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THE CANADIAN THRESHERMAN & FARMER

CANADA'S FARM MACHINERY MAGAZINE

WINNIPEG

CANADA

JANUARY, 1913



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E.H. Heath COMPANY Publishers
"OUR ELEVENTH YEAR"

JOHN DEERE IMPLEMENTS

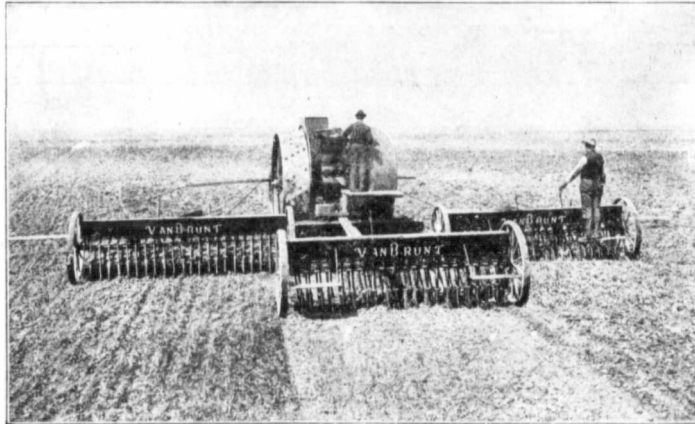
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THE LIGHT DRAFT VAN BRUNT DRILL

will help you to increase your yield per acre. Every grain is covered. The seed is deposited near the centre of the disc at the point where the furrow is wide open—not outside the disc circle, after the furrow is closed, as is found on other drills. The seed is not touched or distributed by the upward turn of the discs, but is planted at a uniform depth.

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THE LIGHT DRAFT VAN BRUNT DRILL

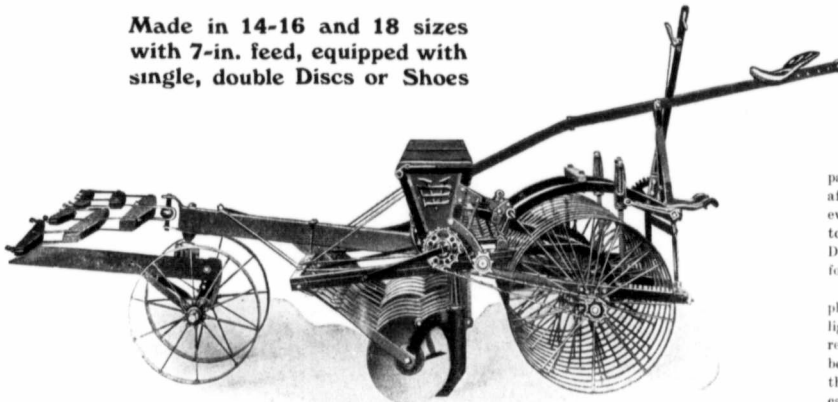
has an adjustable force feed device, which compels accurate seeding. Every feed deposits the same quantity in a continuous, even stream. It does not deposit a bunch of seed in one place and then skip a certain distance. Equipped with gear drive makes it positive and accurate, and it can be regulated without changing gears to sow any quantity from a few pounds per acre to the required number of bushels per acre. This is an exclusive Van Brunt feature; you will not find it on any other drill.

MORE BUSHELS TO THE ACRE

If you seed with a Van Brunt Drill that will effectively seed any soil that can be seeded. Made in sizes 12, 14, 16, 18, 20, 22 and 24. We replace free all disc bearings that wear out.

THE VAN BRUNT PRESS DRILL

Made in 14-16 and 18 sizes with 7-in. feed, equipped with single, double Discs or Shoes



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The purpose of this machine is to pack the soil firmly around the seed, after it has been deposited at an even depth. Where this is required to be done, the Van Brunt Low Down Press Drill is the ideal drill for this purpose.

The equipment of this drill is complete for wear and service. It is light draft and well balanced, with reliable force feed, dust proof disc bearings, automatic device throws the drill in and out of gear. Seat can be adjusted to suit operator.

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John Deere dealers give both

John Deere Plow Company, Limited

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JOHN DEERE IMPLEMENTS

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Deere



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Plows

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Write for Booklet Giving Full Information. We have a beautifully illustrated booklet telling all about engine plows. We cannot tell you all about the many superior features of John Deere Engine Plows in a small ad. It takes a large book to do so. Just write us. We will be glad to send you this book free. It contains a lot of valuable information. A post card will bring it.

Made in 4, 6, 8, 10, 12 and 14 Bottoms in any Style to suit conditions

THE FLEURY PULVERIZER

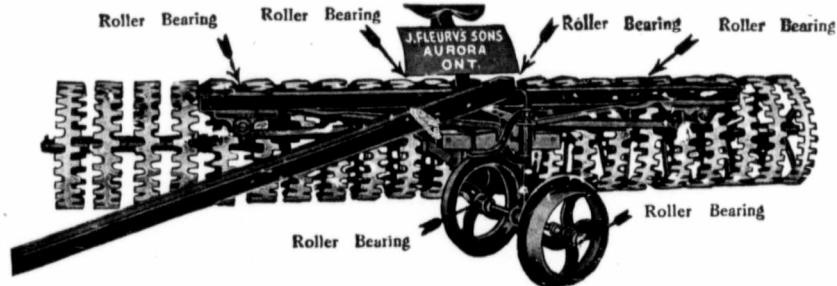
An entirely new implement with new ROLLER-BEARING TONGUE TRUCK that relieves the horses of the jolting and killing drag of the ordinary pulverizer. The racking jolt from uneven ground through the old rigid poles, falls directly on the horses' necks. With the FLEURY it is entirely borne by the FREE OSCILLATING TONGUE TRUCK which accommodates itself to the slightest deviation of the implement.

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Take the place of the obsolete "friction" equipment of the two main axles and the Two Draft Iron Bearings. These are absolutely dust-proof by close-fitting washers secured to both ends of bearing case.

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The castings in which the roller bearings revolve are accurately BORED, not cored, so that the bearings fit perfectly. In other makes the shafting "takes its chance" in the core of the casting which can never be uniform.



The Fleury Pulverizer and Packer with New Roller-Bearing Tongue Truck
In sizes, 16, 22 and 24 sections, with or without Tongue Truck. Any size can be supplied with Sub-Soil Wheels

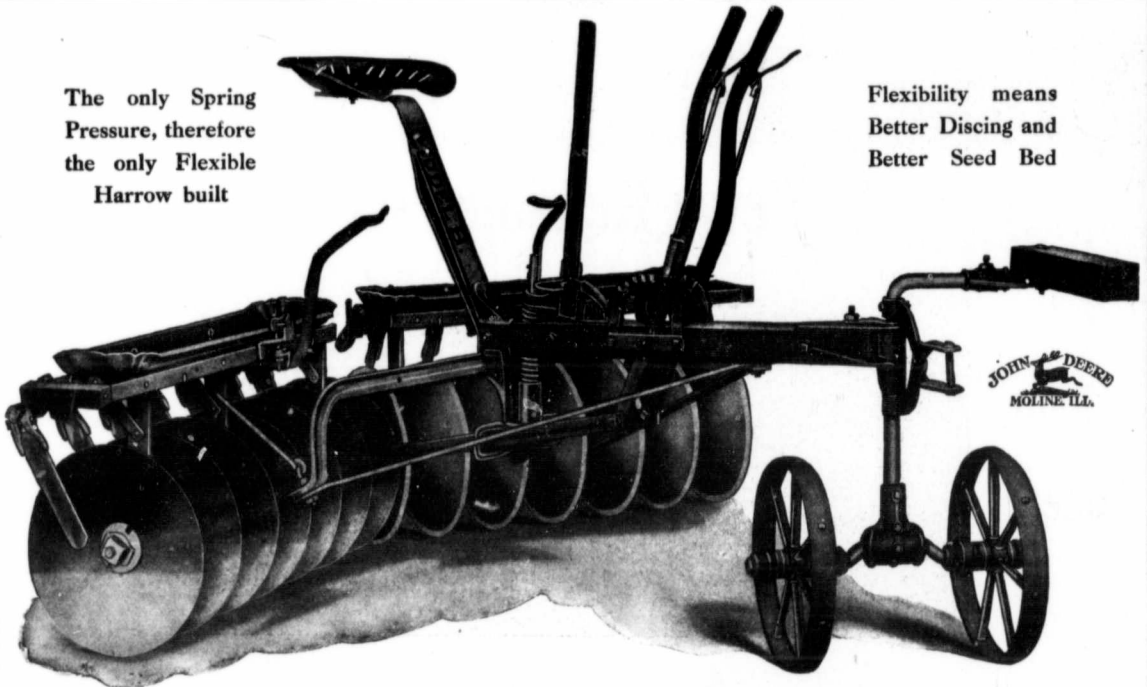
We use only the FINEST REELED SHAFTING in providing for the bearings of the FLEURY PULVERIZER. It is clean and true throughout its whole length as distinguished from the common and irregular cast-shafting of competitive machines. The effect of this at such a vital point of a pulverizer must be felt to be fully appreciated. The saving on draft is very great—not to speak of wear and tear on the machine. It means more work and better work with half the wear and sweat. It means durability in place of weight and wear.

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The only Spring
Pressure, therefore
the only Flexible
Harrow built

Flexibility means
Better Discing and
Better Seed Bed



Discing Before Plowing

Something New in Farm Practice

NOTWITHSTANDING the fact that the disc harrow trade has been growing rapidly, the disc harrow is not being put to as many uses as it should be.

Careful study of the following will show that there are enough profitable ways to use this implement, which are not now being practiced, to double the disc harrow trade.

Many practical experiments, and a good deal of scientific study, just recently, has proven the advisability, and in fact, the absolute necessity, from an economic standpoint, of properly preparing the soil before plowing.

Nature stores moisture, in the subsoil, which is brought up to feed the plants by capillary attraction. Capillarity is only perfect when the soil is well pulverized and compact—that is, the land must be free from lumps and pulverized so that there will be no large air spaces to retard

the process of bringing the moisture from the subsoil to the seed bed proper.

Stubble, heavy layers of manure, corn stalks or rubbish turned under by the plow, is a hindrance and the capillary water stops at the break made at the bottom of the furrow, consequently the plants suffer because they must depend entirely on the water in the seed bed proper—they cannot get the moisture from the lower subsoil.

This condition is obviated by discing before plowing. The disc not only pulverizes the ground, thereby making a compact contact between the furrow slice and the bottom of the furrow, but all vegetation, manure and trash that was on the surface, is cut up and thoroughly worked into the seed bed.

During seasons of scant rainfall, discing immediately after cutting the grain forms a dust or fine mulch on the top of the land.

It will then absorb water, as well as prevent the escaping of what moisture there is already in the soil.

After grain is cut, the ground is exposed to the direct rays of the sun. This dries the surface, draws out what moisture there may be in the subsoil and leaves the ground hard and dry.

Discing puts the ground in condition for the rapid absorption when rain falls, or the snow melts, thereby preventing washing of the soil.

An intelligent and systematic use of the disc harrow, year after year will greatly increase crop yields. This statement has been verified time after time by the most careful experiments.

There are great possibilities in the disc harrow trade; your advocating additional uses that will result in profit to the farmers, is what will increase your disc harrow business.

Deere Model B Disc Harrow

The World's Best—The Most Extensively Sold Disc Harrow Made

The exclusive spring pressure on the Deere Model B Disc Harrow insures more even penetrating power and more thorough cultivation. The operator keeps the discs cutting an even depth.

The one-piece High Arch Frame and the Solid Steel Gang Frames afford great clearance and extra strength.

Deere Disc Blades are of the highest quality of steel and are carefully polished and sharpened.

Flexible Spring Steel Scrapers, securely clamped in proper alignment, keep the discs clean without undue pressure. The lock off device releases the scrapers when they are not needed, reducing the draft.

This Model B is easily adapted to a three horse hitch or a tongue truck.

Write for our book on "Better Farming," which gives full particulars of, and some remarkable experiences with, this wonderful tool.

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The Most Important Thing!

AFTER ALL, what is the most important thing to consider in buying a Tractor? It isn't merely specifications. Measurements of other Tractors seem very much like those of a Sawyer-Massey. But that doesn't mean that these Tractors are the equals of a Sawyer-Massey.

There is something beyond these measurements. That something is summed up by the Sawyer-Massey trademark.

We are trying to make the Sawyer-Massey name stand for honest Power Farm Machinery building—for care and intelligence and efficiency at every step of the long road from the designer's drawing board to the testing shed and the shipping platform. And after the Tractor has left the factory, the Sawyer-Massey name stands for well pleased owners, for satisfactory service, for a guarantee backed by years of successful manufacturing.

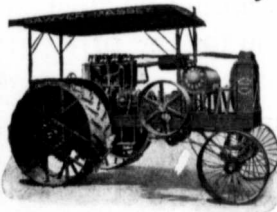
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ABOUT OURSELVES

NATURALLY when a man buys something he wants to know just what he is going to get. If you go into a store to buy a suit of clothes, you look it over carefully, you want to know of just what material it is made and everything that there is to be known about it. You, of course, want to know the price.

In the case of the Canadian Thresherman and Farmer, you know the price but, naturally, you want to know just what you are going to get for your money in 1913. The Editorial matter of our magazine causes us no small amount of anxiety and worry. We have to plan it a year or more in advance in order that we may have the material on hand at the proper time.

For 1913 we have planned some big things for you, or at least we think so: We have scoured the country for just as good Editorial material as it is possible for us to get hold of and if we do not succeed in satisfying you during the coming year, it is because our judgment in the matter has been wrong.

In the first place, every farmer has his problems. Some are big, some are small. Some are vital, some are of more or less consequence. For 1913 we are going to discuss some of these problems and we believe that the discussion will be carried on in such a way that you cannot help but derive considerable benefit therefrom. These problems will be discussed by Miss E. Cora Hind. Nearly every farmer and farmer's wife in Western Canada who has attended any of the public meetings that have been held in the three Prairie Provinces, knows of Miss Hind and not a few of them have heard her speak or have met her personally. We believe there is no one better qualified to take up these problems of the farmer than is Miss Hind. She has studied the farmer and his needs at first hand and she is in a position to get at the very heart and soul of these things. We believe that you will find her discussions unbiased, fair and not a little helpful. We wish to recommend these discussions to you and advise that you follow them carefully throughout the entire year.

Good roads in Western Canada are a thing that need and are receiving considerable attention at the present time. We have secured Mr. A. C. Emmett, a man who has followed the good road question carefully, to give us a series of twelve articles on Good Roads for the Farmer. Good roads are a hobby with Mr. Emmett and we will give him every chance to ride his hobby during 1913 for your benefit.

We feel that every farmer is interested in better farm buildings. There is no surer way of keeping the boys on the farm than to give them a comfortable home, in which they will take a natural pride. This also applies to the girls. We are building a country here and farm building construction in Western Canada should be on a better scale than that which has been carried on in older settled countries. We are in a position to glean from their experience. We can profit by their losses and benefit from their experience. We have secured for 1913 two series of articles along this line. One series will be written by Prof. L. J. Smith of the Manitoba Agricultural College and the other will be written by Prof. L. W. Chase of the Nebraska Agricultural College, Lincoln, Nebraska.

Prof. Smith will take up the details of construction. He will tell you how to construct a building so that it will be at once beautiful, permanent and designed along the lines of practical utility. Every detail of Farm Building Construction will be gone into carefully and his descriptions will be put in such simple language that any farmer can understand it.

Professor Chase on the other hand, will deal with Farm Plans. He will show you how to lay out your buildings, so as to bring about the best results. Time on the farm in the busy season is worth money and a great many of our farmers do not stop to realize just what a few steps saved every day would mean to them, to say nothing about the convenience of the matter. Prof. Chase in his series of articles will attempt to cover any and all conditions and we can guarantee some very valuable ideas from these articles.

Every farmer is interested in good farming. He is always on the lookout for ideas and it is our desire to give him just as many of these ideas as possible. Some time ago we realized that the Governments of the three Prairie Provinces, through their Extension Departments were working out some very valuable information and we decided to see whether or not we could secure some of this information to give to our readers. We are very pleased to state that we have already secured promises from the Governments of Manitoba and Saskatchewan to the effect that each of these provinces will supply to our readers once a month a page of information along the lines of what they are doing in extension work. These pages will be full of practical ideas and will apply to the particular province from which they come. We believe that the information secured in this way will be worth thousands of dollars to our readers. We can recommend this material most highly. We hope to secure the same material from the Province of Alberta and to have it in shape for our readers not later than our February issue. In addition to all of the above we are going to give to the readers of The Canadian Thresherman and Farmer a series of discussions on the soils of Western Canada and their features. These discussions will undoubtedly cover a period of two years, and during that time we expect to treat the subject so thoroughly that any farmer anywhere, if he has followed them carefully, will be able to handle his soil to the best possible advantage.

All the above will be in addition to our regular departments. We will continue our discussions of Farm Machinery, our letters on Traction Plowing, Traction Cultivation, our Gas Engine Course, our Practical Talks to Threshermen, our Women and Boys and Girls Department, our Magazine Section, our Story Section, etc., etc. After reading the above and thinking it over carefully, don't you believe we are going to give you considerably more than a dollar's worth? We have tried to shape our program so as to give you the very best possible results and in return we are going to ask you as a reader of The Canadian Thresherman and Farmer to do something for us. It is simply this, pass your paper on to your neighbor. If he is not already a subscriber to this magazine, let him look it over and tell him about some of the good things that you have found therein. Have you ever stopped to realize that if every subscriber to our magazine would induce one of his neighbors to become a subscriber that our subscription list would double. Circulation-building is a very expensive proposition and is a serious strain upon our business every year financially. If you realized how much you could do for us in this particular line, we know that you would be willing to spend a few minutes of your time, showing our magazine to your neighbor and inducing him to send us his dollar. As we have told you upon many occasions that one dollar scarcely pays for the white paper on which our magazine is printed and when you consider all the good things that are printed thereon and delivered to your post office, postage free, we believe and see that you are getting a mighty cheap proposition. Just think it over and then pass the good word along.



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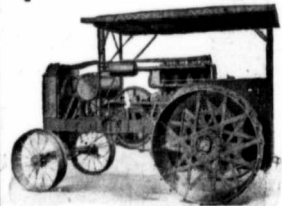
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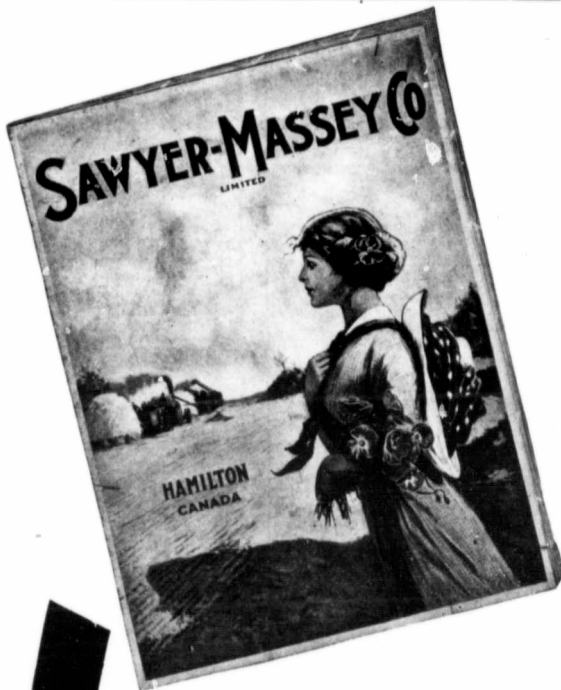
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A MAGAZINE
FOR

THE FARM
AND HOME



THE CANADIAN THRESHERMAN AND FARMER

Vol. XVIII.

WINNIPEG, CANADA, JANUARY, 1913.

No. 1.

Location and Arrangement of Farm Buildings

BY PROFESSOR L. W. CHASE

This month we begin a series of articles on Farm Building Construction and Farm Building Arrangement. These articles will run through the entire year. They are written by authorities on the subjects and should prove very valuable to our readers.

THE owner and manager of a factory builds his factory in one place and his residence just as far away from it as possible. The farm to the farmer is a factory, and his buildings are the centre of this part of operation. Then, too, his house is his home. The farmer cannot build his factory in one place and conveniently set his house in another. They must be adjoining. So then the farmer must combine his financial operation with his home life, and in doing so he must consider in arranging his factory, or as will be used in this article, his farmstead, so that health, comfort, and financial conditions or improvements are combined.

In considering health and comfort, we must consider the farmers' home and the people who dwell in it the greater part of the time. This, then, brings us down to considering the comfort and opportunities of the farmer's wife. If we recall our own experiences, that is, those of us who are living in town, we will note that our wives and mothers spend considerable of their time talking to the neighbors across the back yard fence or running in for a little call to borrow things and visiting in general. The farmer's wife does not have this opportunity. She is kept confined at home nearly all of the week excepting for the Sunday when she goes to church or the Saturday afternoon when she makes the weekly trip to the nearby town. So in selecting a farmstead site, arrange the buildings so that the farmer's wife can view the country in general. Have it so ar-

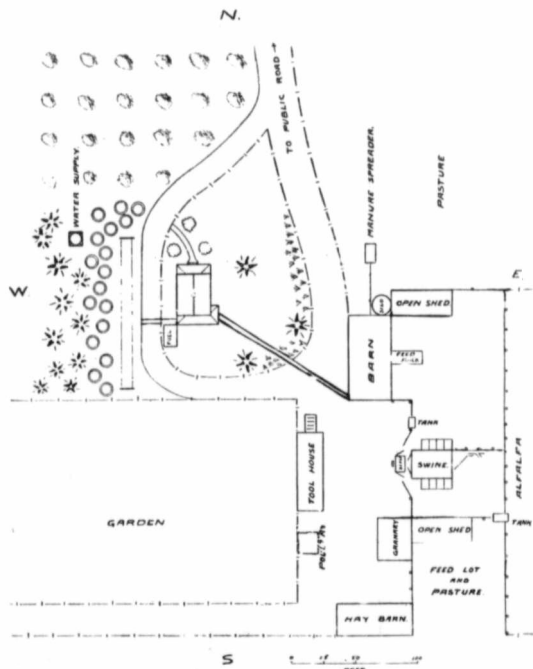
ranged that she can see across the fields and see what the men folks of her own family are at work on, also if possible have the view so extended that she can see into the neighboring communities. Furthermore, if the house can be

In our larger hotels we are so fixed now that the rooms can be artificially cooled. This is not a possible thing in the country. However, if the farmstead is properly selected, one can take advantage of the cooling breezes

This is an error, for it not only protects the buildings from the north wind, but it protects them from the cooling summer breezes. It also protects them from lower relative humidity in the upland. Farmsteads located in the valley are not nearly as healthful as those located on the hills. There are very few air currents moving in such places to dry up the earth, also to cool people who are working in such neighborhoods.

In most places probably the ideal location, so far as topography is concerned, for a set of farm buildings would be a south or south-easter slope. Let the house set upon a slope just over the brow of a hill if it can be had. Otherwise set the house upon top of the hill. Then let the buildings, yards, etc., be east or south-east of the house. Have the wind-breaks protect the buildings and the yards from the north wind, but leave everything open from the south, so that all the breezes of summer can blow through the yards, drying them up, and tending to improve general healthfulness around the farmstead. If such breezes are allowed to pass through the house, it will keep the occupants much cooler than if kept out.

An illustration of taking advantages of natural conditions for keeping cool can be seen by observing the horses or cattle in the pasture in the summer time. When horses are compelled to stand down in the valley in order to stand in the shade, they always go out on top of the hill where breezes will blow across them. If, however, there is a shade tree



located along the roadside, have it so arranged that she can see the neighbors passing by on the adjacent highway.

Then, too, the health of the location is vital on any farmstead.

of the summer, so that even living in the country without that modern convenience, the home can be cooled. Many farmsteads are placed down in the valley to protect them from the north wind.



Everything within easy reach

upon the hill, they will always be found standing there under it.

From a financial point of view, it is quite essential that the buildings be so situated that it is convenient to go from them to the adjacent fields convenient to the adjacent pastures and convenient to receive the products from the field and from the city. Furthermore, the buildings should have good drainage in all directions, as this will save the necessity of the farmer and his stock wading around in mud to a very great degree. Wherever possible, the buildings should be located upon the poorest soil of the farm. When they are located upon the best soil, and the poorest soil is left to farm, there is a great deal of difference in the financial output of the two locations. Then, too, the buildings in the yard should be so located that the fertilizer can be saved. Of course, in new countries the fertilizer is not a great element, but in the older countries it is getting to be of vital importance. Farmsteads have been seen where four, five, six or seven hundred dollars worth of manure is going to waste by washing away every year.

The labor question, which is an interest to all, is sufficient to cause a great many farmers, if they only knew it, to re-locate their farmsteads. In a general purpose farmstead, as shown by the illustration, and farmed in a general way, as many farms of the States are farmed, it can be shown by taking the number of trips that are made to and from the various fields that it costs the farmer to farm his farm \$66.62 more every year because of the fact that his buildings are located in the corner instead of the centre of the farm. This sum might not seem a great item, yet in ten years it amounts to \$666.20 for capital only and the interest would make it amount to much more, but because of the fact that farms will not only be farmed ten years, but twenty, forty, eighty and one hundred and sixty years, and that doubled on forever, this little sum should be given vital consideration.

Looking at the figures from another way of doing it would be seen what this amount would pay the interest on. With interest at 6 per cent we see that \$66.62 will pay the interest on \$1,110. Now

it would take between four and five hundred dollars to move the average set of farm buildings. Assuming that it will take \$450, we see that the interest on this amount would be \$27. This, then, would leave about \$40 with which the debt could be paid off, and it would take about eleven years to meet the obligation. At the end of the eleventh year, then the farmer in this case would have \$66.62 which he could put out on interest, which he could do at six per cent, investing this so that one could get interest on the

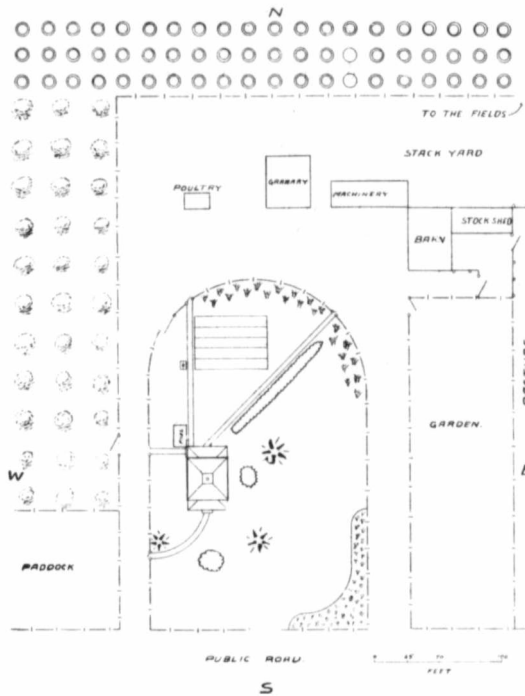
farm clear to the other in either 80 or 160-acre fields, it does not matter very much with respect to the fields, just where the buildings are located. Then in locating buildings in such countries, the following points should be given consideration: A good view, good drainage, admission to the south breezes, plenty of sunshine, north breezes cut off, if possible, and have the house setting so it is adjacent to the roadside.

In British North America there are probably three general types

instance, the house, the horse barn, the machinery shed and the granary. The labor around a grain farmer's set of buildings is not very great. It is generally done in large units, and the labor of getting from one building to another is of minor quantity, but the labor of a general purpose farm is the one which is hard to contend with. For in such instances, the farmer generally considers his chores as a side issue, and in order that he shall put in his full time in the fields his buildings must be arranged so that as few steps are required as possible, so that he may finish his chores earlier in the morning and earlier in the evening. In considering the arrangement of the buildings for the general farmer, it is first essential to consider them from general necessities which must be used in making up a unit of the outfit. Without discussing it further, we will state that the house should have an east front if possible. This, however, is not possible in a good arrangement of all other buildings. Hence, we will probably find before we get through that the house will have to sacrifice some for the uniformity of the arrangement. The next thing to consider is the fact that it is cheaper to pay insurance than it is to pay for labor. The buildings must all be a unit and close together. Many farmers keep their buildings practically isolated from each other because of the danger of fire, and yet the insurance rates on farm buildings in New England, where the complete set is practically one building, the same as in the West in the prairie states where the buildings are anywhere from 25 to 150 or 200 feet apart.

The next general thing to consider is to have all buildings windbreaks to the yards, and have all yards and buildings open to the south to admit of the south breezes. Because of the obnoxious odors that blow from the yard to the house, it is well not to have the buildings set in direct line with the prevailing direction of the wind, especially the spring and autumn breezes.

Insomuch as on a general purpose farm the barn should be the centre of activities, it should contain the horses, the cows, the calves, possibly the colts, box stalls and feed bins and possibly the milk room. Because of the



interest and on the principal yearly, which is the way that money is invested by the insurance companies, it would amount to \$2,242.99 in nineteen years. This, then, means that this farmer has re-located his buildings and in thirty years saved \$2,242.99 by the change. Thirty years is used here as the length of time which one may reside on the farm.

If the farm is to be farmed to grain wholly, as a great many of the great grain farms of Western Canada are, and if the land is so level that the farm can be farmed as a unit, or so level that the plows can move from one end of

of farmers. The stock farmer exclusively, who probably is found in greater numbers in the eastern and the older sections of the country. Then there is the general purpose farmer and the strictly grain farmer. At present, probably in the western sections the strictly grain farmer is the greater in number. However, it will be but a few years until this will change to more of the general purpose farmers.

Arranging the buildings for the grain farmer is a very easy matter. There will only be about four of them to be arranged and they are easily set. They are, for

fact that the hog yard is inclined to throw off a large amount of unpleasant odors, it should probably be placed farthest away from the house. Then there is the cattle yard, the alfalfa lot in which the hogs should run, the pasture should be considered, also the machinery shed. The machinery shed on any well-planned farm is so situated that the horses are taken from the barn, hitched on to the machinery in the shed, and are driven from there to the field. Aside from the machinery shed, there is the granary, which should be convenient to the fields and also to the yards from which the grain is to be fed. Also the scales should be located so that they can be used for both grain and stock without additional factors. This brings up the point of fencing, which is of vital consideration. The average fence on the general purpose farm, which is both hog tight and cattle and horse tight, costs about forty-five cents a rod when completed. Fences around yards cost much more than this. Hence, in building the fences keep the yard so that it takes no more fence than possible, and to do this, stock must be kept on each side. The chances are that there would be no greater expense in keeping up a fence where it takes care of two herds of stock than where it takes care of one.

Then there is the water system or the water supply. A great many farms or farmsteads have been located somewhere convenient to a well. This should be a very minor consideration. Locate the farmstead where it can be most conveniently arranged, then place the well where you can find water and attach it to the buildings wherever needed. It only costs about a dollar to a dollar and a half a rod to run water lines most anywhere.

The poultry house is commonly set up close to the residence so it is close for the housewife to take care of the poultry. This, in the mind of the writer, is a very serious mistake. Keep the poultry house out a good distance from the house, and closer to the yards where the poultry can run around behind the stock and gather its food. Then, too, when the poultry is kept away from the house there isn't near the labor for the housewife to keep the porches and the walks clean as it is when the chickens make the front yard their place of scratching and feeding.

The question now arises: "Can we get such an arrangement of buildings so that all these things can be incorporated without repetition of work or without a great many added steps?" Then let us first see. We will have to assume that the farm on which

we expect to locate these buildings has possibly an eastern slope, with an elevation on which we can set the house and possibly the water supply tank. With the perfect arrangement, the barn which is to be a general purpose barn may lie east of the house. Let it lie about 150 feet from the back door of the house to the closest point of the barn, as shown by the illustration. This barn will set north and south so that it gets plenty of breezes through it in the summer time to keep it cool and dry. Just east of the barn is the open shed and also the open lot. We will let the fence this side of the barn jog out one panel east, then go two and one-half panels south. By panels we mean sixteen feet lengths, for this is the length in which fence boards are cut. In the first one and one-half panels of this fence which leads out, we will place a water tank which is open to the yards on one

then place two gates, one at each corner of the hog house which would swing up and hook on to the scale frame when the scales are to be used. And when they are not being used they will swing back against the side of the building.

Going across the wagon yard west of the hog yard fence, a distance of about seventy feet, will be set the machine shed and shop, and if necessary the milk room will be placed therein. The north end of this shed should be about twenty feet south of the south end of the barn with the shop in the north end. Just at the south end of the shed will be the poultry house. This throws it away from the public highway and yet not inconvenient for the poultry to run across the wagon yard into the hog lot for their feed. Then just west of the machine shed will be seen the garden, which is, of course, very close to the residence.



Our First Home

side and open to the work horses on the other. The next panel will not be a fence, but will be a sixteen-foot gate which is hinged on the end closer to the barn. At the south end of this gate we will now place the half-monitor type of hog house which extends east and west. Assuming that this hog house is twenty-two feet wide, which is the standard width, we will then put south of this another sixteen-foot gate; then a panel of fence; then we will have the open cattle shed placed at the corner of the combined corncrib and granary. Or in the Canadian Northwest this would not be a corncrib and granary, but would probably be one combined granary in which barley, wheat and oats are housed. Now coming back to the hog house, we will place the platform scales just four feet west of the hog house and with the centre of the scales lined up with the centre of the hog house. Assuming that the scale frame is in place,

Referring to illustration No. 2, let us now see how a farmer can handle his chores most conveniently with this arrangement of buildings. First, assume that he is going from the house to the barn in the morning. He will go into the barn and feed his horses, feed the cows and calves, milk the cows and turn to the young stock and, if it is so desired, he can have his milk room in the corner of the barn; then he will separate the milk, take the skim milk to the calves or out to the farrowing pens down by the scales. There he will feed the sows and pigs; then go on to the granary and feed the stock cattle or the fattening cattle and the fattening hogs. He will then come back past the poultry house, take care of the chickens, go to the milk room and get his cream and take it to the house, and his chores are done. He has not repeated his steps in any way whatever.

Looking at the arrangement of this set of buildings from another view, let the farmer, at noon, or at night for that matter, come in from the fields. He will have to come through the gate, known as the gate leading from the fields on the illustration, while his horses are standing here he can step into the hay barn, and throw down the hay for the fattening or stock cattle. He will drive his wagon from there into the double granary, and while the team is standing here to be unhitched he can feed his cattle or stock from the granary, as will be shown in a later issue. Then when his horses go to the watering tank for their water, he can step into the farrowing pens and feed the sows and pigs. Then when the team goes on to the barn he will do all the other chores there and take his team to the house.

It might seem that this is simply a book story and cannot be carried out in practice. Let us look at it again. When, say that a man's chores are not such that the time can come in sequence as outlined, then he will have to come from the house to the barn, do the chores in the barn, then return to the house. He has wasted no steps there. Since the barn is in direct connection with the house to feed the sows and pigs and the fattening cattle. Here, again will be noticed that he has wasted no time whatever. Or looking at it from another light. Assuming that there are three men on this farm to do the chores. Two men would go to the barn and do all the chores there, while the third man would go to the farrowing pens, the fattening cattle and hogs, and take care of the poultry.

In fact, this scheme has been tried out in one or two instances, and by following the men around while they are doing the chores it is shown that they save from the best other arranged set of buildings that we know of 320 feet in walking only. And many arrangements of buildings have been shown where in doing the chores men will save over two miles each day by having this arrangement.

We have only been looking to this set of buildings from the standpoint of doing the chores. Now let us look at it from another standpoint, and that is, of handling the hay and grain. First, assuming that a farmer brings his grain in from the field and desires it to be weighed. He simply swings out around by the machine shed across the scales, drives down into the granary and there it is unloaded. Or if he should decide to take shelled grain to the market, he simply drives into the granary, loads his grain, takes it across the scales and out the back drive past the barn to market.

However, if he should bring hay in and decide to have it weighed, he can bring it from the field across the scales, swing up around the south end of the barn and unload and drive back to the field. Or if he wants to put hay on the market, he can simply drive up to the side of the barn or to the south end of the barn, load it on his rack, drive across the scales and turn around and go back to town again.

Then consider the matter of handling live stock across the scales. First, we would swing out the two little gates attached to the corner of the hog house. Then we would open the south gate from the hog yard, then the south gate to the scale pen. The two gates would be hooked together, and this would then form a driveway leading from the yard on to the scales. As soon as the stock is put on the scales, the scale gates can be closed and the other gates and the stock weighed, and the gates from the north side of the scales and hog house be

opened and closed in a similar manner. By this means we have only the two small gates which make additional fence so that the scales can be used for live stock as well as grain.

Again, notice the fences. There is stock on both sides of all fences excepting the fence between the barn and the hog house, and between the hog house and the granary. Furthermore, just east of the hog house, let us use this fence for various purposes. Say, then, that we put a loading chute out by the gate, we will drive the hogs through the alley up the incline and out into the wagon. But now couldn't we use this for the dipping tank? Place the dipping tank in the bottom of this alley and have it covered with heavy planks. Then if we want to dip the hogs, simply drive them through the alley down into the dipping tank, let them go up the incline, and there the drip from the hogs runs back into the tank. Then by swinging the gate so they can-

not go out into the loading chute they can go down the incline and back into the yard. Furthermore, let us see if we can't arrange this so that we can place a hog ringer or a breeding crate, so that if needed, this same yard can be used for that purpose. Simply set right beside the alley leading to the loading chute the crate or the ringing stanchion and swing the gates around in front of the loading chute. Then the hogs can be run into the crate or the ringing stanchion. Furthermore, by closing the gate to this hog yard, we could use this for a boar pen or a sow pen whenever needed for temporary use.

As to the use of the machine shed, you will notice that the horses can be taken out of the barn, taken to the water tank, right past the water tank, then to the machine shed where they can be hitched on to the machinery and driven to the fields. Then if it is desired, and it should be desired, the farmer can drive in from the fields with his machin-

ery, drive up to the machine shed, unhitch, back his machinery into place, take his horses to the water tank and then to the barn and take care of them.

The water tank, which should be an elevated tank, should be on the highest point of the farm. Hence, it should be up next to the house and possibly sitting back into a grove where it will be more or less out of sight. Conduct the water through the house, down past the barn, past the hog house to the cattle tank, and then to the pasture if needed.

Of course, this set of buildings has been arranged for a south-east slope. It can be used for any slope by simply being modified. In the state of Nebraska it is now used on south slopes, on an east slope, on a west slope, and modified to fit a north slope. And the people who are using it seem to be very proud of the plans and arrangement.

THE owner and manager of is to present to the readers of the Canadian Thresherman and Farmer, both by drawings and by discussion, the principles of the construction of the various types of farm buildings with particular reference to their adaptability to the conditions of the Northwest.

Labor conditions in this rapidly developing country are frequently such as to make it next to impossible for the average farmer to secure the services of a carpenter; and often after a good deal of time is spent in securing one, it is found that he is only a "hammer and saw" man, who knows little more about the work to be done than the farmer himself. Thus, it has been found that in many cases time and money would have been saved had the farmer gone ahead and built, at least, his own smaller buildings. Then, too, it is hoped that those readers who are pushing out and occupying homesteads on the fringe of this western civilization, will be helped to figure the necessary bills of material and erect comfortable buildings for themselves.

A knowledge of building construction is not only necessary to those in circumstances already mentioned, but it is indispensable to anyone in the older settled rural communities and in the smaller towns who are having the better class of permanent buildings erected by contractors for a stated sum. There is perhaps no business where it is so easy to palm off poor materials and workmanship on the unsuspecting victims as in the building trade. This is especially true in the construction of the ordinary build-

Farm Building Construction
BY L. J. SMITH
Professor of Agricultural Engineering, Manitoba Agricultural College

ings whose owners generally do not consider it necessary to engage an architect or have the building properly inspected. It is with regret that one has to write that a high percentage of contractors are guilty, to at least some extent, of these practices. When such a contractor finds

owner must be on the watch for this first test, and when it appears make such a firm and decided stand as to make the other party feel the uselessness of such methods of doing business so far as that particular job is concerned. In many cases where the con-

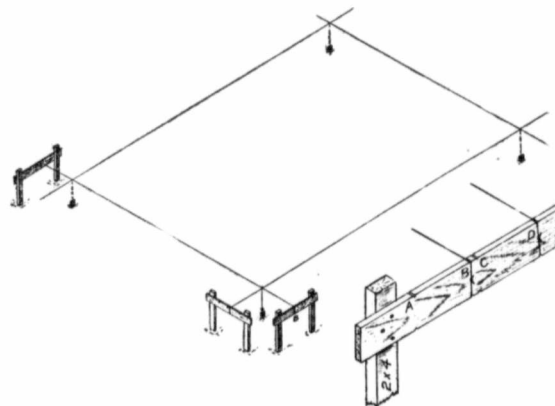
rough sketches almost always leads to trouble even though each party is sincere in his desire to treat the other justly. Toward the end of these articles the writer will take up an outline of specifications of the common buildings, without which no up-to-date building should be erected by contract.

For the benefit of those who are not familiar with the terms applied to the various parts of buildings, the names of each part will be given as it appears for the first time in the illustrations.

Locating and Laying out a Building

Little can be said concerning the location of farm buildings that would be of value from a building construction standpoint except to mention that they should be placed on a sloping piece of ground, or if possible, on ground a little higher than the adjoining land. This insures good drainage and a nice view of the surrounding country. The relative location of the various farm buildings, however, is very important and cannot be ignored by anyone who is planning for the future efficiency of his farmstead. Buildings improperly located with reference to each other can easily be the cause of a good deal of extra time and effort in doing the daily chores. The loss of a half hour a day per man may not seem much, but when one considers that the time is lost not once but daily throughout the months and years that the buildings are in use, it is readily seen to be a serious matter for it directly affects the cost of operating the farm.

Continued on page 64



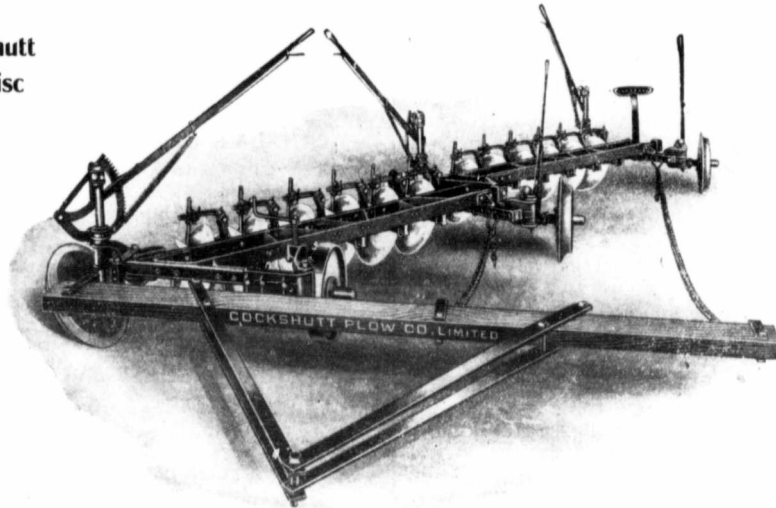
that he is doing work for a man who has some knowledge of the principles of building construction, he is less apt to try to take advantage of him. In most cases, such a contractor will attempt some rather slight departures from good practice to see just how far he can safely go. The

tractor is perfectly reliable, there arise differences between himself and the owner through a lack of definite plans, agreements and specifications for the proper carrying on of the construction. There are so many details in work of this kind that a verbal understanding in connection with

A New Cockshutt Engine Gang

The Cockshutt
Traction Disc
Plow

For Tough,
Sticky Gumbo
Soil



HERE is a new Cockshutt engine gang—a traction disc plow—built to fill the requirements of the farmer whose soil is of such a hard or tenacious nature that a mouldboard plow will not scour properly. This plow is offered only after the most thorough experimental work and severe testing. Results prove that we have been remarkably successful in developing a disc plow which embodies many features superior to any heretofore used on other plows of this type.

A Few Valuable Features

THE above illustration will give you some idea of the substantial build of this plow. The frame is made of heavy angle and channel steel, rigidly braced at all points. The plow is hitched to the center of the engine doing away with side draft. Note the close hitch which makes for light draft.

The frame is supported on four wheels. This insures a proper distribution of the weight of the plow and promotes better plowing than can be secured with plows which have only three wheels.

The large, heavy, disc standards, securely fastened to steel beams have ample strength to withstand any strains they will encounter. They will not spring out

of place and you can always depend on the discs being held at the proper cutting angle. The discs are entirely free from projections that would collect trash, and ample clearance is provided.

All the levers are conveniently located—it is never necessary to stop the engine when making adjustments for different soil conditions. The depth at which the discs cut is regulated by means of long, easily operated furrow wheel levers. On the front land wheel, a raising and lowering screw is used which is very convenient as there is no lever here to interfere with the man on the plow.

There are many other good features which are found only on the Cockshutt—drop us a line and we will send complete information.

The Cockshutt Standard Mouldboard Engine Gang

THIS is still the most popular engine gang in Canada. It was the first successful engine gang and is today the standard. And here are some of the reasons why: The strong triangular frame is made of extra heavy angle steel and is held rigidly together with heavy corner and cross braces. The entire frame is hot riveted and thus becomes one solid unit. The beams—two to each bottom—are of heavy channel steel. The most important point about them is that they are **straight beams**. Nothing but a **straight beam** is strong enough to withstand the strain of heavy engines and tough Western sod.

The bottoms on Cockshutt gangs are independent—each bottom has its

own lever and gauge wheel. Raising one bottom in no way interferes with the work of the other bottoms.

The frame wheels are set **outside of the frame**—not under it. The line of draft, therefore, remains practically the same at all times. The connecting hinge of each bottom is kept at a constant level, and the plow travels over the ground without jarring or jolting. The wheels are of large diameter, have wide tires; the hubs are extra large and dust-proof, have removable bushings and arbors, and are oiled by spring compression grease cups.

Send for our "Horseless Plowing" book—it is full of valuable information on Modern Plowing.

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Life on The Farm

BY T. H. COLTART

TO the average theatre-loving and card-playing denizen of a large city, life on a farm opens up a vista of intolerable monotony from which there is no relief, and which does not contain a single redeeming feature.

We can only say in reply, "Ephraim is joined to his idols: let him alone."

Turn from this class, which is comparatively insignificant except so far as it clogs the wheels of municipal and international progress, to thinking men and women of every class in the cities and we find that they take an entirely different view of the people on the farm and the life which the farmer leads.

What is the burden of Rider Haggard's argument? What is the object of the Salvation Army immigration propaganda? What is the vitally important lesson that Denmark has to teach, but which other nations find it mighty hard to learn?

What do the men and women most closely concerned think about life on the farm? This is the point requiring elucidation. We would respond by saying that the people on the farm take life philosophically. We have never heard a concrete expression of opinion from the general body of farmers, therefore it will be necessary to draw largely from their tacit admissions and also from our own experience.

Generally speaking men and women become attached to their surroundings and farmers are no exception to this rule. Upon careful scrutiny we find many reasons why the farmer above all men should become attached to his surroundings. The first I shall mention in support of my contention is the sense of inde-

pendence which agriculture fosters. This is readily seen when we think of the early settlers who came to this country in the last quarter of last century. They had innumerable hardships to contend with and great credit is due to their self-reliance and splendid courage which finally won for them and posterity the victory. This sense of independence is carried out into every line of thought today.

In Canada we lack the situation that Ian Maclaren had to work upon in Drumtochty where all the characters were of one nationality, with perhaps one or two exceptions. We do not suppose that the heterogeneity of Western Canada's population is a detriment to the progress of the country. What we mean to say is that in Western Canada on the farms are being developed opinions, strongly held, tending on the one hand to radical political thought, and on the other to simpler, broader, and more reverent spiritual convictions. Again we have the instinct of inhabiteness strongly predominating the sub-conscious ego of the farmer. The joy of "living under his own vine and fig tree" is not the baseless fabric of a vision. He feels it pulsing through his veins even though he is by choice silent. It is to this end that he bends his energies seeking to entrench himself still more deeply in the soil, that he may draw strength therefrom like the fabled giant of old who was only overcome when lifted bodily from mother earth.

Another reason why life on the farm is attractive to men and women is the opportunity it gives of self-education along solid and enduring lines. The best literature is to be had in convenient forms, tastefully bound and not too expensive to be out of the reach of those desiring to improve their mental pabulum.

We hear some cynic say, "Where is the time on the farm to read?" My friend there is enough time if it is wisely spent to do reading which in conjunction with physical labor will give zest and interest to life. Was it Bacon who said, "Reading maketh a full man?" It is true in the case of the farmer. He is usually singularly well informed on any subject of importance.

Again life on the farm is attractive because of the animal life which surrounds the farm homestead. As Professor Peters

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said one day in class (and at the time we heartily applauded the statement) "There is a singular fascination about live stock which is foreign to a purely grain growing proposition." Animals are very responsive to kind treatment and have their own naive way of showing their appreciation. Take any line of domesticated animals and you will find this to be so. We have some favorite horses at home to which we can unburden all our troubles and their sympathy is none the less genuine if unspoken. Even a bunch of hogs, give unlimited means of studying their idiosyncrasies at close range, especially when they are on pasture and are satisfied inwardly. Otherwise they will "raise Cain" until their inner necessities are attended to.

We have not exhausted this list at all but we must move rapidly on. In a previous paragraph we contrasted animal life with grain growing. Apart altogether from a utilitarian standpoint there are few more delightful and inspiring scenes than the lovely green of the wheat braird spreading over the surface of the broad expansive fields. It is equalled only by the golden grain waving in the sunlight waiting for the harvest and the time of reaping which marks the completion of the husbandman's care, foresight and toil as he comes rejoicing bringing his sheaves with him.

Let us turn for a minute to see what the winter has to offer in helping to round off the year's duties and pleasures.

To the winter belongs the task of providing the supply of wood for the next season. There is nothing more exhilarating than to drive to the bush two or three miles away and bring home a load of logs, after having chopped them down. The clear frosty air and the bright sunshine act on the system like champagne. When engaged in chopping down the stalwart poplars.

The red dogwood and other shrubs, amongst which may be seen partridges, grouse, woodpeckers and other birds not to mention rabbits galore, lend a delicate attraction to the whole scene, and sounding clear above everything else is heard the metallic music of the axes as they fall ever and anon with swift precision on stem and branch alike.

How plebian, you say, yet all honor to the men of the backwoods who have carved with their axes the name of Canada on the history of the world.

To the hard working people on the farm it will usher in a new era of material and spiritual prosperity for the net ultimate unconscious result will be to lead men from Nature unto Nature's God.

I HEREBY RESOLVE

that, during 1913, I shall use only farm machinery of high reputation and implements which have given the Western Farmers absolute satisfaction during many past years. I, therefore, resolve to use only

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NEW DRILL

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Frame cannot get out of shape.
Equal pressure on long and short drag bars
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Largest grain hopper on the market

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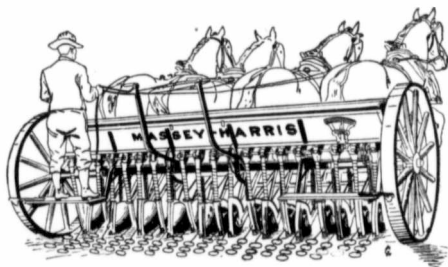
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E. H. HEATH COMPANY, Limited, WINNIPEG, CANADA

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JAN., 1913

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THE BANKER AND THE FARMER

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."

"WE NEED THE MONEY!"—is the burden of everybody's song today. It is the modest but strictly matter-of-fact plea of the collection man as he presents the case for his firm, and the farmer-in-arrears hasn't a word to say. He also needs the money, alas! in the worst possible way although his position is not unlike that of the shipwrecked mariner drifting on his raft. "Water, water everywhere, but not a drop to drink!" It is money, money everywhere, "money to burn" in fact, but in a form which, according to the Bank Act of Canada, is not legally negotiable.

"THE BUSINESS MAN IN CANADA finds in his banker," this article goes on to say, "a guide, a counsellor and a friend; one to whom, if he is a borrower, he supplies detailed information of his affairs, even to the extent of a balance sheet, and to whom he can turn in time of trouble. In consequence there has grown up between Canadian bankers and their clients a degree of intimacy, almost friendliness, that is unknown on this side of the Atlantic" (i.e. in England). Now this is quite correct and very pleasant, but why should there be this ridiculous and invidious distinction between the "person engaged in business" and the man who is husbanding the one thing on which the "person engaged in business" depends for his very existence?

"THE PEOPLE ARE OFTEN WRONG in their opinions," said Junius, "but in their sentiments they are never mistaken." Whatever might be the opinion of banking wizards or those gentlemen who live by the thousand and one interpretations that the law lends itself to, there is a wide-spread and very articulate sentiment among the people that something must be done quickly to amend the legal enactment that says "You cannot lend the bank's money to a farmer on the security of his produce unless"—and then there follows a long chain of conditions, certain links of which, in the very nature of things, cannot possibly make connections.

THE NATURE OF THE SECURITY has everything to do with a loan from a bank or from any source. In the Canadian Banking System, a man with a reputation and a balance sheet can get all the currency he wants (within reason) but a man, also with a reputation and with 20,000 bushels of unencumbered dollar wheat on his farm, cannot legally hypothecate it for the smallest accommodation however it may be secured and protected. A sealed parcel of No. 1. Northern is an asset that requires neither explanation nor the services of an appraiser to value it at any given point of time. But what is a balance sheet?

THE BANK ACT, such as it is, was framed at a time and under conditions which probably called for the strictures under which the country is now groaning. They were no doubt wise provisions when they were made and when the population was a very uncertain quantity both in character and in numbers; but they have outlived their usefulness and in turn become an insupportable drag upon the machinery of the State. It is admitted even by the bankers themselves that the time has come when the bank must ease up, and it is a significant fact that the proposal to amend this act is being fathered in the Dominion House by a Western member of the first legal repute, and who, of all men in the house, is the least likely to trust his reputation in the composition of a revolutionary epie.

THE BALANCE SHEET of an ordinary trading concern is regarded by the banker as a complete and accurate statement of the borrower's financial standing as represented by the difference between his assets and liabilities. The liabilities need not concern us, but what do the assets consist of, say in the case of a soft goods manufacturer or warehouseman? They will not represent much in cash because no trading house will keep a big bank balance if it can use the money in taking its full discounts. They will consist almost entirely of stock-in-trade and book debts. There may also be some real estate, but a bank may not lend money on real estate mortgages, and who is the man who can place a reliable valuation on that stock or those book-debts?

"THE BANK MAY LEND to any person engaged in business as a wholesale manufacturer of any goods, wares and merchandise, upon the security of the goods, etc." This the bank regularly does to an enormous extent, and a recent special "Canadian Supplement" to the English "Graphic" has very elaborately made clear in its article on "The Canadian Banking System." The purpose of this special issue of the "Graphic" is, of course, to advertise the country to the end that men may be attracted to it, and while it would naturally give prominence to the facility with which a man engaged in business can obtain "a line of credit," it would not come within its province to state that a farmer couldn't borrow a dollar from any bank in Canada on the security of stock or produce remaining on his farm.

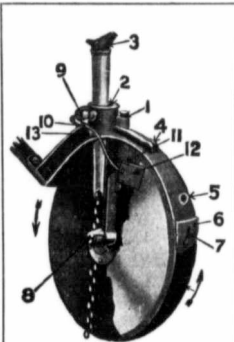
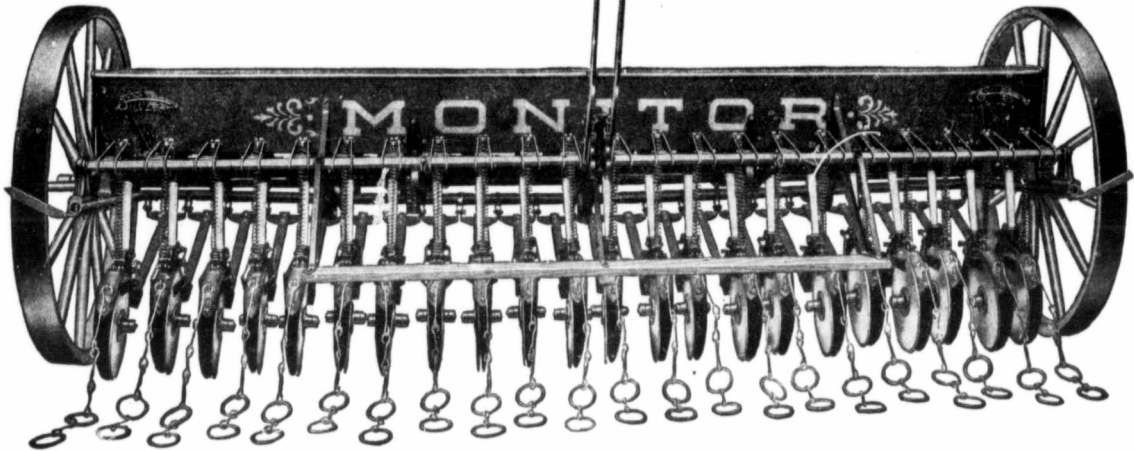
THE CAPRICE OF FASHION alone in one brief season may depreciate the stock-in-trade till it has vanished into thin air, and the law and the lending public generally very properly regard book-debts as among the least certain of all negotiable securities. There are a hundred and one other contingencies, including the undue optimism or the actual dishonesty of the trader to be reckoned with, till, after all, in boiling it down to the real substance of the case, it becomes largely a matter of confidence or the want of it on the part of the individual banker. May not this discretionary power be extended to country bank agents in their dealing with farmers? What level-headed private lender would differentiate between a parcel of high grade clean wheat and a "balance sheet" to the prejudice of the wheat as a security?



