

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

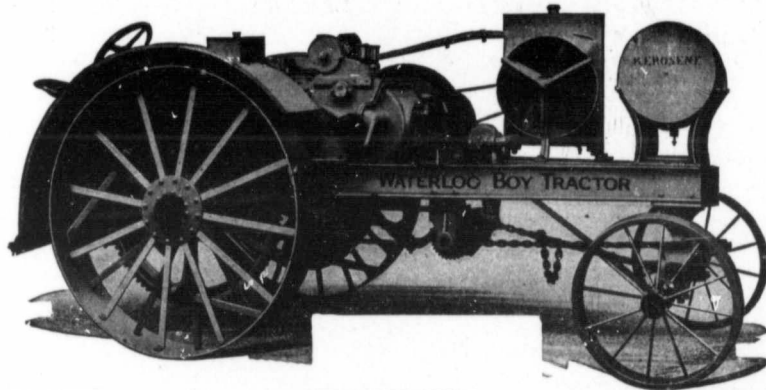
WINNIPEG CANADA
MARCH
NINETEEN SEVENTEEN

BETTER FARMING — BIGGER CROPS — BETTER PRICES



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

The Qualities You Look For in Farm Machinery Are
Features in
Waterloo Boy Machinery



DURABILITY STABILITY SUPREMACY
TRACTOR 12-24 Saves \$2 to \$3 per Day on Fuel Alone

We have chosen from the number of letters we receive from delighted users of the Waterloo Boy Tractor the following letter which should interest every farmer.

Dugald, Man., Jan. 4th, 1917.

Gasoline Engine & Supply Co.,

612 McIntyre Block, Winnipeg, Man.
Gentlemen,—I will with pleasure give you any information I can regarding Waterloo Boy Tractor, the amount of work done, fuel consumption and the cost of same per acre.

First, let me say that the tractor has proved to be efficient in every respect. The cooling and oiling systems are perfect, also the situation of the carburetor giving the engine a very short intake, which is most essential, and also enables the operator to adjust the fuel and water with ease at any time. The magneto is the best I have ever used, the automatic fuel cut-off which eliminates all fuel waste and insures a steady motion of the motor; this feature is noticeable particularly while plowing, when lifting the plows and thereby taking all the load off the engine, this cut-off regulates the feed and the motor will continue the same rate of speed. It works the same when letting the plows in; there is no running away and no slackening down in the motion of the motor.

We plowed close to 150 acres of summer-fallow, most of this 5 to 7 inches deep, using a 3-bottom 14 in. La Crosse engine gang. The tractor pulled this without any difficulty at the rate of plowing 7 to 8 acres per 10-hour day, using 2 gallons kerosene per acre.

Then we broke up 30 acres of old Timothy sod, using two bottoms of the same plow, 6 inches deep. Here we used 2.75 gallons kerosene per acre, doing 5 to 6 acres per day. I disked this piece once and rolled it twice in a day and a half, using a 16-20 disc and a 14 ft. 2,200 lb. packer. I am sure I could have pulled another disk harrow, but we only had one set.

We did some cultivating on summer-fallow, pulling two 8 ft. Massey-Harris cultivators at the rate of 3 acres per hour, using 12 gallons kerosene per 10-hour day. If we had had extensions on I am sure we could have done 4 acres per hour.

We Fall-plowed about 100 acres 4 to 6 inches deep, using 2 gallons kerosene per acre. However, the last day I plowed this Fall I plowed 10 acres, using 16 gallons kerosene and 2 gallons water.

We have not had a chance to try it out on the belt yet. We have run an 8-inch feed grinder, but this is no load at all.

We have had no trouble whatever in starting in cold weather, but if the oil is left in the crank-case and let freeze, the motor will run a long time before the oil will get warm enough to flow.

I think it advisable to drain the oil out of the crank-case when one is through for the time being, and to warm it before putting it in the next time one wants to start the engine.

At present we are using Standard Engine Oil. This oil may not stand the frost as well as some other oils, but when it is cold, say zero or below, I find it necessary to melt the oil before starting.

The cost of fuel, oil, and cup grease for plowing would average 45c. per acre. The amount of fuel and oil necessary to plow 10 acres would be something like this:—

1/2 gal. Gasoline @ 34c.	.....	\$ .17
20 gal. Kerosene @ 15c.	.....	3.00
1 gal. Engine Oil @ c.	.....	.37
1 gal. Gear Oil @ 20c.	.....	.20
1/2 lb. Cup Grease @ 15c.	.....	.03
2 gal. Water	.....	—

Total cost of consumption for 10 acres.....\$4.47

I will be glad to give you any information I can at any time. I remain,

Yours truly,
(Signed) S. HANSON.

**SEPARATOR 24-46 100% Efficient---No Loss of Time
and Money in Breakdowns and Delays**

The Waterloo Boy Thresher gets all the grain out of the head. Gets it clean for market, and does its work quickly with the least amount of work on the part of man.

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

CYLINDER—Has 16 bars. Cylinder shaft is 2-3/16 in. in diameter. This means large capacity and great strength.

The small amount of grain that gets past the separating grate check plate behind the cylinder, is thoroughly beaten out by the straw shaker, that allows no grain to escape with the straw.

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

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

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Gasoline Engine & Supply Co. Limited

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The trade mark that means
lasting tractor satisfaction

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IT is the all around usefulness, the same saving at every job, that makes the 5000 and over owners of Rumely OilPull tractors glad that their good judgment made them select the OilPull. They have found that the OilPull is not best at just one kind of work and poor at another—it handles every job that is put up to it with the same high degree of efficiency and the same low cost of operation.

From Seed Bed to Grain Elevator

You can start out with an OilPull for your Spring plowing and it will handle every operation for getting the biggest crop returns, from preparing the seed bed as it should be prepared, to hauling the grain to the elevator.

The OilPull will economically and easily handle your plows, discs, harrows, packers, drills or any equipment you hook on—thorough, clean work at low cost. Then you can pull your binders with no thought of setbacks or delays.

And as for power for your separator, the OilPull is famous from one end of the country to the other for giving smooth, steady power, regardless of the load, automatically holding a separator to its correct speed all day long.

We've mentioned the low cost of operation—here's how we back it up—a written guarantee with every OilPull order.

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We guarantee the OilPull Tractor to operate successfully at all loads under all conditions, not only on all grades of kerosene permitted by law to be sold in the United States and Canada, but on distillates and fuel oils free from earthy matter.

Add to this big advantage the OilPull's strong construction and long life, oil cooling, close regulation, pre-heater and self-starter and we believe you'll see that your dollars can buy no better tractor value in the market.

Use Your OilPull With Advance-Rumely Machines

The OilPull will deliver the goods with whatever you put on the drawbar or belt but we recommend complete Advance-Rumely outfits, because we know what they will do and stand back of them.

You can buy no better tractor plows than Advance-Rumely engine gang plows, both hand and power lift.

The Rumely Ideal Separator stands supreme by test—steady, thorough, clean threshing without waste, regardless of conditions. Built in five sizes with special models for rice.

Also included in the Advance-Rumely line are the well known Rumely clover and alfalfa huller, Advance husker-shredder and Advance-Rumely steam engines.

A Size Tractor for Every Farm

For those who wish a smaller size tractor we offer the new one-man outfits—the Advance-Rumely "8-16" two-plow tractor and the "12-24" three-plow tractor.

Ask our nearest Branch for catalogs of any or all Advance-Rumely machines.

ADVANCE-RUMELY THRESHER CO.

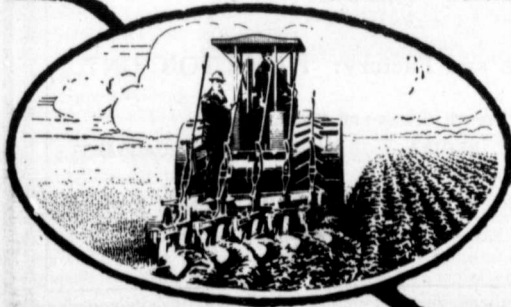
LA PORTE (Incorporated) INDIANA

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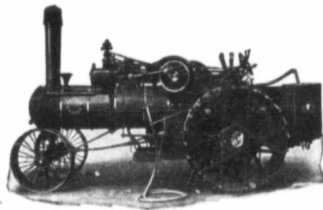


SAWYER-MASSEY

(Made in Canada)

POWERFUL REARMOUNTED STEAM TRACTORS

in two sizes 22-68 and 25-76 horsepower, designed for heavy duty and built for pull both at the drawbar and in the belt.

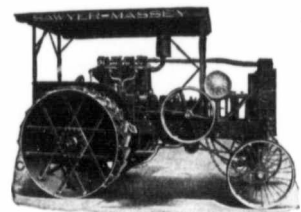


The boilers conform to the Alberta and Saskatchewan Boiler Laws, carry 175 lbs. pressure and are equipped to burn straw, wood or coal. These simple cylinder Rearmounted Steam Engines have rocker grates, balanced valves and duplex steam pumps as part of the regular equipment. They have exceptionally long, economical, large capacity, easy firing boilers and heavy wide face gearing, strong oversize shafting, wide bearings, and will give you the service you have a right to expect. If you are interested in steam plowing and traction cultivation, the putting into early crop of large tracts of land, the doing of

an immense amount of heavy work at low cost in a short time, fill out the coupon below and get free information telling what these powerful steamers will do for you.

FOUR CYLINDER GAS-OIL TRACTORS

in three sizes : 10-20, 16-32 and 27-50 horsepower. These tractors are all of the same general design, and all have four cylinder vibrationless motors which furnish a continuous, steady power. They are equipped to burn either Gasoline or Kerosene, and will give year in and year out service. Built to last and stand up under the heaviest service. All sizes have through and through axles and heavy wide faced gearing. The drive is to both rear wheels. The cooling system is of the enclosed type with a tubular radiator spring mounted. All three size tractors have two speeds forward and two reverse. This feature makes these tractors instantly convertible from slow powerful pullers for plowing and heavy duty work, to fast haulers for freighting on the road, pulling binders and other light machinery. Practically as simple and easy to look after and operate as an automobile. If you are figuring on Tractor power we would like to send you free information concerning these Sawyer-Massey Vibrationless Gas-Oil Tractors. Fill out the Coupon below.



1917 Literature is now ready for distribution. If Separators of suitable sizes to couple with all size Co. Ltd., you are doing business with a strictly an enviable reputation for honest, serviceable

you wish copies fill out the Coupon. We manufacture Engines. Remember, in dealing with Sawyer-Massey Canadian Firm, established in 1836, and who have earned goods, and fair, square dealings with their Customers. Fill out the Coupon.

SAWYER-MASSEY CO. Ltd.,
REGINA, SASK.

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

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Vol. XXII

WINNIPEG, CANADA, MARCH, 1917

No. 3

NO bald-headed person ever more earnestly prayed for a really infallible hair-restorer than many dwellers on the Western prairies long to see those unbroken leagues of bald spots relieved by something less monotonous than a waving sea of wheat.

"Wheat is King" in Western Canada and probably will be for centuries. We have no disparaging remarks to make about wheat and oats and barley, but there's just a possibility that there are other things no less needful to the thorough exploitation of the country's possibilities and the special soil and climatic features of these same prairies.

Few things would be more grateful not only to human life-but to the dumb creatures of the fields, the valuable live-stock herds that are becoming more valuable every year, as well as the cereal crops themselves than trees or hedges-rows. For all that has been done by governments and the zeal and splendid example of private individuals, the country as a whole has not yet been roused to the economic value of trees to agriculture.

Busy farmers say they have no "time" to go planting and cultivating trees. Not in one case out of a thousand is a man's position so difficult that he cannot "afford" the few hours necessary out of the twelve-months to do his little bit on his own quarter. If he holds a half-section or more, still less reason has he to urge this apology. The fact is very much as one practical farm home gardener stated at the recent convention: where a decent home vegetable patch did not exist on a farm, it was not because the man couldn't spare the time but

FARM TREE PLANTING

This is one more of many appeals we have made for trees where there are no trees, and for the sensible conservation of such protection where Nature has provided it. There isn't a bald spot out West where things of any kind will grow in which a variety of trees will not grow, and, with proper care, will reach the "paying stage" very quickly. We strongly urge a careful perusal of Mr. Norman Ross's address on the selection and cultivation of suitable trees, which follows our own appeal.—Ed.

because he would not generate the necessary inclination.

The wind on the prairie is a good thing, when "taken in moderation," but when it gets real mad

and ahead of us, cavorting like a young thing that never had a rope round its neck or a bit in its mouth.

This and next month will give

enough to break the heart of any woman who has a heart in her work and whose home is unprotected from the soil drift.

The "darned thing" seeks out every chink and cranny, sometimes forcing the abandonment of the wind-ward side of the house; and it brought the dirt with it to the despair of the housewife. Dust on the table, dust on the chairs, dust in the cupboard on everything in the shape of food, dust everywhere!

Outside, around the farm buildings, the sheer devilry and discomfort of the wind-storm is something that everyone is perfectly familiar with. Doing the ordinary chores around the barn becomes one of the most disagreeable experiences, and yet there is not a thing that must be done with greater regularity. And the live-stock! Did you ever notice the beasts on a cold windy day when the fodder is scattered in the open and the water is at the other end of the yard? They crowd together in the lee of the barn and there they stay until necessity drives them out. Cattle cannot thrive under these conditions, and yet the only alternative on an unprotected farm is to coop them up in a barn with insufficient air and exercise.

Picture the difference on a neighboring farm where the cattle feed comfortably and exercise normally in the protected barnyard, without burning up all the food they eat in supplying bodily warmth. An authority on animal feeding has said that, of two calves of equal value in the fall and fed the same rations in the winter, one given the freedom of a well protected barnyard and the other kept in an exposed yard or a closed barn, the former will



An Ideal Environment for Live Stock

it can make things uncomfortable out-of-doors (and in-doors too) in a fashion that once experienced it is never forgotten. We skip for the moment all reference to the horrors of the winter blizzard with its snowpiles and blockaded homesteads. These are over for a season and we are once more climbing up to summer, but the wind is still in our wake, on our beam

a better idea of what the wind can do with no fences to jump, than anything we can say about it. When the light covering of snow has been licked up, then the black dust will be whirling and bearing down on farm and home and every living thing like an organized "gas-attack" from the trenches of hades itself. If not quite so bad as that, it is bad

have twice the value of the latter the following spring. And no one who has watched the animals under the two conditions and felt the difference for himself can doubt it. It is a matter of dollars and cents, not sentiment.

These benefits are great and very plain, and yet it is doubtful if the most important economic use of the wind-break has been realized by the farmer at all. This benefit lies not in the protection of the home, important as that function is, not in the comfort of the stock, which could be protected in another way, but in the protection of the field crops, where it has been given very scanty consideration.

And yet the prairie farmer will admit to-day that the howling winds of winter that sweep the snow from his clover field, and the violent spring winds that blow his seed out of the ground, and the dry, parching, southwest winds of summer that wither his grain in a day, are the greatest hazards to his field crops.

He has never considered this seriously, because he has never realized clearly either the actual amount of the damage done to his crops by the winds or the probable benefit which might be received from a windbreak. He has only a vague prejudice against a windbreak, because he thinks that it piles snow on his fields in the spring and delays his plowing, that it sucks moisture from the soil and robs the adjacent crops, and that it occupies land which would otherwise be producing valuable crops. Of the benefits he has never thought.

But others have thought, and science has investigated. The results of the study are altogether worthy of the farmer's attention. They show that the windbreak pays a good rent for the land it occupies and is no trespasser.

The question of repopulating the Western prairie with trees that are adapted to its climatic conditions has been so often and so thoroughly discussed, it may now be fairly assumed that no one but a petrified social dead-beat will any longer seek to belittle the urgency of the case—whether for pressing economic reasons, or for the simple purpose of beautifying the home and making it, to the young

folks a home that will outweigh all the attractions of the city.

To get at the real business end of this subject, we are glad to reproduce the address of Norman M. Ross, B.S.A., B.F., Chief of the Tree Planting Division (Dominion Forestry Branch, Indianhead), delivered to the Convention of Manitoba Horticultural Association in Winnipeg last month. There is nothing in print

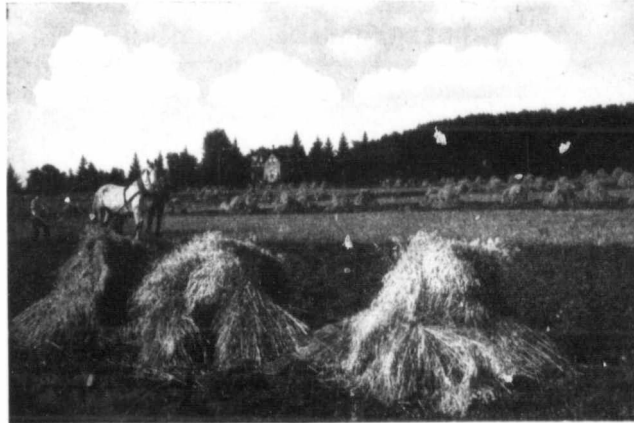
cannot be expected immediately. The permanency of the planting must be recognized, and therefore considerable thought and study should be devoted and evolving the best possible plan and selection of varieties to meet the individual requirements in each case. The very common practice of hap-hazard and indiscriminate planting cannot be too much discouraged; disappointment and

decide to put the trees on this. If one advises these men to wait and prepare ground that the belts can be planted where they will give satisfaction in later years, the answer is invariably "But I shall be losing a whole year."

Personally, I think it would be advisable to lose many years rather than plant trees where they will ultimately be a source of continual annoyance and dissatisfaction. In any of the older settled districts we can find examples of poor planning. We find patches, which were once gardens, now so overgrown with the trees that were supposed to provide shelter that no vegetables or small fruits can be grown. We find lanes almost impassable because the rows on either side were not set sufficiently far apart to allow for their later growth; in other places the roads drift full of snow in the winter and cannot be used till late on in the spring. Again we find the trees cause huge drifts to accumulate in most inconvenient situations and so on. All these troubles can be easily avoided by a little common-sense planning.

Let the preparation of a preliminary plan, therefore, be the first step in any planting work. Such a plan should, as far as possible, be drawn to scale and should embrace all the ground to be set aside for buildings, gardens, ornamental grounds, roads, tree belts, etc. The mistake most commonly made is to leave too little room inside the belts. From six to ten acres should be devoted to this purpose.

In planning the main belts it must be borne in mind that wide belts, unless protected by an outside snow-break, are liable to be broken down in the centre by heavy snow drifts, and unless such snow-breaks are provided for it is unwise to plant the belts more than ten to fifteen yards wide. For a similar reason it is not well to set out a close

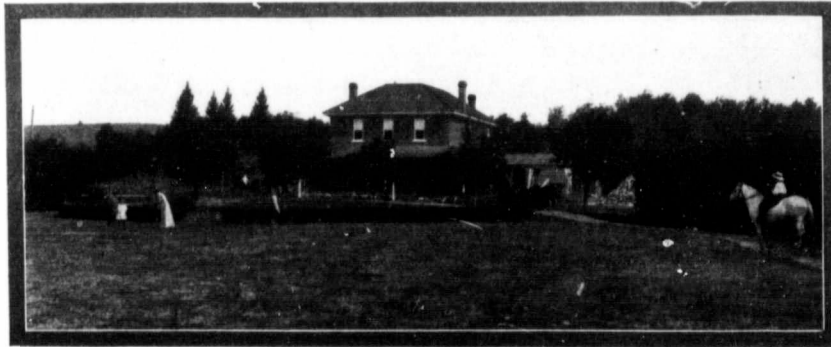


A Real Gem of Manitoba Farming

that more completely covers the case in such a common sense way. It is the outcome of an experience and careful observation, all the more valuable because the job has been gone after from the first attempt in one of the baldest spots in Saskatchewan, with an enthusiasm that nothing could damp out. "Tree planting," says Mr. Ross, "from the prairie farmer's standpoint, comes under one or other of the following three heads.

discouragement are sooner or later bound to be the result.

It is a very easy matter to make an individual tree grow, but it requires thought and careful planning if the shelter belts and plantations are to meet the future requirements after the farm becomes fully developed. In my opinion one of the most important points is that no farmer should undertake any planting until he has a clear idea of the arrange-



Another Complete off-set to the best of City Life

1. Windbreaks and shelter belts.

2. Ornamental or landscape planting.

3. Wood lots, where trees are grown for the material they may produce.

No matter what the object may be, it must be realized that the work is of a more or less permanent character and that results

ment of belts that will best meet his possible future needs.

We meet, every spring, men who have suddenly got the desire to plant trees. They have made no previous preparation, but generally there is some patch of garden ground, an old fire guard, or a piece of summerfallow somewhere near the buildings, and without any further thought, they

row of trees on each side of a roadway unless the snow can be held back by other belts of trees further away; otherwise such roads pile up full with snow and cannot be used in the winter time.

The trees immediately round garden plots should never consist of tall fast-growing varieties, such as Russian poplar or willow, but for this purpose low-growing

hedgè plants, such as caragana, should be utilized. Tree belts should be kept well back from the buildings so that there may be no trouble with snow drifts in convenient places. If properly arranged one of the chief benefits of such belts is that they hold back the snow and leave the ground around the buildings clear and free from snow-drifts.

After settling on the arrangement of the belts, the next important step is to have each year a piece of land thoroughly summerfallowed for planting the following spring. The mistake should not be made of trying to plant too much at any one time. How much any one individual can handle in any one season depends entirely upon the labor he has available for this purpose. Many cases of disappointment, however, are due to the planter trying to undertake more than he can properly handle.

The best course is to do a little each season, gradually adding to the belts as one's time and means permit, until the entire plan of planting originally arranged for is completed. As the subsequent growth of the trees depends very largely of the way the ground is prepared no pains should be spared to get the land into the very best possible condition. We have no hesitation in advising deep summerfallow in every case. We know that good plantations have resulted from planting on stubble and garden land, but such cases are more the exception than the rule. In any event do not plant on breaking or backsetting, as it is almost impossible to entirely kill out the native grasses in one season and if these are not got ride of they are bound to cause trouble later.

