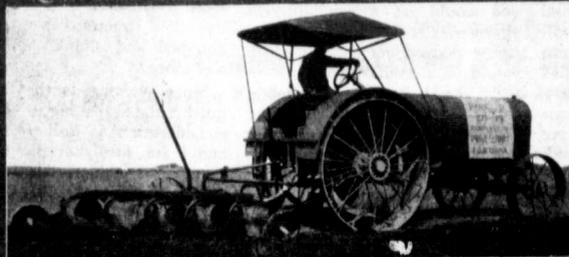
Advance Rumely - COMBINATION  
PLOW AND TRACTOR



Mackay Rumely 12-25 PULLING 3 BOTTOM  
CASE ENG GANG



Samuel Massey PULLING 3 BOTTOM  
COCKSHUTT ENGINE GANG



EMERSON - BRADSHAW 20-35 - PULLING FIVE-  
BOTTOM - E. B. - ENG GANG



E. B. 12-20 - PULLING 3 BOTTOM  
E. B. ENGINE GANG

fed, a world that concerned itself very little about where the next meal was coming from is now face to face with the fact that every bushel that is short means that somebody is going to go hungry.

The tractor must not be regarded as the one thing that will provide us against a food shortage, but if the matter is carefully looked into, it will be found that the tractor is a big factor in increasing production.

In 1917 the Province of Ontario, realizing that something more practical was required than simply exhorting the people to save and at the same time produce, purchased fifty tractors, and loaned them to the farmers of the province, the charge for their use being simply the cost of fuel and oil and the wages of the operators, no charge being made for depreciation, interest, wear and tear. I have it from good authority that this experiment has proved a decided success, and that the province is seriously considering increasing the number of tractors for 1918.

What a change in the tractor situation! Only a few years ago government officials were prone to look upon the tractor as more or less of a menace that was eating its way into, and the heart out of the economic life of our farmers, causing them to lose money "hand over fist," and getting practically nothing in return for the large expenditure they were making for this class of machinery. To some extent this was true, but the tractor received more of the blame than was its due.

The tractor is a machine that has grown fast. In fact, it is the youngest of our agricultural machines. The trouble with it was that it tried to start in as full grown with the result that both manufacturer and farmer came to grief. The idea and the principles however were right, and while the fires died out for a few years, the embers smouldered until someone through the light tractor fanned these same embers into a flame that to-day is creeping north, south, east and west by leaps and bounds, and nothing will stay its course.

I have seen the tractor as a general farm proposition grow from nothing in 1904 to one of the largest manufacturing industries to-day, outside of the automobile business. Only a few years ago I sat in a banquet hall and heard a certain thresher manufacturer make the statement that before his company would ever enter the gas tractor field they would close their doors and go out of business. To-day, that same company is one of the

largest manufacturers of tractors in the world.

About the same time I heard another manufacturer say that his company would never build anything but steam engines. To-day his company is perhaps the largest manufacturer of internal combustion tractors. Less than three years ago one of the large implement concerns was building nothing but small implements. To-day it is in the tractor game, and its output for 1918 will be 20,000 machines, none of which will be sold for export purposes. I am told upon good authority that the State of Illinois will absorb over 4,000 tractors in 1917. Five years ago it would have been next to impossible for any company to have placed a hundred tractors in that State.

This wave of enthusiasm on the part of the farmer for inter-

I hear someone ask: "Has the tractor reached its ultimate form?" Most emphatically no, and it will be years before this can be accomplished. If there is one thing that will prove this it is a plowing demonstration, for there is nothing perhaps that leaves the mind in a more hopeless state of confusion than a visit to such an affair. No two tractors are alike. They differ both in outward appearance, and in all the essential details of construction. They are unlike as regards the number of road wheels, the type of motor, method of drive, and in every other particular. In critically examining all the different designs, we do not blame any intelligent man for asking the question: "What is a tractor?"

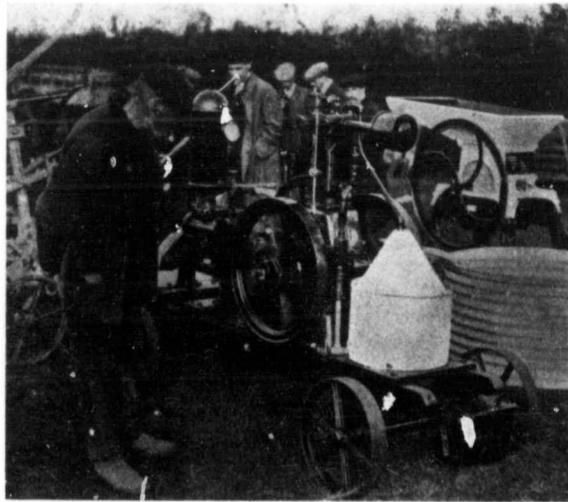
If you were to ask Goold, Shapley and Muir, Waterloo Boy Kerosene Tractor Co., Minneap-

sions, and so far as I know the only standard that has yet been worked out is the height of the draw bar, which I believe is somewhere around 17 in., a mere detail that doesn't affect the tractor very seriously one way or another.

Will our ultimate tractor have two wheels, three wheels or four wheels? Will it be one cylinder, two cylinders or four cylinders? Will its cylinders be vertical, horizontal opposed, or twin? Will the ultimate ignition be by battery or by magneto? What will be the height of our wheels, both front and rear? What will be our type of transmission? What will be our type of radiator? Nobody knows, and nobody will know for some years to come. This, however, does not get us away from the fact that the tractor is here to stay, and that as a factor in producing foodstuffs and cheapening their cost of production, it will yearly become something that is more and more to be reckoned with.

Primarily each farm tractor must be adapted for plowing. This is a task that must be done on every farm every year. It is heavy work and requires more power than any other farming operation. The farmer realizes that when he has to depend on horses, the task is not always well done, either the weather is too hot, or the ground is too hard when the plows should be started, or the farm animals are busy doing some other season's work. They figure that the tractor can work under any climatic condition, and plow at the proper depth to insure the best crop yield. In other words they want a tractor to plow under much more difficult conditions than they would require horses to work under. Apropos of this, while in charge of the Brandon Plowing Demonstration field, the farmer who owned the field came up and said that the tractors were not plowing the ground right, that they were not doing as good work as should be done. I replied with the question: "Would you be willing to start in now with horses and perform this work as we'd as it is being done by the tractors?" He was stumped and didn't bother me any more.

Since plowing is the first requisite, the first thing to take into consideration is soil resistance, and I am firmly of the opinion that until this soil resistance proposition is carefully worked out, and some definite data secured that both manufacturer and farmer are going to be in the dark. It is possible in so far as Western Canada is concerned to



Old Times contemplating the Wonders of the Fair

nal combustion tractors is not a mere fad, but is due to the fact that the farmer has found out to his own satisfaction and has proven to himself conclusively that the internal combustion tractor will serve his ends, and will decrease his cost of production.

Western Canada was the internal combustion tractor's experimental farm, and experimental farms never were and never will be run at a profit. Western Canada a few years ago absorbed several thousand of the old heavy duty type of tractor, a large number of which to-day have found their way into the junk heaps of the scrap iron buyers. They were wrong in principle. They were too heavy. Tractor engineering had not been sufficiently developed, and the farmer and the manufacturer paid the price of the experiment, which price was exceedingly heavy.

olis Threshing Machine Co., J. I. Case Threshing Machine Co., International Harvester Co., Sawyer & Massey, J. D. Adshead Co., Geo. White & Sons, Huber Mfg. Co., Western Canada Auto Tractor Co., Emerson-Brantingham Co., R. A. Lister Co., Waterloo Mfg. Co., Canadian Avery Co., and the Advance Rumely Co., the question: "What is a tractor?" you would get fifteen different answers, all of which would be partly correct, but none of which would be absolutely so.

All the above firms were represented at the Brandon Plowing Demonstration, and if any farmer who attended that demonstration had asked these firms the above question, the result would be as I above state.

There have been many attempts made to standardize the tractor. Manufacturers, engineering societies and others have gotten together in long discus-

# The Tractor

**The One Tractor that is always sure  
to start when you want it to go**

That does not bother you with cracked spark plugs;  
That does not bother you by having to hunt for or wait for a special kind of fuel;  
That the instant you overload it does not stop;  
That runs a cold day as well as a warm day;  
That runs in wet weather the same as it does in dry weather, is the

## Nichols-Shepard Steam Traction Engine

It always works, and when there is anything the matter with it, you know what it is and how to fix it.

It is the strongest traction engine built, and has the best boiler ever used in traction engine building.

It has heavy brackets and boxing. Its shafting is heavy, strong and arranged for thorough lubrication.

The gearing is all semi-steel, and made to stand the heaviest strains.

It is an easy steamer and the most conveniently handled Traction Engine built.

This Tractor is not an experiment, but one that has been built for many years and is known for its efficiency throughout the grain-growing world.

It will furnish ample and steady power for threshing unequalled by any other form or make of tractor.

Made in many sizes and can be delivered now.

Get the Nichols-Shepard Steam Traction Engine and when it is delivered to you, your troubles are ended.

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In Continuous Business Since 1848

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

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# THE CANADIAN THRESHERMAN AND FARMER

CANADA'S LEADING AGRICULTURAL MAGAZINE

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



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CIRCULATION MANAGER

Aug.

There is No Third Event

1917

#### OUR GUARANTEE

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

"THIS war cannot be closed by compromise. The enemy thing unbroken is incompatible with us. Either it lives and we die, or we live and it dies. There is no third event." That being so, there is nothing affecting the Canadian people at this moment which may take precedence of the part the people of Canada have in the business of ending the war—and that means winning it. We cannot, it seems, by any process of language burn this fact into the hearts and understandings of many of our fellow citizens. Heaven send some awful calamity to their firesides if nothing else will bring the meaning of the war home to them. Here is one of the most if not the most earnest and effective statements of the case we have seen. We might use other words, but we dare not try to "improve" it, and with this frank admission, we transcribe it exactly from the editorial page of "The Manitoba Free Press."

"The safety of the state is the supreme law.

It outranks, in importance, wealth, comfort, life. Though this may have a treasonable sound to some, it even outranks political advantage and party success.

Canada is at war. She is taking part in the greatest war in human history, both with respect to the numbers engaged and the issues at stake.

The tide of savagery, bestiality, lust and cruelty which threatens to overwhelm the world is being held with difficulty by a human dyke. To our eternal honor and glory we are a section of this dyke.

Between April 1, 1917, and July 5, 1917, the Canadian forces at the front suffered 27,000 casualties, with some 9,000 deaths.

We have become so calloused by the experiences of three years of war that a round number of casualties, however large, makes no impression upon our minds.

We beg you, Mr. Reader, to give a moment's thought, at least, in an attempt to realize something of what that phrase "27,000 Canadian casualties" means.

Everyone has seen a battalion on the march; as the long column passes down the street it gives a vivid impression of numbers and power.

The equivalent of twenty-seven battalions disappeared from the Canadian front in April, May and June.

Think of what lies behind that bald announcement: What moral courage, what valor, what endurance, what suffering, what sacrifice of human life, what tragedies in Canadian homes!

Most of these thousands killed were young Canadian boys—lads who had tasted none or few of the satisfactions of life, who had not really lived.

They died for Canada—for the security of her soil, for the safety of her people, for the honor of her flag.

Is it too much to expect that older Canadians, who stayed at home attending to their business, living in comfort, shall follow even a great way behind the example which the soldiers at the front have set? These boys put their country before their lives. Any sacrifices asked of stay-at-home Canadians are somewhat less than this—though one would hardly think so to note the desperate resistance made by some to the plain call of duty.

One duty, clear, inescapable, which comes home to every Canadian—this means you, Mr. Reader!—is to see that the soldiers at the front are not abandoned.

They went forth to war having an implied understanding with the people of Canada. We paraded them with bands to the station and sent them off with our cheers, our blessing and our pledges. They went to the front believing that we were behind them—literally to the last man, and the last dollar if this were necessary.

Are we going to stand behind them? Or shall we quit?

The only way to stand behind the troops is to send men to the trenches. Further, they must be sent soon.

We know, by official declaration, that we need 7,800 men a month. We know that this is at least twice the rate of enlistment.

Every Canadian can readily test himself to determine whether he is in this war to a finish, or whether he is prepared to quit?

Is he determined to see that those 7,800 men are forthcoming monthly; and to take whatever steps are necessary to see that they are got? If he is, then he is in favor of winning the war.

If he merely hopes that perhaps the men will be forthcoming and has no clear idea in his head as to how, failing this, the men are to be got, then he is not in the war to a finish. He is a potential quitter—notwithstanding that he may make the rafters ring with his rolling periods against the Kaiser. The cheapest thing in the world these days is patriotic cant; also the commonest.

Quitters—if they are in a position where they can be seen and their actions noted—will be marked men for the rest of their days. There will be an accounting now and hereafter."

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Advertising rates furnished on application.



## SAVE THRESHING MONEY

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

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

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

### International Harvester Company of Canada, Limited

#### BRANCH HOUSES :

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

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

**THIRTY YEARS SIX PER CENT LOANS TO FARMERS**

At the point of writing, applications for loans under the Manitoba Farm Loans Act, amounting to over one million dollars have been filed. As has been explained in previous issues, the principal features of this act are, that persons residing or intending to reside on land within the province may obtain loans up to fifty per cent of the appraised value of farm land offered as first mortgage security, the rate of interest being six per cent on the amount of unrepaid principal, repayment being made by equal annual payments composed of principal and interest extending over a period of thirty years with the provision that, at the end of the fifth year and hereafter, the balance of the principal sum still owing may be paid without giving notice or paying bonus; and it also provides that every borrower must subscribe for shares of the capital stock of the association to the amount of five per cent of the sum borrowed, the same running concurrently with and being collateral to the loan, and none others but borrowers and the Province of Manitoba can hold such shares. The money loaned must be used to make improvements to increase productiveness or to pay off prior encumbrances on the land.

This marks the inception of a new epoch for this, the basic industry of Manitoba and in removing the shackles of burdening debt from the hands of the farmer, by supplying him with capital at a cost he can afford to pay and which leaves him the profit of his labors, it logically follows that what makes for his prosperity must better the conditions of every citizen in the province.

With commendable foresight, as soon as it became assured that the Farm Loans Act was to be placed upon the statute books of the province, the Government made arrangements for the preliminary financing of the project, resulting in the Farm Loans Board having funds now at its disposal sufficient to meet the requirements of present applicants, at a cost that enables the association to fulfil the promise of a six per cent interest rate.

Speculation in real estate by the small investor is a nightmare of the past. The savings of frugality have been sunk in unremunerative and taxable investments that, in a great majority of instances, will not be realized on for many years. The money that should be in constant circulation is tied up, not only to the detriment of the individual, but to business and

the industries of the country. It is to these people that these securities will appeal, and it is to their wants that the Association is catering by issuing short term bonds in small denominations. It is as essential, looking to the better upbuilding of the economic system, that the lending public should be given the same assistance and security as that which is being extended the borrowing public. Purchasers of these bonds will not only be safeguarded by the mortgages which are the direct underlying security, and the unconditional guarantee of the Government, but their investments will be for ever free from any pro-

vincial, municipal, school or other taxation, except duties under "The Succession Duties Act." Undoubtedly the near future will call into being new forms of taxation, and the most likely ones will be the income and personal property taxes, and the fact that these bonds are for ever exempt will give them an additional value.

Besides the opportunity of short term bond investments, the depositors of the province, whose deposits aggregate many millions of dollars, may increase their earnings by one-third and incidentally have the arbitrary restriction removed which compels them to leave their money on deposit for

certain periods or forfeit the interest.

The deposit certificates of the Association are negotiable as cheques and carry a promise that interest at four per cent will be paid whether the money is left on deposit for one day or six months.

Nobody will fail to admit that the Manitoba Farm Loans Act is a tremendous step forward in the right direction, and that it only needs enthusiastic, capable and broad-minded administration to become at once a most effective piece of legislation for the strengthening of the economic system and the upbuilding of a bigger and better Manitoba.

The Greatest Engine Value Offered — **"Z" Engine**

*The new Z Engine*

**1½ H.P. On Skids With BUILT-IN MAGNETO**

Absolutely the one great, convincing engine value.

**Fairbanks-Morse Quality at a Popular Price**

That's the story in a nutshell. This new "Z" Engine puts dependable, efficient, economical "power" within the reach of every farm.

**"More Than Rated Power and a Wonder at The Price"**

Simple—Light Weight—Substantial—Fool-proof Construction—Gun Barrel Cylinder Bore—Leak-proof Compression—Complete with Built-in Magneto. Quick starting even in cold weather. Low first cost—low fuel cost—low maintenance cost. That's the new "Z" engine.

**\$70**

**3 H.P. \$128**

**6 H.P. \$224**

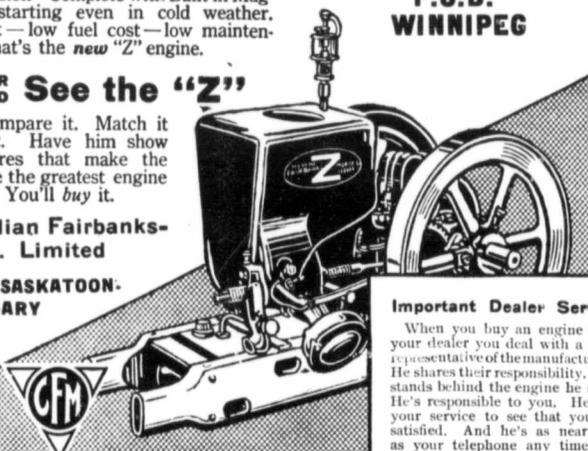
**F.O.B. WINNIPEG**

**GO TO YOUR DEALER AND See the "Z"**

Inspect it. Compare it. Match it point by point. Have him show you the features that make the new "Z" engine the greatest engine value offered. You'll buy it.

**The Canadian Fairbanks-Morse Co. Limited**

**WINNIPEG, SASKATOON. CALGARY**



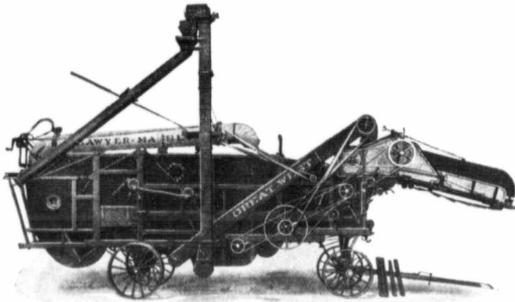
**Important Dealer Service**

When you buy an engine from your dealer you deal with a local representative of the manufacturers. He shares their responsibility. He stands behind the engine he sells. He's responsible to you. He's at your service to see that you are satisfied. And he's as near you as your telephone any time you want him.

# Hook Up With Sawyer-Massey!

## Canadian Made, Big Capacity, Light Running, Vibrationless Threshers

IN SIZES TO SUIT ALL POWER FROM TEN HORSE-POWER UP



### Big Capacity Separators for Large Farms and Custom Work

The new model Sawyer-Massey Great West is built in three sizes, 32 x 56, 36 x 60 and 40 x 64. These are our strongest, fastest and greatest capacity Separators, are designed for doing a farmer's own threshing, and also do custom work, handling a large amount of grain in a short time, and doing good work fast.

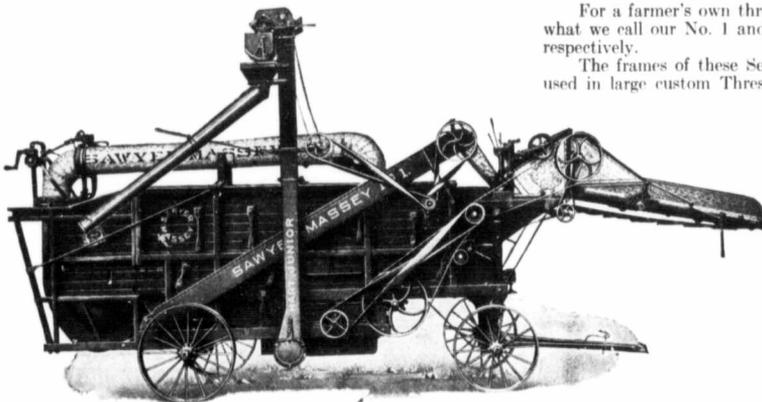
These threshers are well balanced, have few belts, run with practically no vibration, and will stand all kinds of crowding without choking.

One of the features of the Great West Separator is the different adjustment provided, enabling the threshermen to adjust the machine to the work in hand, and to do good work quickly when handling tough, frozen or wet grain. The Great West Separator is the only machine on the market where the speed and length of the throw of the decks and the speed and throw of the shoe can be changed.

Read this letter from James Armstrong & Son, Elbow, Sask., dated February 13th, 1917:

"I thought you would like to know how I got along with the 36 x 60 Great West Separator, 16 bar cylinder, and man-behind-the-gun attachment I got from you last fall. I have had a lot of experience with different makes of separators and consider the Great West the best of them all. As you know, the conditions for threshing last fall were bad, but the Great West behaved to my entire satisfaction. I am very pleased with it and could wish for nothing better in a threshing machine. I threshed my grain clean enough for market and saved practically all of it. I can heartily recommend the Great West where a machine is needed for fast and clean threshing and a big day's work, and you are at liberty to use my name as a reference."

## Threshers for the Individual Farmer



For a farmer's own threshing and that of a few neighbors, we build what we call our No. 1 and No. 2 Machines, sizes 20 x 36 and 28 x 44 respectively.

The frames of these Separators are of the same heavy construction used in large custom Threshers, and are amply strong to carry feeder, windstacker, high wagon elevator and automatic grain register. The bodies are exceptionally long, have sufficient capacity to take all the grain the feeder will put into them, will stand a great deal of crowding and do fast, clean work without choking up.

One of the principal features of these No. 1 and No. 2 Separators is the almost total absence of vibration. This is obtained by balancing the decks, one deck swinging one way and one the other; also by the use of counter-balancing weights. This means that the Separator is not hard on itself, does not shake itself loose, and with reasonable care should last a great many years.

Read this letter from Mr. James Cummings, of Neepawa, Man., dated April 28th, 1917.

"I am writing you about the No. 1 Separator which I bought last fall. I have not given this Separator a fair trial yet, the grain was not in good shape from the time I got it, but I am well pleased with it; it cleans the grain well, and I can put through 1000 bushels of wheat a day, and 1500 bushels of oats, with three teams and a pitcher. I threshed 100 acres of flax with it and put through 700 bushels a day. I would just as soon go into a field of flax as a field of wheat. Men who have threshed for years tell me they never saw a Separator like this one. I had no trouble with this Separator at all, just took it out to the field and started, and I can do the same this fall without any trouble."

**COMBINATION THRESHERS**—We also mount up this No. 1 Sawyer-Massey Separator complete with feeder, windstacker and high wagon elevator and automatic grain register along with the four cylinder Gas-Oil motor from our 10-20 Tractor. This makes a light-weight large capacity machine, and which runs with practically no vibration. The motor is equipped to burn kerosene.

We also manufacture Steam Tractors, Gas-Oil Tractors, and a complete line of Road Machinery. Talk with our Local Agent in your town, or write for free Catalogue and detailed information, stating the size machinery you would like special information on.

## Sawyer-Massey Company, Limited

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

HEAD OFFICE AND FACTORY: HAMILTON, ONTARIO

# Mr. Edison's Wonderful New Phonograph



# Only \$1.00

For years, the world's greatest inventor worked night and day to make the music of the phonograph true to life. At last he has succeeded. Now that you can get THE BEST on the wonderful offer below, you need no longer be satisfied with anything less than Mr. Edison's great instrument. Just read below how easily you may have the genuine New Edison in your home.

## and after trial!

Yes, we will send you the New Edison, the product of the world's greatest inventor's genius, the phonograph with the wonderful diamond stylus reproducer and your choice of latest Diamond Amberol Records on *free trial without a penny down*. On this offer, you can now have the genuine Edison, the instrument which gives you real, life-like music, the finest and best of all phonographs at a small fraction of the price asked for imitations of Mr. Edison's great instrument. *Seize this opportunity!* Send coupon today—now!

## Rock-Bottom Direct Offer—

If, after the free trial, you decide to keep Mr. Edison's superb new instrument, send us only \$1.00. Pay the balance on easiest kind of monthly payments. Think of it! A \$1.00 payment, and a few dollars a month to get this wonderful new style outfit—Mr. Edison's great phonograph with the Diamond Stylus reproducer, all the musical results of the highest price outfits—the same Diamond Amberol Records—yes, the greatest value for \$1.00 down, balance on easiest monthly terms. Convince yourself—free trial first. No money down, no C. O. D., not one cent to pay unless you choose to keep the instrument. Send coupon!

### A Happy Home

Happiness is life—and real happiness is found only in a real home. And by a *real home* I do not mean a house with a yard or farm around it. Oh, no! A real home is the place where the happy and united family gather together for mutual enjoyment and recreation. And the Edison makes this possible, for it stands supreme as the greatest home entertainer. It will mean more than entertainment and merriment, more than an hour of amusement, yes, it will mean genuine pleasure of the lasting sort—helpful entertainment and culture of the most beneficial kind. It will mean the family united—a new home.



### Entertain Your Friends

Get the New Edison in your home on free trial. Entertain your family and friends with the latest up-to-date song hits of the big cities. Laugh until your sides ache at the funniest of funny musical shows. Hear the grand old church hymns. Hear the crashing brass bands, the waltzes, the two-steps, the solos, the duets and quartettes. You will sit awe-stricken at the wonderful grand operas as sung by the world's greatest singers. You will be moved by the tender, sweet harmony of quartettes singing those old melodies that you have heard all your life. Take your choice of any kind of entertainment. All on free trial. Then, after the trial, send the outfit back at our expense if you choose. Or keep it on our great rock-bottom offer. *Send the coupon today!*

### COUPON

F. K. BABSON, Edison Phonograph Distributors,  
355 Portage Ave., Dept. 37, Winnipeg, Man.

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

Name \_\_\_\_\_

Address \_\_\_\_\_

## Our NEW Edison Catalog Sent Free

Your name and address on a postal or in a letter (or just the coupon) is enough. No obligation in asking for the catalog. Get this offer—while this offer lasts!

F. K. BABSON, Edison Phonograph Dist's.  
355 Portage Ave., Dept. 37, WINNIPEG, MAN.  
U. S. OFFICE: Edison Block, Chicago, Illinois



## Talk No. 4

I'M going to talk for a little while on a subject that I have hardly dared to even mention to my best friends for, while I can see the advantages of the idea, still I don't favor it the least bit; in fact, I am "dead against it."

We are terribly short of competent tractor operators. You wouldn't think so if you saw the number of men that want to operate tractors — at a fancy price, but they are not all competent operators, neither are some of the men who are now holding down jobs, and neither are some owner operators even capable tractorneers.

None of us like to think of women handling this work; it is heavy, dirty and, we must admit, fairly dangerous. Not that we kill many men on the job, but quite a bunch of fingers and hands manage to get lost, and, while these losses mean enough to a man, they generally mean a whole lot more to a woman.

However, to get back to the point, we have enough tractorneers to handle the tractors as they are being handled now, but, if we ever make up enough to get together and work the tractors as they should be worked, in order to overcome the shortage of labor and power, we'll need a lot more tractorneers and, as the women will persist in getting their hands dirty and poking around in the machinery to show us that they can do our work as well as their own, there is a good-sized opening for them in the tractor field.

However, if the nation's welfare was one of the first things in every man's mind we wouldn't need to put it up to the women. A whole bunch of our town clerks would be a lot healthier and be doing their country a lot of good if they would get out and handle tractors, binders and sheaves for a while. They can easily be spared from the towns and they are needed on the farms.

I don't suppose for a minute that field work is as easy as sitting in an office, but it is a whole lot more healthy and beneficial.

## Talk No. 5

You have seen about seven million nine hundred and eighty-six thousand five hundred and forty-three (more or less) articles telling you that the tractor will have to be used to overcome the shortage of food. There isn't

a doubt in the world but what the tractor can do it, but the tractor isn't made with brains. It can't go out and do the work all by itself; it needs a hand to guide it, it needs a head to tell it what to do and it needs gas to eat.

Now, we'll suppose you have a tractor. Your own work is done, that is, you have finished as much of your work as you intend to do with the tractor, so you put it in the shed or out behind the bluff, and decide not to do any more than you have to until harvest time. You drive to town, and on the way you sympathize with your neighbor, who you see out in the dust trying to coax his horses to do a little more than a day's work when the weather is so hot that they shouldn't be working at all. Your tractor is in the shed and your neighbor is very behind with his work while you sit in the village store talking about people who haven't done their share towards helping with the war. Every minute that your tractor is standing idle, you are wasting the time and money of the nation and making a larger food shortage, for your tractor isn't earning anything while it is standing idle, and your neighbor who hasn't been able to buy a tractor has to let part of his work on the land go because his horses aren't able to do the work and every piece of work which should be done and isn't means another chunk added to the food shortage.

Get out and help your neighbor. Don't operate at a loss and don't try to make a fortune. Get out and help and keep your tractor rolling. That's one key to the present situation; keep everything moving. If all the tractors in Manitoba, Saskatchewan and Alberta were kept at work for twenty hours every day, this fall's work would be done before we knew we were nicely started.

Talk No. 6  
Overheard at the Portage  
Plowing Match

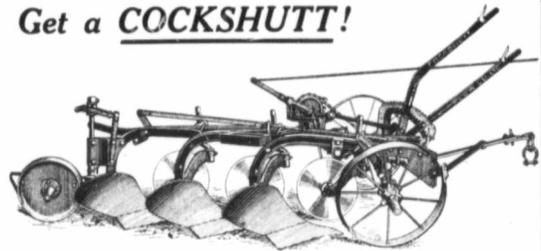
I was out at the plowing match at Portage la Prairie the other day and heard people talking about a lot of things besides plowing, for instance, I was standing at the end of a furrow watching a fellow making a nice straight black mark up the field when a little sawed off fellow about my size said: "Pretty nice job, ain't it?"

"Yes," said a great big fellow with Santa Claus whiskers and a

## COCKSHUTT Light Tractor Plows

clearly demonstrated their superiority at the Brandon Light Tractor Demonstration, July 16th, 17th and 18th, by their clear-cut work, thoroughly covering the weeds.

**For First-Class Plowing  
Get a COCKSHUTT!**



**Better Plowing  
Less Weeds**

**Better Crops  
Less Labor**

The COCKSHUTT is not a makeshift. It is built for Light Tractor work. Our engineers have long foreseen the need for just this type of plow, and here it is—we've done the experimenting—not you. That's the Cockshutt way.