MONITOR DRILLS



Double Disc - Single Disc - Low Down Press - Shoe and Hoe



**This is how
it sows**

grain

so the
chickens
and
birds
can't
get it.



Castor, Alberta

Castor, Alta.
Aug. 10, 1912
Canadian Moline Plow Co.,
Winnipeg, Man.

Gentlemen:—
Now that the drill season is over, and we have the evidence of the work done with the different makes of drills, I wish to say I believe I have the most satisfied customer of any agency in Alberta, unless it is another "Monitor Drill Agency." As the wife of one of my German customers tersely puts it. "She leaves nothings on top of the ground for the chickens," and I will add, you bet she don't, as all seeds are deposited on a firm seed bed, at an even depth where it all germinates together.

I have no trouble to sell a Monitor Drill, and no trouble after I have sold a Monitor drill. It is always sold.

Respectfully,
H. Martin.

Salina, Kansas

Salina, Kansas,
July, 27, 1912.
Kansas Moline Plow Co.,
Kansas City, Mo.

Gentlemen:—
Last fall I purchased from the Salina I. & S. Co., Salina, Ks., one of your 12-8 Monitor Double Disc Drills. At the time of purchase the President of the Salina I. & S. Co., made what I thought was an exaggerated statement as to the merits of the drill, to wit:—
"That he would wager me a "small one" that if I would use the Monitor and sow

only 3 pecks of seed per acre, that I would raise more wheat than I would by using a single disc and sowing 5 pecks per acre, which is the usual amount of seed sown in this country. I called the bet.

I sowed 225 acres, 3 pecks per acre as agreed. A neighbor living just across the road and where the ground was prepared the same way and was just as good, sowed at the same time and sowed 6 pecks per acre, and we watched threshing. We have both just finished threshing. My wheat yielded a little over 25 bushels per acre. My neighbor's made just 15, or 10 bushels per acre less, besides using twice as much seed. I sowed 168½ bushels of wheat last season, and at the price of wheat last fall—\$1.00—I saved on seed alone nearly enough to pay for two drills, to say nothing about the 2500 bushels extra I raised.

It is needless to say I cheerfully paid the wager, and last week we had a jollification at my place, celebrating the Monitor, at which time there were present about 40 of my neighbors who have been watching the results and there are many of them who say they are going to buy the Monitor Double Disc this fall.

I want to say in conclusion that I will cheerfully recommend the Monitor Double Disc Drill to any one who is looking for an ideal seeding machine, not only for wheat but for other grain.

With best wishes for the continued success of the "Monitor" I remain

Yours truly,
W. W. Wood,

Route 3, Solomon, Ks.

Kindersley, Sask.

Kindersley, Sask.
August 12th, 1912
The Canadian Moline Plow Co.,
Winnipeg, Man.

Gentlemen:—
In April last, I purchased from your sales agent at Regina, Sask., one 20 double disc Monitor drill.

This drill has exceeded my expectations, and I am certainly well pleased with this drill.

The structure of the boot of this drill which sows the grain in front of the axles of the disc, thereby depositing the seed at the extreme depth of the furrow made by the disc, and so getting a perfectly uniform depth with all seed sown is the best feature that I have ever seen on any make of drill.

Using the slow feed in sowing flax is also great as the seed can be distributed more evenly than by using the fast feed that other makers of drills use exclusively. This is because more of the fluted feed roll is sowing than would be possible on a drill that uses only the fast feed.

The pressure springs applying the pressure directly over the centre of the discs (just where it is needed) is also another good point.

Mine was the first Monitor to my knowledge that ever came to this part of the country, but it will not be the last as several of my neighbors will not buy anything but a Monitor. Several have already spoken to me asking me where they can buy Monitors for next Spring.

Yours truly,
Gilbert Orser.

A Few Samples of Our Many Testimonials That Speak For Themselves

Write us for Catalogue fully describing all machines

Canadian Moline Plow Company

Winnipeg Regina Saskatoon Calgary Edmonton



GASOLINE TRACTION ENGINES

A DEPARTMENT FOR THE USER

We want every owner of a gas tractor in Western Canada to give us his experience. The owners of gas tractors to-day are in a sense pioneers. They are working out the data and compiling a record of work done that both manufacturer and farmer alike the world over are watching with intense interest. Don't keep what you know under your hat, but let us have a story of your gas tractor work. We will reward every such story with a copy of "Plain Gas Engine Sense," one of the best handbooks we know of on the gasoline engine. Don't neglect this matter but let us have your experience at once.—(Editor.)

Easy Outfit for Two Men

Yours of Jan. 15th is on hand, you wishing to hear from me on my experiences in traction plowing. I cannot write very much on that subject, but will tell you what I can.

My engine is a 30-60 Rumely Oil Pull, and engine gang is an 8-bottom John Deere. It makes a good outfit for breaking and backsetting, but in stubble we can pull more plows. Last fall, when plowing away from home we used another engine gang, a 10-bottom one, and when we plowed at home again, using our own 8-bottom plows, we put an ordinary horse gang behind, so we had ten plows. Two men handle an outfit like that nicely.

I also bought a steering device, which helps out in steering the engine. Last fall in threshing time, when men were scarce, the engineer sometimes plowed all alone. About all we need horses for with our outfit is hauling a tank of oil and a tank of water about once a week. We use the engine kerosene for fuel from a storage taken at Sperling for 11¼c. per gallon; but we must start the engine on gasoline—a barrel of gasoline lasts us a long time.

I have not done any threshing with my engine as yet, but some engines of the same type thresh in this neighborhood, and are getting along good. In breaking, we used from 3 1-5 to 3½ gallons of fuel oil to the acre. Last spring I did some seeding and harrowing with the engine, for which we used a little over three-quarters of a gallon to the acre; we pulled three drills and harrows enough to cover the same strip the drills did, a strip of 32 feet wide, which was a light load for the engine.

Yours truly,

H. W. Palas.

Sperling, Man.

Common Sense and Application

In reply to your letter re Canadian Thresherman and Farmer (the annual traction plowing number).

I am a gasoline plow man, having had no experience with threshing, but I can give you my bit of experience with, extending over a period of two seasons.

My engine is an I.H.C. 20 h.p. I pull five Cockshutt plows, and, working 14 hours, I can plow 15 acres. My gasoline costing 22¼c. per gallon. I used about 27 or 28 gallons plowing the above, also two barrels of water.

I consider that a gasoline outfit is cheaper than steam. Fuel being more expensive, the cost of labor is greater. I work my

self myself that I have experienced no difficulty with my machine that I could not rectify myself.

Wishing your paper every success, I remain,

Yours truly,

H. A. Porteous.

Oakville, Man.

A Good Start

Yours of January 15th to hand and noted. I cannot offer very much experience along the engine line, as I have only had mine working about two months last fall.

We plowed about 175 acres and threshed 35 days. The plowing that we did was just when we were waiting on repairs

more used here than steam. I expect that by next winter I will have something more definite to present you with, as I expect to do all my seeding, plowing and harvesting with the engine. I have not had any experience with machine hitches.

Trusting that the information I have given you will be satisfactory, and that I will have more to offer when called on again, I remain,

Yours truly

Jas. Machan.

Rosetown, Sask.

A Saving of \$1,500

For the last season, I have been working a 25-h.p. gas tractor engine, and the amount of work done speaks for itself.

Last spring I seeded, packed and harrowed 500 acres, plowed 150 of that. Summer fallowed 250 acres, plowing it seven inches deep. Packed and harrowed it four times and cultivated most of it with the disc; cut the 500 acres and fall plowed considerable; threshed most of the crop. Did not finish all the

threshing as I had a break, which caused me some trouble, so got a steam engine to finish.

This work was done for \$450 worth of gasoline, and with the assistance of four horses. Had two men only till harvest; of course in harvest threshing I had more. I believe it cost me \$1,500 less to farm the last season with gas power than it would have cost by using horses. I am,

Yours truly,

C. S. Touchburn.

Alexander, Man.

Fall Best for Engine Work

In reply to your letter about traction plowing. Your articles and letter on the subject are very



A Twin City "40" Gas Tractor equipped with a Cuddy Self Steering Device, enabling one man to operate the tractor when pulling a ten-bottom plow, a soil packer, a harrow, and a 24-shoe double disc drill; thus plowing, packing, harrowing and seeding in one operation, a strip of ground twelve feet wide. Fifteen hundred acres were put in with this outfit during May and June, 1912.

outfit myself so as to do away with a plowman. From what I see myself, I should consider that plowing is harder than threshing on account of dust getting into the gearing. Taking into consideration the cost of fuel, wages for myself, other oils for lubricating, hauling gasoline and water, depreciation of machine, and sundry repairs and new batteries, it costs me as near as possible \$1.50 per acre. Stubble plowing is not so hard on the engine as breaking.

I have had no experience with hitches, as I have only plowed. I must say in conclusion, that any man with a few grains of common sense and a very little tuition can run a gasoline engine, as it is so very simple. I can safely

for the separator, and, therefore, there was not much notice taken of how much was plowed in a day, nor how much gasoline was used.

1. My engine is a Minneapolis Big Four 30 h.p.
2. Plows, Cockshutt and 6-bottoms.
3. I suppose Question 3 and 4 you mean the number of men and horses used on the outfit, which is three men and two horses.
5. About 40 gallons of gasoline.
6. About two pails in the day.
7. I think it is a little harder.
8. About \$1.10 per acre.
9. I have not had any experience in pulling discs, drills or harrows yet. Oil tractors are

ANNOUNCEMENT

The Huber Manufacturing Company

has just established Canadian Headquarters in the City of Winnipeg, Man., and will carry there a full line of Huber Gasoline Tractors, Threshing Machinery, repairs and attachments.

By way of introduction to the farmers and threshermen of Western Canada, we would say that The Huber Manufacturing Company is not new in the manufacturing business. It commenced the building of steam engines and other machinery at Marion, Ohio, about 1870, and was incorporated in 1875 under the laws of the State of Ohio.

SINCE that time, the business has grown steadily, the plant has been enlarged several times, and the output greatly increased from year to year. Other lines of manufacture have been added. The factory is large, modern, and well equipped. It is kept running full force and full time building Huber Steam Engines, Gasoline Tractors, Grain Threshers, Bean and Pea Hullers, Road Rollers, and various attachments.

Branch houses distributed over the United States enable us to supply all sections of the country promptly with the popular Huber line of machinery. In addition to that, requests have come from foreign countries and machinery has been shipped, so that now Huber products are found at work in all parts of the world.

Knowing that we have tractors and threshers peculiarly adapted to the needs of the farmers and threshermen of Canada, we have been prompted to establish a branch house in Winnipeg and carry a stock of machinery and supplies for the convenience of users of our line of goods. The outfits can be seen there, and we are prepared to take good care of all orders placed with us.

Our large Tractor is of the four-cylinder type. For traction work, and particularly for plowing, we believe there isn't anything better offered. The consumption of fuel is very light compared with the amount of power developed. The gearing is finely adjusted for transmitting the power with greatest econ-

omy. The width of outfit does not interfere with its use on ordinary roads. The weight is distributed, and draw bar pull adjusted, so that the engine has enormous pulling power. Drive wheels are wide and high, giving a powerful grip on the ground. This is a valuable feature in plowing.

For belt work, there is a wide band pulley placed at side of frame and close to motor. In setting for stationary work, engine is backed into the belt without band wheel turning. Threshermen will appreciate the advantages of this feature.

Our line of threshers is complete, and we offer machines adapted to all the work of the country. Our large size, with 40 inch cylinder and 66 inch separator has capacity adapted to the largest farms. It will handle and clean perfectly all kinds of small grain, with practically no waste. We furnish feeders, wind stackers, detached stackers, weighers, loaders; in fact every part of the equipment needed to make a complete and modern threshing outfit.

Our new literature for 1913 is just from the press. One book describes our threshing machine line; and the other the gasoline tractor line. Either one is free for the asking, and we send them gladly on request. We solicit inquiries from those interested in our class of machinery; and an opportunity to quote prices and terms on the machinery needed.

The Huber Manufacturing Co. Marion, Ohio

Branch Office - WINNIPEG, MANITOBA

interesting to me, so I will try and do my best to tell what I know about it.

My brother and I bought a 20-h.p. International gasoline tractor four years ago, the first two years we only used it for threshing and chopping, two years ago we got a 5-bottom 14-inch Cockshutt gang. We had very good success while the weather kept dry, but as soon as it got wet we had to quit. The fall of the year is the best for engine plowing. We used about 15 to 20 gallons per ten hours while plowing, and plowed about an acre per hour, two men operating the outfit. We used about one barrel and a half of water per day.

We consider that plowing is a lot harder on the engine than threshing. The load while plowing is always constant, with threshing it is different. We have not tried any other machinery in that line. We usually take out the water and gasoline in the morning to do us all day. We like it very well. Our chief drawback is the small slews and bluffs, which makes short furrows. The engine is ahead of horses, for you can get in as many as you like to work. Our engine handles the five plows quite easily for threshing; they can't be beat.

Wishing every success for you and your magazine, I remain,

Yours truly,
John Young,

Birtle, Man.

The Modern Farm Horse.

I have used a 24-45 Hart-Parr engine for the last two seasons and am well pleased with it, and also find it more economical than horses for most work.

I pull eight 14-inch stubble plows (Cockshutt) and the harrows, and next spring intend to put on the packers, as last fall we found the engine pulling her load very easily. Unfortunately my land is rolling. If it were flat I am sure the engine could pull a far heavier load. I used the engine for cutting the crop both years and also for discing and seeding. With regard to seeding, after the first four weeks we could not see the slightest difference in the crop where the engine wheels had been and therefore do not understand how some people (according to their letters to the papers) found their wheat a foot shorter and also thinner where the engine wheels have run. I used trolley to hitch the drills on, a long sweep, resting on, and chained, to my Cockshutt plow and found this very satisfactory, except that we had to take the plows off, as it was very heavy;

but as I was away last winter I could not make a proper hitch. I hope you will publish the plans of some good ones in your paper again.

I have to keep horses for stook threshing and hauling out grain. I cannot haul out grain with the engine as my station, Uno, is in the Assinaboine Valley, and we have a very steep hill to go down and an awkward approach to the elevators.

I use about 1 1/2 to 2 1/2 gallons of water per hour. It varies considerably, and 1 1/2 gallons of kerosene per hour, about 2 gallons of cylinder oil in 12 hours, and one gallon of lubricating oil on a load of 8 plows and the harrows. If the load does not cause many stops, the gasoline used is very little. I always start on gasoline, but have never had the engine refuse kerosene, however soon I turn it on. There is not the slightest doubt threshing is far easier on an engine than plowing.

I have had a few troubles with the engine occasionally, but in most cases they have been the result of either carelessness, or ignorance. I might add that I had never handled or had anything to do with an engine before buying my Hart-Parr. Also that I have about 1,000 acres under cultivation.

Cost of plowing 2 1-5 acres per hour:

Kerosene	42c
Gasoline	10c
Cylinder oil	7c
Lubricating oil	3c
Engineer's wages (self)	35c
Plowman	15c
Depreciation	20c
Interest at 7 per cent.	12c

Total\$1.44

P.S.—You can put the cost of plowing in if you think it of use. I shall be very pleased to receive your paper for the coming year. If the above letter is too long, cut it down if you like.

Yours truly,
C.P.R. Palmer, Esq.,
Uno, Man.

Has the Only Oil Engine in His Neighbourhood.

Yours at hand regarding my experience in traction plowing. I have had little but not very much. I got my engine and plow last spring and I was a green hand at it, but I will give you my experience as near as I can.

I have an international oil tractor, 25 h.p., my engine plows are the P. & O. and they can't be beat. They are good in scrubby land as well as on prairie. I use two men with the outfit, one for the engine, which I drive myself, and a plowman. As we can't get water very handy we generally use an ? ? ? slough in the

field. We only use 3 or 4 barrels in a good long day. I have six work horses and they do the sowing and discing and harrowing. I use about two barrels of oil in 3 days in breaking and a trifle less in stubble. With regard to plowing being hard on the engine, I have lots of power and it seems easy on the engine in the belt and traction both, but I think plowing is the harder. I could not give a very definite amount with regard to the cost per acre but I think it costs about \$2.00 for breaking and about \$1.50 per acre for stubble.

I have never tried to draw discs or drills or harrows. There is very little traction work on the land here. In fact I was the first to try it and I have not had very good success. I have one picture which I will lend to you but as it is the only one I would like it back again. I have the only gasoline engine in this neighbourhood.

F. A. Green,

Menzie, Sask.

A Good One.

I own a 60-b.h.p. Hart-Parr Tractor, with which I have been doing about all the various kinds of work that an engine is called upon to do on the farm, though I have had the engine only one season.

It was delivered to me only a few days before seeding commenced, and, as I had never handled an engine before, and had only about an hour with the expert, it is not surprising that I was more afraid of the engine than the engine was of me. I mention this because I lost much time and nervous energy on account of my fear of doing harm to the engine, yet I sowed and harrowed 100 acres during my first two days' work with the tractor.

My season's work was as follows: Seeding and harrowing, three seeders and 30-foot harrows, 220 acres; double discing, seeding and harrowing, five 8-foot discs, harrows, two 20-disc seeders and 20-foot harrows, 550 acres; double discing and harrowing seven disc harrows and 30-foot drag harrows, 550 acres; stubble plowing, pulling a 14-disc Emerson engine plow, cutting about 10-foot and with harrows attached, 450 acres.

The following summary will serve better for comparison with the familiar known unit of a 4-horse team and man:

Kind of Work	Acres	Team Days	Cost with Horses	Amount
Seeding	770	47	\$.04 per acre	\$ 308.00
Harrowing	2005	50	.. .15 per acre	300.75
Double Discing	1100	122	.. .65 per acre	715.00
Plowing	685	228	.. 2.25 per acre	1541.25
Cutting	235	14	.. .35 per acre	82.35
Total ...		461		\$2947.35

The value of my work on the basis of the cost of doing same with horses was \$2,947.35. To this item, however, must be added the sum of \$265.60 received in excess of these prices for work done for hire, making a total earnings of \$3,212.95. My cost of operation was as follows:

Fuel, Lubricating and Grease	\$ 850.00
Repairs, Tools, etc.	37.50
Hauling of Fuel, Oil and Water	120.00
Help on Outfit and Board	275.00
Interest on \$3,500 at 8 per cent.	280.00
Depreciation on \$3,500 at 10 per cent.	350.00
	\$1912.50

Deducting from this the earnings, it will be seen that I am gainer by the use of the power outfit by the amount of \$1300.45.

In the opinion of the writer, a calculation based on an entire season's work, which must cover all lost time from all causes, is more reliable than a per day calculation. The outfit was not at work all of the time. I could have done about 30 per cent. more than it was required to do.

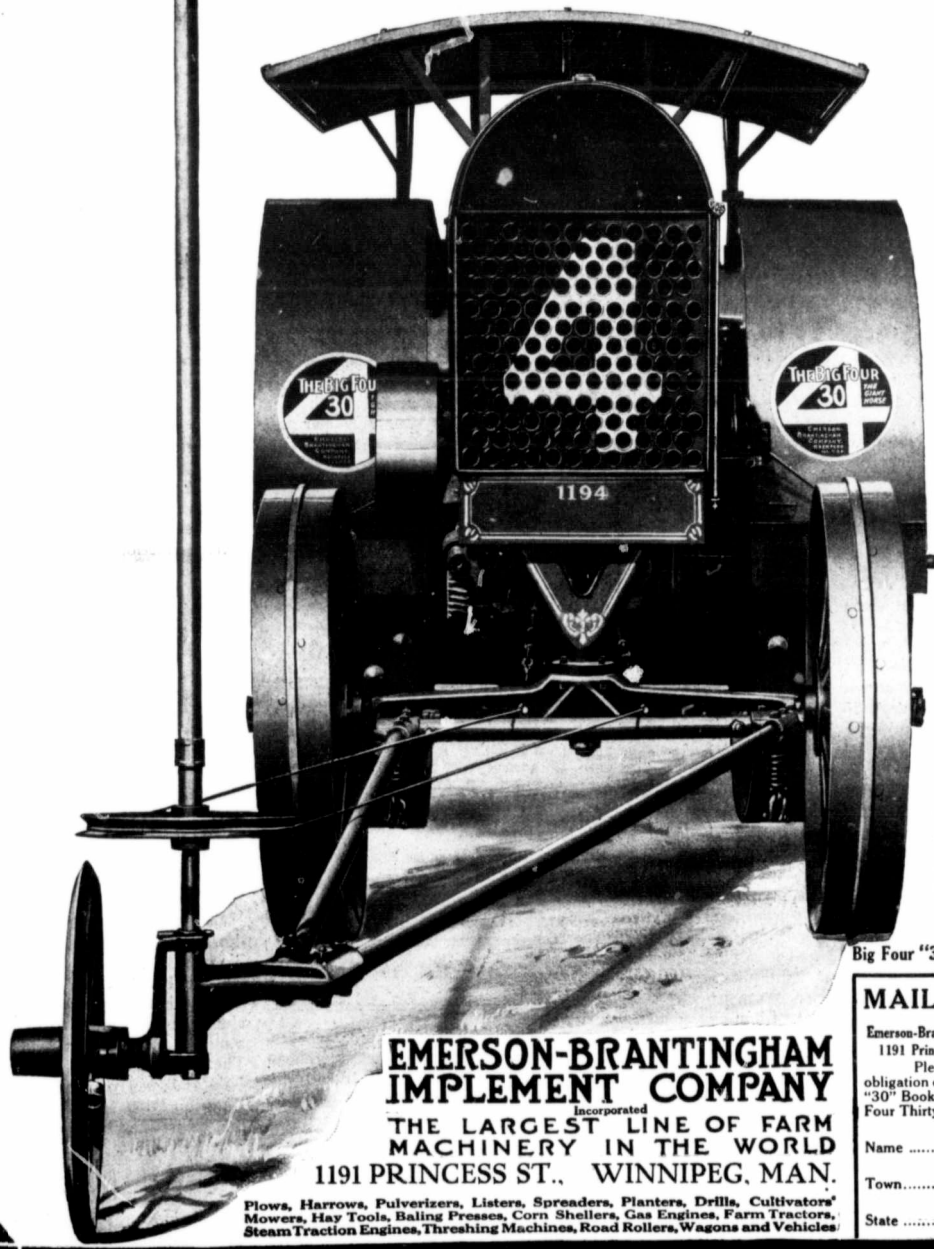
We used Silver Star coal oil at 16c. per gallon, and 40 gallons will carry her maximum load 14 miles on an average. This engine is cooled with oil, but water is fed with the charge, so that about a barrel of water per day is used when under a heavy load.

In no case were more than two men working with the entire outfit, and frequently one man worked alone. I did no threshing with the tractor, as I have a large steam outfit; but threshed long enough with the Hart-Parr engine on the 40 x 64 Northwest Separator to demonstrate that she had plenty of power to run this large separator.

I wish to say a word with regard to the wheel depressions in seeding. These caused me anxiety early in the season, but later I found that in every kind of grain the wheel depressions bore the heaviest kind of grain, and in oats, barley and flax the wheel depressions were so apparent in earlier ripening that the eye could follow them in the case of barley for half a mile.

Yours truly,
J. B. Musselman,
Cupar, Sask.

SOLD ON APPROVAL



READ THIS

The Big Four "30" must make good on your own farm, under your test, before you pay a cent. Let us tell you why the Big Four "30" is sold on approval.

MAIL THIS NOW

Emerson-Brantingham Implement Co., Inc.
1191 Princess Street, Winnipeg, Man.

Please send me without any obligation on my part The Big Four "30" Book and tell me why the Big Four Thirty is sold on approval.

Name

Town

State

EMERSON-BRANTINGHAM IMPLEMENT COMPANY

Incorporated
THE LARGEST LINE OF FARM MACHINERY IN THE WORLD

1191 PRINCESS ST., WINNIPEG, MAN.

Plows, Harrows, Pulverizers, Listers, Spreaders, Planters, Drills, Cultivators, Mowers, Hay Tools, Baling Presses, Corn Shellers, Gas Engines, Farm Tractors, Steam Traction Engines, Threshing Machines, Road Rollers, Wagons and Vehicles

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Cost \$1.65 per Acre

We own a Hart-Parr 22 h.p. and a Cockshutt 6 furrow gang. Have used the outfit for four seasons plowing and two seasons threshing. In plowing I just have one man for plows, and run the engine myself. In ordinary breaking we reckon fifteen acres, an average day's work of about twelve hours, of course we often have bits of stops and breaks which make the average day's work look small.

We use about fifty gallon of engine kerosene and two of gasoline per twelve hour day and about thirty gallons of water, being an oil cooled engine. This water is simply fed into the cylinders along with the coal-oil to keep the heat down. I find in averaging up the cost per acre on the season's run with breakages, interest on outfit and labor and fuel we have an estimate cost of \$1.65 per acre. This looks large but taking one day with another, and figuring in for repairs it brings the season's average gain down quite a bit. I have always found it easier on the engine and more profitable threshing, although these last two seasons we have used the steam for threshing, but this last year has shown me that even the gasoline engine is ahead of the steam when you have bad water and leaky flues to contend with, not to mention tough and damp straw, to fire with.

I have never used the engine much for seeding. The steam engine has the monopoly in the immediate district, although the gasoline is getting a lot more common and after this past season I believe it will be more used as I am firmly convinced in this Western country where we are both scarce of water and often bad as that, the gasoline engine will soon replace the steam both for plowing and threshing.

In most parts of this province, the cost of coal-oil and gasoline has been cut down till we are getting it for more than one-third less, than we had to pay three years ago, which means quite a little sum on the season's run.

Yours truly,

William Elliott, Esq.

Vonda, P.O.

Sask.

**Has an Oil Pull**

I own a Rumely Oil Pull engine thirty horse power and sixty horse break, bought it about the 16th of last June. I first tried breaking bush land with John Deere 24-inch bush breaker. On account of the side draft the plows did not work well as the hitch would have to come, using three plows all on one side of the engine, making the engine hard to

steer, where the ground was soft the engine would slide sideways. I then bought a Cockshutt plow with eight bottoms, took the stubble bottom as there is very little sod in our bush land. I find the stubble bottom does better work than their breakers when on ordinary sod. It turns the furrow better, while it leaves the breaking a little rough looking in heavy sod. I cannot see but it discs fully as well as though it lay smooth. Our land is quite stony and also heavy, their being numbers of willow bunches where one can cut from ten to fifteen willow post from each bunch. The weak part on a Cockshutt plow seems to be the main standard of plow, as I broke three of these, all three were broken on stones. Do not think you can break a plow on stumps or shrub, as I plowed out numbers of stumps twelve inches across and had no breaks from stumps or shrubs. I broke about three hundred acres averaging twenty-five acres a day.

Sixty gallons of coal oil at 18c per gallon. Lubricating and cylinder oils 75c per day. Two men \$2.00 per day each, and 50c each per day for board. They run their engines home each night, fill their oil and water tanks, which lasts for the day. I also summer fallowed three hundred acres. Total expense on plows, breakage and sharpening, \$32.50, this is for the full six hundred acres. No expense on engine.

In discing and harrowing, I attached a sixteen-foot 4 x 6 red pine draw bar to engine, used for discs in front, and two sets of harrows behind, hitching in such a way as to load the engine so there would be no side drafts, or as little as possible.

I used a Great West Sawyer & Massey 36 x 56 Separator, which is all right, have threshed thirty-days without a single break. I consider the Oil Pull engine easier on a separator than steam as she runs more steady.

I have threshed forty-one falls and during this time have owned four steam engines and some eight or nine separators.

I consider the Oil Pull or Gasoline sure to be the coming power. I find it easier to get help to run an Oil Pull, than it is to either drive team or run steam. As most of our young men want to work on the latest up-to-date machinery.

I hired my oil hauled from station to farm for one dollar per barrel or say two cents per gallon which makes the oil cost me 18c per gallon on farm.

Stubble plowing averages about 30 acres a day. Expenses the same as on breaking.

Respectfully yours,

Barney Griffith, Esq.,

Rock Dell, Sask.

Few Steam Rigs in this Neighborhood.

Regarding your letter of Jan. 15th. I purchased the 40 h.p. Flour City engine from the Ontario Wind Engine and Pump Co., Winnipeg, that was entered in the Contests at Winnipeg in 1911, in class D. This is the engine that made the highest number of points in Gasoline, Kerosene or Steam in the whole Contest. I have an eight-bottom John Deere Plow, so that I have practically the same outfit that was in the Contest. When I got the engine it was fitted out with a kerosene attachment, but I could not get very good satisfaction out of the kerosene that I bought in barrels. It seemed to be half water, so I used gasoline all fall. I used about 40 gallons in twelve hours' steady work. The fall was so wet that it was impossible to plow stubble so that I have only tested it on breaking so far.

I kept one man on the engine and one on the plows. Besides it took a man and team half a day every week drawing gasoline. We used about a barrel of water every day but it was handy and we generally backed the engine up to the slough at noon and filled up our tank.

For breaking, I don't think it cost me any over \$1.00 per acre for fuel and wages, including time drawing fuel. Besides when it was not too wet and the engine got footing, I pulled a disc behind the plows. It cost me a lot more this fall. I am sure that it would not, had the season been more favorable. When it was very wet, six plows seemed a far bigger load for the engine than when it was dryer on the surface and the engine did not slip.

There are a few steam plow outfits in this neighborhood but they don't seem to give the satisfaction that the gasoline rigs are giving.

I intend getting a separator next fall and doing my own threshing.

Yours truly,

Allan McBurney, Esq.,

Forward, Sask.

Unlucky 13!

Rev. Minot J. Savage, in a sermon on "Superstitions," declares that he never found 13 unlucky except on one occasion when he owed a bill for 13 dollars and had but 12 with which to meet it.

We all know that rooms in hotels, staterooms and sleepers bearing the number 13 are not taken from choice by the average person. A travelling man arriving late at a hotel was assigned to room 13. "No, you don't,"

said he, "I'll sleep on the billiard table or office floor first." The clerk with a merry twinkle sent him to 94 and the guest failed to add the figures together.

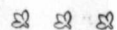
"My wife is worrying about there being 13 at the table to-night," said a host. "Superstitious, eh?" replied the guest. "No, but she has only one dozen best forks."

In the life of Richard Wagner, 13 played a part. He was born in 1813, the numerals of which added make 13, he finished "Tanhauser" April 13, 1860, and it was performed for the first time March 13, 1861. He died February 13, 1883 — a most unlucky thing for the world at large.

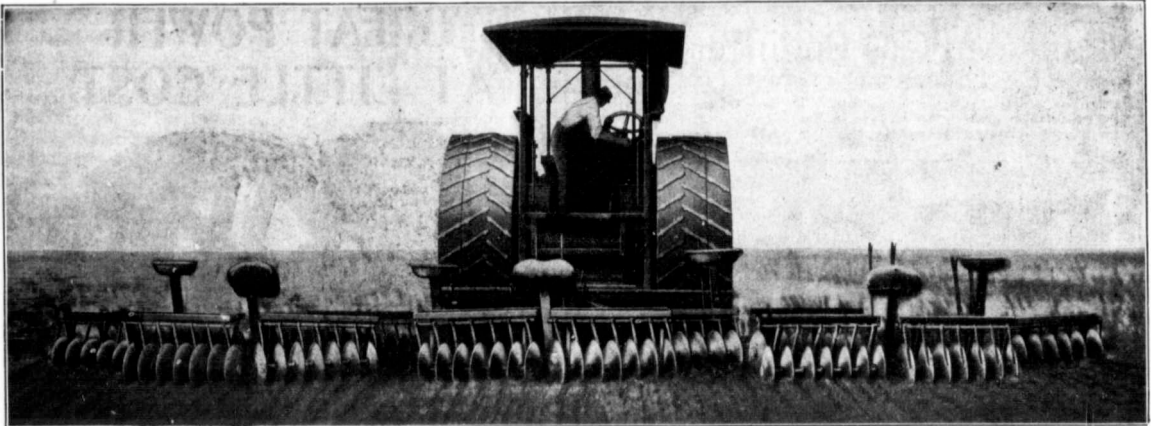
Thirteen is repeated in a singular way in the case of a man named George Coottes (13 letters here) who moved from Vermont to Minnesota and lived there until June 13, 1888, when he joined the 13th Minnesota Regiment, Co M.— the thirteenth letter in the alphabet. He was the thirteenth child in his family. He took part in the Manila land fight August 13th and died soon after, but not on Friday or on the 13th day of the month. To the unbeliever this would be put down to a chain of coincidences, but to those who have faith in omens it affords added proof of their tenets.

Twenty years ago in New York City the Thirteen Club was formed and is still in existence. Their first home was at a club, Knickerbocker, spelled with 13 letters and located at 454 Sixth Avenue, a number which added together fits all right with their ideas. It is a unique organization and has excited curiosity from the start, although at first ridiculed. The first achievement in carrying out its objects — to disabuse the public mind about 13—was to petition the states to abolish Friday as "Hangman's Day." New York led off with the execution of Mrs. Druse on Monday. This unpleasant task is now performed in many states on other days than Friday and Sunday, and as a result of the pioneer work of this club.

At its first club dinner 13 sat down and all survived the year. No one died for six years, and it was neither food nor drink that caused his taking off. When the club dines they cross forks, break a mirror and spill salt regardless. The membership is limited to 1300 and was reached in 1889. The initiation fee is \$1.13, and they address each other as "Yours Thirteenthly."



To hamper the body is to subdue the spirit. When man wanted to insure his dominion over woman, he invented the skirt.



More Acres of Land have been successfully plowed with AULTMAN-TAYLOR than any other make of tractor on the market.

Better Work Has Been Done with the AULTMAN-TAYLOR Tractor than any other.

Less Money Has Been Spent on repairs for AULTMAN-TAYLOR Tractors than any other.

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The AULTMAN-TAYLOR is not only a Tractor for plowing, but has been most successful in seeding, threshing and hauling. The Winnipeg Record stands out as one of the best testimonials that can be offered for the AULTMAN-TAYLOR Gas Tractor. Not a question of price but a question of supplying the very best Tractor that can be built.

We are also builders of NEW CENTURY THRESHERS. Do not be misled by representations that there is something else "just as good" for **it is not built.** No other thresher has ever met with as much favor among operators and patrons of operators as the NEW CENTURY.

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Course in Gas Engineering

CONDUCTED BY D. O. BARRETT

This course consists of a series of practical talks on the theory and practice of the gas, gasoline and oil engine. They will be simple, illustrated when necessary, and of such a nature that the gas engine owner may easily adapt them to his daily engine work.

LESSON XXV. Power, Rating, Etc.

FOR the next two or three lessons we wish to go quite thoroughly into the power question of the internal combustion engine, that is, a discussion of the power rating, the various factors affecting the power delivered by the engine and why, and the capacity of the engine or what it may be reasonably expected to do. To do this in a systematic manner it is necessary to understand the operation of the gas engine indicator and the card obtained from same. No engine test is complete without an indicator card telling what is going on in the cylinder of the engine and the sequence of the events. Final judgment on any engine is only passed after having used the indicator. It is the most necessary adjunct to the engineer who is called upon to test gas engines of any kind and for that matter what is said of the indicator in respect to the gas engine holds equally true with the steam engine.

Several different types of indicators are manufactured, all operating, of course, on the same principle but differing only in details of construction. The one shown in the cut has been designed for special use with the gas engine.

The operating mechanism consists primarily of a piston, spring, pencil motion, and drum. At the bottom of the indicator body is a connection by which it may be fastened to a special cock cylinder, pipe or other parts it is desired to study.

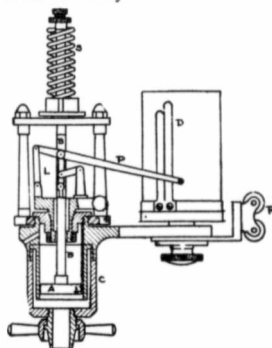


Figure 1

'A' is the piston which moves freely in the cylinder 'C.' The cylinder is in two parts, a small space being left between the two forming a jacket. The hot gases

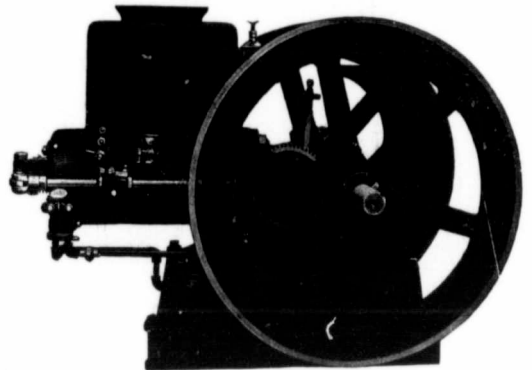
being around and in the inner barrel keep it at an even temperature, insuring practically the same expansion as that of the piston, preventing it from binding at any time. The piston in this particular make of indicator is not straight along the sides but is in the form of a section of a sphere. This insures a line contact between the piston and the cylinder and it is claimed to reduce the friction between the same. A small groove is turned around the center of the piston and this becoming filled with oil makes a gastight joint and allows perfect freedom of the piston in a vertical direction.

Above the piston is an opening from the cylinder communicating with the atmosphere. This allows any gas or steam which may leak by the piston to readily escape from the cylinder without producing any back pressure on the piston.

The rod 'B' is attached to the piston at its lower end and extends up through the body of the indicator terminating in the screw and locknut at the top. On the top coil of the spring 'S' is a small ball and this coil passes through a slot in the top of the rod. The screw passes down on this ball securely fastening the spring and the rod together yet making a flexible connection allowing perfect freedom of the rod as it is not guided in any manner except at the bottom by the piston and as this is spherical it can not cramp in any manner. The lower part of the spring is fastened to the frame by a screw connection and may be raised or lowered by turning and then locked in position. Raising the spring raises the rod, piston, and pencil motion. The object of this is to change the initial or zero position of the pencil on the drum.

The linkage 'L' connects the pencil arm 'P' to the rod. This is composed of three small links. The object of this linkage is to produce what is termed a straight-line motion, that is, the pencil point in the end of the arm is constrained to move in a vertical line parallel to the motion of the piston and in definite ratio to the same. This motion of the piston is increased from three to five times depending upon the make of indicator. Different arrangements of linkages and also cams are used to produce this straight-line motion and consti-

GREAT POWER AT LITTLE COST



The Stover Gasoline Engine

will give you all the power you need and a bit over for every purpose on the farm at less fuel cost than anything else of the kind made. It is the smoothest working and most dependable of all gasoline engines.

LET US PROVE THIS TO YOU

Write for catalogue of our full line of stationary, portable and traction engines.

WE HANDLE EVERY KNOWN FARM REQUISITE

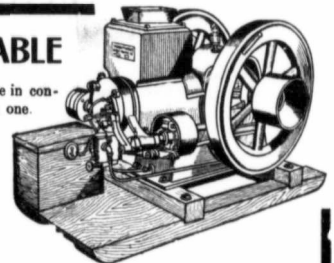
Fuller & Johnson repairs; repairs for the Wilkinson Plow Line; shares for all kinds of plows at lowest prices; dry cells at cost; engines for pumping, churning, crushing, grain cleaning, sawing, threshing and running washing machines.

CANADIAN STOVER GASOLINE ENGINE CO. LTD.
EIGHTH AND PACIFIC AVENUE, BRANDON, MANITOBA

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SIMPLE, RELIABLE

Barrie Engines are so simple in construction your boy can safely run one. Little attention required. Reliable and economical.



BARRIE ENGINES

are staunchly built. Cold weather or long hours don't bother them. All ready to run.

No skilled labor required to adjust them. 3 to 100 horse power. Stationary or portable. For gasoline, producer gas, natural gas, and distillate.

Write for catalog. Agents wanted.

The Canada Producer & Gas Engine Co. Limited

Barrie, Ontario, Canada.

Distributors: James Rae, Medicine Hat; Canada Machinery Agency, Montreal; McCusker Imp. Co., Regina; The Tudhope Anderson Co., Ltd., Winnipeg, Calgary, Edmonton, Lethbridge, Saskatoon and Regina.

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GILSON ENGINE

"GOES LIKE SIXTY"

Always ready for work. Perfectly adapted for operating all farm machinery from the pump to the biggest Thresher. Improved cooling, governing and sparking devices. Up to date. All sizes. Write for catalogue. Gilson Mfg. Co. Ltd., 11 York St., Guelph, Can. FOUNDED 1885

NEW COAL OIL LIGHT



Beats Electric or Gasoline

'ONE FREE To Use On Your Old Lamp!'

Our special introductory offer entitles one person in each locality to one free. Powerful white incandescent mantle light. Replacing common oil lamps everywhere! Burns 70 hours on one gallon of coal oil (kerosene). No odor or noise, simple, clean, brightest and cheapest light for the home, office or store. **WANTED** Spare Time. Write Quick. Better light than gas or electric. Send postal for **FREE OFFER** and agents' wholesale prices.

MANTLE LAMP CO., 278 Aldin Bldg., Montreal and Winnipeg, Can.

tute the main difference of the various styles.

That part of the body carrying the pencil arm and the linkage is allowed to rotate about the rod so that the pencil point may be brought against the paper on the drum at will. The movement against the drum is adjusted by a stop screw so that great friction will not be produced by the pencil point. The drum 'D' rotates back and forth by means of a cord passing around the lower part and connected by means of a reducing motion to the piston of the engine. The reducing motion consists essentially of two pulleys, one large, and one small one. A cord passes from the piston over the large one while the cord from the drum passes over the smaller. This produces the motion of the piston on a smaller scale. The peripheral movement of the drum which is, of course, the length of the indicator card and which corresponds to the length of the stroke of the piston is usually made from three to four inches, depending somewhat on the speed at which the engine is operating. This movement is adjusted by means of the two pulleys in the reducing motion. Inside the drum is a spiral spring which tends to retard the movement of the drum and always returns it to the original position when the cord running to the moving parts of the engine would loosen, due to the return motion of these parts. In the reducing motion is another spring performing the same functions.

In using the indicator it is placed upon the special cock in connection with the combustion chamber of the engine. The drawing shows the position of the indicator and reducing motion on the engine. The cord is represented by the dotted lines. The cord is run from the indicator drum over the small guide pulleys to the small wheel on the reducing motion. Then from the larger wheel of the reducing motion another cord runs over two other pulleys and runs back into the cylinder of the engine, attaching to some part of the piston usually, a convenient place being to fasten to the set-screws holding the piston pin. One special precaution is necessary in setting up in this manner, and that is, to have the cord running from the piston to the first pulley to be exactly parallel to the movement of the piston. If this is not done the indicator card obtained will not be reliable and will not represent the true conditions in the cylinder. Beyond the first pulley the cord may run in any direction. Special indicator cord must be used for this purpose as the action of the piston toward stretching the cord is quite severe. With all reducing motion several sizes of

pulleys may be used so that it is possible to get the correct length of card regardless of the stroke of the engine. The length of card usually obtained is from two and one-half to four inches. On the slow speed engines the longer cards are obtained but when the speed of the engine is increased the inertia of the moving parts is so great that accurate results cannot be obtained and so the length of the card is decreased. There are numerous other ways of connecting the cords and reducing motion, but that given above is one of the simplest. A convenient method of holding the pulleys and reducing motion is on rods attached to the cylinder bolts or studs.

The springs which are used in the indicators are graduated at the factory and each has a definite scale, which value is marked upon it. For instance, a spring is marked '200 G,' this means that in the gas engine indicator in which it is to be used, if 200 pounds pressure per square inch be allowed to act upon the piston, the end of the pencil arm would be raised one inch. Now, the piston of this particular indicator has an area of one-half a square inch while the same type of indicator manufactured for steam engine work has an area of one square inch. The ordinary steam engine indicator has a piston with an area of only one-half square inch with an auxiliary piston for

square inch. However, there are some advantages with the larger piston. If the above mentioned spring were to be used in the steam engine type its scale would be halved or 100 pounds per square inch pressure would then raise the pencil arm one inch, since the area of the piston is twice as great. Sometimes the springs are marked with the two scales, but as they are usually used only in the one indicator this is unnecessary. In using any spring it is very important to be sure and know what the scale is, as otherwise the results would be worthless for some purposes. In order to determine the actual pressure at any time from the indicator card, knowing the scale of the

Continued on page 60

FLOUR CITY TRACTORS



IT STANDS TO REASON

That he who specializes on one article can produce better results than where his efforts are divided.

The "FLOUR CITY" is our specialty; its high standard is due to concentrated effort in one direction. It stands for **quality, efficiency and service.** It did not make its entry with a boom through high financial circles; on the other hand, it has steered clear of combinations, stock jobbers and promoters in general.

It fought its way single-handed and alone; and its success is due to its development in conscientious hands. Its construction has been carefully inspected in all details. That it has produced results is attested to by its record in carrying off four gold medals in as many years in the Winnipeg Contests, in both **Gasoline** and **Kerosene** classes. No other tractor on the market has equalled its record; no other tractor has earned the honors bestowed on the "FLOUR CITY."

Its development has been on the most conservative lines. Our policy is to build the **best** regardless of cost; not how many, but how good. We have never resorted to exorbitant or exaggerated claims to sell the "FLOUR CITY". Our best advertisement has been its record in the field. Its design admits of the maximum power and minimum weight. Its Bevel Gear transmission that was questioned by our competitors, has proved to be the strongest, most durable and lasting of any type, and is now being copied by many, but excelled by none.

Its over-head valves opening direct into the cylinders, free from side chambers, has proved to be the most economical from the fuel standpoint; most dependable from the ignition standpoint, and most advantageous where low grade of oil is used. This construction is recognized by the **United States Government** who specify all these points in asking for bids.

If your local dealer does not handle the "FLOUR CITY" write direct to us for Catalog No. 19.0: detailed information.

828 44th Avenue North

KINNARD-HAINES CO.

MINNEAPOLIS MINN.

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Questions and Answers For Gas Engine Operators

This is a department for gas engine operators similar to that which we have so successfully carried on for the past few years for those interested in steam. We invite your questions and will give them our best attention. Just tell us your troubles or ask us about any point upon which you desire information. We have secured the services of a competent expert who can handle gas engine queries intelligently and to the complete satisfaction of all concerned.

Q. G.G.W. Kindly give me the ingredients for compounding an anti-freezing mixture. I want to use it in my acetylene gas generator and I want something that will not be injurious to galvanized iron. Last year I used kerosene but it was too expensive on account of evaporation.

A. We do not understand how you could use kerosene in connection with your acetylene gas generator. It could not take the place of water for generating gas, and we see no other need you would have for an anti-freezing mixture, since the generation of the gas usually keeps the water warm enough to prevent freezing. There are two anti-freezing mixtures usually used to cool gas engine cylinders, one composed of water and alcohol, or water, alcohol and glycerine. The calcium chloride solution is made up by using about five pounds of chloride to the gallon of water. This is then diluted by about an equal amount of water when placed in the radiators. The cost of the chemical is about five cents a pound. It is the cheapest anti-freezing mixture we know of. We would not recommend it to be used in contact with galvanized iron. It would be liable to attack the zinc slightly and would eventually cause pitting and corrosion generally. The alcohol mixture, while a little more expensive, would meet your needs better. One quart of wood alcohol added to a gallon of water freezes at five degrees below zero, while a fifty per cent solution of alcohol and water will not freeze until the temperature drops to about thirty-five degrees below zero. The alcohol will evaporate to some extent, especially after it gets quite warm and you find it necessary to add some alcohol occasionally to maintain the strength of the solution.

Q. S.D.B. My gas engine when running has a yank occasionally, which causes it to slack somewhat in motion, then runs up to normal speed. There is no

back-firing and think there is no pre-ignition of charges, there are no rough places to cause pre-ignition. Could it be in the compression? I had experts look at it, but everything failed. The cams are all set right. Engine has run five years, same thing every day. It is a 50 h.p. Am operating a flour mill.

A. If we were to inspect the engine while running we should expect to find either pre-ignition or a slipping off of the intake catch or hook, provided of course your engine is fitted with hit and miss governor. Either of these incidents may cause the "yank," as you call it, or a drop in speed. A mis-fire would do the same thing, but we assume from the term "yank" that there is some kind of jerk, jar or thump in connection with or just previous to the slack in speed. A mis-fire might result in a thump following the slackened speed but not precede it. The cause of this trouble ought not to be very difficult to locate by one who has had considerable experience as a trouble hunter, provided he could watch the engine in operation. But at a long range like this we can only suggest and point out causes which gave similar results in our experience. Some catch in the governing mechanism may be at the bottom of the trouble, or possibly some abnormal condition of the inlet or exhaust cam or their rollers.

Q. W.J.T. Will you please tell me through your paper if it does any harm to use kerosene oil for fuel in a two cycle engine? It acts as though it were all right when it has got warmed up on gasoline and then use the oil.

A. No harm whatever will come from the use of kerosene. You may be compelled to clean the cylinder and valves more often by the use of kerosene because it is liable to deposit more soot or burned carbon than gasoline. In other words it does not burn up as clean, as a rule, as gasoline does. But if you could in some way arrange to throw a small spray of water into each charge as it enters the cylinder you may aid the oil to a more complete combustion. You are to be congratulated that your engine will step so readily from gasoline over to kerosene. They will not all do it so obediently.

DON'T LET YOUR ENGINE IDLE

because weather's cold. Don't waste time and strength pulling round a balky engine either. My device easily starts any engine that can be turned over in colder weather. Make it yourself costs but few cents, no expensive, dangerous chemicals—gasoline only. Drawings and full particulars, one dollar. Money back if it won't work. Send dollar bill in envelope today. It will save you many dollars first month.
Addison Johnston, Box B. Stettler

The Comet Magneto Holds First Place

In the minds of hundreds of the leading Gasoline Engine builders, jobbers and dealers.

THE COMET
30 Days
Free Trial



BECAUSE of neatness of mechanical design, simplicity of construction, and **GREAT ELECTRICAL EFFICIENCY.**

IT PAYS
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Cheaper for Every Purpose Power

The **WATERLOO BOY GASOLINE ENGINE** will run all day without attention, furnishes exactly the power you need, maintain a uniform speed and save you money every hour it works.

Use either Kerosene or Gasoline for fuel—equipped for both at no extra charge.

The recent award of Gold Medal at Budapest, Hungary, in open competition with the best engines of all countries is clinching proof that the **Waterloo Boy** leads the World in Construction, Power, Service and Durability.

Has many important exclusive features—Speed Lever works like throttle on a locomotive; old reliable fly ball governor, automatic feed regulation, open jacket, starts easy in Winter, interchangeable parts, etc.

Lowest in price because made in largest quantities, at low manufacturing cost. Guaranteed 5 Years. Break free. Write today.

Burridge-Cooper Company, Ltd.
Winnipeg, Manitoba, Canada.

Awarded Gold Medal First Prize at the International Gasoline & Oil Engine Show Budapest, Hungary

\$45

AND

UPWARDS

\$45

AND

UPWARDS

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Get this Valuable Engine Book Free

The wonderful economy—big power and absolute simplicity of Gray Stationary Engines are facts you should know about before making your selection. Write today and get a copy of the big Gray Catalog—tell us what you want the engine for—we can give you some mighty valuable help and suggestions about the most economical selection for your particular requirements.

Gray Stationary Engines are made in sizes from 1½ to 36 H. P. and are suited to doing the widest variety of work on the farm and in the shop. Big powerful engines for the heavy fall and winter work—big jobs of sawing, pumping, etc. Medium sizes for running all the various machines on the place and small sizes for the small machines—cream separators, churns, washing machines, pumps, etc.

30 DAYS TRIAL You can get any Gray Engine and try it all the risk. If engine is not all we claim it can be returned and we will pay the return freight. Our broad and liberal guarantee as to workmanship, material and power protects you absolutely.

Quick shipment, made from our Winnipeg Agency.

If you are interested in the purchase of a gasoline engine write today and ask for a copy of Engine Book "A". You owe it to yourself to get full details of the Gray line before making your final decision. Don't hesitate to ask questions that will help you in getting the most profitable engine for you.

GRAY MOTOR COMPANY
11229 G. M. C. Bldg., Detroit, Mich.

1 1-2 to 36 H.P.
\$33.00 up

You saw this advertisement in this magazine. Don't forget to say so when writing.

Q. H.S.P. My 2 cylinder opposed air-cooled 14 h.p. engine dropped a connecting rod, knocking a large hole through the bottom of crank case. These pieces have been put back in place and a patch of thin metal formed over the whole bottom, that is all that is affected, and riveted around edges to crank case. The job

seems to have been done well, but the trouble is this—it won't hold oil in the crank case at all, which is causing all my trouble. Now, I've made a paste of smooth-on and rubbed down all cracks good, still it leaks out the oil. You will note that I am at an out-of-the-way place and hundreds of miles from any place where I might get

this thing welded up, even if such can be done right. There will also be a heavy expense and a lot of time lost in taking this case out, shipping and getting it back, so please tell me how to stop this leak without having to take it out of the car.

Why won't a motor get up and hum when the throttle is opened? Mine runs best when the throttle is almost closed and slows up as it is opened, no matter how air and needle valve are set.

A. It seems to us that if you are to expect to succeed you must remove all the oil from the crank case and clean it out thoroughly by washing with gasoline and mopping out with waste. Then by plastering the cracks from the inside thoroughly with a paste of fine iron filings, flour of sulphur and salamoniac; 8 parts iron filings, 2 parts flour of sulphur, 1 part salamoniac. Just enough water to mix into a paste.

After cleaning and pasting from the inside let stand 24 hours and repeat the plastering and let stand again for several days, so that all the cracks may rust. Then paste over smoothly with smooth-on paste.

Q. W.L. I have a gasoline engine which is bothering me and I can't find out what is the matter. It is very hard to start in the morning when it is cold, and when it does start it runs away. I saw wood and shell corn. If you can give me some idea how to fix it I would be much obliged to you.

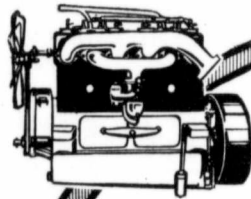
A. You can overcome the hard starting part of your trouble by saturating a corn cob with kerosene or coal oil and sticking it into the end of a wire a foot long or more for a handle and then setting a match to the cob. This will make a long burning torch by which you can heat some part of the inlet pipe or valve, which after being well heated, will assist in vaporizing the first charge admitted to the cylinder. If it is necessary to heat near a coil valve spring you must be careful not to let the spring get too hot because of drawing its temper. Your run-away trouble after the engine starts is due to inaction of the governor for some cause or other, which can only be located by careful inspection. Look the governor and all its parts over carefully and see if everything is in proper adjustment.

Judge—Have you anything to say, prisoner?

Prisoner—Yes, I'm engaged to be married. I've been engaged for the last ten years.

Judge—Why aren't you married?

Prisoner—Because we've never been out of jail together. She comes out tomorrow.



Get Tractor Efficiency That Fulfills Your Expectations--It Costs No More

You can get tractor efficiency that meets with your expectations, by buying any tractor equipped with the **Waukesha Long Stroke Tractor Motor.**

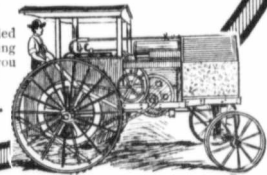
The Waukesha meets every requirement of a tractor motor. It solves your farm power problem cheapest and with greatest efficiency because it is constructed to do this. Its unusually long stroke delivers more power at less cost than the short stroke motor, and reduces the wear. Those parts which are subjected to the greatest strain have been constructed of enormously strong metals in the Waukesha. For example, the Crankshaft has a tensile strength of 70 tons to the square inch. The Bearings will carry a load of 15,000 pounds—greater resistance than will ever be required of them. These two metals are exclusively our own processes. The entire Waukesha Motor is built on par with these two features. You are always assured of absolute reliability when everything depends on your tractor working right. It serves you faithfully at the most critical periods of plowing, harvesting, threshing, hauling, etc.