Next, as to choice of varieties. The prairie planter unfortunately has not a very large number to pick from. For shelter purposes he is practically limited among deciduous varieties to: Maple, Cottonwood, Ash, Russian Poplar, Elm, Willows, Birch, Caragana.

And in the way of evergreens to: White Spruce, Jack Pine, Lodgepole Pine, Scotch Pine.

This list of course does not contain all the kinds of trees that may be successfully grown on the prairies, but the average planter who is setting out a shelter belt for the first time is likely to have better results if he confines him-

self to the use of the varieties above named.

In selecting the varieties, it is generally advisable, in a belt consisting of several rows, to use a mixture of several different kinds. The poplars and cottonwoods, for example, should always be mixed with some other slower-growing kinds to form a sort of undergrowth, as they themselves

damage to other varieties, and it was particularly noted that where maples were well mixed with other trees they did not suffer to the same extent as they did in other belts made up entirely of maples.

The matter of spacing the trees is one which has led to much discussion, and probably never will be settled to everybody's satis-



Laurel Leaf Willow, growing near Medicine Hat on top of a dry knoll, and open to winds in every direction. Second year's growth of one year old trees from Patmore Nursery, Brandon.

very soon become open at the bottom and would not throw sufficient shade to kill out weeds and grass, and would suffer accordingly.

Less damage is liable from disease or insects in a mixed belt than in one consisting of only one

facton. So far as the growth of the individual tree is concerned the matter of spacing is not of great importance, provided the ground is kept well cultivated and free from wees's. But looked at from the standpoint of the busy farmer, who wishes to establish

appearing to give the best results under average conditions. Whatever spacing is decided upon, however, it is of imperative importance that the surface soil between the trees be kept continually cultivated and free from weeds and grass until the branches have grown thick enough to choke out all such growth.

Grass is the worst enemy of our tree plantations, and particular pains must be taken to see that it does not work in from the edges or spread from any isolated patches inside the belt. Even after a belt becomes well established it will be found an excellent practice to keep a strip of from five to eight feet thoroughly cultivated all round the outside edges.

Tree planting even under the best conditions is not altogether plain sailing. One must be prepared for occasional setbacks in the shape of hail, winter killing, rabbits, insects, and fungus diseases. Damage from any of these causes is seldom of a permanent nature. The danger of injury from most of these causes can be greatly lessened by keeping the trees in a strong thrifty condition by good cultivation. They are then better able to withstand any sudden injury.

A year ago the Aphis caused the death of many maples, trees which in some cases were twenty or more years old. In practically all these cases the trees were more or less weakened by the dry weather and a growth of grass at the roots. We personally saw no trees entirely killed out when the ground on which they were growing was properly surface cultivated.

We cannot expect that our trees will be immune from attacks in the future. But knowing the danger, one should always be prepared. We know that insects, such as caterpillars and beetles with biting mouths, can easily be controlled with Paris green or arsenate of lead, and others, such as the Aphis, with coal oil emulsion.

It would pay any one who is cultivating trees to have some kind of spraying apparatus within easy reach. They can be had in all sizes and at all prices, but one of the common barrel spray pumps would probably meet all ordinary requirements.

We are perfectly aware that spraying involves labour, but in

Continued on page 89



A Successful Start with Evergreens

variety. For instance, in the districts which suffered from the poplar-leaf beetle last summer every poplar and willow tree was completely denuded but these insects did not bother maple, ash, or elm. The same thing was seen in Manitoba a year ago when the green aphid was so bad. This insect confined itself to the maple and did not do any appreciable

a good shelter with the least labor and in the shortest possible time, close planting is an absolute necessity.

We would not advise setting the trees in a windbreak further apart than 5 feet each way and not closer than 3 feet each way. The Forestry Branch, in its distribution, requires a uniform spacing of 4 by 4 feet, this distance

THE CANADIAN THRESHERMAN AND FARMER
CANADA'S LEADING AGRICULTURAL MAGAZINE

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



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J. L. MIDDLETON
CIRCULATION MANAGER

(MEMBERS CANADIAN PRESS ASSOCIATION)

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1917

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THERE are certain passages in human history which seem as though they were designed to establish some great axiom in morals and in government. They are landmarks or resting places for the men who lived and fought to secure them, or they may flare out as beacon fires for the guidance of all that is to follow. Of these grateful resting spots, there are few in these days that, in the hearts of the British and the French people, will take precedence of "L'Entente Cordiale." The very youngest of our school children know, or ought to know something about the history of that little unwritten treaty between two great nations. It is perhaps all the more a living fact to-day because it was never engrossed on dried sheepskin in the pedantic rigmarole of the common school-boy's conception of an international treaty. It was ratified in quite a unique way, unique in its very simplicity, by the almost informal return visits of those two decent men who at the moment were the chief magistrates of the two nations—King Edward of the British Empire, and President Loubet of the French Republic.

necessary and entirely foreign to the heart-throb of the great plain people on both sides. It was the by-product of a few unscrupulous filibusters in the early days and is fed to-day only by a disgruntled microscopic minority of political intriguers on the one side and a small scratch team of hereditary snobs on the other.

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

"A cordial understanding" is the simple meaning of the French phrase, and the idea it seeks to embody is the very greatest that can engage the common interchange of human thought. Between the typical Frenchman and the typical Briton there are some very interesting contrasts. These, however, but disclose that wonderful individuality which the Almighty has stamped on every unit of the Great Plan. That individuality is its inalienable right and (as John Stuart Mill has well said) "Whatever crushes individuality is despotism by whatever name you call it." The fourteen odd years' experience of this "Entente Cordiale" has shown in the happiest and most remarkable way that not only can two strong, and in some respects contrasting temperaments live and move together in perfect accord, but that it is in the natural order and plan of things that they should do so.

A spirited attempt is in progress to put an end to all this. We hope and believe this "Borne Entente" will be as successful as its parent on the other side of the Atlantic has been, and our faith finds an anchorage in what we know to be the wish and the will of the people. From the point of view of the English-speaking race, we have no doubt whatever that the first advance in the friendly overture is due from our side. There was never such a chance on earth for the magic of the glad hand as the English-speaking citizens of Canada have at their disposal at this precise moment. God grant that it may not be sacrificed to the rapacity or folly of a few impossible misanthropes on either side. The day for disension and recrimination in our big family is due for decent burial. Let's send our representatives in the flesh from every community out West and all go in spirit to the forthcoming funeral in Montreal.

Anything in human relationship that is short of universal brotherhood is doomed to destruction. Why is it needful at this late stage of our progress to even state this self-evident fact? There is a complete answer to the question if one could line up against a brick wall these few incarnated ideas: The Political Thief, the Party Hack, the Champion of Patronage, the Religious Bigot, "Special Privilege," and that inheritor of many generations of a foolish face, the feudal or the society snob. These are a few of the excrecences of our national life that are as useless for any possible purpose as the dead wood of the forest. There's only one end to them and it must be reached quickly, wasting no sentiment or needless "diplomacy." They must be lopped off, burned or buried and forgotten as quickly as men can forget anything.

Now, if Great Britain and the French Republic are as one in all that is essential to a complete agreement and to the observance of "the unity of the spirit in the bonds of peace," still greater reason why there should be the same ties of real interest and affection between the descendants of the old French settlers in Eastern Canada and those who, in certain very important respects, have less right to the occupancy of the soil, viz., those of us who "came later," and in point of numbers at least have swamped the French Canadians. The "feeling" that has subsisted needs no explaining. It is all the more lamentable because it is wholly artificial, un-

The burden of the trouble, frankly, is on our own doorstep. On the eve of what we hope will prove the complete consummation of a *bonne entente* between the French and English speaking Canadians, we haven't a single unkindly thought to fling at our brothers of Quebec province because they haven't quite come up to the scratch in recruiting. We will judge Quebec by her 14,000 loyal heroes who have gone to the trenches—not by anything she has so far left undone.



The RED RIVER SPECIAL BEATS OUT the Grain

It Also BEATS OUT the Farmer's Thresh Bill

It saves more than the thresh bill.

There is nothing about the action of this Red River Special that resembles molasses in February—it's alive and driving hard every minute of the time and every inch of the way.

Beating, driving, forcing, is the only way to get all the grain from a crop.

The Big Cylinder and "The Man Behind the

Gun" hand such an awful wallop to the grain that it never again mixes with the straw. Ninety per cent of the grain is separated at the cylinder, through the grates and by being driven with terrific force against the check plate, which saves it from remaining with the straw and drops it to the grain pan below. Then, the almost-empty straw passes on over a series of beating shakers that beat out what's left.

SWIFT, THOROUGH, PERSISTENT WORK

Is what our patrons secure from their Red River Specials. It's the ONE BEST machine for the man who wants to make money, because it pleases the farmer by saving his thresh bill—and it permits fast work. Even running to the extent of its capacity, any Red River Special thresher *always* does the work thoroughly, since there is no opportunity for the bulk of the grain (that which is flayed out by

the big cylinder) to be remixed with the straw after striking the check plate.

Men near you have proved to their complete satisfaction the worth of the Red River Special. You can profit by their experience if you will write for a copy of the Home Edition of the Red River Special paper. Big catalogue that gives a full line of information included, if you request it.

NICHOLS & SHEPARD CO.

In Continuous Business Since 1848

Builders EXCLUSIVELY of THRESHING MACHINERY

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

BATTLE CREEK, MICH.

BRANCH HOUSES (with Full Stock of Repairs) at

REGINA, Saskatchewan

H. P. NORTON COMPANY, CALGARY, Alberta

WINNIPEG, Manitoba



THRESHING



MIXING CONCRETE



HAULING HAY



SHELLING CORN

IT seems to have become a fact well established as regards tractor economy that from fifty to eighty full days of ten hours each at some kind of work are necessary before the tractor can be taken out of the luxury classification. It is only theoretical farmers and those who farm for pastime who can afford the luxuries of equipment. To all others there must be a practical economic basis to justify any piece of farm operative equipment, from a grindstone to a tractor. As the tractor now is being touted as the most economically justifiable of all power units, it follows, therefore, that it must have found sufficient work of various kinds upon the farm to justify such a reputation.

Assuming the quarter section farm as the low limit of area for economic tractor employment, a limit recently established by the results of careful investigation, it is evident that under no circumstances can from fifty to eighty days be filled by employing a tractor as a hauling machine alone. This, too, after including all out of the ordinary and unusual jobs to which a tractor can be put. There must be some other way in which a tractor can be used to make up the measure of its necessary days, and fortunately it will be found that it is fully adapted to meet this requirement. On the belt tractor is no less useful, if, indeed, it is not more useful, than on the draw bar.

One of the observable tendencies of agriculture during the last few years has been in the direction of a complete assortment of operative equipment upon every farm of considerable size. Individual machines of relatively small size, of conservative capacity and of moderate cost, well within the means and needs of the average farmer, have been designed to meet the demand of this

tendency. Notably has this been the case in the production of small threshing machines. Then, supplementary to these, may be mentioned such machines as wood saws, concrete mixers and many others which very appropriately might be added.

What has stood in the way of complete individual farm equipment in the past has been the lack of an efficient and convenient power producer which might lend itself readily to the various combinations required. True, the portable gasoline engine has been utilized very extensively in this way, but it did not show enough of versatility in other directions to commend it universally as a satisfactory power producer for complete equipment. When the tractor came, however, there was every inducement to indulge. The tractor lent itself so readily to so many different uses, was so conveniently portable, and was so universally useful that it proved to be the ideal power unit for any and all kinds of operative equipment combinations. The buying of self contained units, too, resulted in a variety of engines upon the farm in many instances. This very much complicated the repair problem. The tractor obviates this difficulty since on the belt it may be applied to anything.

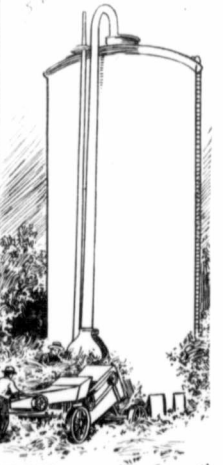
That tractor which has sufficient power at the draw bar to perform the hauling operations necessary, upon the average farm, always has sufficient power also on the belt to run any single machine the farmer may possess. Its quality of self propulsion enables it quickly to be manoeuvred into position anywhere and its entire safety of operation commends it for use in any surroundings. A gasoline or oil tractor may be run into the barn or granary and operated without danger from fire. This tractor of immunity from fire risk is peculiarly valuable during threshing operations.



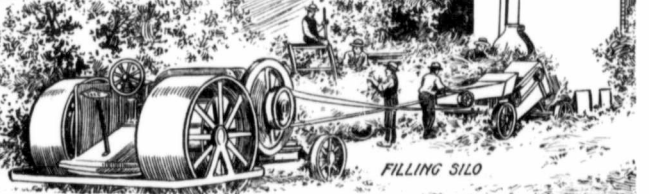
SAWING WOOD



PUMPING



FILLING SILO



"The Great Minneapolis Line"

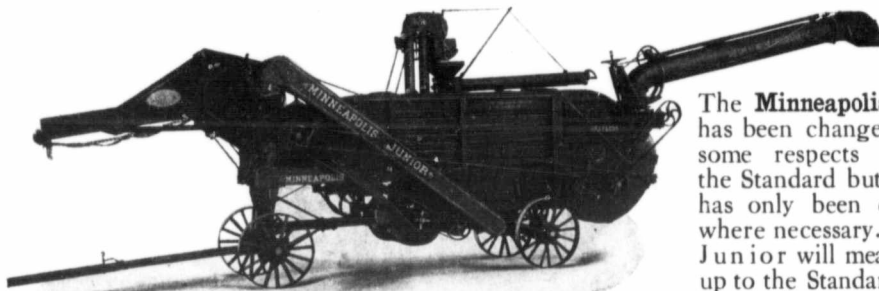
Complete as to Sizes

Catalog Ready Now

Satisfactory as to Service

The Minneapolis line of Steam and Gas Tractors, Tractor Plows, Threshers and Attachments is made up of sizes to suit all conditions. There is a size suitable for your requirements. We want you to know all about Minneapolis Machinery. Our entire organization is at your service.

*"It Saves
the
Farmer's
Grain"*



24 x 36 Minneapolis Jr. Separator Fully Equipped

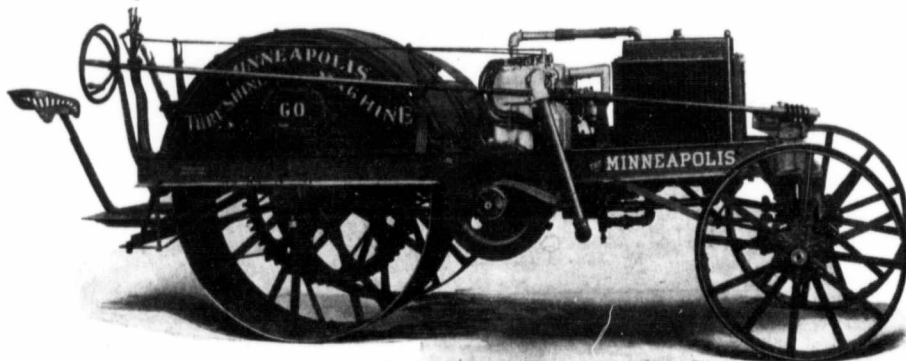
The **Minneapolis Jr.** has been changed in some respects from the Standard but this has only been done where necessary. The **Junior** will measure up to the Standard as to quality of work, durability and general satisfactory results.

Height to top of deck—6 feet 10 inches.
Length of plain machine—12 feet 7 inches.
Width—5 feet 6 inches.
Weight complete, all attachments, 5500 lbs.

We anticipate an enormous demand for the Junior from individual farmers owning light tractors, small steam engines or horsepowers.

There is no longer a doubt as to the small tractor being practical for general farm work, and the farmer can safely invest if he makes a wise selection. There are many things to be considered, however, in making your selection—don't buy one **too small** for your requirements, **too cheap** to be good and durable, or **too freaky** in construction to be practicable and serviceable. We urge intending purchasers to make critical examinations and comparisons of Minneapolis Tractors with those of other makes.

Kerosene
or
Gasoline.
—
Satisfac-
tory.



Gasoline
or
Kerosene
—
Econom-
ical.

16 H.P. 4 Cylinder Minneapolis Light Weight Tractor.

Cylinders—4½ inch bore, 7 inch stroke.
Motor Speed—750 rev. per minute.
Road Speed—2½ and 3 miles per hour.
Belt Pulley—15 inch diameter, 6½ inch face.

Drive Wheel—20 inch face, 56 inches high.
Clutched in Drive Wheel—10 inch face.
Fuel Capacity—18½ gallons.
Approximate Weight—5600 lbs.

The Minneapolis Threshing Machine Co.

WINNIPEG, Man.

HOPKINS (WEST MINNEAPOLIS) MINN.

REGINA, Sask.

STUDIES IN SMALL TRACTOR DESIGNS

By
E. R. WIGGINS

ARTICLE V.

1. CARBURETION

(a) Gasoline

A study of 26 different makes of two plow tractors shows that twelve burn gasoline, eight kerosene, and six are either gasoline or kerosene. Of 14 three plow machines, three

to keep the mixture from becoming richer and richer as the tractor speeds up an auxiliary air valve is provided, which opens as the motor speed increases.

Some carburetors reduce the richness of the mixture at high speeds by using a compound nozzle which combines the direct

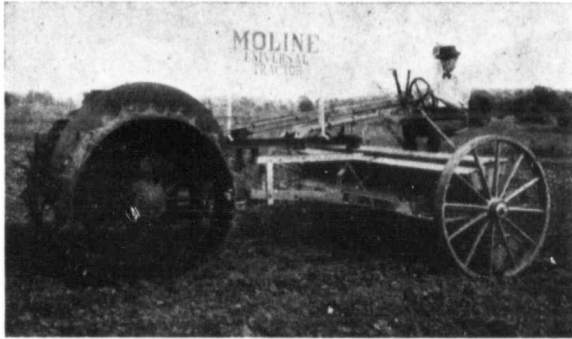
water in the gasoline. Many times when the motor begins to sputter and back fire, we may think that the trouble is in the carburetor, whereas it is water. There is no adjustment that will overcome this. The thing to do is to drain out a considerable amount of the gasoline because the water being heavier will settle to the bottom of the tank. It is a nuisance and can be minimized by pouring the gasoline through a chamois.

The gasoline being used now-a-days is very heavy and so, in order to vaporize, requires heat. Much trouble can be avoided by the use of a hot-air pipe leading to the constant air opening from the manifold. Some carburetors get the same effect by having the jacket water surround the mixing chamber, or allow part of the exhaust gases to pass around the outside. The writer, very recently, found that exhaust gas heat that is used to surround a carburetor for kerosene purposes,

careful in burning gasoline not to get the carburetor too hot.

(b) Kerosene

There are two general schemes of kerosene carburetion. Each type has its followers and both plans have merit. One system is to try to vaporize the fuel by mixing it with air, as is done with gasoline with the addition of a small amount of heat. Or, if the fuel cannot be vaporized completely, it is broken up into very fine particles and thus the same effect as complete vaporization is obtained. The claim is made that kerosene cannot be vaporized anyway, so the next best thing is to get it into a spray and introduce it into the cylinder with the proper amount of air. The other plan is to heat the air slightly and vaporize the fuel by spraying against a hot surface. On the face of the problem the latter solution appears to be the best because more complete vaporization is obtained. It does, however, have a drawback.



One of the many uses the Light Tractor can be put to

are gasoline, one kerosene, and ten are either gasoline or kerosene burners. Only three companies out of thirty make their own carburetors in the two and three plow sizes. Many companies manufacturing the larger sized tractors, use their own make of carburetor, but for the small sizes they appear to favor those manufactured by firms who specialize in carburetors. That which is used generally on the smaller tractors is the automatic type found in auto practice.

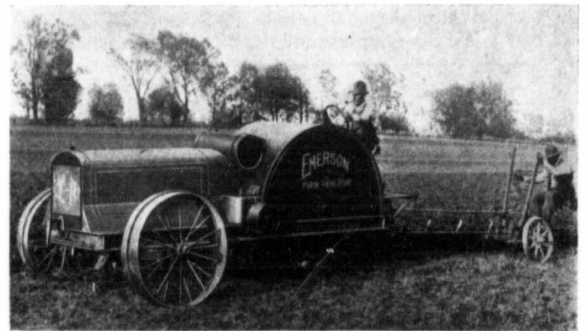
The problem in tractor carburetion is to have a constant proportion of fuel and air at all speeds and loads. The older methods of carburetion, such as used on stationary engines, of having a simple mixing valve, or jet, would not answer because the flow of gasoline from the jet increases faster than the flow of air as the engine speeds up. This makes a very rich mixture at high speed and very lean at low speeds. It is easy to see that such conditions are entirely unsuited to tractor work.

A general description of the automatic carburetor will now be given. The needle valve is encircled by a float. The mixing chamber passes through the center of the carburetor. The float is inside of a bowl that surrounds the mixing chamber and is for the purpose of maintaining a constant level of fuel at the nozzle. The air passage is reduced at the point of the end of the spray nozzle, so that the proper air speed will be obtained. In order

suction on the nozzle with a constant flow of gasoline from a small reservoir, open to the air, in the carburetor. Gasoline carburetors differ only in detail and in general, are giving excellent service.

The adjustment of the carburetor is generally to set the needle valve for good operation at low speeds. At high speeds, the tension of the auxiliary air-valve spring is regulated. Most beginners carry too rich a mixture and this is worse than too lean a mixture. A rich mixture causes a great deal of smoke in the exhaust. This indicates incomplete burning of the fuel and a resulting loss of power. It means that a great deal of carbon is forming with resulting losses.