### All You Do is Drive the Tractor

One pull on a rope raises the bottoms. Another pull lowers them. A boy could run it if he could run the Tractor.

Cockshutt Plows will handle any Western soil with any make of Tractor. They are noted for light draft, compactness, simplicity, and the giant strength you need for good sure work.

Let us send you our new illustrated folder. Write to-day to our nearest branch. You will be delighted with this plow.

## Cockshutt Plow Company, Limited

Winnipeg Regina Calgary Saskatoon

good-sized waist band, "it looks pretty nice and it's all very nice for them to show us how nicely those little engines work, but what's the use of them showing us all that when we can't afford to pay anywhere near the price they ask for them and, anyway, the price is unreasonable. They had lots of material on hand, and are making us pay the big prices just the same as if they had to pay the new prices for material. They should keep the prices at the old place until they use up all the old material."

I happened to know that he was wrong and that most farm machinery manufacturers held their prices down as long as they could, but, even if he had been right, I couldn't help wondering what the same man would say if he were asked to sell his wheat below the market price because it was at a lower price when he grew it, which was before his expenses got to within a mile of where they are now. As I was thinking about this, I began to wonder if the farmer wasn't pretty nearly as much of a speculator as the ones around the stock exchange, who have been getting such a storm of protests.

I don't doubt for a minute but what I'll get somebody into my wool for this, but I couldn't help wondering just the same.

Somebody asked me the other day if the light gas tractor had arrived at the place where it could be called "finished." No, it hasn't; and I don't suppose it ever will get there, for, before it gets to such a state of perfection, something new will be sprung on us; and, anyway, I don't think the gas tractor will ever get to the place where it will be impossible to improve it and, even if it did, there would always be somebody who would think they saw an improvement and, in consequence, they would stick in something that had been tried out and proved a failure long before.

You know it's amusing (when it isn't something worse) to see how manufacturers will persist in decorating their tractors with things that have been tried out and proven failures. Some manufacturers manage to make a collection of these failures, put them all onto one tractor and the result has Charlie Chaplin and Harry Lauder beaten so had they look like an omelet.

Oh, no. Don't worry; the gas tractor will see lots of changes yet and if we don't all starve to death or shoot each other first, we'll see the gas tractor share its popularity with another power.

Doug. R. A. Drummond.

## A. Stanley Jones

**NORTH BATTLEFORD  
Sask. Dept. F.**

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



The Original Small Thresher

**I Pay All Freight  
Write for Time Terms**

Write for Free Catalog

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

The above prices have been advanced 6% since August 1st.

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

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



*Any farm is alive with opportunities to*

## KODAK

The youngsters with their pets, the family reunions and home-comings, the scenic beauties of farm and neighborhood, the interesting incidents that make up farm life, the farm, itself, with its orchards and fields and cattle and barns, offer material for pictures of which any album might well be proud.

There is a practical side to Kodak as well, for any farmer. You can read about it in the little free booklet, "Kodak on the Farm," if you will send for a copy.

Remember, it is easy to make pictures—good pictures—and if you think it's expensive that shows that you ought to find out more about it.

Kodaks from \$7.00 up. Brownie cameras, \$1.25 up.

### CANADIAN KODAK CO., LIMITED

TORONTO, CAN.

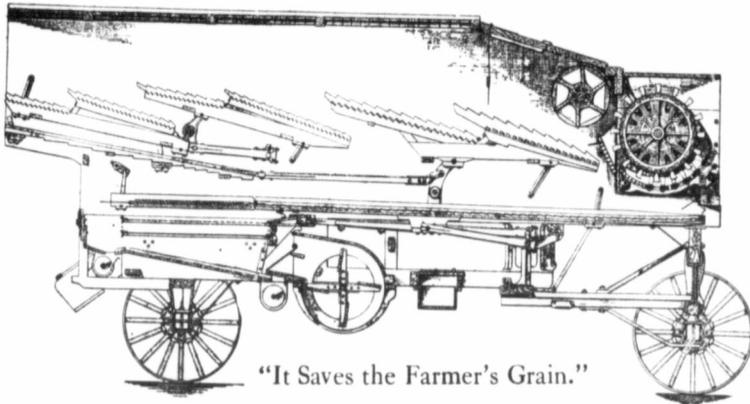
Twelve Months of this Magazine for \$1.00

# "The Great Minneapolis Line"

Unequaled Service

Unending Satisfaction

Write for  
Catalog  
Threshers'  
Account  
Book  
or  
Colored  
Wall  
Hanger



Ask any  
Owner

Our  
Customers  
are our  
References

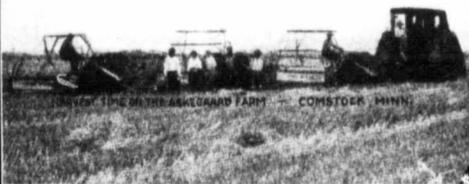
"It Saves the Farmer's Grain."

The Minneapolis separator with its large 16-bar cylinder and adjustable concaves threshes all kinds of grain and seed clean from the head.

The separating grate is far superior to any stationary grate or any grate attached to the concave holders. It can be raised to its extreme height in dry grain, giving the maximum amount of grate separation, and at the same time the concaves may be lowered, or in long, damp, tough grain when concaves are set up close in order to get all the grain from the heads; the separating grate can be lowered enough to give ample room for straw to get away rapidly. These adjustments will be recognized as valuable ones by experienced threshermen and they cannot be had in a built-in stationary grate or one that is fastened to concave holders.

Self-oiling cylinder boxes, tool steel teeth and double chaffer are other superior points of Minneapolis separators. Ask the man of experience about Minneapolis machinery.

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GRAIN THE ECONOMICAL WAY

GOOD ROADS BUILDING



SAVING THE GRAIN BY PERFECT



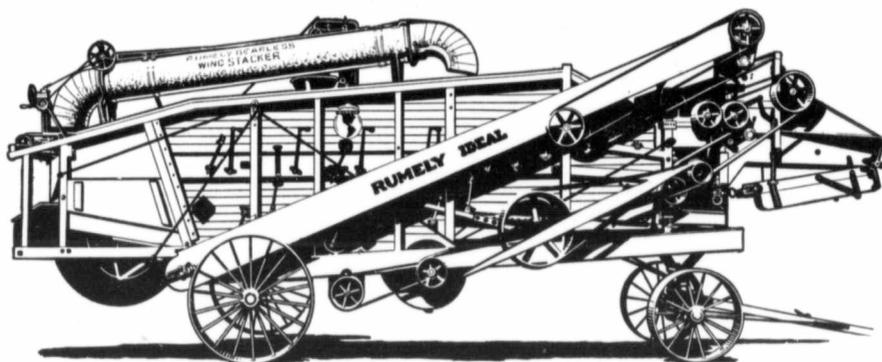
DISCING - SEEDING - HARROWING



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You can do it with the Minneapolis

BUILT BY  
**THE MINNEAPOLIS THRESHING MACHINE CO.**  
HOPKINS (WEST MINNEAPOLIS), MINNESOTA  
WINNIPEG, MANITOBA      REGINA, SASKATCHEWAN



Rumely Ideal Separator

## Will You Accept the Best Judgment of 18,000 Threshermen?

Over 18,000 threshermen in Canada and the United States own and operate Rumely Ideal Separators and for one reason only. They looked for the thresher that was best suited to their requirements, and they picked the Ideal as the best investment in service and satisfaction.

And they got it—otherwise Advance-Rumely would not be building more Ideals every year to supply the increasing demand.

These very owners say that the Ideal means *more bushels, better work, and less expense*, and that's just exactly what *you* want in the thresher you buy.

Thorough cleaning and threshing without waste—

whether the grain is headed or bundled, long straw or short, good weather or bad—that's the money making ability that is built into *every* Rumely Ideal.

The Rumely Ideal fits right into the needs of Canadian threshermen and farmers. When quick work counts, nothing but the *best* will stand up to it. You can count on the Ideal to do the same good work, hour after hour, day after day. We don't merely claim this, the men who own them *prove it—just ask any owner.*

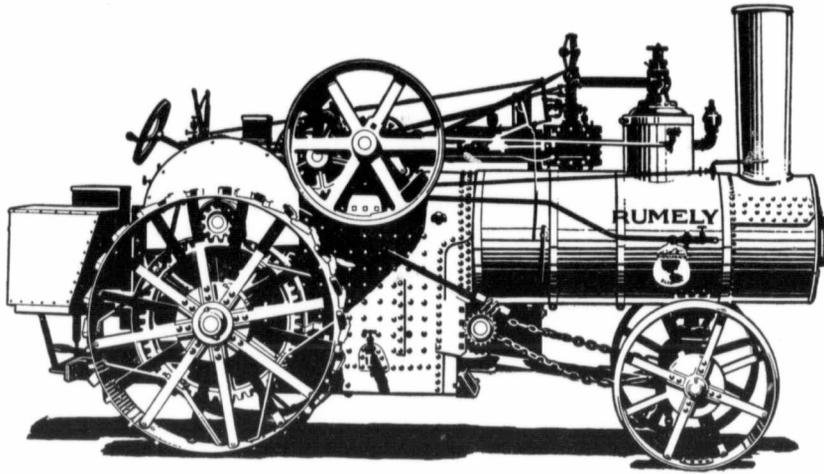
### Back of Your Outfit

Advance-Rumely factory equipment comprises 127 factory buildings and 195 acres of plant area—a permanent, efficient manufacturing unit that means thoroughness and economy in production, and *Service* to its customers *for all times.*

ADVANCE-RUMELY THRESHER COMPANY, Inc.

La Porte, Indiana  
Calgary, Alta.    Saskatoon, Sask.    Regina, Sask.    Winnipeg, Man.

# ADVANCE-RUMELY



Rumely 16 H. P. Steamer

## Dependable, Economical Power for the Other End of the Belt

A combined experience of 80 years backs Advance-Rumely steam engines—their owners numbering into the thousands. Again, there is but one reason for this. They live up to a long standing reputation for absolute dependability and long service.

Two standard lines to choose from—Rumely and Gaar-Scott. Each has its special features, but both share in common the one big requirement that *all* Advance-Rumely machines must meet—a rigid, uniform standard of manufacture, good materials and workmanship—under the most rigid supervision and inspection.

Advance-Rumely steamers meet all Canadian requirements and boiler laws. Select any one of these two

standard makes—in any size—you will find no steamers more economical in the consumption of fuel and water, or of greater steaming capacity.

The many years of satisfactory service which Rumely and Gaar-Scott engines have given, has sufficiently proved their worth. The thresherman who buys a Rumely or Gaar-Scott steamer can be sure of long years of profitable service and satisfied customers—*just ask any owner.*

### Service to Our Customers

When the rush is on, you don't want pleasant words and promises—you want *action*, and you get it from Advance-Rumely. Four branch offices and warehouses in western Canada with complete stocks of machines and repairs, *maintained for your benefit.*

ADVANCE-RUMELY THRESHER COMPANY, Inc

La Porte, Indiana  
Calgary, Alta.    Saskatoon, Sask.    Regina, Sask.    Winnipeg, Man.

# ADVANCE-RUMELY

## FARM GAS ENGINE FUEL ECONOMY

WHEN fuel costs are high, it would seem that there would be every inducement on the part of the engine user to see that the engine he is buying should be an economical fuel consumer. If we were to figure out the various items that went into the cost of operating a gasoline engine, such items as gasoline, or kerosene, lubricating oils, batteries, repairs, etc., we would find, of course, that the fuel consumed constituted the largest portion of the operating expense. If we could reduce the fuel cost any considerable percentage, it would result in a larger amount in dollars and cents saved in a year than an equal ratio of reduction in any of the other items of operating cost.

Many of the engine manufacturers and many dealers, however, seem to be of the opinion that the farmer is not interested in the cost of operation, that the initial cost of the engine seems of greater importance to him than what it is going to cost him to keep the engine in operation. If this is true, it must be so very largely because of a failure on the part of selling forces to show what economical fuel consumption in an engine means.

In the first place, it is self evident that any engine which operates with a very low fuel consumption must be a correspondingly highly efficient engine. No matter how good the materials used in its construction, no matter how well they are put together, if a wasteful use of fuel results, that engine is not highly efficient. Efficiency of this sort begins in the designing room, and is the result of great skill on the part of the designer who planned the important details of the engine. Sometimes an engine that is extremely wasteful in fuel may be overhauled and made efficient, or at least less wasteful. It depends upon what is the cause of its inefficiency. But, as a rule, a company that puts out a high fuel-using line of engines never becomes noted for the contrary quality until its line has been much redesigned.

Good fuel economy means considerably more, in other words, than the mere saving of so much money that would otherwise have to be spent for gasoline. There are so many things that can cause increased fuel waste that when a low fuel rate is secured it indicates a very satisfactory condition. Just as it is usual to consider that a house that is cool in summer and warm in winter is probably built in a durable,



Portion of Headland, Brandon Plowing Demonstration just before the flag dropped

strong and safe way and is likely to be a good investment, so any engine that does its work without needless cost for fuel supply is probably a very good engine.

Take the matter of compression, which is so important in relation to the rate of fuel that will be used. It is generally known that the fuel mixture in any gas engine is compressed so that where it is fired a greater amount of pressure will be secured, meaning more power. In a general way, about four times as great a pressure is the result after the explosion as existed at the time of ignition. One would perhaps wonder then why extremely high compression pressures were not used, and herein lies one of the points for skillful designing engineers to solve at the drawing board, long before the first engine is built. As you compress the fuel mixture the pressure creates a heated condition, and this compression may be carried up high enough so that the mixture will fire itself without other ignition help. Certain types of engines utilize this means. In the customary type of farm engine, however, battery or magneto ignition is used, and the charge must not be compressed to a point where self-ignition occurs. Bearing in mind the fact that an engine that has run for some time gets quite warm and that this adds to the easy firing of the warmed mixture coming into the cylinder, the compression must be made so that even on hot days in the harvest fields and under the hottest of suns, pre-ignition will not occur. High compressions with resulting high explosive pressures mean that engines must be made strong to withstand the strains. Not taking into account any other factors, the higher the compression of an engine the greater the explosive pressure, or power from each charge. Such an engine, therefore, will be a low fuel user.

Other factors, however, do have to be taken into account, and too great compression, or the unskillful designing of even moderate compressions, may result

in an unsatisfactory engine with breakages, preignition, short life, overheating and a long train of troublesome habits. The truly good design of an engine, then, results in one where the compression has been so handled that an economical fuel rate is secured along with freedom from the troubles incident to too great compression.

Ignition is another important factor in the amount of fuel used. Of course, it goes without saying that whenever a charge of fuel is introduced into the cylinder and is exhausted from the engine without being burned, then there is a fuel waste as well as loss of power. Therefore, an engine, to be known as a fuel economizer, must have a good ignition system that will fire every charge taken into the cylinder. If it misses 5 per cent of the charges, it is certainly wasting 5 per cent of the fuel. As a matter of fact, it will probably waste more, because when one charge is missed there is probability that some of the unburned mixture may help to make the next succeeding charge over-rich so that it fails to ignite also. A missing ignition, therefore, may cause quite a considerable waste of fuel and when an engine has been in use for a long time, an engine that at first may have made an excellent fuel record may become quite the reverse.

Of course, an engine that does run without fuel waste probably has a good igniter, but it does not always follow that a good igniter results in low fuel rates. The time when the ignition takes place is a most important factor. We give an engine compression in order that the mixture may be ignited at a high pressure, but if the ignition does not occur until the piston has passed along its outward stroke after reaching the point of highest compression, we are actually firing the charge at a weakened compression pressure. Also, the explosion is occurring during the real power stroke and the piston has a shortened space of time in which to receive the pressure before the exhaust valves open and possibly permit a considerable extra part of the pressure to

escape through the exhaust without having done any useful work. On the other hand, if the spark fires the charge before reaching the highest compression point, the pressure is exerted against the motion of the crankshaft and the engine tries to reverse itself, being prevented from doing so by the inertia momentum of the flywheels which carry it along, but with much loss of power. And whenever, for any reason, power is lost, extra fuel is needed to produce the power needed. Not only that, but the early ignition tends to wreck the engine, and in time will certainly do so.

It is pretty safe then, to assume that an engine with a fuel rate that is low is equipped with an igniter that is doing good work every time it is needed and that is properly timed to give the spark correctly.

Needless to say, waste of fuel always accompanies an improper carburetor adjustment or a poor carburetor. In this statement is intended to include all such matters as the design of the fuel and exhaust passages, the design and timing of the inlet and the exhaust valves, etc. In other words, the economical engine must have a correct fuel mixture, which must be properly introduced into the cylinder, fired and exhausted. Anything which impedes the progress of this event tends to make the engine give less power and use more fuel.

Adjustment of the carburetor is, of course a most important factor, assuming that a good make of carburetor is used. The changing quality of the fuels available has provided increased difficulties for the carburetor manufacturers to solve, and a carburetor of 15 years ago would not handle much of the low-grade fuel that is now poured into the supply tanks of farm engines, automobiles, trucks and tractors. Automobile users know by dear experience that changes in the weather often affect the action of the carburetor and the amount of fuel used.

The timing of the valves, their size, lift and the shape of the inlet and exhaust passages are all items which the purchaser of the engine cannot affect. He should understand, however, something of their importance and the fact that inefficient design in any of these points means low efficiency for the engine and trouble for its owner. There have been many instances of engines whose efficient performance was wonderfully augmented by such appar-

Continued on page 24

"When You Want a Real Good Gasoline or Kerosene Engine Buy a JUDSON"

# You Need Good Farm Supplies

## WE SELL THEM—DIRECT TO YOU

ORDER EARLY AND GUARD AGAINST HIGHER PRICES AND SHORTAGE OF SUPPLIES. ORDER DIRECT FROM THIS PAGE—YOU'LL SAVE MONEY



### EVERY BELT GUARANTEED

#### ENDLESS CANVAS DRIVE BELTS

Our "Reliable" Belts are the heaviest and most durable offered. They are made of full weight 32-oz. duck. Every Belt is guaranteed.

33 ft., 5 in. x 4-ply	\$ 9.00	100 ft., 8 in. x 5-ply	\$53.50	150 ft., 8 in. x 4-ply	\$ 64.75
33 ft., 6 in. x 4-ply	\$11.75	120 ft., 7 in. x 4-ply	\$46.00	150 ft., 8 in. x 5-ply	\$ 75.00
50 ft., 7 in. x 4-ply	\$15.50	120 ft., 7 in. x 5-ply	\$63.50	150 ft., 8 in. x 6-ply	\$ 95.00
75 ft., 6 in. x 4-ply	\$27.00	120 ft., 8 in. x 4-ply	\$22.00	100 ft., 7 in. x 5-ply	\$ 83.50
100 ft., 7 in. x 4-ply	\$37.50	120 ft., 8 in. x 5-ply	\$33.50	100 ft., 8 in. x 6-ply	\$100.00
100 ft., 7 in. x 5-ply	\$47.50	150 ft., 7 in. x 5-ply	\$ 66.00	100 ft., 9 in. x 6-ply	\$114.00
100 ft., 8 in. x 4-ply	\$43.50				

#### ENDLESS RUBBER DRIVE BELTS

We offer this Belt to the Thresherman on its merits, as there is no better Endless Rubber Belt made. The kind of a Belt mostly sold with new threshing outfits. Our price saves you at least one-third. They are made of the best of materials and workmanship. We guarantee these Belts to give good service, and to stand up under a load as long as any Endless Rubber Thresher's Belt manufactured.

100 ft., 7 in. x 5-ply	\$51.75	150 ft., 7 in. x 5-ply	\$78.50
120 ft., 7 in. x 5-ply	\$22.50	150 ft., 8 in. x 4-ply	\$ 72.00
120 ft., 8 in. x 5-ply	\$ 71.25	150 ft., 8 in. x 5-ply	\$ 89.00
100 ft., 9 in. x 5-ply	\$107.00		

#### BINDER CANVASES

Order at Once

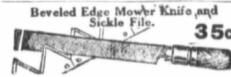


Well made of heavy duck; hardwood slats, and guaranteed to fit the binder for which they are intended equally as well as the original, providing that you give us the correct information when ordering. Give name and number of binder and size and number of canvas if possible.

- 6-ft. platform canvas, complete... \$6.00
- 7-ft. platform canvas, complete... \$ 6.35
- 8-ft. platform canvas, complete... \$ 6.75
- Upper elevator canvas, complete... \$ 5.25
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**HERCULES BELT DRESSING** 40c Per 1-lb. BAR. Save your Belts by using our high grade 1-lb. bars. Price per 1-lb. bar 40c



**BEVELED EDGE MOWER KNIFE AND SICKLE FILE** No. 3A60—Price... 35c Price in lots of 6... \$1.80

#### RUBBER BELTING IN CUT LENGTHS

All 2 and 3-inch is 3-ply; other sizes are 4-ply. Width, inches... 1 1/2 2 2 1/2 3 3 1/2 4 4 1/2 5 6 Price per foot... 10c 12c 13c 15c 16c 18c 20c 21c 23c 25c 30c

**Premier Brand Rubber Belting** No. 5A8—All sizes 4-ply. Width, ins. 1 1/2 2 3 3 1/2 4 4 1/2 5 6 7 8 Price per ft. 13c 17c 20c 24c 30c 32c 38c 38c 46c 53c



**Lace Leather Cutters** No. 5A17—Lace Leather Cutters for cutting leather into strips. Adjustable to various widths. Each... 45c

#### CUT LACE LEATHER

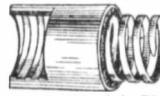
Made from the very best leather possible to procure

No. 5A15—Extra Quality Rawhide Cut Laces.	Feet in lb.	Price per lb.
14	150	\$ 4.50
16	130	\$ 4.00
18	110	\$ 3.50
20	90	\$ 3.00
22	75	\$ 2.50
In sizes of 25 to 9 lbs., per lb.		\$ 2.00

#### STITCHED CANVAS BELTING, CUT LENGTHS

No. 5A3—Four-ply Stitched Canvas Belting.									
Width, inches	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Price, per foot	10c	11c	12c	13c	14c	15c	16c	17c	18c
No. 5A4—Five-ply Stitched Canvas Belting.									
Width, inches	4	4 1/2	5	6	7	8	9		
Price, per foot	27c	30c	31c	36c	45c	50c	60c		

#### SUCTION HOSE



Genuine Yellow Jacket Wire-lined Hose. Heavy and lasting. 2-inch inside diameter. 20-ft. length. Price... \$10.00 25-ft. length. Price... 12.00

#### BINDER CANVAS-SLAT REPAIRER



They save many a trip to town. Sold only by the dozen. No. 3A54—Price, per dozen... 60c

#### GENUINE STILLSON PIPE WRENCHES



No. 5A382—Too well known to require a lengthy description. Made of good quality tool steel, nicely finished. 6, 8, 10 and 14-inch wrenches fitted with wood handle, 18, 24, and 36-inch fitted with steel handle. There are many cheap imitations of this wrench now on the market that will not give satisfactory service. When purchasing be sure to get the genuine Stillson.

Length, open, in.	6	8	10	14	18	24	36
Slip wt., about lbs.	30	35	45	55	75	95	135
Takes pipe, in.	3/8 to 1 1/2	1/2 to 2	3/4 to 2 1/2	1 to 3	1 1/4 to 3 1/2	2 to 4 1/2	3 to 6
	95c	\$1.00	\$1.25	\$1.60	\$2.40	\$3.50	\$6.00

#### BINDER KNIVES COMPLETE WITH KNIFE HEADS

No. 3A42—When ordering state the name and kind of machine, how many cutting sections are on the old knife head and also give us the figures or letters on the old knife head and state whether smooth or rough sections are wanted.

**Rough and Smooth**

To fit Massey-Harris, Deering, McCormick, Frost & Wood binders.

6-foot with 24 sections	\$2.75
7-foot with 28 sections	3.10
8-foot with 32 sections	3.20

#### BINDER SECTIONS

Rough and Smooth

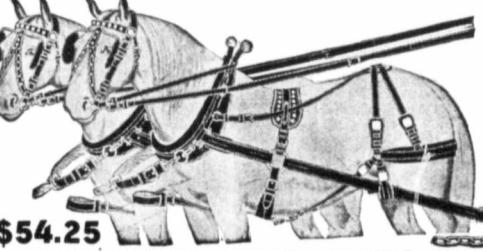
No. 3A41—Box of 25. Complete with rivets. Price... \$1.00



Massey-Harris, smooth... 3x3  
Massey-Harris, smooth... 2 1/2x3  
Massey-Harris, rough... 3x2 1/2  
Frost & Wood, smooth... 3x2 1/2  
Frost & Wood, rough... 3x2 1/2  
Deering, smooth... 3 1/2x2 1/2  
Deering, rough... 3 1/2x2 1/2  
McCormick, smooth... 3x2 1/2  
McCormick, rough... 3x2 1/2

## HARNESS OF QUALITY

WE BUILD OUR HARNESS FIRST AND FIGURE THE PRICE AFTERWARDS



**\$54.25**

"Premier" High Grade Custom Made Farm Harness with 5 Ring Breaching 1 1/2 in. Traces. Japan and Brass Trimmings

This harness represents quality, the true standard of value, and is made throughout of genuine hark tanned leather, all parts being exceptionally well made, so that for all kinds of heavy teaming we highly recommend it.

**Bridles**—7-inch cheeks, extra strong, spotted face piece, brass rosettes.

**Lines**—1-inch. Made from firm selected stock as uniform in thickness as it is possible to get; full length and weight.

**Traces**—Considered the most important part of a harness, are cut extra heavy, from selected trace stock, 1 1/2-inch wide, 6 ft. 4 in. long, with lead chains.

**Beltbands**—Heavy folded, 1 1/2-inch.

**Hames**—All steel, black, brass ball top, brass line ring, bolt style, heavy hame straps.

**Breaching**—Heavy, folded seat, 1 1/4-inch; full length layer, box loop leadups, side straps 1 in. with snaps, lazy straps, 3/4 in. hip straps 1 in., double scalloped safes on leadups, rib straps 1 in., running to hames through loop on pad.

**Breast Straps**—Extra heavy, 1 1/2 in., with roller snaps; martingales, 1 1/2 in.

**Trimmings**—Buckles and rings, heavily japanned; brass spotted, as illustrated; solid brass breeching buckles, brass hame balls and line rings. Weight of harness, packed for shipment, about 90 pounds.

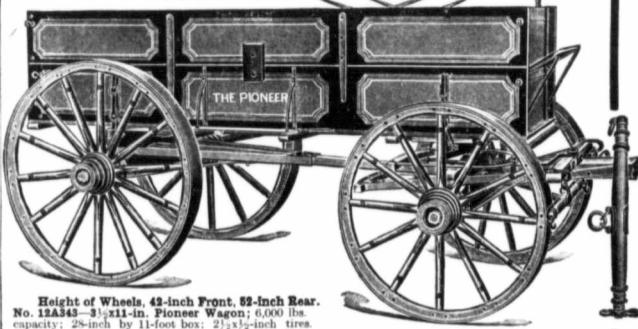
No. AA1—Premier Custom Made 5 Ring Breaching Harness, less collars... \$54.25

## Pioneer Farm Wagons

Are Honest Well-built Wagons  
A Better Wagon than most Mail Order Houses sell  
**\$92.50** WITH 2 1/2-IN. TIRES  
Complete as illustrated.  
Quality The Very Best



Every wagon is fully warranted as to material and workmanship



**Height of Wheels, 42-inch Front, 52-inch Rear.**

No. 12A34—\$111-in. Pioneer Wagon; 6,000 lbs. capacity; 28-inch by 11-foot box; 2 1/2x3 1/2-inch tires. Complete, as illustrated, with neckyoke and whiffletrees. A Real Good Wagon. Weight... \$92.50

1,250 lbs. Price... \$69.50

**Gear only, without box or seat, but with whiffletrees and neckyoke.**

No. 12A34—\$111-in. Pioneer Wagon; 6,000 lbs. capacity; 28-inch by 11-foot box; 3 1/2x3 1/2-inch tires. Complete, as illustrated, with neckyoke and whiffletrees. Weight, 1,300 lbs. Price... \$94.50

**Gear only, without box or seat, but with whiffletrees and neckyoke.** Price... \$71.50

# C. S. JUDSON CO. Ltd.

Cor. Sherbrook and Logan WINNIPEG, Canada

ently simple matters as enlarging the diameter of the exhaust valves, thereby allowing a freer escape of the burned fuel and permitting the next charge to enter a cylinder that was cooler and cleaner. Or, changing the shape of the inlet manifold, especially on four and six-cylinder motors, has often showed a marked improvement in the ease with which a perfectly carbureted mixture could get into the cylinder without condensing a portion of the fuel. Such problems as these are of even greater importance when kerosene is the fuel used, as the lower grade fuels offer many difficulties along these lines. And the correct solution of such problems means again the saving in the quantity of fuel purchased each year during the life of the engine.

While compression, ignition and carburetion problems go a long way in determining the real worth of the engine, there are mechanical problems of importance as well. Such, for instance, is the matter of the bearings. Improved and frictionless bearings have a great deal to do with the efficient engine, and while the user may not see the difference in values between two types of engines until he begins to have bearing troubles, when he does have them, he will be powerless usually to provide any real remedy except to purchase another engine of better grade.

Of course, what applies to the engine applies equally to the accessories. No engine can be better than its accessories, and the engine that is fitted with poor lubricators, weak magneto, or useless grease cups, is condemned by the company it keeps. Also, no engine can be economical in fuel unless it is kept in proper adjustment. What has been said about the ignition getting out of time illustrates this. Leaky valves, fouled spark plugs, poor compression from leaks, scored bearings, gummed piston

rings, loosened governor bolts, broken gears, and all such matters tend to neutralize the value of the best engine and utterly ruin a poor one.

If the farmer trade, therefore, has a tendency to ignore the quality of an engine or tractor, there are opportunities for the dealer to do a lot of educational work along these lines. Particularly in the case of the tractor is such educational work timely at this period of its development, because one unsatisfactory tractor or will possibly prevent the purchase of a dozen more in the neighborhood.

The dealer may, at first thought, be inclined to feel that it is no concern of his anyway, because he does not pay the fuel bills. But if he values the most satisfied customers as an asset, he will do anything he can to get them to purchase the most satisfactory machinery. And if he wishes to avoid complaints as well as trouble, he will, for his own protection, handle only the better and more efficient engine, in order that his customers may have less need of his services in repair and adjustment work.—A. A. Andrews, in Farm Implementation News.