The fuel economy of the Waukesha is unusual. Every ounce of fuel delivers power—there is no waste. It burns only 1 pint of kerosene per horse-power per hour; only 3/4 of a pint of gasoline. That means acres plowed at almost no expense.

Get fully acquainted with this exceptional motor. Write us for detailed information and we will send you a list of the tractor manufacturers using the Waukesha. Tell us the size of your farm. We'll gladly advise you of the most economical size tractor for your individual requirements.

Waukesha Motor Co., Second St., Waukesha, Wis.

We don't make Tractors, but just efficient Tractor Motors.



The Life of a Tractor Depends Upon Design and Construction!

With correct design, proper construction and high-grade materials throughout, a tractor will be good for a long life and a useful one. On design and construction, the "IDEAL" Tractor won highest points in its class at the Winnipeg Motor trials last summer. In materials we employ nothing but the best, at whatever cost.

THE "IDEAL" TRACTOR

Has two opposed cylinders placed horizontally upon cast bed pieces. Pistons are operated by a two-throw crank shaft placed in heavy bearings between the cylinders. As a result the engine has perfect balance and delivers the greatest power at least cost.

Lever is within easy reach of the operator. The engine is governed on the throttling principle, and fitted with pump-spark ignition. We use the vibrating Bosch system, which does away with troublesome batteries and works in all weather.

Steering device is the same as used in high-priced automobiles. Front wheels are attached to axles, permitting sharp turns when necessary. We have overcome all "walking" of the front wheels, and the operator is able to run perfectly straight when plowing.

Cooling system, of the automobile type, gives best results on only slight evaporation of water.

Our tractor booklet tells of many features that make the "IDEAL" best for Western use. Send for a copy, learn about all its good points, and read letters from men who have operated and are operating one.

GOULD, SHAPLEY & MUIR COMPANY, LIMITED

Winnipeg Regina Calgary

"IDEAL" Gasoline Tractors

"IDEAL" Hopper-Cooled Gasoline Engines

Manufacturers of

Windmills and Pumps of every description

Wood Sawing Outfits, etc., etc.

"Maple Leaf" Grain Grinders

Manitoba Engines MUST Make Good!

We have no half-hearted policy, no enticing sales promise, no narrow gauge claims of good-ness to put before engine buyers.

Our greatest asset in the engine-building business is the downright make-good policy back of every engine we sell. No man living who owns a MANITOBA Engine, can truthfully say we have not stood squarely behind him and the engine he bought from us.

Before being able to adopt such a strong policy, we had to be sure of our engine; therefore our first care was to put out a high-grade engine, built with nothing but the best at whatever cost. We produced such an engine in the MANITOBA, and now back it to the limit. Results show the wisdom of our attitude, for our output constantly grows.

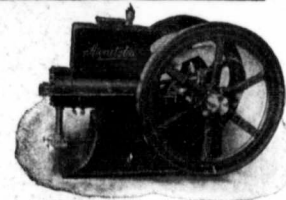
We have a catalogue for you. It tells what we use and what we do not use, where we buy our material, how we guarantee the MANITOBA Engine and how we make it good. Send for a copy. It's full of sound, practical information, free.

WE MANUFACTURE Gasoline Engines, 11 to 26 h.p. Wood and Iron Pump Pumping and Power Wind- Grain Grinders, 6 to 12 inch Wood Saws, all sizes mills, 6 to 14 feet.

"Made in the West for Western Needs."

MANITOBA ENGINES LIMITED

(Formerly The Manitoba Windmill and Pump Co., Limited)
BRANDON, MAN. CALGARY, ALTA.



YOUR COPY of the 1913 CASE
IS NOW

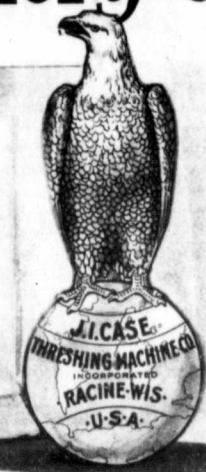


WE ARE AWAITING YOUR

EVERY Progressive who realizes the importance of especially those who will need should lose no time in writing for Machinery Catalog. It tells all about Threshing Machinery for Lessening out unmistakable advantages to be of interest to every purchaser of threshing and valuable information of greatest Farm Power User. Case Threshing acknowledged best, is even better with described and illustrated in the 1913 catalog. To make sure, better do it now before you forget.

J.I. CASE THRESHING
INCORPORATED
RACINE
CANADIAN BRANCHES, TORONTO, WINNIPEG, SASKATOON, REGINA & CALGARY

Threshing Machinery Catalog
READY!



ADDRESS TO SEND IT.

Thresherman and Farmer keeping abreast of the times — and new equipment this coming season — a copy of the New Case Threshing the latest improvements in Case Labor and Increasing Profits. It points out not only in Case Machinery and of vital interest to every Thresherman and Machinery, for 70 years, the world's the Improvements and Refinements catalog. Do not fail to write for a copy. Your name on a post card will bring it.

MACHINE COMPANY
INCORPORATED
WIS. U.S.A.
SASKATOON, REGINA & CALGARY

Thoughts on Agricultural Education

BY DR. EDWARD A. RUMELY

Continued from page 38
December Issue

"In the early days of the automobile business," to quote Mr. Ford, "I attended a Vanderbilt Cup race. I saw a foreign car driver toss his coat and a spare valve to the side of the race course. I examined this valve and found it impossible to bend with my hands, although the stem was no thicker than a lead pencil. Even then I used my full strength, placing it across my knee, I could hardly bend it. I knew there was something peculiar in the metal. With the aid of a German chemist I had it analyzed, and found that it contained an alloy. After a year's experimentation and further study, I knew much about the property of metals that I had never dreamed of before."

"But how did you, without a knowledge of physics and chemistry, notice and become so deeply interested in the peculiar properties of that valve stem?" was asked.

"As a boy, from the time I was 11 to 18" he answered, "I had to earn my own bread working over a vise in a shop, with hammer, chisel, fire and forge. I worked constantly with metals, and during that time I gained a peculiar insight into their properties that has been the basis of all my later work in manufacture. What I regret more than anything else is that today our young men, carried on by the spirit of the schools, do not get this work experience early enough to have it impressed upon them and become a vital part of their experience. Hand experience should be the basis that underlies their whole thinking."

Kent's Hand Book of Engineering, which is in the hands of every engineer in this country, and which contains the standard information for the entire engineering world, is filled from cover to cover with formulae about facts that can be neither seen or heard, but which must be felt through the hand in order to be experienced.

Because the symbols of knowledge in the written and spoken word have appealed to the eye and the ear, our educators have been led astray, and have overlooked entirely the fact that the source of all knowledge comes to us as hand, and that the most valuable of all knowledge comes to us as we work with materials. In other

words, we need practical work as part of the school course, not so much that we may become better mechanics or farmers, in later life, but that we may acquire the broadest possible experience and understanding of the world in which we live. And we all need this, whether we are destined to become clerks and doctors, lawyers, bankers and business men, quite as much as artisans and farmers.

The muscles are intimately bound up with our intellectual life. Through them alone the emotions express themselves. We see in the face of a friend whether he is sad or glad by the lines that reflect the tension and movement of the under-lying muscles; in the voice we recognize the note of sorrow or of joy that comes from the muscle tension of the vocal cord. The leader of a band, by the movement of his baton reflects the flow of feeling through himself and holds all players in unison. For the violin player, every milligram of difference in muscle pressure, and every fraction of an inch difference in the rate of movement of his bow, indicates the varying play of his muscles, and brings out other tones, and in those tones we hear the quivering of the muscles so fine that would be invisible to the naked eye, and through them magnified in the sound we understand the finest feeling of his soul.

Grit and determination are developed in children as they overcome physical resistance. Only in later life can we will to do something abstract or something that lies in the future. As children, we must slam the door, run, jump,

Good Goods Win

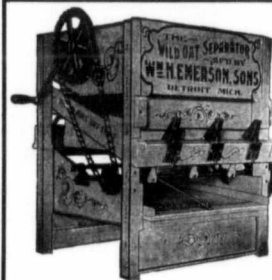
The "Good Goods Win" Slogan of this Company is not an idle dream but the very soul of a clearly defined and ruggedly rooted business policy.



AND "MAPLE LEAF"

Endless Thresher Belts and Lion Rubber Endless Thresher Belts—Go hand in hand as Pre-eminently the Best—Ask the Fellow that has one.

The Winnipeg Rubber Co. Ltd.
WINNIPEG Not in any Trust or Combine CALGARY



WILD OAT SEPARATOR

We positively guarantee our Separator to remove EVERY KERNEL of Wild or Tame Oats from your SEED WHEAT and NO WHEAT LOST with the oats.

- Made in Three Sizes:
- 6-Shoe Power Separator
 - 3-Shoe Hand Separator
 - 1-Shoe Elevator Wheat Tester

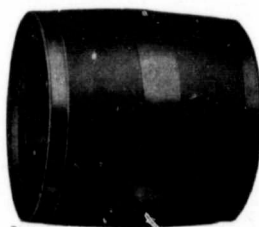
Perfect Separation of OATS from BARLEY or RYE for Seed.

Factories: Detroit, Michigan and Windsor, Ontario
Write for Circular fully explaining this wonderful Separator

WM. H. EMERSON & SONS
81 Commercial Street Detroit, Michigan

You saw this advertisement in this magazine. Don't forget to say so when writing.

The Rockwood Paper Drive Pulley ON AN ADVANCE SEPARATOR



Boyleston, Ind., Nov. 9, 1912.
Dear Sirs:
Replying to yours of the 7th. I have used the Rockwood Pulley and find it a success.
It increases the pull of the machine and I think it will save the cost of the pulley in one year on the wear of the belt alone.
They are surely the candy kids.
I run mine on an Advance 32x34 Separator and it pulled as steady as could be with no dead sound.
I remain,
Yours, Sam Zerfas.

A LITTLE MORE EXPENSIVE BUT WELL WORTH THE PRICE!
Don't fail to get one on your new machine. All sizes for all makes.

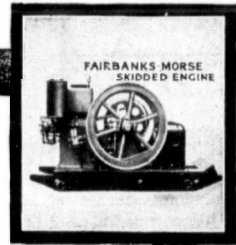
THE ROCKWOOD MFG. CO. 1928 English Ave. Indianapolis, Ind., U.S.A.

You saw this advertisement in this magazine. Don't forget to say so when writing.

climb trees, overcome some other boy in a game, by physical strength, in order to give play to our will. These valuable character qualities can be developed fully only by giving definite tasks in the physical sphere to children. Actual purposeful work with tools furnishes the best training. In the adult man in the firmly set cheek muscles we still recognize the square jaw as evidence of purpose and strength of will and this muscle, like a rudiment, tells the story of how will in each individual is developed as the accompaniment of deliberate muscular effort.

In the brain, on one side there is a cell area about as large as a quarter that serves as the nerve center for speech. Around it lies the motor center of the hand, arm, shoulder, and throat. In all right-hand individuals, this nerve center is on the left-hand side, from which the right hand is controlled. In left-handed persons, the nerve center is on the right side. Originally the cells that later become the center of the speech, controlling both the spoken word and the understanding of words when heard, were the motor area for the right hand and the throat. This development that goes on in every child shows the casual connection between the right hand, work, and the higher faculties of our mind. The Latins, who named all feeling "emotion" or the thing that moves out through the muscles, guessed the truths of muscles and mind.

Through work we are brought into sympathy with our fellows as is hardly possible in any other way. Any plan of education that does not recognize these fundamental facts and make work a part of the early training must lead to serious trouble. From all sides we hear of the breakdown of our present educational system. Everywhere there is a feeling that it does not suffice; that it does not produce capable and well-balanced men and women. The difficulty lies largely in the fact that our educators, until now, have overlooked the fundamental significance of work. There are two nerves leading to the eye and the ear, and hundreds to the muscles of the body. These all must be used as avenues of knowledge, and the demand that we "send the whole boy to school" contains a fundamental truth. This conception, this work training, can be given to the boy in the agricultural school much more easily in the country than in the city. Gardens, demonstration plots, five and ten-acre farms, conducted as an integral part of the school, will furnish an opportunity both for the activity and as object lessons by which formulated scientific knowledge can be conveyed. As soon as we look at the problem in



Get **QUALITY**
When You Buy!

No matter what you buy from us, any article bearing the Fairbanks-Morse name will be of the highest quality. From the smallest pump to the largest tractor, only one grade ever leaves our hands, and that is the best that money, plus skill, plus experience, can produce.

It was with the **QUALITY** idea that this business was founded, and during a half century of progress, that idea has ruled our policy. To-day our immense business in every part of the continent proves the value of **QUALITY** as a business asset, and has made famous the name of

FAIRBANKS-MORSE

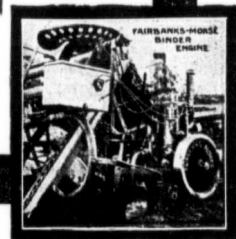
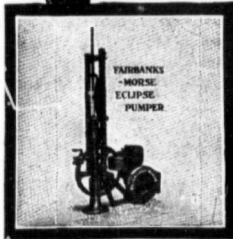
Write our nearest branch for information on any of the lines we manufacture. We are always ready to give expert advice on any subject within our range, and invite such questions as you may wish to put, assuring you of a prompt and courteous reply.

Fairbanks-Morse Oil Tractor Schools
Open to any one interested in oil engines. Short complete course includes lectures and practical work. School at Calgary, opens Jan. 27th, closes Feb. 1st. At Saskatoon, opens Feb. 10th, closes Feb. 22nd. At Winnipeg, opens Feb. 17th, closes Feb. 22nd. At Regina, opens March 2nd, closes March 8th. Write any of our branches for full particulars.

The Canadian Fairbanks-Morse Co. Limited
Winnipeg Regina Saskatoon Calgary
MONTREAL ST. JOHN OTTAWA TORONTO VANCOUVER VICTORIA

We Manufacture

Fairbanks-Morse Oil Tractors, 15-30 and 30-60 H.P.
Gasoline Engines, all Types, Portable and Stationary, 1 to 500 H.P.
Binder Engines, adapted to all makes of Binders.
Marine Engines, 2 and 4-Cycle, 1 to 6 Cylinders.
Truck and Pitless Wagon Scales.
Hand and Power Pumps for every purpose.



You see this advertisement in this magazine. Don't forget to say so when writing.

this way, we see this practical work training must not be deferred until the 13th or 14th year; every child of seven or eight needs an opportunity to handle the basic tools, and to operate with the principal materials, for his cultural development. In the twelfth or thirteenth year practical work should develop into vocational training along definite lines. We cannot solve our agricultural problem unless we aim to reach every farm, and that can be done only through the primary schools. Boys of from thirteen to fifteen are capable of understanding and making rapid progress in the subjects we are teaching at our agricultural colleges with greater difficulty to boys of eighteen to twenty-one. Things learned during the earliest years become part of the fibre of one's thinking,

as information acquired later on can never be, and for the most successful farming, the basic facts of scientific agriculture must become ingrained in the very flesh and blood of those who are on our farms. After completing his primary education, in the Volksschule from his fourteenth to his eighteenth year every boy living upon a farm in all Prussia will soon have to continue spending from two to seven hours per week in the continuation school, confining itself exclusively to agricultural training. This law, while already compulsory in many districts of the North half of Germany, is ultimately to be made universal for the whole Empire.

Better State universities, agricultural colleges, high schools, extension work, experimental and demonstration farms, educational

pamphlets are all useful and much needed institutions, or devices, but alone they will not suffice. For this new work that we are asking the school to undertake, we need teachers, especially prepared by years of training. Already the demand is so great that there are twenty places open for every competent teacher. New courses of studies must be worked out in normal schools that will give a combination of practical knowledge and the broad experience necessary for this new work. Much experimental effort will be required to find the right forms of teaching, all of which it will be hardly possible for a school controlled by the State or other political body to undertake. Some large institutions, privately managed by those who understand

Continued on page 38

PROBLEMS OF THE FARMER

BY E. CORA HIND

IN beginning this series of short articles on "Farm Problems," a word of introduction will not be out of place. The object of the articles is to offer suggestions which may be helpful, first to new comers who may have little capital and possibly also slight experience; second, to farmers who may have been in the country sometime and who may have only partially succeeded, and lastly to farmers who, having done nothing but grain farming in the past are considering changes of method with a view to increasing profits and lessening-anxieties.

If anyone reading the articles wishes to ask a question, they are entirely at liberty to do so. If they have any criticism to make it will be accepted in the same friendly spirit in which no doubt it will be offered; if any one has further information of a practical character to offer on the subjects touched upon it will be received with keen appreciation and if it cannot be printed in full the substance of it will be given for the benefit of readers of the column.

There is an old saying "The on-looker sees most of the game." These articles are from an on-looker, who having had some practical personal experience along agricultural lines, has had, in addition, many years of going to and fro in the West, noting the different methods of different men and different communities, and the results being obtained and has therefore, some first hand knowledge of the things which are good to do, and things which it is wiser to leave alone.

Does Farming Pay?

Does farming in the Canadian West pay? is a question that should be asked and answered by every man who is now engaged in the business before he goes farther, and by every man who thinks of farming in the West as a present means of livelihood and a future means of profit. If farming does not pay, what is the reason?

Emigration literature and real estate advertising are alike full of the big fortunes which have been made in the Canadian West out of farming and farm lands, and these are by no means all fairy tales. There are numbers of instances where men have made fortunes out of grain raising alone, without making account of any increase in the value of the land. But the number of these

cases is small in proportion to those who have made merely a living, and the number who have failed.

The Canadian West has one of the richest and most easily culti-



Surrounded by No. 1 Hard, the Farmer Cannot Always be Called a Money Maker

vated soils in the world, an abundance of sunshine and a fair supply of moisture. To offset these advantages the season of growth is rather short, there is danger from early frosts and in some sections from hail. Taking one thing with another and comparing the drawbacks with those experiences in countries with a longer growing period and a milder winter, the balance lies rather in favor of the West, more especially as land is still relatively cheap.

It would seem therefore, if farming is not profitable that too much is going out in cost of production and too little is being

to 15 cents per bushel less for every bushel of the 124,380,000 odd bushels actually marketed. The difference in freight rates on the various kinds of grain is just about equalized by differing

lengths of haul. A little over half the crop has been sold, but counting on higher prices for some, at least, of what is to come, it is possibly safe to reckon that the total grain crop of the three provinces would realize \$180,000,000 if all in store Fort William, or just about \$9.73 per acre for the amount under cultivation. When allowances are made for freight and handling charges it would mean at least \$1.00 less per acre to the farmer leaving him \$8.73 per acre to pay for horses, machinery, (his seed has been included in the value of the grain) hired help, interest on

but because they are also good for the land.

Figures such as the foregoing should be sufficient to make any thoughtful man pause and consider whether he had better go into farming, if he has not started, and whether he had better try something else if he is already in; or—and this is really the vital question—what can be done to lessen expenses and increase profits.

It is extremely difficult to find out, with any degree of accuracy, just what it costs to produce an acre of wheat, thresh and market it, apportioning the proper amount for wages of men, cost and depreciation of machinery, but it is very safe to assume that today it cannot be done under \$7.00, which would leave, at the above figures, \$1.73 per acre for living expenses and profit. This is too narrow a margin, more especially for men with young families, as for them living expenses must naturally increase yearly for a number of years, indeed it is too narrow a margin for men young or old.

Conditions in North Dakota are very similar to those in Western Canada, and the following figures from President J. H. Worst may be applied with almost equal accuracy here. He says:—"A twenty-bushel crop of wheat removes from the soil in the straw and grain \$9.30 worth of plant food per acre, or 46½ cents per bushel. In selling wheat and burning straw this is actually removed. This year's crop of wheat,—150,000,000 bushels—has removed from the soil \$70,000,000 worth of plant food. In other words, the State of North Dakota is worth less as a crop factory by seventy million dollars than before the past season's crop of wheat was grown. Add to this all other grain sent out of the state and the sum will be much increased.

"It has also been found (Department of Agriculture) that the cost of producing a bushel of wheat is 58c. Adding this to the 46½c., the commercial value of the plant food removed in a bushel of wheat and its straw, the total cost of a bushel of wheat is \$1.04½c. To make a profit the farmer must receive more than this per bushel."

The fact in the first paragraph will be taken up later but for the



The Range has Given Place to the Traction Plow, Thus Crowding Out a Valuable Source of Farm Fertility

produced per acre in proportion to that cost.

A glance at the annual farm statistical number of the Manitoba Free Press gives much food for thought along these lines. It shows that roughly there were 18,500,000 acres under grain crops in the three Western provinces in 1912 and from these acres, up to December 31 there had been sold nearly \$90,000,000 worth of grain. This is not the price to the farmer, but the price of that grain, in store at Fort William. The price to the farmer would be from 13

borrowed capital, depreciation, and his own cost of living to say nothing of allowing himself and his wife any wages. It does not need a financial expert to assure the farmer that there is no profit, but a loss in farming at such returns. In passing it might be stated that the returns from land in roots, turnips, hay and alfalfa were just a little over \$31 per acre to the farmer. This would indicate that some small portion at least, of every farm should be devoted to these crops, not only because they are money makers

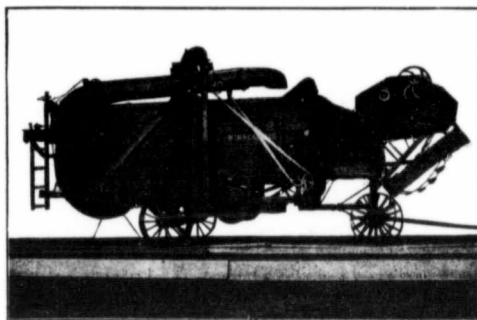


"The Great Minneapolis Line"

Built Right

Sold Right

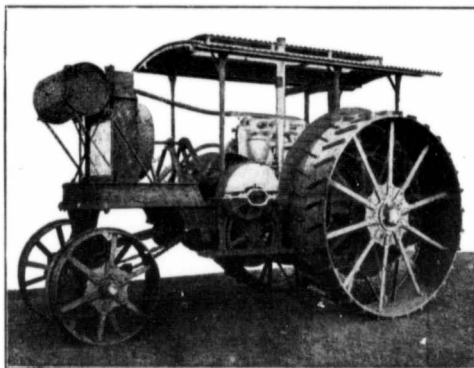
Runs Right



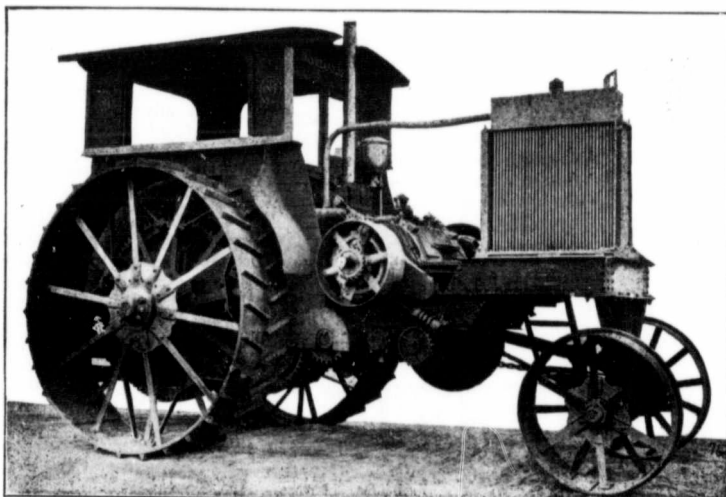
Minneapolis Standard Separator—It Saves the Grain

- The MINNEAPOLIS SEPARATOR has
- Heavy 16-bar Cylinder
 - Tool Steel Teeth
 - Self-Oiling Cylinder Boxes
 - Large Shafting
 - Adjustable Grate Surface
 - Double Chaffer

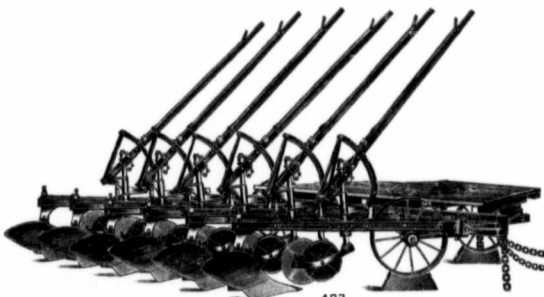
Ask the man who owns one



Minneapolis 25-H.P. 4-Cylinder (Vertical)



Minneapolis 40-H.P. 4-Cylinder (Horizontal)
Has a pull that brings the desired results



403
Minneapolis Engine Gang Plows (5-6-8-10-12 Furrow)
Easily handled and do good work

- Steam Engines
- Farm Motors
- Separators and Attachments
- Engine Gang Plows
- etc., etc.

Ask for Catalog



Minneapolis 20-H.P. 2-Cylinder (Opposed)

Andrusson, Alta., Oct. 30th, 1912.
The Minneapolis Threshing Machine Co.,
Hopkins, Minnesota.

Dear Sir:—

This is to say that I am more than pleased with the 25-H. P. Minneapolis Farm Motor, which I bought of your general agent, Mr. H. S. Bowden of Edmonton, last spring. I am satisfied that the MINNEAPOLIS is the best Gasoline Engine that has ever come to this country. I have seen a few of the "so-called medal winners," and my engine is so far ahead of them that I wonder why you have not entered some of the contests at the Fairs.

I have had seven years' experience in the threshing business, and I may say that I have been successful, you will know that, from the fact that I bought this engine last spring and you have your money for it. However, to come back to the engine, your Mr. Bowden asked me for my opinion of Gasoline as compared with Steam. The last engine I had was an _____, and as good an engine as I ever pulled a throttle over, but with all it wasn't a patch to the MINNEAPOLIS Four-Cylinder Farm Motor for efficiency and economy. I have a running stream of good water on my farm and fuel is cheap, but I find I get the best satisfaction with the Gasoline. We haven't had a breakdown or trouble of any kind with the engine since we started early in the spring, having worked continuously all summer, and are busy threshing now and can say that either on the road or in the belt this engine gives perfect satisfaction, and for a stump puller she cannot be beat, on account of the reversing device, no danger of stripping gears or straining the engine. A boy can start it as well as a man, without any danger of breaking an arm or a leg. Wishing you success, I am,

Yours truly, (Signed) M. HARLAN. 14

The Minneapolis Threshing Machine Co.

West Minneapolis (Hopkins P.O.), Minnesota, U.S.A.

Branches: Regina, Winnipeg

Distributing Points: Calgary, Edmonton

GOOD ROADS FOR MANITOBA

BY A. C. EMMETT

The writer of these articles (which will be continued from month to month throughout the year) has had a wide and severely practical experience and is specially engaged on the "Good Roads" movement.

NO subject is receiving greater attention over the entire American continent today than that of good roads.

Everywhere one goes a live association is found boosting the construction of some particular highway. Transcontinental routes are being mapped out and every class of people is united in an effort to put the highways into fit condition for travel at all seasons of the year.

Probably no class is showing greater interest in the movement than the farmers, as they realize that the provision of a good road means an appreciable increase in the value of the farm and also gives them easy access to their market at all times.

Canada is waking up to the importance of the roads to rural communities, and the proposed National Highway from Halifax to Vancouver is the first move towards the construction of a first-class system of highway throughout the length and breadth of the Dominion.

The proposed great highway has already received its initial movement in the province of British Columbia, where, in spite of the many obstacles to be overcome, the road has been practically carried from Vancouver to the boundary line of Alberta.

It now remains for the three provinces of Manitoba, Saskatchewan and Alberta to take up the work and forge the connecting links across the prairies to the city of Winnipeg. No insuperable difficulties are to be met with in this portion of the work and it should be possible to cover the entire distance in a single season if united effort is the keynote of the movement.

From Winnipeg east the work will prove more difficult through the stretch of rock country around Kenora and onward to the great Lakes. It will be of the greatest importance that this stretch of country is carefully surveyed before any attempt is made to definitely locate the great transcontinental road, and the work when done must be of a substantial character so as to ensure its suitability for every class of traffic.

During the past few years the road work carried on in Manitoba has been of the most useless character and it is entirely due to the efforts of a few enthusiastic men that some improvement in construction methods is being

shown. Anyone who has travelled over the so-called roads of the province can recall hundreds of miles where a ditching grader has been used and a pile of dirt thrown up in the middle of what was previously a good prairie trail. No effort has been made to level off these so-called roads and they stand today as monuments of the inefficient administration of the ratepayers' money. Huge sums have been absolutely wasted in this manner, in fact enough money, which, if it had been expended under the guidance of competent engineers, would have provided good highways over a very large portion of the province.

The majority of farmers even yet do not realize what the want of good roads costs them. During the month of October, when large quantities of grain were being hauled to the elevators, the loss in time and money, due to the bad condition of the roads, cost the farmers of Manitoba over half a million dollars. Teams were seen making trips with only half the load that could have been hauled over good roads, and bushels of grain were split whenever the wagons dropped into the deep pitch holes everywhere in evidence on the trails.

With the advent of the gas tractor the farmer received valuable assistance in the work of

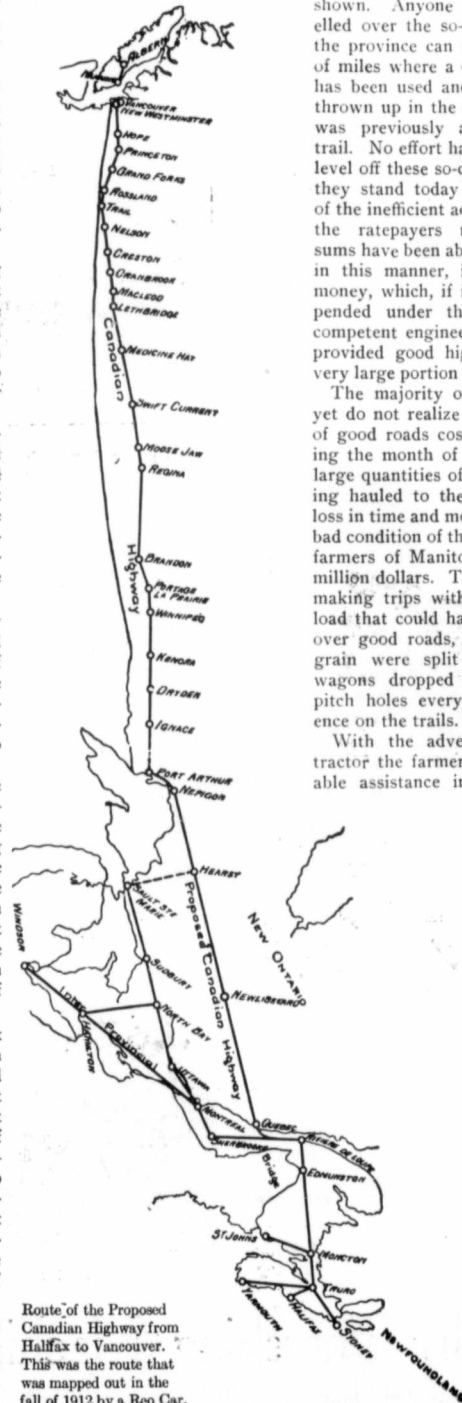
ploughing and harvesting, but it is impossible to secure the best results from these modern farm horses owing to the fact that the roads are not constructed in such a manner as to make them suitable for this heavy class of traffic. With a good road the tractor could haul to market, in one trip, what would take at least six teams to carry the same load.

The value of the railroad has long been recognized, and a network of transcontinental lines is creeping in every direction in order to take care of the ever increasing growth of population in work of railroads is of course an essential feature of the development of the country, but the value of them is materially reduced when the condition of the road at certain seasons of the year practically bars approach or else causes many unnecessary journeys in the carrying of freight to the railroads for transport to the great centres of civilization.

Good roads act as a supplementary outfit to the railroads and become feeders of the greatest possible value, owing to the fact that they quicken the movement of traffic and prevent costly delay caused by the holding of cars at country points whilst the farmer is struggling through mud axle deep with only a third of the load he would be able to move on a good road.

It does not by any means necessitate the use of asphalt, concrete or other like material in order to obtain good roads, although roads constructed in such a manner will doubtless be built in the course of time. It is possible to take the present mud road and turn it into a well graded highway that would be possible of travel at practically any time.

This can be accomplished by the perfect grading of the road and after maintenance by the use of the split-log drag, which is beyond a doubt the most perfect tool ever designed to meet the needs of the situation. It has the great merit of cheapness in addition to its serviceability and can be made by any blacksmith at a cost not exceeding \$12 to \$13. Its value lies in constant use after every shower of rain, the drag being taken over the road as soon as the surface is sufficiently dry to crumble and before it has had a chance to bake hard in the rays of the sun.

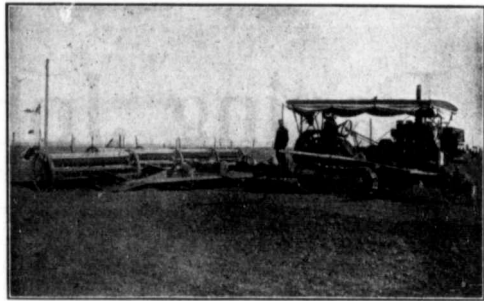
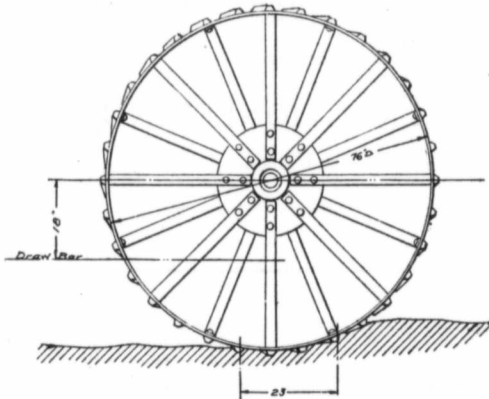


Route of the Proposed Canadian Highway from Halifax to Vancouver. This was the route that was mapped out in the fall of 1912 by a Reo Car.

HOLT Caterpillar

TRADE MARK REGISTERED IN U.S. PATENT OFFICE

It will crawl around over wet places where you would have hard work to get a horse to go. It's a great deal like the fuzzy worm from which it gets its name, because it has a long footing area and does not bear down very heavily on any one point.



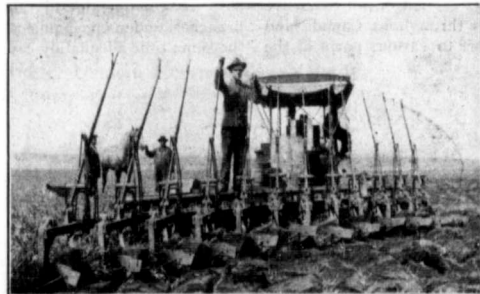
If you will look at the cut on the left you will easily recognize another big feature of advantage that the **Caterpillar Track** has over the wheel. To get the most tractive surface a wheel must sink into the ground, and when it does this it is all the time climbing a hill and wasting power that ought to be utilized in pulling its load. The more the wheel sinks down into the ground the more power is being wasted. Isn't it better to use a wheel like the **Caterpillar Track** that does not sink in but simply lays itself down and allows the weight of the engine to run over it like a locomotive on its rails.

This feature of the **Caterpillar** is especially effective in seeding, where the tractor is working on loose soil. Then, too, it doesn't pack the ground; you know what a round wheel does and whether or not it injures the growing crop.

HOLT CATERPILLAR TRACTOR

The **Caterpillar** is an all-purpose farm tractor that will replace the horses on your ranch. It will work wherever horses can be used, and you don't have to lay up after every rain or wait for the land to dry out in the spring or pull out around the buffalo wallows. One man used his **Caterpillar** three weeks this last spring before his neighbor could get his round-wheel tractor out of his yard, let alone doing any work with it. Doesn't that pay? It is also used extensively for freighting and railroad contracting work in hauling elevating graders.

We want you to know more about the **Holt Caterpillar Tractor**, so fill in the coupon and send it in, and we will be glad to send you a catalogue.



CANADIAN HOLT CO. LIMITED
 609 Eighth Avenue West
CALGARY - - ALBERTA

CANADIAN HOLT CO. LTD.
 609 Eighth Ave. W., Calgary, Alta.

Please send me CATERPILLAR Catalogue.

NAME

ADDRESS

Acres Farmed

G.G.G. 12-25-12

Paying Jobs—Get One

Learn to be a Tractioneer! The demand increases every day for experts. We can promise jobs to at least 300 men next spring. A little study on your part—a little actual experience, perhaps, is all you need to put you in the good-wages class.

Take a course at our Traveling School. It will be near you soon—perhaps in your own town—if not, it will come at least within 150 miles of you. Tuition only \$5.00.

If you take one of our residence courses, or a course by mail, there will be no charge for the course at our Traveling School.

Indiana School of Tractioneering

is equipped as few schools are for teaching. Our teachers are tractor experts. You will get 50 per cent more efficiency out of a tractor after you have mastered our course. That is why men who have big fields are willing to pay our graduates good wages.

Write for dates when we will be near you. Your questions will be cheerfully answered, and we shall be pleased to send our prospectus giving full information about our school and the courses we teach.



A postal today may mean a good job for you next spring.

INDIANA SCHOOL OF TRACTIONEERING

105 Pine Lake Avenue, La Porte, Indiana

The Gutta Percha and Rubber Mfg. Co. of Toronto, Ltd., to be Reorganized

There is to be a reorganization of The Gutta Percha and Rubber Manufacturing Company of Toronto, Limited, whose factories are located in Toronto (Parkdale). The reorganization will take effect as of January 1st, 1913. The Company has carried on an extensive business throughout Canada and by export to various parts of the

company, The Winnipeg Rubber Company, Ltd., and in British Columbia through another subsidiary company, the Vancouver Rubber Company, Ltd. The directors and shareholders of the Company have now decided that its interests and convenience and the interests and convenience of its customers will be better served by a reorganization which will enable it to operate in all its branches under one name and it the same time adequately care for

nection or affiliation with any other company in or out of Canada.

H. D. Mewhirter who has been acting manager for the Winnipeg Rubber Co., Limited, will be the Winnipeg manager of the reorganized Company.



Implement Man Commemorates Thirty Years of Business Life in Winnipeg

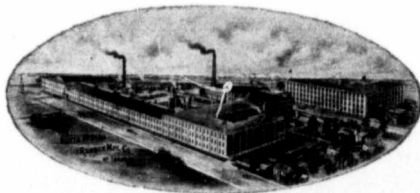
It is not given to all of us to spend a third of a century in one line of business and build that business up from nothing to a huge success. As a matter of fact, it is given to very few of us to even spend that length of time in one particular business.

On January 9th, at 7.30 p.m., 24 of the implement men of Winnipeg, gathered at the Maitoba Club at the request of Mr. H. W. Hutchinson, manager of the John Deere Plow Co., to participate in a most pleasant banquet and to listen to Mr. Hutchinson give them a history of the growth of Western Canada during the past thirty years. To most of those in attendance Mr. Hutchinson's talk was a revelation as very few of the implement men of Winnipeg at the present time have spent anything like thirty years in the business.

A full report of the address will be published in our Febru-

ary issue. Mr. Hutchinson is one of Winnipeg's foremost business men. He is a director of one of our largest banks and is a director in many Financial and Industrial Institutions and is an untiring worker towards the building up of Industrial Western Canada.

At the banquet in question toasts were responded to by Messrs. C. H. Whittaker, manager of the Massey-Harris Co.; E. A. Mott, manager of the Cockshutt Plow Co.; M. J. Rodney, manager of the International Harvester; R. J. MacKay, manager of the Canadian Moline Plow Co., and F. D. Blakeley, manager of "Canadian Farm Implements."



world for over a quarter of a century, having been incorporated as a purely Canadian industry under the Ontario Joint Stock Companies' Act in 1887.

As the business of the Company grew, it became necessary to open branches in many places. At some points these branches were operated under the name of "The Gutta Percha and Rubber Mfg. Co. of Toronto, Ltd." but in the Prairie Provinces the business has been conducted at Winnipeg and Calgary through a subsidiary

and develop its very large and constantly increasing business. To this end, application has been made for a Dominion Charter under the name "Gutta Percha and Rubber Limited," with an authorized capital of \$6,000,000. The new Company will be controlled by the same interests and be under the same management as the old. It will acquire all the trade marks, patents, properties and good will of the old Company and, as heretofore, will be an entirely independent concern without con-

Raw Furs and Beef Hides

Join with the thousands of shippers and send your raw furs and cattle hides to us. We always pay top prices, save middlemen's profits as we sell direct to manufacturers and tanners. Write for our new price list, just issued, mailed free, postpaid, to any address. Our reference is any bank in the country. Address all shipments and correspondence direct to Dept. N.

Northwest Hide & Fur Co.
278 Rupert Ave.
WINNIPEG

Mention this magazine when writing advertisers.



There is a Difference in Threshers

Some farmers and threshermen actually think that one kind of thresher is about as good as another.

Their opinions are based on the claims of thresher manufacturers—not on first hand knowledge of the machines.

Get acquainted with the Buffalo Pitts thresher line. Get a catalogue that dissects the machine for you, that takes it apart and shows you where the difference in threshers lies.

Get your idea of what a steel frame should be from the Buffalo Pitts. See the thresher that has all the bearings bolted to a solid steel frame; that threshes 95 per cent of the grain at the cylinder; that separates the grain from the straw as soon as it is threshed.

Then you will know the difference in threshers. Also, you will know why you should buy a Buffalo Pitts thresher.

A combination of a Buffalo Pitts thresher and an I H C engine or tractor is one of the best that can possibly be made. The engines furnish steady power, such as is required for good threshing.

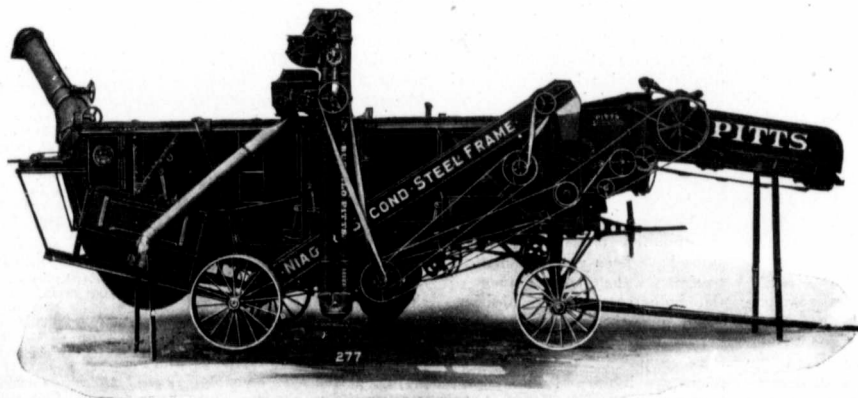
I H C engines are built in all styles, and in any size from one to fifty horse power, tractors from twelve to sixty horse power.

See the I H C local dealer for full information and terms, or write

International Harvester Company of America, Inc.

CANADIAN BRANCH HOUSES

At Brandon, Calgary, Edmonton, Hamilton, Lethbridge, London, Montreal, North Battleford, Ottawa, Quebec, Regina, Saskatoon, St. John, Weyburn, Winnipeg, Yorkton.



You saw this advertisement in this magazine. Don't forget to say so when writing.

Manitoba Has Progressed Agriculturally During 1912

TO stand on the threshold of 1913 and glance back at the vista of Manitoba's agricultural progress during the past year is to draw a breath of encouragement and to face the future with confidence. Individual advancement means general advancement and the tendency toward investigation and improvement in all branches of agricultural pursuit among the farmers of the province is particularly gratifying.

An outline of the work that is being done by the Provincial Department of Agriculture and Immigration may serve to demonstrate the keen interest that is being manifested throughout the province. The Department reports that the increased demands have been yearly multiplying at a rate which is requiring constant revision and promulgation. The fact that the outgrown Manitoba Agricultural College buildings were found inadequate within such a short period, necessitating the broadening of the whole College plan, is a specific indication of the spirit of advancement which is characteristic of the Manitoba farmer.

The staff of the Agricultural College has done splendid work. The work of the College is controlled by the Department of Agriculture and Immigration and under the personal direction of Principal Black, of the Agricultural College, who is assisted in College Extension work by E. Ward Jones, B. S. A., has been a record of achievement of which the province may well be proud. The courses in field and animal husbandry, farm mechanics, dairying, agricultural chemistry, soil physics and kindred subjects have been of a highly practical and thorough nature and their value has been quickly appreciated by the farmers at large.

The possession of such a College with such a staff has enabled the Department to undertake successfully a large amount of extension work. During the summer months and part of the winter months a number of the staff are exclusively engaged in this sort of work.

The importance of this extension work in the general advancement of agricultural standards throughout the province cannot be overestimated. Each year the work in connection with demonstration trains has increased until last summer the attendance at the lectures in various parts of the province was marked by crowds

and intelligent enthusiasm. Until last summer only one line of railway was supplied with these trains but during the summer of 1912 both the C. P. R. and the C. N. R. demonstration trains were in commission and the full staff of the College was engaged for some four to six weeks in delivering lectures repeatedly during six days of the week, to farmers who had assembled at scheduled points.

The assistance which the Department has been able to give to Agricultural societies in the matter of judges at their fairs has been much appreciated also. During the summer and fall months members of the College staff are busily occupied in this work.

Judges are sent to the various seed fairs in Manitoba and speakers provided for such gather-

The plowing match is another form in which the aid of the Department has made for improvement. Sums have been provided for prizes and experienced judges sent to place the awards with the result that the interest in better soil cultivation has been greatly augmented. There is still much work to be done along this line.

Recognizing the importance of the dairy industry in the province, the Minister of Agriculture has paid considerable attention to the testing of milk among farmers and dairymen, its richness and the quantities. Cheese factories and creameries have been closely inspected during the year and especially during the summer months the inspectors have been constantly on the road.

The testing of wheat samples

the Good Farming Competitions held under the auspices of the Agricultural societies, the judges being selected from the College staff or from among thoroughly practical farmers. The Standing Grain Competition has enabled many farmers to have their crops judged and the awarding of prizes to the best and cleanest growing grain has aroused much interest. These competitions afford the judges an opportunity of making friendly suggestions regarding the improvement of future crops and the general management of the farm, advice which has been received in most cases to the great profit of the individual.

It is the custom of the Department each year to grant certain sums and assist with speakers such societies as the Horse Breeders, Swine Breeders, Cattle Breeders and Sheep Breeders associations.

In addition to these various aids the Department keeps up an extensive correspondence with the farmers of the country and the mail of the Agricultural College staff and of the Department at the Government Buildings is always heavy with enquiries on all manner of agricultural subjects. Careful attention has been given to these and a great deal of valuable and specific information furnished the correspondents free. The assistance of Prof. S. A. Bedford, Deputy Minister, has been of great value in this connection.

Among the pamphlets, booklets, etc., which have been mailed free by the Department and which may be had on application are the following:

- Booklet—"Farm Wheat and Dairy Lands in Prosperous Manitoba."
- Pamphlet No. 1—"Classification of the Horse," by W. H. Peters, Professor of Animal Husbandry, Manitoba Agricultural College.
- Pamphlet No. 2—"Two Noxious Weeds," by S. A. Bedford and C. H. Lee, Professors of Field Husbandry and Botany, Manitoba Agricultural College.
- Pamphlet No. 3—"Care of Milk and Cream," by J. W. Mitchell, B.A., Professor of Dairying, Manitoba Agricultural College.
- Pamphlet No. 4—"Protection of Farm Buildings from Lightning," by L. J. Smith, B.S., Professor of Agricultural Engineering, Manitoba Agricultural College.
- Pamphlet No. 5—"The Farm Garden," by F. W. Broderick, B.S.A., Professor of Horticulture and Forestry, Manitoba Agricultural College.
- Pamphlet No. 6—"Farm Poultry in Manitoba," by M. C. Herner, B.S.A., Lecturer in Poultry Husbandry, Manitoba Agricultural College.
- Annual Report of the Department of Agriculture and Immigration.
- Periodical Crop and Live Stock Reports of the Department of Agriculture and Immigration.
- Map of the Province of Manitoba.

New lines which appear to de-

ings. The value of these fairs to the farmer is unquestioned, of course, as they enable him to improve the quality of the seed he uses. Over three and three-quarters million bushels of seed grain are used in this province annually and the importance of a thorough selection is at once apparent.

One thing which is proving very gratifying to the Department is the progress that is being made in the poultry industry. Certain sums have been voted from time to time for the encouragement of the industry and, in addition, members of the College staff have been sent to the leading poultry fairs to judge live and dressed poultry exhibits. Improvement in the manner of feeding and the dressing of fowl for market are among the items of poultry advancement that has resulted.

is another thing which has received considerable attention. Owing to unfavorable weather conditions at some seasons there is a danger of the germinating power of seed grain being injured. The samples of seed sent to the Department by the farmers who desire to know if their seed is fit for sowing have all been thoroughly tested at the Agricultural College and this work has proved of great benefit.

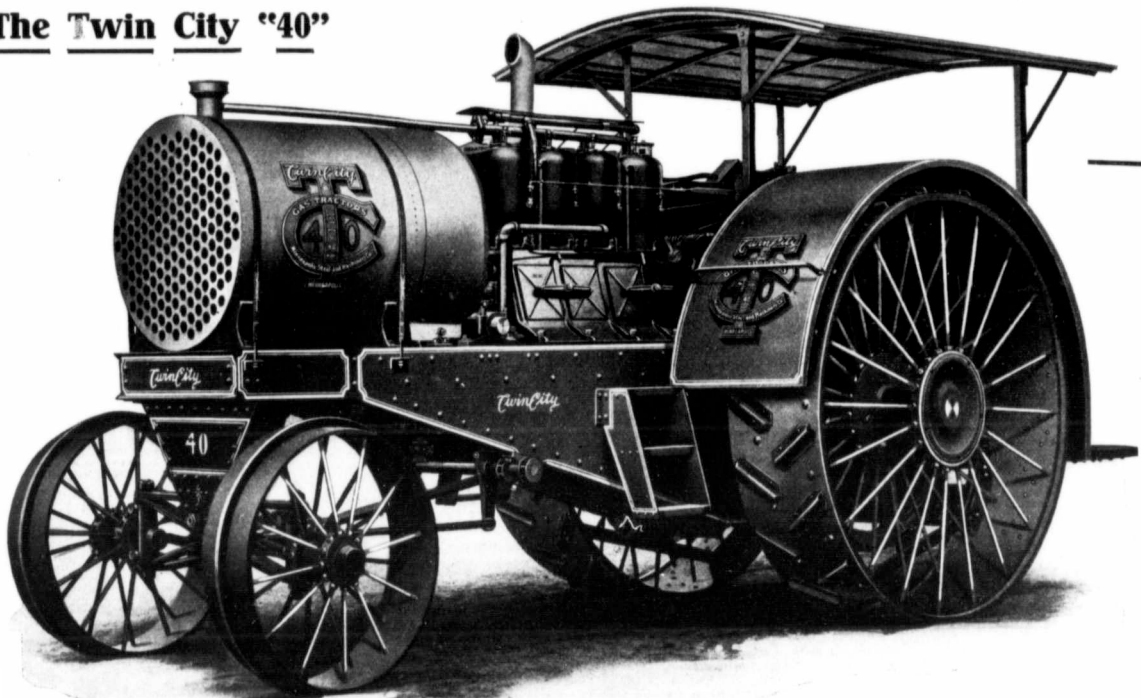
The same may be said of the Department's efforts in connection with noxious weeds. The short course in the identification and destruction of noxious weeds, held at the College each year, has proved of untold value. The municipal weed inspectors throughout the province were invited to attend this meeting with much resultant good.

Mention must be made, too, of



A Side Line in Wool and Mutton.

The Twin City "40"



THE BIG STEEL FARMER

THIS steel combination of forty horses and twenty men every working day is revolutionizing big farming in Canada. It is the greatest factor in making Canada's real farms and big farmers. One look at this machine is enough to convince that here is a tractor that merits close investigation. If it lives up to what it looks it has them all beaten.

Go where you can see one of these tractors at work. Look it over carefully. Compare every part with that of any other tractor on the market. Look at that splendid motor—that wonderful frame.

Look up its record of success in the United States, in South America, in Mexico, in Cuba, and you will be convinced that the tractor of tractors is the

Twin City Tractor

Built in Two Sizes
25 Tractive H.P.; 40 Tractive H.P.

The Cuddy Self-Steering Device on these Tractors works to perfection

Here is some real evidence of Twin City value from men who know the best:

Guernsey, Sask., 11-27-12. Minneapolis Steel & Machinery Co. Regina, Sask.

Dear Sirs: Please express me one coupling for rotary pump shaft No. TA 1592, and oblige.

The Twin City "40" has given us entire satisfaction, pulling ten 14-inch plows to a depth of seven inches. In threshing it pulled a 4x62 separator to its full capacity.

The power has been as steady as any steam, and with no trouble. The repairs to date are none. This testimony has been unsolicited, but we cannot help but praise the engine.

Our steam engine is for sale, and if you find any steam men, put them into communication with us. It is a 40-H.P. double compound plowing engine. Very truly,

MOSIMAN BROTHERS
Per J. R. Mosiman.



One type of farming on a large scale. Two Twin City "40's" on a Northwestern farm. Plowing, packing, harrowing and seeding in one operation is a plan which gets a crop in on time. A third "Twin City" has recently been added to this outfit

Here is some real evidence of Twin City value from men who know the best:

The Western Farmers Land Co. Marsh-Place Bldg.

Waterloo, Iowa Dec. 9th, 1912. Minneapolis Steel & Machinery Co. Minneapolis, Minn.

Gentlemen: We are using two of your Twin City "40" engines on our farm in the Goose Lake District of Canada, and can conscientiously say that we are very well pleased with the service we are getting.

The selection of your machines was made by a committee of practical farmers who aimed to get the best.

Yours truly,
THE WESTERN FARMERS LAND CO.

By C. F. Robe, Secretary
CFR-hmw

The whole of Western Canada is dotted with these tractors in successful operation. There is one near you and you should go and see for yourself just what these machines are doing and can do for you.

Write today for Catalog 10H and Booklet 12H and information as to where you can see these machines at work

The Minneapolis Steel & Machinery Company of Canada, Limited, Regina, Saskatchewan

mand attention will be taken up by the Department during the coming year and the work extended in every way. It is recognized by the Minister of Agriculture that upon the success and achievements of agriculture in Manitoba depends the success and achievements of the province and its citizens as a whole, and no effort will be spared to elevate the standards of the Manitoba farmers and of Manitoba soil products.

Already much has been accomplished and the fact that Manitoba has gained an enviable reputation abroad as a province of up-to-date methods and progress in agricultural matters is cause for congratulation.

During the year Manitoba has captured many honors in competition with the world. To be the home of the world's premier wheat, Manitoba No. 1 Hard, is no longer sufficient. Manitoba has also demonstrated that she can win world's prizes in stock raising on coarse grains, that she can win first place among prairie provinces in the matter of fruit exhibits, that her young men know how to judge grain and live stock and her young women can win prizes in home economics.

That Greater Manitoba will be the home of Mixed Farming at its best is a foregone conclusion. To predict the limits of her development and the degree in which she will excel is beyond computation.



Some Thoughts on Agricultural Education

Continued from page 29

and sympathize with this new ideal of education should be created.

I conceive of a normal school, with 5,000 students, with a board course of studies, with laboratories for the physical sciences such as chemistry, physics, botany, biology, in which the students could receive instruction in the necessary sciences. These laboratories would also serve as places in which practical courses could be worked out which, when reproduced in the agricultural schools over the country, would knit this scientific knowledge into the every-day experience of the boy from the farm. Languages, mathematics, geography and other cultural studies would be taught as at present. Connected with the school would be a large experimental farm with several thousand acres. Before graduation every student desiring to obtain a teacher's certificate would be required to spend from eighteen months to two years at practical work, earning wages, either upon the farms of some of our agricultural colleges, or upon well-managed estates, or upon private farms of their own choos-

ing in selected districts of the country. Those desiring to become teachers of industrial training in the cities would similarly be required to spend from eighteen months to two years at practical trades work, divided into three six-months periods, in factories and other industries. The graduates of such a school of model training would be sought for throughout the country. The enterprise could be self-supporting, and could be undertaken jointly by a group of men interested in our industrial and agricultural development. Once established it would soon become the center of propaganda that would radiate its influence to every state in the Union, and from which would go forth a thousand well-prepared teachers each year to carry on this new educational work that we are endeavouring to promote. The standards of training set up at this school would influence other normal schools, and thereby this central institution would exert a far-reaching influence.