One of the worst things to contend with in tractor operation is



Still another job in which the Light Tractor is at home

is entirely unsuited for gasoline use. The gasoline becomes too hot and a loss of power results. However, some hot air is required but the tractioneer must be

When air which is slightly warmed can be used, as in the first plan, instead of hot air, more power can be obtained from the engine because in the second case, the hot air is expanded before entering the cylinder and less air per stroke is drawn in. Small tractor manufacturers are about equally divided as to number on the two types of carburetors, which would indicate both are in equal favor.

I wish to point out a few of the problems in kerosene carburetion so that the reader can see why it is more difficult to use kerosene than gasoline in the tractor. Gasoline easily vaporizes and stays vaporized, but kerosene gas is very unstable and condenses when rarified.

Now, liquid fuel is objectionable when drawn into the cylinder, because some will vaporize and

Continued on page 28

MAX
BRAND

**Galvanized or Painted
Corrugated Sheets**

The maximum value for building purposes. Full weight, properly corrugated to allow an adequate lap with minimum loss, well covered with a coating that protects, this brand has proved its worth by service in Western Canada. Insist on being supplied with MAX Brand and you will get full value for your money. Your local dealer will gladly quote prices or you can send full particulars of your building with measurements direct to us for free estimate.



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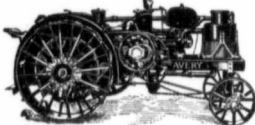
KEROSENE KEROSENE

These Prices on Avery Kerosene Tractors

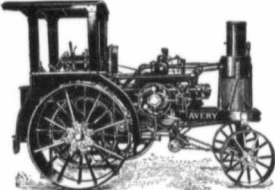
NOW IN EFFECT (Subject to Change)



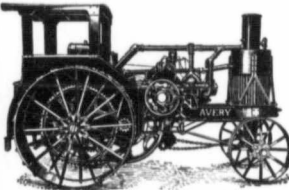
5-10 H.P.—\$500 Cash. For Pulling 2 12-inch Plows, etc. F.O.B. Winnipeg



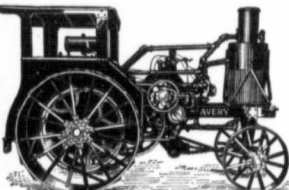
8-16 H.P.—\$1150 Cash, F.O.B. Wpg. For Pulling 3 14-inch Plows, Driving 19x35-inch Threshers, etc.



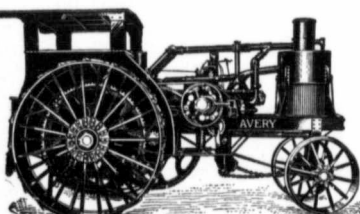
12-25 H.P.—\$1650 Cash, F.O.B. Wpg. For Pulling 4 14-inch Plows, Driving 22x36-inch Threshers, etc.



18-36 H.P.—\$2500 Cash, F.O.B. Winnipeg For Pulling 5 14-inch Plows, Driving 28x46-inch Threshers, etc.



25-50 H.P.—\$3150 Cash, F.O.B. Winnipeg For Pulling 6 14-inch Plows, Driving 32x54-inch Threshers, etc.



40-80 H.P.—\$3800 Cash, F.O.B. Winnipeg For Pulling 8-10 14-inch Plows, Driving 36x60 42x70-inch Threshers, etc.

THE wonderful success of Avery Kerosene Tractors has brought a flood of orders. We were never able to keep up with the demand last year. For 1917, however, we have greatly enlarged our manufacturing facilities and placed large orders for materials which will enable us to increase our output many times over.

This large output will not only enable us to supply the rapidly increasing number who want to buy Avery Kerosene Tractors but has also made it possible for us to start the 1917 selling season with these prices for early deliveries. In view of the uncertainty regarding material costs, these prices cannot be guaranteed for any certain length of time. The only definite statement we can make is that you can buy an Avery Kerosene Tractor at these prices by placing your order NOW.

Costs Less to Buy—Costs Less to Run

And not only can you buy an Avery Tractor at these prices but you can run it cheaper than any other tractor. All sizes of Avery Tractors from 8-16 to 40-80 H. P. burn kerosene. They are all regularly equipped with double carburetors by which you can start on gas and instantaneously switch to kerosene. They all have renewable inner cylinder walls which save you the expense of buying complete new cylinders should the inner walls become worn or scored. They all have crankshafts so strong no owner has ever broken one. They have the fewest gears, the fewest shafts and the fewest bearings of any two speed, double drive tractors built, which means less working parts to wear out. They have no fans, no fuel pumps, no water pumps, no outside lubricators, no belts, no sprocket chains, no counterweights on the crankshaft, no second clutch. You never have any repair expense with these parts on an Avery Kerosene Tractor for they are all done away with. An Avery Kerosene Tractor saves you money in first cost and saves you money in operating and upkeep expense every day you run it.

There Is a Size Avery Tractor to Fit Every Size Farm

You can get an Avery Kerosene Tractor in exactly the right size to fit your size farm. There are five regular sizes—8-16, 12-25, 18-36, 25-50 and 40-80, and a special smaller 5-10 H. P. You can also get an Avery Plow in a size to fit any size Avery Tractor and an Avery Separator in a size to fit any Avery Tractor from 8-16 to 40-80 H. P. We will also begin marketing this spring our new Two-Row Motor Cultivator.

There is real service behind Avery Tractors. They have a design that's fully tested and stands up—they are built in our own large factory. We have our own branch houses located at convenient points where we carry complete repair stocks and maintain a force of trained service men.

It Is Only a Question of Which Tractor

There is no longer any question about the success of tractor farming—it is only a question of getting the right tractor. Write now for new 1917 Avery Catalog, with fine illustrations and clear descriptions of Avery Tractors, Plows, Threshers, etc. Place your order for an Avery Tractor now through the nearest Avery dealer or direct if we have no dealer near you. Get your tractor on the ground early.

AVERY COMPANY
685 Iowa St., Peoria, Ill. **Canadian Avery Co. Ltd.**
Western Canadian Distributors WINNIPEG, REGINA

AMERY

Tractors and Plows—6 Sizes—Fit Any Size Farm

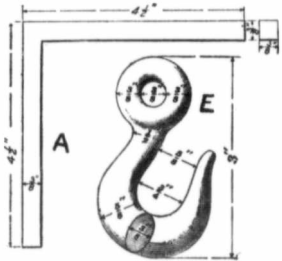
KEROSENE KEROSENE

STOCK FOR BOLTS

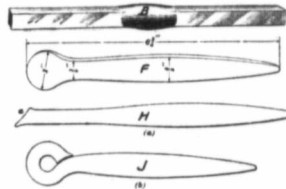
Iron bolts can be made from bars of the same diameter as the bolt, the heads being made by welding on rings or by upsetting the stock. Steel bolts must be made from bars as large or larger than the head, and the body drawn down to the required size.

Making an Angle

If an angle, like the one shown



in Cut (A) is to be made from a bar of 3/4 inch square iron, it will be necessary to upset the bar in the center to give the additional stock required for the corner. About 8 1/2 inches of stock is cut-off, and the center heated and upset to 1/2 inch diameter as shown in Cut (B). The piece is then bent at right angles in the center by sticking one end through the hardie hole down to the heated center and bending the



other end toward the anvil, as shown in Cut (C). To make the corner sharp, the piece is held on the face of the anvil, as shown in Cut (D) and the angle made true by hammering. When striking the blows, the hammer is drawn as shown by the arrow in Cut (D) this draws the iron toward the corner. The piece is finished 3/4 inch square with the flatter, and the ends cut to an equal length on the hardie, and then squared with the hammer.

Making a small Chain Hook

If the chain hook, shown in Cut (E) is to be made, from a bar of 1/2 inch round iron, about 6 1/2 inches of stock is required. The end will have to be upset to provide stock for the eye of the hook. To provide enough stock to make the eye a length of 1 1/2 inches is marked off from the end of the bar and the end heated and upset as shown in Cut until the original 1 1/2 inch length is shortened to 1 inch. The piece is then flattened down to 3/8 inch in thickness, making the upset portion circular and about 1 inch in diameter as shown in Cut (F).

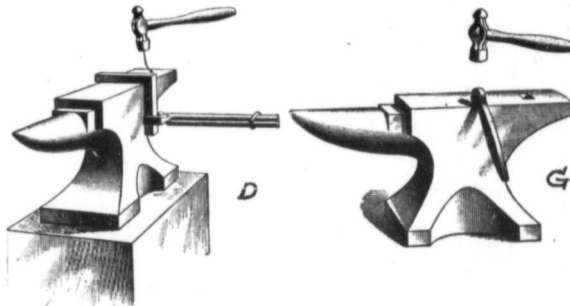
The Art of Blacksmithing

(Continued from February)

Forming the Eye

In flattening the upset portion down to 3/8 inch in thickness, it should be spread sidewise as much as possible. If it draws out in length, it may be upset a little in a swage or heading tool, or it may be upset on the edge of the anvil as shown in Cut (G). When the head has been formed, it is heated and a 1/4 inch hole put

piece is turned over and punched from the other side, where the iron shows a black circular spot. The core is driven out through the hardie hole or through the pritchie hole. Some smiths put a little coal or coke dust into the hole after it has been started and then finish the hole by driving the punch on top of it; this keeps the point of the punch cool and pre-



through with the punch, which should be kept cold by dipping it in water before and after it is used. After the hole started, the punch is held aside to see whether it is in the center; if it is, the punch is driven down well and the

vents it from sticking in the hole. When the hole has been punched, the eye of the hook is raised to a welding heat and worked over to weld up any parted fibers or split places. For this, the punch is put into the hole and

left there while hammering the eye. The punch is driven down occasionally to keep it tight; this will spread the hole to about 3/4 inch in diameter.

Another method of making the eye is to take a sufficient length of material to form the eye of the hook by bending the end of the rod around a pin, a mandrel, or the end of the horn of the anvil.

The eye end of the rod is first scarfed as shown at (a) Cut (H) and is bent around to form the eye as shown in Cut (J) after which the end is welded. These latter operations will be described in detail under separate headings in connection with welding operations.

Bending the Hook

The corners are next rounded and the hook bent into the required shape by holding it on the horn of the anvil and striking it with a light hammer.



Aim to Get This Trade

Mark

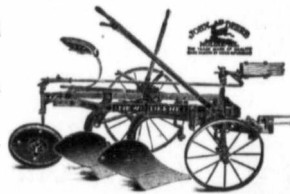


on goods you purchase and Hit the Bull's Eye of satisfaction found in John Deere Goods

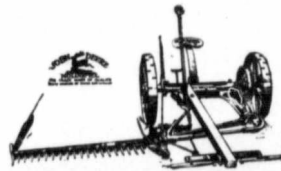
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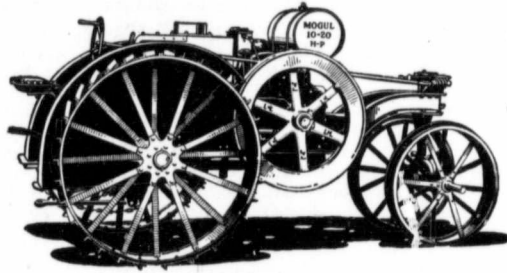
Then why not buy the BEST? You cannot afford to experiment, that's up to the manufacturer. 99 per cent. of the people will tell you the Deere Plow is the BEST. Why? Because it's grown up with the country! It's no experiment—it is Honest.

THE JOHN DEERE PLOW CO., Limited
Winnipeg - Regina - Calgary - Saskatoon

MENTION THIS PAPER

AN AUXILIARY AIR DEVICE

A device which, in view of the low grade motor fuel now on the market, appears to have some merit has recently been developed. In the lower end of the overflow pipe from the radiator of an automobile is placed a trap valve that will allow any condensation, or overflow water, to escape, but retains the steam or watery vapors. From a point above the trap valve a pipe leads to the inlet manifold, where it connects with a small spring-controlled mushroom valve opening into the manifold. In its course this connecting pipe is led along in contact with the exhaust manifold, in order to keep hot, and prevent condensation of the watery vapor passing through it. It will be appreciated that this device operates in the same way as a number of other auxiliary attachments, but it admits hot, moist air to the manifold instead of the ordinary atmosphere. It is claimed that this results in a very satisfactory increase in economy, together with increased power.

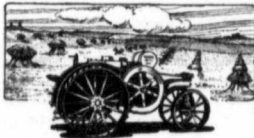


Here is Mogul 10-20 The New-Size Kerosene Tractor

OUT of the good work Mogul tractors have been doing on hundreds of West Canada farms has now grown **Mogul 10-20**, the kerosene tractor that is best suited for every need of the average farmer. It is of the popular size—its 10-H.P. at the drawbar and 20-H.P. at the belt take care of the heavy rush work of seed bed preparation, harvesting, threshing, plowing, etc., and give enough and not too much power for between-times belt work, hauling, etc.

Mogul 10-20's big economy feature is this—it works on kerosene, the cheapest of engine fuels. Day in and day out, while there is work for it to do, it turns common coal oil into the most efficient power. **Mogul 10-20** is designed and built from the ground up to run on kerosene—to stand the extra strains in kerosene burning. The patented Mogul mixer and lubricating system are specially constructed. Farmers who know the work of Moguls will know that **Mogul 10-20** is a real kerosene tractor.

Every part of **Mogul 10-20** construction is calculated to give you satisfactory power. Keep on time with all your farm work. If your requirements call for a larger tractor, consider **Mogul 12-25**, and remember that International Harvester tractors range up to 30-60 H.P.—all kerosene economy tractors. **Mogul** power costs about half as much as gasoline power and about one-third as much as animal power. Write the nearest branch house for a catalogue—NOW!



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:: :: Lubrication and Care of Engines :: ::

THERE is a false impression abroad in the land in regard to lubrication, which it is our desire to correct. The impression seems to prevail that all that is necessary to lubricate a piece of machinery is to take an oil can of some kind and pour a quantity of oil on the different bearings. This is only a part of the operation. To properly lubricate a bearing, it is necessary to do everything that will cut down the friction on that bearing. The worst enemy to a bearing is the dust and dirt which accumulates in the surplus oil around an oil hole. This will mix with the lubricant and go into the bearing in the form of a dirty, grimy paste and wears the bearing nearly as fast as though it were made for the purpose.

Perfect lubrication then, you will see, consists in first removing everything from the vicinity of the oil hole that might mix with the oil and get into the bearing. A cloth or piece of waste should be used, and after the cleaning process is accomplished, the surplus oil should be wiped off the part so that there will be nothing for the dirt to adhere to. By this method of lubrication, the wear on the bearings will be very small and as a result the engine will run two or three times as long without replacing.

There are several methods which may be applied to lubricating a gas engine—force feed, or mechanical oiler, gravity system, grease cups, splash system, and the time honored and ever faithful hand squirt can.

All of these systems will do their work properly when kept in proper condition, but none of them will work unless they are kept in condition to do their work.

The force feed system is used largely on the heavy engines and especially on the tractors, and all engines which are exposed to dirt and the elements. We will take up this system first. The tank or oiler, as we will call it for the sake of brevity, is generally placed on top of the cylinder, on account of the necessity of keeping the lubricating oil warm in cold weather to get the best results. A number of little pumps and pipes, one of each for each bearing to be lubricated are supplied. The pumps are connected up on one or two shafts which in turn are connected with some working part of the engine to furnish the motive power. At the top of these little pumps is generally placed some kind of a sight feed, so that the operator can see how much oil is going to

each bearing. Means are also provided for the adjustment of the amount sent to each bearing, to make the oiler economical and also efficient.

Most of the oilers are run by a small ratchet gear of some kind attached to either the crankshaft of the engine or the cam shaft. Care should be taken to see that this ratchet gear works uniformly every time. After a little wear takes place in these gears, the ratchet will sometimes fail to work every time, which will cut down the quantity of the lubrication. When this fails to a sufficient amount, it will cause the engine to lose power.

This brings to mind an incident where a tractor was being used for plowing. The salesman had told the owner that the oiler was automatic and would never need any attention except to add oil as it was used out. The engine began to fail on power. An expert was sent out with a new set of rings, which were placed in position with a liberal amount of oil on the piston, and for the time being remedied the trouble, but as soon as the surplus oil was

gone the old trouble developed. Another expert was sent out and discovered at once that the oiler was worn in the ratchet so that it did not deliver oil to the bearings every time. Without stopping the engine, he adjusted the trouble and the engine almost immediately came back to its old power. This not only shows the importance of the oiler, but the importance of the care of the oiler. The salesman was, of course, at fault in not telling the customer that the oiler would need a little attention occasionally.

The oiler we now have in mind has two sets of pumps. One is driven by the engine and is in use all the time the engine runs, the other is driven by one of the drive wheels of a tractor and is used only for lubrication of the gears in use when the tractor is moving about on its wheels. This is a very convenient arrangement as it does away with the necessity of turning on the oil pipes which go to these gears every time you want to operate it as a tractor. It also saves considerable oil which would be wasted if the operator failed to

shut off this part when the engine was not in use as a tractor.

A pipe will run from the oiler to each bearing that is to be lubricated. The pump will be set to deliver the exact amount of oil this bearing requires, and will not only save oil, but will save the engine frame from becoming besmeared with the waste oil. These pipes should be removed and cleaned out occasionally to prevent their clogging up and preventing the proper lubrication of the bearing which they supply. It only takes a few minutes to release both ends and blow through them with the mouth or by an air pump of some kind, then you know they are right.

Where an enclosed crank case is used there is generally some means provided for the dipping of a little oil out of the bottom of the crankcase at each revolution for the lubrication of the crank bearings. The oil is supplied to the crank-case by a separate oiler pipe or may be secured by allowing the surplus oil from the crank axle bearings to go to the crankcase. There will be more oil picked up each time than is required for the bearing, but it will be thrown off and drain back into the base of the crank case where it makes another trip.

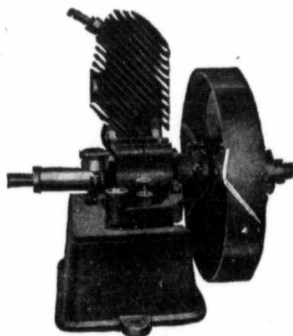
There is another method of lubricating the crank bearing. It is used in both the force feed and gravity oiling systems. In this method the oiler or pipe for this bearing delivers the oil to a small cup at the highest point reached by the crank in its revolution. A small piece of common lamp wicking is attached to the bottom of this cup. The oil runs down onto the wick and a small projecting cup on the crank axle picks up a drop each time.

The gravity system of oiling is what its name would imply. The oiler or tank is placed in such a position that the oil will run to all the different bearings by gravity. A system of pipes, similar to the ones above may be used, even to the sight feed attachment. There may also be used with this system a separate oiler for each bearing. The oiler, in this instance, consists of an oil cup, generally made of glass, a little valve for regulating the amount to be fed, and for shutting off when not in use, and a sight feed attachment of some kind to show the amount going to each bearing. The adjustment is generally such on this oiler that the oiler may be turned on and shut off without interfering with the adjustment.

—J. L. Hobbs.

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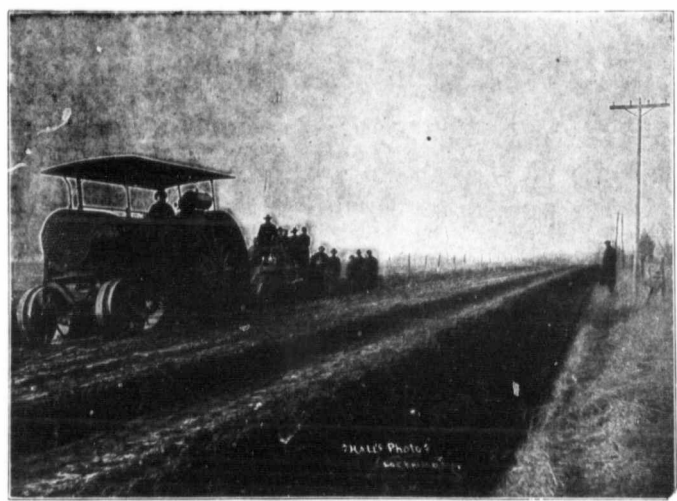
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YOU HAVE TO RELY ON SOMEONE'S WORD AS TO THE QUALITY OF THE TRACTOR YOU BUY, SO WHY NOT TAKE AULTMAN-TAYLOR'S, FOR IT'S A HABIT WITH THEM TO TELL NOTHING BUT THE TRUTH ABOUT THEIR PRODUCTS.

THE TRACTOR BUYER has to rely to a great extent on the maker's word as to the quality of material and the kind of workmanship that goes into the tractor he buys, for he cannot dissect each part for inspection of workmanship—neither can he analyze the materials that enter into its construction. Therefore, one of the first things he should consider is the manufacturer's reputation for honest building and his ability to make good on his guarantee. A tractor may have every appearance, after being groomed with a coat or two of paint, of being high grade, yet the material and workmanship may be of the poorest quality.

THE NAME "AULTMAN-TAYLOR" on any piece of farm power machinery has always stood for the Highest Standard of Value. We've been building good machinery for so long a time that it is second nature with us to build only one grade—the highest. While the tendency of many tractor manufacturers has been to lower the standard of their product, in order to meet price competition, we have been exerting every effort—employing every means to raise, rather than lower, the quality of our tractors.

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Four Is Ultimate Engine

Paper read by A. P. BRUSH to the
Buffalo Engineering Society, December, 1916

ISN'T the four-cylinder engine coming back? Will the four-cylinder engine ever come back? As a matter of fact the four-cylinder engine isn't coming back and never will come back. Such a thing is impossible, for the very simple reason that it has never gone out.

Considered solely from the standpoint of numbers, the four-cylinder engine is, and has been for the last ten years, the standard prime mover for self-propelled road vehicles and, in my judgment, will continue to be so long as the four-cycle internal combustion engine holds its place as the most satisfactory prime mover for mobile use. Other engines of the four-cycle internal combustion type, such as the six, the eight and the twelve-cylinder forms, are more or less special engines built for the purpose of securing results outside the range and capacity of the four.