**Overheating**

Many motorists storing their cars in an unheated garage draw off the water at night and refill with hot water when getting ready to use the car. If this last operation is not carefully watched, an airlock may form in the cylinders or piping, especially in old cars whose water system contains considerable grease derived from the pump. The car will run for some miles on a cold day before the water gets hot enough to boil and break the airlock and the reduced quantity of water left will boil.



"You wouldn't think it to look at 'im, but when I says 'Ands up,' 'e answers back in pullick English, 'Steady on with yer blinkin' toothpick,' 'e sez, 'and I'll come quiet.'"

**Guaranteed Endless Canvas Belts**

100' 7" 4-Ply <b>\$33.50</b>		150' 8" 5-Ply <b>\$69.00</b>
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**Special Reduced Prices for Quick Sale Made of Extra Strong Special Weave Duck**

On account of the peculiar construction of this belting it is unaffected by atmospheric changes, uninjured by water or steam and may be subjected to a degree of heat ruinous to other belting. It is therefore the best belting for outdoor use and for wet, damp or hot places.

**The Farmers' Supply Co., Limited**

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**Steam or Gas Tractors**



Equipped with  
**PICKERING**  
"THE GOVERNOR WITHOUT JOINTS"

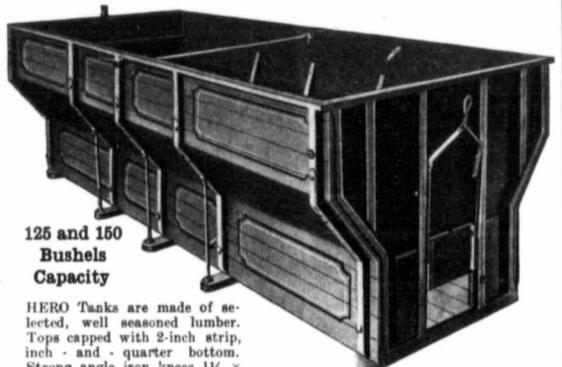
give greatest efficiency  
**FITTED TO EVERY BUILD OF ENGINE**  
Patent Ball Ranger Speed Changer Supplied on all Genuine Pickering Governors.

Will increase speed 50% or more.



**THE PICKERING GOVERNOR CO.**  
PORTLAND CONN., U.S.A.

**Hero Grain Tanks**



**125 and 150 Bushels Capacity**

HERO Tanks are made of selected, well seasoned lumber. Tops capped with 2-inch strip, inch - and - quarter bottom. Strong angle iron knees 1 1/2 x 1/2 x 3/4 inch. Lined with hardwood. Angle iron joint between sides and bottom ensures flax-tight construction. Braces are adjustable to overcome sagging—an exclusive feature. Large stock on hand.

If your dealer does not carry this line write direct to

**Hero Manufacturing Company, Limited**  
WINNIPEG (Under New Management) CANADA

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

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

**FOR SALE**—Or would exchange for a good portable of 20 or 25 h.p., a Rumely oil pull tractor, 23-45 h.p., complete with extension rims and self steerer. Been run two seasons. Good reason for selling. W. Garnet Leffar, Drompore, Man.

**HIGH GRADE SHEET MUSIC**—The entire stock of a wholesaler, all attractive selections, biggest values; five assorted copies 25c, 14 for 50c. Order quick. They went last long. Home and Office Supply Co., Music Dept., Montreal.

# "RED WING"

STITCHED CANVAS

## THRESHER BELTS



Give you more service—per dollar of cost—than any other belts made. They are the belts of extra strength and service. But if you prefer Rubber Belting, ask our nearest branch to give you full particulars about our "STAR" and "LUMBER KING" Belting.



**Canadian Consolidated Rubber Co. Ltd.**

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### PROTECT THE YOUNG FORESTS

Future Timber Industry Depends on To-day's Fire Prevention

"The fire was confined to the brush; no damage was done." How often do we see this in the reports of forest fires? The "brush" referred to is nearly always composed of young growing forests, which have not as yet attained merchantable size. One would be quite as much justified in saying: "A thousand acres of wheat was destroyed by hail, but as the crop was not ripe, no damage was done." Unfortunately, this attitude towards young timber is prevalent even among lumbermen and members of forest protection services whose contact with the forests should enable them to realize the length of time it takes to grow a forest crop, and its prospective value. Too often, little or no effort is made to stop forest fires until timber of merchantable size is endangered. The writer was out with a forest ranger in British Columbia not long ago, when a fire was noticed on a mountain-side covered with the finest stand of young Douglas fir and red cedar one could wish to see. When the ranger's attention was called to it, he said, "Let it burn;

it's only young stuff." This particular stand was about 20 years old. The largest trees were 3 to 4 inches in diameter and 20 to 25 feet high. It is true that it had no present value for timber, but, in another 30 years, it would, in all probability, cut 20,000 board feet per acre; at the present stumpage value, it would then be worth at least \$1.75 per 1,000 feet, or \$35.00 per acre. Since 20 out of the 50 years of growth had been attained, the present value of the stand can safely be placed at two-fifths of the final merchantable value, or \$14.00 per acre.

What the value of standing timber will be when these young forests become of commercial value, no one can predict. If the history of stumpage values in the past may be accepted as a guide, it may be safely assumed that it will enhance sufficiently to more than cover the expense of protection.

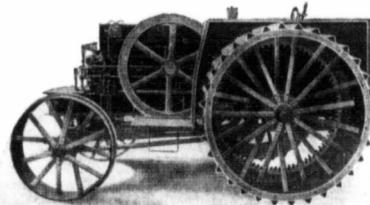
Canada is beginning to worry about the depletion of its forests. If we protect the young growth which nature is striving to establish, our forest industries will always be supplied with raw material.—R.D.C.

**Twelve Months of this Magazine for \$1.00**

## The "IDEAL" Kerosene Tractor

DREW CROWDS OF INTERESTED FARMERS AT THE

### Brandon Plowing Demonstration



Strong in Construction  
Light in Weight  
Burning Kerosene

**THE NEW "IDEAL" 15-30 GAS TRACTOR WITH ITS OPPOSED CYLINDERS, HOPPER COOLED, WORKED PERFECTLY at all loads.**

Its rigid steering device enabled the operator to strike a straight furrow and maintain it. Its steady power permitted the turning of an even well-laid furrow, and its type of wheel-grip reduced slippage to a minimum, thus maintaining a maximum speed per hour in land that was very trying in tractive efficiency.

**THE "IDEAL" LINE also embraces—**

- "IDEAL" "CHAMPION" COMBINATION THRESHERS
- "IDEAL" STATIONARY AND PORTABLE KEROSENE ENGINES
- "IDEAL" DOUBLE GEARED PUMPING AND POWER WINDMILLS
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- PUMPS, PUMP JACKS, WOOD SAWS, CONCRETE MIXERS, ETC.

## The Gould, Shapley & Muir Co.

LIMITED

WINNIPEG, Man. REGINA, Sask. CALGARY, Alta.

## SOME POINTERS IN SELECTING AN ENGINE

By L. D. GOFF in "Gas Review"

**T**HE life of a good engine is shortened by poor handling, and the life of a poor engine is lengthened by good handling, but the life of a good engine properly handled will exceed by far the life of a poor engine accorded the same treatment.

A little experience I recently had with an engine that had gone wrong set me to thinking about the folly of buying cheap engines. The reading of the letter by C. E. Cushing, which appeared in the February number of "Gas Review" set me to writing and, contrary to the usual custom, I am opening rather than closing with the moral.

Without a doubt the engine Mr. Cushing is operating was purchased at a price that enabled the manufacturer to build a real engine, and ability and ingenuity were concentrated in building a serviceable engine. While the first cost of the engine was high compared to some present day prices, his up-keep expense has been low. The service this engine has given must be of considerable satisfaction to Mr. Cushing.

Now his neighbor, because of false economy in employing cheap help to operate a similar engine, has not had the same satisfactory service but under adverse circumstances it did service for some length of time. The question is, what would have been the life of a cheap, poorly constructed engine under the same conditions and with the same handling.

My recent experience was with a smaller engine, rated at 15-horse power, to be more definite, and it stopped. As the man operating it knew but little about a gas engine other than operating it, I was called in and I found the compression was being lost through the exhaust valve. Following my instructions the cylinder head was removed and I found that the seat of the exhaust valve was practically worn out as well as the valve itself, also the valve stem guide was worn so that the head of the valve had worn downward on its seat and the valve stem had also worn the guide downward.

It appeared like a bad case, but

I noticed a feathered edge of metal on the valve seat and straight away started to examine it with the aid of a cold chisel and hammer. I soon removed what was left of the seat in the form of a ring, so the matter of providing a new seat was a very small machine job. In my hasty examination I had overlooked two screws on the cylinder head, which I later found served to hold in place the valve stem guide. This was also easily replaced, and it was a small job to make a new valve. About four hours' work put the engine back in service with this particular part as good as new. This engine has already plugged away daily six days a week for ten years and is good for many,

or less distinct and a person in the market for an engine, after a little investigating, should have no trouble in separating the classes.

The first class is the well designed engine built for long time service, incorporating refinements that go toward economical operation and satisfactory service. The engines mentioned in the fore part of this article are examples of this class. Where a person is contemplating the installation of an engine for steady all-day service, he should look to this class and if the price frightens him bear in mind that the money asked is represented in the engine in quality of material, extra fine fitting and workmanship and, lastly, service. He may never have an occasion to

engine is shut down and the trouble corrected while such a case, where the engine is used for running a small factory or for work on a construction gang, will make a hole in the profits.

I do not wish to imply that these engines I have put in the second class will necessarily give trouble, for such is not the case. They are designed and built for service yet with an eye for economical construction that they may be marketed at an economical price considering the use to which they are to be put. These engines will give service and good service. Nine times out of ten they will be put out of commission by abuse and neglect rather than by wear and this would occur to the engines in the first class if accorded the same treatment.

And, again, as in the first class, the engine represents full value for the price asked with, of course, a reasonable profit. Before going further, let me impress the reader with the fact that there are no unreasonable profits made on engines of the above classes. Competition is altogether too keen for that. It is the aim of the average manufacturer to reduce his cost that he may reduce the selling price and increase his volume of business rather than to make a big profit on a single engine.

Somewhat reluctantly I will start on the third class. I am afraid I will not be able to do this class justice without resorting to language not permitted in print but will try, hoping that at least one or two prospective engine buyers will get the point I am endeavoring to convey.

To the third class belong the low priced engines, cheap engines, cheap in price, cheap in quality of material, cheap in quantity of material, cheap construction, cheap workmanship, cheap finish, cheap equipment, cheap, cheap, cheap. Now the buyers of these engines do not come under P. T. Barnum's class of those who "like to be humbugged," but belong to a peculiar class who have yet to learn the truth of the saying, you cannot get something for nothing. The truth about these cheap engines is never told. On the con-

Continued on page 48



The Gas Traction Experts of a near day

many more, requiring but very little attention. Of course, all of the parts could have been purchased from the manufacturer had no machine shop been available.

But this engine was built to run. The company making it are still making engines, in fact, have an enormous engine business and as far as price is concerned their engines are among the top notchers. Hundreds of cases similar to the above is the reason they can build a real, honestly good engine and get a price that, compared to prices asked for engines put out by other companies, seem outrageous.

There are, to my mind, three classes of engines on the market to-day. These classes are more

call for the service the manufacturers stand ready to give, but he has the satisfaction of knowing if anything goes wrong he can get quick assistance, and a long expensive shut-down will be avoided.

To the second class belongs the engine of moderate price. Because of the price such engines cannot incorporate the fine workmanship, extra refinements, etc., found in engines of the first class. Further, engines to be used for intermittent service such as farm work, are not subjected to the wear and tear that an engine in constant service will get and the cost of construction can be reduced accordingly. Again, if some little adjustment is required, there will be little or no loss if the en-

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# Automobile Tire Repair

By T. P. HINES

**C**ARRY along the following equipment in your car wherever you go:

- One extra outer casing
- Two extra inner tubes
- One wheel jack
- One tire pump
- A can of rubber cement
- A can of vulcanizing cement
- A tire-pressure gauge
- Two cement brushes
- A good set of tire irons
- A die tool for retreading valve stems and caps
- A pound of raw rubber
- A box of "Dime" patches
- A box of air checks for valve stems
- A large can of talcum powder
- A bundle of clean rags or cotton waste
- Several sheets of fine sandpaper
- Several blow-out sleeves
- A small vulcanizer

It is always best to do tire repairing at home if possible. When one is on the road and a tire is punctured the thing to do is to replace the punctured tube with a good one and leave the repair to be made later. Remove the tire, make sure the nail or tack that did the damage is removed from the casing, brush out all sand from inside the casing, dust with talc, inflate the inner tube slightly to avoid pinching and replace the tire.

Sometimes, however, you may have a series of punctures and have to make a repair on the road; hence the patches, cement, vulcanizer and raw rubber.

An ordinary "pin" puncture—made by a pin, nail or tack—may be repaired by the use of a "dime" patch. These patches are already cement-coated on one side and are ready for immediate use. They are called "dime" patches because they cost ten cents each; a box of a dozen costs one dollar.

When the leak to be repaired has been located, sandpaper the surface of the tube about the puncture, usually a space about the size of a silver dollar, until the rubber appears slightly "spongy" or rough to the touch. Then wet a piece of cotton waste with gasoline and thoroughly clean the sandpapered surface. Remove the waxed cloth from the cement-covered side of a dime patch and moisten the cement with gasoline. Allow it to dry for an instant and then apply it to the puncture, pressing with the hands and holding it firmly in place for a few moments. This may be done better by placing the tube on a fender of your car and placing a weight on the patch, or by the use of a wooden clamp made on the principle of a lemon squeezer.

### Vulcanizing a Puncture

If you are in no hurry and want a more permanent repair than that afforded by the dime patch you may vulcanize the puncture.

To do this you prepare the punctured tube as for the application of a dime patch, cover the sandpapered surface with vulcanizing cement and place upon this a piece of raw rubber of the desired size. A piece of heavy wrapping paper should be placed on each side of the tube to be vulcanized, to keep the vulcanizer when heated from directly touching the tube, and the vulcanizer clamped in place.

The vulcanizer should be lighted in a place where there will be no draft upon it. Most of the small vulcanizers are heated with gasoline. There is a small chamber filled with shredded asbestos, upon which is poured a measure of gasoline—the proper measure being supplied with the outfit. The gasoline is then set on fire and when the gasoline burns out the job will be done.

Before trying to remove the paper, which will have stuck to the raw rubber, the tube should be soured in water to cool the plastic rubber. The paper may then be torn off, leaving that which is stuck firmly.

Often a tire develops a slow leak, due to one of two things—a small pin puncture or a faulty valve check. The latter is more common. Remove the caps from the valve stem and pour the mouth of the stem full of water. If the leak is there the water will blubber. The old valve check should then be removed and replaced with a new one, which will cost five cents.

A blow-out is more difficult to handle, as it usually tears quite a large hole in the casing and also makes a long slit in the inner tube. When a blow-out occurs, therefore, the extra casing should be pressed into service and no repair attempted.

Sometimes, however, one may have more than one blow-out or may be without an extra casing. This usually seems to happen a long way from a service station and is very annoying. If the blow-out is not too bad a temporary repair may be made by the use of an inner or an outer blow-out shoe. The inner shoe is made of several plies of heavy canvas, thinning toward the ends and sides. When it is placed in the casing and the casing is put on the rim, the sides of the shoe are left protruding and are thus gripped by the rim and the bead of the casing. Another type of shoe is placed on the outside of the casing and is laced in place. A shoe of this kind is of little service, as it is impossible to lace it

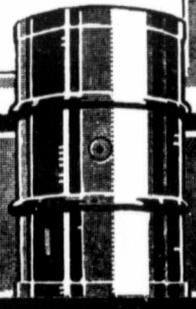


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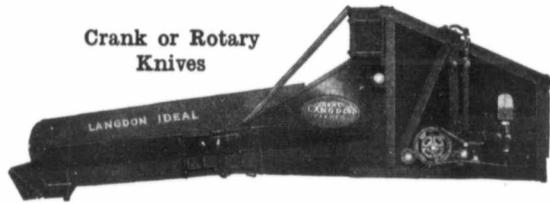
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so it will take much of the strain from the casing wall.

#### Take Care in Buying Tires

The best shoe, in my opinion, is the one that is fastened on outside of the casing by means of hooks that are pushed into the rim channel with the bead of the tire. This will give a snugly fitting shoe and one that will take most of the strain from the weakened casing.

The amount of repairing you have to do is also dependent, in a large measure, upon care in buying tires. Tires are generally selected by considering the amount of load sustained by the wheels of the car. The following

table, giving tire sizes for varying axle loads, will tell you if your auto tires are of the proper size:

Tire sizes	Pounds per wheel
2 1/4-inch, all diameters.....	225
3-inch, all diameters.....	350
3 1/2 x 28-inch.....	400
3 1/2 x 30-inch.....	450
3 1/2 x 32-inch.....	555
3 1/2 x 34-inch.....	600
3 1/2 x 36-inch.....	600
4 x 30-inch.....	550
4 x 32-inch.....	650
4 x 34-inch.....	700
4 x 36-inch.....	750
4 1/2 x 32-inch.....	700
4 1/2 x 34-inch.....	800
4 1/2 x 36-inch.....	900

These weights apply to cars without load. Cars with a 1000-pound or more axle load should

be equipped with tires five inches in diameter or more. It is usually best also to increase the size of the rear tires by twenty-five per cent on account of the strains they must bear.

Next to the proper size of tires, the most important thing to consider is proper inflation. When a tire is not properly inflated the different layers of the tire separate when it is subjected to continual bending in running; when a tire is overinflated it will blow out at the weakest spot when the air expands—caused by tire friction—after the car is put in motion. An air-pressure gauge should be owned by every motor-

ist and tires should be inflated according to the following table:

Diameter of tire, inches	Maximum wt. on wheels, pounds	Air pressure in tire, lbs. per square inch
2 1/2	225	50
3	350	60
3 1/2	600	70
4	750	80
4 1/2	1000	90
5	1000	90

To sum up what I have said, select tires of the proper size, keep them well inflated, repair all cuts promptly to keep water from reaching the fabric, carry along extra casings and tubes for emergencies, but do all repairing at home if possible—and use good judgment.

## Getting the Most Out of a Gallon of Gas

WITH the price of gasoline going up with every change of the moon, with the increased cost of tires not only possible, but probable, and the tariff for everything else needed for automobile upkeep on the ascent, it is time for the owner to consider his expense and renewal costs. And when it is considered that repairs and labor have pirouetted skyward along with other things, it behooves the owner to consider ways of decreasing running expenses, and to learn how to get as much out of a gallon of gas as possible, not to say every mile out of his tires they can be coaxed to give.

There are many little expenses about running a car which total a considerable sum. The Scotchman puts it: "Mony a mickle makes a muckle." A nickel, a dime, a quarter, a dollar do not seem much at the time, but they pile up the cost per mile frightfully. Not every one can be like a friend, who, when cautioned about the way his chauffeur was running up the cost of his several cars, replied:

"I don't want to know what my cars cost. If I did my business instinct would doubtless make me dispose of them all, and I do not want to do this. The cars are a luxury and I don't want to know what they cost."

A car which lasts, with ordinary care, one or two years, if given intelligent care by the owner might be made to last three to five years, says H. C. Brokaw, principal West Side Y.M.C.A. Automobile School, New York. This means taking extraordinary care and a thorough knowledge of the working parts and how to keep them in condition, and it means doing faithfully and persistently the things necessary to keep everything in order.

When it is considered that, with real war at hand, it may not be possible to get a new car as often as it has been in the past, it might be as well to take care of the cars we have, rather than let them go to rack and ruin for lack of care. We are howling about food waste by the American people and it is about time we heard something about waste of automobiles. A good many automobiles are wasted more than they are used. In some cases this is due to carelessness and in others by lack of knowledge of what to do and how to do it.

Take tires, for instance. The cost due to neglect is often greater than the cost of actual wear.

Some of the things which cause excessive wear and deterioration of tires are: Driving into holes in the street, or in deep ruts; turning corners at too high speed; stopping the car so quickly with the brake that the wheels slide on the pavement; and a harsh clutch which jerks the car suddenly from a standstill, causing needless wear. Then there are such things as letting the front wheels get out of alignment, so that they do not run parallel, or nearly so, the action being that the tire is slid instead of being rolled over the road. There should be a slight toe in, for mechanical reasons, but if this is allowed to go beyond the proper limit it costs money.

Adjusters tell us that a very large percentage of tire failures is caused by under-inflation, which allows the tire to flatten and breaks the side walls. Every tire should be tested with a gauge and not with the eye or hand, and kept to the pressure named by the tire maker.

To get the greatest life out of a tire it should be watched continually for small cuts through the rubber to the fabric. Most tires will be found after a short service to have from two to a dozen such cuts. These will allow sand to work in and loosen the rubber and then moisture gets in and rots the fabric. There are preparations with which these cuts may be healed in a few minutes; serious cuts, especially where the rubber is loosened from the fabric, should be taken at once to the vulcanizer.

While oil and grease of good quality cost money, their proper use will save many times their replacement of parts. On the other hand, a waste of lubricant makes unnecessary expense. Especially with a new car, oil and grease should be watched carefully until the bearings have had time to work in. That is the time when expense for replacement of bearings is most likely.

It is not generally realized that a large number of things enter into the economical use of gasoline. To get the most out of a gallon of gasoline all moving parts must work properly. This means proper lubrication. The brakes should not drag; each cylinder of the engine should fire properly; the clutch should not slip; and the carburetor should be in proper adjustment. It is not well to adjust the carburetor unless sure it is at fault. Excessive carbon in the cylinder causes a decided loss of power, due to back

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pressure on the piston, and the partial clogging of the muffler indirectly consumes extra gasoline. The importance of keeping the muffler free is not usually understood.

Some time ago I was riding in a car that could hardly make headway against a strong wind blowing. This meant frequent use of the second speed gear, which in itself causes an undue use of gasoline. I found on experimenting that the muffler cutout pedal could be used in place of the accelerator pedal; that is, when the muffler cutout was open the engine had considerably more power and immediately speeded up. The fact is that we kept the cutout open most of the way home and had no more trouble in bucking the headwind. It led to the discovery that the muffler was totally clogged with carbon.

To insure each cylinder getting its proper power without waste, the engine should be driven with the spark lever advanced as far as possible without causing back pressure. The spark plug gaps should be adjusted properly to insure a thorough ignition of the charge; the spark plugs should be kept clean to prevent the loss of a charge of gas through non-ignition, likewise the interrupter points and the distributor should be kept clean and properly adjusted.

To use all the gas that is taken into the cylinder there should be no loss of compression through leaky valves, or weak valve springs, or poor gaskets on spark plugs or valve caps; and it is equally important that pet cocks, cylinder head, where there is one, and piston rings are tight, so that gas will not waste.

It is not safe to leave these things to the chauffeur and the garage man. The owner should learn how himself and see that everything about his car is adjusted right and he ought to know how to keep them in order. If he gets this knowledge inside his thinking machine he will find that his propelling machine will work better, and that he will not only have more use and pleasure out of it, but he will save a very appreciable part of the cost of upkeep.

**Leaky Gear Boxes**

Sometimes it is noticed that the lubricant in the gear box disappears very rapidly, and to many it is a mysterious phenomenon. The cause is the heating of the gear box, which expands the air in the upper portion and forces the lubricant out through the bearings. If the fault is very persistent it can be remedied by drilling and threading a hole in the top of the gear box and screwing into it a small piece of pipe.



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

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- 1.—**Dunlop Thresher Belts** are superior belts for the simple reason that they are consistent in make-up—manufactured by proper materials in a uniform way and by expert workmen.
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- 5.—To give double security **Dunlop Rubber Thresher Belts** are stitched closely by an improved method that sinks the stitches to avoid a lumpy surface. That's why Dunlop belts are noted for such smooth, evenly-balanced faces.
- 6.—These belts are built on principles that wide experience in belt-making have proven to be correct—another perfectly good reason why you should consider the purchase of a "Dunlop" this coming season.

**DUNLOP CANVAS THRESHER BELTS**

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

**DUNLOP AGRICULTURAL HOSE**

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

**REMEMBER THIS—**

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

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# The Tractor on the Farm

The New Tractor

As a rule all tractors are thoroughly tested before shipment from the factory. This includes a test of the motor before it is installed in the frame of the tractor, and a test made by running the tractor on a special track after all parts have been assembled. Then the power of the motor is given the brake test in some form, and later the pulling power of the tractor is given a test by the use of a dynamometer.

All manufacturers use these and various other tests in trying out machines, and the farmer who buys a new tractor, whatever make it is, gets a machine on which the manufacturer is willing to place his name—a name he wishes to be known for quality and service.

It being evident, therefore, that the tractor manufacturer wishes to give buyers of his machines maximum service, it is the duty of the buyer to the manufacturer, as well as to himself, to give the tractor proper care and attention, and it is with the hope of helping some mechanically untrained buyer to get better service that this article is written.

Before an attempt is made to start the tractor motor, the operator should be sure that the fuel and water containers are full and that all ignition wires are properly connected. All mechanical oilers should be filled with the grade of oil recommended by the manufacturer and, if a splash oiling system is used, enough oil to insure proper lubrication should be placed in the crank case.

Then all open gears should be covered with pin grease and all grease cups should be filled and screwed down so that all bearings getting lubrication from this source will be well supplied. In starting a new engine it is well to remember that all bearings are new and rough, and therefore require more oil and attention than will be necessary later.

Before the motor is started one should study and become thoroughly acquainted with all the control levers and their operation. In an article of so general a nature as this, and with so many tractors on the market, all varying in modes of control, it is impossible to give specific advice as to operation, and the buyer will do well to study the catalogue issued by the company making his tractor as well as the direction book.

First of all the operator should make sure that the master clutch is in neutral, or with the clutch disengaged. This will leave the

engine free from the transmission and will allow it to run independently of the tractor wheels. Then the lever controlling the spark advance should be placed in full retard and the gasoline control advanced so that an adequate supply of gasoline will be furnished the motor.

If the engine has a double system of ignition—that is, batteries with which the engine is started and a magneto which supplies the current after the engine is in operation—the switch should be placed on "battery." When everything has been placed in readiness as indicated above, the operator is ready to "crank" his engine. On small tractors the engine is started with an ordinary crank; on larger engines a ratchet and crowbar are used in cranking; and on those of the largest type a self-starter is supplied, or sometimes a small engine, to do the cranking.

If everything is in proper shape, at the third or fourth revolution of the engine a sharp hiss will be heard from one of the priming cocks, and the engine should go ahead without further trouble. As soon as the engine begins firing, the priming cocks or relief valves should be closed so that the engine may run under full compression. When the engine has gathered normal speed the current switch should be changed to "magneto" that the motor may run on the current developed by its own magneto.

On many of the new tractors the motors are operated on high-tension magnetos and therefore do not require batteries in starting. As the engine gains speed the throttle should also be closed, not allowing the engine to race but merely to "turn over" until the tractor is ready to be started.

Most tractors are controlled by centrifugal governors. The centrifugal governor is largely used where the engine is furnished a gas and air mixture, the proportions of which are controlled by a throttle, the amount of this mixture used by the engine in turn being controlled by the governor. The principle upon which the governor works is that, when the speed of the engine is increased to a certain point, the weights attached to the governor arms will fly out by centrifugal force and close the gate controlling the mixture intake, which will slow the engine by reducing the amount of gas and air mixture fed the cylinders.

When the motor has been started and is operating efficient-

## THE FEATURE OF THE BRANDON PLOWING DEMONSTRATION WAS THE "HEIDER" Light Weight Farm Tractors



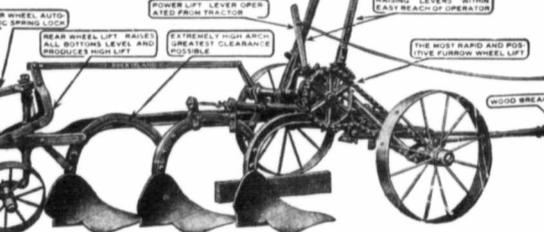
7 Speeds Forward -- 7 Reverse  
The ease with which they performed their work, up hills or down, proved beyond the question of a doubt their suitability for field work.

### THE FRUIT OF NINE YEARS' EXPERIENCE

SPECIFICATIONS--MODEL "C"	SPECIFICATIONS--MODEL "D"
Horse Power--12-20.	Horse Power--9-16.
Draw Bar--12 H.P.	Draw Bar--9 H.P.
Belt Power--20 H.P.	Belt--18 H.P.
Fuel--Gasoline or Kerosene.	Fuel--Gasoline or Kerosene.
Fuel Capacity--21 gallons.	Fuel Capacity--21 gallons.
Water Capacity--7 gallons.	Water Capacity--7 gallons.
Weight--4,500 pounds.	Weight--4,500 pounds.
Ignition--Dial Magneto, with starter coupling.	Ignition--Dial tension magneto.
Tractor Speed--1 to 4 miles per hour.	Lubrication--Splash system.
Belt Speed--100 to 800 revolutions per minute.	Motor--4-cylinder, 4-cycle, 4 1/2-in. bore; 5 1/4-in. stroke. Enclosed valves. Special heavy duty Waukesha tractor motor.
Carburetor--Kingston improved type.	Carburetor--Kingston improved type.
Motor--4-cylinder, 4-cycle, 4 1/2-in. bore; 6 1/4-in. stroke. Enclosed valves. Special heavy duty Waukesha tractor motor.	Transmission--1 to 4 miles per hour.
Lubrication--Splash system.	Transmission--Heider special friction.
Frame--Steel.	Frame--Steel.
Height--8 ft., including top.	Wheel Base--87 ins.
Width--6 ft. 2 ins.	Rear Wheels--Diameter, 54 ins.; width, 8 ins.
Length--12 ft.	Front Wheels--Diameter, 30 ins.; width, 4 ins.
Wheel Base--96 ins.	Height--9 ft. 2 ins.
Rear Wheels--Diameter, 57 ins.; width, 10 ins.	Width--5 ft. 8 ins.
Front Wheels--Diameter, 30 ins.; width, 5 ins.	Length--10 ft. 8 ins.
Model "C" will pull three bottoms under all conditions; under favorable conditions it will pull four.	Model "D" will pull two plows under all conditions; under favorable conditions it will pull three.