I will close by telling of two incidents that I encountered as a student in Germany. Once, while on a walking trip through the Black Forest, I came to a little village school on a warm July day. The teacher and fifteen little eleven to thirteen-year-old German boys, some with big patches on their trousers, were standing in a group not far from the building. One lad held a broom, with which he had swept clean a place in the gravel yard. In reply to the question of the teacher, a little voice said: "We planted the seed, and it started to grow, and the roots reached down into the glass for food, and it spread its leaves into the air to catch the sunshine and to breathe."

As I looked I saw a row of glasses in the school window, in which seeds were germinating and in various stages of growth. Just then a waggon loaded with wheat sheaves that were being hauled to the community threshing machine in the village passed by the school. The teacher sent one of the boys to fetch a bundle of wheat. He laid it on the ground, and set fire to it, as he explained: "This fire will make each part of the plant go back to where it came from. The heat and the light will flow off into space toward the sun, from which they were gathered, and the smoke, containing the coal stuff (carbonic acid) will go back into the air." And then he pointed to the ashes, and asked one lad where they came from. The answer was, "From the ground." "But how did they get there?" "The roots picked them up; they were in the water that the plants suck up, and as the water dried

up in the straw and leaves, these remained behind." "What are these ashes?"—and another lad answered: "They are the minerals that are the strength of our soil, and that make the plants grow." "What is your father doing?" he asked, pointing to a wagon loaded with wheat sheaves that was passing. "He is hauling away the strength of the soil," another little voice said, "but when he hauls the manure back from the stable, he will put all the straw back on the soil."

Such lessons impress themselves upon the minds of ten-year old children indelibly and make of them the skilled German farmers of today.

Another time, as a student at the University of Berlin, I was listening to a lecture by the Professor of Economics. He was discussing the State policy that underlay certain taxation laws, and bounties upon sugar and alcohol. "Yes, we must conserve our soil fertility. Those products which drain the soil most of its permanent values we must import from abroad. If we buy cotton meal in America and feed the cattle here, the whole value of the meal is retained in the price of the meat; while vast quantities of fertilizers, containing the essential soil salts, remain upon the farm and enhance its fertility. In every million bushels of wheat that we purchase from America there are 1,575,000 pounds of phosphorous, nitrogen and potash, worth, in round numbers, 1,068,000 marks (\$267,000). These are drawn from the virgin prairies of America and other new lands. A portion of the fertilizer value of this wheat is retained through our systems of city sewage farms to enhance the fertility of our German soil. In disposing of products of the farm, we must strive market such articles as meat, which contain but 30 per cent. of solid matter and only 2 per cent. or 3 per cent. of mineral salts; cheese, and especially the carbo-hydrates, such as butter, alcohol and sugar. The sugar beet farmer feeds the refuse of his beets to cattle, and the manure goes back to the land. In alcohol production, only the alcohol is sold from the place, while the protein, containing the mineral salts is fed and retained there. The extent to which the farm values we sell are attached to carbon in place of to the soil salts that exist only in limited degree of our agricultural de-velopments is a measure of the

And it is the German art of selling labor in place of natural wealth that we now have to learn.

Few of us can stand prosperity—another man's, I mean.—Mark Twain.

Hart-Parr Tractoneering Schools New Programme

The following dates have been fixed for the next gathering of the Hart-Parr engineering pupils who are asked to communicate at the earliest possible date with the manager of the nearest branch named below if it is their intention to take advantage of the opportunity this event will afford for a thorough tuition and coaching in the construction and operating of the Farm Tractor:
 Calgary, Alta., Jan. 28 to Feb. 7.
 Saskatoon, Sask., Feb. 4 to Feb. 14.
 Portage la Prairie, Man., Feb. 11 to Feb. 21.
 Regina, Sask., Feb. 26 to Mar. 7.



Rumely Tractoneering Schools Dates for Western Canada

The following dates have been arranged for the next Session of the Rumely Tractoneering School at the various points named:
 Winnipeg, Jan. 20 to Feb. 1.
 Regina, Feb. 3 to 15.
 Saskatoon, Feb. 17 to Mar. 1.
 Yorkton, Mar. 3 to 15.
 Calgary, Jan. 20 to Feb. 1.
 Edmonton, Feb. 3 to 15.
 Estevan, Feb. 17 to Mar. 1.
 Brandon, Mar. 3 to 15.



A kindly old lady sympathizing with a one-legged man exclaimed, "It must be a terrible thing to go through life without your leg, but you must remember, my poor man it will be restored to you in the next world."

"I know it will, mum, but that ain't very encouragin', for it was cut off when I was a baby, and it won't come within a couple of foot of the ground when it's restored."

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INCORPORATED IN CANADA

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Fire Live Stock and Hail Insurance **Best Service at lowest possible cost**

HAVE YOUR POLICIES EXAMINED!

A large proportion of fire insurance policies would be found to be worthless—after a fire occurred—because of improper wording. Don't take unnecessary risks! Have your policies examined by any one of our twelve hundred local agents, or write us.

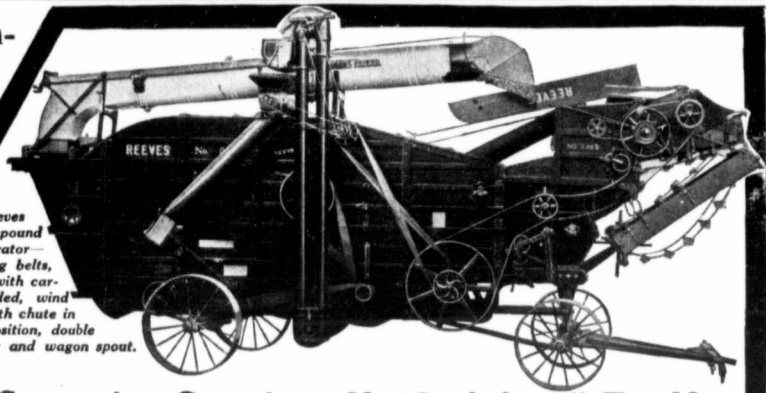
We are especially well equipped to give the best insurance service at lowest cost consistent with reliable protection. Inquire about our rates, our contracts, our service, addressing any of the above companies, or

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REEVES Threshing Outfits

The New Reeves Compound Separator represents the study, the experiments—the improvements of 39 years' experience in the manufacture of threshing machinery. The name REEVES is a guaranty of the highest type of construction and materials, and insures the largest possible degree of satisfaction to the buyer.



Reeves Compound Separator—showing belts, feeder with carriers folded, wind stacker with chute in traveling position, double tube weigher and wagon spout.

Double Separating Capacity

THE REEVES COMPOUND SEPARATOR has an original *double separating* feature—the operation of upper and lower separating tables giving a separating action that is distinctly REEVES and that gives the machine its name—"Compound Separator."

This is without question the greatest threshing, separating and cleaning machine in the world. It is built for *all three* parts of a threshing job, and does them all perfectly. Frame work of wood—vastly stronger and more durable than sheet-iron construction. This machine is water and weather proof—has 6-wing beater that aids in separation—21-bar cylinder of finest machine steel—increased separating and cleaning capacity—improved separating and elevating table—every grain separated kept away from straw during entire process—screens and fan blast insure *perfect* cleaning—best band cutter and feeder—specially designed wind stacker for building stacks *right*. Weighers, baggers, and wing carriers of all styles.

No "Dead Center" Troubles

THE REEVES ENGINE has two cylinders with pistons connected to same crank shaft, at different angles—overcoming "dead center" troubles, enabling a REEVES to start from any point. This engine has heavy connecting rods—crossheads specially designed for strength, ease of adjustment and long wear—straight pins, uniform in size and easily removed—flange steel plate boilers of 60,000 lbs. tensile strength, water bottom type—extra high domes, insuring constant stream of dry steam to cylinders—extra number of cold-drawn seamless steel tubes for conserving heat—protecting jackets that *hold* the heat and give engine a finished appearance—rocking grates easily operated by platform lever—greatest valve construction ever put on a traction engine—rear, wide-faced gearing—extra strong patented drive wheel—fuel-saving water heater.

Exclusive features, proved to be the best, put REEVES Threshing Machines and Engines in a class not approached by others.

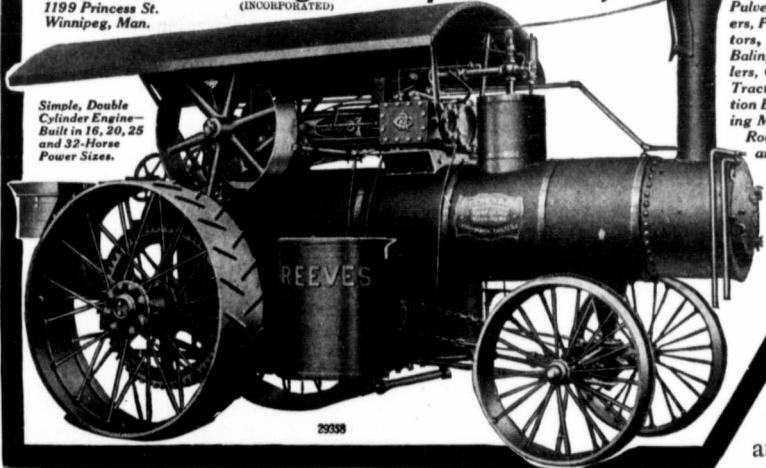
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that gives all details and shows you why this machinery has been ahead for so many years—and is still ahead.

Emerson-Brantingham Implement Co.,

1199 Princess St. Winnipeg, Man.

(INCORPORATED)



Simple, Double Cylinder Engine—Built in 16, 20, 25 and 32-Horse Power Sizes.

Largest Line of Farm Machinery in the World—Plows, Harrows, Pulverizers, Listers, Spreaders, Planters, Drills, Cultivators, Mowers, Hay Tools, Baling Presses, Corn Shellers, Gas Engines, Farm Tractors, Steam Traction Engines, Threshing Machines, Road Rollers, Wagons and Vehicles.

The demand for Reeves Engines is the natural result of a policy that has made them as *standard* in the farm world as gold is in finance. The name "REEVES" on an engine is conclusive proof that that engine will give the greatest possible measure of traction profit and the longest service.



PRACTICAL TALKS TO THRESHERMEN

CONDUCTED BY PROFESSOR P. S. ROSE

Talk No. LXV

Note.—The term "gas engine" in these lessons will be used indiscriminately in speaking about all internal combustion engines.

MEN began experimenting with explosion engines more than two hundred years ago. They tried gunpowder, coal gas, turpentine and many other fuels. Little progress was made except that they gradually learned the things that would not work. For more than one hundred and fifty years there was more or less experimenting in a desultory way, until about 1860 when Lenoir, a French engineer and scientist, brought out a fairly successful engine which worked on gas. A large number were made and sold. At first they were thought to be quite efficient, but this belief was later proven erroneous. The great fault with the Lenoir engine was lack of compression. Shortly after the Lenoir engine appeared, Beau du Rochas laid down his celebrated principles governing gas engine operation and design. Dr. Otto was the first to employ these principles in an actual engine, and from that time until the present the gas engine has increased in popularity.

The four stroke cycle engine, Otto cycle, or four cycle engine, as it is generally called, has proven the most serviceable for all-round purposes. Other cycles have been invented and tried out, and some of these may eventually take the lead. Aside from the four cycle there are only two other types that merit serious consideration, the two cycle and the Diesel. Two cycle engines are made in all sizes and used for all purposes that gas engines are adapted to. Sometime they may come into their own, for they possess much merit, but the cheaper models still retain serious defects which prejudice the public against their use and prevent their development commercially. The Diesel engine is peculiarly adapted to burning heavy fuels like crude oil. It is the most efficient engine built, but it is complex and difficult to keep in good running order on account of its high compression which is carried as high as seven or eight hundred pounds, and, on account of the fact that the air pressure in the auxiliary air cylinder must be carried from three to five hundred pounds higher. This requires extremely accurate valves and pistons and frequent overhauling to keep in working order. It is, therefore, an engine that must be operated by a thoroughly competent engineer. Up to the present, this type of motor has found its widest application in central

station power plants and to a limited extent for marine purposes. It is said to be gaining ground in Europe and eventually it may come into more general use in this country. Its high efficiency and the fact that it is so well adapted to heavy fuels are the leading points in its favor. Consequently, it must not be overlooked in looking into the future of gas engine development.

It seems a little strange when we look at the vast numbers of gasoline engines now in service and consider how really simple they are that they were not perfected earlier. The steam engine reached the commercial stage of its development about 1780, but it was fully ninety years later before the gas engine was even seriously considered as a prime mover although many experimenters worked on the problem during that period. It seems almost incredible, too, that no one previous to Beau de Rochas realized that compression was a vital principle in gas engine operation.

The gasoline engine was, of course, impossible previous to the discovery of the Pennsylvania oil fields, in 1860, because it was not until the development of the oil industry, following this discovery, that gasoline was ever made in commercial quantities. The fact that there was no readily obtainable fuel for internal combustion engines was, without doubt, the reason for its slow development rather than a dearth of first rate inventive ability. There was no particular demand for an explosive engine because there was no great volume of fuel available. True they had coal gas and water gas, but the apparatus necessary to manufacture such gas was very costly, thus making the initial cost of a gas power plant prohibitive. Under these conditions there was little incentive for anyone to go ahead with such costly experiments as were involved in producing a gas engine where there was small hope of financial returns. With the opening of the oil wells in Pennsylvania all this changed in an incredibly short time. In the making of kerosene, one of the most troublesome products the earlier experimenters had to contend with was the volatile constituents consisting of gasoline and naphthas. These could not be used for illuminating purposes, and the gas engine industry was not far enough developed to consume the output. It was one of the by-

products of the oil business that no adequate outlet could be found for and literally millions of barrels were thrown away every year.

Another thing that retarded the growth of the gas engine business was the lack of a suitable lubricating oil. In the days of low pressure steam, animal and vegetable oils proved satisfactory. Even when steam pressures reached sixty or seventy pounds no trouble was experienced because tallow, which was the principal cylinder oil used, will stand quite high temperatures. But when it came to lubricating gas engine cylinders it was very quickly realized that neither animal nor vegetable oils were adequate. These oils decomposed with the high heat and formed carbon. Again gas engineers were dependent upon the oil well people for the success of their undertaking. It was found that a pure mineral oil made from petroleum satisfied every requirement and that it was the only lubricant that did.

In addition to all this, the gas engine required for its fullest development much more careful workmanship than was bestowed upon the ordinary run of machinery and this in turn made it necessary to invent and perfect a line of shop machinery that could produce accurate parts and at a low cost.

It will be seen from a consideration of the foregoing facts that the gas engine could not have been perfected much before it was. First, it had to await development of the oil industry in order to have a sufficient supply of cheap, easily portable fuel; second, it had to wait for a suitable lubricant for the cylinders, and, lastly, the proper machine shop processes and machines had to be forthcoming before gas engines could be manufactured on a commercial scale. Then in the beginning the Otto company had a monopoly of the business through their patents and the high royalties exacted prevented many concerns from entering the gas engine field. The consequence was that for the first twenty years after the gas engine had been proven a worthy competitor of the steam engine it did not gain very much foothold. There was only one powerful company to push the business and it had to meet the combined opposition of the strongly entrenched steam engine trade. After the Otto patents expired, hundreds of

manufacturers rushed into the gas engine business and the trade has been on the increase ever since.

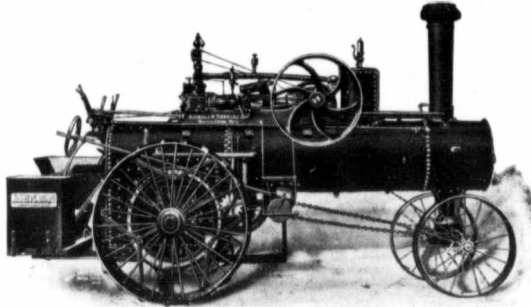
The high speed automobile engine was invented by Daimler about 1889, and after about ten years of experimental work the automobile business began to show signs of life, but another ten years elapsed before it gave promise of anything like its present proportions.

The first gas engines used in agriculture in this country were small pumping engines, but for many years they did not find much favor among farmers. Up until 1900 the windmill was the principal farm motor, aside from the steam engine used for threshing purposes. Perhaps the elevator people and the wayside railroad pumping stations were the real educators of the farm trade. These companies began in the nineties to equip their country stations with gas engines, and in this way they were scattered pretty generally over the country. This gave the farmers an opportunity to see them in daily operation and they were impressed with the low cost of operation. Then began a campaign for the farmer trade in which the most extravagant claims were made in regard to general reliability, the simplicity of the machine and how anybody without any mechanical ability could take care of a gas engine without any fear of trouble.

For a time this sort of campaign got the business, but, as always happens when a business is built up on false claims, it bred a crop of trouble that it has taken a tremendous amount of real education to overcome. When manufacturers realized their mistake, a campaign of education began, that has been materially helped by the advent of the automobile, with the result that the rising generation of farmers are fairly good gas engine men or at least soon will be. In the meantime great improvements have been wrought in all accessory equipment and the better grades of gas engines are really effective and free from most of the faults that were common ten years ago. There are still a few cheap engines on the market that have not been improved much beyond the crude machine of twenty years ago and scarcely deserve the name gas engine, but, on the whole, manufacturers are now striving to give the public a good serviceable article.

THE MACHINERY THAT SAVES YOU MONEY

"The Red River Special Line"



The Nichols-Shepard Steam Tractor

Their aim is to sell only to good, successful threshermen—men who know a good machine and how to use it; for a good machine with a poor operator is worse than a poor machine with a good operator.

Nichols & Shepard Company claim for their machinery—Durability, Efficiency and Economy.

EFFICIENCY

The Red River Special Line is different from all other machinery—not a make-over, copied after other makes—but built to use a different method and a different principle to do its work. It beats the grain out of the straw. The result is that thousands of Red River Special separators are being used all over the country in saving the farmers' thresh bill and hundreds of Nichols & Shepard Tractors are being used everywhere in accomplishing a big variety of heavy tractive work.

ECONOMY

A small number of repairs is required to keep the Red River Special Line running.

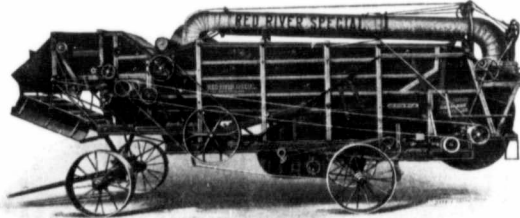
It has been proven that the Red River Special **Saves The Farmers' Thresh Bill.** This is due to the fact that all the grain is beaten from the straw and none carried over into the straw-stack. Thousands of dollars are saved every year for the farmers and grain-growers in just this way and the Red River Special is the only machine which saves it all.

If you are a thresherman, increase your list of satisfied customers and consequently your profits, by owning the best threshing machine made and an engine that is easy to handle, has ample power, requires little expense for repairs and on which you can always depend.

For over sixty years Nichols & Shepard Company have been specialists in the building of threshing machinery. The same Company that invented and marketed the first VIBRATOR has been building nothing but threshing machinery ever since, and their machinery has won because it is strong, durable, convenient and profitable to run to both farmer and thresherman. It has been different from the other kind, and because it is different, it wins.

The Company has always stood for honesty and fairness in the building and selling of its machinery and in the treatment of its customers. It has grown—not like a toadstool, in a night—but steadily; not by financial manipulation, but by a natural, healthy business growth, each year selling a little larger volume of business and a better product than the year before.

The Company stands alone, not in any combination or trust, and builds nothing but threshing machinery and tractors. It can do better for you and for itself by confining its effort in that one direction than it could by trying to build and sell all kinds of machinery and tools used on the farm. They build threshing machinery for threshermen and not odds and ends for dairies and cheese factories.



The Famous Red River Special Separator

DURABILITY

Only the best of material is used in its manufacture. Every department of its Plant has capable foremen in charge who are experts in their line. Careful inspection is constantly made



The Nichols-Shepard Oil-Gas Tractor

NICHOLS & SHEPARD COMPANY BATTLE CREEK, MICH.

Branch Houses, carrying a full line of Machinery and Repairs, at the following points:
WINNIPEG, MAN.; REGINA, SASK.; CALGARY, ALTA.

You saw this advertisement in this magazine. Don't forget to say so when writing.

The Thresherman's Question Drawer

ANSWERS TO CORRESPONDENTS

Q. D.L. Will a balanced valve develop enough more power or make saving enough over a plain slide valve to pay the expense of putting one in an engine?

A. A balanced valve which does not not leak any more than an unbalanced one (other conditions being equal) will certainly have the advantage, as the power which it takes to run the unbalanced valve can be used on the load of the engine.

The unbalanced valve has a tendency to wear to its seat and keep tight but the balanced valve is apt to become leaky and hard to keep steam tight, and the saving in power which it takes to run it is lost in the amount it leaks more than the unbalanced valve. However, if the unbalanced valve is kept steam tight, either by adjustment or renewing the parts, it will enable the engine to give off more power. Whether it will pay to make a change of this kind depends on what kind of a valve it is changed from and what kind it is changed to, as there are some balanced valves which are not as good as a common D unbalanced valve.

Q. R.L. Can crude oil be used for traction engine fuel? How does it compare in cost of operation with coal? What does it cost to equip an engine with an oil burner?

A. Crude oil may be used instead of oil for fuel in traction engines and is so used in various parts of the South-west and in California. In order to determine which is the most economical fuel to use, the cost of both oil and coal delivered in the field must be taken into consideration, together with the greater labor cost of handling the coal. In using oil a fireman is not needed because the engineer can regulate the fire with hardly any additional labor, by means of valves close at hand. A pound of crude oil contains about 22,000 heat units and a pound of good steam coal about 13,000. The heating value or steam making property of each of the two fuels is very closely indicated by these two figures. Roughly, we may say that a pound of crude oil is equivalent to one and two-thirds pounds of coal. A gallon of oil


weighs approximately eight pounds and two hundred fifty-gallons weigh a ton. Accordingly, if coal is worth six dollars per ton oil should be worth ten dollars or four cents per gallon. The cost of hauling the oil will be somewhat less than coal; it is more convenient to handle and dispenses with the need of a fireman.

The oil burning attachment costs from fifty to one hundred dollars. We have been quoted a price of fifty dollars at the factory or seventy dollars when put on in the fields, by one concern, this being the price on a 25 horse power engine. We understand also that it requires a somewhat different attachment to burn the crude oil of the Pacific Coast from that required through the South-west.

There are a large number of locomotives now using oil and a considerable number of steam vessels in the United States and British navies. Oil is a clean, easily handled fuel and when it can be bought for the right price is preferable to coal.

Q. J.A. I have a Woolff gear that shows the same lead with the reverse lever in any position, but I can't get the valve to travel the same when lever is forward; the front port opens full and back port lacks about one-fourth of an inch of opening full. When lever is thrown back the back port opens full and the front port lacks about one-fourth of an inch of opening. I have an adjustable reverse rod and have tried it with many different lengths, but can't get it to travel equally. Should the Woolff exhaust alike on both sides? One engineer says it should, while another says it should not and can't be made to.

A. If your Woolff valve gear is set with equal lead you have it set to the best advantage. It is the nature of the mechanism to open one port wider than the other. The point which is made in this gear is to have a very near uniform cut-off. The end which has the smallest port opening has the latest cut-off and the port which has the largest port opening has the shortest cut-off. Thus making the work done on each end of the cylinder about equal.



GANDY

20,000 Successful Threshermen

Depend on
Gandy Thresher Belts
Year after Year

THE reason these threshermen feel so safe in depending upon the **GANDY THRESHER BELT** is that it was the first stitched cotton duck thresher belt made, and has been completely successful ever since it was first put upon the market 34 years ago.

Our constantly increasing sales prove that the GANDY saves money for these threshermen, and this same success is proof that the GANDY THRESHER BELT will also reduce your belting expenses.

THE GANDY THRESHER BELT has proven more serviceable because it is not affected by atmospheric changes, and more reliable because it is always of uniform quality — the cotton duck is woven by us in our own plant, and the belt is specially treated to prevent slipping, stretching or hardening. Before the busy threshing season starts we want you to write us a letter so that we can post you thoroughly as to just what the GANDY will do for you.

We will gladly send you samples, prices and booklet, if you will write or simply clip, sign and return the attached coupon. It will pay you to do this now.

GANDY BELTING COMPANY
733 W. Pratt Street, BALTIMORE, MD
New York Office: 88-90 Reade St.

CLIP AND RETURN COUPON NOW
Gentlemen: Send me samples, booklet, etc. Adv. in C. P. 1-13.
Name _____ Address _____ Prov. _____

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The Only Attachment

For a Traction Engine that increases its power, or saves a corresponding amount of fuel and water is manufactured by

The Gould Balance Valve Company

KELLOGG, IOWA

Send for Catalog. Agents Wanted for 1913

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For Farming Purposes

Hillcrest Steam Coal

Is the Most Economical

Because "Hillcrest" "the best coal in the Rocky Mountains," contains less slate, rock and other foreign substances. It will plow more land per ton than any other Coal.

Order some now and try it
HILLCREST COLLIERIES, LTD.
Hillcrest, Alta.

You saw this advertisement in this magazine. Don't forget to say so when writing.

Q. A. S. 1. Would it be feasible on a farm where there is just the required amount of help, without hiring, to bale the straw used in firing a straw-burning plowing engine so that a half day's supply could be carried without using so much space? It is understood, of course, that the straw will have to be shaken out before being fired. Would it pay if a man had his own baler and could do the baling at odd times?

2. What's the cost of a gas engine and a six-gang engine plow, for instance, a Model F Rumely Oil-Pull and Rumely plows?

3. Is there any danger that the water leg of a Russell straw-burning boiler will burn out and give way on account of the intense heat in that part of the fire box?

4. What is the substance that is washed out of the boiler in cleaning? Is it rust from the boiler plate, or is it scale of some kind? The water I am using is soft artesian water that is not supposed to form scale.

5. Explain the hydrostatic test for boilers. Is it as good as the hammer test?

6. Do you think a good straw-burning boiler as economical as a gas tractor for plowing purposes, located as we are eight miles from a coal or oil station?

7. Is a compound engine the best for burning straw? I think that it is.

A. 1. This is a question that involves a number of local conditions that we are not familiar with, and we fear that we cannot give you a very satisfactory answer. Straw is not the most satisfactory fuel to fire with, especially in plowing, since it requires the undivided attention of one man in firing and another man and team to get straw to the outfit. If you are going to use straw at all, baling is about the only way you could make a success of it. A ton of straw is only equal to one-third of a ton of good coal in heating value. Consequently where you would burn one and a half tons of coal in a day you would require more than six tons of straw. The best way to find out a thing like this is to try it, say for a day or two and see how it works out. We fear the difficulty of keeping the engine supplied with straw and the heavier work of firing would offset any saving you might make in your fuel bill.

2. The cost of a Model F Rumely Oil-Pull at the factory is \$1,700, and of a six-gang engine plow \$300 more, making a total of \$2,000, to which must be added the freight from La Porte, Indiana, to your home town.

3. There is no danger that the water leg of a Russell engine will burn out unless it becomes cov-

Plow Users!

Here's an Engine Gang Plow For Discs or Moldboards!

To meet the *real need* that every farmer experiences from time to time. While the moldboard plow is more commonly used, there are times—on practically every farm—in every season—with every kind of soil—when the disc plow is badly needed. You have this *double service*—to fit the conditions of the hour—when you own the EMERSON Flexible-Section Engine Plow. Either disc or moldboard bottoms may be used on the *same frame*—the change is quickly and easily made—and you have the *ideal all-purpose plow*. Built on the principle of the sulky and gang plows—with light, strong frame—we say positively that the

Emerson Flexible-Section Engine Gang Plow

is the *lightest draft* engine plow ever made. The EMERSON compels the pulling of no surplus weight. Suction—not weight—*keeps a plow in the ground*. Both suction and weight in the EMERSON are exactly right for perfect work.

The flexible section makes accurate work possible when the ground is uneven—each section working up and down according to surface of the ground. Any number of sections can be used, in keeping with the power of the engine.

Pivot hitch makes this plow do perfect work around the ends. This means continuous plowing.

Draft Control of Furrow Wheel

No other engine plow has this great feature—draft control of furrow wheel. It is protected by our own patent—is one of many *distinctive* points that make

the EMERSON supreme. Furrow wheel keeps the plow in proper position, inside plow having proper width of cut at all times.

Superior EMERSON Construction

EMERSON construction means materials and workmanship of highest quality. Built of steel, braced for great strength and minimum weight. Discs easily adjusted—sloping or abrupt—to meet all conditions; bearings absolutely dust proof; moldboards provided with spring trips if necessary; dust proof boxing for axle bearings, insuring easy action on one application of grease.

Every detail worked out with EMERSON skill and finished with Emerson care. It is a *great plow*, backed by a policy that deals seriously with *quality and service*. Write today for detailed description.

EMERSON-BRANTINGHAM IMPLEMENT COMPANY
1192 Princess St. (Incorporated) Winnipeg, Man.,

Write Today

Write today for an illustrated EMERSON Plow Book—*free to you*—giving complete details of this splendid engine plow. This book will help you with your plowing problems. Don't delay! Learn more now about EMERSON—the name that stands for *farm efficiency and farm service*.

29057



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ered with mud or scale. If it does get so covered, it will, of course, burn out in a short time. Good care will prevent any such accident as this, however.

4. The substance washed out of a boiler is mostly red iron rust together with whatever dirt or sediment there may be in the water. There is no artesian water so pure that it does not contain some mineral impurities which may be precipitated when the boiler is steamed up.

5. The hydrostatic test for boilers is very simple. A force pump is attached at some convenient place and water is pumped in. Care must be taken to see that the boiler is filled clear to the top of the dome with water and that an accurate steam gauge is attached to determine the pressure. During the time that the pressure is being applied,

close watch must be taken to every part of the boiler and to the gauge to note any evidence of the breaking of a stay bolt or brace. If the gauge should suddenly drop in pressure, it is taken as evidence that a stay has given way somewhere. In case no such accident happens, the pressure is run up about fifty per cent higher than the steam pressure it is purposed to carry. For example, if you intend to carry one hundred pounds of steam pressure you should test with cold water to one hundred and fifty pounds. It is superior to the hammer test.

6. The relative economy of a gas tractor and of a steam tractor depends upon a number of things aside from the mere price of fuel. If the water used for boiler purposes is of good quality and you have very little trouble

with the leaking of boiler tubes, and if fuel does not cost much for steam than for a gas tractor, we believe you will find steam a little more economical. It is generally conceded that the deterioration of a steam engine is less than it is for gas. This is an item that requires the most careful consideration when making a choice between the two kinds of power. It may more than offset the gain in being able to start up quickly in the morning.

7. We do not believe there is much difference in the steaming qualities of simple or compound steam traction engines. The steaming qualities are not dependent upon the engine, but upon the boiler. It may be true that the compound engine under favorable conditions requires less steam to do a given amount of work than a simple engine, and

in that case your opinion would be correct. We have heard the claim made that compound engines do use much less steam than a simple engine, but in the absence of unbiased tests we cannot decide this point.

Q. W. K. What per cent of total heat supplied to gasoline engines is lost in the exhaust? Do gasoline engines exhaust harder when under full load than when running light? Does a muffler have any tendency to cause back pressure? Can a gasoline engine be compounded in the same way as a steam engine, and has it ever been accomplished? Have rotary steam engines ever been successfully applied to threshing engines?

A. We find, on referring to a leading gas engine authority, the following result of a test of the heat distribution in a 500-horsepower engine: 24.9 per cent of the heat supplied was turned into useful work; 4.58 per cent was used up in friction and pump work; 34.22 per cent was lost to the jacket water, and 36.32 per cent went out by way of the exhaust and by radiation from the entire engine. The figures for a heavy gas engine, such as this, will apply fairly close to small gasoline engines as well, with the exception that a greater percentage of the heat supplied will be used in friction and pump work, and more will be lost to the jacket water. The exhaust losses will be about the same. Tests made on a small engine by the writer several years ago bear out this statement. Roughly speaking, we may say that one-third of the heat is lost to the exhausts, one-third to the jacket water, and the remainder is divided between useful work, engine friction, radiation, etc. The ordinary small farm gasoline engine will show a heat efficiency of from twelve to fifteen per cent. Heavily loaded engines of the throttle governed type exhaust harder than engines with a light load, because under heavy load a full charge is taken into the cylinder on each suction stroke. Hit-and-miss-governed engines take in a full charge on each charging stroke, and consequently their exhaust is always of the same intensity, but they occasionally miss a power stroke due to the action of the governor. A muffler of proper construction will not cause very much back pressure. Recent tests on an automobile muffler showed a slight loss of power at certain speeds, and even a gain of power at other speeds. The opinion of the engineers in charge of the test was that a properly constructed muffler does not cause a loss of power. Gas engines have been compounded, but they were not successful. The friction of

the piston and other moving parts in the low pressure cylinder is said to have absorbed practically as much energy as the exhaust gases from the high pressure cylinder contain. We have no record of a successful attempt to apply steam engines to a threshing engine. Rotary engines of small size have never shown remarkable economy, and we see no reason for attempting experiments in this direction. Engines using high pressure super-heated steam built after the plan of the German locomobile engines hold greater promise in the way of development than any other type yet developed. These engines are of the reciprocating type and are located in the path of the hot gases from the furnace, thus preventing the loss due to the cylinder condensation and abstracting a certain proportion of heat from the free gases.

Q. A. O. E. Can you advise me where to send for a polishing wheel to be used for polishing plowshares?

2. I have a single cylinder automobile in which trouble occurs with the ignition. When it runs fast it fires all right, but when it runs slow it misses fire. The wires are new and the spark plugs are all new. Would it pay to have the coil repaired?

A. You can obtain emery grinder and polishing wheels from the Luther Grinder Manufacturing Co., Milwaukee, Wis., or you can order what you want through your local hardware dealer.

2. We judge the trouble you are having with your automobile is not due to the ignition apparatus, but to the carburetor. It is doubtfully adjusted to run fast and does not give a correct mixture when running slow. A slight change in the adjustment in the needle valve ought to remedy your difficulty.

Q. G. W. The cross-head guides on my engines are worn more on one end than on the other, caused apparently by piston rod. Can you advise me how to time the guides, and what tools I will need, especially to do the measuring?

A. We assume that the engine is of modern construction with bored guides. If that is the case, the only way they can be repaired is to return them to the foundry or take the engine to a well-equipped machine shop; have the guides rebored, and refit the cross-head to correspond. On most engines the cross-head shoes can be set out enough to take any lost motion due to wear. The job you have on hand is not one that can be handled satisfactorily out-



Decide Now on Your 1913 Belting Requirements

You will find the Sawyer Canvas Stitched to be the ideal Farmer's belt. It will stand a few months' rest and come out strong and pliable, or it will stand many years of service.

Write for our Booklet L.

SAWYER BELTING CO., Cleveland, Ohio

You saw this advertisement in this magazine. Don't forget to say so when writing.

WRITE TO

The Garlock Packing Co.

117 Market St. E., Winnipeg.

For catalog and prices on canvas, leather and rubber belts, water and steam hose, babbitt metals, etc., and Genuine Garlock Packings.

The Garlock Packing Co.

TORONTO

HAMILTON

MONTREAL

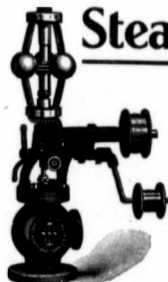
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Sawyer-Massey Co.

NOT

IN A COMBINE!

Steam or Gas Tractors



Equipped with

PICKERING

give greater efficiency

We fit every build of engine and give our guarantee.

Patent Ball Ranger Speed Changer Supplied on all Genuine Pickering Governors. Will increase speed 50% or more.

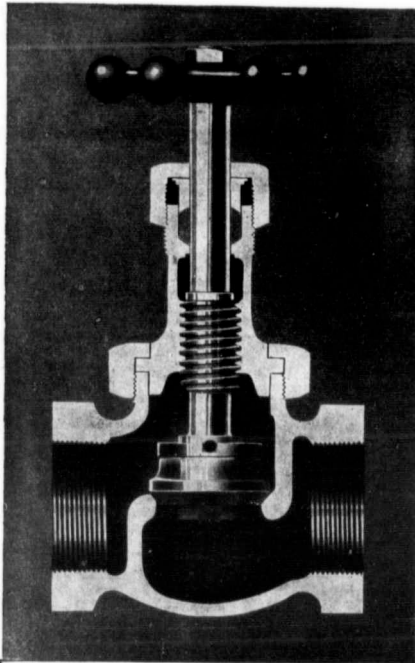
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PORTLAND

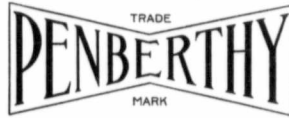
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"Something better in valves than you have ever used before."



Regrinding Brass Valves

VIZ:
Globe Angle Cross
AND

Horizontal, Angle, Vertical and Swing Check Valves

GUARANTEED TO STAND A CONSTANT WORKING PRESSURE OF TWO HUNDRED POUNDS

They Have Passed Government Inspection
for the Northwest Provinces

THEY EMBODY the newest designs and the best mechanical ideas ever employed in valve construction.

THEY WILL GIVE absolute reliable service and dependability under high pressures and severe conditions.

If You Want VALVE Comfort—
Give This Valve a Trial!

WRITE US FOR DESCRIPTIVE
CIRCULAR TODAY

PENBERTHY INJECTOR CO. LIMITED, WINDSOR, ONT.

You saw this advertisement in this magazine. Don't forget to say so when writing.

side of a shop, and it need a very well-equipped shop at that.



Q. P.J. Will you kindly explain how to line up an engine to a separator ready to belt the buckle on and begin threshing? I would like to have you explain fully all the details of how to do this the quickest and the easiest.

A. Facility in lining up an engine comes only through experience. There are not very many rules which can be laid down that will be of any benefit. The engineer should learn first to handle his engine, to drive it exactly where he aims to drive it, to move it sidewise, forward or backward with the least effort and greatest speed. When this is mastered there will not be much trouble in lining up. Usually the separator man runs out with the belt and marks the place where the fly-wheel should stand. If this is done properly and the belt is lined up with the separator, it is a simple matter for the engineer to run and place. He must, of course, sight along the edges of the fly-wheel to get the engine perfectly in line, but while he is doing this he must not forget that the body of the engine must also be in line with the body of the separator, otherwise the belt will be liable to run off. Then there is the matter of the wind to take in-

to consideration. If the wind is blowing quite strongly from the side, an allowance must be made in setting the engine. The only way of learning, that we have ever heard of, is to actually do the work.

The Little Colts

Little colts will be coming to a great many farms soon, and we must be ready for them. If possible, be near when the foal is born.

The first thing to be sure of is that its nostrils are clear so it may begin breathing. The second, attend to the navel cord (umbilicus); keep it out of the filth and do not tie it with a dirty string. To allow it to break naturally is better than to be obliged to sever it. It will break usually when the dam rises. If it must be tied, have a stout string in a bottle of water and carbolic acid (five per cent solution) and use that, tying it tightly an inch or an inch and a half from the abdomen; then cut off the ends and the navel cord about two inches below the tie. Use a clean knife that has been soaked in the carbolic solution. Whether the cord is tied or not, grease the little fellow's belly

around the navel with clean, unsalted lard, or with pure vaseline, and wet the navel and cord with the carbolic solution twice a day until it dries up. Wet it well so that no infection can live there. With the skin greased the carbolic will not blister it. A weak colt will need to be held up to nurse at first, but most colts will rise and suck within an hour, without assistance.

Several diseases of the young colt come through infection, sometimes by way of the mouth. To avoid a possibility of such trouble, wash the mare's udder thoroughly with strong soapsuds, and rinse before the colt gets its first meal. If the mare's entire hind parts be thus cleansed it will not be labor lost. Dry her well by careful and abundant rubbing with clean, dry cloths. It will not be out of place to wash the udder carefully two or three times a week.

See to it that the bowels of the young colt are moved soon after birth. The first milk of the dam should unite with the fecal matter in the colt's intestines and act as a purgative to clear them. The attendant should be prepared to inject into the rectum tepid water (a pint or so) or flaxseed tea, if evacuation is not had naturally. Afterward, and within twelve hours, this must be

repeated if the bowels are not moved. Many fine colts die because the condition of the bowels is overlooked. The only thing needed is a small, clean hose and a little funnel into which the fluid is merely poured. Grease the end of the hose and do not use force. All through the young colt's early days guard it against constipation and its opposite, dysentery or scours.

Where the Farmer Stands

Sometimes farmers think of themselves as simply cogs in the wheel. They are far more than that. The farmer is the world's great provider. His hand feeds the world. His farm is the source of supply for every man, woman and child on the face of the earth. He is the mainspring of society. He is the nation's balance wheel. He furnishes the motive power for the world's work. When he keeps the standard high, the life of the nation is strong, clean and full of power. To realize and to live up to this would make us all better farmers.



A fool is one who has never made an experiment.—Mrs. Hertha Ayrton.



Canadian Power, Seed & Soil



Vol. 1, No. 1.

Published monthly by Rumely Products Company, La Porte, Ind., U.S.A., in the interests of Farm Progress

January, 1913.

Progress Demands New Methods and New Machinery

A HAPPY NEW YEAR

A happy New Year to you—surely this should be a happy occasion for you, as it is for us also. Why, it should be a real second edition of Thanksgiving for all of us. For New Year's Day is naturally a time to look back upon the past year, and both you and we have many pleasant things to look back upon.

You, threshermen and farmers of the world, have just ended a year that has been the most prosperous that you have known for a long time. Your crops have been good. Your labors have been richly blessed. Prosperity has been heaped upon you. We, too, have much to be thankful for. The past year has been the greatest in the history of our Company. We have built more machines than ever before, employed more men, made more sales. This is our sixtieth anniversary. Sixty years ago Meinrad Rumely started his little blacksmith shop in La Porte. Sixty years ago he crudely fashioned the first Rumely separator—the pioneer of a line of machines for threshing, hulling and plowing that is now known 'round the world. Sixty years ago he dreamed dreams and saw visions that have now come true in richest measure, for the Rumely Company is now the third largest concern in the world manufacturing arm machinery.

The New Year is the time for looking back. As we look back now over the past

year, and the other years of our Company's life, we can see one thing more than all else responsible for our success—the fact that we have been performing a real service for the farmers and threshermen of the world. What more fitting than, than this New Year's resolution—"That We Will Continue to Make Machinery the Best We Know How, Striving to Give the Greatest Measure of Service, and to Further the Progress of Agriculture."

May we also suggest a resolution for you? If you have not been enjoying better profits, easier work and work done better by means of Rumely power-farming machinery, why not resolve to make this a Rumely year?



"Kerosene Annie"

Again, we wish you all a Happy New Year.

Just as we have abandoned the use of horses in transportation and manufacturing, so will the farmer have to abandon the horse for the bulk of heavy work.

THE FIRST OIL PULL

On our sixtieth anniversary, we glance back with pride at the crude little machine shown here—"Kerosene Annie," the original oil puller. Yes, it looks odd, we know. It was crude, clumsy, not very strong and it might have worked more smoothly than it did. For one thing, however, it will ever mean much to us. It proved to us and to the world that oil could be used successfully for fuel,—that it could be burned at all loads, all temperatures, all altitudes. Here's to "Kerosene Annie"—her wheels and frame and tanks may go to the junk pile, but her memory will be strong with us always.

"We are now obliged to face the food problem and are doing so, not by moving on, but remaining where we are and bringing science to bear in our farming."

HERE'S AN ALBERTA LETTER

Seven Persons, Alta. M. Rumely Company, La Porte, Ind. Gentlemen: A word in regard to the outfit I bought of you, can say it is the best running out-



At Winnipeg

fit I ever had and I have threshed for over twelve falls and had two outfits of my own. But the OIL-PULL and the Rumely separator is the best I have ever seen. The 15-30 has given no trouble, and I have two barrels of poor oil that did not give me much power, otherwise it has always been ready to go and I can not speak too highly of it. I think in a year or so you will have a big bunch of them here.

Thanking you, I am for success. Yours truly, O. E. Jensen.

INDIAN GIVERS Sweepstakes Taken Back

We learn by change from the management of the Canadian Industrial Exhibition that after all these months they have discovered that the highest score in the 1912 Agricultural Motor Competition was won by the J. I. Case Threshing Machine Company, Entry No. 27 (steam) instead of the Rumely Oil-Pull Tractor, Entry No. 23. The final corrected score is given as 457.85 points for the Case Steamer and 449.75 for the Oil-Pull Tractor. We must therefore, as gracefully as possible, draw in our horns and concede the sweepstakes score to our friends the enemy, whom we congratulate. We retain the rather distinguished honor of having the highest score among all the gas tractors, that is, unless Winnipeg Board again changes its mind.

Now that we haven't the sweepstakes it occurs to us that we didn't care so much for it anyhow. We had to award it to ourselves and in all of our advertising we had to be careful not to mention the sweepstakes medal, because there wasn't any medal, simply a matter of highest score in the contest. We got the gold medal Class E for kerosene engines and both the preliminary and final reports gave us the sweepstakes score. Now that somebody else has the honor we can say that there are things to be desired in the manner of scoring anyhow.

It appears that the judges were not all consistent. In some cases the full score was allotted for the best performance in any class, e.g. gasoline, kerosene and steam, taking in all sizes of each. In other cases, even the best performance was scored below maximum or in other words a standard of perfection was set which was higher than was reached by any of the entries. While no engine could be imagined perfect, we have no definite standard of perfection and it is our opinion that the full score should have been allotted to the highest performance on each and every point.

It is to be noted again that on some particulars, for instance "horse-power hours per unit of fuel" in the economy brake test, the full score was allotted to the best gasoline engine, the best kerosene engine and the best steam engine. On "horse-power hours per unit of water," three gasoline engines received the full score, and apparently all the kerosene engines were rated downward from the score of the gasoline engines. We maintain that consistency would have given the full score on this point also, to an engine in the kerosene class, even though it would not have affected the score but a fraction of a per cent in our case.

On "steadiness, vibration and condition of engine," all engines were scored down from perfect. On the relation of maximum to economy load the judges went a step further and compared all engines, gasoline, kerosene, and steam, with the highest in any class which even then was not considered perfect. Again on evenness of load, no engine was given perfect score. In the next column nearly every engine was rated perfect in condition.

In plowing an engine in each of the three general classes received perfect score on fuel consumption, but on consumption of water the classes were apparently divided into steam and inter-

nal combustion, because no kerosene engine was given the full score and no gasoline tractor was.

On "acres plowed per hour per brake horse-power" in the following column, all three classes were again thrown together and compared with the Aultman & Taylor Entry No. 12, which was rated perfect. On quality of plowing no entry was perfect. The engines were separated into three classes again on "distance traveled without replenishing fuel or water," but the scoring was done on the percentage of total tank capacity used rather

compared with the highest score on easy manipulation instead of being divided into classes.

We do not say that a consistent manner of scoring would have materially helped our score—it wasn't a bad score after all—but that is no reason why we should not express these views publicly, as we have expressed them privately for several years in letters to the Exhibition officials. We believe that the judges should be given enough time to work out their results so that there shall be absolutely no questioning the data when they are published. We

A Little Tractor With a Big Pull

Rumely Gas-Pull Tractor is a medium sized tractor built for big jobs. It is small in size, but exerts an unusual pull—the right tractor for all-round farm work. It pulls heavy loads, and will run grain separators, clover hullers, pumps or any other farm machinery. In fact it can be used wherever traction or belt power is required.

It is simple in construction and easy to operate and adjust. Rumely Gas-Pull Tractor is a labor saver and expense saver. It does the work of 15 horses and costs less than 5 to operate.

Write for booklet, it tells about this wonderful tractor.
RUMELY PRODUCTS CO. (Inc.), La Porte, Indiana, U.S.A.
Power-Farming Machinery Branches all over Canada



than the percentage of the total amount of water that actually could be used without stopping the work.

Under "design and construction," all engines were apparently compared with the one which was considered best in accessibility and on protection of working parts, no one being considered good enough to merit the full score. All engines were

have repeatedly urged that the results should be withheld from the competitors and the public until a report is made that is consistent, thorough, comprehensive, and published under the signature of the officials in charge. Then we shall have fewer sour grapes that were apparently sweet for some time after being plucked.

THE BEST FOR THE BEST

Oil Pull Tractor Awarded as Sweepstakes Prize for Best Bushel of Hard Wheat

Honest labor reaped its reward in success, when Henry Holmes, a hard-working farmer at Raymond, Alberta, won the Oil-Pull Tractor offered as a prize for the best bushel of hard wheat at the International Dry Farming Congress at Lethbridge last October. Not a kid-gloved farmer he, but a true tiller of the soil—a practical farmer, who earns his daily bread by the sweat of his brow.

This glorious achievement of "Hy" Holmes, as he is known to his neighbors, has spread all over the world, and will act as an incentive to stir up men to the value of individual exertion. It was most fitting that for the best bushel of wheat should be given as a prize the best tractor—the Oil-Pull.

In the competition for the Oil-Pull prize there were 183 entries. But Mr. Holmes' winning bushel—the Marquis variety—was considered far ahead of all by the jury of awards. It was his first attempt at growing Marquis wheat. His success establishes him as the premier wheat grower of the world.

On the evening that he returned to Raymond, after the awards had been announced, he was met at the station by the local band and an enthusiastic crowd of people, who were over-joyed at his victory.

Much credit is due the International Dry Farming Congress for the admirable work it is doing and the intense interest it is arousing in all parts of the world. The meeting at Lethbridge in October proved that the movement is making rapid progress.

The winning of the Oil-Pull by Henry Holmes has established the farm tractor as one of the most important factors in successful dry farming. Nowhere is the necessity of mechanical power for farm purposes more felt than it is in dry-land agriculture.

NEW CATALOGS AND BOOKLETS

We have lots of new catalogs and booklets ready for you that you'll want to read. These are brand new—the ink is hardly dry on some of them. One of the new catalogs is on the Gas-Pull tractor—the new all-round tractor for the small farm. Another one is of the new 1913 model of Rumely Engine Gang Plow.

One of the new Rumely Feed Mill—one on Rumely-Olds Engines. All these contain information about plowing, feeding, farm management, etc., that you ought to have. Our general catalogs are also worth having. Better send for some of these today.

The Rumely and Advance - Gaar Scott general catalogs give a brief general description of all our machines in these two lines.

The data books give a detailed description of the various machines. Our literature can be obtained from any of the Canadian branches of Rumely Products Co. in the following cities:

- REGINA, Saskatchewan
- SASKATOON, Saskatchewan
- TORONTO, Ontario
- BRANDON, Manitoba
- WINNIPEG, Manitoba
- CALGARY, Alberta
- VANCOUVER, British Columbia

WHAT A MANITOBA BUYER SAYS

Melita, Man. Dear Sirs:-

The 15-30 H.P. Rumely Oil-Pull and Ideal Separator 28-44 which I purchased through your agent, Mr. Hill McRoberts last fall has given me excellent satisfaction. The outfit will do all the work that you claimed it would do, as a matter of fact it exceeds your claim for ability. The engine handles a six furrow gang and harrow or packer with apparent ease. I have only to say that I am well satisfied with the whole outfit and would not hesitate in recommending it to intending purchasers. Yours truly, R. J. Dobbyn.



Rumely Tractors Work the Year 'Round

About this time of the year, when the cold wind is whistling around your windows and the snow piling up in drifts, you feel more like toasting your shins in front of the stove than running your tractor. "Way off in Damascus, however, they're working in shirt sleeves, and having a hard time keep cool at that. This shows a Gaar-Scott portable engine running a separator. Even to Asia Minor the Rumely name and fame have spread.

OLD EMPLOYEES No. 1.—John Hanna

John Hanna took up his tools in M. & J. Rumely's shop in August 1857. Now, 56 years later, he is still working faithfully, though eighty years of age. Till a few years ago he was head machinist of the separator department. Then he yielded his place only to his son. Some time since, John Hanna was taken sick. He could only be kept at home a fortnight however. Then his family yielded to his pleading that he be allowed to go back to the work he loved. So there he stands today, using the skill ripened in 57 years of devoted service, helping to build Rumely Separators.



John Hanna

Dreadnought Tractor Guide

Every Tractor sold hereafter will be regularly equipped with the Dreadnought Guide.

This handy attachment guides the tractor automatically in plowing. A triangular frame extends out in front of the tractor, bearing at its end the guide wheel. This wheel runs in the furrow last turned, hugging the landside and keeping the tractor running exactly alongside that furrow without any assistance. In turning at the headlands, the operator can control the direction of the tractor independently of the guide.

Saw Wood and Save Money

Now is the time to prepare for cold weather prices on fuel. Get a Rumely-Falk Engine Saw Rig NOW and use up the old posts and scraps of lumber as fuel.

Rumely-Falk Engine Saw Rigs are portable—you can saw where and when you please.

They burn the cheapest of all fuels—kerosene—at all loads and under all conditions, and give the utmost satisfaction. Cold weather does not affect the Rumely-Falk. It starts easily at any time.

Write for booklet
RUMELY PRODUCTS CO.
(Incorporated)
Power-Farming Machinery
La Porte - Indiana, U.S.A.
Branches all over Canada

The Right Tractor For Every Job

The Rumely Oil-Pull Tractor can be used satisfactorily for any job which requires either traction or belt power. It pulls plows, discs and harrows, runs grain separators, clover hullers, hay balers, wood saws, and hauls products to railway points.

The Rumely Oil-Pull Tractor is built to do long efficient service—built of the best materials obtainable, and thoroughly tested by men who experts in their line of work.

Our booklet, "Toiling and Tilling the Soil," tells the history of the tractor, how it is built and what it will do for you. We shall be glad to mail you a copy. Send for it today.

RUMELY PRODUCTS COMPANY, (Inc.)
Power-Farming Machinery
La Porte, Indiana, U.S.A.
Branches: Brandon, Man. Estevan, Sask. Regina, Sask. Vancouver, B.C. Edmonton, Alta. Toronto, Ont. Calgary, Alta. Saskatoon, Sask. Yorkton, Sask. Winnipeg, Man.

Prepare for a Big Harvest

by using a Rumely Engine Gang Plow to plow your land. It will plow deep and fast. It works easily, and is ready any time you want it.

The Rumely Engine Gang Plow is built in four sizes, with 6, 8 and 10 bottoms—a size to suit the needs of every one.

Write for catalog
RUMELY PRODUCTS CO.
(Incorporated)
Power-Farming Machinery
La Porte - Indiana, U.S.A.
Branches all over Canada

The burden of farm life used to fall upon the woman. Her work began early in the morning and continued long after dark at night.

Besides her own immediate family, to be cared for, there was the ubiquitous hired man with his casual appetite.

In the harvest time, when the threshers came, there was a small army of hungry men to feed.

If she wished to go to town, the horses usually were all in use. She was chained to the soil, as a galley slave of old was chained to the floor.

As the Oil-Pull liberates the horses, so will it liberate the wife on the farm. The army of hungry harvest hands will be eliminated, fewer men will do the work, she will share in the general prosperity.

Elbert Hubbard in "The Philistine."

A pint of kerosene has more potential power in it than the same quantity of dynamite.

Write for catalog
RUMELY PRODUCTS CO.
(Incorporated)
Power-Farming Machinery
La Porte - Indiana, U.S.A.
Branches all over Canada



The Hog Industry in Alberta

The following address was delivered by W. F. Stevens, Live Stock Commissioner for Alberta before the "Alberta Swine Breeders' Association" in Calgary, Nov. 27th, 1912. As it is a subject of immense importance in the diversified programme of "Better Farming" in which the "Canadian Thresherman and Farmer" seeks to take its part, we are glad to give it in full.—Ed.)

Mr. Chairman and Gentlemen: I realize that it will be difficult for me to say much that will be new to so intelligent a body of successful swine growers as I see before me. For this reason, and because the occasion does not require it, I shall not devote much attention to discussing the details connected with this line of animal husbandry, but will occupy the brief space of time that is allotted to me to a consideration of the broader aspect of the question.

The Swine Growers of Alberta are to be congratulated upon the fact that the prospects for their industry were never brighter than they are at the present time. Development throughout the northwest is going on very rapidly, and it is limited only by our ability to secure a sufficient number of men to do the hard labor that is inseparable from pioneering work and municipal improvement. These men are naturally large consumers of meat, and pork constitutes a large percentage of their daily meat allowance. For this reason there is now a demand far in excess of what we are able to supply, and there is every indication that this demand will continue to increase.