Naturally the question will suggest itself, if the four-cylinder engine is susceptible of development and improvement, and if it is even numerically the most popular engine and has the greatest amount of capital invested in its production, is it not reasonable to suppose that its development has been carried further than that of any other mobile prime mover?

Multi-Cylinder Development

It is my opinion that the six, the eight and the twelve-cylinder have all been developed more nearly to their ultimate possibilities than has the four-cylinder engine, and it is also my opinion that the greatest obstruction to the development of the four-cylinder toward its ultimate possibilities has been and is its very popularity. Volume of production makes for efficiency of production and stagnation of development.

The production engineer has carried his work nearer to the ultimate with respect to the four-cylinder than with respect to the six, the eight or the twelve, but to secure this result the production engineer has been an obstructionist as regards the development engineer. With his face set firmly in the direction of efficiency in production, he has been, with equal fixedness, opposed to change, because change is the arch enemy of production efficiency.

Progress in design, so far as the large-quantity manufacturer of four-cylinder-engine cars is concerned, may be said to originate only in the minds of the sales department, finding its expression

in their effusions, to the end that it may exist as an hallucination in the mind of the ultimate consumer.

A Commercial Angle

There is another very real obstruction to the development of the four-cylinder engine. It has come to be accepted as the engine for the extremely low priced automobile. It is, of course, possible that these Kresges and Woolworths of the automobile industry are producing the only marketable type of light weight car of limited passenger capacity. That is a commercial rather than an engineering question and, technically at least, outside our consideration at this time. For use in the so-called pleasure type of automobile the four-cylinder engine is pre-eminently the engine to be used in light-weight cars whose ultimate owners are their own chauffeurs and mechanics. Right here I want to venture the opinion that this class of user is entitled to, and a considerable proportion are willing to pay a reasonable addition for, better car performance and higher comfort value combined with the same or

greater simplicity and compactness of mechanism.

During the past year a four-cylinder engine has been designed, tested, and its production in a light weight car has been arranged for. The cylinder dimensions are $3\frac{1}{2} \times 4\frac{1}{2}$ in., giving a piston displacement of just under 150 cu. in. Its maximum power, as determined by exhaustive dynamometer tests, is just over 44, giving a horsepower per cubic inch value of 0.29. Comparing this with the best four-cylinder engines previously referred to, you will find an increase of over 40 per cent in power output per cubic inch of piston displacement and an increase of over 25 per cent in total horsepower available.

Comparing maximum horsepower output does not tell the whole story. Good performance in an automobile means, in the engine, a high power output throughout a wide percentage of speed. In this respect this little engine probably surpasses its popular predecessors to at least an equal degree. Owing to the absence of published power curves I cannot make a direct

comparison in this respect. I can only tell you that it excelled the maximum power output per cubic inch of its predecessors throughout a range of over 2,000 r.p.m.; that is, it developed over 0.2 h.p. per cubic inch from 400 r.p.m. to 2,600 r.p.m. Because of its smaller cylinder diameter, and, further, because of the fact that it is of the two-bearing- crankshaft type, this engine occupies much less room in the car than any of the other engines used for comparison. This means, of course, either more passenger room and comfort for a given wheelbase or the same passenger room and comfort with less wheelbase. These comparisons, I think, clearly demonstrate the possibility of increased performance values in the light-weight four-cylinder car.

Now, let us see what are the results in comfort value. The objectionable characteristics of a four-cylinder engine are vibration at high speed, due to the weight of the pistons and the angularity of the connecting rods, and another class of vibration which may be described as torque vibration, due to the relatively heavy and infrequent torque impulses at very low speeds. Obviously these smaller cylinder dimensions mean a reduction in piston weight, with a consequent reduction in vibration tendencies at high speeds, and because of its greater speed range it is obviously possible and advisable to use a lower rear-axle gear ratio, which means, of course, greater frequency of impulse and therefore less torque vibrations at low speeds. This marked increase in performance and comfort value has been secured with no increase in the complication of the mechanism which the owner-user must understand and care for, and production efficiency is equal with very little if any increase in engine cost.

Valves Are Adequate

To avoid making this paper too long I shall give you only the briefest possible resume of the essential details which were the means employed to secure the results outlined. The little engine is of the overhead-valve type, and, by the omission of valve gears and some other minor details of arrangement, valves of adequate size were used. Having secured valves of adequate capacity, the next problem was to secure a carburetor and manifold arrangement which would give somewhere near maximum power at high speed and not destroy the engine performance at low speed.

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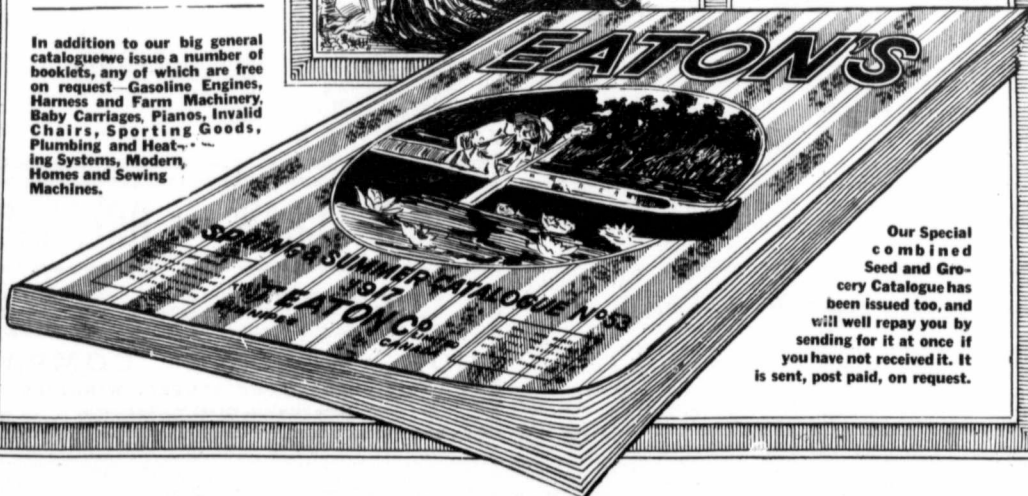
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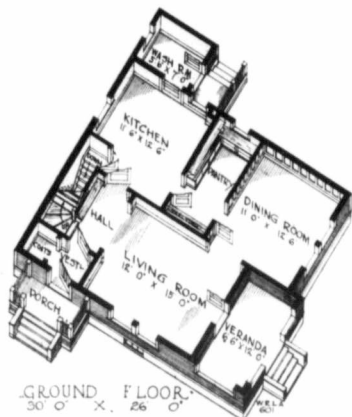
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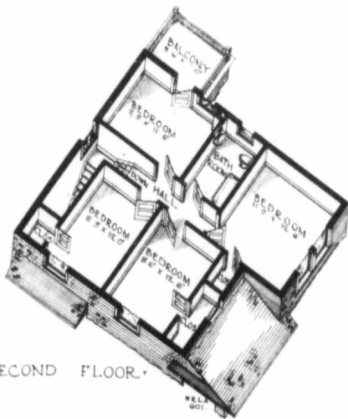
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Attention is drawn to the closet in the right hand front bedroom, shown here, equipped with high up window, giving light and ventilation, an important development of the modern house.



How Your Auto Generator Works

Highly necessary part of mechanism is rarely understood by the layman

Mr. Automobile Man, do you know just what your automobile generator does for you? It isn't very difficult to understand, and is something which every person who drives a machine should be familiar with.

In most cars nowadays, the generator is the primary source of all the current used in the car. It supplies the electricity to charge the storage battery, to ignite the charges of explosive mixture in the engine cylinders, and to light the lights, under certain conditions.

The generator consists of two essential parts, a revolving part, called the armature, and a stationary part, called the field. The armature consists of a frame of

iron on the shaft, carrying windings of copper wire. These windings are all brought out to a device at the end of the armature, just inside of one of the end bearings, called the commutator. The electric current is generated in these windings, as they revolve, and led out to the commutator, from which it is collected by carbon brushes, bearing upon its surface. These brushes are stationary, being generally fastened to the end bearing plate of the generator. From the brushes, the current is led out to the various parts of the automobile where it is to be used.

The field consists of a magnet, usually of the general shape of a horseshoe, between the poles of which, the so-called magnetic field



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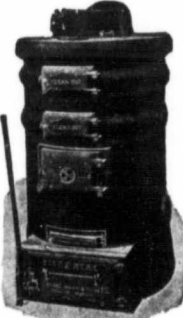
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exists, and the armature revolves. The current is generated as the armature conductors revolve in this magnetic field. The field magnets are usually electro-magnets, that is, iron, with current carrying windings of copper wire. These windings magnetize the field magnets, to make them carry out their functions.

In connection with the standard automobile generator, is an automatic switch, which makes a circuit whenever the engine runs fast enough for the generator to operate properly, and allows the current to flow from the generator. When the speed drops below the operating point, the switch is again automatically opened so that current will not flow backwards from the storage battery into the generator.

Some machines have a separate generator for the ignition, called the magneto, which is entirely separate from the starting and lighting system, and furnishes exclusively, except sometimes for starting, current only for ignition. The principle of the magneto is the same as that described for the generator above, but it generally has a permanent magnet, instead of an electro-magnet, for the field. In the regularly equipped Ford car, the magneto also supplies the current for lighting.

Some cars also reverse the generator function and also use the generator as a motor to start the engine, the generator automatically beginning again as the engine comes up to speed.

PLUG POINTS FOR VARYING CONDITIONS

Manufacturers can be trusted to send out a new car with the engine fitted with sparking plugs suited to the special requirements of its work, but it does not follow that this brand of plug will always be the best for that engine. In fact, it is almost safe to say that, after considerable use, another type may give better results, and it may even be found that the plug which will work well in one cylinder will not suit another.

This is very easily to be understood, when we realize how the working condition of the engine may fluctuate. Thus, a clean engine, even of high compression, will not necessarily overheat, but, as it becomes carbonized, the compression ratio will be noticeably increased, and excessive heating probably will then take place. Hence engines of this type, and, in fact, most fast-running, high-speed models, are served best by a sparking plug with heavy, substantial electrodes, which will also dissipate the heat rapidly. It is essential with such a plug that the electrical insulation should be above suspicion,

otherwise we may find that occasionally oil will be thrown upon the tips of the electrodes, and not being burnt off owing to the plug being of the super-cooled type, the current will be discovered shorting internally.

This brings us to another extreme state of affairs. When, owing to the pistons having worn to a sloppy fit, or the piston rings being in a condition when they should be replaced, oil is thrown up continually onto the electrodes. This will produce intermittent misfiring and most erratic running, which can only be cured by using a sparking plug with thin, fine electrodes. These will become so hot under the firing charge that the oil will be burnt off immediately. Here, again, it is possible that the effect may be overdone, for, if the plug points become so hot as to get incandescent, pre-ignition is likely to take place.

It will be seen that the conditions are always somewhat varying, but if any of the leading plug manufacturers are taken into one's confidence and the exact difficulties described, one can rely upon receiving advice which will prove very useful in the selection of a type of plug to meet the special requirements.

TOURIST SLEEPING CARS

The majority of people have only a very vague idea of what a tourist car really is. Some people never having ridden in one of these cars, seem to have a hazy impression of something, not exactly a box car, and not exactly a standard sleeper, a contrivance built for accommodation, but not comfort. The reason for this erroneous idea is, no doubt, due to the fact that in this country the great bulk of the travel is first class, while in the Old Country and on the Continent, the recognized mode of transportation is third class. Second class transportation in this country not only exceeds that of a like class in European countries, but will compare very favorably with their best.

The Canadian Northern Railway has now surpassed itself in the tourist car it is now operating throughout the main lines of its system. These cars, besides being the newest, have all the appointments similar to those of a standard sleeper. The linen, blankets and pillows being of the same quality and freshness. Many of the little conveniences hitherto unknown outside his pampered brother, the standard sleeper, have been borrowed and permanently installed in the tourist sleeping car. It provides practically all the luxuries at something like half the expense.

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Dairy Barn, Silos and Milk House Built of Hollow Tile

You don't buy a horse because he's cheap. You get one that can do the work! So—for Economy and Durability—Build with

HOLLOW TILE
DOMINION FIRE PROOFING COMPANY, LTD.

SALES AGENTS
503 Confederation Life Building, Winnipeg
Alberta Clay Products Company, Limited, Manufacturers

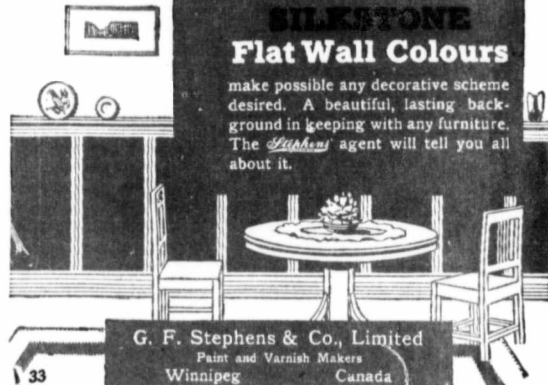


SILKSTONE your Walls and Ceilings

Sanitary walls and ceilings, tastefully soft in finish and without gloss, are no longer an expensive luxury. Choose a permanent coating that can be washed with pure soap and water. Twenty-five handsome shades of

SILKSTONE Flat Wall Colours

make possible any decorative scheme desired. A beautiful, lasting background in keeping with any furniture. The *Stephens'* agent will tell you all about it.



G. F. Stephens & Co., Limited
Paint and Varnish Makers
Winnipeg Canada

Your very Last Opportunity to obtain a Car---FREE. See page 53 of this issue

SAVING IN PRODUCING

If the Indiana Manufacturing Company's claims of merit of the Sharple grain saving device are true, and if there is a loss on an average of one and a half bushels to the acre on all wheat threshed by all kinds of machines, as set forth by the following letter, and if by using this device there can be obviated, or even a fractional part of the waste can be saved, then it would seem that every manufacturer of threshing machinery would jump at the chance of incorporating any feature which would prevent this loss.

In a letter from Mr. J. C. Mohler, secretary of the Kansas State Board of Agriculture, to the Indiana Manufacturing Company, that gentleman says:

"Your letter of December 12th is at hand. I believe the quotation about the loss of wheat by wasteful methods of harvesting and threshing in Kansas is approximately correct. We have no printed matter or estimates along this line for distribution, but the approximation was based on statements from a number of extensive and long time wheat growers in the state. Some enterprising men in the wheat belt have sort of made it a business to re-clean straw stacks and gather up the scattered wheat. It is not uncommon to recover sixty to seventy bushels of wheat to a stack, and in one instance of which we know, eight hundred bushels were thus secured from a three hundred and twenty acre field. One man and his family reclaimed sufficient wheat by this method to bring them \$3,500. Of course the loss varies according to the condition of the wheat and the adjustment of the threshing machinery. Where a straw stack is re-cleaned, it is run through an old fashioned fanning mill equipped with a homemade cylinder and operated with a gasoline engine. As we have had about nine million acres sown to wheat in the past few years, you see the average loss would amount to about one and one-half bushels to the acre to account for the thirteen million bushels loss for the state."

This estimate may be erroneous, indeed it would seem that it was. Yet, at the rapid rate of threshing, a certain amount of waste grain has always been found, but nothing approaching any such figures as these has ever been claimed before. This would mean a loss of millions of bushels of wheat.

Every thresherman wants to save every grain of wheat possible for the farmer, and no class of machinery in the world is more skillfully operated than threshing machinery. There may be, there always are, exceptions, no matter what the make of machinery used, but if anything approaching the claims set forth above are true, then the question should have serious consideration, and anybody's device that will save even a small percentage of this alleged loss should be welcomed by every builder of threshing machinery.

The Indiana Manufacturing Company are conducting a campaign of education in the grain raising sections and will follow this up, calling the attention to the loss of grain, by personal visits to farmers and by posters and, in keeping with their slogan of a few

years ago, propounding the question "Where do you want your grain, in the sack or in the stack?"

A WORD OF ADVICE TO THE FARMER

During the Winnipeg Bonspiel we overhead a portion of conversation in one of the Winnipeg hotels, which in effect was as follows:—"I am going to bring in a bunch of cheap tractors into Western Canada. I am going to sell them just as quickly as I can, and then get out of the game. I don't care a rap how much trouble the farmers have with them afterwards or what they do with them. I know that there is a demand for small tractors, and I know I can dispose of practically all I can get." The rest of the conversation was lost, but it started us to thinking.

We know that there is a demand here for the light internal combustion tractor, and we know that the farmers are going to buy this class of machine readily. In view of the above conversation we feel that a word of warning is not amiss.

Mr. Farmer before you purchase a tractor in 1917 here are some points that you should satisfy yourself upon:

1.—What is the standing of the company through whom you are buying the tractor?

2.—Is there reasonable assurance that they are going to remain in business for some time, thus insuring you service?

3.—How about stocks of repair parts? Are you sure you can get repairs within reasonable time? Remember that a few days might easily mean the loss of your crop.

4.—Is the tractor a new thing, or has it been thoroughly tried out? In other words are you doing experimental work or has that already been done by the manufacturer?

Wherever there is easy business you will find plenty of people take advantage of it and for this reason the farmers should be doubly careful about whom they are dealing with.

LEAVE THE MAGNETO ALONE

One of the hard and fast unwritten rules of gas engine operation is to leave the magneto alone. It is a sure way of making trouble for one who doesn't know much about it to take a magneto apart. This is an operation that should be done at the factory or by some repairman who knows his business.

The magneto is readily accessible in so far as the minor points of adjustment are concerned and taking it apart is really not necessary. Dirt is the principal enemy which is apt to get into the magneto, but by the use of a little gasoline it may be readily cleaned from the brushes and other parts.

Washing Machine

Reversible Wringer

Easy control guaranteed to be the best on the market. Will not injure the finest fabric.

Price \$22.00
Shipping Weight 125 lbs.

HARROW TEETH

3/4 inch, extra long thread. Each 6c

PLOW SHARES

12 inch Crucible Steel. Each	\$2.45
13-14 inch, Crucible Steel. Each	\$2.70
15-16 inch, Crucible Steel. Each	\$2.90
18 inch, Crucible Steel. Each	\$3.10



These shares are guaranteed to be exact duplicates and to fit your plow. Buy your shares from the Stover Company and get good shares at right prices. Beware of imitations.

Write for complete list.

The Canadian Stover Gasoline Engine Co.

BRANDON, MAN.

Write for Special Harness Circular



Wanted Over A Billion Dead Gophers By the Farmers of Canada in 1917

One thing agricultural Canada needs this year is the death of over a billion gophers.

Gophers cause a loss of 25 cents each per year. An enormous loss when you consider the vast number of them.

Professor V. W. Jackson, of the Manitoba Agricultural College, states that on a careful survey in Manitoba "it was estimated that there are at least 9 million gophers in twenty-five townships (average 20 per acre) causing a loss of \$2,250,000." He estimates the loss at 25 cents per gopher.



There Won't be Any Mourners If you Use Kill-Em-Quick

GOPHER POISON

The Time-Tested, Guaranteed Gopher Killer for gophers—it gets 'em all—none left for mourners—costs only 1 cent an acre—saves enormous losses.

Guaranteed

We unreservedly guarantee Kill-Em-Quick to kill all the gophers on the land for 1 cent an acre. If it doesn't, we will refund the purchase price. We print our guarantee on every package as well as in our advertising. Just treat your farm as follows and you'll have no gopher losses:—

Soak oats or ground feed over night. Drain off water and thoroughly stir in Kill-Em-Quick, then drop the moistened grains into gopher burrows.

That's the easy, safe, sure way to save your crops. No danger in handling. Spreads no noxious weeds. Far cheaper and more certain to kill than other methods.

Get Kill-Em-Quick

Get relief from gophers—they cost you more than your seed grains. What they destroy will give your children a fine education. Get Kill-Em-Quick from your druggist. 40-acre size 50c; 100-acre size \$1.00. If he cannot supply you, we ship direct upon receipt of the price. Send for free Gopher Book.

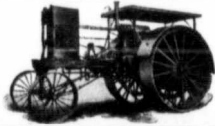
Kill-Em-Quick Co., Ltd.

Dept. C Winnipeg, Canada



An Old Friend in a New Dress





Flour City Tractors

17 YEARS IN THE FIELD

A PRACTICAL DESIGN CAREFULLY DEVELOPED.

SIMPLICITY IS ITS BEAUTY, STRENGTH AND POWER ITS STRONG POINT.

ITS SUCCESSFUL CAREER HAS BUILT OUR FACTORY AND MADE OUR BUSINESS

THE FLOUR CITY IS BUILT IN SIZES SUITABLE FOR ANY FARM.

BUY ONE BIG ENOUGH TO DO YOUR WORK.

CATALOG ON REQUEST.

KINNARD-HAINES CO.
828 44th Ave N. MINNAPOLIS, MINN.

ARE YOU LOOKING FOR A NEW FARMING LOCATION?

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

R. W. RUTHERFORD
309 Merchants Bank
Winnipeg Manitoba

Big Money
Let us start you in a business that will make you from \$15 to \$50 a day when farm work is slack. Other men have done it for years with an **Improved Power Well Combined Well Boring and Drilling Machine**. Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed. Small investments; easy terms; make machine pay for itself in a few weeks work. Write for free illustrated circulars showing different styles. **Life Manufacturing Co.** Box 931, Clarinda, Iowa

SMALL CRANE FOR A WAGON

Occasionally heavy objects must be lifted into a wagon bed, which calls for two or more men to do the work. Not always having sufficient help at hand, one farmer made a light crane that can be readily attached to any wagon, which aids him in hoisting all loads too heavy for one man to lift.