## Rock Island Plows Work Behind Any Tractor

Number Bottoms and Size	Wt.
No. 12--2 14-inch Bottoms	1080
No. 12--3 14-inch Bottoms	1225
No. 12--4 14-inch Bottoms	1415
No. 12--5d Bot. Att., extra	180
No. 12--4th Bot. Att., extra	190
No. 11--2 10-inch Bottoms	690
No. 11--2 12-inch Bottoms	695
No. 11--2 14-inch Bottoms	700
No. 11--2 16-inch Bottoms	705



The power for the power lift is obtained from the wheel which is always running in the bottom of the furrow. This wheel is always on solid ground, and there is positively no chance of slipping when rising the plow. The clearance, both fore and aft and under the beam, is much greater than the ordinary plow. No chance of clogging in trashy ground. An exceptionally high and level lift is made possible by our lifting device giving a swing from high to low of fourteen inches. The clearance above ground is five inches. The bottoms are self-leveling and insure an even depth of plowing. Light draft is secured by distributing the weight evenly over all three wheels.

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Made in sizes--24 x 36, 28 x 42, 33 x 52, 36 x 56, and 40 x 62. The name is an absolute assurance of dependability and long service. Grain, time and money savers. Deliver the grain in marketable shape in the sack--not the stack. Handle any kind of grain perfectly, regardless of condition. Quiet in operation, easily adjusted, well balanced, free from vibration. Every part guaranteed to give your customers perfect satisfaction.

**Waterloo Manufacturing Co. Limited**  
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are "crop results" that are no less an uncertain quantity than if the grain were still in the fields, uncut, at the mercy of the weather. Make your threshing a *dead certainty* by using the



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ly the tractor is ready to be started. The type of transmission with which the tractor is fitted will determine the number of levers with which starting, stopping and reversing are accomplished.

Two other features of control are the steering wheel and the brake. The operator should learn first, before the tractor is started, that he may stop it immediately by disengaging the master clutch, and applying the brake, no matter at what speed it is running, or whether backward or forward. I have known one or two men to become excited and tear the corner off some farm building, just because they forgot how to stop the tractor. To stop is the lesson that should be learned first.

When the tractor is ready to be started the throttle should be opened, the spark advanced, and the clutch engaged very gradually. When the tractor gains momentum the master clutch may be given a final push, fully engaging it, after which it will require no more attention until it is desired to stop.

To stop the tractor, the throttle should be closed, the clutch disengaged, the spark retarded and the brake applied. If the stop is to be a lengthy one the engine should be stopped and the fuel supply cut off at the tank. The

clutch should always be kept in the "off" position when the tractor is standing.

To the mechanic familiar with steam tractor or automobile operation, the operation of the gas tractor will not be difficult. One who has been accustomed to controlling a light automobile will first have to become used to the steering mechanism of the tractor. There is a great difference in the steering mechanism of these machines. The automobile operates at high speed, is light in weight, and therefore is equipped with a quick-acting steering apparatus; the tractor, which operates at low speed, is heavy, does not require quick action, and has a slow-acting steering gear.

When the tractor is of two or three speeds the operator should always use the speed best suited to his work. For hauling light loads and for getting from place to place the highest speed should be used; for heavy hauling the medium speed; and for heavy drawbar work the lowest speed should be employed. The tractor should not be operated on low gear, however, unless conditions demand it, for the life of the engine will be longer if the high speeds are used whenever possible and the speed of the motor is reduced.



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**ELECTRICITY FOR EVERY FARM**

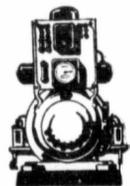
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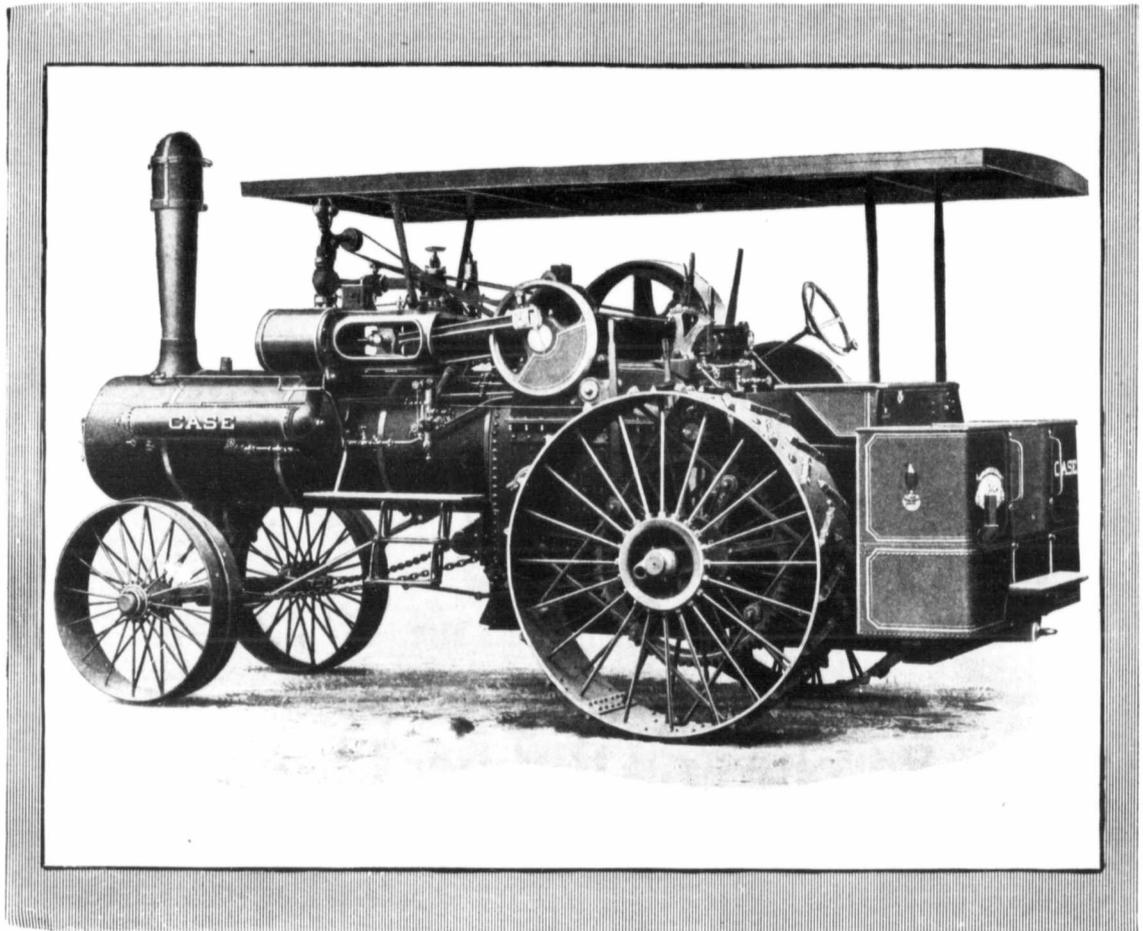
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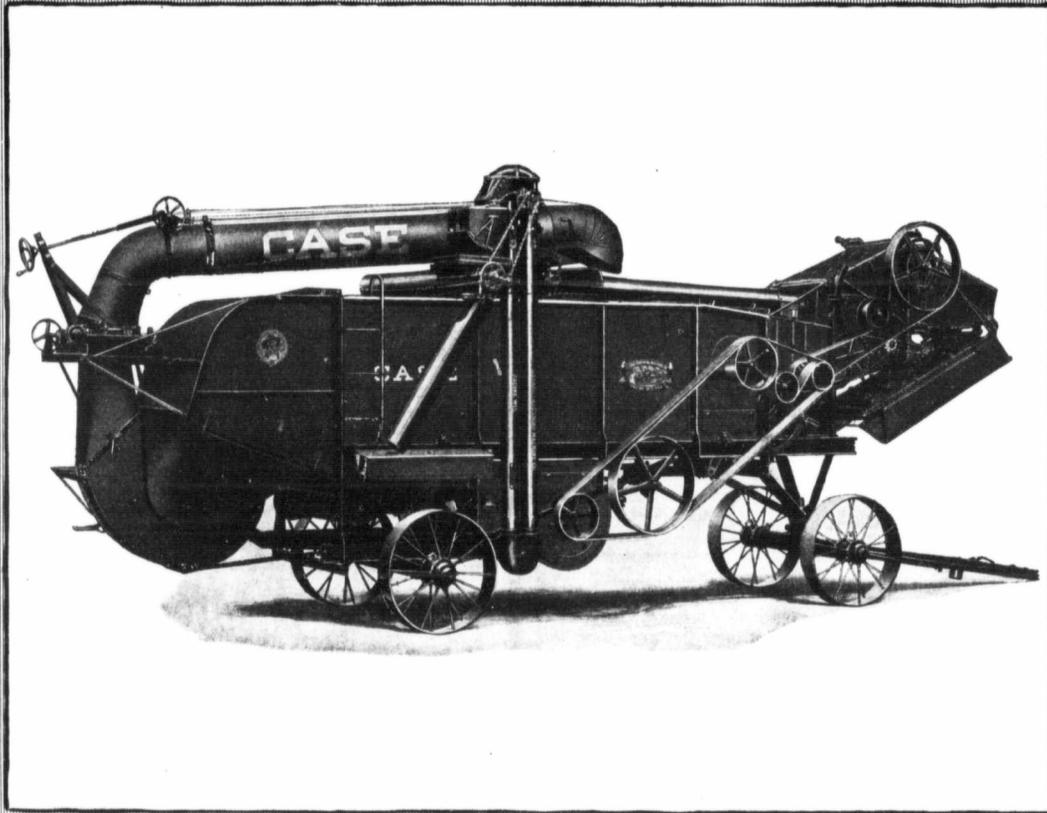
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RACINE WIS. U.S.A.



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**HOW THE TRACTOR GERM GROWS**

Edward Ryall

THE above title refers not to the evolution of the tractor but is intended to show how a deep rooted sense of its advantages in farming operations, as compared with the more primitive method of animal power, may have its inception and development in the minds of those destined to make their living by growing farm crops.

Our boy wanted a gasoline engine, wanted it badly and talked about it often, talked descriptively and punished the mails for information. "Even a small engine would do," he said. Perhaps the propensity is in some degree inherited. I confess to a sort of fellow feeling on that point. The difficulty was, you know there is always a difficulty, that gasoline engines do not grow on bushes. Still the boy's persistency finally dug up the fact that although they do not grow on bushes they may be grown in fields. We determined to grow one.

A piece of ground some three acres in extent was devoted to this purpose. It was carefully prepared and planted to navy beans. The growing crop was given the most assiduous attention because the horse-power of the engine depended upon the amount of revenue realized. The results came up to our expectations and the proceeds from the bean crop were ample to purchase the engine decided upon. It was a 5½-horsepower engine known as the "Pace-maker." I have a distinct recollection of the day the kid went with me to the station to get it and haul it home. He became conversant with all the mysteries of its smelly interior before I could fairly get it uncrated. From the smudge of grease on his nose to the three-cornered tear in the rear of his overalls, he was interest personified.

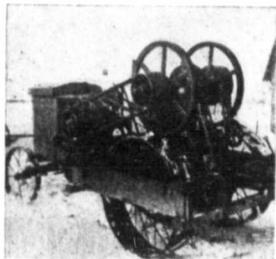
The little coughing monster was at once named Billy and became our man of all work. There is an appreciative glint in the kid's eye—perhaps in older eyes too—as he marks the tireless energy with which Billy tackles the various tasks of pumping water, shelling corn, cutting fodder, grinding feed, sawing wood and other chores of kindred nature

which heretofore had been performed at times and by methods that robbed life in God's green country of most of its poetry.

For some time Billy was mounted on a skid and moved from place to place by the aid of a team. But, from the start, the boy's ambition was to convert it into a tractor or, as he graphically put it, "to make her go herself." This idea at length crystallized into a well defined plan.

Certain essential parts were acquired, the possibilities of two discarded McCormick grain binders were requisitioned and their master wheels were used for drivers. The spare time of one winter was devoted to assembling these various parts, the scene of construction being the barn floor.

As it neared completion, the all-important question as to



This is "Billy"

whether the little tractor would really go or not become accentuated, so, although Billy was still minus a steering device and a lever to operate its clutch, the point was settled—behind closed doors.

"I'll turn her over, Dad, and you push in the clutch." We did. And, like Fulton's steamboat "it moved," moved at its pre-determined gait of four and a half miles per hour. This was all right, but now I wanted to stop and the clutch, which had slipped in easy enough, would not release and Billy was jamming me against the breast beam of the barn. In the excitement of the moment I gave voice to an impressive "Whoa!" You see I had been used to driving horses.

Now the above method of stopping a tractor may be open to criticism, might even be amusing to a third party; it certainly was to a second. Our tractor did not "whoa." It continued its way across the floor and fairly bunted

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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 chiefs that winna ding, and canna be disputed."*

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the barn doors down before that kid could quit laughing long enough to stop it by throwing the switch. Our queer crop was backed on to the barn floor again, finished with more confidence and eventually started with more caution.

That was four years ago and Billy, much improved and elaborated is still on the job. Many and various are the uses to which it has been put. One of its stunts was to pull a large barrel mounted on wheels and filled with water, to a distant pasture for the benefit of a flock of sheep. This work, done about every other day during two summers, must otherwise have been done by a team. The bolting of an Ireland geared hoist to its forward truck added another to Billy's line of tricks, enabling it to operate the hay fork in unloading hay, beans, etc. Also when we had to sand pump the well, this feature of hauling on a rope made it Johnnie on the spot.

The operation of the little tractor has been left entirely to the boy who, for the most part, designed and built it. He guides it deftly from one task to another, lining up and backing into the belt with as much importance as though he were handling an army tank.

It was during the fall of last year he was heard to observe that "Billy could pull the pulverizer as well as a team." I was somewhat skeptical, so he took advantage of my absence to try it out, and backed Billy up to the disc harrow, having easily induced his mother, who was apprehensive but long suffering, to aid him to the extent of riding on the harrow and regulating the load.

They went afield. The demonstration was completed satis-

factorily and justified its promoter in greeting his paternal parent with "What did I tell you?" When this last stunt was repeated for my benefit I was genuinely surprised to see what this crudely built little machine could do. What it was doing was this: It was pulling twelve sixteen-inch discs set to their deepest cutting capacity, pulling them straight and true. I watched it cross the field some sixty rods, and return. Its speed was about two and a quarter miles an hour. It was work for a good stout team.

This set me to thinking and the kid to talking again. Talking this time about the tractive properties of various kinds of drive wheels, of areas of pressure, of the relation of stroke and bore to speed, and so on. The result is that a second tractor is now being built, a little more pretentious as to design and power, its power plant being a two cylinder opposed motor of 22-horse power. Of course I do not know how this second venture will turn out. Moreover, I have reached the point of this story. May I be allowed a smile to sharpen that point? I once knew a dreamy, visionary sort of youth who was being instructed in the art of free hand drawing by a very clever Teuton who had difficulties with the Saxon tongue. The lessons dealt ever with lines, curves, proportions, perspective and so whereas the student wanted to work on a real picture, perhaps a picture of an ancient mill, with a pair of picturesque bipeds spooning in the foreground and a dozen lambs playing tag for their diversion. The dream was discouraged like this and with gesticulations: "Der bicture! der bicture! Vy you haf your silly kopf in der bicture? Dose lines, dose curves, dose be bicture, das ist all."

Even so; the picture is made up of lines, so the desire to construct and use a tractor may exist without its coefficient, a good working knowledge of the fundamental principles under which it operates. I have indicated one way in which this necessary elementary knowledge may be acquired. A sustained and vigorous interest in any subject is, in itself, a nucleus around which information on that subject accumulate line upon line.

The moral is: If your boy wants an engine, get him one. Then if he wants a tractor badly enough to try to build one himself, he will not lack the determination to some day own a real one, nor the ability to operate it.

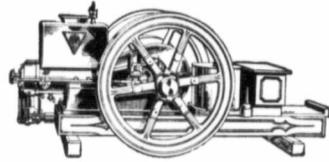
**Chicks and Hens**

"Say, father," said little Johnny, "Do they raise chicory in a henery?"



"Ow's your son gottin' on in the Army, Mrs. Poddish?"  
 "Fine, thankoe. They've made 'im a Colonel."  
 "Oh, come—"  
 "Captain, then."  
 "Go on. You mean Corporal, p'raps."  
 "Well, 'ave it that way if you like. I know it began with a 'K'."

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He gets such an engine when he buys an Alpha. The Alpha is a thoroughly practical engine. It is designed and built to do its work day in and day out under the varying conditions it is called upon to meet on the farm. It is dependable at all times.

The trouble-making features found in many so-called "farm" engines have been avoided in the Alpha. It contains no delicate electric batteries, but starts and runs on a simple low-speed magneto, guaranteed for the life of the engine.

The same idea of simplicity and durability has been carried out all through the Alpha. Every part is designed to do its work with little or no attention and to stand up under hard work.

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Alpha Gas Engines are made in eleven sizes, 2 to 28 H.P., and each size is furnished in stationary, semi-portable, or portable style, with hopper or tank-cooled cylinder.

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## Pooling the World's Food Supply

It will give Producers Good Prices and Assure the Allies' Being Fed

By HERBERT HOOVER

**F**OOD is an international problem to-day. All the world's food supply is being thrown into two great pools—one controlled by the Central Empires and the other by the Allies.

The first comprises the food produced by the Central Empires themselves, together with a certain part of the food produced in the few neutral countries which have direct land or Baltic Sea connections with these empires.

The second comprises most of the neutral food supply, as well as that from the dozen Allied nations. In this Allied pool the food supply of the United States is a predominant factor, and it is therefore with a lively interest that we of America turn to the methods by which the great Allied pool can be made a success. For it is on this success that largely depends Allied success in the war.

Simply establishing a pool of most of the world's food supply is not sufficient. No pool can insure the supply of even the minimum needs of ourselves and our Allies without a competent centralized control. How can such a control be effected?

### Our Duties in the Allied Pool

Already each of the principal Allied countries has established a special ministry or independent department of food whose first function is to determine the food needs of the nation, on a basis of careful restriction of unnecessary consumption, elimination of waste, substitution of abundant for less abundant food materials, and the physiological necessities of different groups of the population.

The importance of the last consideration is made apparent by a single example: The fighting army, and the great industrial army tributary to it, both need a much larger ration than most of the rest of the population.

The second function of each food ministry is the determination of how far the native production of the nation will go in caring for the food needs of the people, and the stimulation of this production to its highest possibilities. The third function is the supplying of the deficiency between the food needs and the native production by securing importations from the outside on some basis that will be as economical as possible.

It is this last function that brings all the nations of the great pool into close international relations and gives the food problem its international aspect — that makes it, indeed, as has already been stated, a great international problem.

Because the United States is the largest granary and general food depot in the Allied pool, and because it is upon funds derived from us that the Allies are now depending, and will more and more depend, for the outside purchase of food, our rights and our duties in the whole problem of the thorough internationalization and proper control and distribution of the world's food supply become matters of high importance, and demand our best thought and endeavor.

The proper administration of our food supply becomes, then, an integral part of the proper administration of the international food supply, and the immediate necessity is to co-ordinate the food administrations of other Allied nations with our own so that food economy and control throughout the whole Allied pool will be as effective as possible.

For example, the different Allied nations must no longer be competitors in our markets as they have been and in some ways still are. There must be an international board of some kind, which will know the minimum consumption necessities of each nation in the pool; the native production of each nation, both as to kind and quantity of foodstuffs and the stocks on hand at any given moment; and, finally, on a basis of this knowledge, the needs of foreign supply to each nation.

In the hands of this board must rest the general decision as to the fair allocation of the available world's food supply to the various members of the pool, and the general direction of the purchase and transportation of the allocated supplies.

Such an internationalization of the food supplies available to the Allies will at once wisely economize the food itself, the available tonnage for its transportation and the money necessary to pay for both food and tonnage.

### Will Aid Producers and Consumers

It will prevent selfish manipulation and speculation, and consequently prevent the unnecessary skyrocketing of prices now so

## Manitoba Agricultural College and School of Home Economics

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

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

wasteful of the war chests of our Allies and so cruel to our own people—not only cruel to all our own people of limited means, but dangerous to our social order and hence to the unity of our efforts in this titanic struggle.

This competently controlled internationalization of the food problem will work to the advantage of producer as well as consumer, for it will insure a steady and sure market at fixed good prices.

It is necessary to see that the producer is aided and stimulated in every way possible for the sake of a continuing high production.

This is just as much a duty of the international control board as is the prevention of unnecessary high prices for the consumer—a duty not alone for the sake of fairness to the producer but at the same time to insure success in the maintenance and increase of the food supply. It is plain good business.

The solving of the food problem by international administration will therefore be advantageous to producer and consumer alike; will insure the economical but sufficient feeding of the soldiers of our fighting Allies in the fields and of their wives and children at home, and of the great industrial army of men and women on whom the armies depend for their supply of munitions.

And, finally, it will develop to best advantage the great potentialities of the United States as a factor in bringing this world cataclysm to an end that will mean victory and future peace on earth.

#### SHEEP

The sheep, like the dairy cow, gives two returns annually. The fleece easily pays for the cost of feed and care for a whole year. The product in lambs becomes clear gain. The increase may be as high as 150 per cent and no meat can be placed on the market with so little grain as mutton.

In figuring the returns from sheep, the lambs and wool are not the only legitimate sources of profit. Sheep are continuously at war with weeds of all kinds. Only when they lie down together—with the weeds inside—is there peace. It is impossible to place a money value on this service which they render.

Cattle pastures are becoming more weedy each year. Such pastures judiciously grazed by sheep would soon not only support the sheep, but would support additional cattle as well.

Wherever sheep graze, the land becomes more fertile and productive. Truly "the sheep has a golden hoof."—G. C. W.

## Massey-Harris Service

### Talk No. 5.—*Manufacturing and Selling.*

**N**O matter how much care may be exercised in the manufacturing of an article, the manner in which it is sold may to a large extent, cause one to lose sight of whatever merit the article may possess.

In some cases the manufacturer has a large force of travellers selling to the jobbers, who, in turn, have their travellers selling to the retailer, who supplies the consumer. The manufacturer must first make his profit, then each of the Selling Agencies comes in for a profit, all of which are added to the price of the article. Then, if it is an article which may require attention of any kind, one is so far removed from the manufacturer that service is practically out of the question from that source, and the various Selling Agencies lack the required knowledge or are indifferent towards an article which may be but a small part of their line, and which they might not handle another year.

Sometimes implements are sold by methods which apparently enable the vendor to make very attractive prices, but, when one comes to add the freight and other items incident to the purchase, and takes into consideration the quality of the goods and lack

of service in connection with same, the apparent "bargain" often looks very different.

In buying from Massey-Harris Company, Limited, you buy from the manufacturer. You pay no profit to middle-men—what would go to them for selling expenses and profits, you get in better implements and *Service*. Our Branch Offices, Travellers, Experts and Local Agencies are maintained solely for the purpose of rendering the very best possible service to our customers.

The manufacturing is done on as large a scale as is consistent with thorough workmanship, and by shipping in large quantities, we are able to secure very advantageous freight rates, so that, both in the manufacture and distribution of our implements, we are able to effect economies which are out of the question in a business conducted on a smaller scale, and can give our customers the highest possible quality in the implements themselves, and render *Service* without a parallel.

*Don't let the matter of price alone influence you in your purchase of an implement, for the quality is remembered long after the price is forgotten.*

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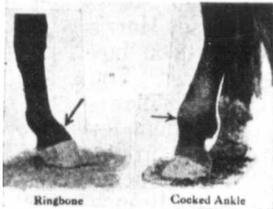
**Twelve Months of this Magazine for \$1.00**

## The Horse's Feet

The First Thing to Look at When You are Going to Buy  
By THOMAS J. DELOHERY

WHENEVER I look over a horse that I think I should like to buy the first things I look at are his legs and feet, for I believe that the limbs are the most important part of a horse. The old saying has it: "No feet, no horse." I believe this should be broadened to include the legs, for good legs are as essential as good feet.

Many defects of the feet and legs are considered unsoundnesses, and they detract not only from



Ringbone      Cocked Ankle

the appearance and usefulness of the animal, but from his value as well. Soundness is a vital factor in determining the value of a horse. In breeding, it is extremely important. Though the defects may not be handed down by the dam or sire, there is a possibility that the weaknesses which preceded the unsoundnesses may be inherited.

Recently I ascertained just how much the money discount would be on a horse that was affected with either ringbones, spavins, sidebones, splints or curbs. I obtained the following opinion from Ellsworth & McNair, one of the biggest horse commission firms at Chicago:

"A great deal depends upon the class of the horse. If it is a \$250 to \$300 draft horse, and has a big bone spavin, ringbones or sidebones, it would make a difference of seventy-five dollars or more. On medium-priced horses, sidebones, curbs or bone spavins that do not lame the horse probably would not make a difference of more than fifteen to twenty dollars. In the case of a first-class big horse, it makes a wonderful difference whether he is absolutely sound or has any of those defects."

On pure-bred horses it is but natural that the discount is larger. But it is hardly probable that any of the breeders of pure-breds would purchase a horse thus afflicted.

"It is a very difficult thing for us to give you the amount of depreciation caused by the different blemishes on horses," said J. G. Truman, of the Truman Pioneer

Stud Farm. "Any of the blemishes you mention would, in our opinion, reduce the value seventy-five per cent. In other words, a stallion for which we might get \$1,000 if sound, we should sell for \$250 if he had spavins, ringbones, or any of the other defects. I do not think you would be very far wrong if you figured that these blemishes reduced the value of a pure-bred horse from fifty to seventy-five per cent. One thing is certain; we would not pay that price for a stallion with the blemishes."

Unsound legs and feet may be due to many causes, principal among them being heredity, extreme labor, bruises, cuts or injuries, ill-fitting harness, diseases and lack of proper care. In the majority of cases, however, it will undoubtedly be found that the chief causes are heredity—that is, predisposition to the affliction, because one or both of the parents were defective—and the fact that the animal was compelled to perform work beyond his strength.

Not all defects are considered unsoundnesses. Some are classed as blemishes. A blemish may detract from the appearance of the horse, but will not impair his usefulness.

Probably the most prevalent of unsoundnesses. Some are classed bone spavin, ringbone, cocked ankle, splints, thoroughpin and curb.



1. Bog Spavin; 2. Thoroughpin      A Splint

To the trained eye these unsoundnesses are quite visible; the unskilled person may have some trouble to prove a suspicion—if he has a suspicion. A short discussion, therefore, will serve to tell how these several unsoundnesses may be detected and suspicions confirmed upon examination.

**Bog Spavin.** This is a more or less serious inflammation of the hock joint. It is a round

## Cushman Combination Thresher

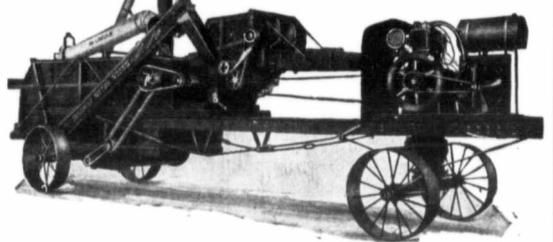
Don't Wait until your grain is damaged in the shock—until hundreds of bushels are shelled out and lost—until the rain and snow cuts down the grade. Your grain is worth too much money to waste.

### JUST WHAT YOU NEED

Here is a Threshing Outfit that you and your neighbor can afford to own—that will do your threshing with from four to seven men—just when you want it. No Waiting—No Worry—No Loss. It carries its own engine on the frame, requiring no horses except for pulling it to position.

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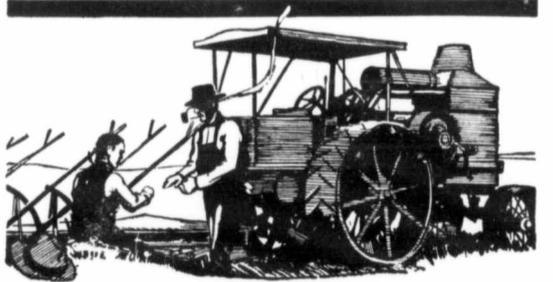
8 H.P. with Straw Carrier and Hand Feed; 20 H.P. with Wind Stacker and Self Feed; 15 H.P. with Wind Stacker and Hand Feed. Equipped with the famous Cushman 3-Cylinder Engines.



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smooth swelling in front of the hock, just a little to the inside. By pressing it it may be moved round—that is, from the outside to the inside of the hock. A bog spavin may be caused by a sprain, or may result from hereditary weakness. On young animals it is regarded as somewhat serious; on older horses, unless it lames them, it is not regarded as very significant.

**Bone Spavin.** Recognition of a bone spavin depends upon the size of the bony growth. It is also recognized by lameness in the horse. Either may exist without the other—that is, a horse may have a spavin and still not be lame, or he may be lame without a spavin. A bone spavin is usually found on the inside of the leg just below the base of the hock. Handling a suspicious hock will soon disclose if a spavin is present. Another way of satisfying a suspicion is to hold the hock flexed for about a minute, and then start the horse off on a trot. If the spavin is present the horse will display a well-defined limp. A bone spavin prevents the flexing of the hock, and necessitates an exaggerated action of the hip. There is also a tendency to drag the toe.

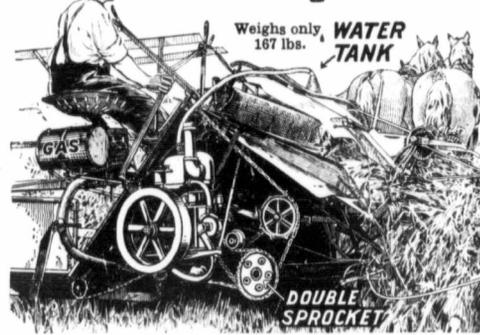
**Sidebones.** These are most common in draft horses, and are caused by the ossification of the lateral cartilages in the hoof. They may or may not cause lameness, and for the most part are found on the front feet. The great damage resulting from this injury is that the ossification of the cartilages prevents the expansion and contraction of the heels, consequently limiting the movement, and shortening the stride of a horse.

Farm horses are seldom made lame by sidebones, but in the city, where the animals are always shod and pounding on pavements, the danger is great. For this reason city buyers object to horses with sidebones.

**Ringbone.** There are two kinds of ringbone: One may be caused by excessive concussion upon the bones of normal quality or upon the bones of poor quality. The other is caused by excessive straining on the ligaments, resulting from an unbalanced condition within the foot and limb, or due to faulty quality of the bones into which the ligaments are inserted. Ringbone may often follow a wound or abscess of the coronet. It is also classed as a hereditary unsoundness, and may result from blows, bruises, sprains or improper shoeing.