Keen Interest Awakened

Fortunately the farmers in Alberta are beginning to awaken to their opportunities and are beginning to devote more time and attention to swine growing. I may say that I have just finished a four weeks' tour of the province in connection with the Mixed Farming Special, and everywhere I found very keen interest manifested in this business, even at points where a few years ago it was stated that swine growing

could never be carried on to any great extent. Numerous inquiries were made for pure bred animals for breeding purposes. This should be good news to the members of the Swine Breeders' Association. Nowhere was there any indication that any one breed or type of animals had an advantage over another, as those who were contemplating going into the business, were naturally inquiring for the kind of animal they had been accustomed to before coming to Alberta. Naturally there were a great many amateurs who wished to receive suggestions regarding the best breeds and types of hogs to grow in this province.

This, as you know, is a delicate question to deal with. Discussions in the past regarding breeds and types of hogs have usually been attended with a good deal of acrimony, most of which was unnecessary. The difficulty lay largely in the fact that one of the parties to the discussion contended in favor of a type of hog that has been proven to be best adapted to a country where Indian corn constituted the principle grain ration, while the other argued in favor of an animal the product of which fills the requirements of the London market.

The futility of such discussion should be apparent, when it is considered that the farmers of Alberta don't feed Indian corn, and their hogs do not go to London. The fact is that we have here a condition that is all our own; most of our feeds are peculiar to this climate, and our market is different to that of the United States and of Eastern Canada, and it is only by studying our own conditions and our own markets that we will solve the problems peculiar to Alberta.

Room for All Types

Some four years ago I contributed an article for a pamphlet which was issued by your secretary, on the subject of Swine Growing in Alberta. In that article I stated that we have room in Alberta for all types. We have a large Northern trade which is satisfied only with the product of the lard hog; we have a large mining and lumbering trade which requires one of medium thickness,

Money is Easy

Only when it is made by common-sense application of the man to the job and by utilizing the very best that he can lay his hands upon in up-to-date labor-saving machinery



DAIRY FARMING IS AS GOOD AS A GOLD MINE

when the milk is handled by a

"MAGNET" Cream Separator

Again and again the strength, solidity and uniformly excellent work of the "Magnet" has been proved on the farm and in record-breaking International Contests. Its square gear as distinguished from the ordinary "wobbling worm" is the admiration of every practical man who sees it. Let us send you details of forty facts about the "Magnet" that sets it far ahead of any other separator in use to-day.

Our Slogan is "TO SATISFY"—and we will do it at all costs.

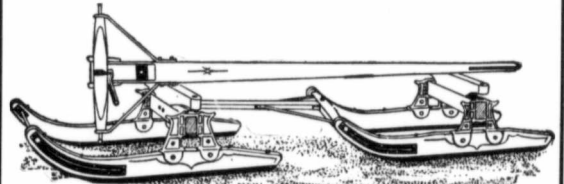
We will prove every point we claim for the superiority of the "Magnet" on your farm—at our expense.

The Petrie Mfg. Co., Ltd.

Head Office and Factory: HAMILTON, ONT.
Winnipeg, Calgary, Regina, Vancouver, Montreal, St. John, N.B. Edmonton, Alta.

You saw this advertisement in this magazine. Don't forget to say so when writing.

THE GREGG MALLEABLE KNEE SLEIGH



Made from A1 stock, in an up-to-date factory, by men who have had years of experience in this kind of work. Result—A Sleigh that cannot be duplicated in material, workmanship or appearance. Recognized—by those who have gained their knowledge by experience—to be the strongest, easiest running sleigh made.

Has many distinctive features not found in other sleighs. Ask your dealer or write to us. We will tell you about them.

GREGG MFG. CO. LTD., WINNIPEG, MAN.

You saw this advertisement in this magazine. Don't forget to say so when writing.

Wall Plaster

Patent Hardwall Plasters (the "Empire" Brands) manufactured from Gypsum will give results not to be obtained by any other plastering material or so called plaster substitutes.

Plaster Board—the fireproof plaster lath and sound deadner

THE MANITOBA GYPSUM COMPANY, LIMITED
WINNIPEG, MAN.

You saw this advertisement in this magazine. Don't forget to say so when writing.

while our urban population prefers that of the bacon type. Since that time I have made some special enquiries along the lines of the types of hogs that were best suited to the Alberta trade.

About three years ago I addressed a letter to the packers, asking what type of hog they found to be best adapted to their business, and I requested them to state whether or not they had any preference for any particular breed. I explained to them that my object in doing so was to be able to use the information thus obtained in institute work. Upon one point the answers were very uniform, and that was, they were prepared to pay top prices for all classes of hogs of good quality and well finished, weighing between 180 and 225 pounds each.

On the question of breeds there was a great diversity of preference. P. Burns & Co. stated they found the Berkshires and Poland Chinas best adapted to their trade. Swift & Co. expressed a preference for Yorkshires, and Berkshire-Yorkshire crosses. Gainers mentioned Yorkshires alone as especially adapted to their trade; while Vogle preferred Tamworths and mentioned particularly Berkshire-Tamworth crosses. During the summer of 1911 I chanced to be in Mr. Burns' stock yard while several cars of hogs were being unloaded, and while in conversation with Mr. Burns I requested him to indicate the type of hog that he finds especially adapted to his trade, and the first animal that he pointed to was a Duroc; he pointed to a number of others, some of them Berkshires, some Poland Chinas and some Yorkshires, but all of the animals that he indicated a preference for were well fleshed, about six months old, and were over rather than under the 200 pound mark.

Early in the present year, wishing to ascertain if there was any tendency setting in, in favor of a particular type of animal, I arranged with a photographer to visit the different packers and photograph such animals as they should indicate as being the kind that they preferred. I explained to the packers what I desired, and that the information which I received was to be used in institute work, advising the farmers as to the direction in which to devote their attention. The results of these photographs were just as diverse as were the letters that I received three years ago.

The animals in the photograph taken at Mr. Burns' plant were all blacks; some Berkshires, and some Poland Chinas; those photographed at Swifts were red or red and black spotted, they were evidently Berkshire-Tamworth and Berkshire-Duroc crosses, the former predominating. Gainers still expressed a strong preference

A Better and More Complete Service for Dairymen and Cow Owners in the Northwest

ON January 1st, 1913, the Western Canadian business of the De Laval Separator Co. was taken over by the De Laval Dairy Supply Co., Limited, a distinctly Canadian corporation operating under a Canadian Charter which, in addition to being the sole Canadian distributors of De Laval Cream Separators and Ideal Green Feed Silos, will handle a complete line of dairy, creamery, milk plant and cheese factory supplies of all kinds.

There has been no change of ownership, management or business policy. The change was made solely with the object of enlarging the scope of the De Laval organization in Canada and to facilitate a better equipment service for cow-owners and others in Western Canada interested in the various phases of dairying.

To this end the De Laval Dairy Supply Co., Ltd., has now under construction at Peterboro, Ontario, a large up-to-date manufacturing plant, which when completed will be the largest and best equipped factory in Canada for the manufacture of dairy supplies and in many respects the best in the world. The present De Laval Cream Separator manufacturing plant in Montreal will be maintained in addition to the factory for the manufacture of creamery and dairy machinery and silos at Peterboro.

To adequately care for the greater interests of the new Company the Western Canadian Branch of the De Laval Dairy Supply Co., Ltd., has recently erected a fine new building at 128 James Street, Winnipeg, where they are now located, and are in a position to serve their patrons better than ever before.

The same high plane of superior quality and efficiency in the manufacture of cream separators for which the De Laval Canadian organization has already achieved a well-deserved reputation will be maintained in its full new line of creamery, cheese factory, milk plant and dairy machinery, silos and other equipment and supplies for cow-owners and dairymen.

Complete catalogues have been issued covering the various lines which the Company is handling, and these will be gladly mailed free of cost to everyone asking for them. In writing please state what machines or lines of dairying you are most interested in.

De Laval Dairy Supply Company Limited

128 James St., WINNIPEG 173 William St., MONTREAL

You saw this advertisement in this magazine. Don't forget to say so when writing.

for Yorkshires and most of the animals in the photograph were of that breeding. With such a diversity of preference on the part of the men who buy your animals, I do not think it is incumbent upon me to champion any one particular variety of breed.

I have always been and still am of the opinion that whatever the trade requires a particular type of animal it is the duty of the men who are in the trade to indicate the fact by the price which they are willing to pay for animals of that particular kind. In other words if one type of animal is of greater value to the packer than another the farmer who grows that type ought to receive a part of the benefit of that increased value.

Supply of Pedigree Stock

At this point I wish to direct attention to a matter not altogether connected with swine growing and yet to some extent affecting the interest and standing of the breeders, and that is the matter of supplying pedigrees promptly for all animals sold. I have, from time to time, since assuming the duties of Livestock Commissioner, received

BLATCHFORD'S CALF MEAL

The complete milk substitute, raises calves without milk, prevents scouring, insures early maturity, raises 3 feed calves at the cost of one. Send for free booklet, how to raise calves cheaply and successfully without milk.

STEELE BRIGGS' SEED COMPANY, WINNIPEG, Man.

You saw this advertisement in this magazine. Don't forget to say so when writing.

complaints from farmers who stated that they had bought a pure bred animal and paid for him with the promise that the pedigree would be supplied just as soon as it could be mailed to Ottawa for record and returned. In some instances a year or more has elapsed before the party made complaint to me. I have always taken up these various questions and urged the breeders to supply his customer with the pedigree to which he was entitled, and so far as I know the pedigrees have been forthcoming. I have always made it a point to explain to the parties making complaint that when buying a pure bred animal, it is good business policy to withhold about one-third of the purchase price; deposit the money with his banker, with instructions to pay over the same upon receipt of the required pedigree. During my recent tour of the province I have



ABSORBINE

will reduce inflamed, swollen Joints, Bruises, Soft Bunches, Cure Boils, Fistula or any unsightly sore quickly; pleasant to use; does not blister under bandage or remove the hair, and you can work the horse, \$2 per bottle at dealers or delivered. Horse Book 7 D free.

ABSORBINE, JR. for manking, \$1.00 per bottle. Reduces Varicose Veins, Varicocele, Hydrocele, Gout, Wens, Strains, Bruises, stops Pain and Inflammation.

W. F. YOUNG, P.O. F. 112 Monument St., Springfield, Mass.
LYMAN, BOSS & CO., Montreal, Canadian Agents.

It is spelled A-B-S-O-R-B-I-N-E and manufactured only by W.F. Young, P.O. F. 112 Lyman's Building, Montreal, P.Q.

Also furnished by Martin Ross & Wynne Co., Winnipeg; The National Drug and Chemical Co., Winnipeg & Calgary; and Henderson Ross, Co. Ltd., Vancouver.

received quite a number of complaints along that line; in fact, they were much more general than I had reason to suspect. I am pleased to say that in no case did these complaints refer to members of this association. They concerned principally men, who are engaged in breeding pure breeds, but are either not attached to any Swine Breeders Association, or are exhibitors from out-

side of the province, who bring with them a large number of stock in the hope of selling them at the various Fairs.

As this is a matter which affects the Swine Growing Industry, I conceive it to be my duty to deal with the question, and protect our Swine Growers against impositions. If a purchaser pays \$50 for an animal that would be worth only \$20 if slaughtered, to my way of thinking he is paying \$30 for a pedigree, and if that pedigree is not forthcoming he has been defrauded of just that sum. And it is my intention to go to whatever length may be necessary to compel guilty parties to change their methods or go out of business in Alberta.

Disease Due to Feeding

The swine growers of Alberta have in the past always congratulated themselves that their herds are practically immune from disease, particularly the dread disease known as swine Plague or Hog Cholera. However, in recent years there have been three distinct outbreaks in this province—in one instance as many as 1500 animals were slaughtered before the disease was brought under control. The Health of Animals branch of the Dominion Government states that in every instance the outbreak was either directly or indirectly traceable to the feeding of uncooked hotel slops, and the Department at Ottawa have adopted the policy of withholding indemnity for animals slaughtered where uncooked hotel slops are being fed.

During the past year I have received a number of complaints from the farmers who are growing a large number of hogs in the vicinity where these hotel slops are being fed. They all argue that the feeding of hotel slops has proven to be a menace to swine growing in the neighborhood and they ask some kind of protection against it. During the past two weeks reports have been received of outbreaks of the disease in Southern Saskatchewan and Alberta.

What foundation there is to these reports, I am not able to say, but I purpose later on to endeavour to secure this information through the Department at Ottawa. I am inclined to think that it would be a good idea for the members of this association to take part in this enquiry, and if in opinion of the Inspectors of the Health of Animals branch these various outbreaks are attributable to the feeding of hotel slops, some sort of legislation should be asked for, that will require all such slops to be cooked or steamed before being fed, and that all premises on which such

slops are being fed shall be subject to inspection.

High Death Rate in Young Pigs

Another difficulty with which the swine growers of Alberta have to contend—one which is more general throughout the province, and one that in a certain sense may be called peculiar to North-western Canada is the high rate of mortality among young pigs. Every year we receive a large number of reports of pigs being farrowed in a weak condition and without hair. They are, usually large and plump but deficient in muscular strength and devoid of the nesting instinct; they wander about the pen in an aimless way and usually die in a few hours. Although I suffered some serious loss from this cause myself and have investigated a number of cases where the difficulty was complained of, I do not pretend to say that I have reached anywhere near the bottom of the trouble. I may say that I find this condition most common where one or more of the following conditions prevail: The sires are permitted to run with a herd of anywhere from six to two dozen brood sows; or if kept isolated they are confined to dark and ill-ventilated quarters.

Brood sows are fed too liberally on grain, particularly on wheat and barley. On the other hand I receive fewest complaints where the opposite conditions prevail; yet I receive reports of men who had excellent success where practically every law of health had been violated, and others who report losses where, as nearly as I could judge, every law had been complied with. Some three months ago I received a complaint from a swine grower in the Edmonton district, who stated that he had heard me make an address on this subject, and as he had suffered some losses in young pigs, he decided he would follow my instructions to the letter, and yet all his pigs died.

It required a good deal of investigation to get at the root of the difficulty, but in the end the following facts were brought out, and these were—that immediately after seeding he had manured very heavily a piece of ground that had been in potatoes a year ago. This was plowed quite deep and sown to beardless barley. You will remember that along about the middle of June the rainy season set in in the Edmonton district, and we had anywhere from three to a dozen showers per week throughout the summer; the result was, this barley grew very rank, succulent and washy; the brood sows were turned in upon it and received no other feed.

They actually grew fat on this kind of pasture and rather than walk about while grazing would

MARQUIS WHEAT

THE BEST TRADE YOU EVER MADE.

MR. GRAIN GROWER! Trading your other seed for "Marquis" is insuring in EARLINESS, PRODUCTIVENESS and QUALITY.

2 SPECIAL LOTS

LOT 1.—This strain we supplied to Mr. Wheeler. It was one of the factors which produced his **WORLD'S CHAMPION.**

LOT 2.—This strain Dr. Saunders, the breeder of "Marquis," pronounced of "EXCEPTIONAL PURITY"

WRITE FOR FURTHER INFORMATION.

OUR COMPLETE CATALOGUE WILL BE READY IN JANUARY.

CANADA'S STEELE BRIGGS SEED CO. LIMITED.
GREATEST SEED HOUSE
Winnipeg, Canada.

You saw this advertisement in this magazine. Don't forget to say so when writing.

SMUT



SMUT

Last season the farmers in Western Canada lost over five million dollars through smut in their grain, even in spite of the fact that by far the largest percentage treated their seed grain. How much was your loss?

The **Automatic Seed Grain Pickler** pickles at the rate of 135 bushels per hour, is self-operating, the weight of the grain supplying the power to operate; the machine is light though strongly built and with ordinary care will last a lifetime. The price is reasonable, it is built for using both bluestone and formaldehyde and does absolutely perfect work with any and every kind of grain, flax included. Last year we had orders for hundreds of machines more than we could manufacture and although every machine was sold with a **guarantee of money back** and freight paid both ways if the machine was not perfectly satisfactory in the users' estimation, still we have never yet had returned a single machine.

This machine has proven a huge success for the last two years. Do not allow your dealer to persuade you to buy another machine simply because he has another make in stock, but ask to see this machine; if he is an up-to-date dealer he will have it. But remember, order early. Price, for using formaldehyde \$17.00; built of solid copper for bluestone \$20.00; freight prepaid to your station and a guarantee with every machine. Write for further information or send in your order now.

Dominion Specialty Works

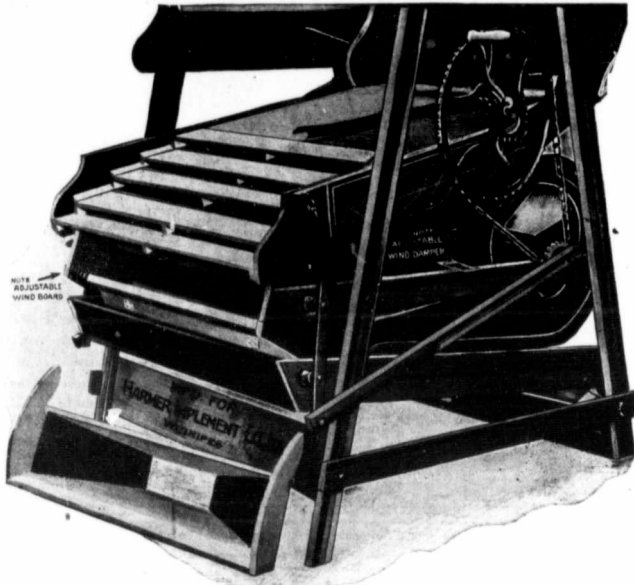
Winnipeg - - - - - Manitoba

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IMPROVED NEW SUPERIOR

THE KING OF

Wild Oat Separators



MADE IN THREE SIZES, 24, 32, 42in. wide, with or without Bagger.
We can furnish power attachment to operate with gasoline engine if desired.

Because of its positive separation with our patented open and blank space sieves causing the oats to lie flat and not up on end

Patented **Adjustable Wind Boards** so that blast is always under control. Can blow out as much or as little as you like, making it a perfect oat cleaner and grader.

The lower shoe is fitted with a cleaning rack that is adjustable, never touching the sieve, but just close enough to knock out any grain that gets stuck when going over the sieve. It is movable, working back and forth about two inches in opposite directions to the shoe. By this improvement the capacity is increased about 25 per cent.

It is strong and well built and bolted, not nailed together.

Our machine is built to clean any kind of grain and do perfect work. What the New Superior can't do no other can. Exceptionally easy to operate.

LIVE AGENTS WANTED

Write at once for our large descriptive catalogue of OWEN'S Smut Machines and NEW SUPERIOR Fanning Mills.

The Harmer Implement Company, Ltd.

182 PRINCESS ST.

WINNIPEG

You saw this advertisement in this magazine. Don't forget to say so when writing.

sometimes lie down and eat what was in reach, get up and move on a short distance and lie down again. The sows farrowed in August, and the pigs resembled very much the kind of feed the dams had been eating, that is they were washy and without strength, and they all died.

Another instance that I investigated and have not yet got at the bottom of was that of a farmer who claimed to have complied with every suggestion that I was able to make; he stated that out of five brood sows he saved only one litter and that was from an animal which had got injured, or as he described it had got its back broken, and he was undecided whether to quit the business or to break the backs of all the rest of them and see if his luck would change.

It may not be out of place to say that while some difficulty is experienced in all parts of the province, the difficulty I am persuaded is most prevalent in the districts where our soil consists largely of leaf mould. This fact led me to suspect several years ago that part of the trouble might be attributed to a deficiency of mineral in our soil. While still engaged in swine growing I conducted in a limited way some experiments in the feeding of phosphate of lime to brood sows before farrowing, however I had not

carried it on sufficiently far to arrive at any conclusions, when I assumed the duty of Livestock Commissioner and was unable to prosecute the investigation any further.

Experiments with Digester Tankage

About three years ago I arranged with Swift & Co., of Chicago, for a limited amount of digester tankage to be supplied to such growers of livestock as would agree to carry out the experiments according to directions which they should give. I succeeded in interesting about ten different farmers in the matter, but the results did not indicate anything very definite.

There was a wide range of opinion as to the effectiveness of this kind of feed. Some reported excellent results and stated that in their opinion the feeding of digester tankage to brood sows would be of great advantage; others reported positive injury and that their losses were greater than ever before, one man reporting that not only were the litters immediately following the feeding of tankage inferior to those he had raised in former years, but even subsequent litters were below the mark.

With such facts as these to contend with, I think you will admit that the difficulty is a serious one,

and one that is deserving of a special inquiry. While I purpose continuing my investigation of the question because it so seriously concerns the business of swine growing in Alberta, I do not claim to be able to discover all that lies at the bottom of it, and I invite your co-operation in the matter.

I would also urge that when selling a pure bred animal, you impress upon the purchaser, particularly if you have reason to suspect that he is an amateur, the importance of feeding and handling their sire in such a manner that his vigor may not be impaired, and that brood sows be not only permitted, but be compelled to take a large amount of exercise; that they be fed in such a manner that they will have to remain on their feet the greater part of the day in order to satisfy their hunger, and that the use of such heating foods as barley and wheat be carefully avoided. Although the foregoing rules are not an absolute guarantee against losses, experience shows that losses are less serious where they are closely observed, than where they are disregarded.

Give the average youth plenty of cold cash and he will have a hot time.—San Francisco Chronicle.

Starting a Poultry Farm By M. K. Boyer

A poultry farm built upon a secure foundation is sure to be successful if afterwards properly managed. It is not only necessary to make the right kind of start, but the work must be regularly and faithfully performed, day in and day out.

As a rule, beginners start with great enthusiasm, and not a few build air castles—but to very many of them the sameness of the work, the close application, the constant watching, soon becomes monotonous, and then there is a shirking of duty, neglect, carelessness—and the enterprise becomes a failure. The point is to begin small—measure the size of the initial step with the amount of capital and experience at hand.

It is often the case that men with more or less available capital practically put all their money in houses and stock. This is a mistake, and more so in the case of those who have had no personal experience in the work.

In the parlance of today, "a man must be onto his job." He must know what to do and how best to do it. He must be aware that inexperience may cause leaks, and leaks will soon sink the enterprise.

It is a noteworthy fact that the most successful poultry farms of today are those that have started from a small beginning and gradually expanded as business and experience warranted. Men who would not go into the dry goods business for the reason that "they knew nothing about it," will build houses and stock them and expect the hens to do the rest.

Hens, like cows, yield a profit according to the treatment given. They will not stand neglect. They are hard workers when properly rewarded, but can be the most idle and indifferent producers when made to shift for themselves.

Our agricultural colleges have done much to teach the new aspirants how to tread in poultry paths, and men and women who endeavor to improve by these excellently arranged courses of instruction, will have won half the battle—the other half naturally belongs to practical experience.

A man with \$1000 had better invest one-half of it in buildings, stock, and fixtures, and reserve the other half for feed and running expenses, rather than invest the whole amount in the equipment and have to go in debt for the feed.

Eggs and poultry are staple crops, and the demand is far greater than the supply. This country needs more poultry farms, and they will be successful when properly built and managed. But the beginning must be small, and the growth gradual, so that every part of the work is promptly noted and correctly performed.

The duck laying season opens in February, although a number of early hatched ducklings begin laying in January. The first eggs of the season are rarely ever fertile.

The duck house should have an earth floor, and this ought to be heavily bedded with leaves, straw, or some other light litter.

It is claimed by those who have tried it, that a cross of Muscovy drake on Pekin ducks will produce sterile progeny.

While breeding ducks can be successfully kept on land, it has been proved that those having the advantage of bathing water keep in a more healthful condition, and there is greater fertility in their eggs. Bathing is the only real exercise a duck can take, for, unlike the hen, she cannot scratch. A less number of drakes are needed in a flock where bathing water is supplied.

The age and vigor and productiveness in a duck is about double that of the hen. Ducks have been successfully bred up until seven years of age.

Geese enjoy low, wet pastures. They do not thrive in confined quarters. Grass and water is their

principal diet. According to an experiment tried some years ago in Rhode Island, fall-sown rye, spring-sown oats and peas, and sweet corn furnishes the finest kind of pasture.

Matthew, the cook of Cardinal de Rohan, was the first who suggested the use of liver of the goose for pies. In Europe the liver of the goose is much esteemed, which is sold to pie makers who make of it the well-known pies.

Clover is as much an egg producer as it is a producer of milk. It is rich in nitrogen and mineral matter. Having a high nutritive ratio, it is equal to barley, and almost as high as wheat. Its action is to extend the food ration, reduce the too-concentrated grain food, and prevent the accumulation of internal fat. The second crop, or "rowen" clover is the best. Clover should be cut when in full blossom. Let it grow until the first blossoms begin to turn brown.

Charcoal is an excellent corrective of the evils of injudicious over-feeding, and also is a good remedy in bowel disorders in poultry. Having wonderful absorbent powers, especially for gases, only a small quantity should be put in the feed hoppers at a time on account of its absorptive nature. It should be kept in a thoroughly dry vessel with a close-fitting cover, so as to exclude the air. If charcoal is heated well before given to the poultry, it will have a tendency to drive off impurities which may have become absorbed, and will be equal to fresh charcoal.

In turkey culture, never use a gobbler that is akin to the hens. In-breeding is the cause of much of the "bad luck" in raising the young.

Ginger, if fed poultry for too long a time, is apt to weaken the digestive organs, while asafetida and gentian are excellent digestive stimulants. Asafetida, garlic and onions have a good effect on the lungs and bronchia.

When a fowl has a bilious look, dysentery and then costiveness, it is a strong indication that it is suffering from liver trouble. When the edges of the comb and wattles are of a purplish red, it is a sign of indigestion. Fowls in good health always have a bright red comb.

Before they sell the eggs received, commission men take them to a dark room where they are "candled." The egg is held up in the left hand, before a strong light, and the top shaded with the right hand. If the aircell is small, they know the egg is fresh. If the albumen is noted to be slightly thin and watery, and the air space larger than that of a fresh egg it indicates a month old. If the albumen is still more watery, and the air space greatly enlarged, it



What is a Good Roof?

Is it something like this? A roof that can't catch fire from burning embers. A roof that will wear as long as good cedar shingles used to wear. A roof that isn't going to be an expense for repairs. You get everything that makes a high-grade roof when you buy

NEPONSET PAROID ROOFING

Over 3,000,000 square feet have been used in the Panama Canal work. Leading Railway Systems are also big users, including the Canadian Pacific. Bought everywhere by farmers for high-grade barns as the best roofing value on the market. A big warehouse roofed in 1898 was torn down last summer with the NEPONSET Paroid roof in good condition. This is the roofing with a record. Make sure that you get it. Sold only by regularly authorized NEPONSET dealers, leading hardware and lumber merchants.

Send for Blue Print Barn Plans—FREE
You will like these plans as expressing the Canadian idea of a real barn.

NEPONSET Roofings are made in Canada.
F. W. BIRD & SON (INC.) 429 Heintzman Bldg., Hamilton, Ont.
Winnipeg St. John, N. B. Vancouver, B. C.

NEPONSET
Prostate Roofing
makes a handsome
red or green roof
for houses.

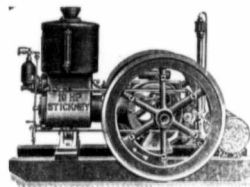
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Family Group Photos a Specialty

AT
STEELE & CO., LTD.

MAIN ST. AND BANNATYNE AVE.

WINNIPEG



MR. FARMER:

We wish you a happy and prosperous New Year, and use this opportunity to call your attention to our line of farm machinery which will lighten your work, increase your profits, and in all do a great deal toward making 1913 your most successful year.

WINDMILLS

for Pumping and Driving Machinery.

CHAPMAN 2-H.P. GASOLINE ENGINE

The best Engine on the Market for light work. Will be glad to tell you WHY.

STICKNEY GASOLINE ENGINES

Stationary or Portable, 1½ to 20 H.P.

These engines have many features which will pay you to learn about, such as outside ignitor and straight-line valve motion. You will find these the simplest and strongest engines for all-round farm use. They work equally well in the coldest and hottest weather.

TORONTO GRAIN GRINDERS AND ROLLER CRUSHERS

These Grinders and Roller Crushers are made in all sizes. Let us know your requirements; we can fill them in a perfectly satisfactory manner.

CANADIAN STEEL FRAME POLE SAWS

These are the latest and most improved saws on the market. Let us send you complete information about them.

NEW CHAPMAN WELL DRILLS

You will find that these outfits are money makers for the enterprising man. With the new Chapman Drill you can drill wells of any size or depth.

DEMPSTER WELL AUGERS

These Well Augers are made in sizes from 12 to 36 inches in diameter.

AYLMER PITLESS AND TRUCK SCALES

A complete and strictly first-class line from which your particular needs can be supplied. Satisfaction guaranteed.

We also carry a complete line of Pumps, Tanks, Troughs, Pipe and Fittings, Well casing, Brass Iron and Porcelain-lined Cylinders, Eureka and Deep Well Cylinders, Hydraulic Rams, Belting, Hose, Cow Basins and Stanchions.

Ask us to send you catalogue and prices, and at the same time see our local Agent.

Ontario Wind Engine & Pump Co. Ltd.

Toronto

Montreal
WINNIPEG

Calgary

You saw this advertisement in this magazine. Don't forget to say so when writing.

is put down as two months old. About a month or two after that the air space reaches about the center of the egg, and it is declared worthless.

Ducklings usually start to molt when eleven weeks of age, and it will require about six weeks for them to finish the process, and get into good condition again. For that reason ducklings should be marketed at ten weeks of age, for after that they are more apt to lose weight than gain it.

For the Eel grass which is the natural duck food in maritime districts, inland breeders substitute steeped clover hay or alfalfa, and some chop up green rye, oats or corn. Where there is a scarcity of green food, more bran must be fed in the ration.

Richardson, a former English authority, said the ideal gander has large dimensions, active gait, lively and clear eyes, an ever-ready and hoarse voice, and a demeanor of full boldness. The goose should be chosen for her weight of body, steadiness of deportment, and breadth of foot—a quality said to indicate the presence of other excellences.

In 1869, J. Brace, at that time one of England's foremost poultry authorities, said there seemed to be a great diversity of opinion among writers relative to the domestic goose of America, many contending that they derived their parentage from the Canada wild goose. On the other hand it was said by eminent ornithologists that the American wild goose is identical with the Canada, and that the latter derives its name from the former breed.

The American Standard of Perfection classifies the weights of geese as follows: Toulouse and Embden, adult gander, 25 pounds; young gander, 20 pounds; adult goose, 23 pounds; young goose, 18 pounds. African, adult gander, 20 pounds; young gander, 16 pounds; adult goose, 18 pounds; young goose, 14 pounds; Chinese and Canada, adult gander, 16 pounds; young gander, 12 pounds; adult goose, 14 pounds; young goose, 10 pounds; Egyptian, adult gander, 15 pounds; young gander, 12 pounds; adult goose, 12 pounds, young goose, 9 pounds.

The age of a fowl cannot always be told by the size of spurs. In the yard of the writer there is a three-year old hen that could easily be mistaken for a pullet or yearling hen. But there is a dull, heavy look under the eyes of an old bird which an expert will detect at a glance. The best plan is to band all the birds and a record kept of their ages.

The highest temperature recorded is 124 degrees and a fraction, taken in Algeria, July 17, 1879.



When a farmer opens his first bag of cement

he has taken a long step in the march of Progress, which leads to Prosperity.

After he uses that bag—if only for a hitching-block or a porch step—he has learned some profitable lessons.

He knows that it doesn't take an expert to use concrete successfully.

He knows that he has added a permanent improvement to his property, something that will last as long as the farm itself.

He knows that he has added convenience, and therefore profit, to his home.

He knows that it didn't cost him more, in money or time, than if he had used an inferior material and made a temporary improvement.

He knows that he wants to read the book.

"What the Farmer Can Do With Concrete"

to find out how he can apply these lessons to other places on his farm.

This advertisement is to tell him that his copy of this profusely illustrated book is ready to be mailed as soon as he sends in his name and address. It makes no difference whether he has yet used that first bag of cement or not. If he hasn't, the book will tell him how to use it to the best advantage. And in any case it's

ABSOLUTELY FREE

A hundred and sixty pages of plain description, telling how other farmers have used concrete, with photographs to illustrate every paragraph in the text.

Just send your name and address on a postal, in a letter, or use the coupon, and the book will be sent by return mail.

Address

CANADA CEMENT CO., Ltd.
501-560 National Bank Building
MONTREAL



You saw this advertisement in this magazine. Don't forget to say so when writing.

The "Bissell" Double Action Disk

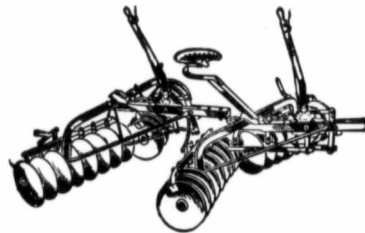
is a two-in-one implement. This Harrow is both In-Throw and Out-Throw. By hitching 4, 6 or 8 of the Bissell Disk Harrows together in a group, you can have a double action outfit for engine power and disking on a large scale. The gangs are flexible on the Bissell Harrow and are not too long to fit the hollows made by heavy engine drive wheels.

These same Harrows may be used for double action or single disking with horses.

The "Bissell" will make a proper seed bed for you.

The Bissell 28-plate Disk is a wide sweep, 4 gang, flexible Harrow, covering 14 feet wide. It is nicely handled with 6 horses and is a favorite with many farmers.

For further particulars write Dept. L



The Bissell Double Action Disk

Manufactured Exclusively by T. E. BISSELL CO. LTD., ELORA, ONT. Write to any of the John Deere Plow Company's Branch Houses

You saw this advertisement in this magazine. Don't forget to say so when writing.

Some Negligible Epigrams.

Be not prodigal of your opinions, lest by sharing them with others you may be left without.

One whose falsehoods no longer deceive has forfeited the right to speak truth.

To the eye of failure, success is an accident with a presumption of crime.

Wearing his eyes in his heart, the optimist falls over his own feet, and calls it progress.

You can calculate your distance from hell by the number of wayside roses. They are thickest at the hither end of the route.

The world is made a sphere in order that men should not push one another off, but the landowner smiles when he thinks of the sea.

All men were singing the praises of Justice. "Not so loud," said an angel; "if you wake him he will put you all to death."

Pray do not despise your delinquent debtor; his default is no evidence of poverty.

All are lunatics, but he who can analyze his delusion is called a philosopher.

Slang is a foul pool at which every dunce fills his bucket, and then sets up as a fountain.

You may lead a horse to the bar room, but you cannot make him drink. The same rule does not hold good in the case of an ass.—Judge, New York.

Farmer Up-to-Date - Farmer Good Intention

Their Farms adjoin. Both of these Farmers live in your neighborhood. You know them and they know you. Are you one of them? If so, we sincerely hope you are the right one.

JANUARY
1913

FARMER UP-TO-DATE

LAST NIGHT OF THE OLD YEAR

Father: Well here's the last cog of the last revolution of another year - my goodness, how those twelve months have raced along! The year opened bright and peaceful and it closes in battle smoke. I wonder what will be the end of this European war? It's all very well to talk about beating spears into pruning hooks, but while we have the unspeakable Turk and the avarice of a half-dozen very doubtful "friendly powers" to reckon with, no level-headed patriot will talk about swapping guns for moccasins. It seems to me that the day for a universal disarmament is about as far off as it was in the days of Senacharib, and that the strong-limbed policeman is still the best watch-dog and the most dependable guarantee against a breach of the peace.



Neighbor Jones: Yes, it's a pity that we can't always trust the friendly assurances of all our neighbors, but I suppose as long as this world of flesh and blood lasts we've got to be on our guard. Selfishness is the universal fountain of crime, and while men covet something that doesn't belong to them, the strong arm is necessary. I used to think with that sanctified crowd of good folks that all this money spent on big guns and other weapons of warfare was a sinful waste, and that every man who went to war was a criminal. I still believe that the biggest criminals on earth are those fellows who are the cause of war, and that war is to be avoided at all costs. But in travelling abroad I have come to the conclusion that the cheapest cost is the price we pay for maintaining without offence that position which commands the wholesome respect of well-meaning folks and makes us a "holy terror" to the gun man.



Charles: We had an argument with old man Stubbs at the loading platform yesterday on this Canadian Navy business. He couldn't see what we in Western Canada had to do with a navy and thought that the proposed contribution was a "scandalous proceeding." O my! he was hot, and Jimmy Whaler made him nearly mad. Jimmy told him that if the fleet weren't able to keep an open door at every point where Canadian wheat was bought, Stubbs would soon lose his job. Jimmy said (and I agreed with him) that we had as much to do with a fleet or anything else that was needful to secure a clear course to every market as the folks on any of our coasts had to do with it, and that if thirty-five millions or a hundred and thirty-five millions were necessary to prevent war, it was cheap at the price. Jimmy is no "Jingo" either and blames the yellow press for a lot of the hot blood that we hear of.



John: I think anyone in these days who can't see his way to help in the support of the best navy in the world is distinctly a back number. I don't care a button whether we have a "Canadian Navy" or if we are a bit of the Imperial fleet so long as we are "in it." It stands to reason we can't build and man a purely Canadian outfit worth the name for a few years to come. In the meantime, I think it is our very first business to let them see that we are with them in their programme, even if it takes the form of a "Contribution." Let's get our dockyards ready, and when the time is ripe for us to build and sail our own boats and to conduct our own naval programme from Ottawa, it will be a very simple matter to get the craft we have been paying for into their new base at Halifax or somewhere in the St. Lawrence. And not a dollar is wasted that is paid in wages to the thousands of workmen who build and operate those vessels.

FARMER GOOD INTENTION

Father: This has been the bummiest year of all the bum years I have ever lived through. Here's Christmas eve and we haven't done a scratch of the pen to any of our friends, and to make matters worse I haven't a dollar of ready money I can call my own to buy so much as a rag doll for Annie's little girl. I wonder where this state of chronic bustedness is going to end. It gets on my nerves, and every day seems to add another cart-load to the everlasting worry. I made up my mind at this time last year that I would never wind up another twelve months in such a hopeless muddle, but here we are, worse than ever, and no reasonable prospect of bettering things unless some kind-hearted millionaire presents me with a fortune, and that is more hopeless still than any "expectation" I ever had.



Mother: I wish, father, you had gone to that little meeting at the School-house last week when Biggs, the implement man, read his paper on "Farm Bookkeeping." Now, don't interrupt me with your "chucks," because he said exactly the right thing, and he just put down in a few plain English words what was necessary to keep the fattest farmer from running head over heels into bankruptcy. It was a case of simple accounts - of addition and subtraction, and of ordinary horse sense in the management of a man's affairs. And he is entitled to speak, because he made good on the farm himself and runs his implement business as carefully as he handled his farm. Everybody knows he came into the district long after we settled here, and he had only some twenty-five dollars of cash between himself and actual want.



Charles: And, moreover, father, he has been a very decent friend to you. He could have sewed you up long ago, would have been compelled to foreclose, in fact, if he had not had a few hundred dollars laid by and was therefore able to wait. But my face burns with shame every time I see him. He is always so nice and never once gave me the least impression that your indebtedness to him was ever on his mind when we met. I never listened to better sense or a more practical talk than he gave us in that paper on the "Farm Bookkeeping." He gave us a little sketch of Wilkins Micawber from Dickens and the way he shuffled along. Upon my word, it was true to life, and even in our little neighborhood I can count on a few "Wilkins Micawbers," only they don't sport the jaunty air that was second nature to Wilkins. No, they are more like bears with sore heads, and they never have a hopeful word for anybody.



Bob: Who was that man of whom it was said that by his own fine ability he could have done greater things than almost any two other men in the world if he had only bought a few cents worth of pink tape and tied up his papers? There's a fellow in our office in Winnipeg who is something like that man. Everybody likes him. He does a powerful amount of "work," but he is always in a muddle - always in the drag. Father, I have been, and I always will be loyal to you, but as this year closes I want to tell you that you've only one enemy and he wears your own hat all the time. I do believe you would make a record success of this farm if you would only work by a system of some kind; if you would not only intend to do things you speak of "at the first opportunity," but make the time to do them at the ripe moment.

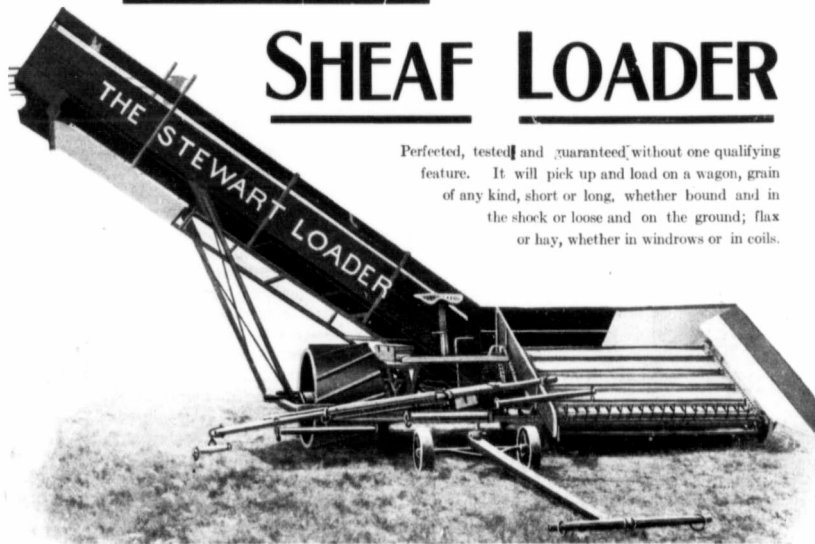
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Individual Gas Lighting Plants

Paper read before the American Society of Agricultural Engineers
BY EUGENE BECKER

JUST one hundred years have passed since the first Company for the manufacture and distribution of illuminating gas was formed in England—but a short time, if the tremendous importance of the gas industry today is taken into consideration.

The main progress in the development of the industry has taken place during the last thirty years, and it has been especially accelerated by the introduction of Auer Von Welsbach's incandescent mantle. This invention and the development of the various gas appliances, such as gas stoves and heaters, etc., are mainly responsible for the fact that even the progress of such a powerful competitor as the electric light industry has not been able to retard the rapid progress of the gas industry.

Unfortunately, the advantages of coal gas were available only to those who lived in large communities where the investment in gas mains was in reasonable proportion to the gas consumption. It has taken a long time to develop reliable individual lighting plants which are at the present time available in the country as well. The individual gas systems which are at the present time available to the farmer can be divided into three classes, namely:

1. Gasolene Gas.
2. Acetylene.
3. Blaugas.

The individual gasolene, alcohol, and kerosene lamps, etc., which still require comparatively great care and attention, will not be considered, but only such installations which supply the gas for one or several houses from one central point will be taken up.

Gasolene Gas

Gasolene gas—or, as it is often called in Europe, "air gas"—consists of air saturated with gasolene vapor are mixed with air is considered explosive when from two to five volumes of gasolene vapor are mixed with from 98 to 95 per cent of air. Therefore, it is essential that gasolene gas machines deliver a gas that contains either less than 2 per cent or more than 5 per cent of gasolene. Nearly all gasolene gas in this country contains considerably more than 5 per cent of gasolene.

The various systems of gasolene gas machines may be divided into two main groups:

(a.) Those which use the hot process—that is, which use a flame to vaporize the gasolene.

(b.) Those which use the cold process—that is, which do not use any flame to vaporize the gasolene.

Naturally, the former kind can use gasolene of a higher boiling point, which is cheaper; on the other hand, the presence of an open flame in a gas machine must always be considered a source of danger.

The machines using a flame for vaporizing the gasolene may also be divided into two classes:

- (1.) Those having the gasolene tank outside of the building, and
- (2.) Those which are entirely inside of the building.

Naturally, the latter is to be regarded as more dangerous than any other kind of gasolene gas machine.

Those gasolene gas machines which do not use any open flame to vaporize the gasolene are of two classes:

- (1.) Those having the carburettor inside the building, thereby allowing a certain quantity of gasolene to enter the building in liquid form, and,
- (2.) Those having the carburettor outside of the building, and simply the air pump or the air blower inside the building.

The latter kind is the safest form of gasolene gas machine, as only gasolene vapor and no liquid gasolene enters the building.

Gasolene machines that use the hot process are generally cheaper in original investment and as to cost of fuel, provided they are always properly regulated. However, they require very much greater attention than machines operating according to the cold process, and, as mentioned above, are not as reliable or as safe as those using the cold system.

As the quantity of gasolene that can be retained by atmospheric air fluctuates considerably with the temperature of the air, and, to a certain extent, with the humidity in the air, the better class machines are equipped with a regulator, which automatically regulates the quantity of gasolene that is retained by the air. These governors use, for instance, an air-tight drum which floats in the gasolene gas, and when more gasolene is contained in the air than desired, so that the specific gravity of the air becomes ex-

cessive, the float will rise and allow more air to mix with the gas; when the specific gravity of the gas goes down, the float will sink and choke the inlet of the air. These better class gasolene gas machines consist of an air pump or blower, a carburettor, and a mixer or governor. The air pump is built on the same principle as a wet gas meter, with the only difference that outside power is used to turn the drum, whereas in a gas meter the drum is moved by the pressure of the gas.

For smaller installations, a weight which is wound up every day or every other day, is used to drive the blower. For larger installations either a small water motor or gas engine is used for this purpose.

The various systems use varying amounts of gasolene to produce a given number of cubic feet of air gas, but generally it can be figured that 5½ gallons are used to make 1,000 cubic feet of gasolene gas. The specific gravity of such a gas is around 1.5, and it contains about 14½ per cent of gasolene vapor; it has a calorific value of about 600 B. T. U. per cubic foot, and is well adapted for lighting and heating purposes. Such gas will form an explosive mixture when from 13.8 per cent to 34.4 per cent of gasolene gas is mixed with from 86.2 per cent to 65.6 per cent of air, as such mixture will contain from 2 to 5 per cent of gasolene vapor.

Air gas of this character will deposit some liquid gasolene in the pipes whenever its temperature is lowered to about 45 deg. F.; therefore, it is necessary to protect all pipes from lower temperature by insulation or by proper heating.

Acetylene Machines.

Acetylene has been known for about 75 years, but it is only about 18 years since, by the application of the electric furnace, it became possible to commercially produce calcium carbide at a price that made it available for domestic purposes. About 1,800 pounds of lime and 1,050 pounds of carbon are used to produce a short ton of calcium carbide. The product, varying from lumps of about 2 inches in diameter to powder according to the machine in which it is to be used, is shipped in air-tight tins. When brought into contact with water, one pound of calcium carbide, selling today



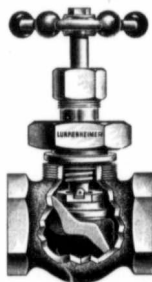
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at a price of about 4 cents, will form about $4\frac{1}{4}$ to $4\frac{1}{2}$ cubic feet of acetylene. The calorific value of this gas is high—about 1,440 B. T. U.

Whereas all other illuminating gases are now used, to a very great extent, in the incandescent burner, acetylene is seldom used together with an incandescent mantle, but almost exclusively in the open flame burner. There are two reasons for this fact: firstly, that the life of incandescent mantles used with acetylene is very much shorter than when used with other gases, and, secondly, that the advantage of an incandescent mantle over the open flame burner is not so great for acetylene as for other gases. The acetylene flame is intensely white, one cubic foot of gas yielding about 45 candles per hour.

Acetylene is an endothermic product; that is, it is produced under absorption of heat, which heat is liberated again when the gas is decomposed into other compounds. This endothermic energy is the reason for some of the advantages of acetylene, and at the same time the reason for a great number of accidents which have occurred. When acetylene gas burns, the endothermic energy becomes free; that is, a certain amount of heat is liberated directly in the acetylene flame,

thereby producing a very high temperature in the flame. This also is the reason for the fact that the flame is whiter than the open flame of other gases, as the carbon is brought to higher incandescence. This same quality of acetylene gas is responsible for the development of the acetylene industry for autogenous welding in recent years.

Acetylene gas generators may be divided into two groups;

- (a.) Those where the carbide is brought to the water.
- (b.) Those where the water is brought to the carbide.

The latter type is considered more dangerous than the former; firstly, because the heat generated during the production of the gas from the carbide is not carried off as easily as by a large quantity of water, and, secondly, because such machines which bring the water to the carbide cannot be refilled with carbide without allowing some air to enter the machine, which, naturally, is a source of danger. If the heat that is liberated in the generator is not carried away, the temperature of the generator becomes higher and higher, and may reach a point where serious accidents may occur.

Common solder will melt at a temperature of about 200 deg. cent.; acetylene will decompose

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at a temperature of about 700 deg. cent., and as heat is liberated during the decomposition, the temperature of the dissociated hydrogen will be increased, and the pressure due to this heat may thereby be increased to such an extent that the apparatus explodes. Mixed with air, acetylene forms explosive mixtures when more than 2 per cent and less than 49 per cent of acetylene is mixed with from 98 per cent to 51 per cent of air, respectively. The upper explosive limit is often given considerably higher, and the reason is that, in the experiments which show a still greater explosive range than given above, all humidity has been removed from the mixture; another reason why the figures for the explosive range often vary considerably is the fact that generally the kind of instrument used to determine the explosive limits is not mentioned. The above figures are based on experiments with a tube of $\frac{3}{4}$ inch diameter. Larger tubes will show a greater explosive range. Fortunately, acetylene has a very characteristic and pungent odor, so that even small leaks are easily discovered.

Whereas gasolene gas can be used for lighting purposes and for all purposes for which coal gas is available, acetylene gas is used almost exclusively for lighting purposes, at least as far as its domestic use is concerned. Stove burners for acetylene are on the market, but their use is very limited, because they give satisfactory results only when they are kept absolutely clean, and give endless trouble when they are neglected in the very least.

Shortly after the manufacture of calcium carbide on a commercial basis had been accomplished and it could be sold at a reasonable price, a suggestion was made to compress acetylene and ship it in tanks to customers, so that no individual gas plant would be necessary, but simply some pressure-reducing device. However, a number of serious accidents showed that compressed acetylene, and especially acetylene liquefied under pressure, must be considered as very dangerous, and it is regarded as so dangerous that today no railroads accept acetylene for transportation at a pressure as high as 2 atmospheres. Safer than compressed acetylene is a solution of acetylene in acetone, which is used to some extent for coast lighting, railroad trains and automobile headlights. However, dissolved acetylene is not to be considered for domestic purposes on account of its high price.

Blaugas

The newest type of gas apparatus on the market is the Blaugas system. This system, which derives its name from the

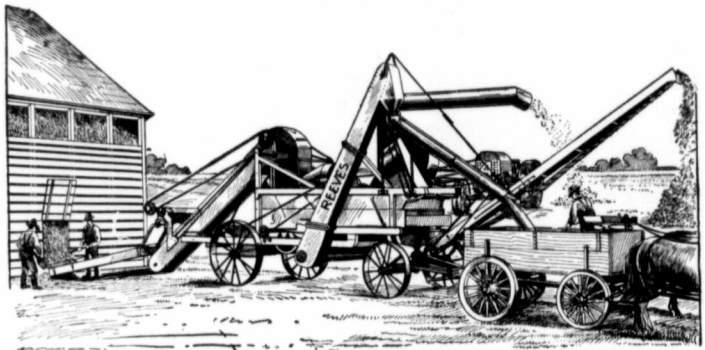
inventor, a German chemist named Blau delivers gas ready for use to the consumer, instead of raw material from which gas is generated on the premises, as in the gasolene and acetylene systems. It has been in use in Europe for several years, and there are several factories now manufacturing Blaugas in this country.

Blaugas is a mixture of those hydrocarbon gases which, under ordinary pressure and temperature, are in a gaseous form, but which will liquefy under high pressures and low temperatures. These so liquefied hydrocarbons contain, absorbed or dissolved therein, under the pressure and temperatures employed in the Blau process, a large quantity of the nearly related gases and a small quantity of the so-called permanent gases, especially

methane and hydrogen, the whole forming an aggregate of hydrocarbons which, under high pressure and normal temperature, remains a liquid, but which, when

released under nearly atmospheric pressure and normal temperature, will be completely reconverted into a gaseous aggregate.

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distillation of ordinary gas oil, crude oil, fuel oil or any similar agent, in retorts, in the usual manner. The gas produced thereby is conducted through coolers and scrubbers for the purpose of removing the tar. From there it passes through receptacles containing chemical cleansing agents which remove the impurities, such as sulphide of hydrogen, carbon dioxide, etc. The gas is then cooled and compressed. Certain hydrocarbons, especially those which would liquefy under ordinary pressure and temperature, are withdrawn. The remaining gases are subjected to continually increasing pressure, the final stage of compression being about 80 atmospheres, whereby a large quantity of the hydrocarbons liquefy. These liquefied hydrocarbons absorb a considerable quantity of those hydrocarbons which, under the pressure and temperature employed, will not liquefy, and they also absorb a small quantity of the permanent gases, especially metha and hydrogen. These liquefied and absorbed gases are conducted into steel bottles or cylinders, in which they are shipped to the consumer. The liquefied gas so produced has been reduced to 1-400 of its volume. In other words, one cubic foot of liquefied Blaugas will expand into 400 cubic feet.

Blaugas, as produced by the above process, contains a large quantity of the heavier hydrocarbons and a relatively small quantity of the permanent gases, therefore, it is very rich in heat value. A great many tests made by various investigators have shown that one cubic foot of expanded Blaugas yields from about 1,800 to 2,000 B.T.U. against about 600 B.T.U. per cubic foot of ordinary coal gas and about 1440 B.T.U. of acetylene. Therefore, the heat value of one cubic foot of expanded Blaugas is more than three times that of ordinary coal gas. As one cubic foot of liquefied Blaugas expands into 400 cubic feet, these 400 cubic feet will equal in heat value more than 1,200 cubic feet of ordinary coal gas.

Blaugas is furnished under a high pressure, therefore, it is necessary to reduce its pressure before it enters the service pipes, which is done by reducing and regulating valves. This produces, without any further artificial means, so-called pressure gas, which is of very great value for illuminating purposes. Because of its higher pressure and great heat value, it is very efficient for illuminating, heating and cooking purposes, one cubic foot of Blugas giving approximately 80 candles in an inverted incandescent burner, whereas ordinary coal gas

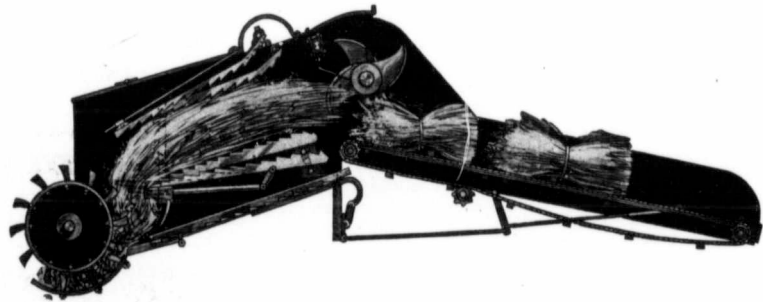
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will yield 90 candles with a consumption of five cubic feet.

Blaugas is shipped in steel bottles containing from twenty to twenty-five pounds of liquid gas. Each pound of liquid gas will yield 12½ cubic feet of expanded gas.

Mixtures of Blaugas with air will be explosive when they consist of from 4 per cent of gas plus 96 per cent of air to 8 per cent of gas plus 92 per cent of air; its explosive range, therefore, is 4 per cent. It will be remembered that gasoline gas, as herein described, will form explosive mixtures with air when these mixtures consist of 13.8 per cent of gas plus 86.2 per cent of air to 34.4 per cent of gasoline gas plus 65.6 per cent of air. Its explosive range, therefore, is over 20 per cent. Acetylene will form explosive mixtures with air when those mixtures consist of from 2 per cent acetylene plus 98 per cent of air to 49 per cent of acetylene plus 51 per cent of air. Its explosive range, therefore, is 47 per cent.

An analysis made by the "Institut für Gahrungsgewerbe" in Berlin shows the following composition of Blaugas:

1 liter, that is, 1.246 gr. of Blaugas, at 0 deg. C. and 760 mm. barometer, contained.

1.042 gr. Carbon.
0.204 gr. Hydrogen.

The gas is used under a pressure of about ½ lb. per square inch. For lighting purposes it is used nearly always in conjunction with the inverted incandescent mantle, one cubic foot yielding about 80 candle power. For cooking, heating, etc., it can be used in every type of gas appliance which is used for city gas.

Blaugas is furnished to the consumer in steel bottles which are placed in a steel cabinet about three feet wide by five feet high, and sixteen inches deep. In this cabinet, which is called the "expander box," the gas is permitted to escape from the bottles by proper reducing valves into an expansion tank, from which the gas flows through a pressure regulator into the house pipes. Absolutely nothing else is required but to detach empty bottles and attach full ones, as the gas is delivered ready for use. The exchange of bottles can be made by any person without any prior experience. When bottles are empty, they are returned to the factory to be exchanged for full ones. Two bottles are always connected with the system, one in use and the other as a reserve.