The crane consists of a 2 or 3-in. gas pipe, about 12 ft long, and two brackets, also a block

and tackle. One of the brackets, A, is forged to fit over the rear axle of the wagon and provided with a vertical bearing on which to set the end of the pipe. The other bracket, B, is shaped to form a ring around the pipe, and is attached to the wagon bed in front of the standard. The pipe has about 2 ft. of one end bent over, as shown, which is drilled to receive a ring that can be used to fasten the tackle. A double tackle will be sufficient for all purposes. The pipe can be easily taken out when not in use. The bend in the pipe will allow the object being hoisted to clear the rear end of the wagon box, whereupon the crane can be swung around and the object lowered.



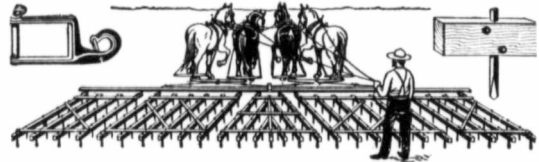
Wagon Crane Made of 2 Length of Gas Pipe with a Block and Tackle Attached

CHANGE YOUR CRANK CASE OIL

No matter how good a quality of oil or grease you use in your crank case it will not retain its proper lubricating qualities forever, but steadily deteriorates by use, and also gathers a continually increasing amount of grit and foreign matter from the wearing of bearings and carbon formed in the cylinders. The result is that, although there may be the proper quantity of oil in the base, its quality has deteriorated, and it has become positively injurious. The same remarks apply to the lubricant in the gear and differential cases, where the accumulation of foreign matter is particularly rapid, owing to the constant rubbing together of the gears. It is good policy to change all oil and grease in the cases mentioned frequently—certainly as often as any darkening of the color is seen, and the cost will be more than made up in the increased life of the car, decreased charges for repairs and freer running. Merely diluting the muddy mass with fresh lubricant does not remedy the difficulty.

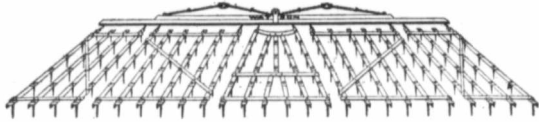
A WATSON HARROW

is a "blanket policy" against crop failure. It is the best harrow that can be made, and no other implement will so perfectly form the dust mulch.



WATSON'S BOSS WOOD HARROW

is made of seasoned hardwood—correctly designed and finely finished. Has malleable draw clevis of the very best pattern, and two rivets to each tooth, so that there is no danger of its coming loose or splitting the back. Will do better work than any other harrow of its kind and thousands of experienced farmers know this.



WATSON'S STEEL BOSS HARROWS

are indispensable to any efforts either in extensive or intensive farming. Tooth bars are all angle steel—cross braces of channel steel, each tooth separately fixed in place by steel wedge. Teeth are dagger shape, with edges straight in line of draft. Equipped with pulley hitch eveners. Light draft, easy on horses. 101 tooth, 17 feet wide, 140 tooth, 24 feet wide. **SAVE**—don't scrap your Moline and Janesville Plows. We keep all repair parts.

We sell Straw Cutters, Grain Grinders, Root Pulpers, Wheelbarrows Harrow Carts, Turnip Seeders, Pole and Cordwood Saws, Plow Eveners, Pump Jacks, Pulverizers, Washing Machines, etc.

John Watson Mfg. Co.
LIMITED

Agents for Viking Cream Separators.

311 Chambers St.

Winnipeg

BARGAINS TRACTORS AND PORTABLES

LOOK at these for Bargains that cannot be duplicated anywhere.

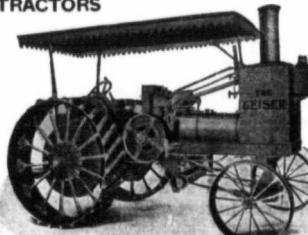
GASOLINE TRACTORS

45 h.p. 4-Cylinder Tractors (new). Cash (sold) **\$1500**

45 h.p. 4-Cylinder Tractors (rebuilt) like new. Cash... **\$1200**

45 h.p. 4-Cylinder Tractors, second-hand, good order. Cash... **\$1000**

8-16 h.p. Single Cylinder Tractor, Manitoba Universal (used for demonstrating only). Cash..... **\$600**



PORTABLE GEISER GASOLINE ENGINES

22 h.p. Single Cylinder, on strong truck (new). Cash..... **\$600**

22 h.p. Single Cylinder, on strong truck (rebuilt). Cash..... **\$550**

20 h.p. Single Cylinder, on strong truck (rebuilt). Cash..... **\$500**

Also have a couple of 20 and 22 h.p. Portables which will rebuild and sell at about **\$350 each**.



STEAM TRACTORS

35 h.p. Double-cylinder Geiser (rebuilt). Cash..... **\$2000**
25 h.p. North-West (rebuilt). Cash..... **\$1000**

OHIO ENGINES

15 h.p. Standard (new) **\$328.75** 12 h.p. Standard (new) **\$306.50**

GEISER SEPARATOR

36-56 Geiser Separator, with Feeder and Blower (rebuilt like new). This is a great bargain. Cash..... **\$800**

THE GREATEST PLACE IN WINNIPEG FOR BARGAINS
R. S. EWING, 200 Union Trust Building, Winnipeg

BRITAIN Calls to CANADA

The Factory

The Farm

She must have food---

for her Armies in the Field—for her Workers in the Factory—the Munition Plant
—the Shipyard—the Mine.

She Calls on YOU---to Help.

There's Danger in Sight !!

DO YOU KNOW--

that the rapidly rising price of food stuffs means that the World's reserve supply is getting small ?

DO YOU KNOW--

that a world-wide famine can only be averted by increasing this supply ?

DO YOU KNOW--

that a "food famine" would be a worse disaster to the Empire and her Allies than reverses in the Field ?

But You Can Help !!

YOU CAN--

help avert Germany's desperate submarine menace on the high seas.

YOU CAN--

do this by helping to make every bit of land in Canada produce—the very last pound of food stuffs of which it is capable.

AND REMEMBER--

that no man can say that he has fully done his part—who having land—be it garden patch, or farm, or ranch—fails to make it produce food to its utmost capacity.

These Farm Products are needed for Export.

- WHEAT,
- OATS,
- BEEF,
- BACON,
- CHEESE,
- EGGS,
- BUTTER,
- POULTRY,
- BEANS & PEAS,
- WOOL
- FLAX and FLAX FIBRE,
- DRIED VEGETABLES.

BRITAIN TURNS TO CANADA

The nearest producer of staple foods.

One Ship Equals Four.

CANADA	Length of voyage 2625 miles	BRITAIN.
ARGENTINE & INDIA	6000 miles (more than twice as long as between Britain and Canada)	BRITAIN.
AUSTRALIA	11500 miles (more than four times as long as between Britain and Canada)	BRITAIN.

"No matter what difficulties may face us, the supreme duty of every man on the land is to use every thought and every energy in the direction of producing more—and still more."

Martin Burrell—Minister of Agriculture.

For information on any subject relative to Farm and Garden, write

Information Bureau,

Dominion Department of Agriculture
Ottawa

Manitoba Seeks Your Help In Immigration

There are a large number of prosperous farmers now located in this province, who came either from the South or from the East and who are realising a degree of success in returns for their invested energy and capital which they saw no hope of realising under the old conditions. They have been successful to a degree—many of them far beyond even the "conservative estimate" held out to them for two reasons.

First: The natural conditions to successful grain growing and stock raising were really there and exactly as described by the agents of the government on whose word they decided to "Cross the Rubicon" and make the great venture of their lives.

Second: They had had exper-

ience in raising live stock and grain crops; they had shown by a worthy record of industry and frugality that they could take care of their own money and were therefore the kind of people to be entrusted with the use of any one else's money if they ever needed that assistance.

In these times the Manitoba Government through its immigration department does not seek to encourage the importation of more store-keepers, clerks, professional men, not even capitalists who are desirous of buying land to sell again. With that sort of thing the country is already overcrowded, but the Manitoba Government does offer the very best prospects and the whole of its credit in guaranteeing these to any man with or without family who will come and take part in the cultivation of the still uncultivated land.

Like so many of the finest

things this world holds in its gift, the one obstacle to a full and free participation in the wealth and health and permanent happiness this Western country still holds out to millions of honest souls is simple ignorance of the fact or of the no less simple method of bridging the interval between their present circumstances and the new conditions which are at their disposal

Every settler on the land and every civilian dweller of the city has a duty in these times as incumbent as that which is imposed on the physically-fit fighting man; and that is to help the still unproductive land to produce. If he cannot for any reason take a hand in tilling the soil himself, comfortable and prosperous citizen that he is, he must know of one or more private friends in less easy circumstances who would be grateful for the merest "tip" as to how they might come in and share

in still undeveloped possibilities that will never be exhausted, which (under reasonable treatment) can never be exhausted.

This friendly service at least is due by every loyal friend to his or her friend and no less by every loyal citizen of the Province to the best interests of the Province that has been so kind and hospitable and which, apart from all sentiment, has returned a rate of interest for labor and capital invested in soil cultivation that is out-classed by nothing in honest industry the world over.

We again urge on every reader to respond heartily and quickly to the request for names and addresses of friends in the States or Eastern Canada, who are in the least likely to entertain the idea of coming to Manitoba under a guarantee of success and satisfaction which no limitation that is not inherent in the prospective settler can possibly off-set.

TAKE CARE OF THE AUTO BATTERY

Many automobile owners do not realize the importance and necessity of giving their starting and lighting batteries proper attention in the winter. The battery is a delicate piece of apparatus, and if mistreated, will very quickly depreciate.

Two things are of prime importance; the battery should be kept fully charged, and it should not be allowed to freeze. A battery when standing idle for any length of time gradually loses its charge. Therefore, if the car is not run regularly during the winter, in order to keep the battery fully charged, the engine should be run at regular periods to charge, or else the battery should be charged from an outside source of current. This should be done every two or three weeks. The state of charge can be easily read from a specific gravity hydrometer syringe, which can be purchased for about a dollar from an auto supply dealer. A reading of from 1.250 to 1.300 indicates full charge. The reading is indicated by the number on the hydrometer at the level of the liquid.

A GREAT CHANCE FOR WAR SERVICE

A fine class of mature and experienced men are joining the Independent Forestry Company M. D. 10 now being mobilized in Winnipeg. The unit consists of 227 men, all ranks, and judging from the way recruits have come in so far, it will be up to strength by the last of March. Forestry service appeals to a great many men who are experienced in the bush and sawmill work, also those used to farm work, as they are thus enabled to do their "bit" in a branch of the service with whose work they are familiar.

The medical examination is less severe than for other branches, consequently many who have failed to get into the service before are now enabled to do so. The rates of pay and allowances are the same as for infantry, and transportation is sent to any man who forwards a doctor's certificate as to his fitness. Major D. E. Sprague is a well known and practical lumberman, who is well fitted by experience to command such a unit, and he confidently expects to be overseas almost as soon as the unit is up to strength, as there is no long tedious training for this work. The Headquarters of the Company are at Broadway Drill Hall and 445 Main St., Winnipeg, Man., where all enquiries should be addressed.



Prevent locked wheels and hot boxes by the use of

MICA AXLE GREASE

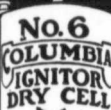
Mica forms a smooth coating on the axle spindle—keeps it cool and well lubricated.

THE IMPERIAL OIL COMPANY Limited

BRANCHES THROUGHOUT CANADA

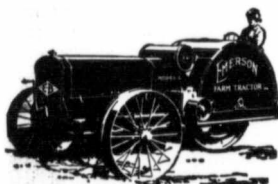
Columbia Batteries

Zing! goes the bell. You can depend on its ringing if you can depend on the battery that rings it. Columbia is the dependable battery.



Canadian National Carbon Co. Limited Toronto, Ontario

FOR GENERAL IGNITION CANADIAN CARBON CO. TORONTO, ONT.



E-B Farm Tractor

Model L-12-20 Horse Power
A four-cylinder, 2-speed, light-weight tractor of great power, suitable for any size farm. Will pull the implements you now have on your farm—gang plows, harrows, mowers, binders, manure spreaders, road drag or graders. Will also operate your ensilage cutter, feed grinder, circular saw, etc. Does more work than horse—costs less and is so simple anyone can run it.

Lawson-Birmingham Implement Co. (Inc.) Regina, Sask., Can.

- Please send me free literature on articles checked:
- Plow
 - Harrow
 - Cultivator
 - Mower
 - Spreader
 - Drill
 - Plaster
 - Hay Tools
 - Lathers
 - Saw Engines
 - Wagons
 - Saws
 - Sale Trailers
 - Potato Machinery
 - Tractors, Horseless
 - Engine Pumps
 - Steam Engines
 - Thrashers
 - Case Binders
 - Saw Mills
 - Baling Presses
- Name _____
Address _____

FIRST STEPS IN GARDENING

Order it from McKenzies

Our 1917 Catalog, known as the "Red Guide Book for the West," explains and illustrates those seeds which have proven to be **BEST FOR THE WEST**. "Every Garden Means a Home"—not just a house but a home. "Twill soon be seeding time—ORDER TO-DAY."

GROW YOUR OWN VEGETABLES

Try This Selection	Prices Pkts.	Postpaid Oz.	Lbs.
Beans	McKenzie's Golden Wax	5c	\$0 50
Beet	McKenzie's Extra Early	5c	\$0 20
Cabbage	McKenzie's W. W. King	5c	25
Carrot	McKenzie's Coburn	5c	25
Cauliflower	McKenzie's Early Snow-camp	25c	3 25
Celery	McKenzie's White Plume	5c	85
Corn	McKenzie's White Cory	5c	35
Corn	Early Malcolm	10c	60
Corn	Peep-o'-Day	5c	40
Cucumber	McKenzie's Long Green	5c	20
Lettuce	McKenzie's Prairie Queen	10c	25
Onion	McKenzie's Yellow Globe	5c	30 2 25
Onion	McKenzie's Red Wethers-field	5c	30 2 25
Pea	Richard Seddon	5c	45
Pea	McKenzie's Prosperity	5c	40
Radish	McKenzie's Rosy Gem	5c	15 1 00
Tomato	Alacorty	10c	40

We have

Thousands of Bushels

Sample Selected Stocks

SEED WHEAT—

Marquis Stock K 70

\$2.10 Per Bush.

OATS, BARLEY, FLAX,

SPRING and WINTER

RYE, FODDER CORN.

Also

Grasses, Clovers, Alfalfa,

Millet, Field Peas,

Speltz, Rape, Potatoes,

Field Root Seeds

Try the

New Fadder Plant

McKenzie's

Duplex Rape-Kale

Very hardy yields

enormous crops

Rapid and vigor-

ous growth. The

Stock Raisers

Ideal Plant.

Order Early

Stock Limited

NEW GARDEN "COLLECTIONS"

EASIEST TO GROW EASIEST TO BUY

EASIEST TO ORDER

Thousands of Plants will use them this season. The handiest and most economical method of purchase. Save you 25c to 95c as compared with individual varieties purchased separately. See pages 4 and 5 of 1917 Catalog

The joys and delights of making a garden can only be fully realized by sowing the best seeds—McKenzie's. We have all the Standard Varieties of Vegetable and Flower Seeds *Sure to Grow*.

SWEET PEAS

in every conceivable form and color. The most popular annual flower grown.

A. E. McKenzie Co.

Ltd.

Brandon, Man. Calgary, Alta.



Very Important Information for Western Canadian Farmers from McBean Bros.

In our last letter of Dec. 8, 1916, we claimed our wheat was worth \$2.00 per bus. and oats 75c per bus. in store Fort William. These prices have not yet been reached, although near it for wheat. The break in prices during the last week was apparently brought about by the large grain operators in the United States, and it looks to us as if it was a deliberate attempt to stampede the farmers into selling their cash grain, the bulk of which would fall into their hands, and therefore, we strongly urge farmers to sit tight and not sell a bushel on this break. We still figure our wheat is worth \$2.00 per bus. and oats 75c per bus., and we feel satisfied that if farmers will hang on they will get these prices. Of course, such advance may not come as soon as we expect, but we figure this will be the ultimate outcome if the war continues. Do not pay any attention to peace rumors, as most of them are manufactured out of whole cloth by large operators who want temporary lower prices. If peace was declared we would likely have a temporary break followed by a sharp advance to a high point, as German and Austrian immediate huge wants would have to be supplied. The world requires all our wheat, oats and barley, and will want them and want them badly before another crop is harvested.

We are commission merchants, and would like a share of your grain this year. Try us by shipping your grain to Fort William, Port Arthur, Saskatoon, Moose Jaw, Duluth or Superior, advise McBean Bros., Winnipeg, Man., and we will look after the grading, etc. We make big advances on each car of grain. Write us any time for market information.

McBEAN BROS.

February 1, 1917.

Grain Exchange, Winnipeg, Man.

NOTICE

DOMINION SEED GRAIN PURCHASING COMMISSION

Notice is hereby given that The Dominion Seed Grain Purchasing Commission will not be in the market to purchase grain suitable for seed after March 20th, 1917, unless special announcement is made; and will not accept deliveries at any of the Interior Government Elevators after that date. This notice applies to all grains.

(Signed) A. E. WILSON,

March 1st, 1917

Commissioner and Chief Agent

How Bill Overhauled His Tractor

He Took the Engine Down and Had it Ready for Spring Work.

By G. P. PEARCE in "The Country Gentleman."

IT WAS ten degrees below zero and a windy night at that, and all hands were trying to wrap themselves round the parlor stove.

"Say, Mike, did you drain that tractor radiator? That alcohol mixture is not strong enough for ten degrees below," said Joe.

"Sure, it's out. I ran it all into that old wash boiler," replied Mike.

"Got a good tight cover on that wash boiler?" asked Bill Steelworth, who was a guest for the week-end.

"There is no cover at all. What do you want a cover for—it won't run away, will it?" laughed Mike.

"Don't be so sure," said Bill. "Didn't you notice a strong smell of alcohol round that wash boiler? Well, that shows that the alcohol is evaporating and your mixture will get weaker. With alcohol round a dollar a gallon, it is too expensive to try to perfume the great outdoors."

"Well, it isn't bottled up so terribly tight in the radiator is it?" suggested Mike.

"No! It isn't bottled tight, but it comes pretty near to it. You will find that the only outlet from your radiator is a long tube about five-sixteenths of an inch in diameter, and no wind or air currents can blow across the water surface. Even with all these precautions the alcohol keeps slowly evaporating, and what amounts to a five-degrees-below-zero mixture to-day may be only a zero mixture next week. I test my mixture every week in the winter with a little device that cost me about a dollar.

"I draw a canful of the mixture out, warm it to sixty degrees Fahrenheit, and then float the freeze-meter in it. The number it sinks to is the temperature at which that mixture will freeze. When it gets too weak I strengthen it up a little with more alcohol. It's pretty cheap insurance too. A cracked cylinder or a busted radiator would knock a good hole in sixty dollars," said Bill Steelworth.

"That's a good idea. I shall do the same," said Fred, Joe's brother.

"Well, I guess we won't use the tractor again this winter, so we'll put that mixture into something tight and leave things as they are until spring," said Joe.

"If you boys aren't going to use the tractor again this winter, why don't you overhaul it now, while you have plenty of time?" suggested Bill.

"Well, you see," stammered Joe, "we have had it only one season and we thought it ought to hold out for another. It runs all right and, to tell the truth, we hardly know just what ought to be done."

Trouble Insurance Pays

"It might hold out another season all right and then again it might develop a lot of trouble right in the middle of your plowing season; and the value of a tractor depends, above everything else, upon its ability to get you through the plowing season. I take no chances with mine and I have run it two seasons now without a breakdown that lasted more than thirty minutes. That's more than some of my neighbors can say," said Bill with a smile. He remembered how Joe and Fred had asked him to come over several times to get their tractor going—once for a broken spark plug; once for water in the carburetor; once for a dirt-clogged gasoline strainer, and again for a bad case of carbon.

"Say, Bill, without any kidding, do you think our tractor ought to be overhauled?" asked Joe.

"Yes, Joe, I do. The last time I saw it running I noticed a knock that sounded very much like loose connecting rods, and your clutch

does not seem to work good. There was also a carbon knock and I thought there was more oil smoke in the discharge than usual," said Bill.

Fred got up and walked over to Bill and said: "If you will tell us just what you do to your tractor every winter it will be a great help to us, for we have never pulled a tractor to pieces and are afraid we may do it more harm than good. We asked a garage man what he would charge to overhaul it for us and he said he would do it for one hundred dollars, provided there were no badly worn or broken parts, but that is more than we feel we can afford."

"If I can be of any help I shall be glad," said Bill. "Now here is what I have just done to my tractor: Two weeks ago I ran it into the barn and drained all the alcohol mixture into a galvanized can with a tight lid. Then I took off the radiator and washed it out well with water. After looking it over for leaks I put on new rubber-hose connections which I shel-lacked into place.

"Then I disconnected the engine and with some help took it over to the bench, where I first removed the cylinder cover and with a screw driver scraped off all carbon both from cover and piston

head. The next thing was the spark plugs. I took them to pieces and carefully cleaned the porcelains with a piece of oily waste. I have often seen porcelains cleaned with sand-paper, but it is a very foolish thing to do because it makes the porcelain rough, which soots up more rapidly; also it is then not so good an insulator.

"I next scraped all the carbon out of the shells with an old pocket knife and then put the plugs together, testing the spark gap with a small piece of No. 22-gauge galvanized sheet steel, which is just about one-thirty-second of an inch. By bending the points a little with a pair of small pliers I soon had them so the galvanized-steel strip would just slide into the gap, which made them O. K.

"Next I tackled the valves, first being sure they were numbered, the one nearest the starting crank being number one. I might mention that the first time I ground the valves I had to number every one, which I did with a sharp center punch, being careful to hit only lightly with a small hammer.

"The springs I pried up with a couple of screw drivers to avoid twisting them too much on one side. This enabled me to draw out the retaining pins, and then I could lift out the valves one by one and scrape all the carbon off with an old knife.