**Splints.** These are small bony growths, something like buttons, and may be found on the cannon bone of either the front or hind legs. They are usually found on the inside, and are generally con-

**Cushman Engine on a Binder**



**Cushman Light Weight Engine  
Saves a Team on the Binder**

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

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

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

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

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

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

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

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

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

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*The Lock that Holds*

sidered blemishes, unless serious enough to cause lameness, which is rarely the case. Splints are considered more detrimental to light than heavy horses.

**Curb.** Though a curb may be called an unsoundness, rarely ever does it cause lameness. It may be caused by strains due to heavy hauling or slipping. Horses that have sickle hocks are susceptible to this injury. A swelling appears four or five inches below the point of the hock over the ligament. It may be viewed from the side; but if of sufficient size may be seen from the rear. Treatment consists of application to remove the inflammation. In the first stages blistering or firing may effect a cure.

**Thoroughpin.** Though thoroughpin is not generally considered an unsoundness, many horsemen look upon it as such. It is a swelling which occurs just above the hock, between the bone which sticks out and forms a Y and the bone of the leg. There is a hollow place there, and the thoroughpin is a fleshy swelling which fills it. A thoroughpin is loose—that is, it may be pushed from side to side by the fingers. Blistering, rest and pads and bandages may help, just as they do with bog spavin, which is an ailment on the same order.

**Cocked Ankle.** Cocked ankle may not be a serious ailment, but it may result in other injuries. It causes the pasterns to become almost straight. It may also result in a diseased condition of the fetlock joint. Hard work and improper shoeing are the causes. It may be remedied by shoeing.

In the main, these constitute the most serious and most prevalent unsoundnesses of horses' legs and feet. For the most part, they occur on the hind feet, and inasmuch as the brunt of the work falls upon the hind legs, the necessity of a horse's having good sound legs and feet is readily seen.

Since some of these injuries are inherited—breeding predisposes the animal to these unsoundnesses—there is every reason to believe that they result in a heavy discount from the selling price of market and breeding horses thus afflicted. These unsoundnesses are very prevalent, and a knowledge of them is essential to successful breeding, buying and selling.

**Consolation**

Young Lady—"No, Mammy; I have no bean. I guess I'm to be an old maid."

Mammy—"Well, honey, dey say dem is happiest of all—once dey quits strugglin'!"—Puck.

**Avoid Waste**

The world war has taken so many producers from the sources of food supply that the world's consumption of food is greater than the amount available, and, consequently, food reserves are being rapidly depleted.

Millions of men are actively engaged in warfare and in the supply of munitions and equipment. They are fighting our battles and we must provide their food. Canada will produce all the food we can consume, but Canadians have never been known as a selfish race. Our Allies, therefore, are depending upon us for help and our people will unquestionably respond with generous hand.

The time for planting for 1917 is past, but the time of harvest is yet to come. There is very often much waste at this time, due, in many instances, to the lack of a demand at market prices. Fruit, especially, supplies much of this waste, and yet, while this waste is taking place, many families are compelled to go without it for lack of means to pay the market prices. Local organizations could easily arrange to bring the consumers in touch with this surplus fruit that it might not be wasted.

The use of such perishable food, which would otherwise be wasted, will help to increase the supply of exportable food.

There is also much waste in the kitchens and dining rooms of Canadian homes. The waste in bread alone is a considerable item. Bread has been looked upon as one of the cheaper staple foods and little care has been taken to prevent its waste by drying up, the discarding of crusts, etc. A little thought will show what this waste amounts to when the cumulative result throughout Canada is considered.

Sir Robert Borden has said that Canada is in the war "to the last man and the last dollar." Canada is also in the war to the last pound of food. Canadians are their brothers' keepers, and will feed them, cost what it may. It is necessary, therefore, that we practise economy of the food supply. It is better to deny ourselves from choice than from necessity. There is no denying that there will be a food shortage, and the present is the time to put into practice thrift and rigid economy in the use of food.

"I'm worried about my boy."  
 "What's the matter with him?"  
 "When I left home yesterday morning, I told him to clean up our lawn, and when I got home last evening I found that he had done it."

**"SWEET CLOVER" BRAND HAM**

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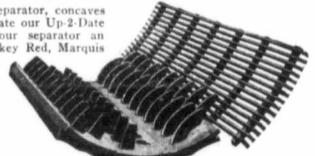
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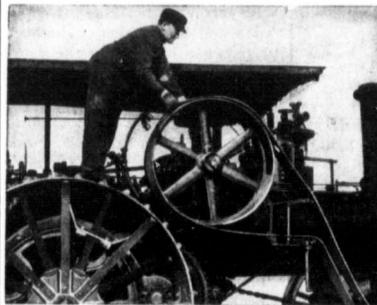
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Are you intending to buy a new separator, concaves or teeth? Then you should investigate our Up-2-Date concaves and teeth, and make your separator an Up-2-Date one. For threshing Turkey Red, Marquis or Blue stem wheat, Bearded barley, Honduras or Blue Rose rice, nothing can equal them in getting the grain out of the toughest heads without cracking the grain. No winding or back lashing in long, damp straw. We guarantee them. Write for concave catalogue.



Frank D. Morrill, Secretary, Minnesota Brotherhood of Threshermen, Janesville, Minn., writes Jan. 4, 1918:—"The Up-2-Date concaves that I bought last fall for my 40-inch separator will do more than you claim for them, in fact they did so well, that when I bought another 40-inch machine three weeks later, I set the concaves aside and put in another set of your Up-2-Date concaves. It is the first time in my 30 years' experience as a thresherman that I have threshed a season through without teeth trouble, and as not a single tooth broke or got loose in either set, I had no trouble with my cylinder teeth. I would not take \$100.00 for a set and have to go back to the old style. They are the only concaves to get Turkey Red and Marquis wheat out of the head."

**AN UP-2-DATE BELT HOLDER AND GUIDE**



**For Steam or Gas Tractors**

Kelly and Sanderson, Albion, Idaho, write Jan. 8, 1917: "The Belt Guide and Holder paid for itself last fall if we never used it again. Bad side winds don't bother; it saves time belting up and never flops off. "Mostly side hills here, and always had to dig down to drop the drive wheel to line and level up. We don't have to get in line or on the level now."

We have the best line of threshing machine specialties made. They are all winners and original with us. Our catalog tells all about them.

Threshing with a Chaffin Belt Guide on a Windy Day. An Up-2-Date "Flue Scale Remover" removes all scales on the outside of flues. You probably wonder how it is done. Our catalog explains. E. H. Egertson, Wallingford, Iowa, writes: "The Hanson patent tool for removing scales from boiler tubes is a great success. I took out one bushel of scales from our 20 H.P. boiler at one cleaning. This tool with your flue cleaner makes flues steam like new ones."

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## Better Farm Homes

By Professor L. J. SMITH, Dept. of Agricultural Engineering, Manitoba Agricultural College

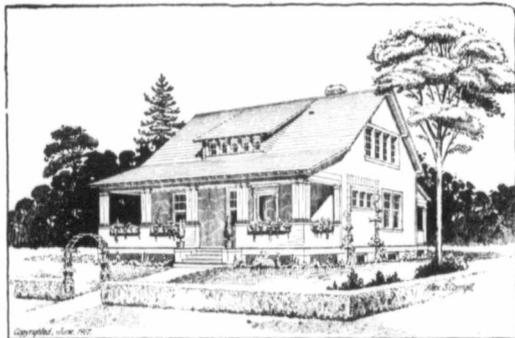
### FARM HOUSE B.

Second of the series of Farm House Plans perfected from designs of Manitoba Farm women and published by Manitoba Agricultural College.

The accompanying illustrations show a perspective view of the

bookcase, and buffet. At either end of the room on the fireplace side are the two inside doors, one opening into the pass-pantry, and the other into a small hall, off which is a handy closet for wraps.

The pass-pantry, though small (4 ft. x 7 ft.) is convenient, pro-



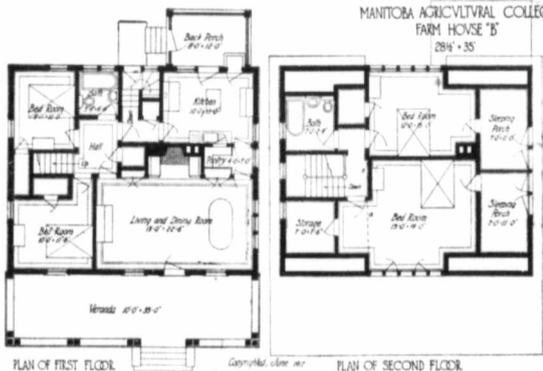
MANITOBA AGRICULTURAL COLLEGE. FARM HOUSE "B". 28'6" x 35'

first and second floor plans and the kitchen layout of the M.A.C. "Farm House B."

The drawing of the exterior gives an excellent idea of the appearance of this house. Of moderate size, 28½ ft. x 35 ft. it has simple lines, and does not appear as if it had been taken from a row of city houses. The wide verandah across the entire front, together with the low walls and broad stretches of roof will give

vision being made for a dumb waiter, and a small door communicating with the draining board of the sink, overcomes unnecessary carrying of dishes and other utensils from the kitchen to their places in the pantry.

The kitchen, of which an enlarged layout is shown, is well lighted, and ventilated by two windows in opposite corners. The range is placed directly in the

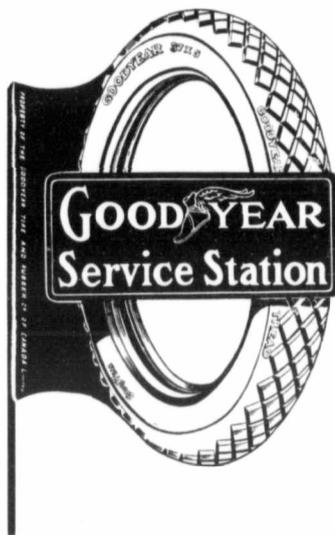


this house a massive appearance which will belie its actual size.

The screened verandah, 10 ft. x 35 ft. is large enough to serve as an outdoor living room. Opening directly off the verandah is the living and drawing room (13 ft. x 22 ft., 6 in.), a well-designed room, free from the objectionable multiplicity of doors, which so often take up nearly all the wall space. Opposite the outside door is the fireplace with built-in seats,

light of one window, and the sink and draining board are just across the doorway from the other. The wood-box and range-boiler are shown close to the range, but some might prefer their positions reversed in order that the fuel might be replenished from the back porch. Another feature of this kitchen is the built-in refrigerator, which is iced from the outside.

The remainder of the ground



## Saving Worry and Money Through Service

There are many motorists who base their preference on the assured comfort, appearance, or security these tires lend.

They are the epicures among tire buyers. Their standards are exacting. In Goodyear merits their demands are amply answered.

There is another class of Goodyear users. This class is overwhelmingly in the majority.

Men in this class bring their business instinct into tire purchasing. They measure tire virtues by a far more exacting standard—the capacity for delivering long, loyal, economical service.

It is because these men obtain their due in Goodyear Tires that they regularly prefer them as their equipment.

In Canada more than 1,000 business men, realizing the reliable and economical service yielded by Goodyear Tires, have so organized themselves that they can support and extend this service.

They work beneath the emblem shown above. Their set aim is to make your tire bills smaller, to build their business on your friendship, to win your friendship by deserving it.

Their service embraces many tasks. It is yielded courteously and willingly. It involves doing many things that would take the pleasure out of your motoring if you had them to do yourself. It is a service that saves you worry and money.

You should take advantage of the Goodyear Service Station Dealer's work. It helps you realize what you and every other motorist desires—tire service that is long, reliable and economical.

Go to the Goodyear Service Station Dealer near you. Ask him to describe his work. He will be glad to tell you the many tasks he performs. He will be pleased to demonstrate to you that his service is money-saving, efficient, courteous, complete—that his service is service such as you have been seeking.

**GOODYEAR**  
MADE IN CANADA

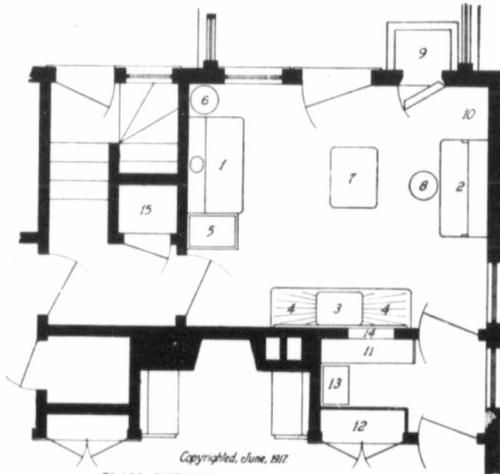
**The Goodyear Tire & Rubber Co.**  
of Canada, Limited

floor is given over to two bedrooms, a bathroom and the stairs. The stair to the second storey is between the bedrooms, the space beneath the steps and half landing being utilized for two closets. This is a somewhat novel arrangement, as there is no loss of space above these closets, as is usually the case. The cellar stair is between the kitchen and bathroom opening off the passage from the kitchen to the hall. A grade entrance to these stairs is also provided, making a very convenient cellar stair.

The second storey consists of two large bedrooms, a bathroom, store room under the eaves, and two sleeping porches which are a part of the building, and could be used as regular bedroom if desired. They communicate with the two large bedrooms and

would make room for harvest or other temporary help.

Working drawings, showing the front and two side elevations, sectional elevations, exterior and interior details (7 sheets 14 in. x 24 in.), together with specifications and a bill of material, can be had by writing the Department of Agricultural Engineering, Manitoba Agricultural College, Winnipeg. This material is sold at a nominal price, with no intention of securing a profit, but to cover the cost of reproduction of individual copies. The cost to applicants residing in Manitoba is \$3.00, and for those residing elsewhere, \$5.00. Applicants when sending for this material, should allow plenty of time for the getting out of copies of the specifications and bill of material.

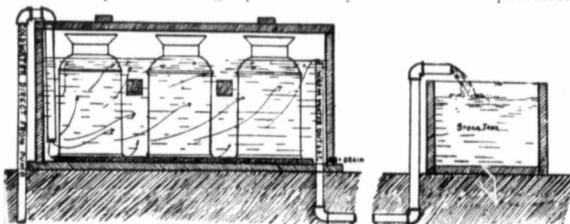


Copyrighted, June, 1917  
**PLAN SHOWING LAYOUT OF KITCHEN**  
 1. Range  
 2. Cabinet  
 3. Sink  
 4. Drain boards  
 5. Fuel  
 6. Hot water tank  
 7. Movable small table  
 8. Adjustable stool  
 9. Refrigerator  
 10. Dinner wagon  
 11. Shelving  
 12. Built in Buffet  
 13. Dumb waiter  
 14. Small door  
 15. Closet with shelves

**Cooling Cream on the Farm**

High temperatures bring "fearful and wonderful" changes in farm cream which is not kept cool. It leaves the farm separator clean and sweet but with a temperature which, if maintained a few hours, greatly decreases its value for buttermaking. If it could be delivered to the creamery with the high qual-

ity it had at first, a better grade of butter could be made and a higher price secured. The market is never flooded with a product of extra quality. What is needed is a means of maintaining the cream's original quality. The "means" is a practical system for cooling. The only difference between two cans of cream, one delivered sweet and clean, and the other, sour, unsightly and greatly reduced in value, is oftentimes merely a matter of temperatures.



**TALKS ON TRACTOR FUELS**

By The Imperial Oil Company, Limited

115,000 motor cars in Canada. 40% more than last year. This means big demands for gasoline and makes kerosene the logical, economical fuel for your tractor. Try kerosene this year. Tractor manufacturers encourage its use. Ask your manufacturer for suggestions and save money daily through the season.

And 500 prairie tank stations, one near you, will sell you SILVER STAR KEROSENE and ROYALITE GOAL OIL; if your prefer to run on gasoline, be sure to get PREMIER GASOLINE.



**There's a Reason**

We would be glad to send you our booklets, prices and particulars of any of the undermentioned goods, if you will kindly place an X against any you are interested in. We know we can sell you these Articles at a less price and give you better quality, and at the same time give you more money for your HIDES and FURS than any house in Canada.

- Harness, Halters and Leather
- Ladies' Hudson Seal and Muskrat Coats
- Tanning Hides and Furs for Robes, Coats, Bags, or Lace Leather
- Mounting all kinds of Game Heads and Birds
- Prices of Hides and Raw Furs

**Wheat City Tannery**  
 Tanners and Manufacturers  
 BRANDON, MAN.

Cream kept cool from the time of separation to delivery is usually good cream; if kept at atmospheric temperatures for many hours during July or August, it most frequently is not good cream. The main difference is the use of a cooling tank.

The system of cooling used cannot be elaborate or expensive. Unfortunately, in many places no difference is made in price between cream of high quality and that which may even be so undesirable as to need renovation or to be mixed with other cream before it can be made into an edible product. The time approaches when all cream will be bought on a graded system. Until that time, however, the satisfaction of selling a strictly healthful food product is the chief compensation for effort expended in keeping cream clean and cool. The farmer who begins the use of a cooling tank now will not have to begin later.

On last page is shown a cut of a tank which has been thoroughly tried out under farm conditions and found satisfactory. This tank is placed out-of-doors and all the water goes through it as it is pumped for the stock tank. It is of advantage to cover the tank to protect from the sun and from storms. A tank of this kind not only protects cream from high temperatures in the summer but keeps it from freezing in the winter. In Indiana, experiments on forty farms showed that the use of such tanks may be expected to reduce the bacterial count in milk about one-third and in cream about sixty per cent. Butter made from cream so cooled in the experiment sold for a higher price than from cream not cooled.

This tank should be made not less than 18 inches wide and 26 inches deep, the length varying with the number of cans to be used. It can be constructed of one and one-half inch material. An inside slatted bottom of one-inch cleats allows cold water to pass under as well as around the cans.

The diagram shows the direction of water through this tank. It enters directly from the well and discharges about five inches from the bottom. An overflow pipe at the opposite end at the desired height takes care of surplus water, carrying off the warm water forced up by the cold water discharged near the bottom. The water runs to a stock tank, as indicated, so there is no waste of water. Such a tank as this can be constructed at small cost on any farm. Its use will prove most valuable in keeping milk and cream cool. By utilizing the stock tank water supply, the cost of operation is practically negligible.—Hoard's Dairyman.



### What are these two talking about ?

**PERHAPS** it's the mare grazing out in front. Perhaps it's the barley field that starts just beyond. Perhaps it's a bunch of cattle that don't show in the picture—or pigs, or sheep. It really doesn't matter what they are talking about--they are enjoying the visit.

And the smoke isn't the least enjoyable part of it, either. It seems that men in order to be absolutely sociable and companionable and hospitable **MUST SMOKE.**

Most of the hard, useful work of the world is done by men who smoke—yes, and while they smoke.

A pipe and good tobacco (Orinoco tobacco for instance) keeps up the steam

that runs the world's work. But there are times when a pipe doesn't exactly fit in. Sometimes a *cigar is the thing.*

For instance, when a neighbor rides over. You know how it is. You stroll out and show him where to tie up. Then you say, "Have a chair, Joe?" Then you should say, "Have a cigar, Joe."

The minute a man lights your cigar he's better company, he likes you better, he likes the world better.

But it should be a good cigar. Don't forget that.

It should be a **TUCKETT CIGAR**—a Marguerite, for instance, or a Club Special—a smooth-smoking, well-made, honest cigar.

Why don't you men who live off the pavements, buy Tucketts Cigars a box at a time? It is the best and cheapest way. Try this idea. Next time you're in

town buy a quarter's worth of Marguerites (you'll usually get three. Smoke 'em. See if you don't think it's a good cigar—a pure-bred. Then buy a box of 25 or 50. Take them home, and after the chores are done—after supper—Sundays when you are looking over the crops—when a neighbor drops in, lay your pipe aside and *smoke a cigar.*

No matter where you are located—near the border to Peace River—you aren't very far away from a barber shop, general store, restaurant, or hotel that sells Tucketts Marguerite and Tucketts Club Special, 3 for 25c., and cheaper by the box.

Honestly now, what do you think of the idea?

**\*P. S.—**

There is a cigar called **TUCKETTS PREFERRED PERFECTO.** Perhaps you know it. Made of the best selected, mellowed, imported leaf. It sells 2 for 25c. mostly anywhere in the North West. When you want a specially fine cigar, try the **PREFERRED PERFECTO.**  
\*Perfect Smoke.

**THE TUCKETT TOBACCO CO., Limited - Hamilton, Montreal, London, Vancouver**

Makers of Fine Cigars, Tobacco, Cigarettes, all well and favorably known in the Great Canadian West.

Western Distributors: TEES & PERSSE, Winnipeg, Calgary, Saskatoon, Regina, Moose Jaw, Edmonton.

**THE MARTIN DITCHER AND GRADER**  
DIGS YOUR DITCHES  
GRADES YOUR ROADS  
EASILY QUICKLY CHEAPLY  
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FINISHES IN ONE DAY  
**DOES THE WORK OF 50 MEN**  
SEND FOR FREE BOOKLET  
THE PRESTON CAR & COACH CO. LIMITED  
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**Dr. Thomas' Eclectic Oil**  
Relieves all Pain in Man or Beast  
25 Cent Bottles at all Dealers

# Alleged Profits of the William Davies Company in 1916 on Bacon, as Indicated by Department of Labor to be Five Cents Per Pound, Untrue:

## Actual Profits Two-Thirds of a Cent Per Pound

**T**HE statement issued by the Department of Labor concerning the business of The William Davies Company, Limited, has been given widespread circulation throughout the country and provoked public unrest.

Whatever the technical wording of the report was, the effect has been that the newspapers have published that "the profits on Bacon alone" of this Company "for 1916" were about "five millions of dollars." This interpretation of the official report is not surprising in view of certain statements of the Commissioner of the Cost of Living makes. The Commissioner is reported as saying that "There were two individual cases of profiteering in 1916 and that had these cases occurred since the passage of the cost of living Order-in-Council, he would consider it his duty to recommend that the facts be laid before the

Attorney-General for consideration as to their criminality." The situation created by such erroneous and damaging statements is serious as emanating from a Government official, from whom one looks for not only accurate statements but correct conclusions.

The William Davies Company, being a private concern, has followed the practice of all private corporations, except when it made a bond issue in 1911, in that it has not published reports of its assets and liabilities or profit and loss. The present circumstance, however, in which a Government Official has led the public to false conclusions, makes it advisable for this Company, for both the public interest and its own interest, to publish particulars of its business as well as point out the error of the statement of the Government Official.

For the last fiscal year ending March 27th, 1917, The William Davies Company bought and killed 1,043,000 head of Live Stock (Cattle, Hogs and Sheep). This, plus purchases of outside Meats, produced 160,000,000 pounds of Meats. The Company handled 6,550,000 pounds of Butter and Cheese, 5,650,000 dozens of Eggs, and manufactured 26,500,000 tins of Canned Goods.

The net profits on these were .68 cents (or two-thirds of a cent) per pound on Meats, 1.04 cents on Butter and Cheese, 1.04 cents per dozen on Eggs, and .47 cents (or slightly less than one-half a cent) per tin on Canned Goods. These profits include profits on all By-Products derived from these accounts.

During the year the Company served at its retail stores 7,500,000 customers, the average purchase of each customer was 35c., and the net profit on each sale was 5-8 of 1 cent.

The turnover of the Company from all its operations for the fiscal year ending March 27th, 1917, was \$40,000,000. The net percentage of profit upon this turnover, after deducting war tax, was 1.69 per cent, or including war tax 3.45 per cent.

The William Davies Company has assets of \$13,385,000, of which \$3,865,000 is tied up in fixed investments.

To provide the necessary facilities for the increased volume of business the Company expended \$750,000 in buildings and equipment during the year.

Companies of other character present no more reasonable statement of profit and loss based upon the investments made in the business.

The William Davies Company offered to the Imperial authorities, as well as to the War Office Service (which represents the Imperial authorities in Canada) to place the output of its factory with respect to Bacon supplies, Canned Beef and Pork and Beans at the service of the authorities, on the basis of cost plus an agreed percentage. These offers were successively declined as the authorities evidently desired to purchase in the open market, and on this basis The William Davies Company has secured War Office business by open competition with the world.

## Respecting the Report of the Commissioner on the Cost of Living:

Last winter, the Commissioner, under authority of Order-in-Council, required packers to submit statements, under oath, for some years back and up to December 1st, 1916, of incoming stocks of Meats and the cost of such, as well as statements of outgoing product and the selling value. This Company represented in writing at the time that the information as specifically required was not in accordance with Packing House Accounting methods, and invited the Commissioner to send an Officer to the Head Office of the Company to examine the books for any information desired, and to secure a viewpoint as to the best way of collecting data which would be of use to the Government. This offer was declined, and there was nothing to do but fill in the information required as literally as we could determine it. For example, there was no recognition of the fact that a raw product

may enter a factory under a specific classification and leave the factory as a finished product under some other classification.

We submitted a series of accurate figures based upon our interpretation of the official requirements which made no provision for charges of any description other than incoming freight and unloading charges to be included in the cost or to be deducted from the selling price. There was nothing in the report which could be read so as to determine a profit and loss statement. The very fact that with only a statement based upon cost of raw products and value of sales in Great Britain a Government Official has deduced "Large margins," "Profiteering" and "Criminality" if it had occurred since the passage of a recent Act, shows too dangerous a trifling and incapacity to be permitted to deal with any important situation. The statements of this Company

have been treated by the author of this report as if the outgoing product was identical with the incoming product, and from the series of reports he has singled out two items—the Bacon and Egg reports—and from them deduced an erroneous "margin" which the newspapers have interpreted as "profit." The author of the inquiry shows a strange lack of even a fundamental knowledge of simple bookkeeping and a dangerous inability to co-ordinate figures. The following are specific and outstanding errors in the report:

The principal item that is causing excitement deals with cold storage Bacon. The term "cold-storage" is not defined, and the public is allowed to make its own definitions. As all Bacon in a packing house is under refrigeration, it is really all cold-storage, and therefore this Company's figures of cold-storage Bacon represent the

(Continued on next page)

(Continued from preceding page)

complete quantity of Bacon handled in its entire Plant, whether in freezers or in process of cure for immediate shipment. That some companies interpreted cold-storage product as "freezer" product only is evidenced by the smallness of entire lack of figures on the Bacon list for some Plants, indicating that many firms did not submit statements of their complete stocks, as did this Company. An official of this Company pointed out this cold-storage distinction to Mr. O'Connor and Miss McKenna in Ottawa a few weeks ago, and the failure to make the distinction after having had it pointed out evidences lack of desire for accuracy of the real information desired.

It is true, The William Davies Company, in 1916, exported 97,791,000 pounds of Bacon, but we do not know how the margin of 5.05 cents per pound is arrived at by Mr. O'Connor, as there were no figures to justify such a conclusion. The probabilities are that the margin is arrived at by taking the average cost per pound of incoming product from the average selling price per pound of outgoing product. This may be a rough way of estimating the gross margin when dealing with small figures, but when dealing with figures the size that Mr. O'Connor has to deal with, a very small fraction of a cent per pound of error makes a very important difference in the total, and one must be careful to make sure that the outgoing product is the same finished merchandise of the incoming product reported on.

Allowing it to pass, however, as a rough estimate, we wish to point out—First, The inquiry of the Commissioner allowed only for incoming freight and unloading charges, and made no provision whatsoever for operating charges of any kind, such as labor, curing materials, refrigeration, et cetera. Such actual charges on the 97,791,000 pounds exported were \$1,162,000—or 1.2 cents per

pound. This amount covered all charges up to the point of placing the Bacon on cars f.o.b. packing-house. In addition to this was the actual cost to land and sell this 97,791,000 pounds in England after leaving the packing house, which involved charges of 2.9 cents per pound—or \$2,836,000. This 2.9 cents per pound included inland and ocean freight, landing charges, war and marine insurance, cables and selling commission to agents. The ocean freight and war risk alone would make up 2.4 cents of the charge of 2.9 cents per pound. This 1.2 cents, plus 2.9 cents—a total of 4.1 cents—must be deducted from Mr. O'Connor's margin of 5.05 cents per pound, leaving a margin of .95 cents, or slightly less than a cent per pound, which still has to be reduced because of the error of premises and because of further factors which have to be considered to determine net profits.

It is quite evident some of the other packers did not show selling values in the country in which the goods were sold—a proceeding quite proper, as the forms submitted to be filled in were indefinite and ambiguous, thus permitting without charge of evasion a variety of interpretation as to the information required. It is thus possible that of all the figures submitted by the different packers that no two sets of costs and sales prices are determined at the same common point. It is this difference of interpretation of what was required that accounts for the difference of the alleged "margin" made by the different companies. Common conclusions, however, have been drawn by the author of the report from varying bases of premises.

The figures of the Egg business were submitted on the same basis as Bacon, and similar deductions must be made.

Second. The above margin is further reduced in that the author of this inquiry singled out the Bacon figures as an item in

which the selling price shows an alleged improper advance over cost, but he did not give us credit for the statements of other products, of which figures were submitted, the selling prices of which were under cost. The reason of this was that through failure to inquire the Department entirely overlooked the fact that product may come in as pork and, through the process of manufacture, go out as Bacon, or, in another instance, enter the factory as beef and go out in the form of canned meat; for example: much of the product which came in as pork, and which was entered on the pork sheet submitted to the Commissioner—about which he makes no mention—was cured and left the factory in the form of Bacon, and was, therefore, entered on the outgoing side of the Bacon sheet—the result is that the Bacon sales are increased by this amount over the incoming stocks of Bacon, and, likewise, the sheet showing sales of pork is reduced by the amount that went out in the form of Bacon. If the Department takes one set of figures that show favorable to the company they should take another set of figures that show unfavorable, as the principle in either case is the same, and failure to do so looks as if the author of the report was exercising more enthusiasm than sound judgment in his investigations.

Third. It is queried in the report, that "if the margin of 3.47 cents," alleged to have been made in 1915, "was satisfactory, why was it necessary to show increased margin in 1916?" Assuming again for the moment the soundness of the premises in asking such a question based on an erroneous "margin," it will be found that the increased margin is chiefly absorbed in increased ocean freight rates and war risk insurance in 1916, of which apparently the author of the report was in ignorance.

The Company does not challenge either the legal or moral right of the Government to investigate business enterprises when public interest directs such an investigation should be made. If an investigation of the packing and meat business is ordered, the Company will place at the disposal of the Government not only the data it would be required to supply under Order-in-Council directing that inquiry be made, but will place the experience of its officers at the disposal of the investigating committee, if it is considered they can render any service which will be of value. The Company has not now—not at any time during the fifty years of its operation—anything to conceal in method or practice of carrying on its business. It does, however, claim the right to conduct its export business without abusive comment from Government civil servants—especially when the conclusions drawn from the data asked for are improper and false.