Blaugas, as shown before, is very efficient, it is non-poisonous, it is safer from explosion than any other commercial gas, it is easy to handle, it is in a very condensed form so as to readily permit of transportation, and as its price compares very favorably

with other illuminating agents, it is to be expected that its use will increase very rapidly.



Course of Gas Engineering

Continued from page 23

spring it is only necessary to measure the height in inches and fractions thereof and multiply by the scale of the spring. However, to do away with the troublesome multiplication, scales are furnished with each spring. These scales are graduated in the same number of parts per inch as the scale of the spring, except for the larger numbers and then in half the number of parts. The values may thus be read directly.

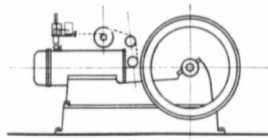


Figure 2

The method as outlined above has been for the obtaining of the complete indicator card. Where it is desired to obtain merely the compression pressure or the maximum explosion pressure the reducing motion is dispensed with and only the indicator used. To obtain only the compression pressure the ignition switch may be thrown out and the cock on the indicator then opened and the pencil pressed against the drum when a vertical line will be obtained corresponding to the pressure in the cylinder. By pulling the drum cord several impressions may be taken. In the same manner the maximum pressure is taken.

Since the maximum pressure in the gas engine at the moment of ignition is about 350 pounds per square inch a spring suitable for this pressure must be used. For the compression pressure, this runs only from 50 to 100 pounds and a lighter spring may be used here if care is exercised that no explosion takes place in the cylinder while the cock to the indicator is opened. In any case a zero or initial line representing no pressure must be drawn while the cock is closed by rotating the drum by hand.

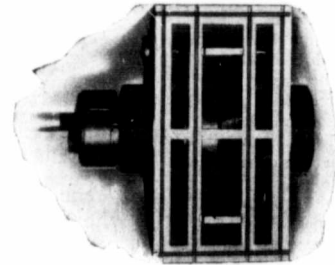


An electric wire had fallen under its heavy weight of snow. The linemen found a crowd around the grounded copper, and an inquisitive Irishman lifting one end from the ground.

"Man alive! Don't you know what a risk you're taking? That might be a live wire!" he ejaculated.

"Sure 'n' Oi thought of that meself, an' Oi filf of the wire good before Oi picked it up at all."

START THE NEW YEAR RIGHT BY USING A BAKER BALANCED VALVE ON YOUR ENGINE THIS SEASON



Read the Several Reasons Why

- First**—No more broken Valve Stems and Eccentrics.
- Second**—No more worn Valve Gearing.
- Third**—No more worn Valve Seats.
- Fourth**—No more trouble with Valves in bad water.
- Fifth**—No more trouble reversing engine under full head of steam.
- Sixth**—They pay for themselves in saving of cylinder oil alone.

What They Say about the Baker Balanced Valve

Enclosed please find an order for a Baker Valve for 20-H.P. Case. The one I am using on the 25-H.P. Case is giving perfect satisfaction, saves fuel, oil and water.
G. M. Daniels, Plenty, Sask.

Please ship at once another set of Baker Valves for a 25-H.P. Double Reeves, These valves are certainly a great improvement over the D slide valve.
Kimble Bros., Bassano, Alta.

Write us at once for prices and particulars

BAKER VALVE COMPANY

100 James Street

Winnipeg, Man.

You saw this advertisement in this magazine. Don't forget to say so when writing.

TOWNSLEY SYSTEM PROTECTS FROM LIGHTNING



Photograph of Lightning Storm, taken in Winnipeg, in Summer of 1910

Canadian Lightning Arrester & Electrical Co. Ltd., Winnipeg, Man

To DEALERS and AGENTS

We offer you an extraordinary opportunity to make big money while you are conferring a boon on your neighborhood and making friends who will never cease to thank you for having induced them to safe guard their property with the

TOWNSLEY SYSTEM OF LIGHTNING PROTECTION

Now is the time to get in line for the season. Write us at once for full particulars. We give an absolute guarantee and pay a big commission. What your clients pay for installing our 99% pure Copper System will be refunded in decreased insurance rates in two or three seasons.

SEE US WHEN YOU COME TO THE BONSPIEL

Canadian Lightning Arrester & Electrical Co. Limited
199 Main Street, Winnipeg

You saw this advertisement in this magazine. Don't forget to say so when writing.

Problems of the Farmer

Continued from page 30

moment the thing under consideration is actual cost of production and how it may be lessened.

Cutting Down Expenses

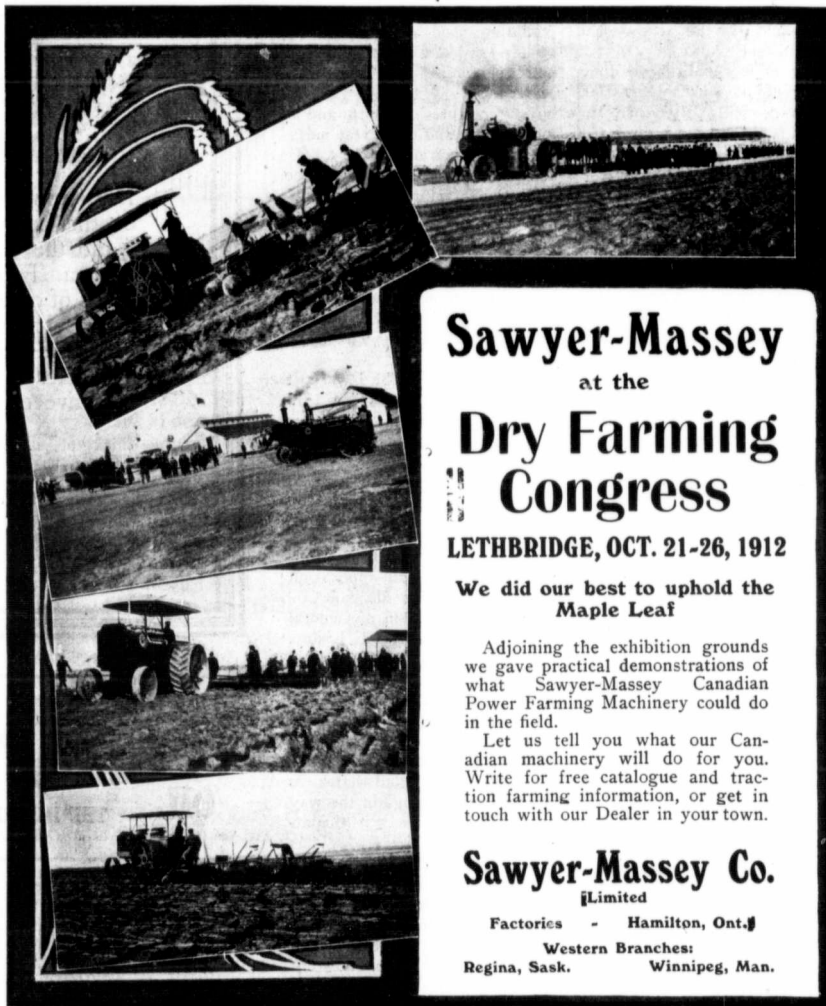
Expenses may be materially lessened by cultivating less land. That may look at first blush, like a retrograde movement, but is it? The real test of success is not the number of acres in crop, but the number of bushels per acre obtained. Covering hundreds of acres, it cannot be called farming them, has become an obsession in the Canadian West, and a very costly obsession it is proving. The inrush of immigration has created a demand for land, the land has been cheap and the old residents have felt they must secure more before it was all gobbled up; the American from the South coming with considerable capital has purchased large blocks and everywhere there has been a mad rush to get this land in crop either to pay for it or to secure money to buy still more land.

Machinery, especially that for bringing new land under cultivation, has developed very rapidly in the past few years and the motor tractor has made possible the breaking up of areas in a single year which ten years ago would have required three or possibly four years to break. It has made it possible for one man to put in crop with his own unaided efforts a whole section of land. Fortunately, or unfortunately, there has been no development in agricultural machinery which will enable him to reap and thresh that number of acres alone; hence with each added acre in crop he has increased his dependance on the chance harvest hand, and enlarged his liabilities.

The man who finally produces a really successful stooker has the chance of becoming a millionaire, but so far the implement has not arrived. There is no doubt it will come and that sheaf loaders will be improved and cheapened which will materially lessen the cost of harvesting. Again the present motor tractor, while it is being used to some extent for running binders is not an entire success. In a few years no doubt the tractor will be available for many forms of work on the farm, to which now they cannot be applied, thereby increasing their usefulness and lessening their cost. In the meantime, however, they have led to much very poor cultivation and consequent small yields per acre. Take the spring of 1912 as an example. Very large areas had been broken the previous year. Spring was late, help was scarce and dear and there was a very great tendency

to slap the crop in any how. The big areas mean too often, not only indifferent cultivation, but very late seeding. Then if there is a dry spell just after late seeding the crop does not get a start, the plants are not so strong, the crop is late in maturing and in danger of frost. Everyone who is at all observant, and who has travelled over the West knows that every year, whether the season is favorable or not, there are men who have crops of wheat yielding from 35 to 40 bushels to the acre; barley that goes 50; oats that go 90 and flax that runs from 25 to 30. Such crops are not so very uncommon either. Yet what do the returns for the past years show? This—wheat 18 bushels; oats 45 to 50; barley 32 and flax, which has only been recorded for a few years, about 10.

In 1912 there was sown to wheat in Western Canada at least 9,000,000 acres and the joint provincial returns fix the yield from this at 182,000,000 bushels, about



Sawyer-Massey
at the
Dry Farming
Congress

LETHBRIDGE, OCT. 21-26, 1912

**We did our best to uphold the
Maple Leaf**

Adjoining the exhibition grounds we gave practical demonstrations of what Sawyer-Massey Canadian Power Farming Machinery could do in the field.

Let us tell you what our Canadian machinery will do for you. Write for free catalogue and traction farming information, or get in touch with our Dealer in your town.

Sawyer-Massey Co.
Limited

Factories - Hamilton, Ont.
Western Branches:
Regina, Sask. Winnipeg, Man.

SEEDING THAT FROST AND HAIL DO NOT AFFECT

NOW IS THE TIME TO PLANT YOUR GOLDEN SEED

A few dollars planted now in our high class property will produce a rich harvest when other crops may fail. We are offering lots in our "Deer Lodge Subdivision" situated in the West End and adjoining Portage Avenue, where a five-cent car fare will carry you right to the property and in our "Woodlawn Subdivision" situated in the southeast of the City, at original prices.

So assured are we that prices will increase rapidly and good profits result, that we will guarantee to refund your money with six per cent per annum added, if at the end of two years you are not satisfied with your investment. Can anything be fairer than this?

Write for plans and full particulars.

PRICES LOW

TERMS EASY

STEWART & WALKER LIMITED,
202 STERLING BANK BLDG. WINNIPEG

Remember to Renew Your Subscription

20 bushels to the acre, the crop being an exceptionally heavy yield. If this acreage had produced an average of 35 bushels as it should have done, there would have been 315,000,000 bushels or still better had the acreage been reduced a third at a yield of 35 bushels, there would have been 210,000,000 bushels at very much less cost.

If the man who owns 640 acres could be persuaded to cultivate 300 of it up to its highest producing capacity and allow the balance of his land, if it is virgin prairie, to remain unbroken until such time as he has equipment to cultivate thoroughly, and the man who has foolishly broken more than he could cultivate would get it back in grass, or better still, a part of it at least into Alfalfa, the profits from farming would soon begin to be in evidence. The bill for hired help would dwindle and the number of farms where one good man is kept the year round would increase and multiply. Another saving would be effected in threshing. Not that more bushels would cost less, but with the stooks closer together on a smaller area less time would be wasted. Again, it would be easier to stack, and if more grain were stacked and sweated there would be a material increase in the percentage of No. 1 Northern. With the grain stacked and out of the way, the fall plowing could be done earlier and more thoroughly, and more of it. In short with less ground to cover a man would have his work under control, he would not be at the mercy of the harvest hands who demand \$4.00 a day and do \$1.00 of work. With proper rotation of crops and the use of manure, which would be easily possible on smaller areas, a farmer would find that very soon he could force his wheat yield up to 40 bushels to the acre and

secure a better grade. His outlay in horses would be smaller, he would not need so many plows or binders, and he would then be in a better position to form a syndicate of farmers, say six or eight and buy a good threshing outfit and be independent and to a great measure control the matter of weeds. The travelling thresher is far too often the travelling weed distributor.

One thing which the farmers of the Canadian West must bear in mind, is the increasing difficulty in getting temporary farm help of even the most indifferent quality. The difficulty grows with each year.

As a solution of the high cost of farming the slogan for 1913 should be smaller areas, better cultivation and bigger yields.



At it Again for 1913

Nothing succeeds like success. Sure we all know it. It, however, has a most practical application in the case of The Maytag Co., under the supervision of General Manager for Canada, E. E. Lyday. Mr. Lyday has been on the job at the Maytag offices for five years, and each year has witnessed a substantial growth over the previous one. He informs us that he will again be at the same old stand for 1913, and that he is looking for big things in the way of Ruth Feeder sales. Anticipating a big year Mr. Lyday has secured the services of Mr. O. E. Chapman, who for the past 14 years has been connected with the Ontario Wind Engine and Pump Co., Ltd., the last seven of which he held the position of Western Sales Manager. Mr. Chapman will fill a responsible position with The Maytag Co., where he will doubtless prove a very valuable acquisition to an already efficient staff. Mr. J. Sam Findlay will continue as manager of the repair and shipping departments, and he has informed us that for 1913, as in the past, you will get just what you order and get it promptly.

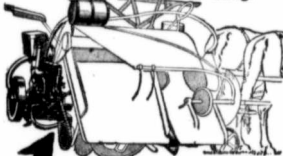


List of Alberta Seed Fair, 1913

Circuit No. 2	
Didsbury	Jan. 2
Olds	" 3
Bowden	" 4
Innisfail	" 6
Red Deer	" 7
Lacombe	" 8
Leduc	" 9
Milnerton	" 11
Three Hills	" 13
Circuit No. 3	
Cardston	Jan. 3
Macleod	" 6
Medicine Hat	" 7
Gleichen	" 8
Langdon	" 9
Nanton	" 10

Run Your Binder with a Cushman Engine

Only two horses required—smooth, even running—no failures to bind—work goes right along.



Horses Simply Draw Machine

The engine does all the work of operating. 4 h.p. Weight under 200 lbs. Speeds to 5 h. p. easily. Automatic throttle governor measures out fuel according to work. The original binder engine and more in use than all others combined. Details and use for all-purpose farm power. Easy to handle, fits in anywhere. We also build 6-8 and 22 h. p. engines with same high efficiency—engines for all heavy duty. Write for free catalogue.

CUSHMAN MOTOR WORKS, 2022 N St., Lincoln, Neb.

Farm Cushman The Original Binder Engine

Mention this magazine when writing advertisers.



Dig down to the bottom of the automobile question—and the chances are you'll buy a Ford—just as thousands of other Canadians have done. It's the one car that will stand the severe tests of the hardest use—without excessive expense.

Think of it—nearly 200,000 Fords have been sold and delivered. New prices—runabout \$675—touring car \$750—delivery car \$775—town car \$1000—with all equipment, f.o.b. Walkerville, Ont. Get particulars from Ford Motor Company of Canada, Limited, Walkerville, Ont., Canada.

You saw this advertisement in this magazine. Don't forget to say so when writing.

EUREKA HARNESS OIL



BEST FOR WEAR

Insist on the genuine Eureka Harness Oil in original packages.

Dealers Everywhere



THE IMPERIAL OIL CO., LIMITED

You saw this advertisement in this magazine. Don't forget to say so when writing.

Clareholm	" 11
Priddis	" 13
Cochrane	" 14
Magrath	" 17
Taber	" 24
Carmangay	" 31
Circuit No. 4	
Munson	Jan. 4
Castor	" 7
Gadsby	" 8
Provost	" 10
Hardisty	" 11
Sedgewick	" 13
Killam	" 14
Daysland	" 15
Camrose	" 16
Circuit No. 5	
Vegreville	Feb. 3
Innisfree	" 4
Lloydminster	" 5-6
Viking	" 7
Tofield	" 8
Irma	" 10

DO IT NOW.

When you've got a job to do, Do it now!
 If it's one you wish was through, Do it now!
 If you're sure the job's your own, Just tackle it alone;
 Don't hem and haw and groan—Do it now!
 Don't put off a bit of work, Do it now!
 It doesn't pay to shirk, Do it now!

If you want to fill a place And be useful to the race, Just get up and take a brace, Do it now!

DOMINION EXPRESS Money Orders

and Foreign Cheques are payable all over the World.

They may be sent in payment of produce, tax, gas and electric light bills, interest on notes and mortgages, insurance premiums, subscriptions to newspapers and magazines, and in fact in payment of all kinds of accounts, whether in or out of town.

We give you a receipt and if the remittance goes astray in the mails, we refund your money or issue a new order free of charge.

TRAVELLERS' CHEQUES ISSUED. MONEY SENT BY TELEGRAPH AND CABLE.

When purchasing Goods by mail, ALWAYS remit by

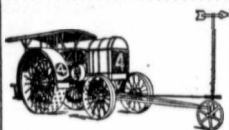
DOMINION EXPRESS CO. MONEY ORDERS

RATES FOR MONEY ORDERS:

\$ 5. AND UNDER	5 CENTS
OVER 5. TO \$10.	6 "
" 10. " 20.	10 "
" 20. " 50.	15 "
" 50. " 100.	21 "

AGENCIES THROUGHOUT CANADA.

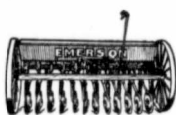
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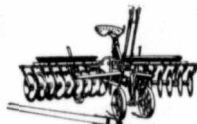
EMERSON Low Down Spreader



EMERSON Drill



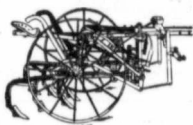
EMERSON Foot-Lift Plow



EMERSON Disc Harrow



EMERSON Walking Plow



EMERSON Cultivator



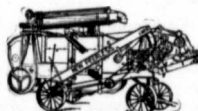
REEVES Corn Sheller



EMERSON Deep Furrow Plow



EMERSON Engine Plow



GEISER Peerless Separator

You Know these Facts About Emerson Service

YOU who have used EMERSON Plows, EMERSON Hay Tools, EMERSON Implements of any kind—you *know*, when you see the word EMERSON on a machine, that it will do its work with the greatest efficiency, least expenditure of time and labor and greatest convenience to the operator.

You *know* that it has valuable time and labor-saving features found only in EMERSON products—a perfection of design and construction, of detail—a finish found in no other goods.

Practically *every* farmer knows this. It is the secret of the enormous sales of EMERSON machines in the last sixty years.

EMERSON on an implement or vehicle means what NEWTON means on a wagon—what REEVES and GEISER mean on a threshing machine—what the BIG FOUR "30" means in the tractor world—*efficiency!*

That is why all these great companies, now welded together in the Emerson-Brantingham Company, have been makers of Agricultural History—because all these years they have been making implements and machines and vehicles and wagons a little better than anybody else makes them.

And practically every farmer also knows what EMERSON *service* means. All these great companies have been as much interested in their goods *after* they were sold as they were *before*—they have realized that the goods must not only be *sold*, but that they must give perfect satisfaction to the buyer.

EMERSON machines will help you to farm better, easier and cheaper. We illustrate here a few of the EMERSON lines. Write today for free catalogs and information on any article that interests you.

Emerson-Brantingham Implement Company

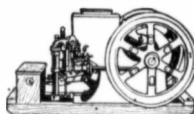
1190 Princess Street Incorporated Winnipeg, Man.

The Largest Line of Farm Machinery in the World

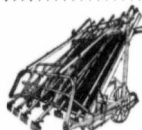
2507



EMERSON Corn Planter



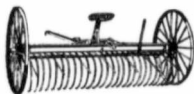
EMERSON Gas Engine



EMERSON Gearless Hay Loader



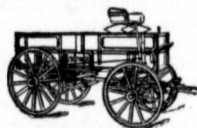
GEISER Baling Press



EMERSON Hay Rake



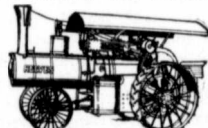
EMERSON Standard Mower



NEWTON Wagon



EMERSON Buggy



REEVES Steam Engine

Farm Building Construction
Continued from page 10

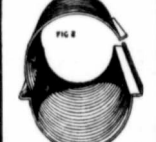
The general practice is to have all farm buildings square with the four points of the compass, with the sides running north and south, and east and west. The fact that farm fences run in the same directions, accounts for this practice and will, without doubt, perpetuate the custom with the exception of the farmhouse. There is no special reason other than that just mentioned why the house should not face in any direction. Many are now advocating the change in order that the sunlight may enter all the rooms of the house sometime during the day.

Once the location of a building is decided on, the next step is to stake out the corners. First one corner stake is driven into the ground, then one side is laid out with a tape, or if nothing better is available, a ten-foot pole. We now have two corners (A and B, Figure 1,) located, and are ready to lay out another side which necessitates laying out a right angle. Except for very large buildings where a surveyor's instrument is used, the right angles at the corners are commonly gotten by the use of the 3-4-5 method. Any multiple of these numbers, such as 6-8-10 or 15-20-25 will serve the same purpose. The method is as follows: stretch a carpenter's line tightly between the stakes A and B. The exact corner is located on each stake by means of a small nail driven vertically into the stake. Measure six feet out from the corner B on the carpenter's line. From the corner stretch another line as nearly as possible at right angles to the first one and on this line lay out eight feet from the corner. Then move the far end of the line BC until the distance between the six and eight foot marks is exactly ten feet and the two lines form a right angle. Now on this second line measure off the distance along that side of the building and at that point drive the third stake. The fourth stake, D, is easy to locate. Measure out from A the width of the building and from C the length of the building and where these two lengths meet drive the stake D. The work can then be checked for accuracy by measuring diagonally across from A to C and from B to D and if the work has been accurately done these distances will be equal. If they are not equal, move stakes C and D until they are.

The larger the numbers used in the method just described, the more accurate will be the work. For instance, 15, 20 and 25 feet would give the right angle more accurately than 3, 4 and 5 feet. In land surveying, 60, 80 and 100 are sometimes used, which figures



These nested bundles are carried to the job by wagon--



and fit together like this--



when they are firmly clamped by this three-pronged flange. After that you simply can't break down Pedlar culvert.

SEND NOW

and get a free sample of Pedlar Corrugated Culvert by return mail. The non-corroding galvanized Toncan metal, and the strength of the sample, will tell you the whole story. Send to our nearest office below. Good culverts make good roads.

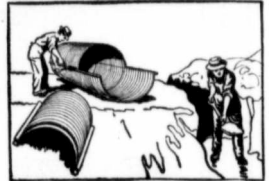
- REGINA WINNIPEG VICTORIA
76 Lombard St. 434 Kingston St.
- CALGARY
Room 7, Crown Block
- ST. JOHN, N.B.
42-46 Prince William St.
- PORT ARTHUR
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A Sample of our Culvert and a Special Book about it to any Farmer or Reeve or Municipal Officer --

FREE

PEDLAR

To make better roads, reduce taxes and cut down statute labor, use Pedlar's Nestable Culvert. In strong, corrugated, non-rusting metal, you build any length needed at the job, excavate just enough to fit it in place, and tamp back the earth. Your culvert is made for years to come. Won't cave in, frost-proof, better than brick, cement or wood. Handy, quick and sure. So good you'll always use it. Holds up traction engines easily. Learn everything about it in our free book. Write for sample free.



The above two pictures tell the whole story of installing a frost-proof, time-proof Pedlar Nestable Culvert.



Best Culvert for the Fields!

TONCAN METAL
8 ins. to 7 ft. sizes

Look at the pictures on the right. A man sets up Pedlar Culvert, ready to roll into place. Two men place it. This saves time and money. See what a fine bridge it makes at your gate, or see it make a perfect culvert on your farm. This is the best and strongest culvert ever made. Send for sample.



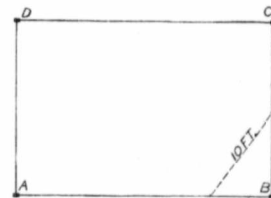
Established 1861

- OTTAWA
423 Somerset St.
- QUEBEC
127 Rue du Pont
- EDMONTON
563 Third St. W.
- CHARLESTON
200 King St. W.
- VANCOUVER
108 Alexander St.

You saw this advertisement in this magazine. Don't forget to say so when writing.

if carefully applied will give a right angle very accurately. These figures can be used to advantage in locating a line of fence at right angles to another.

Having found the corners of the building, the next step is to transfer these points in such a manner that their location may be



preserved and yet allow the earth to be taken out for the foundation walls. It is evident that when the earth is taken out the dirt in which the stakes rest will also have to be moved. The location of the corners is kept by the use

of batter boards, as shown in Figure 2. They consist of two pieces of 2 x 4's, driven vertically into the ground and a piece of 1 x 6 nailed horizontally across. There are two sets of batter boards at each corner, though they are not so shown in the figure. Lines are stitched directly over the stakes and fastened to the batter boards. Two such lines when properly stitched will intersect directly above the nail in the top of the stake. The lines are thus located by means of a plumb-bob, as shown at the nearest corner in the illustration. Notches should be cut where the lines come on the batter board to preserve their location and so they can be quickly stretched at any time. Sometimes nails are driven into the top of the 1 x 6's for this purpose, but it is considered a poor practice, for they may be pulled out or get bent and the line may be fastened on one side

of the nail one time and on the other side the next.

The lines described may represent the outside of the rough frame work of the building or the outside of the wall, generally the latter. These lines are fastened to the batter board at B. From this point measure off BD, equal to the thickness of the wall and cut a notch at C to represent the line of the outside of the sill. If the earth is to be excavated beyond the outside of the foundation wall, notches are cut at A to mark the outer line of the excavation.

It is a common practice to have the upper edge of the batter boards exactly horizontal and all in the same level, and to have this level represent the top of the wall. Then when the mason stretches his lines over notches B and D and brings the wall up to the lines, the wall is finished.

Good Roads

Continued from page 32

The annual competition held under the auspices of the Manitoba Good Roads Association, and for which the Canadian Thresherman donated the first year's cash prizes, have proved in the most conclusive manner the value of the split-log drag in road work and to what an extent even the ordinary dirt road is improved by its use.

The holding of these competitions should be fostered in every province, and a prize offered for the best kept stretch, in addition to the sum of money allowed for the work done.

In the case of the Manitoba Municipalities, the contestants are allotted a two-mile stretch of road and supplied with a split-log drag to do the work. They are paid \$15 for the work, which entails the dragging of the two miles after every rain and have the chance of securing additional funds from the prize money, which is divided into a first prize of \$100 and a second prize of \$50.

The keenest interest has been taken in this competition by all the municipalities in the immediate vicinity of Winnipeg and it has always been found possible to secure a good list of competitors from among the farmers who have realized the advantage to their own property from the provision of a good road between their farms and the adjoining town or village.

What It Costs the Farmer

During the time that the Good Roads bill, calling for the expenditure of the sum of \$5,000,000 was being considered by the Saskatchewan Government, some figures were quoted showing the losses sustained by the farmers in one year in the conveyance of their produce to the railroads. The figures were as follows:

Total number of farmers in the province	90,000
Estimated production in 1911:	
Bushels of wheat	92,000,000
Bushels of oats	193,000,000
Bushels of barley	6,500,000
Bushels of flax	5,000,000
Total	206,500,000

Assuming that 56,500,000 bushels of oats, etc., were consumed on the farms there is still left a total of over 150,000,000 which had to be conveyed over the roads. Allowing the ordinary weights per bushel of each kind of grain and an average load per team of say 3,600 pounds, it will be seen that the total number of loads conveyed over roads amounted to the respectable figure of 2,000,000. Although competent authorities have estimated the average haul from the farm to elevator or station as 8



The Car that made the Continental Trip will be exhibited at Montreal Show

STAND below the little white sign post at Alberni, Vancouver Island, you Canadians, and see this sturdy Canadian car as she completes her journey from Halifax, with her front paws in the Pacific. You will then pardon our pride in this achievement—this trail blazing for the all-red National Highway.

Reo is The Natural Car

HERE is the family car fast enough for the men folks—simple enough for the women folks. Driving a Reo is as natural and unconscious as breathing or walking.

Seated on the left side—next to the passing traffic—all controls are below your hand in the shape of cane handle. There is no reaching or fumbling at levers. The Reo control is as easy and natural as walking with a cane. Merely a movement of 3 inches each of four ways shifts every gear. The cane handle is close to the seat—does not obstruct either fore door. Both brakes are operated by the feet instinctively. Car can be stopped without taking a hand from the wheel.

There is no cranking. The Gray and Davis positive action self-starter is powerful enough to propel the car 2 miles without engine if necessary—in zero weather, if need be.

Five lights—one in rear, two flush with dash board and two searchlights—are operated from the seat.

Reo 1913 cars, with 2 or 5-passenger bodies, each \$1,750 f.o.b. St. Catharines.



The Reo Sales Company

Sole Distributors for the Dominion of Canada

The Reo Motor Car Co., Limited - St. Catharines, Ont.

REO MANITOBA AGENTS:—Alex. Kennedy, Morden, Man.; W. R. Lavery, Newdale, Man.; T. B. Mitchell, Virden, Man.; Neepawa Auto Garage, Neepawa, Man.; Flews Automobile Co., 328-330 William Av., Winnipeg, Man.; Portage Garage Co., Portage la Prairie, Man.; Reliance Machine Co., Brandon, Man.; Jas. Winram, Pilot Mound, Man.

You saw this advertisement in this magazine. Don't forget to say so when writing.

miles for the purpose of this comparison it is only fixed at 4 miles. This would allow of a team being able to make at least two trips a day. The actual cost to the farmer for keeping teams, etc., may be about \$3.20 per day. Therefore, the hauling of each load costs about \$1.60. Working on this basis it will be seen that the total cost of hauling Saskatchewan grain last year, assuming the whole crop was disposed of, would be about \$3,200,000. If the haul averaged more than 4 miles the cost would, of course, be proportionately greater.

Now, if the roads over which this vast amount of produce had to be hauled were in good condition it would have been possible to increase the team load to say 6,000 pounds, which would reduce the number of loads to be hauled, and the cost would be about

\$2,000,000. In other words, the farmers would be \$1,200,000 in pocket, or they could pay that amount in payment of debentures issued for road improvements. This amount, capitalized at 5 per cent would represent a possible expenditure of \$24,000,000, which would suffice to improve 24,000 miles of road. It must not be forgotten that the above saving only represents the possible economy on one year's farming in one province, and if good roads were general throughout the province the next year's saving would be actual cash in pocket to the farmer.

All of a sudden the host said: "I will tell you, gentlemen, this is the truth: I have kissed the dainty Japanese girl; I have kissed the South Sea maiden; I have kissed the slim Indian beauty, and the girls of England, Germany and even of America; but it is the truest that to kiss my wife is best of all."

Then a young man at the table said: "By gad, Sir, you are right there."

"All right on behind there?" called the conductor from the front of the car.

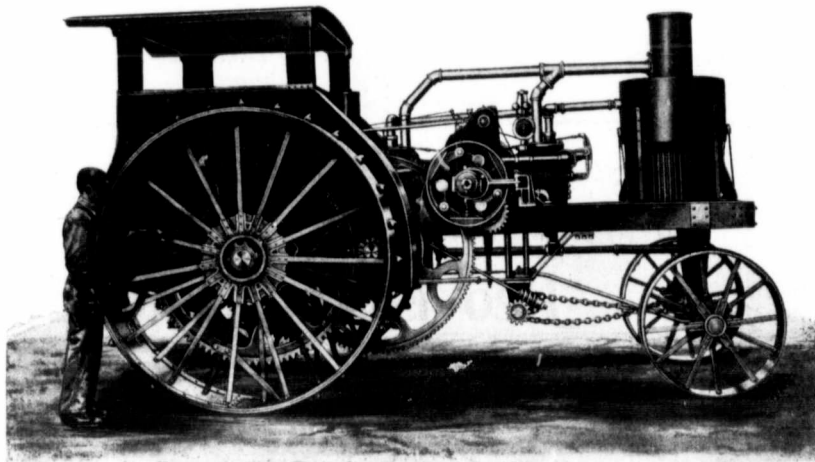
"Hold on," cried a shrill voice. "Wait till I get my clothes on!"

The passengers craned their necks expectantly. A small boy was struggling to get a basket of laundry aboard.

How did he Know?

After dinner, when the ladies had gone upstairs, the men, over their coffee and cigars, talked as men will, of love.

40
Traction
Horse
Power



80
Brake
Horse
Power

Now! A New Big Brother Avery Tractor

Here is the latest Avery Tractor

The New Big Brother in the Avery Tractor family. Has a four-cylinder opposed motor and will pull eight to ten plows and any of the largest size Avery Separators.

Big in power but light in weight

While this new Avery Tractor develops 40 traction and 80 brake horse power (and it is guaranteed to do it) it is still wonderfully light weight considering the power which it develops. It weighs only 20,000 pounds. Think of it! A tractor that will pull eight to ten plows and a big separator and yet weighs only 20,000. Compare this with the weight of other tractors of equal power and you will find that this new big Avery Tractor, as well as our other two smaller sizes, clearly justifies our claim that Avery Tractors are the Lightest Weight of any tractors built, considering the power which they develop and their strength of construction.

As one of the prominent farm papers has said, "the question of weight is one of the most important questions in a tractor." A "Light-Weight" Avery won't pack your ground to injure it in any manner—it doesn't waste fuel moving useless dead weight—you can get into the field earlier in the spring or after a rain and it will travel over ground where other tractors mire down.

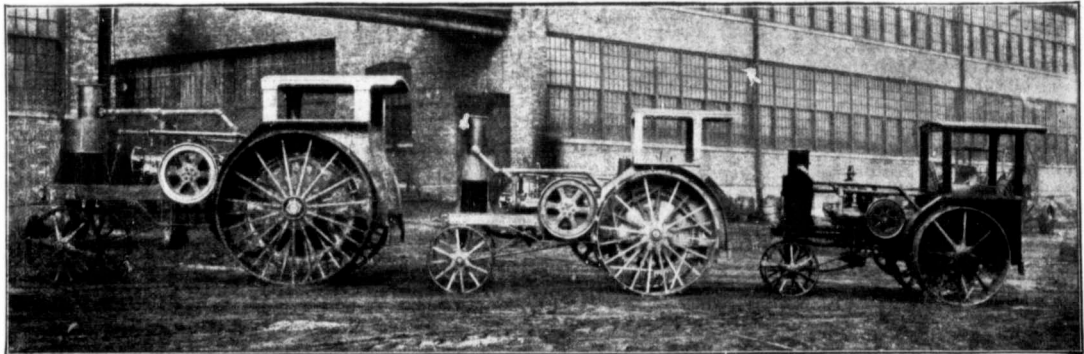
Runs with almost no vibration

You ought to see how steady this Tractor stands. Almost as steady as a steam engine. There is no comparison between it and the ordinary tractor which constantly jerks back and forth, racking itself to pieces and shaking up the operator.

"Almost as simple as a wheelbarrow"

That's what one man said about his Avery Tractor and it applies to the 40-80 h. p. as well as the smaller sizes. This size tractor, like the smaller 12 and 20 h. p., has no intermediate gear for traveling ahead—it has only one friction clutch. It has no cooling fan; it has no outside lubricator; it has no intermediate shaft; it has no water pump; it has no fuel pump. It doesn't take an expert to run an Avery Tractor. Any man or boy can run it with a little experience and reasonable care.

There have been a lot of men waiting for the Avery Company to bring out a Big Gas and Oil Tractor for they know the kind of machinery the Avery Company build. We can now supply your requirements in a big tractor. Write us at once for complete specifications and price.



You can now get a size Avery Tractor to just fit your needs

Now the Avery Tractor Line is complete

Last year we built a 20-35 h. p. Tractor and they sold like hot cakes. Now, for 1913, we have added a 12-25 "Baby Brother" size and a 40-80 h. p. "Big Brother" size.

The 12 h. p. Tractor pulls three to four plows and drives our small size Kid Separator. The 20-35 h. p. pulls five to six plows and drives any size Avery Separator up to 32 x 54. The 40-80 h. p. pulls eight to ten plows and drives any size Avery Separator up to our largest machine.

A complete line and an up-to-date line

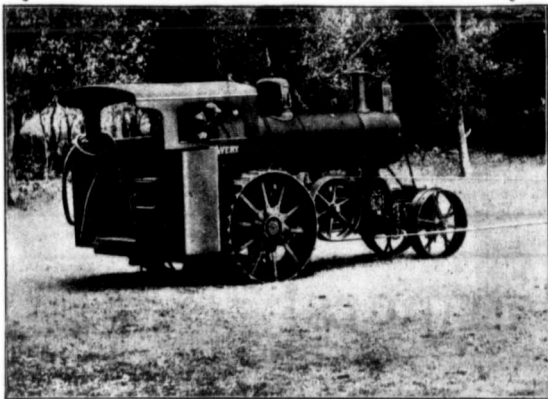
Not only is the Avery Line of Tractors now complete—we can fit the needs of any man doing any kind of belt work or on any sized farm, small, medium or

large—but the Avery Line of Tractors is also Up-to-date and in the lead of them all.

Avery Tractors are the "lightest-weight" tractors

Avery Tractors are the "Lightest-Weight" Tractors built, considering their power and strength of construction. They are the Simplest Tractors of any on the market. They have gone out in the field from the time they were put on the market and done the best work of any tractors, new or old, that were ever built. They are Sold on Approval, which you know we could not possibly do unless we knew that they would make good. And besides this, after you get one, we back you up with the Strongest Guarantees given with any Tractor built.

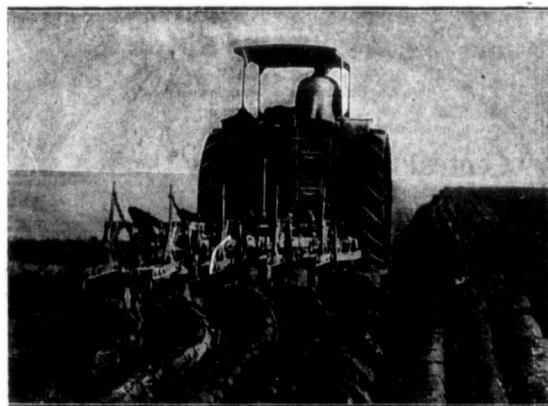
Write today for a new 1913 Avery Gas and Oil Tractor catalog and get all the facts about the Avery Line of Tractors and the work they do.



This is the Steam Engine that leads them all — Patented

There is nothing in the Steam Engine Line that can compare with the Avery Double Undermounted Engine. There is no other engine built with the cylinders and gearing entirely independent of the boiler, which does away with all pulling strains on the boiler and makes the engine much more durable. There is no other steam engine built with a straight line pull direct from the cylinders to the draw bar which reduces friction and increases the pulling power. There is no other steam engine built with all of the working parts low down so that they can be reached from the ground and so that one man can belt up the engine while standing on the ground.

And there is no other steam engine built that is backed up by the guarantee we give with the Undermounted Avery. You can't afford to buy a steam engine without getting all the facts about this one. Write for a copy of the new Avery 1913 Steam Engine Catalog.



This "Self-lift" Avery Plow has put all the hand lever plows clear out of date

There simply isn't any comparison between an Avery "Self-lift" Plow and the old style hand lever plow. Just think what it means. With this plow you don't have to hire any plowman. You save all his wages and board. What you save in this way will pay for the plow and then keep right on saving you money every day you use it. It means no hard, back-breaking work lifting and lowering each plow by a hand lever at the end of each furrow. It means no time lost at the ends. All you do is to jerk the cord and go right along. No stopping or starting up as with hand lever plows.

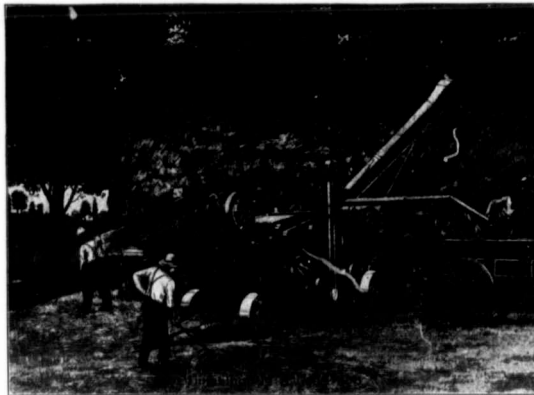
Ask for a copy of the 1913 Avery "Self-lift" Plow Catalog and find out about this wonderful Engine Gang Plow.

Use the coupon at the right. Write us a letter or a post card, or call at our home office, nearest branch house or any of our jobbers or agents for full information about the Avery Line of Machinery. It's the most up-to-date line of Threshing, Farming and Hauling Machinery built and is backed up by the strongest guarantees. Write us at once for the 1913 catalogs you want and tell us what you will need this year.

AVERY COMPANY

675 Iowa St., Peoria, Ill.

Haug Bros. & Nellerme Co. Ltd., Winnipeg, Regina, Calgary
Western Canadian Distributors



Field tests absolutely prove that you can save the grain with Avery Separators

You don't have to depend upon our claims to be certain that when you buy an Avery Separator you can save the grain. We do not stop with simply claiming that the Avery is a grain saver, we have gone right out into the field and made canvas tests while the machines were being operated by the regular crews and in 27 field tests the average percentage of saving was 99 9/10 per cent. Think of it! An almost perfect record. No other such a proven record of grain saving has ever been made by any make of machine. When you buy an Avery Separator we guarantee it to save 99 52/100 per cent. or more and, if necessary, we will make a field test to prove it. You can't get any such a guarantee on any other make of separator. Write for new Avery 1913 "Yellow Fellow" Separator Catalog.



This is the new, better way to do your hauling

With an Avery Gasoline Truck you can haul cheaper, quicker and easier than with horses. This truck hauls a three-ton load on its own body and will also pull a trailer behind. It will travel at a speed of from 2 to 12 miles per hour. Hundreds of these trucks are already being used all over the country, hauling farm produce, coal, lumber, gravel, oil, flour, groceries, etc.

Write us, giving us full information about the hauling you are doing or wish to do and find out if you cannot do the work much cheaper with an Avery gasoline truck than in any other way. Ask for Avery 1913 Motor Truck Catalog.

Avery Company, 675 Iowa St., Peoria, Ill.

Please mail me as soon as ready for delivery, your 1913 catalogs checked below:

- Avery Steam Traction Engines.
- Avery Gas and Oil Tractors.
- Avery "Yellow-Fellow" Separators.
- Avery "Self-lift" Engine Gang Plows
- Avery Gasoline Trucks.

Are you in the market?..... If so, when?.....

What for?.....

Name..... Town..... R.F.D.....

State..... Date.....



No. 1 HARD

December brought the lowest prices of the crop, and the opening of the New Year sees wheat steadily mounting to higher levels. The demand for the past fortnight has been good for nearly all grades, much grain being required to fill the large number of boats for winter storage, ere the ice breaking ceases. The very decided advantage of having plenty of boat space available must be apparent to all. Some statistics are to the point here. The area in Canada sown to Fall wheat is 6 per cent less than that of a year ago. The latest official estimates of 17 Governments on their respective yields of wheat in 1912, indicate an aggregate output of 213,000,000 bushels greater than the aggregate of the same countries in 1911, and 151,000,000 bushels larger than that of 1910. These figures are worthy of reflection. Owing to the lower prices, the carry-over to next season will probably be big the world over, so that not all the above enormous surplus will be consumed this year.

In Canada inspections to January 12th were as follows:

	Bushels
Wheat	87,516,000
Oats	26,984,100
Barley	8,691,800
Flax	9,719,850

Altogether a phenomenal crop movement. If several Crop Estimates of flax at about 12,000,000 bushels be anywhere near correct, the amount remaining in the farmers' hands must be relatively small; having in mind the fact that a small percentage is yet unthreshed and may not be well saved. In fact it begins to look as if all Crop Estimates will have to be revised upward.

The foreign demand has been good, but Argentine offerings are sure to be heavy directly, and with the demand to fill boat space gone about a week hence, the edge may go temporarily off the market.

There is as yet no shortage of room at Canadian Terminals, except for flax, but this grain should be shipped to Duluth.

American Millers report a very good flour demand, but Canadian Millers are not so well satisfied. All European crops save that of Russia are much poorer in quality

and lower in quantity than last year. The estimate for the new Argentine shows a probable surplus for export of 120,000,000 bushels altogether with considerable European reserves from heavy autumn buying, and big Argentine shipments for the next ten weeks, it is scarcely probable the advance will go much further for the interval. Low grade wheat should be shipped at once.

OATS

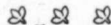
In this grain the outstanding feature has been the big percentage grading tough, and prices have been generally low. Farmers should get out all off grades, as such will not keep even so well as wheat, and all drying facilities will be badly congested again this spring. Good clean dry oats are in demand for seed.

BARLEY

This grain has held fairly steady with only indifferent demand, and not much change is anticipated.

FLAX

Flax has held low and steady. Only a very brisk demand for oil in the next two months can lift the price, and in the United States building activity is awaiting a more definite pronouncement on several matters by the new President.



An Irish militia regiment was drawn up on parade awaiting the Colonel's inspection. One by one the companies were brought to "Attention" by the captains, until it came to No. 3 Company, the captain of which had had a serious misunderstanding with his tenantry on the subject of rents. No word was given; consequently the company remained standing "at ease." Up rode the adjutant furiously. "Captain O'Ballynoodle, why the deuce don't you call your men to 'attention'?" No answer. "Will you call them to 'attention,' sir?" screamed the adjutant. At this juncture, the color-sergeant stepped out, and addressing the adjutant, said "Av you please, sorr, the captain and his company are not on sphanking terms!"

FARMERS! SHIP YOUR GRAIN

TO THE

CANADIAN ELEVATOR CO. LTD.
GRAIN COMMISSION MERCHANTS, WINNIPEG

It is as much our business to give satisfaction as to secure grain shipments. We watch the grading of each car and allow liberal advances on all bills of lading.

You saw this advertisement in this magazine. Don't forget to say so when writing.

Farmers!

Ship Your Grain Direct

We are prepared to handle all kinds of grain in carloads direct from farmer to Eastern markets. Farmers may draw on us for high percentage of value, bill of lading attached. No delay in final returns. References: Sterling Bank of Canada. Full particulars furnished promptly.

Canada Grain Co. Ltd., Toronto

You saw this advertisement in this magazine. Don't forget to say so when writing.

Donald Morrison & Co.

ESTABLISHED 1904

GRAIN COMMISSION

711 T Grain Exchange
WINNIPEG

WE handle Wheat, Oats, Flax and Barley on commission, obtaining best possible grades and prices. Our work is prompt, accurate and reliable. Let us handle YOUR shipments this season. Daily or weekly market letter on application.

REFERENCES: Bank of Toronto, Northern Crown Bank and Commercial Agencies.

You saw this advertisement in this magazine. Don't forget to say so when writing.

Consign your Grain to a firm that will look after your interests: Call for re-inspection when necessary - obtain highest market prices, and make prompt returns:

Central Grain Company Limited
BONDED COMMISSION MERCHANTS LICENSED

707 Grain Exchange - Winnipeg, Man.

Car Tracin and Claim Department in connection. Send us samples of your Grain, we will look after the grading and advise you promptly. The permanent success of our business depends on our customers' continued satisfaction.

Paid-up Capital: \$150,000

References: Any Bank or Commercial Agency

You saw this advertisement in this magazine. Don't forget to say so when writing.

Grain Prices Have Improved

A good reason why you should ship your grain rather than sell on street. The demand is good. We can handle grain shipped to Duluth to excellent advantage. But before loading barley get in touch with us. We can get you real good premiums.

Blackburn & Mills

(A. M. Blackburn)

(D. K. Mills)

531 Grain Exchange

Winnipeg, Man.

Licensed

TELEPHONE MAIN 46

Reference: The Royal Bank of Canada.

Bonded

You saw this advertisement in this magazine. Don't forget to say so when writing.

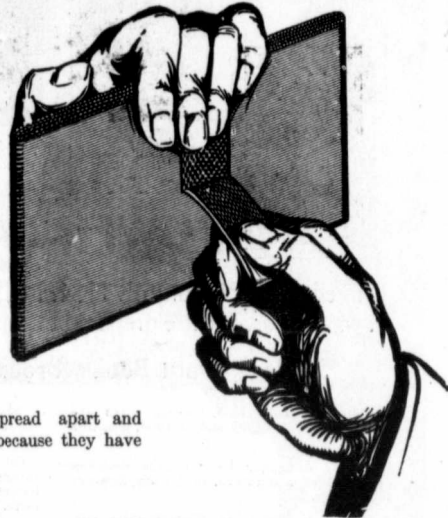
Get Wear and Service = Lower the Cost!

The cost of a belt is not just what you pay for it. If a belt slips off the pulleys it ties up your whole working force. A big loss of time.

If It Stretches It Wastes Power

You should add these losses to the cost of your belts. When you estimate the cost of a belt compare the service it gives and the length of time it wears with the price paid for it. Some belts split and spread apart and then rot because moisture gets into the fabric. Some belts wear out quickly because they have not enough pulling power.

A belt that gives satisfactory service and that wears is cheapest in the end.



Goodyear Thresher Belting

BLACK DIAMOND
RED CROSS

The cover of Goodyear Thresher Belting is thick and tough—the first indication of strength and wear. It has a hard surface yet it is quite pliable. It bends without breaking. The seam is invisible, it is practically a one-piece cover. Moisture cannot get into the belt. Note how the edges are covered.

The cover is finished with a rough surface to make it grip the pulleys.



WILL NOT SLIP
WILL NOT SPLIT

Try to remove the cover. Almost impossible, is it not? That is because the cover is vulcanized on. Now look beneath the cover. Try to separate the layers of duck. That black substance that holds them so tightly together is called "friction." The friction adds to the strength of the duck—makes it wear longer—prevents the duck splitting—protects it from moisture—prevents rotting.

All the Duck Used in Goodyear Belting

is tested for weight and pulling power. The friction-compound is tested for its power to hold together.

The duck and friction are put together under heavy hydraulic pressure. Vulcanizing the cover on makes the cover and friction practically one. And every belt is thoroughly cured and stretched.

Having proven the strength, we subject all materials to careful laboratory tests to satisfy ourselves that the quality is up to the Goodyear standard. And each belt is tested at different stages of the making. And the records of the tests made on every belt are kept on file at the Factory.

Goodyear Thresher Belting is made in two weights—"Black Diamond" a heavy weight belting, and "Red Cross" a lighter belting. The only difference is in the weight. The lighter weight belting is less expensive.

Not One Thresher Belt Returned in 1911 \$155.22 represents the total amount paid out for adjustment of claims by our Mechanical Department during the year ending Sept. 30th, 1911. This was not for Belting alone but the sum includes claims on all such goods as rubber hose, packing, belting of all kinds and other rubber articles. During the first four months of the present year starting on October 1st, 1911, in spite of a 50% increase in business, this Department has paid out in adjusting claims only \$23.93. The only claim made on Thresher Belting amounted to \$1.50. And in this case the Belt was damaged in transit. Not one Thresher Belt was returned to us in 1911.

Do you want to give more thought to the choosing of your Thresher Belting? Write our nearest branch for Booklet

Goodyear Tire and Rubber Company, of Canada, Limited

HEAD OFFICE, TORONTO.

FACTORY, BOWMANVILLE, ONT.

Branches in Western Canada: **Winnipeg, Man.**—41 Princess Street. **Regina, Sask.**—2317-2319 South Railway Street.

Calgary, Alta.—1012 Second Street East.

Vancouver, B.C.—1213 Granville Street.

Victoria, B.C.—855 Fort Street.



RUMELY POWER-FARMING MACHINERY

Printed matter, beautifully illustrated, tells the story of Rumely Power-Farming Machinery. Tell us your needs. We are prepared to supply you with any of the machines listed in the coupon below.

Catalogs, Data Books, Broadsides, Circulars, Moving Picture and Color Cards

Rumely General Line Catalog gives the history of our Company and, in brief, describes our line.

Rumely Automatic Baler booklet describes the construction and merits of this hay, straw or alfalfa baler.

Rumely Engine Gang Plow Booklet tells about the many improvements found in our new plow, which leads in competition.

Rumely-Adams Corn Husker Booklet shows the advantages of owning your own husker and husking when you are ready.

Broadsides tell briefly about the Oil Pull, Gas Pull, Toe Hold, and other machines which bring you profit.

Advance-Gaar-Scott Line Catalog describes the threshing machinery known under these two famous names.

Oil Pull Tractor Data Book describes the kerosene-burning tractor which boomed our business; known as the "cheapest gas engine on earth."

Rumely-Watts Corn Sheller Data Book shows how this low cost sheller does the work of the high-priced machines.

Oil Turn Motor Booklet tells about the handy stationary or portable engines which operate on kerosene.

Moving Picture and Colored Post Cards for mailing to your friends, show the Oil Pull and other famous power-farming machines.

Rumely Clover Huller Booklet tells about the huller that saves all the clover or alfalfa seed.

Gas Pull Tractor; the handy, light-running tractor which does the work of six to sixteen horses fully described.

Rumely Toe Hold Cultivating Tractor Booklet describes the handy tractor that will go wherever a team of horses can be driven.

Rumely Rainbow Grain Grader Circular shows how you can get the best crops by sowing carefully selected seed.

Other literature; leaflets, circulars, pamphlets on any power-farming implement listed below is yours on request.

Write Us on Any Power-Farming Subject

Mail the Coupon Below

We Shall be Pleased to Send Our Literature

Rumely Products Co.

(INCORPORATED)

Power-Farming Machinery

La Porte

:::

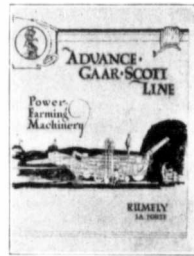
Indiana

CANADIAN BRANCHES:

Brandon, Man.
Calgary, Alta.
Saskatoon, Sask.
Edmonton, Alta.

Estevan, Sask.
Regina, Sask.
Yorkton, Sask.

Toronto, Ont.
Vancouver, B.C.
Winnipeg, Man.



CLIP ALONG THE DOTTED LINE

Fill Out This Coupon

carefully. Mark "X" in the square opposite the subject in which you are interested. We want to know you better in addition to the catalogs, circulars and post cards listed below, send for "Raising Wheat with a Tractor," "Oil instead of Oats," "Tiger Truths," and "Will Proven"—the first two booklets relating to the Oil Pull Tractor, "Tiger Truths" to Gaar-Scott machinery and "Will Proven" to Advance machinery.

Please send me

- Circulars
- Catalogs describing
- Post Cards

- Oil Pull Tractors
- Gas Pull Tractors
- Toe Hold Tractors
- Oil Turn Motors
- Rumely-Adams Engines
- Steam Engines
- Threshing Machinery
- Clover Hullers
- Engine Gang Plows
- Husker-Shredders
- Corn Huskers
- Corn Shellers
- Feed Mills
- Grain Graders
- Automatic Balers
- Saw Mills
- Engine Guides
- Oil or Water Tanks

I will need (name machines).....

When..... My farm contains..... acres.

My name is..... Post Office..... Province.....

MAGAZINE SECTION

WITH THOUGHTS LIKE THESE
ARE ALL OUR CARES BEGUILED.

Labor

A New Year Sonnet

"**W**ORK! which beads the brow, and tans the flesh,
Of lusty manhood, casting out its devils!
By whose weird art, transmuting poor men's evils,
Their bed seems down, their one dish ever fresh.
Ah me! For lack of it what ills in leash
Holds us. Its want the pale mechanic levels
To workhouse depths, while Master Spendthrift revels.
For want of work the fiends him soon inmesh!
Ah! beauteous tripping dame with bell-like skirts,
Intent on thy small scarlet-coated hound,
Are ragged way-side babes not lovesome too?
Untrained, their state reflects on thy deserts,
Or they grow noisome beggars to abound,
Or dreaded midnight robbers, breaking through."

—MADDOX BROWN



Girls' Cozy Corner

FOR THE MORE HOMELY GIRLS

Are your cheeks abrown with freckles, little girl?
Is your hair a horrid color, without curl?
Is your voice a low and rare one
Or the hoarser kind to scare one?
I've a hint to drop in kindness, if I may.

Live a life of pure uprightness, little girl,
Light the world with smiles of brightness, little girl;
Beauty of the face is fleeting,
Style and manner both are cheating;
Sowing love-'tis love you'll gather day by day.

Are your hands all red with working, little girl?
From the lye in soap suds lurking, little girl?