"The next thing was to slip an old piece of spring over the valve stem and then to put it back into its proper place, after rubbing a small amount of coarse grinding compound on the valve seat. With a brace and screw-driver bit I rapidly oscillated it to and fro about half a dozen times, about a third of a turn; then, turning the brace about a quarter turn, I ground about half a dozen more times; then I gave another quarter-turn advance and did a little more grinding, and so on until I had made a complete turn.

"Taking out the valve and examining the seat I noted if it was grinding all round or if it hadn't ground a complete circle. I cleaned off the old grinding compound and put on a fresh lot—just enough to make a thin film round the seat—and ground it again. I continued doing this until a ground circle appeared round the valve. Then one polishing with a film or fine compound finished that valve. They took an average of ten minutes apiece."

"Just a minute," said Fred. "Don't you have to put good pres-

PEORIA TRACTOR

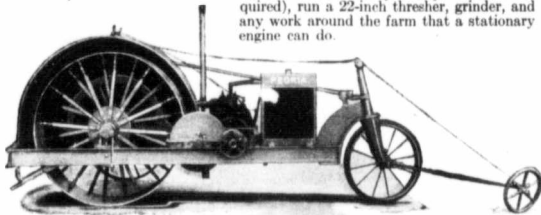
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The "Happy Farmer" Tractor

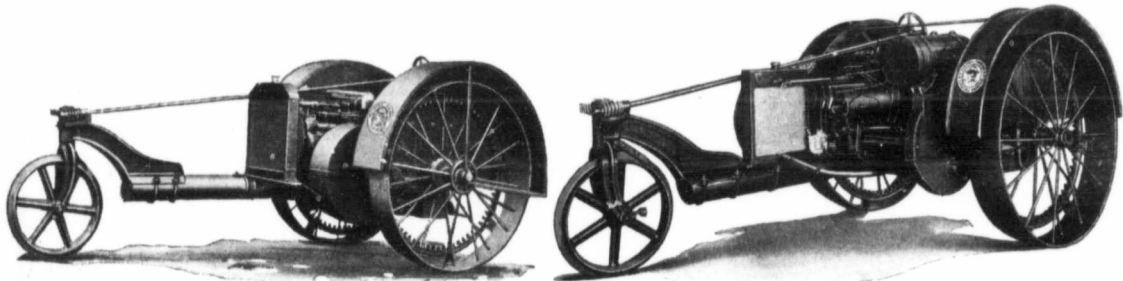
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1500 lbs. Constant Drawbar Pull. Does the Work of 8 Horses
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Scientific Farming Methods. Larger Yields

By attaining scientific methods of deep plowing you get better crops and larger yields at less cost. The "HAPPY FARMER" carries 3080 pounds of its total weight (3500 pounds) in its traction wheels, and consequently has the most powerful soil grip of any tractor made. Will handle two 14 in. plows at a speed of 2½ miles an hour, and has reserve power for three under ordinary cultivation. Will not pack the soil. The "HAPPY FARMER" tractor has an unbreakable cast steel frame, fitted throughout with Hyatt Rollers bearing in dust-proof cage. All gears are steel cut, and enclosed, oiling themselves automatically. Can be left out in wind or rain. No stable; no chores! Steers itself, enabling you to handle plow, and turns square corners right or left, being easy to handle in a small field, in fact it is **simplicity** personified, containing only about two-third of the parts of any other tractor, and is a pleasure to handle. The fuel cost is small, burning kerosene or distillate. The "HAPPY FARMER" will also haul your crops, do road work, work your threshing machine, saw, feed grinders or pump.

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Please send me by return, particulars of Dollar Saving Models "A" and "B."

Name

Address



ROMANCE OF ENGINE FUELS

Concluded from page 18 February issue

Each retort has an inlet piping system for crude petroleum, and also an outlet piping system for the distillate. The outlet pipe passes over the side of the retort and down to a cooling coil or worm which is immersed in cold running water.

The worm acts as a condenser, changing back to liquid the vapor driven off the petroleum by the heat applied. A smaller pipe leads from the condenser to a receiver with glass sides through which the flow of distilled oil can be seen.

From the bottom receiver a number of pipes lead to different storage tanks, each pipe with a valve whereby the liquid can be let into the different tanks. This is done according to the specific gravity of the liquid, it being continually registered.

The first product of the retort is a gas formed by the fumes of the petroleum and air combined. A hydrometer is situated in the receiver so that the gravity of the distillate is tested as it comes. It is so highly volatile, so nearly a gas, that when exposed to air it rises in an invisible vapor and will quickly evaporate. It cannot, potentially be kept in barrels, as even in the coldest weather it will pass through wood.

Usually the first flow is about .90 specific gravity, but this gravity could not be used commercially, it being used to bring up the gravity of a mass made up of lower gravities. Therefore, if .88 is being tanked the attendant lets .90, .89, .88, and some of .87 gravity oil flow into the receiver, making an average mixture of the required density. This process is used for the production of all commercial gravities, and is called "fractioning." This continues through gasoline into kerosene, the next distillate, down to about .42 specific gravity.

In England gasoline is known as "petrol," in France as "essence," but to the analyst it is only high gravity naphtha.

Of course, owing to the limitations of space, we have only been able to touch lightly on the evolution of solid and liquid fuels, yet, to the average individual connected with the engine, whether steam or internal combustion, there is a great field for cogitation in considering the production of fuels.

To any believer in evolution it is so potent a fact that the earth yields us all the means for producing power, that by power we may cultivate and increase the wealth of the earth. All things are an unending circle, and skeptical are those who believe



Economical Electricity on your Farm

Has electricity been an advantage you thought you had to do without? Then welcome Delco-Light! For here is clean, safe, brilliant electric light—convenient, cheap power—and all this economically. Here is electricity for your farm without bother, without trouble.

Make your farm home the most desirable of all homes. Add the cheerful, labor-saving, economical feature of electricity—save time for your wife and sons—your hired help.

A Completely Efficient Plant

No desirable feature has been forgotten, no unnecessary frill has been added, in building Delco-Light. The plant is simply operated—a child can look after it. Upkeep cost is absurdly small. Sufficient light is provided for house, barn, outbuildings, yard. Power is provided to run cream separator, churn, vacuum cleaner, water system and other light machinery.

The Delco-Light plant consists of one unit combining gasoline engine, electric generator, switchboard, storage

batteries. Self-starting on the pressing of a switch. Stops automatically when batteries are charged. Needs little attention—Develops adequate power. Easily installed. Comes to you ready to run. Price only \$300 for No. 208 and \$465 for No. 216.

Full Literature FREE

We have prepared booklets describing Delco-Light fully. Send for them. They tell the whole story in plain, unvarnished English. They are of intense interest to every farmer. Your name and address on a postcard will do.

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Completes Your Electric Plant

This is the Delco Light Power-stand—an efficient, economical little electric motor that you can carry anywhere on your farm. Runs off the nearest light socket. Will run all small machinery. Save you hours of time and most of your hand labor. Absolutely safe even for children.

ELECTRICITY FOR EVERY FARM DELCO-LIGHT

that the change we know as death is the end of all things for the body and soul.

From the mud and ooze of the waters that once covered the earth, we find that the fish form developed to the bird form, and the bird to the beast shape. Aeon after aeon, we find that evolution is a great geared system swinging onward, onward, heading toward that which our puny imaginations have not the intellectual strength to grasp.—Farm Machinery.



"Can ye lick Kelly?"
"Does he believe in arbitration?"
"He does."
"I kin."



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

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

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YOUR BLACKSMITH OR REPAIR EXPERT CAN DO THIS WORK FOR YOU See him now about your broken castings. If he has not a welding plant write us, giving his name, and we will supply him with full particulars. It will save you time and money.

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Largest Manufacturers of Oxygen and Welding Plants.

Oxy-Acetylene Welding in Garages and Repair Shops

By A. F. BRENNAN

(Concluded from page 20 February issue)

The repair of automobile parts is one of the big fields for oxy-acetylene welding. The price of new parts is comparatively high and in the past they have been rather hard to obtain in many instances. Owners of these vehicles seem to insist on allowing the water in the cylinder jackets to freeze up, with the result that the outer wall of the jacket is cracked. This repair is a simple one if properly handled.

The cylinder should be stripped entirely of all extra parts—valves, springs, pet cocks, etc. The crank should be bevelled out with a cape or diamond point chisel. The whole casting should be brought to a very dull red and the weld executed as rapidly as possible. The whole casting should then be allowed to cool slowly and uniformly. It is always a good plan to test out the cylinder with water pressure before it leaves the shop or is assembled in the motor. It is utterly useless to attempt a repair of this kind without tearing down the motor, stripping the cylinder and preheating it, although it is rather difficult at times to convince some owners and repair men of this fact.

If the break is on the inside of the head or jacket, then a portion of the outer wall must be cut out so that the crack is accessible. The casting can then be preheated and the weld made. The portion cut away is welded in again the last thing. If the crack extends into the bore of the cylinder for any considerable distance, it is apparent that regrounding will be necessary. Where the cylinders are cast in pairs or the entire motor is cast in block, the welding problem is the same. In the latter case, great care must be taken in preheating. In general, the more complicated the casting, the greater will be the likelihood of its cracking during cooling.

Oftentimes the lugs or ears on automobile cylinders are broken off due to carelessness in handling or in bolting the cylinder to the crank case. In making such repairs preheating is unnecessary, since the lug is free to expand and contract—is not restrained as is the water jacket. After the weld has been made, the lower end of the cylinder may have to be ground out slightly, but this can usually be done by means of a flexible shaft outfit or an electric grinder.

The repair of aluminum automobile parts such as crank, gear and transmission cases, mani-

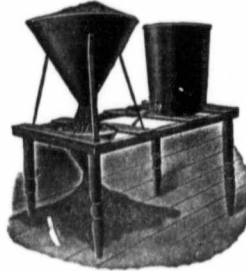
folds, housings, etc., offers a big field for the repair man, owing to the high cost of replacements.

This metal is a rather difficult one for the average operator to handle. The writer believes that the best results will be obtained if pure aluminum filling rod is used in conjunction with a suitable flux. The contention that all fluxes are injurious to aluminum is insupportable, and although many operators can produce satisfactory welds without a flux by puddling the metal with a steel spatula, the beginner will find the flux method easier to learn and more reliable in the long run.

The welding of a broken arm on a crank case is comparatively simple if the break is in the arm and not in that portion of the case surrounding the arm. Here again preheating is unnecessary, as the parts are free to move. This is also true if the magneto support or pump bracket or any projecting lug is broken. The parts should be carefully set in place and the weld should be executed as rapidly as possible. If the main body of the case is broken, however, preheating will be necessary, and the whole case should be carefully set up. The case should be stripped, even the bearings being removed. Place a sheet of paper on the inside of the casting next to the crack to be welded. Back this paper with a layer of damp fire-clay. The paper prevents the fire-clay from getting into the weld. Back up the fire-clay mould with asbestos fiber, held in place by asbestos paper and wire or strips of metal. This backing prevents the collapse of the metal, which is very fragile when heated. A shaft or mandrel should be clamped in the bearings and angle iron bolted along the upper and lower faces of the case to prevent warping. The preheating should be done very carefully, as mentioned previously. If this is done by means of a torch, the torch should be held by an operator and should be kept moving so that the heat will be uniform. When the casting is hot enough to melt half and half wire solder, the weld can be executed. The casting should then be cooled slowly either in the furnace or in asbestos fiber.

It is true that many experienced operators to-day do a great deal of aluminum welding without preheating. Experience alone has shown them how to go about this work. They are skillful enough to execute a weld rapidly

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This is the only machine of its kind in use. Handles grain at the rate of 135 bushels per hour. Light in weight. Perfect in action. Fully guaranteed. Substantially built. Thoroughly soaks, turns over and treats the grain. The only pickler with the turbine principle.

The Lincoln Smut Cleaner—a Perfect Pickling Machine

Made in Two Sizes:

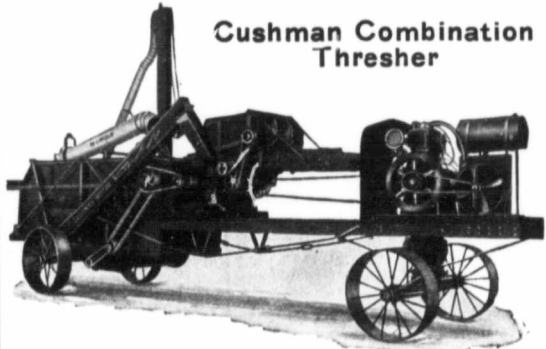
No. 3 machine handles 30-50 bushels per hour; No. 4, 50-75 bushels. Sold on a positive guarantee to prevent smut.

This machine separates smut balls, wild oats, king heads, and all light seeds from wheat, and wild oats and all light seed from barley. Grain is thoroughly pickled, dried and elevated to wagon box. Automatic skimmer is an exclusive feature. Strong, heavy construction. Rustless solution tanks of large capacity.



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Equipped with the famous Cushman 2-Cylinder Engine.

8 H.P. with Straw Carrier and Hand Feeder.

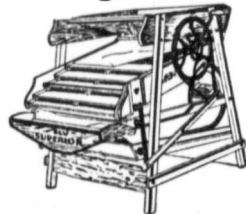
15 H.P. with Wind Stackler and Hand Feeder.

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

The 4 H.P. Cushman is the Original and Successful Binder Engine. Its light weight and steady power permit it to be attached to rear of Binder.

King of Wild Oat Separators



Save dockage, clean your grain before marketing with The Lincoln "New Superior" Wild Oat Separator.

With our patented open and blank space sieves, it positively separates every wild oat seed, causing them to lie flat, and not up on end.

It is strong, well-built and bolted—not nailed.

Made in sizes 24, 32 and 42 inches wide, with or without bagger, and with power attachment for gasoline engine if desired.

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Builders of Light Weight Engines for Farm and Binder use. Distributors of Reliable Power Driven Machines, such as Fanning Mills, Grinders, Saw, Power Washing Machines, etc.

Also Barn Door Hangers and Mountaineer Neck Yoke Centers

and prevent any great amount of heat spreading into the body of the casting. The inexperienced man will do better to follow the general principles laid down above and allow other developments to come later.

Another job frequently met with in garages is the repair of an automobile frame. This work is not difficult although it takes considerable time if the break is hard to get at. The weld should always be reinforced with a steel plate about one-eighth to one-quarter of an inch thick extending for several inches on each side of the crack wherever possible. This reinforcement can be put on the inside or outside, depending on the location and accessibility of the break.

Any parts or accessories which are in the way, such as wheels, fenders, radiator or carburetor should be removed. In some cases it is necessary to remove or jack up one end of the body. This happens but seldom, however, as breaks usually occur in front of the body near where the engine is bolted on. The crack should be bevelled out and welded up in the usual manner first. If the reinforcement is placed on the inside, then several holes about one inch in diameter should be cut in the frame on each side of the break. The reinforcement can be spot welded to the frame through these holes. If, however, the reinforcement is placed on the outside it will be best to weld this to the frame, the weld extending all the way around the edge of the reinforcing plate. If repaired in this manner, the welded portion is considerably stronger than the original.

In this connection the writer knows of one hospital the garage of which contains four cars—three ambulances and a superintendent's machine. When last counted there were seven welds in the frames of these four cars—all of which are subject to severe service. Not one of the welds has ever given way and several are more than a year old. Some interesting work has also been done in altering new frames. In many instances standard frames have been lengthened for use in ambulances, funeral cars, experimental models or advance display cars. The work is not difficult as the bare frame can be handled much more easily than the complete assembly. Care must be taken to preserve good alignment.

The welding of malleable iron presents a serious problem to most repair shops. This is particularly true in small towns where a great many broken parts of farm machinery must be repaired. Formerly it was thought best to weld such parts with a filler rod of cast iron, Norway iron or nickel steel and reinforce the weld by building up as much

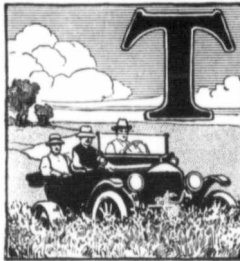
as possible. Some welders advocated the use of Norway iron in the centre of the break and cast iron on the surface. Any of these methods will produce a weld of uncertain strength and a surface that cannot be machined except by grinding. Owing to the very nature of the metal and the method of its production, it cannot be welded in this manner without destroying many of its most valuable properties. If tobin bronze is used as a filler, however, in conjunction with a suitable flux, a joint similar to a brazed joint

will be obtained. The weld (so-called) will be strong, tough and at the same time readily machineable.

There are many fields for oxy-acetylene welding besides repair work, and there is an excellent opportunity for the wide-awake repair man to get into them. The process can be used in the construction of tanks, frames, housings, metal furniture or in fact, wherever two pieces of metal are to be joined. It is being used today in the joining of gas, air, and steam piping, displacing the use

of fittings and couplings to a very large extent. Many miles of rails for electric roads are being bonded by this method. In fact, it is a process of such far-reaching application that no mechanic or engineer engaged in the manufacture or repair of machine parts can afford to overlook it. Even though all repair shops may not be equipped to carry out the work themselves, they should at least familiarize themselves with the methods employed so that they can solve the problems confronting them in an intelligent manner.

A Car of Proven Quality



THE Ford car has been on the market twelve years, surely long enough to have proven its high quality. There is nothing experimental about it. Every part has stood the test of time and proven its stability with hard service. No other car has ever approached the durability records of the Ford.

No matter what price you pay for a car you cannot get one with a stancher chassis. Government Laboratory tests have shown that the different parts of the Ford car are superior to those in any other car. Ford Vanadium steel has never been equaled in strength.

If you want a car that can plow through deep mud, sand and gravel—that can cross fields, corduroy roads and ford streams—that can climb the steepest hills with ease—that will give the greatest mileage all year round with the least expense and care—then there is only ONE car for you—The Ford.

Ford

Touring - - \$495

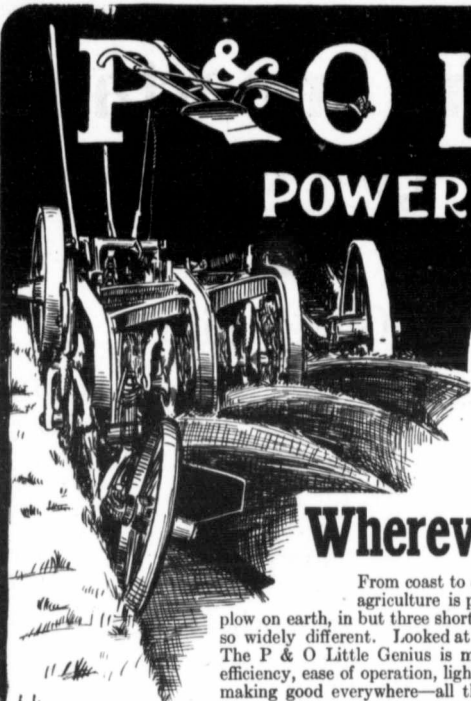
Runabout - \$475

F.O.B. FORD, ONT.

Ford Motor Company of Canada, Limited

FORD - - ONTARIO

32



P & O Little Genius

POWER LIFT TRACTOR PLOW

The Plow that is Making Good

The difference between just "Tractor Plows" and "P & O Little Genius Tractor Plows" is important to every tractor plowman, for the latter is the full name of a proven quantity—of an article that is making good. P & O Little Genius Plows are built for all kinds of plowing service. They are built in sizes to suit any of the small tractors—2, 3 or 4 furrow—any type of P & O bottoms.

Wherever there is Plowing to be Done

From coast to coast—from Canada to the Argentine—to Europe, Asia and Africa—wherever agriculture is practised along modern lines, P & O Little Genius Plows have gone. No other plow on earth, in but three short years, has gone into so many foreign fields, nor made good under conditions so widely different. Looked at from every angle, there's only one real reason for this remarkable record—The P & O Little Genius is making good. It is leaving the plowman with nothing to be desired in efficiency, ease of operation, lightness of draft, simplicity in construction and durability of its parts. It is making good everywhere—all the time—it's built that way and is bound to do it. Write for Catalogs.

Built by **PARLIN & ORENDORFF CO., Canton, Ill.**

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FAMILIAR TOOLS

Concluded from page 40 February issue

The hack-saw is another much abused tool that gets scant justice and no mercy. The amateur—and the young garage hand—look upon it as a tool to hack off stuff with somehow, and that exactly describes all it will do for them. With a good blade and firm strokes only just heavy enough to make the teeth enter, a hack-saw will really saw at a rate and with an ease that astonishes the uninitiated. The beginner presses far too heavily on the saw, and takes little fooling strokes of about 3 in. With an 8 in. blade—a common size—strokes of 7 in. should be taken, and the saw, if used carefully, will saw and not hack.

Right Chisel

Hard chisels, again, are made to cut with, and their edges should be sharp, though the sides meeting at the edge must form a less acute angle than those of a wood chisel—about 60 degrees is right for ordinary use. Most hard chisels one sees in tool kits have no edge, being rounded and blunted and gapped where the edge should be. It may come as a surprise to some to learn that tradesmen who have hard chisels much in use sharpen them frequently on the grindstone.

Oil-tight Joints

In many repairs it is necessary to make joints pressure-tight or oil-tight. Valve caps are an instance of the former, and the crank case of an engine of the latter. Valve cap washers are too often made to do duty long after they should be superannuated; on a car that is supposed to be decently cared for my own rule is never to use them more than twice. If a man wishes to be very economical he may anneal them by heating to a cherry-red and quenching, and so use them once or twice more. A little gold size

smear on cap and washer is a help toward a sound joint. It should be left to set all night before the engine is used or the compression tried. Crankcase joints are generally too well machined to need any jointing compound, but gold size may be used if there is a leakage, and will set the joint pretty firmly. It should have 24 hours to set before oil gets to it.