One of Canada's chief export industries is the packing business. It is essential to the live stock industry, and along with other export industries, it maintains the financial stability of this country and should, providing it is on a sound basis, receive encouragement and not slanderous abuse. In view of the publicity given to the report of the Commissioner on the cost of living, the Company demands the same publicity in having an official Government investigation of this report to determine the truthfulness or untruthfulness of its conclusions. We do not seek public consideration as a company, but we do say that untruthful official statements, or statements the effect of which is to create an untruth, adversely affect

the live stock industry of this country, which is so valuable and essential a wealth-producing power and, in the long run, are harmful to the very people that the statement seeks to benefit.

If the passing out of existence of a corporation such as The William Davies Company, or if nationalization of packing houses would materially and permanently reduce food prices, then in view of the present world tragedy it ought to be consummated without delay. The fact of the matter is, however, that with millions of people in Europe turning from producers into consumers because of war, and the tremendous destruction of food products incident to war, there is no remedy for the high prices of food while such conditions last, except the remedy of thrift and increase of production.

Long before there was a talk of a Food Controller in the United States or Canada, The William Davies Company urged the Government at Ottawa, in writing, to appoint a Food Controller with full power to do what he saw fit, as we realized at that time the upward tendency in the price of food commodities unless checked by official effort. At the most a great deal cannot be done in reducing food prices while currency is inflated and until the scale of prices of all kinds of commodities declines also. What can be done can only be done by a Food Controller. We wish to point out that nothing at all can be accomplished unless the data secured are accurately and clearly made and the deductions therefrom sound. Only public harm arises from dangerous incompetency in the haphazard collection and careless use of important figures.

**As far as the William Davies Company is concerned this terminates all public statements of the Company, and it will pay no more attention to speculative and haphazard statements made either by newspapers or civil servants. The only further statement that will be made will be at an official investigation.**

**E. C. FOX, General Manager**

**THE WILLIAM DAVIES COMPANY, LIMITED**

Toronto, July 17th, 1917

### Some Pointers in Selecting an Engine

*Continued from page 26*

trary the prospective customer is led to believe he will get one of the best engines on the market should he select one of these cheap engines. Big selling points are made of little things that amount to nothing in actual use.

None of the manufacturers have featured an engine equipped with a starter, said starter being a crank, but they have sold engines on the strength of some other detail of equipment which possesses no greater novelty.

To be sure, these cheap engines will run (most of them), but how long is the question? How much trouble will they give is another question, and the cost of keeping them in running condition still another, but anyone who assumes that these cheap engines will give the service and general satisfaction to be obtained from the second or first class engines as I have classified them is all wrong. A good bearing metal will, if properly lubricated, last longer than a poor metal and the good metal will cost more and so it is with the entire engine. If a person were to buy an engine for a short job, then throw it away, there might be some excuse for selecting a cheap one, but even then it is somewhat questionable for the cheap engine might develop trouble early and cause a loss greater than the difference in price.

It is rather peculiar how a farmer, for instance, will study and work to bring his crops to a stage where they will bring the highest market price, knowing he is getting a long price because of quality and then turn around and buy a cheap gas engine thinking he is getting one for quality.

There has been and is a demand for low priced engines, unfortunate as it may be, and there are those who are always ready to give the public what it demands, but in demanding a low priced engine it is assumed that the engine is to be equal to the best, an impossibility.

Mr. Manufacturer says, "We will give them a low priced engine," and to do this he knows he must cut the quality. He has done so but has stooped to the practice of leading the buyer to believe he is getting the best. Those demanding and buying a low-priced engine are getting it, quite often in the neck to be sure, but they should realize that when gasoline is selling for twenty cents a gallon and some one offers a quantity at ten cents, there is quite apt to be some kerosene in the deal.

Now, in closing, I wish to impress prospective engine purchasers that regardless of what make of engine they decide on,

they are going to get their money's worth and no more except in the third class of engines where they are more likely to get less for their money. Remember that in order to sell these cheap engines they must be represented as equal to or better than the best. Get catalogs and literature covering the higher priced engines, then compare the descriptions. If you find some features in the more expensive engines that seem to be omitted in the cheaper, find out why.

Inquire of your neighbors who are using engines, their opinions of the various makes you are considering. If the cheap engine is guaranteed to be this, that, etc., look for loop holes. Beware of long time guarantees, apparently covering wear, defects, extremely low fuel consumption as compared to classes for other engines, and finally find out if there are similar engines in your neighborhood and if so take the time to look them over; it will pay you. In considering testimonials remember that the manufacturer never publishes the complaints he receives. My final advice is to pay a reasonable price and buy a good engine, otherwise look out.

### THE TALE OF A GROWING PIG

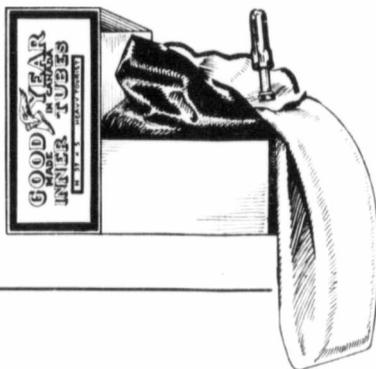
If you want to burn the road,  
Buy a pig.  
If you want to raise the load,  
Buy a pig.  
O, he's little, but he's wise,  
He's a terror for his size,  
And he's quick to advertise—  
Buy a pig.  
If you want the cheapest board,  
Buy a pig.  
If you want to own a Ford,  
Buy a pig.  
He is solemn, but he's fat,  
And he knows just where he's at,  
And he always comes to bat—  
Own a pig.  
O, it's really somewhat hard—  
Keep a pig.  
That he has to end—in lard—  
Keep a pig.  
He makes sausage, ham and  
sich,  
Pickled feet and bacon fitch,  
And he makes his owner rich,  
Keep a pig!  
—Chas. I. Bray.

Saddlee—"A man can hardly wed now unless he can show the girl two licenses."

Denston—"Two licenses?"

Saddlee—"Yes—marriage and automobile."

**Twelve Months of this Magazine for \$1.00**



## Good Tubes Increase the Mileage of Tires . . .

You have read of extra long mileages that other motorists have got from tires. You may be amongst the thousands of motorists who wonder why the same brand of tires goes farther for other men.

Allow us to give you a pointer.

Look to your tubes.

Good tubes—Goodyear Tubes—will get many extra miles from tires.

Because a poor tube, through slow leaks, causes under-inflation, the commonest enemy of tires.

Goodyear Laminated Tubes overcome this. Their exclusive method of manufacture insures air-tightness to the greatest possible degree.

For we take the highest quality rubber and roll it thin to transparency—so we can detect all flaws, sand holes, air bubbles. The inspected, perfect sheets are then built up, layer on layer, into a perfect, inseparable whole. This is the only right way to make tubes.

And we even vulcanize the valve patch, instead of merely sticking it on.

It is very much worth while, for the sake of your casings, and for longer tube service, to say "Goodyears" when you buy tubes.

## The Goodyear Tire & Rubber Co. of Canada, Limited

*Goodyear Tubes, along with Goodyear Tires, and Tire-Saver Accessories are easy to get from Goodyear Service Station Dealers everywhere.*

**GOOD YEAR**  
MADE IN CANADA  
**TUBES**

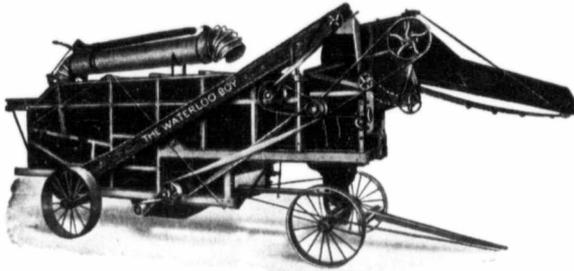
**They Cannot Withstand**  
**CHALLENGE**  
WATER PROOF COLLARS  
Keep their shape and freshness unimpaired in all weathers. Cleaned instantly with soap and water. Stylishly cut, with the correct finish. 25 cents at all stores or direct.  
ARLINGTON CO. OF CANADA, LTD.  
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### ARE YOU LOOKING FOR A NEW FARMING LOCATION?

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

**R. W. RUTHERFORD**  
309 Merchants Bank  
Winnipeg Manitoba

# WATERLOO BOY MACHINERY



**24-46 SEPARATOR**

**FEEDER**—Strongly constructed with angle steel frame and body of galvanized iron, same as the rest of the separator. Carrier is made of rubber and canvas, no sprocket chains being used.

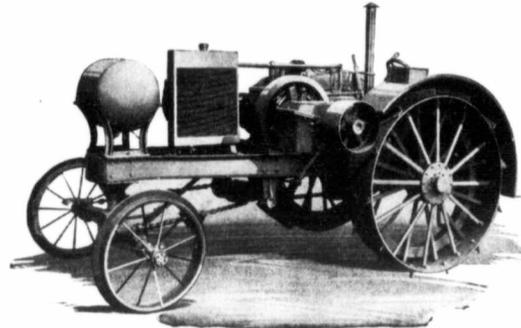
**CYLINDER**—Has 16 bars. Substantially built, and perfectly balanced. Cylinder shaft is 2 3/16 inches in diameter. This means large capacity and great strength.

**CHECK PLATE**—Immediately behind the grate ensures greatest part of separation at this point, and the small amount of grain that gets past the separating check plate, is thoroughly beaten out by the straw shaker, that allows no grain to escape with the straw.

**GRATE**—46 inch grate surface extending high up behind the cylinder, with separating grate check plate behind.

**BEATER**—Spreads the straw evenly over the entire width of the deck, ensuring thorough separation of the little grain that gets past the check plate. Sheet steel deflector prevents flying grain.

**STRAW DECKS**—Built in two sections: has four distinct motions, the straw is shaken, thrown up, struck from beneath, thinned out and driven forward. No grain can remain in the straw with this treatment. The few parts used in the construction of these decks means lighter running and less wear and strain than in other machines means loss of time and repairs.



**12-24 TRACTOR**

The Waterloo Boy will pull a light engine gang with three 14-inch plows in stubble any depth you wish. It will pull two 14-inch plows in any prairie breaking. On your summerfallow it will handle a disk with harrows behind at from 2 1/2 to 3 miles per hour. It will drive a 24-46 thresher with all attachments.

The Waterloo Boy weighs only 4,800 pounds. It is a kerosene tractor, built specially to operate on this fuel—No makeshift attachments. It has twin cylinders cast en block. High tension Dixie magneto with impulse starter. Cooling system is of the most approved type. Will turn in a 25-foot radius, and when plowing is self-steering. Transmission—Sliding gear with shifts for one speed forward and one reverse.

The Waterloo Boy Tractor performs its work with efficiency and economy that will please any practical farmer. It is a sensible practical machine that sells at a price you can easily afford. Built by a Company with an established reputation, and numerous machines at work in the fields of Western Canada that prove its superiority.

**PROMPT DELIVERY GUARANTEED**

**Waterloo Boy Kerosene Tractor of Canada, Limited, Dept. B WINNIPEG**



Synopsis of Canadian Northwest Land Regulations.

THE sole head of a family, or any male over 18 years old, who was at the commencement of the present war, and has since continued to be a British subject or a subject of an allied or neutral country, may homestead a quarter-section of available Dominion Land in Manitoba, Saskatchewan or Alberta. Applicant must appear in person at Dominion Lands Agency or Sub-Agency for District. Entry by proxy may be made on certain conditions. Duties—Six months residence upon and cultivation of land in each of three years.

In certain districts a homesteader may secure an adjoining quarter-section as pre-emption. Price \$3.00 per acre. Duties—Reside six months in each of three years after earning homestead patent and cultivate 80 acres extra. May obtain pre-emption patent as soon as homestead patent on certain conditions.

A settler after obtaining homestead patent, if he cannot secure a pre-emption, may take a purchased homestead in certain districts. Price \$3.00 per acre. Must reside six months in each of three years, cultivate 80 acres and erect a house worth \$200.00.

When Dominion Lands are advertised or posted for entry, returned subject who have served overseas and have been honorably discharged, receive one day priority in applying for entry at local Agency's Office (but not Sub-Agency). Discharge papers must be presented to Agent.

W. W. CORY,

Deputy Minister of the Interior.

N.B.—Unauthorized publication of this advertisement will not be paid for.

## MANURE AS FERTILIZER

Equal Results Secured With Fresh and Rotted Manure

Perhaps one of the most remarkable results obtained in our experiment with fertilizers has been the discovery that, as far as ordinary farm crops are concerned, fresh and rotted manure, applied at the same rate, have given practically equal yields. The explanation for this is not easy to find, since rotted manure, weight for weight, is very considerably richer in plant food than fresh manure. It probably lies in the better inoculation of the soil with desirable micro-organisms for the conversion of soil plant food into assimilable forms by the fresh manure and the greater warmth set up by its fermentation in the soil affecting beneficially the crop in its early stages. But, be this as it may, we have the practical deduction that there is no concomitant gain from the use of rotted manure, in the ordinary farm rotation, for the labor involved in rotting it and the large losses in organic matter and plant food that inevitably accompany the operation. The quicker the farmer can get the manure into the land or on to the land the better, for it is never worth more than when first produced.

The manurial value of clover need not be dwelt upon at any length. Our work in this connection is fairly well known throughout the Dominion. It has been of an exhaustive nature and has yielded most satisfactory results; indeed, it would be difficult to overestimate its value to Canadian agriculture. Chemically, physically and biologically, the growth and turning under of clover improves the soil, and we have been enabled to demonstrate over and over again that a crop of clover in the rotation has a manurial effect equal to an application of farm manure of ten to fifteen tons per acre.—Dr. F. T. Shutt at Eighth Annual Meeting of Commission of Conservation.

### When Without Matches

The likelihood of finding oneself without matches when miles away from anywhere is a contingency that might occur to anyone. But it is fairly easy to obtain a light by detaching one of the high-tension wires from its sparking plug and attaching it to a spare one. Place the plug on a convenient part of the frame, so that the current can earth readily. Dip a piece of tissue paper into gasoline and place in the spark gap. Switch on, and turn the engine round, and the spark will readily ignite the inflammable paper.

# Lumber

Direct from Our Mills at Wholesale Mill Prices

You cannot afford to buy LUMBER without knowing our prices. We will quote you the LOWEST WHOLESALABLE MILL PRICES, on dimensions, Lumber, Shiplap, Flooring, Ceiling, Siding, Moulding, Shingles, Windows and Doors, in fact everything in lumber you would require for your building, and the prices are delivered, freight paid to your nearest railroad station.

A POST CARD will bring our prices, or send us your bill of lumber and we will give you a detailed estimate of the cost. FREIGHT PAID TO YOUR STATION.

CLUB ORDERS will have special care, we will load each lot separately in the car, and separate each lot on the invoice. WRITE FOR PRICE LIST TO-DAY.

WE WHOLESALABLE to a NATION INSTEAD OF RETAIL to a NEIGHBORHOOD

**Consumers' Lumber Company VANCOUVER, B.C.**

## PATENTS TRADE MARKS AND DESIGNS

Write for booklet, circulars, terms, etc. FETHERSTONHAUGH & CO.

FRED. E. FETHERSTONHAUGH, F. C. M. E. GERALD S. ROXBURGH, E. A. S.

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## Binder Twine

500 feet Standard Manilla

at less than Wholesale Prices

Write us or wire us for our Prices

f.o.b. your station

Saskatoon Hardware Co., Ltd.

SASKATOON, Sask.

**How is Your Alfalfa?**

**H**AS your new alfalfa seedling stopped growing? Is it spotted and patchy? Is it turning yellow? Have you a thin stand?

If it's yellow and patchy and thin there is surely something seriously wrong. To diagnose the case I should advise you to go out in the field and examine not only the plants and soil but your own conscience. Ask yourself and answer these questions:

1. Are you sure your soil conditions are right for alfalfa? Is your soil sour? Does it need lime for alfalfa? Did you test it with litmus paper or otherwise to see if it needed lime before you seeded your alfalfa? If not, do so at once and find out.

2. Did you inoculate? Are nodules present on the roots? Dig up several plants and see.

3. Is your field reasonably fertile and well drained? Are there any low wet spots? Alfalfa will not stand wet feet. It will not do well on a poor, worn-out soil.

4. Do you have a hardpan subsoil six or eight inches below the surface? Hardpan is impenetrable to alfalfa roots.

5. Was your alfalfa seeded early enough in the summer or fall to result in a thick eight-inch growth before the first freeze of the fall? Remember, late seeding may result in winter-killing.

6. Did you have a poor stand last fall? If your alfalfa was sown in the spring with a nurse crop, was only one bushel of grain an acre used? If spring wheat or late maturing oats were used as a nurse crop, were they cut for hay or grain? Too thick seeding of the nurse crop and the use of late ripening grain, when not cut early for hay, may cause poor stands.

7. Was your alfalfa cut or pastured late in the fall? Remember the eight-inch rule: If alfalfa does not go into winter with eight inches of growth it may suffer from winter-killing.

8. Did you use hardy variegated alfalfa seed or just common alfalfa? The kinds of alfalfa that withstand the rigors of winter best are the variegated strains, such as the Grimm, Baltic and Cossack. Of course common alfalfa is very hardy for the first winter, but any alfalfa may be killed out by open winter weather with much alternate freezing and thawing and the formation of smothering ice sheets.

If your conscience is clear on these eight points the chances are that the yellow streak your alfalfa is showing is due to drought or disease or both. Alfalfa resists drought, but that does not mean it will grow luxuriantly during hot, dry weather of long duration. In fact, in times of severe drought it often turns yellow and stops growing.

Alfalfa is always infected with a universal disease—leaf spot. You will find it in all fields. In some years and places it is more abundant than in others. It makes its most profuse appearance about two weeks before cutting time. The lower leaves become so badly infected and spotted with brown spots that they turn yellow and drop off. Then the disease moves upward, and soon the whole field may take on a yellow hue. A heavy loss of leaves may result.

The disease is generally most severe when sour soils or other unfavorable conditions weaken the alfalfa plants. The remedy is very simple. Early cutting is a sure cure. The succeeding growth will come up healthy and green. When plants are diseased their strength is thrown into producing new growths at the crowns. These new shoots or stems grow rapidly, necessitating earlier cutting than if the alfalfa were healthy and free from attacks of leaf spot. Early cutting also saves leaves.

**Drum Hoist**

The next time you are stuck in the mud or sand remember that you can fasten a rope to a tree or post, give it a turn around one of the rear wheel hubs and start the engine on either low or reverse, and by holding the rope taut the automobile will pull itself toward the post or tree. The action of the rope upon the hub is the same as that of a drum hoist. Of course it will be necessary to hold the other rear wheel stationary either by a rope or chain, unless it is on solid ground.



**GREAT DEFEAT OF THE RATE COLLECTOR**

"Can I see Mr. Jones, please?"  
 "E's gorn, sir."  
 "Has he been called up?"  
 "I ain't sure whether he's been called up or down—'e died six months ago."

**This  
is  
the  
Bottle**

**Look  
for the  
Pink  
Blue  
and  
Gold  
Label**

## HEALTH AND HAPPINESS

When we think of one we naturally think of the other. They are inseparable. The little children with their robust bodies, the healthy glow in their cheeks and the sharp twinkle in their eyes—they are happy.

As Father Time hurries on, nature becomes more lax in the performance of her arduous duties—she needs assistance in order that youthful vigor and happiness may be maintained. She welcomes such an apt assistant as

# MALTUM STOUT

(Registered)

**STOUT**

a non-intoxicating beverage. Pure, wholesome and nutritious. A product of fine cereals selected for their nutritive value as well as for the deliciousness resulting from their scientific combination. Given fragrance and tang by the addition of choicest hops.

Serve **MALTUM STOUT** on the table. It goes well with hot meals and cold lunches, unusually refreshing as a thirst quencher and possesses a quality of flavor that goes delightfully with food.

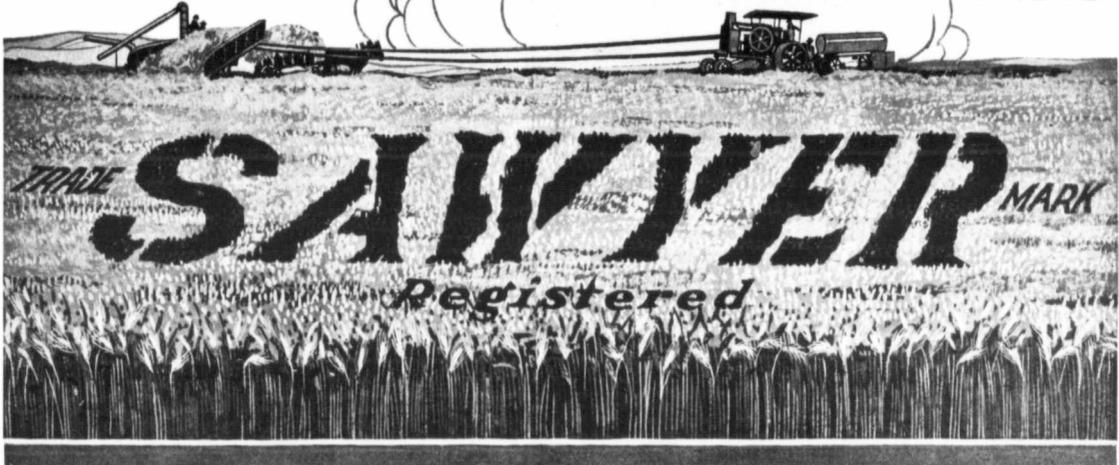
PUT UP IN QUARTS,  
PINTS, HALF PINTS  
OR IN CASKS

Order a case to-day from  
your grocer, druggist, con-  
fectioner or direct from

## E. L. Drewry

LIMITED  
Winnipeg, Man.

# Coming Events Cast Their Shadows Before Them



## The Hum of the Threshing Machine

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

TRADE **SAWYER** MARK  
Registered

**ENDLESS STITCHED CANVAS BELT**

**PLEWES, LIMITED, Distributors, WINNIPEG**

### Silencing the Ford

The quest for silence should begin before the car is purchased, by a careful study of the instruction book. The new car should be run most carefully, for then the car is new to the driver and the driver is new to the car. The Ford should have about five quarts of oil in the crank case, until the cinders and grit, which have probably entered the bearings during the car's journey from the factory, have been washed out. If the car is run at a moderate speed for the first week or so, the bearings will have a chance to bed themselves down to smooth, close-fitting surfaces

which will tend to eliminate noise and wear for a long time. The idea should be to break in the car easily, not to break it up.

Noise is often the danger signal of wear and possible breakage, for noise is usually due to the rubbing of unlubricated surfaces or to the hammering of loose parts. If the spring shackle bolts are noisy from lack of lubrication, it is certain they will wear rapidly. If they rattle because they are loose, the hammering action is apt to cause rapid wear and eventual breakage.

If small parts are worn, it is often better to replace them and thus to keep the car up to a high

standard of efficiency, than to attempt makeshift repairs. If a bushing is worn it is often advisable to replace the pin also, for a worn pin will soon wear a new bushing to a loose fit and will thus curtail the value of the repair.

Some noises and squeaks are rather difficult to locate, but they can generally be found by a process of elimination. If certain sounds are heard when the motor is running and the car is at rest, it is reasonably certain that the trouble is in the motor. Another test is to disengage the clutch and stop the motor while the car is coasting down hill and thus

locate chassis squeaks.

Jumping on the running boards, while the car is at rest, is a useful test for locating spring and body squeaks. If the mouthpiece of a megaphone is held near the ear, the large end of the megaphone can be used to locate the direction of the sound. By eliminating other noises the megaphone makes the source of the noise easier to locate.

Flat surfaces in the mud guards are apt to vibrate and drum. This can often be cured by bending these flat surfaces slightly so that they are either convex or concave and are thus supported against vibration.

## Investment Notes

By MARK LANE

THE wisdom or folly of making a particular investment in many cases depends as much upon the circumstances of the investor himself as it does upon the character of the investment. The wealthy man who has large investments spread over a wide field of railway, municipal and commercial undertakings, can afford to take investing risks which should be absolutely tabooed by the individual whose whole income is derived from a limited amount of invested capital. In the past we have been too apt to reason that because Sir So-and-So of wide business experience has a large interest in a certain concern John Jones may safely invest his hard-earned savings of a lifetime in the

accepted a lower rate of interest on that account a "concession" which was more than made up for by selling a highly-priced life policy. The trend now is to place loans and sell insurance on their respective merits independently of each other for the payment of a single premium cannot convert a poor loan into a good one and the farmer saves money by taking out life insurance on the inexpensive whole of life plan irrespective of his mortgage.

For the farmer who has funds to invest over and above what may be judiciously expended in stocking and developing his farm the writer would suggest:

First—Life insurance on the whole of life plan up to at least

### THREE POINTED QUESTIONS

(Suggested by recent articles)

*Have you ascertained that your titles are in order?*

*Have you taken out that life policy?*

*Have you made your Will?*

To-day is yours for action; if in doubt **Mark Lane** will gladly help.

same undertaking. The smaller one's capital is the more carefully one should seek gilt-edged securities, producing a modest income rather than a fair average commercial investment yielding a better return.

In our new country, investments in general are not spread over a wide field as is the case where investing interests have been studying every phase of the business for over half a century and whose holdings are literally "from China to Peru." The records of our western insurance companies show a preponderance of investments in mortgages—indeed, until the real estate slump and the issues of war loans the investing boards confined themselves almost exclusively to this class. They were led to do so by the good yield coupled with supposedly excellent security and a valuable connection for securing new life insurance business. A wiser policy would have been to include a goodly proportion of dominion, provincial and municipal bonds. Some companies practically insisted on life insurance being taken out by the mortgagor and given as collateral security to the loan. Sometimes

\$5,000.00. (See our June issue for hints and rates.)

Second—The reduction or extinction of his own mortgage indebtedness.

Third—Dominion War Bonds—These suggestions are intentionally given in the above order because:

(1) It is better policy for a mortgagor to apply \$100.00 a year in carrying \$4,000.00 life insurance than to reduce his mortgage by that amount. The average farmer at his death leaves very little cash in the bank, for he has been able to use his earnings to better advantage in prosecuting farming. That is the very reason why life insurance is of particular benefit to the farming household in tiding over the unavoidable expenses and also in settling the current liabilities which the hand of death has prevented the farmer from meeting himself as he anticipated. The farmer carrying adequate life insurance may run his finances pretty closely, but the uninsured man is foolish to do so.

(2) Apart from his farm and life insurance the farmer cannot find another investment which will return him 7 per cent or 8

## Two Ways of Saving Money

### Which is the Better?—

A WAGE-EARNER placed \$20 in the Savings Bank, intending his deposit to be the first of many. He died, and his widow received the \$20.

A fellow wage-earner also deposited \$20, but in Life Insurance. He died, and his widow received \$1,000.

**Life Insurance offers the one sure way of providing for dependent ones. The Great-West Life Policies provide such insurance on most attractive terms. You owe it to your family and to yourself to make enquiries.**

WRITE, STATING AGE, TO

**THE GREAT-WEST LIFE ASSURANCE COMPANY**

Dept. "U," HEAD OFFICE, WINNIPEG

## UNION BANK

OF CANADA

### Loans for Livestock

THE UNION BANK OF CANADA is prepared to make loans to good farmers on reasonable terms, to purchase cattle for feeding or breeding purposes.

It is in the best interests of farmers to increase their herds.

Consult the Local Manager for particulars

PAID UP CAPITAL \$5,000,000.00  
TOTAL ASSETS EXCEED \$100,000,000.00



Head Office: Winnipeg  
Total Assets over  
\$100,000,000  
Deposits over \$85,000,000

The Pioneer Bank of Western Canada

per cent as regularly as his own mortgage interest falls due, and therefore it is his best policy to reduce his fixed liabilities when he has the available funds. The bulk of life premiums and mortgage repayments are being invested in war bonds, so it is quite patriotic to follow this course.

(3) The past few years have shown that even in the apparently most stable enterprises of our country unforeseen conditions have caused so serious a decrease in their earning powers that some investors who five years ago were comparatively well off are today in straitened circumstances. A case in point is the Winnipeg Electric Railway Company, whose stock a little over three years ago was selling at \$200.00 per \$100.00 share on the basis of a 12 per cent dividend, the yield on the market price thus being 6 per cent. The competition of the City of Winnipeg in light and power (a boon to the citizens since it reduced the commodity to one-third of the previous cost) and the inroads of jitneys on passenger traffic have compelled the company to cease payment of dividends entirely. The market price of the stock has dropped to about \$50.00 per \$100.00 share, and thus the investor who bought stock at the high price now holds a non-revenue producing asset valued at about 25 per cent of its cost.

C.P.R. stock is now selling at about \$160.00 for \$100.00 stock, thus yielding about 6 1/4 p.c. on its 10 p.c. dividend basis. The company's earnings for the past year far exceed previous records, but the public agitation for the restriction of corporation earnings and the growing demand for public ownership of public utilities bring this otherwise very attractive investment into the realm of uncertainties.

For these and other weighty reasons war bonds are undoubtedly the most desirable investment offered to the public to-day, but, apart from their inherent worth, there is the higher note of patriotism calling us to invest in our war loans. In justice to the cause we have espoused, to the Empire we love, and to our children whose liberty we dare not barter, we must reinforce in this material way the attack upon the enemy at the gate.

(To be concluded in next issue).

## We'll Buy Your Time

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

H. E. Heath Co. Ltd., Winnipeg

### KILL THE BUGS!

Spraying is the Real Battle to Save the Garden

IT sometimes happens that the home gardener neglects spraying, that very necessary step in securing perfect fruits and vegetables, because he does not have the information at hand on preparing the mixtures in small quantities. He frequently sees spray formulas for the commercial grower, giving the figures in pounds and hundreds of gallons. What the gardener wants to know is how to prepare a mixture in single gallon lots. Here then is the information he has been looking for. Only a few of the numerous formulas are given, but they are the most important ones and practically the only ones it is necessary for him to know:

**Bordeaux Mixture** — Stone lime, 1 1/2 tablespoonfuls; copper sulphate, 1 tablespoonful; water, 1 gallon.

Dissolve the copper sulphate in half a gallon of water. Slake the lime in a small quantity of water and dilute with the other half gallon; then pour the two mixtures equally into a third vessel. Strain and use at once.

Bordeaux can be bought in paste form ready to dilute with water and apply; if you have only a few plants to treat this is the best plan. Bordeaux is an excellent general fungicide.