Are they just a trifle big?
Are the other girls more trig?
Let me whisper in your ear something true;

God has given us the rose, little girl,
But the green grass wider grows, little girl.
Roses quickly bloom and pass,
But we always need the grass,
And I love its fragrant growing, I love you.

Girls' Prize Letter

Perdue, Sask.

Dear Cousin Doris,—This is the first time I have come to visit the Cozy Corner. My father takes the Canadian Thresherman and Farmer. I like to read it very much. The girls write very interesting letters, but the boys' are rather slow.

I am fifteen years old, five feet, six inches tall, and not very slim. I have not gone to school since last February, on account of my mother being ill. I have kept house since then, and you may be sure I had a hard time, as I never before did that kind of work. I can make cake, and took first prize at Perdue fair for bread.

I am very sorry Alberta Moore hasn't any mamma. I guess what makes me feel so sorry for her is because I have a good mother. I think like, you, Cousin Doris, that God will bless Mrs. I. Morter for looking after her. Ethel must be glad that she has Alberta to play with.

We had a concert in our school on the 25th of October. It was a great success. There were dialogues, tableaux, drills, songs and recitations. Anybody who is going to have a concert and wants to know what our dialogues, drills and tableaux were like, I will gladly tell them.

I will close with a recipe for a layer cake: 2 eggs, 1 cupful sugar, and 1 cupful cream beaten well together, a pinch of salt, 1 teaspoonful vanilla, 2 teaspoonfuls baking powder, and as much flour as will make a nice batter. Bake in a moderately hot oven. This has been well tried, and is known to be good, as well as simple. If my letter escapes the W.P.B. I will write again and tell you how I make bread.

I must close now for this time, hoping I will get a prize and wishing you every success. I remain your cousin,—Vera M. Porter.

Macleod, Alta.
Dear Cousin Doris,—May I step into your Cozy Corner and exchange recipes and ideas with the cousins? Or am I too late to tell you all of my recipes? Believing that I am not, I will as—then if they like jelly roll, or if they have ever tried making it.

My recipe is as follows: 3 eggs, 4 cupful sugar beaten until white and creamy, 1/2 cupful hot water, 1/2 cupful of flour, 1 teaspoonful baking powder, flavor with lemon or vanilla. Spread the mixture evenly, not more than 1/2 an inch thick, in a large pan. Eight or twelve minutes is sufficient to bake. When turned out, spread with jam or jelly and rolled while hot, it will not crack or break.

I am very fond of riding and reading. Of the many books I have read my favorites are: "Thelma," "Ivanhoe," "Little Men," "Jo's Boys," "The Virginian" and "The Heart Line."

Hoping I will not escape notice, I remain, sincerely,—A Prairie Cousin."

Swallow,
Dear Cousin Doris,—I have just been reading the letters in the Cozy Corner, and also your request for letters on the subject each girl is most interested in.

I am interested in several things. One of them is cooking and another sewing. But first of all I want to join the cooks. I like to make candy, and one kind that I make seems to be a favorite with everybody so I will tell you about it if I may.

It is very simple and easy to make, the more so because it requires no cooking. First of all I rub three fourths of a lb. of icing sugar through a sieve then add a pinch of cream of tartar, six ounces of cocoanut, and sufficient fresh cream to form a very stiff paste. I leave this to stand for one hour, and while it is standing I will take up my fancy work and retire to the sewing circle.

Do not those of you who do fancy work delight to trace with your needle the delicate rose, the leaf or the daisy, and as the piece grows under your hand do you not become more and more interested? Thus let me pass a happy hour until some one looks at the clock and exclaims at the time it has grown, and I too suddenly remember my candy and return to it.

Now take the candy and turn on a board and knead with a few drops of coloring. Do not add too much coloring for they are daintier if you do not. When you think that it is kneaded enough, cut the cream in pieces and form in oblong balls. Roll these in cocoanut and put on sugared tins for twenty-four hours. This candy is called "Cocoanut Kisses."

This is not my first letter to the Cozy Corner. It is almost two years ago now since I wrote and was successful in getting a prize.

At that time a girl whose pen name was "Nancy" wished me to write to her. I wrote to Cousin Doris for her address; but I guess my letter was lost. So will Nancy please write direct to me if she sees this.

Yours lovingly,
Clara Henderson.
Age sixteen.

Reston, Man.

Dear Girls of the Cozy Corner,—This is my first letter to your club. I like reading your nice letters very much. We have taken the Canadian Thresherman and Farmer for a number of years. We all like it very much. I am going to school nearly every day now. I am

in grade four. I am three miles from school. Our school is called Hillview. There are about 21 go to it. Our teacher's name is Miss McDonald. We are going to have a garden at our school this year. Two are going to have a small one together. I am going to have mine with Lizzie Guthrie. I will close with some riddles.

Why is a pig in a parlor like a house on fire?

The quicker you get it out the better.

Why is the Prince of Wales like a cloudy day?

Because he is likely to reign
I will close wishing the club every success. From—Julia W. Fraser.

Halbrite, Sask.

Dear Cousin Doris,—This is my first letter in the Cozy Corner and if you will allow me I will come in for a chat. I go to the Cony school when I go. I like going in summer.

We have a nice teacher; her name is Miss Hilson. I have lived in Halbrite six years and like it very much. I came from Toronto six years ago and have lived in the West ever since. I was learning to skate in the winter, but did not succeed. I had an awful time getting them on my boots, for I never put them on before and it was hard work getting the screws in the leather.

Well, I think this is a long enough stay for the first time. I will stay longer next time. This letter hasn't much news in it, but I can't think of any more this time, so I will step out of this cozy corner for a while and let someone else in my place. With best wishes to the editor and club, I will close. I would like to see my letter in print and to receive a book. — Alberta Robinson.

Gooding, Sask.

Dear Cousin Doris,—This is my first letter I have written to the Girls' Cozy Corner. My father has taken the Canadian Farmer for nearly a year. I am 13 years old and never went to school for three years. I live on a homestead 35 miles from town. We keep the post office. We get the mail every Saturday and I always run for the Canadian Farmer paper. I have one sister and three brothers. For pets I have a pony. His name is Peter. My dog's name is Watch. How many of the members like riding on horseback. I do, for one. We have three horses and one colt. We lost one of our horses; he fell dead in the plow. We do not know what happened it. We have 12 head of cattle and 40 hens. We are getting a dozen of eggs a day. The wolves are bad around here; they took about 40 of our hens. My letter is getting rather long, so I will quit for this time. Wishing Cousin Doris and the club every success. I hope to see my letter in print. Your cousin,—Jennie Gooding.

New Richmond West, Quebec.

Dear Cousin Doris,—Please let me join your Girl's Cozy Corner. We have been taking the Canadian Thresherman and Farmer a year and we like it very much.

I go to school every day and live two miles from school, but we always get driven in the winter.

I like reading very much and I have read a great deal. The books I like the best

are: "The Bessie Books," "Black Beauty," "Mildred," and many others.

I have a pet called "Minnie." She can jump up on the door, look in at the glass, and mew till we go to let her in. She can also jump up, tap at the latch, force the door open, and come in.

It is very nice here in summer. We live on a farm and have lovely times, making hay. I often get on the load of hay, when they are bringing it into the barn.

I will close now, hoping to see my letter in print. Sincerely yours,—Alice Fair-service.

Clareholm, Alta.

Dear Cousin Doris,—Could your Cozy Corners crowd a little closer, and make room for another who has been a silent reader for a long time. My father has taken this paper a long time, and we all like it very much.

We have nine head of horses, sixteen head of cattle, five pigs, and about a hundred chickens. For pets I have a horse, two calves, a yearling, two cows, two cats, two dogs, and a bird. I go to school every day I can; I ride my horse to school which is five miles away. Our teacher is thinking of having a Christmas tree. I will send the song to any one who wants it.

A Merry Farmer's girl am I. I would like to correspond with any one, who is willing to write first. My address is with Cousin Doris. How is your little girl, Monona, and how old is she?

I will close. Wishing the Club every success, I am, your cousin,—Lucy Hart.

Miami, Manitoba.

Dear Cousin Doris and Members,—Here I come again into the Cozy Corner for a chat. I have not written for a long time. I did not see my last letter in print, so thought I would write and try my luck again.

We have had a snow storm. It started on Thanksgiving day, and ended today (the 29th). In some places the snow is over four feet deep.

Papa has a threshing machine. It is down at a neighbor's place. They were threshing when the storm came. This will stop them from threshing for a while, I guess. This is awful weather for threshing, isn't it?

I am going to tell you of some adventures I have had. We have a horse which we call Sam. One day my sister Bessie and I got on horse-back. We were going on splendidly, when Sam didn't like having two on his back. So he threw us both into a mud puddle, but we were not hurt. Bessie is afraid to get on horse-back now, though I have been on several times since. Another day this spring, my mother was sick in bed, and they wanted some one to go to town, which is three and a half miles away. I was told to go. I asked if my little sister Amy could go, and they said she could. We were coming home, and were just crossing a bridge near a railroad when we saw a train coming, the horse heard it and started to get up. We backed over the bridge and broke the buggy. The train stopped, and some men came to get the horse and buggy out. There was not much water in the creek, but plenty of mud. A man came up, who was going to Miami, and I asked if he would please phone to papa, and tell him to come after us.

In a little while a man came up that was going by our place, so I asked him if he would take us home. We were about half way there, when we met papa, so we

got in horse : ventur I an before My s Englis ature- You L try.' I an will ge hoping paper every : cousin.

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B Say, b Abot What's This Get up For You n The pl May The th May What No The Is b

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PATMORE NURSERY CO.

Patmore's Reliable Seeds, Trees, Shrubs and Plants

can be found growing in every district in Western Canada, and we gratefully acknowledge the many nice letters WE ARE CONSTANTLY RECEIVING from our customers. We know our Seeds and Products are the best for this Western climate, and our customers are proving this. We can buy seeds to sell at half the price we do; but we won't handle that sort; we want the best only.

READ THIS LETTER—A SAMPLE OF MANY MORE
 Gentlemen.—We had great success with your seeds last year. I intend to use them exclusively this year. From one-tenth of an acre we harvested 40 bushels of fine onions, and from three-quarters of an acre we harvested 400 bushels of carrots. The cabbages were splendid and weighed from 6 to 15 pounds each. From 1 1/2 acres we put in our cellars 5000 heads besides marketing several hundreds during the summer.
 (Signed)
 Saskatoon, Sask. ROBERT HAMILTON.

We make a Special Nursery Offer for this Spring:
FOR \$10.00 WE WILL SEND
 50 Currant and Gooseberry bearing bushes of best varieties.
 100 Raspberry Plants, best varieties.
 12 Plum and Fruit Trees, young and thrifty, 2 to 3 feet high.
 All of the above for \$10.00.

WHY NOT HAVE A GOOD FRUIT GARDEN?
 We have to offer this Spring:
 200,000 Maples, 6 to 10 feet.
 200,000 Poplars and Willows, 3 to 4 feet high.

Write to-day for Our Catalogue.

It is compiled jointly with Messrs. SUTTON & SONS (for whom we are Special Agents for Canada) and is a safe and profitable guide to Horticulture in the Canadian West, as we list and describe only such varieties as we have found reliable in our 25 Years of Practical, Steadily-Acquired Knowledge of Western Horticulture.

SASKATOON, SASK.

THE PATMORE NURSERY COMPANY

BRANDON, MAN.

RELIABLE SEEDS-TESTED FOR WESTERN CONDITIONS

You saw this advertisement in this magazine. Don't forget to say so when writing.

got in the buggy and returned for the horse and buggy. That was quite an adventure, wasn't it?

I am not going to school just now, but before I stopped I was in Grade seven. My studies were arithmetic, spelling, English history, Canadian history, literature—"Rob and His Friends," "As You Like It," "Poems of Love and Country," "Christmas Carol."

I am writing a long letter. The Editor will get tired publishing it, so I will close, hoping my letter will escape the waste paper basket, and wishing the Club every success, I am your very loving cousin,—Mary Corden.

the boat capsized and dumped us right into the water. You would have laughed had you seen the two sorry figures that crawled up the bank, for it was early spring, and the water was very cold.

Well, I must tell you about my garden. I have corn, beans, peas, sage, beets, carrots, onions and other things. Hoping this will escape the W.P.B. and wishing the C.B.C. every success, I remain,

Ed. Ferris, Harris, Saskatchewan.

Clanwilliam

Dear Cousin Doris—This is my first letter to the Boys' Camp. My fader just took the paper this year and I like it fine, and all the rest do like it too. I am very fond of reading the letters and I would like to be a member of the Camp. I have two miles to school. I am nine years old and am in the third class. I like best reading, writing, spelling and drawing. I like my teacher good. Well, as I do not know what else to tell you I will close with a story. The hen in the garden. Robert saw a hen in the garden, and she was scratching up the seeds which his fader had planted. So Robert cried out, "you must not do that, old hen!" Then he ran and drove her into the barnyard, and shut the door so she could not get out. The hen made a loud noise, for she did not like to leave scratching in the earth. She found there plenty of worms, and of these hens are fond.—Gordon Hanson.

After the Sand Storm

By M. Gauss

All trails across the plain had been buried by the sand storm. Here and there were spreading caeti; here and there in the starlight a yucca-plant stood up like a tree. A dead horse, with his broken leg doubled under him, lay where he had been put out of his pain a few hours before; and a short distance from the body, Joe Travis lay asleep on the ground.
 About one o'clock two men rode to the top of a hill near by, and scanned the plain in all directions. The yuccas hid the dead horse and the sleeping boy. The men rode on.
 As the sound of hoofs came to him, Joe turned over, and felt for a money-belt that was round his body.
 As it was impossible to find the way

home by starlight to Running Water ranch, he was compelled to wait for dawn. He thought of the time when he had come west, of his father's death, of the many months he had spent looking in vain for work. Then he remembered the day when he went to Running Water ranch; Decker, the cattleman, had liked him, and at once given him a job.

It was Decker's money that he carried. To make sure that it was safe, he felt for it once more; soon afterward he was again asleep.

He dreamed that he was herding Decker's cattle. The steers stood knee-deep in a mountain river. Farther upstream, Joe made a cup of his hands and started to drink. But when the water touched his swollen lips, he awoke. He had slept only a moment; the stars were unchanged. And the sky was very dark, for dawn was not far away.

Four days before, he had driven the bunch of cattle to a town, and sold them. Decker had told him to bring home the money; there was no bank near Running Water.

"It was crazy to ride across the plain with it," Joe said to himself. Then he began to think about the fellow who had helped drive the cattle. Joe was only a boy. Whether or not his assistant was honest he was never to know. But he had become distrustful of this man, and he had escaped from him one night, and with Decker's money, had started across the desert alone. At times during his long ride he had thought that some one not far away was watching him. So he had pushed on rapidly and cautiously. Once, to avoid being seen, he had hidden for hours in an arroyo.

He lay still until it began to grow light across the plain. Now, he thought, he could surely find his way. He believed that he had not wandered far in the storm of the day before, when his horse, with a scream of pain, had fallen with a broken leg.

He sat up, and although his swollen tongue made it hard for him to swallow, he managed to eat a piece of biscuit. Then, with the hope of seeing a trail, he set out to walk to the top of the hill.
 The yucca spike near his bed was heavy with cream-colored bells that sent out a heavy perfume. A desert horned lark flew up with a plaintive cry. By the presence of the bird, Joe knew he was probably not more than fifteen or twenty miles from some canyon where there was water.

The hill was farther away than it had seemed. When at last he climbed it, the sky was taking on a burnished look, as if

it were copper. His head ached; and with the glare, black specks began to dance before his eyes.

He scanned the plain. Far away in the southwest was a streak of blue. It might be merely an outcrop of slate on the desert, or it might be a cauyon. From a distance canyons with cedar growing in them, and with streams like the one that ran before Running Water ranch-house, appear deep indigo.

And then, winding in that direction, he saw what seemed a trail that was almost blotted out by sand. He set out to follow it.

But the way was soon blocked by an arroyo. The trail had been a false or "lost" one; in a sand-storm the wind makes many false trails.

The sun beat on Joe's head; he was almost blind. When he tried to look across ahead, everything that he saw had a ring either of red or purple round it. In that manner he thought he saw some one at a distance crossing the plain.

When he looked again, the figure had disappeared, and a large rock stood out against the sky. Hoping to find camps beyond the rock, he hurried toward it. As he came near it, he saw two horses standing in the slight shade that the boulder cast. Then he caught sight of two men, sitting near a fire on the farther side of an arroyo. He could smell their coffee. They had a pack-mule, with a large water-keg strapped to its back. The mere sight of the keg increased Joe's thirst, and he sprang forward; but when he reached the arroyo, he stopped.

A small cloud had passed in front of the sun, and he could see the campers distinctly. One was the man who had helped him drive Decker's cattle; the other whom Joe knew by sight—was a notorious "cattle-rustler."

Once more the boy put his hand on the money that was not his own. Then, since the men had not seen him, he dropped noiselessly into the arroyo, among the tumbleweeds.

For a few seconds it seemed to him that money or no money, he must have a drink from the keg. If the money had been his own, he would have given every dollar of it for a dipperful of water.

Then he thought of Decker, and he began to crawl away from the men, up the arroyo.

An hour later as he climbed out of the arroyo, he saw that he had put a low ridge between himself and the camp. He could not see even the smoke of the fire. Once more he set his face toward the blue streak

To be Continued next month

Canadian Boys' Camp

WHAT COUNTS.

By George Whitefield D'vys.

Say, boy, take heed, don't stop to talk
 About what you've in mind;
 Whatever you plan, keep to yourself,
 'Tis safer far you'll find.
 Get up and at it NOW, my boy,
 For always it is true
 The things you meant to do!
 The plans of which you stop to talk
 May make some hearer great;
 The thing that you intend to do
 May happen while you wait.
 What your achievement might have been
 No credit is to you,
 The only thing that counts, my boy,
 Is but the thing you do!

Boys Prize Letter

Harris, Sask.,

Dear Cousin Doris:—As I am somewhat of a bookworm, I thought I would write a letter to the C.B.C. in the hope of winning a book. I am going to tell you of an adventure which befell my brother and me, while having a boat ride on a creek about two miles from our home. We rowed about half a mile up the creek and back again, and were just on the point of landing, when



Womans' Department

Conducted by PEARL RICHMOND HAMILTON

A HOUSEHOLD FORUM FOR THE DISCUSSION OF EVERYTHING THAT PERTAINS TO THE HOME



A Mother's Prayer

By Cora A. Matson Dolson

To Thee, dear Lord, I bow in prayer;
Search me and make me spirit-whole,
That I prove worthy of this care—
The trust of an immortal soul.

I realize, dear Lord, that this
New burden, laid within my arms,
Came not alone that I might kiss
And prize these growing mortal charms,

But that my hand might help to lead
A soul to work on earth for Thee,
Further Thy cause in word and deed,
Through time and through eternity.

Remind me, Lord, lest I forget,
In raptured joy of this, my own,
That some dwarfed soul might face me yet,
In accusation by Thy throne—

That, through neglect of this, my trust,
Perfect and pure when sent to me,
My own soul might be bowed in dust,
And one hurt for eternity.

Backward, as well as forward, Lord,
My eyes would look, that they may read,
In thoughts from my own child-heart
poured,
One word of wisdom that I need.

Home Economics

As this is the last issue before the Annual Home Economics Convention to be held at the Manitoba Agricultural College, commencing on the afternoon of Feb. 4th, I want to thank very sincerely the women who have sent in their Home Economics reports.

These reports have helped many women not only in Manitoba, but in Saskatchewan and Alberta as well. It has been my privilege to visit four Societies—at Morris, Virden, Manitou and Carman. In these four Societies, I feel that friendships were created that will be life-long. I regret that I could not visit all of the Societies, but as I am a "Home-maker," too, I can not leave home very easily. But during this year I hope to visit other Societies.

There is a fine spirit of progressiveness, enthusiasm and patriotism, in this Home Economics work, for its promoters are men and women who regard the home-life as the most sacred, the most creative, the most influential and the most important force in the building of a prosperous and powerful nation.

The branches of the Home Economics Society that accomplish the best results and are the most progressive are the branches that work most in harmony with one another, recognizing at the same time the importance of loyalty to the staff of the Agricultural Society, whose advice is given after thorough study and experience, obtained from wide experience and carefully acquired knowledge.

The ambition of this Society is to make the farm and home more prosperous, more ideal, and more genuinely successful in every detail. Is not this honest patriotism? Does it not mean more loyalty to our great Empire, than bobbing up and down in obedience to set forms of flag-drilling?

Honest patriotism comes only from the heart, and if we would honor our flag

we must create clean hearts and good homes.

I like the Home Economics Society because its aim includes all that defines national prosperity. Strong men and pure women cannot come from weak homes.

While speaking on this subject, let me call the attention of the Home Economic women to the temperance policy of this magazine. If you search through the advertisements in The Canadian Thresherman and Farmer, you will find no liquor advertisements. This magazine turns down thousands of dollars every year, because its policy is to accept no liquor advertisements. During the Xmas sea-

MIAMI

A Progressive Society

The Editor of this department has been watching with a great deal of interest the progressive and patriotic spirit that pervades the Miami branch of the Home Economics Society.

Unfortunately, the August report did not reach me, but I feel that the other societies should know about this important meeting. The feature of the August meeting was a flower show. More than one hundred paid admission at the gate. There was a great variety of beautiful bouquets and flowers, and after all was over, the treasurer de-

Economics Society were fortunate in getting Miss Playfair, of Hartney, as their speaker. Local talent furnished music in the evening. Both afternoon and evening meetings were well attended.

The secretary in her report says: "Some outsiders who do not know much about us have been asking a lot of Society. What is it for? and why we questions about the Home Economics should belong to it? So our President prepared a very able paper on the subject which was published in the local paper."

I am sure that the Miami Society is doing splendid work, for their enthusiasm and practical programmes must promote better ideals for character building and true home-making, the two fundamental essentials necessary in the formation of a great nation. I want every woman to read the paper by Miss Seip, entitled "What is the Home Economics Society?" Miss Seip has answered very convincingly questions that outsiders ask. I am pleased to have the paper for publication in our department.—P. R. H.

Will all members please read this paper?—P. R. H.

What is the Home Economics Society?

By Miss Seip, of Miami

In this community, and possibly in other communities, there seems to be some prejudice against this society which can only be due to the fact that non-members are ignorant of the aims and objects of this organization. This institute of Home Economics, or, in other words, the Women's Agricultural Society, is an organization which permits the women of the community to meet with a common object in view: no class, church or national distinction being drawn. As was said at our August meeting, high and low, rich and poor, educated and uneducated, are welcome to come and enjoy the meetings.

The work done by the Home Economics Societies in most comprehensive; while the preparation of foods demands a share of study by the members, attention is given to other matters of interest to the home-maker. The handbook for the Women's Institutes or Home Economics Societies in Ontario gives the objects of this organization as follows: It shall be for the dissemination of knowledge relating to domestic economy, including household architecture, with special attention to home sanitation, a better understanding of the economic and hygienic value of foods, clothing and fuel, and a more scientific care and training of children with a view to raising the general standard of the health and morals of our people; or the carrying on of any line of work which has for its object the uplifting of the home, or the betterment of conditions surrounding community life. All organizations under the act shall be strictly non-partisan and non-sectarian in every phase of their work, and no society of this kind shall be operated in the interest of any party, church or society, but for the equal good of all citizens. The motto adopted by the organization conveys in a word its lofty objects—for home and country.

Is not this, then, a most necessary and worthy object?—the betterment of home life and the upbuilding of characters. In this great country, where influential men are bending their energies to nation building and to the general prosperity of the country, is it not fitting that the women in the home should bend their



"MOTHER"

Portrait of Madame Vige Le Brun and Child painted by herself.

son certain liquor hampers were turned down because we felt it would result in a great deal of harm, in the way of Intemperance.

In conclusion let me urge every Society to send delegates to the Home Economics Convention at the Manitoba Agricultural College, beginning on the afternoon of Feb. 4th; and let us make the year 1913, a year of unusual prosperity in Home Economics work. Wishing everyone of our readers a year, full of happiness, love and interest, I am sincerely,

Pearl Richmond Hamilton.

Notice: We want to make the Feb. issue a special number for grandmothers. Will my readers send in reminiscences of their grandmothers?

posited a nice sum of money in the bank.

At the October meeting one of the members brought a beautifully dressed chicken and explained fully and clearly how it was prepared. It was also decided to co-operate with the Agricultural Society and have the November meeting on the day of the Seed Fair and Poultry Show, and have special prizes for dressed poultry and butter. The prizes for dressed poultry were all won by members of the Home Economics Society, and also three of the four prizes offered for butter, both firsts being won by Home Economics entries. There were four speakers present from the Manitoba Agricultural College for the Farmers' Short Course. The Home

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LET
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MOONEY MAKES THE CRISPEST.

CREAMIEST BISCUIT

"LET MOONEY DO IT"

Thousands of people all over Western Canada are letting **MOONEY** make their biscuits.

They have found that **MOONEY'S BISCUITS** are just a little crisper, just a little creamier, just a little thinner, just a little more appetizing.

MOONEY'S BISCUITS are just good enough to take the place of the product of the home oven! Use

MOONEY'S PERFECTION SODA BISCUITS

Made in the big sanitary factory in Winnipeg.

The biscuit that's good for every meal of every day, In air tight, dust proof, damp proof packages or sealed tins,



energies to character building? The hope of the country is in the home, and those Home Economics Societies are for making women more efficient in the home. Women are realizing that they are not only the mothers of the race, but that they are the intellectual mothers of the race; and if their brains are not alert, keen and strong, they cannot hope that the brains of their children will be all that nature intended them to be. It has been said that the agricultural society has been of more benefit to the farming communities than any other organization that has been introduced. The Women's Institute of Home Economics Society should surpass it, as it has a wider scope and deals with a higher subject. By attending those meetings, new ideas and suggestions are received, and consequently there is more variety and interest in the home duties. Not many of us know so much that we cannot learn more. Whatever may be the plan we have already followed, there may be a better one; and we should not be slow to accept suggestions or to follow the example of a neighbor if, by so doing, we might lighten our labor and increase our pleasures. This society should be of immense educational value, as it teaches us to ask ourselves the question why we do this or that, and to look for better ways and means of accomplishing our work, instead of doing it in a haphazard way. It is making pleasure of work that was before a monotonous drudgery. Housekeeping, like everything else, is a pleasure or a drudgery, just according to the amount of brains and energy we put into the work. The Home Economics Society offers many advantages of developing our capabilities and gives the members a chance to tell others what experience has taught them. It gives the members a confidence in themselves in taking part in the discussions so that they may forget to be afraid of the sound of their own voice.

Those who prepare papers reap an additional benefit from the fact that they read more and have the information more deeply impressed on the mind. The comment has been made: "Why go to the expense of keeping up a Home Economics Society when we can read all about those things in our splendid journals and magazines?" We would



A Brilliant Canadian Lecturer

Mrs. Genevieve Lipssett-Skinner has been appointed by President Black to address the Home Economics societies in the towns of Manitoba. She is appointed as a representative of the Manitoba Agricultural College.

Mrs. Lipssett-Skinner is a clever woman who has been engaged in many activities. Early in 1912 she was appointed by the Minister of the Interior to lecture in Great Britain on "Opportunities for Women in Canada." The Minister of the Interior felt that if women could be interested in settling in Canada they would come over as a result of these lectures.

Mrs. Lipssett-Skinner travelled over rural England spending a great deal of time in Yorkshire, Lancashire, Staffordshire and Devonshire. She spoke in many of the big centers—in fact the largest audience that ever gathered in the famous Atheneum Hall of Manchester came to listen to her lecture on Canada and to see the pictures which proved the statements she made.

Then she travelled through rural districts in a huge motor caravan which was a nomadic exhibition of Canada's

fruits and grain—this caravan was halted and the display opened wherever a handful of people were accosted on the roads, while Mrs. Lipssett-Skinner explained the advantages of living in Canada. This caravan also drew up in the various county seats on market days occupying a conspicuous place on the market square, where Mrs. Skinner answered questions, handed out literature about various provinces and gave interviews.

London was her headquarters and while there she addressed some of the greatest organizations of journalists and writers who seemed eager to learn all they could about Canada.

On her return to Canada the leading Canadian dailies commended the Minister of the Interior for his forward step in immigration propaganda, declaring that a woman who combined a personal experience of pioneer life on a homestead, a school teacher in rural districts of Manitoba and who also taught foreign children in Winnipeg's north end knew what she was talking about.

Mrs. Lipssett-Skinner is a Social Service Worker—is Canadian organizer of the International Sunshine. She conducts the Sunshine Society of the Winnipeg Telegram and is an angel of mercy in many of Winnipeg's poor homes. She has associated with her many helpers but she herself does a large personal work among suffering women and children. During the Xmas season, through her management several thousand dollars are collected for Christmas boxes for Winnipeg's unfortunate poor and sick.

Mrs. Lipssett-Skinner as a journalist contributes to Toronto Saturday Night, The Canadian Courier and while in England she wrote "Impressions of the Canadian Woman in the Motherland," for several daily papers across Canada. Mrs. Skinner is an interesting woman of large experience and the Home Economics societies are fortunate in having the opportunity to hear Mrs. Skinner. She is a young woman full of enthusiasm, ambition and Western Canadian optimism.

answer by asking another question: "Why go to the expense of building churches, etc., when we can buy such splendid sermons and enjoy them without exerting ourselves to go outside our homes?" But, is it not the sweet spirit of communion among mankind, coupled with helpfulness: that is so great a power for good in a community? Some of the members are, I think, as much benefitted by the social side of those meetings as in the educational line. It is the only meeting which enables all the women to come together with a common interest and to become well acquainted. To women, more than men, there is a danger of becoming narrow, and we get narrow when we live to ourselves. An afternoon spent at those meetings is more profitable than an afternoon spent in visiting. At our church meetings we meet only those of our denomination, but here we become acquainted with others whom it is a benefit and pleasure to meet. Our interests are enlarged, our views broadened, and our lives made happier and brighter. We have been asked: "Why this name Home Economics instead of Women's Institute?" "Econ-om-ics, indeed," exclaimed one very energetic housekeeper, when asked to attend a meeting, "you need not learn me to save money. I cannot only do that now, but do it a lot better than some of you who stand up there and read papers." Now the word "Economics" does not stand for money-saving only, as any can see who consult their dictionary. Economics is defined as the science or right way of household management, and the consequence of scientific management in anything is a saving of strength, health and means. Perfection in any profession means study—study and practice; and a perfect system of housekeeping must be a gradual development. As members, we should endeavor to increase our membership that all may enjoy the many and varied benefits. We should increase our membership, not so much by personal canvass — though that is good—but by making our meetings so interesting and helpful that the women and girls will not want to stay away.

Those who know much should come and give others the benefit of their experience, as we all are willing to learn. We have no argument put forth why this organization should not meet with

continued success. Its aims are most liberal, its objects helpful and the subjects for discussion unlimited, and it conducts work of interest and benefit to all. There should be no doubt of its success. It should receive support and encouragement from every woman in the community. If, however, there is a woman in the community whose love of home and family, whose pride in her district and desire that it may be advanced as others is not sufficient to insure her attendance, when benefits to all these may be secured, I do not know that it is worth while to talk further to gain her assistance. But we feel sure that if the women of each community would take the trouble to consider something of this work they would be proud to belong to an organization whose object is the betterment of the home-life and the uplifting of the character of this great Dominion of ours.

**SWAN LAKE
Prompt Reports**

If a prize had been offered to the society that sent in most promptly their report every month during the year, the Swan Lake Society would have been the winner. I think it might be a good plan for this magazine to offer a prize of this kind another year. Mrs. Langridge has been an ideal secretary, as a correspondent; and is responsible to a great extent for creating through the province intense interest in the work of the Swan Lake Society. This society has accomplished splendid results, and I am sure Swan Lake is a more prosperous community because of the work of this very influential organization. I want to take this opportunity to thank Mrs. Langridge for her promptness and faithfulness in sending the reports every month.—P. R. H.

The November meeting of the Swan Lake Home Economics was held on Saturday, 23rd, and allowing for the unpleasantness of the weather, was well attended.

As the President, Mrs. Gordon, was absent at the S. S. Convention at Brandon, the chair was taken by Mrs. Downey, Vice President, who expressed her regret that someone else had not been chosen, but as the meeting progressed it was soon evident that the President's choice for a substitute had been a happy one. After the usual business, the Corresponding Secretary read a communication from Principal Black, asking that the annual meeting should be held in sufficient time to allow of the report being sent in before December 10th, so, after discussion, it was decided to hold this meeting on Saturday, December 7th, and all members are asked to attend on that date.

Notice was also given that all fees for the forthcoming year must be paid at the annual meeting, it being one of the rules of the Home Economics Societies that only those who have paid their fees shall be eligible for office or shall have the privilege of voting.

The subject of the programme, "Christmas Gifts," was then taken and Miss Alice Gordon showed an inexpensive and useful knife and fork case made of felt, and which could be used for storing cutlery and silver not in every day use; or which would be very useful for travellers when meals are required on boat or train. Mrs. Thom had brought a novel hair tidy made from a straw sleeve protector and trimmed with ribbon. Mrs. Hartwell, a "housewife" for needles and pins and which could be rolled up and slipped in the pocket; Miss Gordon, small workbags made of silk ribbon and carrying needles, pins and reels of cotton, also a hairpin holder of ribbon and fish net. Mrs. Rice brought a sachet case, the covering being made in woven ribbons in two shades and also kindly offered to show the method of making to any member who desired further information. Mrs. Gardner brought a hair tidy made of a fancy handkerchief; Mrs. Herbert a linen roll for protecting clean d'oylies and table centres so that they will not crush when put away in a drawer; and Mrs. Downey a walnut pincushion, a handkerchief case and a tie made of ribbon and artificial flowers.

After roll-call, Mrs. Downey heartily thanked all those who had contributed to the success of a very interesting afternoon. The National Anthem was then sung and lunch served.

The Annual Meeting of the Swan Lake Home Economics was held on Saturday, December 7th, only a small number being there on account of the inclement weather. The President, not being well enough to attend, the first Vice President, Mrs. Downey, took the chair. The election of officers for the forthcoming year occupied a very short time. Mrs. G. B. Gordon was re-elected President for the third succeeding year by acclamation. Mrs. Gordon has been so popular, and has proved herself so eminently fitted for the post of President, that the question of putting forward another name for the post she fills so worthily and with so much tact, was not even mooted. The election of the secretary was also carried by acclamation, it being felt that it would be difficult to find anyone to adequately replace Mrs. W. F. Hartwell, and Mrs. Langridge remains corresponding secretary. The three vice presidents are: Mesdames Downey, Gardner and Moffat, and the Board of Directors: Mesdames Herbert, Hodgson, Penniston, G. Couch, Blair and Moore. As Mr. Holland was unable to attend to read his promised paper on "Science in the Household," a general discussion followed on the programme for the next year, and it was suggested that, in order to get each member to contribute, four should be asked at each meeting to take the programme for the next month. This was agreed to, subject to the approval of the President, and Mesdames Gardner, Hartwell, Moffat and Langridge were selected for January, but the latter will drop out if Mr. Holland can attend. Lunch was then served.

**MINNEDOSA
A Splendid Programme**

The Minnedosa Home Economics Society, or "Women's Institute," as we hear the name is probably to be in the future, met in the Town Hall on October 24th at the usual hour. A most dainty and delicious tea was served, and then Mr. E. O. Denison, manager of the Union Bank, gave a very clear and interesting address on "Banking for Women," explaining many points that had been rather difficult to understand. A hearty vote of thanks was tendered to Mr. Denison, and then we proceeded with the regular business. A suggestion was made that the annual meeting, which will be in December, would be more interesting if the members of the Agricultural Society combined with Home Economics Society to hold an open meeting in the evening, and prepared a good programme. The meeting closed, as usual, with "God Save the King."

MORRIS

**Mrs. Mary Millwood, Oldest Member of
Manitoba Home Economics Society**

This department is honored this month in having the photograph of Mrs. Mary Millwood, of Morris. Mrs. Mill-



Mrs. Millwood
Oldest Member of "Home Economics"
in Manitoba

GILLETT'S PERFUMED LYE



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Takes
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More Bread
and Better Bread

You saw this advertisement in this magazine. Don't forget to say so when writing.

wood never misses a meeting of the Home Economics Society. It was, indeed, a privilege to meet this sweet-faced woman, so young in heart and rich in experience. She is a great inspiration to the Morris society for her splendid example of faithfulness and encouragement. Mrs. Millwood was born in the fertile centre of Warwickshire, England, where she spent the first part of her life. In 1852 she married Mr. Millwood. All of their children, except one, were born in England. She moved to Eastern Ontario in 1870, where she lived till 1881, when her family joined the rush to the great Northwest, where they lived on a homestead for about twenty years at Bay Water, North Dakota. When bereaved of her husband and children, she went to live with her youngest and only surviving child, Mrs. Albert Langton, and came West with them when they moved to Manitoba about eight years ago.

Mrs. Millwood has lived under four sovereigns. She can remember the bells tolling for the death of King William IV, in the evening and then ringing the merry peal next morning for the maid queen—Victoria. Mrs. Millwood is quite hale and hearty for her years, and takes an interest in all leading topics, and especially in the Home Economics Society of Morris.

BENITO

Home Comforts, by Mrs. E. H. Smith
Read at the Benito Society

The subject of "Home Comforts" is one of the most important subjects that could be brought before any home economics society. Since the making up of a home depends largely upon the wife, do you not think we should have an ideal in home-making as well as in anything else? The most successful

126 Chicks
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A 97% hatch! Mrs. Alma Shipp, Hale, Mo., did this with a Komon-Sense Incubator. Hundreds of others are doing likewise. So can you, because it's built right and heated right. It's durable and will last a lifetime with proper care. Think of it! This

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130 Egg Incubator \$7.50

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Satisfaction guaranteed or no sale. 130-chick Komon-Sense Brooder alone, \$4.00. Incubator and Brooder ordered together, \$8.00. orders direct or sent through Free Book Komon-Sense Incubator Co. Box 75, Eads, Mo.



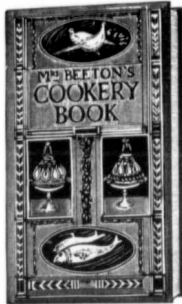
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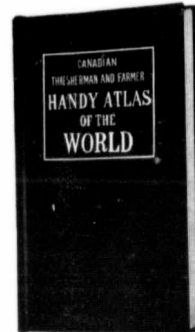
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Isn't it a Peach? Made from very fine clear briar and fitted with a black vulcanite mouthpiece. The bowl and mouthpiece are well proportioned and highly polished. The pipe smokes very easily and the bowl is of sufficient thickness to always keep cool. Sent, postpaid, with one-year subscription.

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**Pin a dollar bill to this
 coupon, and if you are
 not more than satisfied
 back goes your dollar**

E. H. Heath Co. Ltd.

Gentlemen:

Enclosed please find \$.....for which send me "The Canadian Thresherman & Farmer" for one year and.....
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Name.....

Town..... Province.....

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Be sure to write Name and Address plainly.

farmer, artisan or professional man is the one who has an ideal and who aims to attain to it in so far as his means will allow.

The young couple starting out in life should have an ideal in regard to their home. I do not mean that they should desire an ideal home to commence in, except in as far as their means will allow. But while many may not aim to have the ideal home, surely it is the ambition of all to have a comfortable home, and that is really the subject of this paper. Do you not think the most essential home comfort is harmony among the members? How can a home be comfortable without it? No matter what conveniences and furnishings it contains, if discord be there, true comfort is lacking. The home was instituted by God himself, and it is the most important place in any nation. The destiny, morally and spiritually, is fixed by the home.

If men or women or, better still, if boys and girls sent out from our homes have not received the education, which only the home can give, and will be their fate and also the fate of the nation. Let the angels of love, joy and peace reign, and there will be no strife and no discord; then it will be truly said, "Be it ever so humble there is no place like home." But even though there be that disposition to agreeableness, how much easier it is to be agreeable when one has the necessary conveniences, things to work with and home comforts. It should, therefore, be our aim to get as many of these as possible, but wherein we lack let us do the best with what is at hand; study how to get the most out of them. But as the paper on home conveniences has treated on these I need not enlarge on them here.

What about the individual members of a home? Are not each and every one of these home comforts? Therefore, from the oldest to the youngest the interests of each must be kindly considered. And who is to do this? The parents at the head must be the example. If the father and mother take an interest in each other's work, trials, etc., there is no doubt but the other members of that home will cultivate kindly consideration for each other. We cannot expect every member of a home to find enjoyment in the same thing. No two dispositions are alike; each has his likes and dislikes. No two tastes are exactly alike, so another important home comfort is attractiveness; as far as possible, let each one work out their own tastes. For example, those of a literary turn of mind should be provided with books, magazines, papers, etc., and to some extent these are within reach of all. Another may be artistic. This member will make home comforts for herself, adding attractiveness, good taste in decorations and tidiness. Cleanliness is another very essential subject to be considered. What is more restful to the tired husband or father than to know a clean, cheerful home awaits him? In this he must do his part. The subject of cleanliness has a wide scope. No matter how sacrificing or hard-working the wife or mother may be to keep the home clean, sanitary and comfortable, this home will lose one of its comforts unless the man is considerate and clean regarding the language used by himself or brought into his home by his associates. To sum up, home comforts should be of such a nature that the members of that home will find it so pleasant and attractive that there will be no difficulty in keeping them there.

Conveniences of a Modern Home,

by Mrs. J. T. Douglas

Read at the Benito Society

Having been requested to write a paper on the above subject, I will begin with the upstairs; I might say that a bath, or wash-room with washstands where all the family can wash and do away with washstands in each bedroom saves a great deal of work. A clothes hamper, with lid on, for soiled clothes (bedding and towels) may be kept in the bath room; and a box with lid and covered with art sateen or chintz and upholstered for a window seat to hold dresses and blouses is very handy. This may be kept in the bedroom. Also a low chair, a common kitchen chair, cut off about four inches and enamelled and cushioned, is also very

convenient for a bedroom. A small linen closet with lots of shelves is also very handy.

Then for the downstairs, I think the living or sitting-room is a matter of taste and money. In the dining-room I might mention a small table to be used as a dinner wagon, to hold water pitcher, glasses and dishes to be used for dessert or second courses. This is a great saving on one at meal time, as you can have everything handy. Now I will come to the kitchen, where we do most work. I might suggest a kitchen cabinet where everything for baking is kept. A sink with hard and soft water pumps, also a sink strainer. The sink stand may be built with shelf inside to hold granite-ware and pans where there is not a pantry. Where there is not a kitchen cabinet, I would suggest a shelf above the table where all small articles can be kept, such as salt and pepper bottles, vinegar bottles, tea and coffee cans, small sugar bowl, also a small kitchen clock and lamps. Have hooks under the shelf for meat fork, bread knife and large spoon, etc.; also a magazine with cord run through to hang up, which you can tear a leaf off to put under black pots if needed on the table, thus saving black marks on the oil-cloth. A small oil stove is a wonderfully convenient article in the kitchen to heat water in a hurry where fires would have to be kindled. A high stool to use at the table, when one can sit at her work, brings you on a level with the table.

The laundry room, if you have a separate room, saves the kitchen. You may have a shelf here, too, to hold soap, starch blueing, etc., also a clothes pin bag and basket. A small galvanized iron tank is very handy here.

In the cellar with furnace, bins for vegetables, shelves for fruit and place for fuel.

Now last, but not least, a well-trained husband to carry in wood and water.

Mothers' Corner

MOTHERHOOD

By Rose Henderson

Something was gone of her youth's fresh sweetness,

The roses had paled in her fair young face,

But a grave new look of divine completeness

Had filled their place.

And in the eyes that were dark and tender,

Trembled a light that was dearer far

Than the glad wild gleam of her youthful splendor,

Or any star.

For out of the great world's boundless treasure,

Out of the things that men call good,

Her heart had gathered the fullest measure

Of womanhood.

THE NEED OF NURSES

Every month pathetic letters come to me from women pleading for a system of establishing nurse; throughout the West. Children are left motherless and women are made life-time sufferers because they do not have the medical attention they need.

Splendid families in the Old Country would settle here if they were assured of medical help when needed, but many men will not bring their wives to this country for this very reason. Furthermore, a young woman who lately returned from the West said this was the very reason she refused to marry a home-steader. There is a crying need for nurses. Women in many places cannot persuade their neighbors to help them. This morning I clipped the following from the Free Press:

Duchess Transfers Victorian Fund

Ottawa, Dec. 26.—At a special meeting of the board of governors of the Victorian Order of Nurses, Miss Pelly, lady-in-waiting, acting for Her Royal Highness, the Duchess of Connaught, announced that the special fund which Her Royal Highness has been raising to enable the board to extend its activities, had grown

MID-SEASON BARGAINS OF QUALITY FURS



Our early season fur sale is all the more a genuine bargain offering in the fact that the goods are still in season and can be worn for several months before being summer-stored.

These substantial discounts are made (on highest quality perfect goods only) so that we may effect a complete clearance and start the new season with entirely fresh up-to-date garments.

Ladies' Persian Lamb Coats

Fine selected skins, 50 inches long.

Reg. \$450

For \$337.50

Ladies' Muskrat Coats

50 and 52 inches long. Reg. \$90

For \$72

Ladies' Hudson Seal Sets

Stole or large Throwover, with reverse stripes and large oval Muff with shirred silk ends and lining.

Reg. \$70

For \$56

Isabella Fox Sets

Two skin shaped Stole, trimmed heads and tails, and large Princess Muff to match. Reg. \$85

For \$68

Men's Hair Beaver Coats

Special \$204

Men's Raccoon Coats

Special \$60

Men's Muskrat Lined Coats

Black beaver cloth shells, otter or Persian lamb collars.

Special \$100

Men's Chamois Lined Coats

Carr's melton cloth shells, satin or twilled silk lining, chamois interlined to bottom.

Special \$80

Men's Genuine Buffalo Coats

One only

Special \$100

SPECIAL Lines in Men's Fur Caps Collars and Gauntlets



Write for Illustrated Catalogue

297-9 Portage Ave. WINNIPEG

You saw this advertisement in this magazine. Don't forget to say so when writing.

AFTER ALL THERE IS NO BETTER TEST

Of An Article Than Popularity. Ask Your Friends What They Think Of



Then buy a packet, and if it does not please you your grocer has authority to refund your money.

to \$220,000. This amount was formally handed over to the executive by Miss Pelly. The board has not yet reached a decision as to the best means of extending the work, but has several proposals under consideration.

Would it not be a good plan for our readers to write to Miss Pelly of the Victorian Order of Nurses at Ottawa, and make plain the need of an organized system of nursing in these isolated places? Let our readers who know of cases where death and suffering have resulted from lack of medical assistance, write to her explaining these cases.

This department has worked hard to rouse public sympathy to this great need.

Our boys and girls who grow into men and women and our mothers are Canada's greatest assets.

A LETTER WORTH READING

The following letter from a Manitoba woman contains ideas for serious consideration:

"You see I am taking advantage of your kind invitation to write if I had an idea. It is not an idea but the more I think of the Memorial, the more I hope the government will not put hundreds—perhaps thousands of dollars into a marble monument. Do not let them do that! It may be pleasant to the weary toiling pioneer or homesteader's wife to think of it, but oh, my! they want and need something to help them in their daily toil or when special sickness comes. Of course they could not set up more than one monument, and that would not be any practical help to the pioneers or their children,—just the pleasing thought that their services were appreciated by the government.

Would it not be possible to extend the Victorian order of nurses, or establish a maternity class of nurses who could take charge of cases where a doctor could not be had. Then these could be placed in all the large towns or villages along the railroads, with the positive understanding that they go out to the needy ones who could not perhaps, pay the half of what they usually charge. I tell you it's an expensive affair to get any medical skill, or trained nursing now-a-days, and our own population will not increase under existing circumstances.

It would be better to help take care of our own women and children who are here than spend so much on objectionable immigrants.

A case came under my notice last summer, where a very worthy couple from England were keeping house and working for a farmer near here. They expected a little one and she was to go to town as the only nurse was engaged and could not go to the woman. All told, it would have cost them sixty dollars, but she was taken care of by three kind neighbors.

I read tonight, where the government is to build houses for ranchers who are to look after the new young and second growth of spruce and poplar trees. This is very valuable to the country no doubt, but not more so than the lives of the mothers of today and the children, who will so soon take our places in all the callings of Canadian life. I read also a piece on district nursing, which I think comes nearest to filling the want or need that I have seen. It is not a nurse who requires someone to wait on her that is needed, but one with the qualities that will help in the home.

I am sorry that I cannot word this better; but the poor tired souls need more help, than we could glean from a marble shaft even if it does point heavenward."

WHAT THE HEALTH CONGRESS HAD TO SAY ABOUT BABIES

Laura Crozer

One of the conspicuous exhibits at the recent Health Congress in Washington where 450 doctors and scientists from thirty countries met to compare notes, was a light which flashed up at intervals and then died down. Beneath it was this card:

Watch the light flash!
At every flash
A BABY DIES
Somewhere in the Civilized World.
One every 10 seconds
360 every hour
8,640 every day
3,053,600 every year.
ONE-HALF OF THIS LOSS
Is preventable

All the rest of the "baby exhibit" was occupied in explaining this statement. "Where the white horse goes oftenest, there you will find the weakest spot in your municipal housekeeping," it warns the cities. But there are certain foes that menace babies everywhere.

The strongest of these is the summer digestive trouble due principally to bottle feeding. Six bottle-fed babies die of digestive trouble, to one breast-fed baby. Even when the milk can be so modified as to suit the baby, there is always the danger of overfeeding. The mother's supply of milk regulates itself according to the demand of the baby, and its composition actually changes in warm and cold weather. It is very nearly sterile. Contagious diseases are responsible for only a small number of the deaths of breast-fed babies because the mother's milk contains protective substances which render the child immune. All the older children may take the disease, but the baby stands a good chance of escaping—if he is breast-fed.

His second enemy is debility—he may be too weak to live. He may have been born before his proper time—two per cent of all babies are. He may be too weak because his mother was too young, or because she was overworked or underfed. These causes too are considered largely preventable. The law should forbid the marriage of women under eighteen, for this very reason. And the cities are beginning to take care of the mother before the baby comes.

Boston especially now enrolls all expectant mothers, a nurse visiting such as need care or instruction about once in ten days. If they need medical treatment she sees that they are sent to a hospital or that a doctor is called in. She gives them instruction in the general Art of Motherhood, teaching them how to care for themselves and for the baby after it arrives. She sees also that they do not work too hard and that they have proper food. The visits are continued until the baby is a month old, with the result that the average weight at birth has been raised from below seven pounds to seven pound-eight and one-half ounces and the proportion of still-births has been reduced from five per hundred to less than three—that is, it has been practically cut in half.

The mothers are encouraged to pay for the City's care when they are able, and as the cost of caring for and instructing a mother amounts only to about \$2.61, the work is practically self-supporting. One nurse can look after from eight to one hundred expectant mothers at the same time, provided they are in the same neighborhood. Other cities are taking up the work with varying degrees of thoroughness.

The baby's third deadly enemy, pneumonia, operates in winter, taking the place, of the summer digestive troubles. Kissing declares the Congress, is one of the means by which the disease is spread, for the germs often lurk in the mouths of healthy persons. The mother who does not wish to see her baby strangle, will avoid kissing him on the mouth herself and will absolutely forbid other people to do so. Children are commonly allowed to kiss one another and even this practice is condemned. Incidentally one is reminded of the hundreds of French babies playing in the parks who never dream of kissing anyone on the mouth but salute both cheeks instead. The habit is never outgrown, for even two men will, if they are related, greet each other in this way.

Ill-ventilated rooms are responsible for almost all the other deaths from pneumonia. City babies are not the only sufferers from this cause. The farmer is reminded in a big placard that he knows that his little pigs, if they are to survive must have sunlight and fresh air. But he sometimes lets his babies stay in the close air of the farmhouse through long stretches of winter weather because the roads are impassable for the baby-carriage, and it is too much trouble to "hitch up."

The Convention adds a list of don'ts for Mothers.

Don't taste the milk from the baby's bottle. To do so may convey disease.

Don't wash the baby's face with a handkerchief wet in the mouth. It is dangerous for the child.

Don't take the child into crowded places. The air in such places being much breathed, is liable to be unwholesome.

Don't give the baby a bite from food which you have yourself bitten into. Infection may be the consequence.

Don't allow the baby to be exposed to



Pretty Birthday Or Anniversary Gifts of Jewellery Or Silverware

can be most pleasantly and satisfactorily chosen by you from the selection shown in our Catalogue.

Grace in design, fineness of quality and reasonable price are the striking features of the articles illustrated in this handsome book, which will be sent to you, free of charge, upon receipt of your request.

D. R. DINGWALL LIMITED
JEWELLERS WINNIPEG

You saw this advertisement in this magazine. Don't forget to say so when writing.



Mason & Risch Pianos

"From Factory to Home"

17 Western Branch Stores

If you contemplate purchasing a Piano, remember that in Piano making there are many opportunities for the substitution of inferior materials, many ways that high-grade construction may be imitated at much less cost.

A close inspection of a Mason & Risch Piano will remodel your ideas of Piano perfection, for the Mason & Risch name on a Piano means: A Piano as good as is humanly possible to produce. The more rigidly you compare the Mason & Risch Piano with other makes, the more convinced you will be of its prestige and dominance in the musical world.

Remember we stand between you and high prices for inferior instruments. Investigate our "Factory-to-Home" selling plan before buying.

Mason & Risch Limited

Factory Branch:

272 Portage Ave., Winnipeg

You saw this advertisement in this magazine. Don't forget to say so when writing.

flies and dust. Both are common carriers of disease germs.

A much enlarged picture of a sick-looking baby had a whole catalog of explanations as to what was the matter with the child.

It is fed or taken up whenever it cries.
It is fed too much.
It gets a taste of whatever the family has at the table.
It needs a daily bath.
It is not kept dry or clean.
It is taken to moving-picture shows and other over-crowded places.
It is bounced up and down.
It is teased and made to "show off" for visitors.

It is kept up too late.
It sleeps in a hot room with the windows closed.

The cities are therefore urged by the Convention to

Prevent the marriage of the unfit.
Educate the people to be parents.
Care for expectant mothers.

Control infectious disease. Contagious diseases are already under control.

Inspect foals especially milk.
Safeguard the health of women engaged in industry.

Provide parks for mothers and children.

The progress of the baby as a school-child is then traced. It comes under medical inspection. If it has been allowed a "pacifier" it probably has adenoids which must be removed by an operation. If it has been allowed to suck its finger in baby-hood the dental arch may be deformed, and this must be straightened so that the teeth may meet properly and digestion go on as it should. If the baby has always breathed impure air it may have developed tuberculosis and is sent to an open-air school.

Even the country school has an exhibit of its own. This is the old-fashioned airtight stove, with its poisonous efflux of gases. The stove is now provided with a jacket. The warmed air rises and spreads over the top of the room while the cool air falls and is sucked out through a pipe provided for that purpose. The windows are supplemented by a sky-light, to prevent eye-strain. Proper and improper seats are also illustrated, the recommended seats being movable desks and chairs which may be piled up to scrub the floors, and to leave them free for the social life of the neighborhood.

The Convention did not consist simply of these exhibits, of course. Its members read many papers, based on careful experiments. Some of the discoveries will be of interest to mothers. Drs John Anderson and Joseph Goldberger, of the United States Public Health Service, found that the germs of measles were carried by sneezing, instead of by skin scales as had always been supposed.

Dr. M. J. Rosenau of Harvard University announced his discovery that infantile paralysis was carried through the bite of the ordinary fly. Dr. A. J. Peterson of Sweden had found that infantile paralysis can be transmitted from person to person through the secretions of the nose.

Dr. Jacques Bertillon of Paris had found by statistics that farmers are the most healthy class of people and liquor dealers the most sickly. Edward Burrell Phelps stated that infant mortality throughout the world is on the decrease despite increased population and birth-rate. Dr. Charles Gilmore Morley of New York stated that heredity has nothing to do with the character of the child. It is the child's environment which is the determining factor in character building. Bleeker Van Wageningen of New York declared that ten per cent of the entire population of the United States are inherently defective, and unfit to become parents. Dr. W. G. Ebersole of Cleveland stated that ninety-seven per cent of all school children have diseased or defective mouths, and that decay of the teeth is the most prevalent disease known to modern civilization.

RECIPES

Pumpkin Custard

Line a square tin with pastry. Mix together one and three-quarter cupsful of steamed and strained pumpkin with two-thirds cupful of sugar, two cupsful of cream or milk, a quarter of a teaspoonful of salt, two eggs well beaten, half a teaspoonful of powdered ginger, quarter of a teaspoonful of grated nutmeg and one teaspoonful of vanilla extract.