Washers between cylinder and crank case are generally of brown paper, but in some newer engines a thicker washer, perhaps 1-16th of an inch, may be found. This

should be replaced by one of the same thickness, since probably the makers fitted it to lower the compression a little.

REMOVING NUTS

There are several methods of removing nuts that seem obstinately fixed. When they are in a part exposed to wet and rust—as, for example, the U clips holding the springs on the spring tables of the axles, it is a good plan to give them a dose of kerosene overnight. If still fast one may hammer lightly on the flats of the nut to jar it a bit and start the threads. A gentle application of heat from a blow lamp, where it can be applied, is also excellent. One may also hold a spanner on the nut and hit the other end of it with a hammer. Here, again, the object is to give the nut a sharp jar on the threads. As a rule, shifting nuts that seem set absolutely fast is more a matter of knack than of brute force.

In the same way the spanner may be hammered to jag big nuts up tight on parts much exposed to vibration; but, speaking generally, a steady pulling up with the spanner is the proper way to tighten nuts, and hammering on the spanner at the finish is merely a method of jamming the threads of nut and bolt as a sort of lock.



THE "TANKS"

Fresh from the Somme—"Ay man, they're awfu' things, thae tanks. They stick at naething, an' gang throw a' thing. I saw ane gang throw a public hoose, the day I left."

LIGHT TRACTOR DESIGN

Continued from page 12

part will burn to carbon and causes smoke. Liquid fuel is slow burning and so interferes with the cycle of operations. Some of the contents of kerosene ignite at a temperature lower than gasoline and so pre-ignition occurs.

The compression of kerosene is from 45 to 65 pounds whereas gasoline varies from 65 to 90. For kerosene the piston should fit the cylinder more accurately than

current is produced by an oscillating motion of the armature between the pole pieces, which motion is obtained from springs mounted on the armature shaft. The magneto usually is operated by means of a trip on the exhaust push rod. This ignition is being used in stationary engine practice very extensively and is proving very satisfactory in that line. One of the chief advantages with this is the ease of starting.

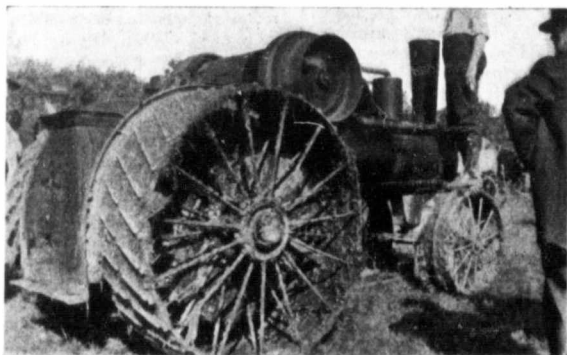
The high tension magneto so common in autos is the latest



Hulling Clover with a Light Tractor

for gasoline because more of the liquid passes the rings and piston and blows into the crank case. This, of course, should be reduced to a minimum. A number of the small tractors that burn kerosene try to avoid condensation in the passage between the carburetor and cylinder by heating the same with hot water, or by casting this passage in the water jacket. All the kerosene carburetors are arranged to introduce water into the cylinder with the fuel if required. It is not necessary to do this with some carburetors. The writer has recently operated an 8-16 horse power tractor on kerosene, for two months, and the use of water was not necessary, during that period.

step in the development of magnetos and is finding a ready field in the tractor industry. The main shaft of the magneto holds the armature, and revolves at crank shaft speed. The primary and secondary circuits are placed upon the armature shaft. The primary current is led to the circuit breaker, on the armature shaft, and on a four cylinder motor, breaks twice every revolution. In this circuit are also a condenser and switch. The secondary current runs to a distributor that revolves at one half engine speed. The distributor contains four distributor carbons, each connected to a wire leading to a spark plug in each cylinder. The action is such that the car-



Three Plow Kerosene Tractor built along the lines of a Steam Tractor

Ignition

Out of 21 leading makes of two plow tractors, one uses battery ignition, one is low tension make and break, and the remainder are high tension jump spark. Of 15 leading three plow tractors of different makes all are high tension. Mention will be made of the system using the make and break ignition. The magneto used is the oscillating type. The

bons take the high tension current from the revolving part and distribute the current to the spark plug at the proper time in the stroke of the motor.

As the majority of small tractors use the modern high tension magneto, I wish to point out a few important items the purchaser of a tractor should consider with reference to the magneto:

The Important Question

now throughout all the world is

Conservation

to repair the ravages of war and to reduce the continually increasing cost of living everywhere. This in plain words means

Saving.

The amount of wheat needlessly wasted in this country every year during threshing time would

Sustain Whole Armies.

Threshermen, do your part in preventing this enormous waste. It can be done, and you can easily do it by using a

Grain Saving Wind Stacker.

It operates with less power than any other stacker. It stacks the straw and *saves* the *grain* the threshing machine wastes.

Obtain catalogue from any threshing machine manufacturer, illustrating and explaining how *the grain is put in the sack*, and not in the stack with the

Grain Saving Wind Stacker

The Indiana Manufacturing Co.

Indianapolis, Indiana, U.S.A.

POWER TRANSMISSION

in all its history has never known a more faithful exponent and demonstrator than the "Lion" and the "Yellow Fellow" Belt Service. Constancy and uniformity is guaranteed under the most gruelling test that atmospheric or any other conditions can impose. Strength and durability are endorsed on this guarantee and in point of economy it is impossible to outclass the



**LION BRAND
Rubber Belt**

AND THE

**YELLOW
FELLOW**

ENDLESS THRESHER BELT



WILL OUTLAST THE GREATEST STRAIN THAT MAY BE PUT UPON THEM IN MANY YEARS

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

Gutta Percha and Rubber Limited, Not in any trust or Combine

WINNIPEG FORT WILLIAM REGINA SASKATOON CALGARY EDMONTON

- 1.—It should have an intensive spark at low speeds.
- 2.—The maximum intensity should be at or near the retard position to make starting easy.
- 3.—Should be water and dust proof and be able to withstand heat.
- 4.—Oil and dirt should not be able to collect on the commutator or distributor.
- 5.—Magneto should be simple.
- 6.—All wearing parts should be easily replaceable.

The ignition systems furnished with light tractors are now so dependable that the prospective purchaser need have no fear of trouble from that source.

**SIMPLE CURES FOR
CRACKED CYLINDERS**

The treatment of cracked cylinders depends almost entirely upon the situation of the crack. If it should be the inner wall of the cylinder, which has to bear the brunt of the explosion pressure, the only satisfactory method of dealing with it is to have the spot welded and then it must be machined to produce a satisfactory surface. External cracks, such as those in the water jackets, lend themselves to much cheaper and simpler treatment. Thus the crack can be widened out, until it is a fairly deep

groove, and the temperature of the casting can be raised by means of a blow-pipe until solder can be run into it. Another plan is to clamp to the damaged part of the cylinder a rough mold, which has been packed tightly with a mixture of iron filings and plaster of paris. When water is then inserted into the cylinder it will percolate through into the mold and cause the plaster to expand, and, as expansion can only take place in the direction of the crack, this will have some of the mixture forced into it and thus be closed up. Yet a third plan is to place the cylinder with the cracked side facing down and then to fill the water jacket with a solution of copper sulphate. This will slowly percolate through the crack, and it should be caught in a tin can and replaced repeatedly. Gradually a deposit will be formed inside the crack, which will close it up.

**A SEPARATE POWER
HOUSE IS BEST**

Where one can arrange in any way at all, by far the most economical and satisfactory plan of utilizing the gasoline engine is to build a power house expressly for that purpose.

Even here it will be well to have a couple of engines installed.

The house should be built near some good well, so that the various water-supplies can be economically provided at all seasons.

Such a building should be used exclusively for the operation of gasoline engines, and should be equipped with good pulleys, shafts and belts. By this arrangement, the farmer actually can have two or three, or even more, pieces of machinery in operation at a single cost.

The profits thus realized by economizing in the amount of labor hired (or dispensing with it altogether) is proving a big

factor on many a farm. Indeed, it would seem that the great reduction thus accomplished in the cost of production will play an important part in lowering this much-talked-of high cost of living.

The Snake in the Grass

Johnny (who has eaten his apple): "Milly, let's play Adam and Eve. You be Eve and I'll be Adam."

Milly: "All right. Well?"

Johnny: "Now you tempt me to eat your apple, and I'll succumb."

Cast Iron Breakages Welded

By the Oxy-Acetylene Process

WE ARE THE PIONEERS OF THIS PROCESS IN THE WEST

Our repairs are permanent and our welds absolutely guaranteed. Prices reasonable. All machinery parts welded. We operate a machine shop in connection with the welding department. Worn or scored engine cylinders rebored and fitted with oversize pistons and rings.

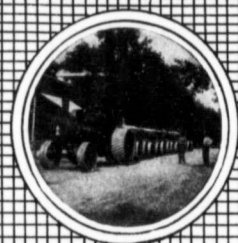
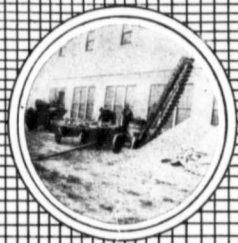
INQUIRIES CHEERFULLY ANSWERED

Manitoba Welding and Mfg. Co.

(Established in 1911)

58 PRINCESS STREET

WINNIPEG



Case Steam Engines Have Been Leaders for Forty Years

The Case steam engine has been recognized as a leader for 40 years. Whether you go South, North, East or West you will find Case steam engines giving faithful service, day after day. They have become a universal favorite.

Today many makers have switched their interest to gas. Case manufactures both steam and gas and while the gas tractor has proven a real success, we still maintain that steam is *the* power in certain localities. While others are neglecting steam we have still continued to add new improvements and refinements. Our engineers have been ever alert to the needs of farmers. Today Case steam engines stand for the best in quality, simplicity, efficiency, performance, durability and economy.

ASK ANY CASE USER

We should like to have you come to our factory and see how Case engines are made from the raw material to the finished product. You would be interested to see how carefully Case boilers are constructed. You would be interested to go thru our machine shops, assembly and testing departments to see the processes thru which each machine must go. If you could see for yourself you would *know* why Case steam engines are found in such big numbers in the best farming districts. But for those who cannot visit our plant we urge you to see Case engines at our nearest branch house, make careful comparisons, ask Case users and you will be satisfied that a Case engine is the right one to buy. Built in eight sizes. Our catalog explains them in detail. Send for it - TODAY.



The Sign of
Mechanical Excellence
the World Over

J. I. CASE T. M. CO., Inc.

829 Liberty St. RACINE, WIS.

Canadian Branches: Winnipeg, Calgary, Regina and Saskatoon

CASE



Farmers Prefer to Have Their Grain Threshed by Case Machines

In all grain growing districts most farmers insist on having their work done with Case threshers. At the grain elevators farmers know that the grain threshed by Case machines invariably brings the highest prices. Case threshers hold unparalleled records as grain savers. They get all the grain in the crop. This means that the Case thresherman leaves his customer satisfied and gets the job when he comes back the next season. Satisfied customers, that's what counts. Considering the fact that *three Case threshers are sold to one of any other make, isn't that convincing proof* that the Case is the logical machine to buy?

A WORD TO THRESHERMEN

With a Case machine you do more than just satisfy your customers. You get a machine that combines the very latest and best in thresher construction. Our experience has enabled us to build a machine without equal. A Case machine requires but a minimum of power expense to operate. They are remarkably simple. No complication of numerous belts, pulleys, sprockets, gears, chains, etc.

For threshing even under the most adverse conditions the Case cylinder is without comparison. It successfully



The Sign of
Mechanical Excellence
the World Over

handles long straw, tough, weed filled, mouldy and stack-burnt bundles, and is responsible for the big capacity for which Case separators are famous.

The steel construction prevents warping and rotting. Thousands of Case machines are in actual use. They are made for continuous hard service. Get detailed information on Case threshers. Send for our latest catalog on Case machinery, sent free on request.

J. I. CASE T. M. CO., Inc.

829 Liberty St. RACINE, WIS.

Canadian Branches: Winnipeg, Calgary, Regina and Saskatoon

CASE



Clearing the Land of Stumps by Dynamite By E. B. MALLETT

THE problem of the easiest, most inexpensive and most efficient method, of clearing the land of stumps, is of the first importance to a wide area of the Canadian West.

Stumps are a great obstacle to best results from the soil. The stumps face the farmer, in formidable array, and to get his full returns they should be entirely removed, just as soon as possible.

Removing a few of the most easily removed, and leaving the remainder to be steered clear of, is most unsatisfactory, and many a farmer has contemplated these obstacles, with a sincere wish that they were out of his way.

The space the stumps occupy, with their large roots, he reflects, would yield him a considerable area, if under cultivation, and render that cultivation very much easier. He has to steer his teams and implements clear of them, or else he has to pay for damages incurred by contact with the stump.

Stumps are hard on driver, team and implement, and the sooner a farmer is free of them, from his fields, the greater will be his satisfaction, and where before, were these unsightly and dangerous encumbrances, will be waving grain, and good stand of whatever may be sown or planted. If not removed they constitute an ever present menace in standing grain, and it is hardly necessary to mention the ceaseless vigilance, and careful driving that is absolutely necessary to avoid contact with them. A collision here is in all probability attended by disastrous consequences, in damaged machinery, severe jolt to driver and possible injury; and if using young and inexperienced horses, rendering them skittish, sometimes causing a runaway with fatal result.

Viewed from all points, the stump is a nuisance to the farmer. A field full of stumps faces the farmer, and the problem is which is the most efficient, easiest and cheapest method to be adopted to rid the field of these obstacles to cultivation? If he hires a man to chop and dig them out, he soon discovers that the work is

too slow, and also much too expensive.

He may achieve something with the addition of team, and a logging chain, but as a rule stumps are firmly imbedded, and some may come easily enough; others resist the efforts of the strongest oxen, to say nothing of the efforts of horses. He may chop the obstacle, and then be able to only haul part of it from the soil, the remainder, to his disgust, remaining a most dangerous snag, which resists all his efforts to remove.

Leaving stumps to rot out, is an infinitely slow process, the process of decomposition being very slow. The top of the stump may dry out, so that fire may be applied. Fire is sometimes a good agent in this regard, but just as often, it fails to complete the job, for upon coming in contact with the lower part, or base of the stump, it refuses to burn, and thus the most important portion to be removed is left, and being somewhat low and close to the surface of the ground, even constitutes a more dangerous menace to machinery, than if left standing complete.

Being low and close to the ground it is not observed, until all is brought up with terrific jolt and jar, to binder, or whatever implement the farmer may be using. These sudden jolts, and jars, are not good for machinery, men or horses, and often future ailments, both in man and beast, can be traced to just such an incident.

These are the difficulties, which confront the farmer with regard to stumps on his land, and as he views these, his most ardent desire is that his land were free of them.

Now however difficult a problem, nature presents to man, she gives him an agent to overcome the difficulty, and in the case of stumps she has given him an agent to tear them from the soil in the twinkling of an eye. This agent is dynamite, and it is the most inexpensive and effective method.

Use 60 per cent dynamite in sticks about a foot long. For a stump 6 to 8 inches in diameter,



PROVEN

Seventeen years' constant use on Canadian Farms
of the

"MAGNET" Cream Separator

with its square gear drive and ball-bearing adjustments has shown no wear and proven that it will surely last a lifetime.

DAIRY WOMEN know that the "MAGNET" bowl and one-piece-skimmer is easily washed sweet and clean in less than five minutes—a saving of from 10 to 15 days' labor each year over the time required to properly wash the disc kind.

TWO "MISERIES" A DAY

In the south there are a number of people who when called upon to do a disagreeable job, dodge it by saying "I am not well to-day, I have a 'misery.'" If those people lived in Canada and had to spend from 10 to 20 minutes to properly wash the bowl and bunch of unware called a "skimmer" found in some dairies they would reply: "Say boss! I have 'two miseries' to-day."

MAGNET ALWAYS SKIMS CLEAN

because its bowl is supported at both ends, cannot wobble and therefore will do perfect skimming for a life-time. Dairy men and women can avoid all "misery" by buying the up-to-date "Magnet" Cream Separator.

"Facts are chieft that winna ding, and canna be disputed."

The Petrie Mfg. Co. Ltd.

Head Office and Factory: Hamilton, Ont.

WINNIPEG, CALGARY, REGINA, VANCOUVER, MONTREAL,
ST. JOHN, EDMONTON, LETHBRIDGE

According to the Power Supplied

IS AN EXCLUSIVE FEATURE OF

THE GARDEN CITY FEEDER

BECAUSE—It governs AUTOMATICALLY without regard to the speed of the cylinder, and delivers the grain to the separator in a continuous stream, uniform in thickness and volume, regardless of how it is piled upon the feeder, allowing the cylinder to get ALL it can handle and NO MORE; thus a NORMAL and STEADY motion of the machine is maintained with the LEAST consumption of POWER; and FURTHER—there are NO HIGH SPEED knives or distributors which require EXTRA power to maintain at threshing speed.

THEREFORE—THE GARDEN CITY FEEDER requires LESS power and is the ONLY feeder that can SUCCESSFULLY feed a small separator, when driven by gas or kerosene tractors of limited power, as well as the larger machines with unlimited power.

We will cheerfully give you the benefit of our twenty years' EXPERIENCE in the threshing business, and give you an UNBIASED opinion as to the advisability of placing a new feeder upon your separator. **WRITE TO-DAY FOR FREE CATALOG.**

The Garden City Feeder Co., Limited
REGINA, SASK.

use 1/2 to 3/4 of a stick. For a 10 to 12 inches stump, use one stick of dynamite, and for a stump from 12 to 15 inches, use a stick and a half. For a larger stump, first punch a hole in the soil, under the stump, and place 1/2 stick of dynamite, in the bottom of the hole, and leave this hole open.

When the dynamite explodes, a hollow place is made beneath the stump. Now break 3 or 4 sticks in halves, and place in this hollow spot, and plug the hole. In this manner the largest stump can be removed, the dynamite heaving the stump out bodily, when fired. Use cap and fuse.

To break these sticks of dynamite, first mark around with the thumb nail, and then break in halves, with both hands. Dynamite is not dangerous, if handled properly. Sudden jar is the thing to avoid, and if handled carefully, one man can clear an acre per day of the thickest stumps. A case of dynamite containing 200 sticks costs \$15. It is hardly necessary to draw any comparison with other methods, as it can be readily seen, this method is cheaper and more effective.

Moreover the gases from the use of dynamite are good for the soil, wheat standing, six inches higher, where dynamite has been used.

Dynamite can also be used to advantage to remove clumps of willows. Place the dynamite around the base of the clump, and the whole will be uprooted.

HORSES DISPLACED BY TRACTORS

Some interesting information bearing upon the question of how many horses can be dispensed with by the farmer who uses a tractor is found in a table recently prepared by one of the tractor manufacturing companies from data received from 72 farmers using 8-16 tractors of the company's make. Twelve of the farmers reported no change in the number of horses owned before and after the purchase of the tractor.

However, 60 of the farmers reported the number of horses dispensed with. It ranged from one to eight. The average for all was three. The number of horses owned before the purchase of the tractors ranged from 2 to 18 and the average for the 72 farms was 7.9. One farmer reported that he had dispensed with six of the eight horses he had owned.

The value of the horses replaced ranged all the way from \$150 to \$1,475, and the average per farm was \$474.

The average area of the farms from which reports were received was 292.7 acres and the average area under cultivation was 222 acres.

THE GAS ENGINE IN DAIRYING

By M. Coverdell

The gasoline engine is proving a great boon to dairymen everywhere, especially by cutting the roughage with the feed-cutter and grinding the grain, thereby securing the maximum milk-flow at the minimum cost in feed.

The engine also can be brought into service for spraying the cows or washing them off when extremely filthy. It also operates the cream separator easier than by hand, causes less wear and tear by smooth running, and is more apt to extract the highest per cent of butter-fat possible.

Not only is the engine making all these operations easier and more quickly performed, but by its use the dairyman is finding it unnecessary to have so much hired help around—help which he uses to good advantage during a few hours evening and morning, then lets loaf the rest of the day. In other words, the gasoline engine is greatly reducing the cost of dairy production—which is but another manner of saving greater profits from the herd.

PREVENTION OF FOREST FIRES

As a specific example of a "Permit Law," as applied to settlers in timbered districts for the prevention of fire losses, Robson Black, secretary of the Canadian Forestry Association, advises as follows:

The Quebec law says: "No person shall in the forest or less than a mile of the forest set fire to or burn any pile of wood, branches or brushwood, or any trees, shrub or other plant, or any black loam or light soil, or any tree trunk, or tree that has been felled," between the 1st of April and 15th of November, during which time it is necessary to first obtain the written permission of any officer of the department or a ranger.

It is proposed that in the prairie provinces the permits would be issued by Dominion or provincial officials—as the provincial governments choose—and these officers would enforce precautions in the selection of weather, the piling of slash, and vigilance against fire contagion.

The prairie provinces are being robbed of their sole stock of timber supplies by settlers' fires. Every year enhances the hazard in timbered districts. Only a permit law will make life and property immune. Lacking efficient control of the settlers' burning operations, there is no way to prevent a further enormous reduction of the local wood supplies on which Western settlement depends.

You need a good gas engine—buy an ALPHA now



THERE is no question about your needing a good gas engine. Every day you can see ways in which it would be a big help. Why delay the purchase any longer? You are not saving money by doing without an engine. You are actually losing money. You will not begin to save the price of a good engine until you buy an Alpha and let it do the saving.

But be sure the engine you buy is a good engine—a high-grade, reliable, durable engine that you can depend upon to do the work you expect of an engine.

The first cost is the last thing to consider. The lower the first cost, the lower the quality of an engine, and you cannot get reliable service, durability, low repair and fuel costs, with such an engine. Buy your engine with an eye to the future.

There is nothing mysterious about the superiority of an Alpha. The better design of this engine, the quality of material and workmanship that go into it, are easily seen. Every feature of this engine has in it some sound reason why the Alpha will give you better service and last longer.