A combination fungicide and insecticide may be prepared by adding one tablespoonful of arsenate-of-lead paste, or half the amount of powder, to the above Bordeaux formula. It is necessary to mix the arsenate of lead thoroughly in a small quantity of water before adding it to the Bordeaux. This combination spray is effective against nearly all plant diseases and chewing insects.

A ready-prepared Bordeaux paste, containing arsenate of lead, is on sale. This is also an excellent material for the small user.

**Lime-Sulphur Solution** — As lime-sulphur must be prepared by boiling, it is nearly always best for the gardener to buy the commercial concentrated lime-sulphur. This is an excellent insecticide for winter use against the scale insects and is also very good as a fungicide for summer use. For winter use it is diluted to about one to ten parts of water. For summer use it is diluted to about one to forty. Directions are given on the package. Lead arsenate may be added to the summer-strength lime-sulphur, thus giving a combination spray against plant diseases and chewing insects; add one

## A SQUARE DEAL IN LIFE ASSURANCE



"First in the Northwest"

### Do YOU know anything about "loadings"?

When the average Life Assurance Actuary figures out your premium he first finds the "net" premium, then adds to it a percentage called a "loading" to provide for expenses.

This method has been condemned by world famous actuaries for over half a century.

The Northwestern is the only Canadian Life Company that uses a scientific method of providing for expenses, and this results in

### LOWER PREMIUMS

Write for our circular entitled "Life Assurance Rates" exposing the unsound methods generally followed and justifying our claim to be

Canada's Only Scientific Life Company

The Northwestern provides the highest :: reserves of any Canadian Company ::

The Northwestern Life Assurance Company CANADA

WINNIPEG

CANADA

## FARMS FOR SALE

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

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

235

# PEERLESS PERFECTION

Absolute Security.

WHEN you go away for a day or turn in for the night, you are certain your stock is locked in—they can't get over, under or through the spaces—a perfect fence for hilly or uneven ground, through streams; protects poultry, ducks, geese, sheep and hogs. Can't sag or break down and will turn an unruly horse.

### Peerless Perfection Fencing

is made of best heavy Open Hearth steel fence wire, the impurities burned out and all the strength and toughness left in. Makes the fence elastic and springy. It will not snap or break under sudden shocks or quick atmospheric changes. Our method of galvanizing prevents rust and the coating will not flake, peel or chip off. Every intersection is securely clamped with the famous Peerless Lock.

Send for catalog. It also describes our farm gates, poultry fencing and ornamental fencing.

Peerless Perfection symbolizes the highest regard for quality.

The Banwell-Hoxie Wire Fence Co., Ltd.  
WINNIPEG, MAN. HAMILTON, ONT.



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**GIRLS and BOYS WANTED**  
 Results prove The Success College supremely superior. Twenty-five calls a day for Success graduates is common. This year we could have placed 426 more Stenographers and Bookkeepers. Our annual enrollment of 2100 students (in one school) is Canada's largest—it greatly exceeds that of all competitors combined. We employ 28 expert, certificated teachers. If you wish to succeed attend Success College. Enroll any time. Send for catalogue of courses.  
**The SUCCESS**  
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**Myers**  
**Tank Pumps**  
 Have Capacity, Ease of Operation and Wearing Qualities appreciated by threshermen and others. Built with "Rolling Motion" Cog Gear or Plain Handle for operation by hand or gasoline engine. The name MYERS guarantees the pumping service. Circulars on request.  
**F. E. Myers & Bro., Ashland, Ohio**

**Got Gophers?**  
**Kill 'Em Quick**  
 Don't Feed Gophers All Fall. Kill 'Em Now. Use **KILL-EM-QUICK**

**CLASSIFIED**

**EXCHANGE QUARTER-SECTION** for small threshing machine. George Wyer, Clearwater, Man.

**30-60 TRACTOR**—Will sell cheap for cash or what you like to exchange in good condition, cheap for cash. Also apply nearby new. E. C. R., Box 3164, Winnipeg.

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

**STEAM TRACTORS**—One 85 hp. double cylinder Geiser (rebuilt), just like new, runs like a watch, \$2,000.00 cash; one 25 hp. North West, single cylinder, rebuilt, \$1,000.00 cash; one 20 hp. Nichols & Shepard, good order, \$800.00 cash. Apply P.O. Box 178, Winnipeg.

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

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

**SEPARATOR**—36 x 56 Geiser, good as new, all rebuilt, with self-feeder and blower; a snap at \$450.00. Apply P.O. Box 178, Winnipeg.

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

**BROME AND WESTERN RYE GRASS SEED**—Mixed about half and half, best quality procurable, well cleaned and sacked in 50 lb. and 100 lb. bags. This seed has been grown, threshed and cleaned by grass seed specialists; it is plump and well matured, without damage by frost and cleaned with the most up-to-date machinery. Warehouse located on tracks; shipments made same day as orders received. Price, 12 cents lb. The best time for seeding is nigh at hand. Write for pamphlet giving full information regarding tame hay or pasture, methods of seeding, etc. This is the ideal season for seeding this seed. The Hallman Grass Seed Growers, Benton, Alta. \$27

**PATENTS: CANADIAN, FOREIGN**—Eccerton R. Case, Patent Solicitor, Temple Building, Toronto. Valuable booklets free.

tablespoonful of arsenate-of-lead paste to one gallon of the diluted lime-sulphur mixture for use as a summer spray.

**Arsenate of Lead**—Arsenate-of-lead paste, 1 tablespoonful; water, 1 gallon; or arsenate-of-lead powder, 1/2 tablespoonful; water, 1 gallon.

Frequently it is desirable to use an insecticide alone against chewing insects without having it combined with a fungicide, in which case either of the above formulas may be employed.

As stated before, the lead arsenate in either form should be thoroughly mixed with a small quantity of water before diluting it with a gallon of water.

**Paris Green**—Paris green, 1 tablespoonful; stone lime, 3 tablespoonfuls; water, 3 gallons.

This may be used instead of arsenate of lead if arsenate is difficult to obtain. Strain the mixture before putting it into the sprayer. A combination spray with Paris green may be made by adding half a teaspoonful of Paris green to the Bordeaux formula given above, after mixing the Paris green with a small quantity of water.

**Hellebore**—Hellebore, 1 ounce; water, 1 gallon.

This is another insecticide for chewing insects, to be substituted for arsenate of lead when there is any possible danger of poisoning men or animals. It is well to use it on cabbages against the cabbage worm after the heads are half grown. Hellebore must be fresh to be of value. It loses its poisonous properties after being exposed to the air for three or four days.

**Tobacco Extract**—It is best to buy this in a commercial form, such as Black Leaf Forty. It is very effective against the sucking insects, as the aphides or plant lice. Dilute according to directions. One fluid ounce in five gallons of water is right for most insects. Dissolve about one-tenth of a pound of soap in the above mixture to assist it in spreading.

**Poison Mash**—Bran, 1 quart; Paris green, 1 teaspoonful; molasses, 1 tablespoonful; water as needed to moisten.

This mixture is especially effective against cutworms that attack tomatoes, cabbages and other young plants soon after they have appeared above the ground. Scatter the mash on the surface of the soil close to the plants. Take great care that children and animals are kept away from the garden after this has been spread about.



**"I PUT IT UP MYSELF!"**

If a man is handy with tools he can put up a fireproof Ready Made Building and make a neat job of it.

The way we ship these buildings out, with all frame members and every piece of corrugated iron cut to fit and marked where they should go, there is no chance of mistake. The corners, joints, eaves and ridge fit snugly.

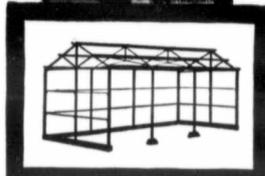
The metal windows, glazed with wired-glass, are built right in a corrugated sheet, and can be put in place the same as any other sheets. The big sliding doors are sent out mounted with all hardware and ready to hang.

There are doors for the whole front side of the building. These doors pass each other on the bird-proof track which is supplied.

No wood is exposed. Nor can rain, snow, or dust find an open joint in a Ready Made Building. A metal watershed over the doors and track protects them from the weather. The gable ends are protected by tight-fitting cornices. Special plates under eaves make that joint wind, dust, and weather proof.

**Eight Factories to Supply You.**

Ready Made Buildings are ready to ship. Tell us how large a building you want, what it is to be used for. We can send you one the very day your order is received from the nearest of our eight factories.



**Ready-Made Farm Buildings**

Patent applied for

Ready Made Buildings are just the kind you want for storage, carriage houses, implement sheds.

You can put them up quickly—and once built you have rigid buildings that will stand any wind pressure or roof strain without sagging. You have buildings that are fire-proof and lightning proof—buildings that will never cost a cent for paint or repairs.

Send for full information and free catalogue. Tear out the coupon and mail it to-day.

**The Metal Shingle & Siding Co., Limited**  
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Associated with A. B. Ormsby & Co., Ltd.

Consolidated factories at: PRESTON WINNIPEG TORONTO SASKATOON REGINA MONTREAL CALGARY EDMONTON

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**AGENTS WANTED**

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

E. H. HEATH CO. LTD., WINNIPEG

**WHAT IS A TRACTOR?**

*Continued from page 8*

tabulate the soil resistance, as it were. It would take some little time, but it might be done, and the pounds pull per plow under varying conditions determined. With this accomplished, tractors could be sold on draw bar pull, and horse-power which is an elusive thing and could be ignored.

One writer in discussing this matter states:—"Take, for instance, a heavy prairie loam under sod. When in its best condition for plowing, a 14-inch plow cutting 7 inches deep will require a draw bar pull of about 500 pounds. But this same soil in July when the ground is dry, it will require a draw bar pull of fully one thousand pounds to be plowed, while in some soils it may require as high as 1,200 pounds. Naturally it follows that men who own that kind of land are just the ones who need it and who buy tractors. If they buy a two or three plow machine, they expect it to handle two or three plows in any condition whatsoever."

It can thus be seen that it is almost impossible for the manufacturer to provide a factor of safety, and the matter of determining the draw bar pull of the various pieces of land seems to be about the only solution of the problem.

So much for plowing. Now let us see what the requirements are for field work. The heaviest field work in agriculture is threshing which requires anywhere from 15 to 70 horse power, depending upon the size of the thresher, the conditions of the ground, and how heavily the straw is fed into the machine. Only the 18 and 20 inch machines can be operated by the small tractors, and these are the sizes that naturally would be purchased for individual use.

But every farmer has a great many operations on the farm to perform where power is required. It is a lamentable fact that the farmers do not realize that the tractor can be put to more uses than plowing. Only a small percentage of our tractor owners to-day use their tractors for discing, seeding, harrowing, pulling manure spreaders, etc.

One of the tractor companies, namely, the J. I. Case Threshing Machine Co., gave a private demonstration with one of their 10-20 tractors pulling a Frost and Wood binder at the Brandon Plowing Demonstration, and a large number of farmers were surprised to note that both tractor and binder could be operated by one man.

The farmer must of necessity use his ingenuity and work out a great many of these farm problems for himself. Plowing must

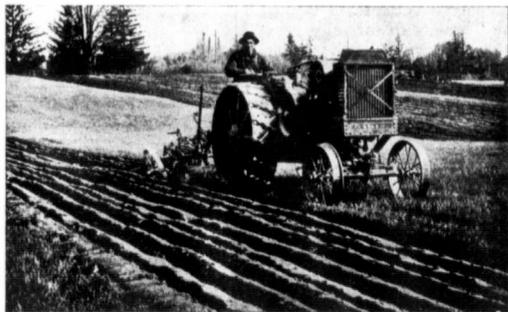
of necessity be his first thought in purchasing his tractor, but it should by no means be his last one. Here also are experimental farms and Agricultural Colleges lax in not demonstrating to the farmer how wide a use there is for the tractor. It is also a lamentable fact that we can find so little tractor information to-day in our colleges. It is true that the professors of agricultural engineering can discuss ignition and carburetion, but when it comes to making a practical application of the tractor to the farm there is a decided lack of knowledge with the result that the boys who attend these colleges return home with a very superficial knowledge of what the tractor will actually do. There is much need for a proper and at the same time more detailed education as regards the tractor.

Both the manufacturer and the farmer are eagerly searching for all the information that it is possible to get hold of, but little encouragement is rendered or little help offered by those from whom help should be expected.

The tractor manufacturer builds what he calls a three plow tractor. The farmer naturally presumes that it will pull three plows, and under most conditions it will, but the tractor runs up against a field that is unusually tough, and it won't pull three plows, and the farmer thinks he is being cheated. Nobody cares what the design of the tractor is or how many cylinders it has got, so long as it will deliver at the draw bar a stated number of pounds pull, so long as it will last sufficiently long to justify the farmer in making the necessary expenditure and that it will perform its work at a reasonable cost for fuel and upkeep.

These three things attained and we have partly answered the question: "What is a tractor?" The internal combustion tractor is an economic factor that the various provincial governments must reckon with. Ontario has taken a long step in the lead and Manitoba, Saskatchewan and Alberta would do well to follow. Each of the three prairie provinces could well afford to spend a quarter of a million dollars for purchasing such outfits for 1918, and loan them out to our farmers. This would mean approximately 100 outfits for each province, and it would seem that the matter of securing a hundred returned soldiers in each of the provinces to operate these would be an easy task.

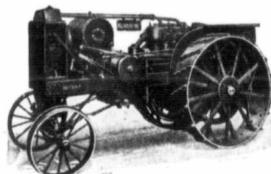
The Brandon Plowing Demonstration, all things being considered, was a success. It was held on a plot of land about a mile west of the fair grounds.



**Sawyer-Massey 10-20 Gas-Oil Tractor**

A Kerosene Tractor of Canadian manufacture for the small farm. Will pull two plows in breaking, three plows in stubble or four disc plows. A Standardized Tractor which the ordinary farmer can successfully operate himself, and manufactured and warranted by the largest and oldest Canadian Threshing Machine Company.

Four Cylinder Gas-Oil Motor, 4 1/4 inch Bore, 5 3/4 inch Stroke. The only moving exposed part of the motor is the fly wheel. The Traction Drive is to both rear wheels through strong wide-



faced gearing. Two speeds forward and two reverse of 2 1/4 and 3 1/2 miles per hour. This feature gives you a Tractor instantly convertible from a slow powerful puller for plowing and heavy duty work to a fast hauler for pulling binders, harrows, freighting on the road, etc.

Enclosed system tubular type spring mounted Radiator. K.W. High Tension Ignition (no batteries). Bennett Kerosene Carburetor. This Tractor successfully burns kerosene under all loads without smoke, and starts and handles as easily and runs as vibrationless as an automobile.

To couple up with this Tractor we manufacture what we call our No. 1 Separator, size 20 x 36. We also mount the 20 horse-power four cylinder gas-oil motor from this Tractor on our Combination Thresher along with this No. 1 Separator.

We manufacture larger size Tractors than this, all of the four cylinder type, also a complete range of Steam Engines, Road Machinery and Threshers. Talk with our Agent in your town or write for detailed information, stating the size of machinery you would like special information on.

**Sawyer-Massey Company, Limited**

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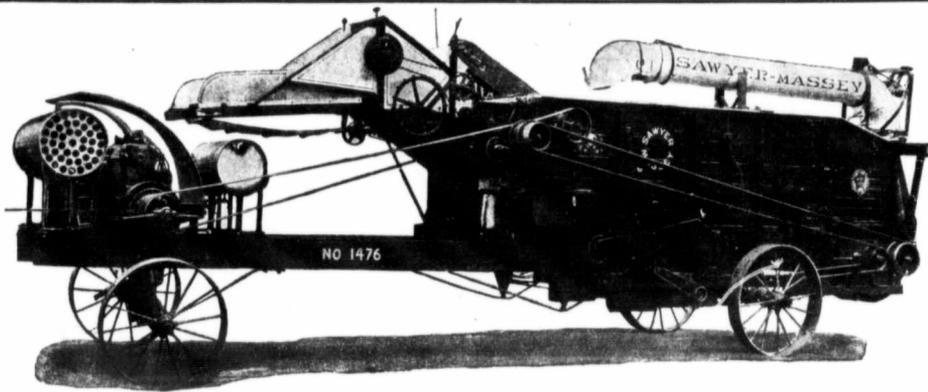
Kindly send me free information regarding your machinery which I have marked with an X below.

- ..... Rearmount Steam Engines.
- ..... Sidemount Steam Engines.
- ..... 10-20 Gas-Oil Tractors.
- ..... 16-32 Gas-Oil Tractors.
- ..... 27-50 Gas-Oil Tractors.
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# Sawyer-Massey Combination Thresher

NO MORE VIBRATION THAN AN AUTOMOBILE

### Four Cylinder, 20 Horse Power Gas-Oil Motor

This motor is identical with that used on our 10-20 Tractor: four cylinders, 4 1/4 Bore, 5 3/4 Stroke, High Tension Ignition, Bennett Kerosene Carburetor. The clutch used is similar to that used in our 10-20 Tractor, and is of the automobile type. This motor starts very easily and is exceptionally easy to look after. The only moving part of the motor which is exposed is the balance wheel, the valves, rods, etc., being entirely enclosed. This four cylinder motor gives you a 20 Horse Power Plant with very little weight. When running at full speed it is possible to balance a quarter on the Combination frame.

### Sawyer-Massey 20x36 No. 1 Separator

Complete with Self Feeder, Windstacker, 14 ft. Elevator and Automatic Grain Register, Drive Belt, Belt Tightener, all necessary belts and pulleys, and everything complete ready to go to work. Capacity 800 to 1000 bushels of wheat per day. The main deck in this Separator has a swinging motion, and as it swings forks raise up tossing the straw upwards, just the same as it would be done with a pitchfork by hand. The lower deck swings in directly opposite direction, balancing the machine up. The frame of the Separator is very strongly constructed, the same style as our large custom machines.

We also offer you this same 20 x 36 Separator mounted up on its own trucks, and the same four cylinder 20 Horse Power Motor mounted up in a 10-20 Tractor. We manufacture a complete range of Steam Engines, Gas-Oil Tractors, Road Machinery and Separators. Talk with our Local Agent in your town, or write for complete Catalogue with detailed information, stating the size of machinery you would like special information on.

## Sawyer-Massey Company, Limited

Head Office and Factory: HAMILTON, Ontario

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Winnipeg, Regina, Saskatoon, Calgary

## You'll Never Worry

No, Sir! You'll never have to worry any more about the shortage of labor for harvesting, when we ship your Stewart Sheaf Loader next week, which will be just in time for this year's harvest.

*You'll never enjoy harvesting more than you will this year with your*

## Stewart Sheaf Loader

Just to think of all the years you have been without one, and the money you have lost. But there will be one consolation, and that is this: you are getting your Loader in time to save your crop this year, and at a time when it would be impossible to be without one, due to the big shortage of help.

*There is not much time left*

## Stewart Sheaf Loader Co. Limited

WINNIPEG - MANITOBA

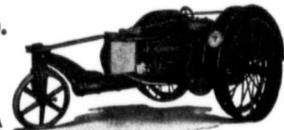
## Brandon Test Satisfies!

Not one of the twenty-one other tractors in the same class equalled the performance of this reliable little 3700-pounder in the demonstrations! Plenty of power on the belt or with three plows—and speedy. That's the

## HAPPY FARMER Model B 12-24 Kerosene TRACTOR

It burns kerosene at all loads perfectly—and without water. 35c an acre for fuel! Can you beat it? Get one of these, on easy terms, for your fall work. It's a wonder at cleaning up the jobs and saving time. Write us for the facts to-night—they're free.

**J. D. Adshead Co. Limited**  
225 Curry Building  
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**FOR SALE**—1 Geiser Separator, complete with belt and Ruth Feeder. Used only ten days, with portable 4-cylinder, 4-cycle Waukesha motor, K.T. tractor frame; complete, ready for operating, as used last year, \$1,100. H. B. Lyall, 875 Logan avenue, Winnipeg.

**FOR SALE**—10-20 Case tractor, high tension magneto, 3-furrow Deere plow, 6 shares, new this summer, plowed 100 acres guaranteed. W. H. Bullock, Box 2752 Reston, Man.

**COMPLETE THRESHING OUTFIT**, in good shape. Will be sold at a sacrifice. 26-horse Waterloo double cylinder steam engine, 28-44 Rumley Separator, Box 66, MacGregor, Man.

**32-50 SAWYER-MASSEY DAISY SEPARATOR**, with Ruth Feeder; in good working condition; belting complete, \$400.00 cash. Reason for selling, bought larger separator. Apply Bowey & Murray, Munson, Alberta.

# OUR WOMEN FOLK

CONDUCTED BY  
PEARL RICHMOND HAMILTON

## GOD OF THE OPEN

By Badger Clark  
God of the open, though I am so simple,  
Out in the wind I can travel with you,  
Noons when the hot mesal ripple and  
dimple,  
Nights when the stars glitter cool in the  
blue.  
Too far you stand for the reach of my  
hand,  
Yet I can hear your big heart as it beats  
Friendly and warm in the sun or the storm.  
Are you the same as the God of the  
streets?  
Yours is the sunny blue roof I ride under;  
Mountain and plain are the house you  
have made.  
Sometimes it roars with the wind and the  
thunder  
But in your house I am never afraid.  
He? Oh, they give him the license to live,  
Aim, in their ledgers, to pay him his due,  
Gather by herds to present him with  
words—  
Words! What are words when my  
heart talks with you?

God of the open, forgive an old ranger  
Mazed among walls where he cannot  
see through.  
Well do I know, though their God seems a  
stranger,  
Earth has no room for another like you.  
Shut out the roll of the wheels from my  
soul.  
Bring me a wind that is singing and  
sweet  
Into this place where the smoke dims  
your face.  
Help me see you in the God of the street!

## When I Grow Old

Ethel R. Peyser  
When I grow old, God grant that every  
child  
Will feel the youthful texture of my soul  
And will not turn away from me  
As from a shade or shrunken vine,  
When I grow old.  
When I grow old, God grant that I may  
have some task  
Which must be done or someone fare the  
worse—  
That in some corner of the earth  
Some one will need my hand,  
When I grow old.  
—Courtesy Harper's Magazine.

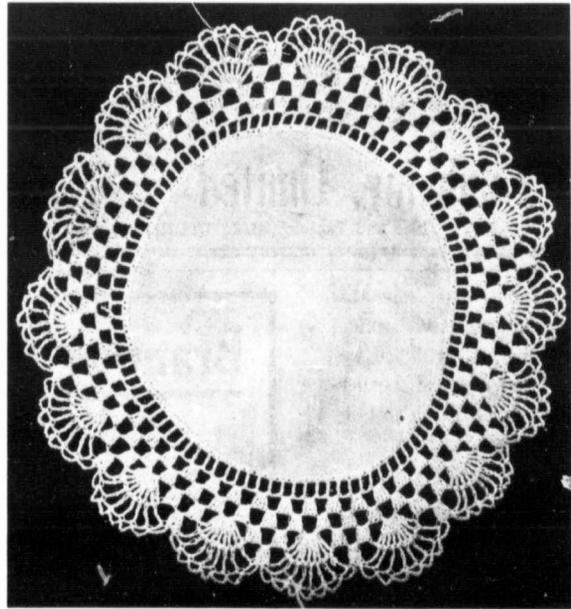
## Women's Dress

During the past two years there has been much discussion on the uniformity of dress among women. W. L. George in his book on *The Intelligence of Woman* has written a chapter on the subject. He says, "Women have grown a new insanity."  
"We have come to a point where, for a great number of women, the fashions have become the motive power of life, and where, for almost every woman, they have acquired great importance. Women classify each other according to their clothes; they have corrupted the drama into a show room; they have completely ruined the more expensive parts of the opera house; they have invaded the newspapers in myriad paragraphs, in fashion pages, and do not spare even the august columns of the most dignified papers. The cost of dress is making women lead humanity nearer to poverty, envy, discontent, frivolity, starvation—to general social degradation. Nothing can mitigate these evils," says Mr. George, "until woman is induced to view clothing as does the modern man, until she decides to wear a uniform."  
Fashions change at such a speed that women have not time to wear out their clothes.

Why, a certain sister would not go down town with me because my suit was made in the style worn two years ago! The goods of substantial cloth lasted longer than the style.  
"To-day women actually say: 'I won't buy that. I couldn't wear it out.' Fashion 'rings' decree every few months that the clothes of yesterday have become a social stigma."  
"Women are in the grasp of a new hysteria. Lacking the old occupations of brewing, baking, child-rearing, spinning, they are desperately looking for something to do," continues Mr. George.  
In past ages the clothing of women did not change often. Our grandmother's best dress lasted a lifetime.

I do not mean these men's wives, for any old rag does them—but their daughters! I quote the following from the chapter on uniforms for women:  
"Recently a coroner's inquest in Soho showed that a girl had practically starved herself to death to buy fine clothes, and it is not an isolated case. For the last eight years I have been investigating conditions among girls. I find that their main object in leaving home is to have money for smart clothes. They flood the labor market to buy fine clothes. They go further; while making the necessary inquiries for my novel, 'A Bed of Roses,' I scheduled the cases of about forty London prostitutes. In about twenty-five per cent of the cases the original

hypnotized by fashion plates, compelled to witness at the doors of fashionable churches, in the streets and elsewhere, develops an intolerable desire for finery. Until the rich woman realizes that her example is her responsibility it will be fair to say that her expensive gown has its consequence in a prostitute. The rich woman who dresses extravagantly does not escape its effect. It is obvious that her dress makes her mind unfit to think of art, the public interest or, even love. Woman does not desire to be beautifully dressed; she desires to be more beautifully dressed than her acquaintances. She wishes to humiliate her sisters, and as modern clothes are costly, she does not hesitate to give full play to human cruelty, to use all the resources of the rich husband to satisfy her pride and to apply her arrogant ingenuity to the torture of her sisters.  
Men do not care for the dangerous smart, but the modest. They fear the implication that smartly dressed women are unvirtuous and they certainly fear the dressmaker's bills.  
Swift changes in fashion are an insult offered by wealth to poverty, a degradation of women's qualities which carries its own penalty in the form of mental baseness.



A Beautiful Doily—described on page 61

Our fashion creators destroy yesterday. Then women wore their clothes out. To-day they put them aside after they are worn a few times.  
In the Bon Marche there are fifteen hundred dressmakers employed to create styles. Between six and seven thousand are employed to carry out their ideas—all within one establishment.  
It seems as if the past few years, there had to be an immodest part of the dress somewhere. Tight skirts, extremely low necks, or thin flimsy material that disobeys all the laws of decency. To-day it is short skirts—the skirts that show a good section of the silk hose above a high boot.  
The hose must be silk—even though every toe is out in the boot, even though the day is frosty and madam has to wear furs, even though the shop girl has to go without her dinner—her hose must be silk.  
"A large percentage of women spend a tenth of their husband's income on clothes. After the other actual living expenses are taken out there is little money left for books and educational advantages," states the author.  
In the lower classes the case is still

worse. I do not mean these men's wives, for any old rag does them—but their daughters! I quote the following from the chapter on uniforms for women:  
"Recently a coroner's inquest in Soho showed that a girl had practically starved herself to death to buy fine clothes, and it is not an isolated case. For the last eight years I have been investigating conditions among girls. I find that their main object in leaving home is to have money for smart clothes. They flood the labor market to buy fine clothes. They go further; while making the necessary inquiries for my novel, 'A Bed of Roses,' I scheduled the cases of about forty London prostitutes. In about twenty-five per cent of the cases the original

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Swift changes in fashion are an insult offered by wealth to poverty, a degradation of women's qualities which carries its own penalty in the form of mental baseness.  
These investigations by Mr. George apply generally, I believe, except among our sincerely patriotic women. I have noticed that our women who have loved ones in the trenches dress simply and modestly for their true patriotism will not allow them to be extravagant in dress, and these women are beautiful—for the spirit of a sympathetic life creates a charm in their personality that distinguishes them far more than the cut of the latest fashion plate.  
But the girls and other women who do make themselves slaves to fashion must have reform. I know girls—young girls—who exist for dress—who buy expensive boots to match every dress, who purchase three or four expensive hats in a three month's season, who must have four or five suits in a year—girls who work on a low salary. I have talked with women representing the sporting class, whose minds have been sadly warped in the chase for new clothes. Yes, and I have been asked by these same women to find them a dress skirt fit to appear in court—any old thing would do to cover up their rags. Their minds had become so depraved that in a few years—only two years in one case—they had lost all desire for even decent clothes.  
Oh,—it does not pay to sacrifice one's virtue for finery!  
Then the awful physical effect of fashion is appalling. For example the present stoop shouldered hump-backed position that fashion decrees. How can the lungs develop in the body so stupidly crippled? Why even our ten-year-old daughters copy the position!  
The day of universal calsonming seems to have dawned—cheeks and lips painted and the rest of the face whitened until not a patch on the whole countenance is natural. May the day hasten when women shall treat with reverence God's masterpiece—the body.  
In a late copy of *Physical Culture*, Elinore Robinson Crowell makes a striking appeal in her article—*The Cave Mother Speaks to the Modern City Woman*, she says:  
"Stand up to answer. What of the spirit of your womanhood?"  
"I was a savage. Yet I served my mate and through him served the tribe. I was his chattel—beaten at his will. You quote my awful fate with shudders now. Oh! shallow, sterile fool, I laugh. He beat me, but he shared with me. Our lives were one. I did not need the vote

you cry for. I was government. Because from out my body came the tribe and from me drew their food and learned their crafts—because I shared the hunt, and kept cave fires going night and day—and mothered men from suckling to the grave—because I did those things I needed not those hollow rites which you call 'courtesies to your sex.' Such forms are mockeries unless they spring from the deep soil of mutual service and esteem.

"Knowing I lacked such tribute you have called me 'slave'—and speak with pride of 'womanhood set free.' You are the slave. For, you depend upon man's whims (or scarce more staple habits) for regard, for even sustenance. But I was bound up with man's deep necessity—my place was fixed within the vital scheme of things. You talk of 'rights'—and fight for them. My 'rights' were as the rights of seas or hills immutable, unquestioned.

"And that transcendent task that only you could do—the mothering of all the sons of earth—how have you kept that faith? That was the greatest thing in all the world, so simple yet so terrible. All your charms of face and mind were meant to be but means to that great end—the serving flowers of vital roots that stretch beyond our ken, through all Life's mysteries, unto the heart of God.