Pour into the prepared tin. Bake for half an hour in a moderate oven. When cold, sprinkle over with sugar. Cut into neat pieces and serve.

Squash can be used in the same way and makes a delicious custard pie.

Lady Cake

From time immemorial lady cake has had a place on the holiday table. To get the best results, the almonds should be pounded to a paste with rose water, and while that process means a little extra labor, it is amply worth while. For a cake of generous size, allow three ounces of shelled sweet almonds, one ounce of shelled bitter almonds, half a gill of rose water, half pound of butter, three-quarters of a pound of sugar, three-quarters of a pound of flour, whites of eggs to make half a pint, and half a gill of rich cream. Blanch the almonds, and pound them to a paste with the rose water, putting only two almonds and a few drops of water in at first, adding little by little. When the paste is smooth, rub the butter and sugar to a cream, then stir in the almond paste and beat very hard until smooth. Sift the flour and add it and the whites beaten stiff, alternately, a little at a time. Stir in the cream and beat vigorously until perfectly light. Pour into shallow pans lined with buttered paper and bake in a moderate oven for one hour or more, according to the thickness. Spread paraffine paper over the top, and let cool gradually.

For the icing, put the whites of two fresh eggs on ice until very cold; then beat until they begin to froth, but not to become white; then sift in gradually half a pound of powdered sugar, beating steadily from the bottom of the dish with each sweep of the egg whip. Continue beating until the icing is snow white. Add a teaspoonful of lemon juice and again whip until the icing is stiff enough to stand alone. Spread over the cake with a broad, flat blade of a knife that has been dipped in ice water. Mark off into half-inch slices while the icing is still soft.

Harlequin Cake

To make this novel as well as delicious cake, rub one pound of sugar into three-quarters of a pound of butter until a cream is formed; then add two teaspoonfuls of vanilla extract and four whole eggs beaten to a cream. Add one pint of milk and one and one-half pounds of sifted flour; lastly, a generous teaspoonful of baking powder. Separate into two equal quantities and pour one-half in jelly cake tins and bake. To the other half add two teaspoonfuls of molasses, half a pound of raisins, seeded and chopped, half a pound of well cleaned currants, two teaspoonfuls of ground cinnamon, one teaspoonful of cloves, and one of allspice, half a nutmeg, grated. Dust the fruit with flour before adding to the batter, and then pour into jelly cake pans of the same size as used for the white cake, and bake.

Put a layer of the dark cake on a flat plate and spread with fruit jelly. Place a white layer on the top of the jelly and spread with jelly of a different flavor. Add a second layer of dark cake, more jelly, and again light cake. Then dust the top with powdered sugar. Currant and grape jelly are excellent used in this way.

White Fruit Cake

Rub half a pound of butter and one pound of powdered sugar to a cream. Then add one cupful of milk and the whites of six eggs beaten until stiff. Stir in three-quarters of a pound of flour sifted with two teaspoonfuls of baking powder, and beat until light. Put one pound of seeded and chopped raisins in a bowl, add half a pound of chopped figs, half a pound of chopped dates, half a pound of blanched, chopped almonds, and a quarter of a pound of citron cut into bits. Dust with flour and stir into the cake batter. Pour into pans lined with buttered paper and bake in a moderate oven.

For the icing, boil a cup of sugar with half a gill of water until it spins a thread. Then pour slowly into the white of one egg which has been whipped until stiff. Beat regularly and evenly until cold. Then stir in a quarter of a pound of almonds which have been blanched and chopped, two ounces of seeded raisins that have been soaked in hot water until well swollen, and two ounces of finely chopped citron.

Marshmallow Cake

Beat two cupfuls of sifted sugar and one cupful of butter until creamy. Add three well-beaten eggs, one cupful of milk four cupfuls of sifted flour, one and a half teaspoonfuls of baking soda and the strained juice of two lemons. Divide into three buttered and floured layer cake tins and

Miss Canada
Always Buys
Royal Household Flour

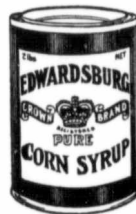
She has learned that Royal Household Flour is to ordinary flours what cream is to skim milk.

She has used other kinds of flour, but has found that Royal Household is rich in the highest quality of **gluten**, giving the loaf a thin, crisp crust and within a creamy whiteness with a sweet nutty flavor.

Ask for Ogilvie's Royal Household
It Always Gives Satisfaction

Ogilvie Flour Mills Co., Ltd.
Winnipeg - Fort William - Montreal

Lend Variety to the Daily Menu
And add to the enjoyment of home cooking by using



Crown Brand
Corn Syrup

The purest and most delicious table syrup obtainable.

Crown Brand—clear as strained honey—gives a delightful flavor to dumplings, puddings, pastry, etc., and is especially desirable for serving with Buckwheat and Griddle Cakes, Cookies and Biscuits.

It is a most nourishing food—splendid for children, because it is so easily digested.

Next Time Try Crown Brand—Your Grocer Has It

The Canada Starch Co. Limited

Manufacturers of **EDWARDSBURG** BRANDS

Montreal Cardinal Toronto Brantford Vancouver

bake in a moderate oven. Mix together one rounding tablespoonful of corn-starch, one tablespoonful of butter, two table-spoonfuls of flour and half a cupful of milk. Heat one cupful of milk and carefully add the flour mixture and half a cupful of sugar. Stir till smooth and cook for five minutes, stirring all the time. Remove from the stove, cool and add half a pound of marshmallows (a few at a time) and a teaspoonful of vanilla extract. Beat lightly until partially melted and cool before spreading on cake. Decorate with white frosting and marshmallows.

Springerle

This is a little cake known to every German child, and without it no Christmas would be complete. The ingredients required are one pound of powdered sugar, four eggs, one grated lemon peel and one pound of flour.

Beat the eggs and sugar together until as light as possible. Add grated lemon peel and the flour (sifted). Mix all together and roll out thin—not more than one-eighth inch thick. Have small, square wooden forms in designs of birds, etc. These forms may be secured at any department store. Cut the dough into squares. Dust the forms with flour and put the dough squares into them to permit the design in the square to become stamped on the cakes. Remove carefully from forms and lay the cakes on a clean cloth on the table for twelve hours to dry. Then put in buttered tins, which have been strewn with aniseed. Bake in moderate oven until the color of a soda cracker.

The Spice Cabinet

Lots of people never cast their bread on the waters until it gets so stale that dogs won't eat it.

An Old, Old Practice

A little fellow who had just felt the hard side of a slipper, turned to his mother for consolation.

"Mother," he asked, "did grandpa thrash father when he was a little boy?"

"Yes," answered his mother, impressively.

"And did his father thrash him when he was little?"

"Yes."

"And did his father thrash him?"

"Yes."

A pause.

"Well, who started this thing anyway?"—Sel.

"Beg pardon, sir," said the butler, "but I'm goin' to leave next week."

"Don't I pay you enough?" queried Mr. Neurich.

"Oh, yes, sir," answered the butler, "I have nothing to complain of on that score, and you are all right yourself, but I can't get along with your wife."

"How's that?" asked Neurich.

"Why, you see, sir," explained the other, "she doesn't seem to realize that I can pack up my grip and get out at any time, so she just bosses me around as if I was you, sir."

The Fullness of Life

Extract from a young lady's letter from Venice:

"Last night I lay in a gondola in the Grand Canal, drinking it all in, and life never seemed so full before."—Sel.

Value Beneath the Surface

A young man whose business acumen marks him as a future millionaire is celebrated in Puck:

"How much are these puppies, little boy?"

"All a quarter 'cept that one, and he's thirty-five cents. He swallowed a dime yesterday!"

Quick Thinking

An instance of that valuable quality, presence of mind, comes from South Africa by way of the Belfast News:

A German shoemaker left the gas turned on in his shop one night, and upon arriving in the morning struck a match to light it. There was a terrific explosion, and the shoemaker was blown out through the door, almost to the middle of the street.

A passer-by rushed to his assistance, and after helping him to rise, inquired if he was injured. The little German gazed in at his place of business, which was now

burning quite briskly, and said, "No, I ain't hurt. But I got out shust in time, eh?"

Doctor Johnson and his Dinner

Doctor Johnson, who was a lover of good cookery, used to assert that whenever a dinner was ill-got it was because of poverty, avarice or stupidity. One day he was eloquent on this subject, when his hostess (Mrs. Thrale) asked him "if he ever huffed his wife about his dinner."

"So often," he replied, "that at last she called to me, and said:

"Nay, hold, Mr. Johnson! Do not make a farce of thanking God for a dinner which in a few minutes you will protest is not eatable."

Crippled

By John Troiland

Alas! that man has lost a leg,
Yet with a radiant face,
He walks complaisant on his peg,
With compensating grace.

But there goes one across the way
Who needs compassion much;
He lost his faith in heaven, one day—
For him there is no crutch!

KODAK CALENDAR OF CANADA

Mrs. Florence Gratiot Bale has compiled a Canadian Calendar that contains fourteen illustrations of Canadian views

and quotations from our Canadian writers as well as helpful thoughts from other writers. It is a very attractive Calendar and is distinctively Canadian. The price is reasonable—only fifty cents.

His Hope for Revenge

Judge (to barber sentenced to death)—If you have a last request, the court will be glad to grant it.

Barber—I should like to shave the prosecuting attorney.



Mr. Edison's Pet and Hobby

He realizes the wonderful value of his phonograph as a center of home ties and as a maker of happy homes. And for this reason he works for years striving to produce the most perfect phonograph. At last he has produced this new model, and his friends have induced him to take the first vacation he has had in over a quarter of a century. Just think of it: over twenty-five years of unremitting work on many inventions—then his pet and hobby perfected—then a vacation.

Wonderful NEW Edison Shipped FREE

Write today for our new Edison catalog that tells you all about the wonderful new model Edison with Mr. Edison's new Model R Reproducer and the new parlor grand equipment. With this catalog we also send full explanation of our free shipment offer.

Mr. Edison Says
"I want to see a phonograph in every home."

The Offer

We will send you the new model Edison Phonograph and your choice of over a thousand records on an absolutely free loan. We want you to have all the waltzes, two-steps, vaudevilles, minstrels, grand operas, also the sacred music, etc., etc., by the world's greatest artists. Entertain your family and your friends. Give plays and concerts right in your own parlor. Hear the songs, solos, duets and quartettes, the pealing organs, the brass bands, the symphony orchestras, the choirs of Europe's great cathedrals, the piano and violin concerts, virtuoso—all these we want you to hear free as reproduced on the new Edison. Then, when you are through with the outfit you may send it back to us.

Read Free Shipment
offer on the first lot of the new style Edison Phonographs; these new Phonographs to be shipped FREE on this special offer NOW.

The Reason

Why should we make such an ultra-liberal offer? Why should we go to all this expense and trouble just so you can have all these free concerts? Well, we'll tell you: we are tremendously proud of this magnificent new instrument. When you get it in your town we know everybody will say that nothing like it has ever been heard—so wonderful, so grand, so beautiful, such a king of entertainers—so we are pretty sure that at least some one, if not you, then somebody else, will want to buy one of these new style Edison's (especially as they are being offered now at the most astounding rock-bottom price and on easy terms as low as \$2.00 a month). But even if nobody buys there is no obligation and we'll be just as glad anyway that we sent you the New Edison on our free trial; for that is our way of advertising quickly everywhere the wonderful superiority of the New Edison.

FREE: Our New Edison Catalog

Write today for our new Edison catalog and learn all about the wonderful New Edison. Learn how thousands of people are entertaining their friends by giving Edison concerts—learn how the boys and girls are kept at home and all the family made happy by the wonderful Edison. No obligations whatsoever in asking for this magnificently illustrated catalog, so write now.

FREE COUPON

BABSON BROS., Edison Phonograph Distributors.
Dept. 7701, 355 Portage Ave. Winnipeg, Can.
Dear Sir:—Please send me your New Edison Catalog and full particulars of your free trial offer on the first lot of the new model Edison Phonographs.

Name _____
Address _____

BABSON BROS., 355 Portage Ave., Dept. 7701 WINNIPEG, CAN.

Western Office: 85 Post Street, San Francisco, Cal. U. S. Office: Edison Block, Chicago, Ill.



With

Many Other Uses and Full Directions on Large Sifter-Can 10c



Mention The Canadian Threshherman and Farmer when writing advertisers.

The Man Who Planted the Hungry-Grass

A Story of Money-grubbing and its Poverty.
By Ruth Sawyer

CORPORATION DAN was dying.

Washington knew it. Senators and congressmen, heads of departments, even the attorney-general and the President himself, looked uncertainly into the future. They knew full well the man who had made them, and they speculated as to how far his death would count toward breaking them in the next campaign.

The men in his own works knew it; and as they went about the great sooty buildings, their faces black with smoke, their ears full of the roar of furnaces and the clanking of metal, they prophesied much concerning it. Some said it would bring better wages and more decent living; others said—worse.

The Great City knew it. Stocks dropped, life grew sluggish on "the Street," and bankers and brokers went about their business half-heartedly. Across the water cablegrams were registering the news in foreign papers; while a bitter, disappointed woman gave directions for her maid to pack, wondering indifferently if the next boat would bring her home in time.

Then it was that the undersized old Irishman disentangled himself from the mob of reporters on the steps and laid a detaining hand on his arm:

"I'm wantin' to go to him," he said, jerking his thumb toward the house. "An' I'm thinkin' ye'll have to speak for me—to get me in."

"Who are you?"
"No one at all—but we were lads together yondther; an' it's a cruel thing for a man to be passin' alone."

The doctor hesitated for only a moment. "You are right," he said, "Come." He wheeled about and rang the bell.

The reporters, watching in amazement, saw the back of the undersized stranger disappear inside the forbidden house.

In the sick-room Corporation Dan lay—his mind full of numberless things. He was without pain; only a great weariness and

At the end of the day a feeling of loneliness and disability had overpowered him, and then it was that the iron entered his very soul. For the specialist had come in dinner dress; and there had been a tradition of long standing



"Ye've sown hunger for other lads so ought I ave helped!"

Out of the thousands who feared, worried, prophesied, or wondered, there were just two who cared: a boy who waited in a faraway college town for the outgoing train, and an undersized, withered old Irishman who pushed his way against wind and sleet toward the house in which Corporation Dan lay dying.

Outside, reporters hovered like kites; not one had been admitted. For Corporation Dan ruled even in death.

It was dusk when the specialist closed the door behind him, the last words of the sick man still ringing uncomfortably in his ears.

among those who knew him best when he attended a case clothed thus there was not a fighting chance left. Corporation Dan had taken the thrust like a man; he held out a shaking hand, without wincing, and said grimly:

"Good-by. We are keeping different engagements tonight—you and I. Here's hoping we both find a welcome."

But when the doctor had gone he turned his face away and groaned; he—Corporation Dan—knew for the first time how bitter loneliness could be. Why could not the doctor have stayed? Why could not some one have



Where You Entertain Your Guests

Home is not for its inmates alone, but even lit with it should be as attractive and artistic as possible. Therefore the decorating of the Dining Room should receive the careful and serious consideration of the home-maker.

SILKSTONE FLAT WALL COLOURS

"Smooth as Silk—Hard as Stone"
Enables the home-maker to produce artistic and permanent effects never before possible. It is the new finish for plaster and metal walls and ceilings. Fine for refinishing burlap. Silkstone is durable and sanitary—is not affected by steam or moisture—may be thoroughly cleaned with warm water and pure Castile soap. Suitable for every wall in the house—takes the place of wall paper and kalamine. Sixteen beautiful colours and white.

Sold by leading dealers. Write for the book of "Suggestions"—for paint users.



Mention this magazine when writing advertisers

Ladies, Gentlemen's and Children's Clothing.

also furs, positively made to measure. Fully illustrated catalogue free. Prices absolutely below any house in Canada. Medium priced goods, quality and fit are our strong points. We will give 15% discount to all new customers on their first order.

Metropolitan Mfg. Co. Limited. Toronto, Ont.

Mention this magazine when writing advertisers

SEND 1 DOLLAR
Receive by return mail post paid Two pretty Fall and Winter Dresses for little girls age 1 to 10. Material is soft warm goods for winter wear in checks and stripes in various pretty colorings made just as pictured. Add fee for postage. Order at once.

Standard Garment Co.
17 Standard Building, London, Ont.
Mention this magazine when writing advertisers

NO MORE WET OR COLD FEET!!

With Health Brand Clogs on, the man or woman who works in the wettest, coldest places always has warm, dry and comfortable feet. Try a pair yourself this winter.

Felt-lined CLCGS
(As illustrated)
Fine leather tops, hardwood sole and heel, cosily lined with warm felt. All sizes for men and women, delivered, all charges paid.
\$1.75

Higher 3 buckles \$2.25
High-seamed Wellingtons \$2.75 and \$3.25
Children's lace, 7's to 2's 1.25
Or if you wish to learn more about these wonderful Clogs before ordering, write to us for catalogue booklet, telling how Health Brand Clogs are made, etc. etc. Dealers, write for proposition.

CANADIAN FELT-LINED CLOG CO.,
Dept. 4, 363 Spadina Ave., Toronto, Canada
Mention this magazine when writing advertisers.

Send your Raw FURS to John Hallam

Sixty Thousand trappers now send us their Raw Furs. Why not you? We pay highest prices and express charges, charge no commission and send money same day goods are received. Millions of dollars are paid trappers each year. Deal with a reliable house. We are the largest in our line in Canada.

FREE Our "Up to the minute" Fur quotations and the latest Edition of HALLAM'S TRAPPERS GUIDE, a book of 96 pages, mailed FREE. Write to-day to John Hallam, Mail Dept 44 TORONTO, 111 Front St. E.

Mention this magazine when writing advertisers

Hunters and Trappers

Save your fine Specimens! Every trophy you kill is worth money to you. You will be astonished at the prices you will get for your specimens. We can teach you, by mail in your own home, how to

Mount Birds and Animals also heads, fish, and to tan hides, make rugs, robes, etc.

Yes, you can learn easily—quickly—perfectly in your own home by mail. Success guaranteed. Fascinating work. We have 35,000 apartments students, and every one is an enthusiastic student. Big profits to all who know taxidermy. Write today.

Special for Canadian Students

For a short time we are making a special reduced price to Canadian students. Act promptly. Write to your own home by mail. Success guaranteed. Fascinating work. We have 35,000 apartments students, and every one is an enthusiastic student. Big profits to all who know taxidermy. Write today.

NORTHWESTERN SCHOOL OF TAXIDERM Y, 520 Howard Building, Omaha, Neb.

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WELL DRILLING

GUS PECH
FOUNDRY AND
MANUFACTURING
COMPANY

Manufacturers of the Celebrated
MONITOR WELL AUGERS AND DRILLS

Write for prices and illustrated Catalogue.

LE MARS, IOWA U.S.A.
Branch House: REGINA, SASK.

Mention this magazine when writing advertisers.

If You Have a Motor Car

Jaeger Motor Coats and Ulsters will Interest You

They are Very Comfortable! Very Stylish! Well Made! Durable!

A Jaeger Double Fleece Coat gives greater warmth and does not induce perspiration like a leather or fur coat.

See them at the Jaeger Stores in their attractive variety.

Dr. JAEGER

SANITARY WOOLEN SYSTEM Co.

364 Portage Avenue, Winnipeg, Man.
316 St. Catherine St., West, Montreal
231 Yonge Street, Toronto, Ont.
And from JAEGER Agents throughout the Dominion

Mention this magazine when writing advertisers

come to lessen the burden of his loneliness? A man could live alone and live better so, for it meant no hindrance to his work; but who wanted to die alone? He did not hear the tread of feet on the stairs nor the whisper of voices at the door; but suddenly he was conscious of something which swung wide the gates of his memory and led him back—

"Danny—Danny lad!" A voice was saying it from somewhere far, far away.

He knew—he had forgotten the cattle again and they had strayed into the ripening corn. It was his father calling him to drive them out. No—that was in another country — his father was dead. He was Corporation Dan, a great man, and the voice was close beside him. He turned his head toward it and opened his eyes curiously.

"Danny lad, are ye not knowin' me?"

He looked perplexed. The under-sized old man standing by his bedside was a stranger; but the voice he knew. His mind stumbled back past the years of his ladder-climbing and his growing power, and left him, a boy, on the steerage deck of an ocean liner with a young man beside him.

"It's Con," he said, hesitatingly, and then more firmly: "It's Con McDougherty."

"Aye, that it is. I knew ye'd not be forgettin'—but it has been a long waitin', lad, an' a sad meetin' afther it."

"How did you know?"

The old Irishman drew a chair to the bedside and sat down. His face was an odd mixture of loving pride, sorrow, and tender pity.

"How was I knowin' it? Faith, I came up for to keep a promise I made to a little lad forty years ago. I was down at Battery Park when I heard them cryin' the extra."

"Curse them!" said Corporation Dan. "Can't they let a man die without howling?"

"'Tis a tribute to ye, lad. Are ye not proud of it?" And the faintest glimmer of a laugh crept into the old man's eyes. Then his face sobered, and he reached quietly across the bed to pat the hand of the sick man.

"Is it thrue—that they had in the papers — about the wife and childer bein' away from ye?"

The man nodded absently. His mind had slipped back to the past again. He was catching glimpses of gray days on an upland pasture with the moorland about him and the white ocean stretching away at his feet. He was remembering how tired and hungry he was when he tramped home afterward—almost as tired as he was now. He was seeing

Big Ben



One Big Ben Runs the Whole Farm on Time

Big Ben is made big enough for the whole family to consult about the time. He looms up handsome and impressive across the largest rooms. His broad smiling face and big, honest hands tell the right time plainly. A million families have adopted him. He works for his living—a drop of oil a year is all he asks.

You can buy a clock to wake you up for \$1 or \$1.50, but isn't Big Ben worth two dollars more than that since he wakes you on time and never fails to tell the right time all day long as well as all the night? You don't have to wonder "if that clock is telling the right time" if the clock is Big Ben. The city man can ask a neighbor or get the right time by picking up the telephone. You must depend upon a clock. Depend upon Big Ben.

He helps you wind with his big easy-turning keys. He wears an inner jacket of steel, which keeps him strong and makes him last for years. He rings just when you want and either way you want five straight minutes or every other half minute during ten minutes unless you flag him off. Get him now. And get him Christmas for some friend or relative.

He is sold by 5,000 Canadian dealers—the price is \$5.00 anywhere. If you cannot find him at your dealer's, a money order sent to his designers, Montreal, La Salle, Illinois, will bring him to you attractively boxed and duty charges paid.

You saw this advertisement in this magazine. Don't forget to say so when writing.



Children Should Have Good Light for Studying

A poor light strains the eyes, and the injurious effects may last for life. An oil lamp is best. The light from the Rayo Lamp is soft and mellow. You can read or work under it for hours without hurting your eyes.

The RAYO is constructed scientifically. It is the best lamp made—yet inexpensive and economical.

The Rayo Lamp, made of solid brass—nickel plated. Lighted without removing chimney or shade. Easy to clean and rewick. Made in various styles and for all purposes.

Dealers Everywhere

THE IMPERIAL OIL COMPANY, Limited

WINNIPEG MONTREAL TORONTO ST. JOHN HALIFAX

You saw this advertisement in this magazine. Don't forget to say so when writing.

Patronize those who Patronize this Magazine.



YES

Our dealers sold more "Barth" Jacks this year than in any year since we started building Jacks in 1892—twenty years ago. That should be good news to you who have one of our Jacks. And still better news to you who have made up your mind to buy one of our Jacks. The "Barth" Jack is a good Jack. We know it is because we make it. You know it is if you own one.

Ask your dealer for the Jack. Ask us for a catalogue.

BARTH MFG. CO.
158 L St. Milwaukee, Wis.

Mention this magazine when writing advertisers

SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS

Any person who is the sole head of a family or any male over 18 years old, may homestead a quarter-section of available Dominion land in Manitoba, Saskatchewan or Alberta. The applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the district. Entry by proxy may be made at any agency, on certain conditions, by father, mother, son, daughter, brother or sister of intending homesteader.

Duties—Six month's residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres solely owned and occupied by him or by his father, mother, son, daughter, brother or sister.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price \$3.00 per acre. Duties—Must reside six months in each of six years from date of homestead entry (including the time required to earn homestead patent) and cultivate fifty acres extra.

A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may enter for a purchased homestead in certain districts. Price \$5.00 per acre. Duties—Must reside six months in each of three years, cultivate fifty acres and erect a house worth \$300.00.

W. W. CORY.
Deputy of the Minister of the Interior
N.B.—Unauthorized publication of this advertisement will not be paid for.

TACKS

WE ARE MANUFACTURERS OF ALL KINDS OF
Guaranteed Tacks and Small Cut Nails
ALSO MAKE A SPECIAL FEATURE OF
Brass Plating and Electro Tinning.

Write for Quotations to
Dominion Tack and Nail Co.,
Limited,
GALT, ONTARIO

Mention this magazine when writing advertisers

the crowded hearthside at night, the air thick with turki smoke, and the faces dim about him. Were they the faces of his father and mother and the small brothers and sisters? His mind groped for a minute. How foolish—they were the faces of his men at the works, black with furnace smoke.

And that reminded him—he must tell Patterson to cut down the men's wages; there would be a drop in the market, and it could be done safely without any danger of a strike. Once more his mind slipped, and he found himself back in his home-land. It was a clear, brave morning, and he was climbing down the sand-dunes—an old, empty creel on his arm—on his way to the sea to hunt for cockles. He laughed.

"Con, — do you remember the market-day at Donegal when we sold cockles, and took enough money between us to buy the cap we wanted in Hennessy's window? I think you wore it one Sunday to mass, and I the next."

"Aye, I mind it. 'Twas the cap ye wore comin' over."

"Did I? Seems to me we were to meet just a year from the day we landed—why didn't we?"

"I'm not knowin' what kept ye, Danny; but I was there—lookin' for ye."

Corporation Dan closed his eyes again and thought back—hard. How well he remembered the morning they had landed; he, a raw green boy of fifteen, and Con, a man ten years older. He had felt at first a terrifying sense of alienage and ignorance, which had made him cling closer to the man beside him. Then slowly, insistently, had come to him the throbbing vital noises of the Great City; the rumble of traffic in the streets, the jarring whirr of machinery, the never-ending footsteps of people about him.

And out of these myriad noises had sounded the call of Power; it gripped him in an instant and bound him fast to the Great City. Never once in the succeeding years had he allowed any of the little senseless things of life to dull his ears to the call. Con had gone on to the small western farming town alone, after he had given him the half-hearted promise to meet him at the landing-place a year from that day. Then promise and friend had been speedily forgotten.

His ladder-climbing had taken comparatively few years; and throughout he had been dominated by two resistless ideas: to be legally honest in all his dealings, and to give no place in his life to sentiment. Soft-heartedness was an Irish failing which had ruined many a lad, and he had no use for it. So there had been safe, brilliant years at the top; and now, as they reviewed themselves before him, he glowed with

MODEL 1893



Marlin Big Game REPEATING RIFLES

The Special Smokeless Steel barrel, rifled deep on the Ballard system, creates perfect combustion, develops highest velocity and hurls the bullet with utmost accuracy and mightiest killing impact.

The mechanism is direct-acting, strong, simple and perfectly adjusted. It never clogs. The protecting wall of solid steel between your head and cartridge keeps rain, sleet, snow and all foreign matter from getting into the action. The side ejection throws shells away from line of sight and allows instant repeat shots always. New .33-caliber now ready.

Built in perfect proportion throughout, in many high power calibres, it is a quick handling, powerful, accurate gun for all big game.

Every hunter should know all the Marlin characteristics. **The Marlin Firearms Co.** Send for our free catalog. Enclose 3 stamps for postage, 166 Willow Street, New Haven, Conn.

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CHALLENGE



WATERPROOF COLLARS

Save you money

Stop all laundry troubles. "Challenge" Collars can be cleaned with a rub from a wet cloth—smart and dressy always. The correct dull finish and texture of the best linen.

If your dealer hasn't "Challenge" Brand write us enclosing money, 25c. for collar, 50c. for cuffs. We will supply you. Send for new style book.

THE ARLINGTON CO. OF CANADA
Limited
54-64 Fraser Ave., Toronto, Can.
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Well Digging and Prospecting Machinery



Rock Drilling, Hydraulic Jetting, or Hydraulic Rotary Machines to drill any depth in any formation. Operated by steam or gasoline engines, or horse power.

Write for Illustrated Catalogue No. 15.
AUSTIN MANUFACTURING COMPANY,
CHICAGO.

Canadian Sales Agents—**BURRIDGE COOPER CO., LTD.,** Winnipeg

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JOSEPH RODGERS & SONS, Limited
SHEFFIELD, ENG.

Avoid imitations of our CUTLERY by Seeing that This EXACT MARK is on Each Blade.

SOLE AGENTS FOR CANADA
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Alex. Naismith, Pres. Wm. Paterson, Vice-Pres. C. D. Kerr, Treasurer

The WAWANESA MUTUAL INSURANCE COMPANY

HEAD OFFICE: WAWANESA, MAN.

A. F. KEMPTON, Secretary-Manager

Amount of Insurance in force Dec. 31st, 1911	\$31,243,598 00
Assets over Liabilities	522,944.15

THE NUMBER OF FARMERS INSURED 21,543

The Largest Farmers Mutual Fire Insurance Company in Canada. Agents wanted in unrepresented districts

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The Occidental Fire Insurance Co.

Head Office: WAWANESA, MAN.

A. NAISMITH, President R. M. MATHESON, Vice-President
A. F. KEMPTON, Sec. and Mgr. C. D. FERR, Treasurer

Subscribed Capital	\$500,000.00
Security to Policy-holders	640,817.29

Full Deposit with Dominion Government
Agents wanted in unrepresented districts

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DRUGS CAN'T CURE CONSTIPATION

If you wanted to clean an engine you could not force a cleaner through it that would injure its parts—yet this is the process you employ when you drug your system to rid it of waste. Drugs force nature instead of assisting her. Drugs have to be taken in constantly increasing doses to be at all efficient and soon we add ourselves slaves to this drug habit.

This is an unnatural and positively harmful method of treatment. Two of the most prominent physicians on the continent state as follows:

Professor Alonzo Clark, M.D., of the New York College of Physicians and Surgeons, states:

"All of our curative agents are poison, and as a consequence every dose diminishes the patient's vitality."

Professor Joseph M. Smith, of the same school says:

"All medicines which enter the circulation poison the blood in the same manner as do poisons that produce disease."

Now there is a natural and simple and much more efficient way of keeping our system clean and pure and wholesome. This is by the internal bath as applied by Dr. Charles A. Tyrrell's J. B. L. Cascada. This is now being enthusiastically used by thousands and is prescribed by the most enlightened physicians everywhere.

A most interesting book has been published on this system by Dr. Tyrrell which will be sent you free upon request if you will write Dr. Charles A. Tyrrell, M.D., Room 280 College St., Toronto, Ont.

Mention this magazine when writing advertisers.

GRAND TRUNK RAILWAY SYSTEM

THE Double Track Route TO

Detroit, London, Hamilton, Toronto, Montreal and New York via Niagara Falls

Smooth road-bed, polite employees, unexcelled dining-car service, and latest standard equipment

AGENTS, COOK'S TOURS AND ALL STEAMSHIP LINES

Rates, reservations and all particulars at Ticket Office

Phone Main 7098 260 Portage WWINNIPEG

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CHEW MAPLE SUGAR TOBACCO

MILD, SWEET, MELLOW AND JUICY
Manufactured by
ROCK CITY TOBACCO CO.
Quebec Winnipeg

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Erickson Leg Does not chafe, over-heat or draw end of stump.
The latest limb recovery in the world.
K. H. Erickson, Acclimated Limb Co.,
Washington Ave., St. Minneapolis, Minn. Send for catalog.
Mention this magazine when writing advertisers.

exultation and pride. Yes—he had been a great man, and he would be remembered.

The man beside him spoke, as if he had been following the trail of his thoughts: "Ye have been a great man, Danny. Have ye been a happy one?"

"Why not? I am dying one of the richest men over here."

"Aye, and one of the loneliest." He said it under his breath, but the sick man heard and turned uneasily toward him.

"Why did you say that?"

"I was thinkin'—that was the why."

A silence fell between the two. The house had grown very still; the world outside seemed stopping. It oppressed the sick man.

"Open the windows — pull up the shades—I want air and noise. I want to hear the city—it's too still!"

The old man rose to his bidding. As the wind scuttled in through the window it brought the rumble of a wagon with it.

"That's better," said Corporation Dan. "Things must not stop until—they have to." The next moment he turned impatiently to the man beside him.

"Look here, Con, I have had what I wanted all my life. It—just at the last—I am missing anything—it has been more than paid for. Understand that. I haven't a single wish—"

He broke off suddenly. "Yes, I have—just one. I'd like to see the boy. I'd like to give him the gold watch, in the drawer over there, that I bought for his birthday. Never had time to buy him a present — always gave him checks—much more sensible. But the boy is fond of me, and I'd like to have him get here in time."

He smiled; and then a look of great annoyance came into his face. "He must get here in time. He has too much of that damned Irish soft-heartedness, and it has got to be knocked out of him. Patterson will look after him; he will put a stop to any sentimental bosh at the works; still, I'd like to talk to him myself. Funny—his mother was like that at the beginning."

"Where is—his mother?" The old man asked it timidly.

"She's abroad—it's just as well she couldn't get here—we wouldn't have anything to say to each other." He paused for a moment; and then, strangely enough, he felt that he must explain. "You see," he went on slowly, "a man in my position doesn't marry for any foolish, sentimental reasons; he marries a woman who can look after the fashionable side of his life and do what the world expects. My wife has done all this, and she has never bothered my work."

"I don't suppose—" said the other, still timidly, "I don't suppose the two o' ye have spent a

WINCHESTER



Extra Light Weight Repeating Rifle

Shoots .22 Short, .22 Long and .22 Long Rifle Cartridges

This is a well-made, handy little rifle, known as the Model 1906, costing little money to buy and little money to shoot. It handles all three of the cartridges mentioned above, which makes it very useful, either for target or game shooting. It is made up to the Winchester standard, to shoot strong and accurately and give satisfaction in every way. Look into it. Catalogue sent free on request.

WINCHESTER REPEATING ARMS CO., - NEW HAVEN, CONN.



National Trust Company, Ltd.

TORONTO, WINNIPEG, EDMONTON, MONTREAL, REGINA, SASKATOON
Capital and Reserve, \$2,800,000.00

The strain and worry of managing Estates will all be borne for you by this Company.

A PRIVATE Executor may lie or become incapable of acting before the completion of the Trust. A Trust Company is PERMANENT and will survive the longest Trusts.

This Company's financial strength and expert staff ensure responsible and capable administration.

We act as Trustee, Executor, Administrator, Guardian, Liquidator, Assignee, Financial Agent
SAFE DEPOSIT VAULTS SAVINGS DEPARTMENT MONEY TO LOAN
ARTHUR STEWART, Manager, Winnipeg Branch, 323-325 Main St.

FIRE INSURANCE

The Liverpool-Manitoba Assurance Co.

All Policies Guaranteed by
THE LIVERPOOL AND LONDON AND GLOBE INSURANCE COMPANY, LTD.

Northwest Branch - WINNIPEG, Canada
Agents wanted in unrepresented districts. S. N. RICHARDS, Local Manager

ALASKA RADIATOR FLUID

WILL NOT FREEZE WILL NOT BOIL

Guaranteed to do no injury to the cooling system. Absolutely prevents the freezing of radiators.

Gas Tractors and Automobiles
can be used during the coldest weather.

One filling lasts a whole season. Freezing point 49° below zero F. by actual tests. The cooling properties are of the best for its boiling point is higher than that of water. Boils at 239° F. by actual tests. Is a watery solution saturated with chemicals that will not injure in the least any part of the cooling system and does not affect the rubber hose connections. Unlike Alcoholic Mixtures, Alaska Radiator Fluid is always uniform in strength, for its essential elements never evaporate.

Price I.o.b. Winnipeg

BULK.....75c.
IN 44 GAL STEEL DRUMS.....84c.

We stock Alaska Radiator Fluid at four Western points at Winnipeg price plus car-load rate of freight

We agree to allow \$3.00 for the steel drums when returned.

Continental Oil Co., Limited

WINNIPEG - MANITOBA

Branch Offices: Regina Saskatoon Lethbridge Calgary

3
Leading Brands

Sold everywhere throughout
Western Canada

DREWRY'S
Refined
Ale
(Registered)

Extra Stout
AND
Redwood
Lager

These well known malt
beverages are brewed from
barley malt and hops only.
Always uniform in quality and
flavor.

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WE WANT AGENTS
Everywhere in Western Canada

for
C.O.W.L. Brand Ranch & Farm
Remedies. (Preparations made from
refined Coal-Tar and blended with
suitable emollient oil).

Liberal Commissions
Full particulars, prices etc., on application,
The Carbon Oil Works, Limited
WINNIPEG - CANADA
Write to Dept. "T" Remedies.

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**Dealers Increase
Your Sales!**
Take a Look at the
Strite Governor Pulley



It's the original and the
only thing for driving cream
separators with gasoline en-
gines. Once tried, always
used. **TRY ONE!** More in use
than all others combined.
Costs no more than imita-
tions. Also see about our
friction clutch pulleys.

STRITE GOVERNOR PULLEY CO., 310 N. 3RD ST., MINNEAPOLIS
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Write for booklet, circulars, terms, etc.
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GERALD S. ROXBURGH, R. A. Sc.
Portage Avenue, WINNIPEG.
209-10 Bank of Nova Scotia

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In Answering Advertisements
in this Magazine be sure and mention
where you saw the advt. Remember
we guarantee the reliability of all
our advertisers.

great number o' evenin's together
by your hearthside now?"

Corporation Dan almost laughed.
"You haven't changed a whit,
Con. You're as simple and as
Irish as you were the day you
come over."

"Aye? Well, lad, that's what
I'm proud of."

The smile still softened the
lips of the sick man. "Tell me,"
he said, "what have you made of
these years?"

Con McDougherty rubbed his
fingers nervously through his
shock of grey hair, and thought
for a moment. "It's what ye be
callin' a failure. I've been naught
but a gardener all my life — a
gardener for a great man like ye.
All these years that ye've been
growin' grandther, I've been
tendin' flowers."

"I remember," said Corpora-
tion Dan. "You were always
foolish about flowers. Didn't you
walk me over the moorland from
dawn until dark one day just to
find a little bit of white heather?"

"Aye. 'Twas the day afore we
came away, an' I was huntin' it
for Jenny."

"I mind my mother had the
sayin' when I was born that she
found me undther a primrose, I
was always so daffy about the
wee things. 'Tis long I've had
the feeln' I belonged to them,
somehow. I've planted so many
generations o' them and brought
them up — it makes ye fond o'
them same as if they were
humans. I've helped some as
came up crooked—to straighten
their backs, an' some as was
sickly—to get strong. I've made
my livin' by them these forty
years—but I never crushed them
doin' it."

This time Corporation Dan
opened his eyes and looked
sharply at the Irishman beside
him; but he found nothing but
simple kindness in the face, and
his thoughts went back to the
things they had been talking of.

"Well," he said magnanimous-
ly, "every one can't succeed. Did
you marry?"

"Aye, Jenny. I sent for her
the second year I was over.
'Twas herself made me come to
ye this night. I was for stayin'—
'The lad's forgotten, an' what's
more, he has small need o' me
now,' I says, 'an' the journey will
have the same endin' it's always
had.' But she answers—'Ye can
never be tellin'. Ye keep your
promise same as ye've been
keepin' it.'"

"Do you mean to say—" and
there was something very like
consternation in the face of Cor-
poration Dan—"you have been at
Battery Park every year to meet
me?"

"Aye, lad, every year."
"Then you were a fool—that's
all. What possible need could I

WATERLOO MFG. CO. LTD.

Waterloo Lion Brand

of Farm Machinery has never yet been surpassed by any-
thing in Agricultural Engineering for quality, efficiency,
durability and value. Plowing and Threshing Engines
ranging from 14 to 30-H.P. are unsurpassed by anything of
their size. Wind Stackers, Feeders, Baggers and Drive Belts
a specialty.

Waterloo Separators
28-42 to 36-56

ARE THE GREATEST GRAIN SAVERS IN THE MARKET

The "Champion" Made in 3 sizes
28x42 33x52 36x56

Write for catalogue of complete line

Waterloo Manufacturing Co. Ltd.

FACTORY BRANCH OFFICE AND WAREHOUSE
WATERLOO-ONT. PORTAGE-LA-PRAIRIEMAN

**John Deere Shares Save
You Time and Trouble**



Makes the
Plow Users
Hardest
Task Easy

One Nut to
Remove—
The
Job is Done

- 1st.—Save 80 per cent of time in changing shares.
- 2nd.—No tipping of plow or lying in the dirt.
- 3rd.—The simplest and strongest share ever made.
- 4th.—No lost, bent, or broken bolts or nuts.
- 5th.—Only one nut to remove instead of five.
- 6th.—Locks rigidly—Equalized strain on all parts.

Q-D means quick detachable—quick attachable, too. On and off
quick is the idea. This new and exclusive feature is the latest develop-
ment in the art of plow making. As soon as you see it you will want
a plow equipped with it. Only new Deere sulky and gang plows have
it. Don't waste your time and patience changing old style shares.

Every up-to-date farmer will be interested. We have
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JOHN DEERE PLOW COMPANY, MOLINE, ILLINOIS

JOHN DEERE
MOLINE, ILL.
THE TRADE MARK OF QUALITY
MADE THROUGH BY GOOD PRACTICES

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Well Drilling Machines

Over 20 sizes and either deep or any kind of soil on wheels or on glides or horse power. Simple, durable. Any mechanic can operate them. Send for catalog.

WILLIAMS BROS.
THACA N. W.

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Imperial Bank OF CANADA

Established 1876

Capital Authorized \$10,000,000
Capital Paid Up 6,820,000
Reserve Fund 6,820,000
Total Assets 72,000,000

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Thoroughly Protected in all Countries

EGERTON R: CASE
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Specialist in procuring Canadian and Foreign Patents

Dept. H., Temple Bldg., TORONTO

BOOKLET AND DRAWING SHEET ON APPLICATION

The Pump That Pumps

SPRAY PUMPS

Double-acting, L.H. Tank and Spray

MYERS' SHAY TOOLS

Myers Stayon Flexible Door Hangers

with steel roller bearings, easy to push and pull, cannot be thrown off the track—hence its name—“Stayon.” Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.

F. E. MYERS & CO.
Ashland, Ohio.

Mention this magazine when writing advertisers.

THE ORIGINAL PECH Boring Machine

THE OLD RELIABLE Easiest to operate
Bore Holes
Most Durable

Improved Up-to-date Drilling Machines

DESCRIPTIVE CATALOGUE FREE

Cherokee Mfg. Co., Dept. A, Cherokee, Iowa.

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ERZINGER'S No. 2 CUT PLUG

Leads them all. It's the Best Dollar Tobacco sold anywhere.

JOHN ERZINGER
McIntyre Bldg. - 293 Portage Ave.
Phone 69 Phone 2677

Mention this magazine when writing advertisers.

have of you?" And then he added brutally: "Why, I'd even forgotten your existence." Suddenly a thought swept everything else from his mind: "Didn't your Jenny have a younger sister—a pretty girl about my age?"

"Aye, an' ye forgot her along wi' the other things. Ye'd promised her ye'd bring her over when I sent for Jenny. 'Twas a lad's promise—I grant ye—but she held by it; an' the waitin', an' the watchin' Jenny go without her, broke her, just. She went, same as a harebell when the wind snaps it. Lad—lad—ye may have got power and money a-plenty—but ye've planted the hungry-grass along every bit o' road ye've travelled."

"The hungry-grass! What do you mean by the hungry-grass?"

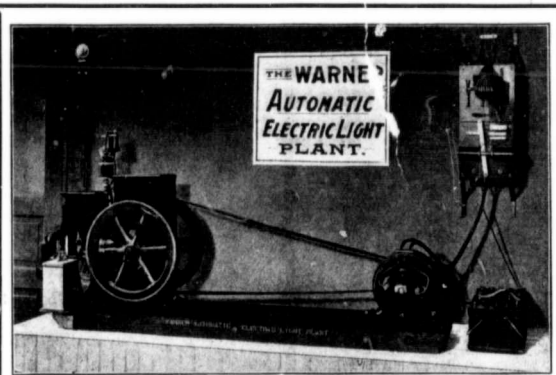
Con McDougherty leaned across the bed; the gentle kindness was fading from his face, and in its place was growing a look of stern, unrelenting rebuke.

"Do ye not mind the tale o' the hungry-grass? Ye had it from your mother as I had it from mine. Every Donegal lad hears it when he goes to herd the cattle for the first time on the upland pastures. The mother tells it as she bakes the bannock he carries wi' him for the noonday meal. 'Mind,' says she, 'that ye be not greedy in eatin' an' forget to scatter the crumbs for the faery people; else, when ye have gone, they will make the hungry-grass spring up. An' every man and woman and child that follow your way will brush it wi' their feet, and they will feel the hunger your greed has planted afther ye.' Are ye not mindin' the tale?"

"No!" And anger brought a last sudden flood of strength to Corporation Dan. He raised himself on an elbow and pointed a shaking finger at the other. "How dare you call my success greed? By what right do you say I have made others suffer—what do you know of my life?"

"I know—I know—" and truth spoke unmerrily and without fear. "'Twas your greed for the power and the money that made ye forget the home-land, an' the promises ye left behind there. Hunger ate out the hearts of two: your lass, and your mother. Ye've taken everything to yourself; and ye've left never a crumb for any one. An' that's but the beginnin'. Ye've sown hunger for other lads ye might have helped, for the shopkeepers and the thradsmen your corporations have killed. Ye've planted it close about the wee huts o' your workmen, till the air is heavy wi' it, an' the faces o' their childer are pinched wi' it."

The stature of the undersized old man seemed to grow and grow, until he towered above the



You Can Now Have Electric Light in Your Own Home

Each plant is complete with Special Self Contained Gasoline Engine, Special Automatic Electric Dynamo, Storage Battery, Automatic Switch-board, and all necessary instruments. Each plant is entirely automatic, the engine starting and stopping itself whenever necessary. The only attention required is to fill with gasoline and oil, and whenever this becomes necessary an electric bell rings and keeps on ringing until the fuel is placed in the tanks. No electrical experience is necessary. These are the **only** plants made that are **absolutely automatic** and "fool proof." The gasoline engine will also burn kerosene in case of emergency. The cost of operation is almost nothing. Each plant comes completely mounted on suitable timbers, and requires no expert to set it up. They take up a very small space in basement, and are almost noiseless. There is no danger from the electrical current, in fact, the pressure is so low and harmless that two wires may be placed in the mouth without danger.

PRICE LIST

Plant No. 50.—This is our smallest plant. It will run continuously seventy-five 8 c.p. lamps; or fifty 12 c.p. lamps; or thirty-seven 16 c.p. lamps. Cost of operation about 14c. per hour. Weight, 750 lbs. Price, \$150.00 complete F.O.B. Winnipeg. Terms, 25% with order, balance C.O.D. We have several larger sizes of plants. Prices on request.

WESTERN MOTOR COMPANY, 52 1/2 Princess St., WINNIPEG, MAN.

125-Egg Incubator and Brooder Both For \$13.75

If ordered together we send both machines for only \$13.75 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man., and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station.

Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Five year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Remember our price of \$13.75 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalogue today, or send in your order and save time.

Write us today. Don't delay.

WISCONSIN INCUBATOR CO., Box 224, Racine, Wis., U. S. A.

PREPARE Your Wheat Ground and Summer Fallow WITH THE "ACME"

For Irrigated or "Dry" Farms

Our catalog tells why the Acme thoroughly compacts the soil and leaves the top soil mulched for the attraction and conservation of moisture.

WRITE NOW!

The Acme Cuts, Crushes, Pulverizes and Levels At Once

with the least strain on your horses. It is the lowest priced riding Harrow made. Practically unbreakable. There is a size for your needs. Write for our catalog now.

DUANE H. NASH, Inc., 318 Division Ave., Millington, N. I.
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bed like an accusing angel, with an invisible but mighty flaming sword.

"I've heard there were good men your power put out o' work. I've heard there were good laws your hand kept others from makin'—an' that's not all of it. Ye have planted the hungry-grass for the woman ye married without love, and for the son ye never fathered."

The sick man sank back exhausted on his pillow: "It's not true," he said thickly. "None of it's true."

"Aye, it is thrue—and ye know it. Moreover, there's a bit left to the tale, and that's thrue, too. The man who plants the hungry-grass crosses it himself—once—afore he dies; an' then he learns the taste o' hunger—the hunger o' loneliness—for the things he never had."

"Curse ye," said Corporation Dan, the speech of the new world slipping from him. "An' curse this night that brought ye wi' your bitter tongue to trouble a dyin' man. I was passin' peacefully till ye came."

"Ye were not—" and then the old man's face softened, and all the simple, gentle humanity showed in it again. "Forgive me, Danny lad, I was not thinkin' of ye this once, but of the lad who come after ye—an' the words ye said about him. Don't ye take his heart from him till ye are sure of havin' somethin' better to leave."

"You'd better go," said the nurse beside him; and Corporation Dan repeated after her weakly: "Yes—go—and remember—I am dying content—absolutely content."

At the door the old man turned. "Good-by," he said, "good-by, and good luck—" and he passed slowly out of the room.

But Con McDougherty did not leave the house. Something held him, and he stood a long time in the hall below, fumbling with the buttons of his coat, bewildered and uncertain.

Then steps sounded above him; and in a moment the nurse came down holding a small leather case in her hand.

"He's gone?" he asked tremulously.

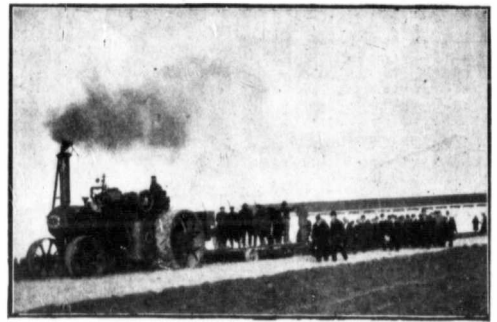
"Yes—a few minutes ago. But he sent this to you—" and the nurse gave the small case into the old man's hard hand.

He opened it. It was a gold watch. "I'm not knowin' the meanin' of it," he said stupidly.

"He said — you were to wait here until his son came, and then to give him that. I think his mind must have been wandering, for he said—you were to tell the boy about the hungry-grass."

The lips of Con McDougherty quivered as he closed the case. "I'll wait," he said softly, "an' I'll tell the tale to the lad."

That Powerful Sawyer-Massey



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That's what men of authority told us we were doing with our powerful 35 h.p. Steamer, breaking virgin prairie at the Dry Farming Congress, Lethbridge, October 21-26.

Look at the crowds following.

We actually pulled ten 14-in. John Deere bottoms, eight inches deep, and with a double set of 10-ft. Bissel Engine Disks hitched on behind. In the tough breaking there, this load they told us was equivalent to pulling at least twenty plows four inches deep any place in Western Canada.

There is no scrimping in any of the generous dimensions of these Magnificent Canadian Steam Tractors—the Power Wonders of the West. Designed and built at our Canadian Factory for pull—both in the belt and at the draw bar; stronger, better built and more economical engines than have been heretofore manufactured. They have overcome the trying conditions of poor water, poor fuel, hard tough breaking, and extreme temperatures.

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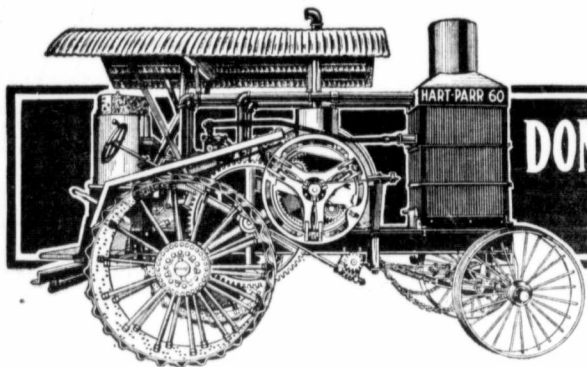
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DON'T JUDGE A TRACTOR BY ITS PAINT

For even an inferior tractor, new from the factory, may look substantial in a coat of fresh, glistening paint. In the hands of an expert, it may even operate perfectly for a time especially if working conditions are ideal. ¶ But fresh paint often hides a multitude of defects in design, construction and material. And it doesn't count for much when that tractor goes into hard, continuous field service. ¶ Then it is that cheap, flimsy construction is bound to show up at every point. ¶ So don't judge a tractor by its looks only. Go deeper than the painted surface. We invite you to look well into the design and construction of a

HART-PARR OIL TRACTOR

The tractor that not only looks good but is built right from wheel-base to cooler stack.

We want you to first examine and then compare every detail of its construction with that of any other tractor on the market. You will quickly understand why Hart-Parr tractors outsell all others. Why they make good in the hands of their owners. And if you carefully investigate a Hart-Parr Tractor, here's what you'll find:

Design—highly efficient, yet very simple, with fewest working parts to get out of order and give trouble.

Construction—that's a marvel of strength and durability. Strength built into every part, yet no excessive weight at any point. We use steel largely, and so avoid dead, useless weight.

Materials—of the best quality, selected for their fitness to withstand the strains and stresses of heavy traction and belt work.

Happy, Satisfied Owners—Owners who find the Hart-Parr Oil Tractor a wise investment that pays for itself in a few seasons. Owners who find they can pit a Hart-Parr Tractor against work so severe that it would soon send an inferior tractor to the scrap pile.

Judged on the basis of working economy, a Hart-Parr Tractor is a revelation. It does the work of 15 to 30 sturdy horses, operates on cheapest kerosene at all loads and requires but one man to operate and care for it.

Cheaply built tractors add daily to their first cost because of heavy repairs and up-keep. These are items that a Hart-Parr Tractor holds down to the lowest notch. In 100 days of actual work, one farmer plowed 540 acres of sod, disced and seeded 800 acres, harvested 1440 acres, threshed 16,000 bushels of grain and hauled it to market. He did all this with a Hart-Parr Oil Tractor and his total repair-bill was only \$4.00. Hundreds of equally good records prove the superior reliability of Hart-Parr Oil Tractors.

Hart-Parr Service Really Serves

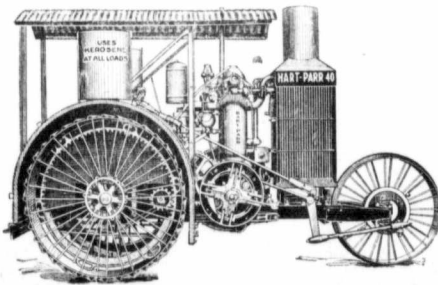
Hart-Parr Service is just as reliable and efficient as Hart-Parr Tractors. We have experts stationed at convenient points to give you prompt aid should you need it.

It's comforting, also, to know that you can get repairs in double quick time. We carry a complete stock of repairs at all our Branches and can get them to you in the shortest time. This means a lot to you when you are busy and must make every minute count.

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If you are now in the market for a Tractor, or if you expect to buy one at some future time, get our catalog and literature on power farming costs.

WINNIPEG OFFICIAL'S CORRECT ERROR

In rechecking the results of the International Motor Contest held at Winnipeg last July the judges discovered that a clerical error had been made which deprived the Case entry No. 27 of the Grand Sweep Stake Prize.

After correcting the error, the Case 110 H. P. Engine scored the highest number of points of any engine entered in the Contest, which gave it in addition to the Gold Medal won in its class, the Grand Sweep Stake Prize as well

The error by which the Case entry was deprived for the time being of another high honor was due to the vast amount of data which the judges and the clerical staff were forced to compile very hurriedly to satisfy the demands of the impatient public and press for the final results of the contest.

We respectfully submit the following Official Letter which will be of interest to the farm power users of the world.

To whom it may concern:

In the 1912 Winnipeg Motor Contest of all classes, Steam, Gasoline, and kerosene, the highest number of points scored was 457.85, and was made by Entry No. 27, Case 110-Horse Engine.

Due to a clerical error the published figures incorrectly gave this engine a score of 442.85 points, the error being in the score for, "Horsepower hours per unit of water", in the Economy Brake Test, which should read 35 points instead of 15, as given.

We the undersigned judges of the 1912 Winnipeg Motor Contest make this announcement in order to correct an error which we greatly regret.

Yours truly,

A. O. Frith

Engineer in Charge.

M. L. King

L. W. Chase

A. R. Greig

This is an exact photograph of the original letter.

J. I. CASE THRESHING MACHINE CO.

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