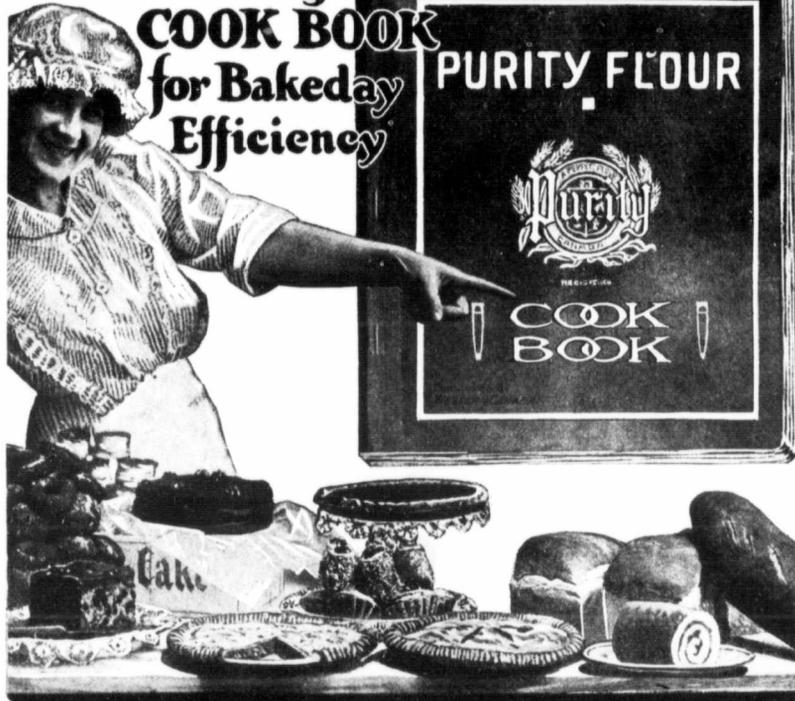
"But how have you kept faith? You did not like the storm, the pelting hail, nor that far colder thing, the bleak indifference of men at work. So you found softer ways to warm-fed ease. You sought the sheltered place, you squirmed away from galling, sweaty loads. For some few years of girlish pleasures, youthful lines, unwrinkled skin, freedom from gray responsibility, you gave your splendid heritage of breeding strength and wifely comradeship. Your mystic intuitions given you for keen edged tools, as coarser brawn and brain were given men, you use to serve your trivial selfish ends—to win you monkey-hopping dances, dinners, gowns—as one would train grim leopards to catch fleas.

"You stand before me, you and all your sisterhood, some wearing painted stoules, some stuffed with knowledge as a bag is stuffed with straw. Ladies of leisure—women of the streets—it's hard to tell the two apart—the hands of both are empty—actresses, lawyers, brokers, architects, what can you give to silence that sad cry that rises like a plague from off the world—that wailing, yearning for long-lost content—for rooted Peace—for old, old-fashioned love?

"With all your hellish knowledge of a man's weaker side—with all your fabled beauty for his lure—with all your bookish delving into dry, learned husks—what can you give of sympathy and joy? What can you give to fit men freshly for the fight when they come stumbling home, greed-soiled, hope spent, or crazed with fear?

"What care I that you have the vote, smoke cigarettes, keep separate bank accounts, serve on a congress, carve up the dead, or ride a horse astride. If you have ceased to bear with joy and pride, if you have lost the vital mother touch—then all your beauty and your knowledge are

# Get this Big COOK BOOK for Bakeday Efficiency



**Western Canada Flour Mills Co. Limited**  
WINNIPEG

This handsomely bound 180-page Cook Book will be a most useful guide to you in attaining greater efficiency. It contains a collection of recipes and valuable information on the preparation of wholesome and necessary foods. Refer to it next bake day. You'll appreciate its timely suggestions. Mail the coupon to-day.

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47



**RETIRED BEATEN**

Private (sadly)—"Excuse me, sir, could I have a couple of hours off—to go and see my dying father?"  
Officer (sternly)—"Dying father? Why I left him not ten minutes ago!"  
Private (hastily)—"Ten minutes ago? Sir, You take the bun—he's been dead seven years."  
"Sydney Bulletin."

but waste—your body is worthless as a dry-gnawed bone—you are as those diseased—unclean!—unclean!"

Uniformity of dress would solve this vital problem. Already a neat housewife's dress has been adopted in some places. These uniforms—three or four could be adopted for women—need not be ugly.

Doubtless the reader will say that her individuality is expressed in her dress. Indeed fashion indicates that the one thing woman avoids is expressing her individuality.

It cannot be much of an individuality that depends upon a frock. One can be distinctive in uniform, as anybody will realize who compares a smart soldier with an untidy one. The individuality of men who wear uniform manages to attract. Fashions smother individuality. A woman's personality can dominate her uniform. That will be a true race and a finer one than the game of sex-temptation which many fashionable women play.

If uniformity of dress is adopted

women will wear it—you say they will not. Not follow a fashion? This has never happened before.

If woman is to be diverted from the path that leads straight toward a greater degradation of her faculties; if household budgets are to be relieved so as to leave money for inspiring pleasure and for culture; if true beauty is to take the place of tinsel, feathers, frills, ruffles and paint; if middle-class women are to cease to live in bitterness because they cannot keep up with the rich; if the daughters of the poor are no longer to be stimulated and corrupted by example into poverty and prostitution, it will be necessary for the few who lead the many to realize that simplicity, modesty, moderation, and grace are the only things which will enable women to gain for themselves, and for men, peace and satisfaction out of a civilization every day more hectic."

The picture of the sweet Highland girl comes in a vision before me. "Sweet Highland girl, a very shower Of beauty is thy earthly dower!"

A face with gladness overspread! Sweet looks, by human kindness bred! And seemliness complete, that sways Thy courtesies, about thee plays, With no restraint, but such as springs From quick and eager visitings Of thoughts, that lie beyond the reach Of thy few words of English speech. What hand but would a garland cull For thee, who art so beautiful?"

In these times of National chastening, it is a source of real satisfaction to me to know that "The First Lady in England"—her most gracious Majesty—Queen Mary—sets us all an example in the matter of dress. The most consistent patron of the democratic arts, she has given expression to the most severe strictures on some of the fashion crazes now in vogue. Always making good in her own personal adornment her words of common sense, may her example soon be lived out, by every woman in the British Empire.—P.R.H.

## Mother's Corner

### A Mother's Love

A Mother's Love—how sweet the name!  
What is a Mother's love?  
—A noble, pure, and tender flame,  
Enkindled from above,  
To bless a heart of earthly mould;  
The warmest love that can grow cold;  
This is a Mother's Love.

To bring a helpless babe to light,  
Then, while it lies forlorn,  
To gaze upon that dearest sight,  
And feel herself new-born,  
In its existence lose her own,  
And live and breathe in it alone;  
This is a Mother's Love.

Its weakness in her arms to bear;  
To cherish on her breast,  
Feed it from Love's own fountain there,  
And lull it there to rest;  
Then, while it slumbers, watch its breath,  
As if to guard from instant death;  
This is a Mother's Love.

To mark its growth from day to day,  
Its opening charms admire,  
Catch from its eye the earliest ray  
Of intellectual fire;  
To smile and listen while it talks,  
And lend a finger when it walks;  
This is a Mother's Love.

And can a Mother's Love grow cold?  
Can she forget her boy?  
His pleading innocence behold,  
Nor weep for grief—for joy?  
A Mother may forget her child,  
While wolves devour it on the wild;  
Is this a Mother's Love?

Ten thousand voices answer "No!"  
Ye clasp your babes and kiss;  
Your bosoms yearn, your eyes o'erflow;  
Yet, ah! remember this,—  
The infant, rear'd alone for earth,  
May live, may die,—to curse his birth;  
—Is this a Mother's Love?

A parent's heart may prove a snare;  
The child she loves so well,  
Her hand may lead, with gentle care,  
Down the smooth road to hell;  
Nourish its frame,—destroy its mind:  
Thus do the blind mislead the blind,  
Even with a Mother's Love.

Blest infant! whom his mother taught  
Early to seek the Lord,  
And pour'd upon his dawning thought  
The day-spring of the word;  
This was the lesson to her son  
—Time is Eternity begun:  
Behold that Mother's Love.

Blest Mother! who, in wisdom's path  
By her own parent trod,  
Thus taught her son to flee the wrath,  
And know the fear of God:  
Ah, youth! like him enjoy your prime;  
Begin Eternity in time,  
Taught by that Mother's Love.

That Mother's Love!—how sweet the name!  
What was that Mother's Love?  
—The noblest, purest, tenderest flame,  
That kindles from above,  
Within a heart of earthly mould,  
As much of heaven as heart can hold,  
Nor through eternity grows cold:  
This was that Mother's Love.

### For the Tired

Shallow people often get in deep  
trouble.  
You can't walk straight in a crooked  
path.

The folks who talk most usually think  
least.  
Good nature is a habit. It is the  
beauty of the mind.

Women are great only as they are kind.  
Boasting of ancestors does not help  
posterity.

A lot of divorces come out of the frying  
pan.  
Love is life's soft pedal.  
Little minds sometimes dwell in large  
bodies.

The folks who chase pleasure often  
bump into trouble.

Not what you say but what you do tells  
the story of your life.

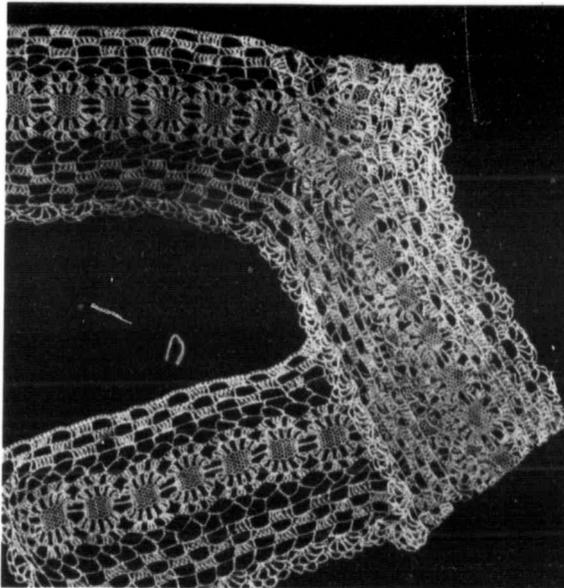
Happiness is not so much getting  
things from others as doing things for  
them.

## Home Economics

### How to Put Vim Into a Monthly Meeting

Paper read at Portage la Prairie Con-  
vention by Mrs. E. H. Muir, High Bluff.

To put vim into our monthly meet-  
ings to me simply means that we must  
be full of vim ourselves, as we cannot



Right half of Yoke—We will gladly supply working details free to any subscriber writing for same

impart to others what we do not possess  
ourselves.

This word vim is a very small word—  
only three letters, but a very compre-  
hensive one implying, I think, a combina-  
tion of energy, force, tact, interest, snap  
or life.

To put vim into our meetings, we  
need to have our officers in the society  
full of vim. As our president is chosen  
by ballot, we have the opportunity of  
selecting one from a number, and such  
choice should be carefully made. See to  
it that the president chosen has, to use  
an old Scotch maxim, "the root of the  
matter in her." That she attends well  
to the ways of her own household, but  
has a heart large enough to embrace  
the whole neighborhood and community.  
That she is alive to a sense of her

responsibilities, and tries to make her  
life count for time and for eternity,  
endeavoring to improve conditions for  
the coming generations.

She needs to have a carefully prepared  
programme. Open and close meetings  
promptly on time; give suitable time for  
short discussions on important business,  
and full of tact in bringing such discus-  
sions to a harmonious ending. Much  
rests with the president, but by no  
means all. The members who elected  
her should stand by her during her term

receives the second highest ballot, as the  
training she receives in taking a meet-  
ing occasionally, in the absence of the  
president, helps prepare her for this  
office. The duties of the vice-presi-  
dent doesn't necessarily end in taking an oc-  
casional meeting; she can assist the presi-  
dent in very many ways, and should be  
willing to cheerfully perform any duties  
assigned to her.

The secretary needs to be full of vim,  
and keep a correct diary of each meet-  
ing; read her minutes so they will give  
pleasure to the hearers, and always be  
in her place and on time. If circum-  
stances should arise to prevent her being  
present at any meeting, she should  
appoint a good substitute.

The treasurer has a very important  
office, and a treasurer full of vim will  
be always pleased and give every encour-  
agement to whatever tends to the up-  
building of the treasury.

Now when the president and other  
officers and members are all full of vim  
and zealous for the success of each meet-  
ing, the problem of a successful meeting  
full of vim is fully solved.

A few helpful hints that would, I  
think, add vim to the meetings, would  
be:

To have a carefully prepared pro-  
gramme for the year, broad enough to  
reach out to the majority of homes, so  
that interest may be aroused in each  
home.

Have solos, choruses or recitations by  
the children, as children always want the  
parents present, and the parents natu-  
rally want to come.

A ten cent tea served at the close of  
each meeting by two or three members,  
members taking turns in catering, adds  
to the social life of a meeting.

An interesting debate by the members  
on some live topic, bearing perhaps on  
laws for women and children, would,  
without doubt, add vim to any meeting.  
Demonstration papers on bread, cake,  
butter-making, ice cream and jelly mak-  
ing, desserts, hot and cold menus, prepara-  
tion of different cuts of meats, fol-  
lowed by a discussion, will put plenty of  
vim into a meeting.

Now, no doubt, you will gain more  
from the discussion that is to follow on  
this topic, than from anything more I  
could say along those lines, but in con-  
clusion, I would like to urge this upon  
all the members present.

Go to Home Economics meeting and  
every meeting, after placing yourself  
and meeting in God's hands, as all our  
meetings, whether secular or sacred, and  
all our plans for the bettering of sur-  
rounding conditions, have their origin in  
Him; and when we see our dear boys  
completely annihilating all thoughts of  
self, placing themselves between us and  
a merciless, implacable foe that our con-  
ditions may not be that of our poor un-  
fortunate Belgium sisters and others,  
it behooves us to be up and doing; crush-  
ing down our selfishness; full of vim;  
living to bring about better conditions  
in our homes, communities and every-  
where. Fighting our battle for right  
and righteousness, that our societies may  
be better. The aims of community life  
higher and nobler. Full of vim that the  
rising generations may have cause to  
respect, esteem and bless our memories:

Oh, watch and fight and pray  
The battle ne'er give o'er;  
Renew it boldly every day  
And help Divine implore—  
Ne'er think the victory won,  
And lay thine armor down,  
Thine arduous task will not be done  
Till thou obtain thy crown.

### Boston Brown Bread

Mix and sift one cupful rye meal, one  
cupful cornmeal, one cupful Graham  
flour, three-fourths of a tablespoonful  
soda and one teaspoonful of salt. Add  
three-fourths of a cupful of molasses  
and two cupfuls sour milk or one and  
three-fourths cupfuls sweet milk or water.  
Turn into a well-buttered mold (not  
having mold more than two-thirds full),  
adjust cover and tie down with a string,  
otherwise the bread in rising might force  
off the cover. Place mold on a trivet in  
kettle containing boiling water, allowing  
water to come half way up around mold.  
Cover closely and steam three and one-  
half hours, adding more water as needed  
and never allowing the water to reach a  
lower temperature than the boiling point.



Officer's Batman (awakening young Subaltern who has just returned from his  
honeymoon in Blighty): "—and it's gone seven."

Officer: (drowsily) —"A'right, darling—shan't be a minute."

# EATON'S CATALOGUE

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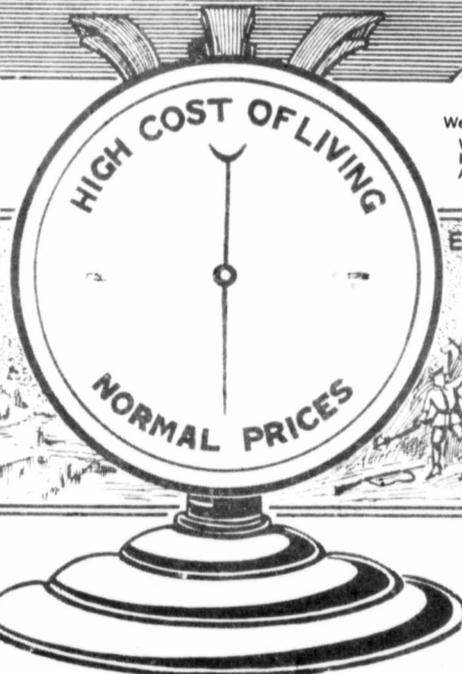
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**THE T. EATON CO LIMITED**  
WINNIPEG CANADA

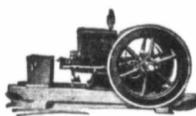
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120 x 7 x 4	41.00	120 x 7 x 4	52.00	3-in. " "	13c
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### DOILEY

Working Details of Doily Shown on Page 60

This is a useful and easily made doily. It can be made in various sizes and used for plate, centrepiece, etc., according to diameter of damask, linen, etc., chosen. The materials required to make the 8-in. illustrated doily are:

- 1 crochet hook No. 4.
- 1 ball No. 40 crochet cotton (mercerized).

1 centre of linen 4½-in. in diameter. To easily cut the linen centre a good circle, use a 4½ in. bowl or saucer, and mark its edge with lead pencil upon the linen. Cut outside the pencil mark and remove thread from sewing machine needle and run ¼ in. inside of the pencil line with the machine needle to perforate evenly a line for the first row of crochet stitches. Single crochet into this line of perforations to form the first row. When finished, it resembles buttonholing, and makes a good and neat finish for the linen.

First Row—Chain 5 and make one treble into third stitch from hook. Chain 2, and make one treble into every third stitch around the doily. There should be 98 meshes around the doily when this row is finished.

Second Row—Chain 5, skip one mesh and make four treble into next mesh. Chain 2, and skip one mesh, and

make 4 trebles into the next. Repeat to form this row.

Third Row—Same as second row.

Fourth Row—Chain 5—Throw thread over needle twice, to make double treble into the first mesh. Chain one, make double treble, and repeat until you have nine double trebles in the same mesh. Make four single trebles into next mesh, chain three, and make four trebles into next mesh. Repeat to finish this row.

Fifth Row—Chain 6, make one double treble between each previously made double treble allowing chain of two between each to complete the fan-like edge. This allows eight double trebles to form the wide part of the fan. Make 4 single trebles into next mesh and continue to complete row.

Chain 6 and make slip stitch into each of the double trebles to form the edge.

### HOW TO USE SKIMMILK

There are many places in which skimmilk is not used as completely as it might be. On farms there is often more than can be profitably fed to calves or pigs. In creameries much of it is made into cottage cheese, but even then the whey, which is really rich in good materials, goes to waste.

Many people do not realize how nutritious skimmilk is. They imagine that because it so generally has little or no commercial value it is hardly fit for

## Handle Your Grain The Easy Way

Unload your grain with a Cyclone Portable Elevator and eliminate the handling with the grain scoop. You can save from twenty to thirty minutes to the load. This

### Cyclone Portable Grain Elevator

has a greater capacity than any other, and is more strongly built. It will easily handle from 1200 to 2200 bushels per hour, and can be operated by an engine of from 2½ to 6 h.p.

Elevates a load in four to five minutes in cars, tanks and granaries. Readily transported, one man and a team being sufficient to handle this outfit, it is built for years of service, being made almost entirely of steel.

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

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human food. Nevertheless, skim milk can be used to great advantage in combination with other food materials, especially in cooking, and is altogether too valuable to be wasted, according to home economics specialists of the United States Department of Agriculture.

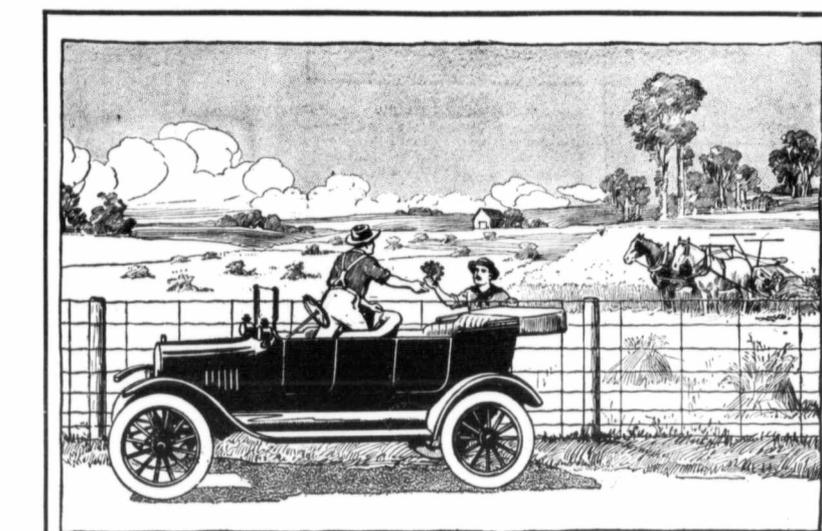
A quart of whole milk weighs  $34\frac{1}{8}$  ounces, or a little more than two pounds, nearly 30 ounces of which is water. The remaining solid matter contains very useful food materials. Slightly more than one ounce is protein, a very important muscle builder, and one of the most expensive of the substances needed by the body. About one and one-third ounces consist of butterfat, and one and two-thirds ounces of milk sugar. These two materials are used by the body to provide it with energy, much the same as fuel is used to produce steam and power in the engine. The quart of milk also contains about one-quarter of an ounce of mineral matter, small quantities of which are very necessary for the growth and general upkeep of the body.

As the fat is separated to form the cream some of the protein, milk sugar, and mineral matter go with it, but by no means all. The protein remains; therefore, a quart of separator-skimmed milk provides slightly more of this indispensable and costly material than does a quart of whole milk. It contains in all about one and one-fifth ounces of protein, one and one-quarter ounces of milk sugar, about one-quarter of an ounce of mineral matter, and a little fat, the last named depending, of course, upon the completeness of the separation. This means that, quart for quart, it would furnish the body with slightly more protein and milk sugar than whole milk does, and practically the same quantity of mineral matter, though far less fat. In other words, as a tissue builder it is equal to whole milk, and as an energy-yielder not nearly so good. Since, as a rule, the tissue-building materials are contained in the more expensive foods (meats, eggs, etc.), and the energy-yielding materials can be largely provided by cheaper foods (bread and other cereal foods, fats, potatoes, etc.), it seems doubly wasteful not to use skim milk.

Those who buy milk seldom have much skim milk to use unless they follow the custom of skimming their own cream. That there is economy in so doing is shown by the following: A quart of whole milk usually sells for the same price as a half pint of cream, which contains about one-fifth ounce of protein, one and one-half ounces of fat, not quite one-third ounce of milk sugar, and a very little mineral substance. If this is compared with a quart of whole milk, which very commonly can be purchased for the same sum, it will be seen that the purchaser in buying a half pint of cream instead of a quart of milk sacrifices nearly an ounce of protein, one and one-third ounces of sugar, and one-fifth ounce of mineral matter. He gets, of course, a trifle more fat—about one-fifth ounce, or a level teaspoonful—but this is small in comparison with what is sacrificed. Some people, therefore, buy whole milk instead of cream in order to have for family use the nourishment contained in the milk after it has been skimmed. Home-skimmed milk is, of course, richer in fat than that which has been skimmed by a separator, but it can be used in the same way.

The uses of skim milk are many and in cooking it adds to quality as well as to food value. If used in place of water in bread it adds about as much protein to one pound of bread as there is in an egg. Skim milk used in place of the usual half milk and half water of course, increases the quantity of protein in a loaf by the amount that is contained in half an egg. The saving involved in the use of skim milk in bread, however, is small compared with that involved in its use in the preparation of cereals, for, while in bread the milk is only about one-third of the flour, in the preparation of cereals the volume of milk is usually three or four times that of the cereal. To cook a cupful of cereal in three cupfuls of skim milk instead of three of water adds as much protein as that contained in three eggs.

There are many dishes which may be described as vegetable milk soups, usually made by combining milk and the juice and pulp of vegetables. This mixture is then thickened with flour



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In the harvest time every hour between daylight and dark is worth money to the busy farmer.

You get an early start in the morning intending to do a big day's work, but the

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## Count up the extra half days that a Ford will save you

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42

and starch and enriched with butter or other fat. If a fire is kept all the time and the cost of fuel need not be taken into consideration, the following method is recommended as a means of utilizing skim milk: Chop the raw vegetable or cut it into small pieces. Put it with the skim milk into a double boiler and cook until the vegetable is tender. The mixture can then be thickened and enriched as described above. By this method no part of the vegetable is thrown away and the liquid of the soup, instead of being part milk and part water, is all milk. A soup so made, therefore, usually has about twice as much protein as that made in the other way, and has the additional advantage of a particularly good combination of mineral substances, for milk is rich in calcium and phosphorus, and the vegetables are rich in iron.

If in making these soups the vegetable is chopped finely in the meat grinder, they need not be strained before being served. If the vegetable is not so chopped the soup may be put through an ordinary strainer, or such vegetables as carrots or potatoes may be cut into slices and left in the liquid, in which case the dish resembles a vegetable chowder. These soups may be thickened with stale bread.

### Soup Recipe

One quart of spinach (4 ounces); one thin slice of onion; two slices of stale bread (2 ounces); one quart of skim milk.

Put the spinach and onion through the meat chopper, following them by the bread, in order that there may be no waste. Put into a double boiler with the milk and cook until the spinach is tender.

There is a class of extremely valuable dishes which are sometimes called "cereal milk puddings," usually made by cooking equal volumes of a cereal (usually rice) and sugar in twelve times the volume of milk—for example, one-fourth cupful of rice, one-fourth cupful of sugar, and three cupfuls of milk. When a fire is kept constantly and the cost of fuel need not be considered, such a dish may be made with skim milk, and very much more than three cupfuls of the milk used. As the water evaporates, the dish becomes richer and richer in protein.

This cereal milk puddings, made by slowly cooking down until thick 10 or 12 parts of skim milk and one of rice, oatmeal or similar cereal, may be used in place of cream with stewed fresh fruits or cooked dried fruits or baked apples.—U. S. Dairy Division.

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CALGARY CANADA

**Recipes**

**Raisin Bread**

1 cupful of lukewarm water, 1 cupful of milk, scalded and cooled, 1 tablespoonful of sugar, 1 yeast cake, 6 cupfuls of sifted flour, 2 tablespoonfuls of shortening, ¾ cupful of sugar, 1½ cupfuls of seeded raisins, 1 teaspoonful of salt, 1 egg. Dissolve the yeast and one tablespoonful of sugar in the lukewarm milk and water; add two cupfuls of flour, the shortening and the sugar well-creamed together; beat until smooth. Cover and set to rise in a warm place for about one hour and a half or until light. When well raised add well-floured raisins, the rest of the flour, or enough to make a moderately soft dough, and salt. Knead lightly. Place in a well-greased bowl, cover, and let rise again about one hour and a half or until double in bulk. Mold into loaves, half fill well-greased pans, cover, and let rise about one hour or until light. Glaze with egg diluted with water; bake forty-five minutes.

**Old-fashioned Bread Pudding**

2 cupfuls of diced stale bread, 2 cupfuls of milk, 2 eggs, ½ cupful of brown sugar, 1 tablespoonful of butter, 2 tablespoonfuls of raisins, ¼ teaspoonful of salt. Beat the eggs until light; add the milk and the salt. Brush a round earthenware dish with a little butter; put in the diced stale bread; then cover with the egg and the milk. Add the raisins and mix so that they are covered with the bread, for if left on top they will easily burn. Cover the top with the brown sugar, and place in a moderate oven. Bake slowly for forty minutes. This pudding is rather stiff and should be served with fruit or jelly sauce. Two tablespoonfuls of tart jelly dissolved in one cupful of hot water, brought to a boil and thickened with two teaspoonfuls of cornstarch, makes a very nice sauce.

**Salmon Chops**

1 tablespoonful butter, 2 tablespoonfuls flour, 1 cupful milk, 1 teaspoonful salt, ¼ teaspoonful pepper, 1 cupful dried white or entire-wheat bread-crumbs, 1 can salmon. Make a white sauce thus: Melt the butter, add the flour and seasoning, and blend well. Add milk slowly, stirring constantly. Cook until mixture thickens. Add to this the bread-crumbs and salmon, which has been drained and washed after removing skin and bones. Shape like chops, roll in flour. Put a stick of macaroni in the end to simulate the chop-bone. Fry in deep hot fat. Serve with peas and small potatoes.

**"Pigs in the Blanket"**

1½ pounds round steak cut thin, bacon, onions, salt and pepper. Cut the steak into twelve pieces. Pound them to make larger and to facilitate rolling. Lay a small piece of bacon and a thin slice of onion on each piece of steak; dust with salt and pepper and roll, fastening together with toothpicks. Roll each piece in flour and sear in a hot frying pan in beef-drippings or lard; then add water to cover the bottom of the pan; cover closely and simmer for an hour and a half, adding more water to keep the quantity the same. Remove the meat, pull out toothpicks, and make a brown gravy of the drippings.



Motorist—"Won't you allow me to replace your dog?"  
Maiden Lady (shyly)—"Oh sir, this is so sudden."



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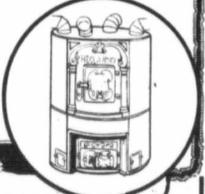
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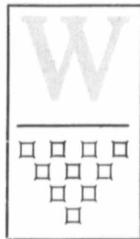
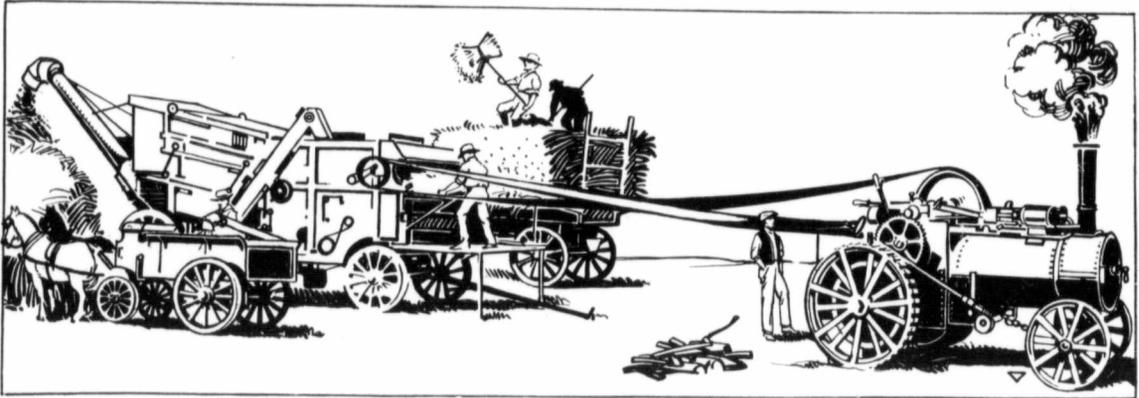
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