Ask for and read our large engine catalogue carefully, and you will see where the extra value comes in.

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

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

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

Big Ben

A Westclox Alarm



7 a.m.—

For the Rising Generation

BIG BEN at his best—at seven a. m. —opening little folks' eyes—there's a race to hush him—a pillow battle—merry laughter—and mother to tidy the kiddies for school.

Big Ben's little men bubble health and cheer, and they feel as big as Daddy with a clock all their own.

You'll like Big Ben face to face. He's seven inches tall, spunky, neighborly—downright good.

Big Ben is six times factory tested. At your dealer's, \$2.50 in the United States, \$1.50 in Canada. Sent prepaid on receipt of price if your dealer doesn't stock him.

Westclox folk build more than three million alarms a year—and build them well. All wherels are assembled by a special process—patented, of course. Result—accuracy, less friction, long life.

La Salle, Ill., U. S. A. **Western Clock Co.** Makers of Westclox
 Other Westclox: Baby Ben, Pocket Ben, America, Bing, Sleep-Meter, Lookout and Ironclad

DIAGNOSING AUTO TROUBLES

WITH the rapid growth of the automobile industry the development of specialists has begun to rival the medical profession. In the larger repair stations are men who do nothing but adjust valve tappets; others will be kept busy on carbureter work, and the replacing of gears will be the main duty of a third group.

These lines are all extremely necessary, but the man who can drive a car around the block and tell exactly what is the trouble with it is in a class by himself. He is the examining physician of the repair clinic, and like his more professional brother his work is well spiced with variety.

"I always look for the simplest thing first," said one of these testers the other day. "The average repair man will try all the hard ways he knows to get a machine in shape, and in a large number of cases he will stumble on some simple little thing that is the key to the whole situation."

He went on to say that earlier in his career he had spent half a day on a car trying to find out why it would run well for a quarter of a mile and then stop. It seemed like a stoppage in the gasoline pipe and the line from the tank to the carbureter was removed and thoroughly cleaned. The carbureter was taken off and found to be quite clear of dirt, yet when the machine was again driven it stopped after traveling smoothly for a couple of blocks.

After wasting half a day the cause of the trouble was discovered in the shape of a stop cock in the pipe line from the gas tank. The handle of the cock was horizontal when in the open position, and the jar of the machine had partially closed it so that gasoline could only flow very slowly. The bowl of the carbureter would fill up while the car was standing, and as soon as the gasoline in the float chamber was exhausted the engine stopped.

Many people have the bad habit of adjusting their brakes without the use of a jack. Without raising a wheel from the ground it is almost impossible to determine whether the brake is set up tightly enough to drag when the pedal or lever is fully released. Frequently this difficulty leads to the taking of the car to a service station with the complaint that the motor will not pull, and refuses to climb ordinary grades on high gear. Sometimes the service people get a car in this condition, and find that the owner has tried to compensate for his brake drag by changing his carbureter to give it a richer mixture.

Recently an owner telephoned to a service station for an expert,

saying that his car absolutely refused to start after the most patient efforts. The owner had tried priming, and hot water in the radiator, but not a single explosion was forthcoming. One look, however, was sufficient for the expert. A bright new coat of aluminium paint covered the engine from the tops of the spark plugs to the crank case, and served to short-circuit the ignition apparatus most effectively. "He

even painted the porcelain on the plugs," laughed the service man, "and it took me two hours to clear the generator and starting motor. A few experiences of that kind make us realize that it is a pretty broad claim to call a motor car fool proof."—Scientific American.

Many motorists are content to drive their cars ahead day after day, but do not realize the necessity of learning to back properly.

Then when they must back suddenly they hit something. Practise backing until it is as easy to you as driving forward. Some day you will have reason to be thankful for this.

"Why, do many come up here?" asked the surprised visitor.

"Many? Why, stranger, I don't believe there air a week but what one goes by."

**THE SEAL OF QUALITY
DUNLOP LINE**

Rubber Belting That Meets Threshermen's Needs

Threshing generally exacts the unusual in belt service. Outside work, exposure to all sorts of weather conditions, undue stress and strain, explain why.

As the main driving force between the engine and separator we believe Dunlop "Prairie" is unsurpassed. The whirr of the machine is continuous wherever this belt is employed.

Dunlop "Prairie" and "Reliance" Thresher Belts

Dunlop "Reliance" is a second choice for threshing work. Although this belt is of a slightly lighter construction than Dunlop "Prairie," it is a thoroughly dependable article, and because of its many merits is largely represented in the Prairie Provinces.

It is needless to say that both of these belts are especially designed. They have to be to deliver that unflinching service which hundreds of thresher machine owners in every agricultural community have been receiving from them.

Unless specified otherwise, Dunlop "Prairie" and Dunlop "Reliance" are supplied endless and stitched.

Dunlop Canvas Thresher Belts and Dunlop Agricultural Hose are thoroughly upholding the reputation of the "Two Hand's" Line of Rubber-Made Goods.

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Successful Rearing of Turkeys

By Mrs. DUMBRIIL, Charleswood, Man.

Out here we are all busy planning what we shall do this coming spring and summer.

The catalogues are coming along and with them comes the longing for warm weather and flowers. Oh what things we long to do, some of us want to earn some pocket money and how to do it is a problem.

One of the best paying things it seems to me is the raising of turkeys. With a little care a

raising them. Maybe my method will be of interest to beginners, as I have had some success in this line, and success is always worth listening to.

The turkeys are given the range of a large yard in the early spring so they will not wander off and lay away where I cannot locate them. Sometimes one will slyly slip away and it is very hard to find 'the nest'; but I found by using a field glass I could see where the hen went and find it that way.

At one time I used the barrel nests and occasionally a hen would take to it. But if the turkey hens are raised with chickens they would lay in the hen's nest, and it was hard to break her from it. Now we have a few brush piles put in the yard and the turkeys like to feel they have hidden away. For brush we use last year's sweet pea sticks with the vines still on them.

When the hens start to lay I dust them every week with insect powder until they start to brood. Turkeys usually start laying about the first week in April, and at this time they make a peculiar "bark" which they do not do at any other time. The hens need very little food while sitting and only soft food such as soaked bread and some green stuff. We give them sprouted oats to supply this green stuff. Turkey hens are



Mrs. DUMBRIIL feeding her Flock

large percentage of poults can be raised to marketable size and a nice little sum realized from the sale of them. With turkeys selling at 30c lb. at Christmas time there is good money in it. This price of course is retail, and if you can get up a good private trade for your produce and put up your poultry in an attractive style you can always demand a good price and get it too.

Being interested in raising and marketing poultry, I always visit the dressed poultry departments of our large stores. When you see what is sent in from the country, you cannot wonder at the low price the farmers get for their produce.

Birds badly scalded. Holes torn in the flesh. Crops full and turned green. Flesh discolored from being packed while the animal heat was still in them. It makes one wonder whoever will buy such stuff. Now if those birds had fasted for 24 hours; had they been properly bled and plucked, feet nicely washed and drawn up they would have been more attractive. I do not find turkeys nearly so hard to dress as I do the chickens, and would rather dress a turkey than a chicken any time.

There are a great many methods of brooding and care of young turkeys, and each person has his or her own method of



"The Old Man" also gets his hand in

troubled with constipation while sitting, and sometimes it is necessary to lift the sitting hen off the nest to make her take exercise, as a hen will sit so close, they sometimes die on the nest. Use a pair of leather or fur gloves as a turkey is very vicious while sitting and can take a pretty hard nip.

When the eggs begin to chip I leave the hen alone for at least 24

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hours. By that time the poults are ready to leave the nest. I then take hen and poults to an open coop, feed and water them for a few days before giving the mother her liberty, as a turkey hen will tire the wee fellows out in a short time. Every evening I go after them and bring them home to the yard for the night, a long whip is used to shake in the grass to hurry them a little as they will stop to pick a strawberry or a bug and so delay getting home. Turkeys are great bug hunters. It is said that turkeys have bug hunting down to a science.

After a couple of weeks of bringing them home they will come themselves and thereafter give no more trouble in coming in at night. If allowed too far away, the hawks and crows are always about in menacing numbers, and will soon clear you out of turkeys. For feed I give the poults all the sour milk I can spare, but at first they take very little food or drink. We raise our own feed, so I get a few sacks of wheat and oats chopped and use this feed sometime after they eat grains readily. Pin-head oatmeal mixed with sour milk with a little soda and ginger added is a good food for young turkeys. If I see any with wings drooped, I take them indoors and give a pill made of cayenne pepper and lard, and usually the turk gets better. Black pepper is also good. They are very fond of soaked bread, dandelions, lettuce, sow thistle, onions, or any tender greens and all are very good for them.

I keep before them at all times a hopper full of mixed grains and another of grit and chick charcoal.

I also give them dry bread put through the meat chopper and occasionally some boiled rice. I examine them sometimes to see if there are any vermin and dust the turkey hen quite frequent. Young turks need to be carefully watched until after they have passed that critical stage called "Shooting of the red" which if well grown is at about 8 weeks old. They then become quite hardy and do not need watching so closely.

There are times when in spite of all one's care, the turkeys have

the discouraging habits of dying, especially during damp weather. Damp and dirty quarters are the cause of a lot of turkey ailments. I do not allow the young turkeys out until after the dew is dry as young turkeys cannot stand wetting. As soon as I see a shower coming up I bring them home and shut them up, so in this way I have very few losses.

I should like to say something on the marketing of the birds, but this article is already quite long, so will leave it for another time.

SEED GRAIN GRADER

One of the most up-to-date machines for selecting the very best seed grain is the Loop the Loop Seed Grain Grader—an all-Western product—manufactured by The Seed Grain Grader Co., Ltd., at Regina. The principle of the machine, as explained by the inventor, Mr. C. A. Torrence, an implement man of years' standing, is to make use of gravity and air. He first conceived the idea by watching his father years ago select seed grain by spreading out a large tarpaulin and standing back a considerable distance, throwing the grain onto the tarpaulin. The heavier grains carried the farthest, and these were the ones that his father used for seed grain.

"My father, by using that method, demonstrated that he could select the best kernels of grain for seed, as his crops were the best in the country in that district," said Mr. Torrence, in speaking of the machine. "All that the Loop the Loop Grader does is convert that method into machine form to handle larger quantities of grain to suit present conditions, and it does it well, as many of the farmers of Saskatchewan already know. The grader will also separate wild oats from tame ones, and thoroughly clean the grain, all at one operation."

The machine is simply constructed in order to make it economical.

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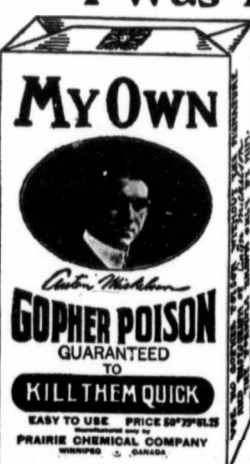



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Alfalfa the Wonderful Forage Plant

NEVER was known a plant of such signal value to the world's husbandry. This is the estimate placed on this most wonderful plant by a writer in Field and Farm of Colorado. The writer enumerates some of the characteristics that produce such world-wide fame. When firmly established, alfalfa remains productive perhaps for a century and instead of depleting the soil, it has the faculty of nourishing it, which is contrary to almost every other plant. It is deep-rooted drawing nourishment from greater depths, bringing its fruits to the surface for the support of man and beast. Even its flowers produce the sweetest nectar that pleases the palate of any epicure. It will even vie with the orange and lemon in bringing adequate returns to the tiller of the ground.

fed and horned and turned out to graze for seven long years it is recorded he subsisted upon herbage and that one of the plants was pulse said to be a legume and there may not be any myth about the claim that alfalfa is the legume named in the bible narrative.

The popularity of the plant is such that it is growing in every state from the Atlantic to the Pacific. Many failures have been made by experimenters and largely because each one followed ideas of his own, thinking that as it is of the clover family it would come in a stranger to our conditions and stand the abuse that the red clover plant must bear.

If there were but one sure method to secure a stand of alfalfa and it could be secured in no other way, and if we were to publish



TWO FINE MANITOBA PRODUCTS

Second cutting of Alfalfa, showing 30 days' growth, Wa-wa-dell Farm, Macdonald, Man.

It produces the most gorgeous dyes that the Parisians can find to make their adornment. Its leaves are used for the healing of the people and our sheep and kine fed on such forage will capture the first prize wherever shown. What sight is more gorgeous than a field of alfalfa in full bloom with its grand, purple blossoms and the busy bee humming and flitting from flower to flower drinking in the sweet nectar to store for its winter use.

Our scientists tell us it possesses elements that will sustain human existence. Only last winter a banquet was given in Chicago in which every dish was prepared from alfalfa in a most appetizing and palatable form, and scientists recommend it highly as one of our most nourishing and choicest of breakfast dishes. When Nebuchadnezzar was hoo-

lity this method every month, there would still be almost as many different plans tried as there were experimenters and this is why there are so many conflicting stories about how to get a stand of this wonderful plant. The wheat crop in average years leaves very little moisture in the soil, and saps very largely the immediate available fertility. Unless there is plenty of rainfall, enough to store up a good supply after harvest the attempt to get a stand of alfalfa immediately after wheat is rather a hazardous risk. Regardless of the time of seeding, whether it be in early June or August, the ground should be plowed in the spring and cultivated well and frequently up to the time of sowing or rather planting the seed, for it should be covered deep enough to insure being in permanent, moist seed bed. This



THE TWENTY-TWENTY TRADE-MARK COAT

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Under date of December 3rd, 1916, an Infantry Officer in France writes to a friend: "We find we cannot get Slickers here and have to write back to Canada for them, and if anyone needed a Slicker, believe me, we do over here. I want a "TOWER" make if I can get one, as they are by far the best."

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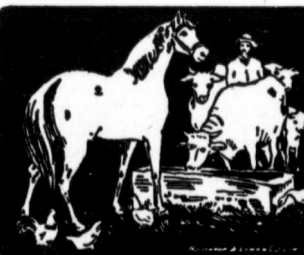
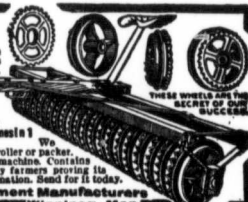
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plan assures a mellow and firm seed bed; it is level, smooth, making good surface for harvesting and handling; the weed seeds have had an opportunity to sprout and grow and be killed in the cultivating process; and, very important, the frequent and proper cultivation has retained the moisture even up to August.

Experience teaches us that more weeds sprout and grow after harvest, rather after most farmers have "laid by" the corn than before. This suggests that the late weeds will smother out the small plants and what are not smothered out the winter kills. Besides, the growing and ripening grain saps the soil of moisture needed to not only sprout the alfalfa seed but to sustain the plants. This is a good way to get ahead of the weeds but the risk of getting a stand of alfalfa is greater. Weeds have probably interfered with growing alfalfa more than any other thing. It is therefore very essential that we do that which will reduce the risk from this source of loss. This may be done by growing a spring crop of oats or barley and cut for hay; by growing a cultivated crop the previous season; by seeding with a nurse crop of barley and cutting the barley quite early for hay; by early breaking and frequent cultivation until the latter part of July or first of August. More successes have been made by the early plowing and cultivating and sowing in late summer.

There are plans and plans for seeding all the members of the clover family and there probably is no best plan, but the best stands are secured where the growers have planted the seed in good seed beds and given a good covering. We do not always get things done as we wish, nor are plans always successful, but we study conditions and endeavor to have them done as near along the lines of correct principles as possible and we come nearer succeeding.

TREE BUTCHER AN UNDESIRABLE CITIZEN

In late winter and early spring the tree butcher becomes active in mutilating inoffensive and defenceless shade trees. How the barbarous custom arose is lost in antiquity, along with the beginnings of witchcraft and head hunting. But in this day of enlightenment, the practice of "heading back" large trees should be abandoned, and, indeed, has been in most localities.

No one with sensitiveness as to beauty in form can see a dehorned tree without a feeling of disgust, especially if he knows that in almost all cases the practice is indefensible. The owner usually

assigns one or two reasons for committing the atrocity; either the dense shade of the tree is interfering with grass growing on his lawn, or he desires a lower branching habit for the tree. The first assigned motive can be better accomplished by entirely removing the tree, and the second one can be better and more permanently accomplished by planting a species which grows neither tall nor large.

While the owner may have the perfect legal right to treat his own trees on his own lawn as he pleases, it is doubtful if he has the right to disfigure the street trees in front of his house; they belong to the public, a majority of whom like to see normally developed, graceful trees.

THINGS TO REMEMBER IN PLANTING EVERGREENS

The ground in which evergreen trees are to be planted should be thoroughly prepared beforehand, so that it will be in good, loose, moist condition at the time of planting. When a large number of trees are to be planted, furrows may be drawn with a lister or plow and holes to receive the trees can be dug in the furrow.

When only a few trees are to be planted, the holes must be dug by hand labor, but the ground should be spaded up beforehand to a depth of 2 feet or more if the subsoil is hard and impervious. If the soil is dry it should be soaked up by artificial watering a few days before the trees are to be set, so that it can be worked without danger of puddling at the time of planting the trees.

The holes should not be dug until the tree is ready to be planted. Opening a hole some time before the tree is to be planted allows the soil to dry out. Two or three inches of loose soil should be left in the bottom of the hole, place the tree in an up-right position, arrange the roots in natural order and fill in about them with loose, moist soil. When the hole is partly filled, tramp the soil firmly to bring it in close contact with the roots and leave no openings about the roots. Two or three inches of the top soil should be left in a loose, open condition for a soil mulch. If the soil is in good condition, the newly planted trees will not require watering. When planted in their permanent location the trees should be set 2 or 3 inches deeper than they grew in the nursery.

Newly planted trees should receive the best of cultivation for one or two years, or until they become thoroughly rooted. The cultivation should be sufficient to maintain a soil mulch and to keep down all weeds.

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FARM TREE PLANTING

Continued from page 7

some seasons it will be the only way to save the trees from more or less serious injury. We must remember that in the East the fruit grower attaches just as much importance to spraying his trees as he does to any other operation in connection with the cultivation of his orchard, and thinks nothing of spraying 30 or 40 acres of trees, and this not once only but generally two or three times in a season. The same methods are resorted to by the large ones to preserve their shade trees, and trees 70 and 80 feet in height are sprayed at great expense to keep them free from tussock moth and other pests.

During the past few years our cultivated trees have seriously suffered from the attacks of three insects: the green aphid and the canker-worm prevalent for the most part in Manitoba and South-East Saskatchewan, and the poplar-leaf beetle which operated chiefly in Alberta and Western Saskatchewan. We may reasonably expect considerable trouble, at least from the canker-worm and poplar-leaf beetle this summer again, particularly in the districts principally affected last season.

I would like to say a word in connection with the more general use of the evergreen varieties above-mentioned for shelter purposes. These evergreens can be grown successfully anywhere on the prairies so far as our experience goes, provided the soil in which they are planted is free from alkali. We find that, provided these plants are properly handled in the nursery and well packed for shipment, the average farmer secures just as good results in planting as with the broad-leaf varieties, and from what we can see they do as well on heavy as light soils, and when once established they will withstand greater hardships in the way of drought and extremes of temperature.

After the second season the growth is rapid and continues so for several years, ultimately outstripping many of the broad-leaf kinds planted at the same time. These evergreens have much to recommend them for prairie planting, their extreme hardness, their comparative freedom from insect troubles, the fact that they make the best possible shelter owing to their dense growth, and particularly because they remain green all winter. One row of well grown pines or spruce will make as good or better shelter than six rows of the ordinary deciduous trees.

One thing, however, should be remembered; if you want a good evergreen shelter the trees must

not be mixed with or planted close to deciduous trees. A belt of broad-leaf trees can be improved 100 per cent by the planting of a single or double row of evergreens, preferably on the inside, but it is important always to leave at least 8 to 10 feet clear between the belt and the evergreens, and if at any time in later years the evergreens appear to be suffering from over-shading, or from the roots of the other trees robbing them of moisture no time should be lost in cutting out the trees that are causing the trouble as in such cases it will always pay to sacrifice the deciduous trees if by not doing so the evergreens are likely to be checked or deformed.

In this paper, planting merely for ornamental purposes and for fuel or fencing material has not been considered. Planting for shelter is under our present conditions the feature requiring the most attention. Once a good shelter is established the ornamental planting will follow as a matter of course, and here the planter will have a much wider range of material to work with and will have an opportunity of demonstrating his skill as a horticulturist.

CAN YOU TELL IRON FROM STEEL?

In many instances a farmer is at a loss to know whether a piece of metal is iron or steel, be it in a machine or in bar form.

There are numerous methods used to distinguish between these, of which the following are the four most common:

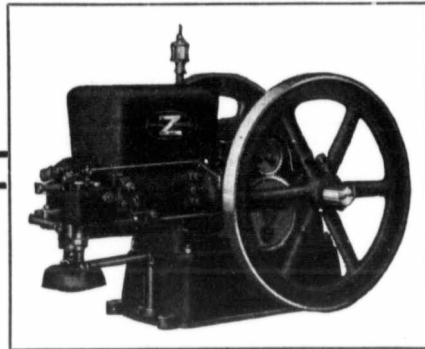
First: The method most commonly used is to tap the metal with another piece of metal or to drop it on a hard surface, a concrete floor will serve, and note the sound made. If the metal has a clear ring it is steel, if a very dull or dead sound it is iron.

Second: Examine the surface and corners of the piece in question. If the surface has a glass smoothness and the corners are sharp it is steel. If the surface be rough and the corners somewhat rounded, it is iron.

Third: Touch the metal to an emery wheel and observe very closely the sparks given off. If all the sparks burst after leaving the wheel, it is steel. In steel some of the sparks burst and then the particles burst again. In iron this never happens and but very few of the sparks burst.

Fourth: A final method, if the person is still in doubt, is to break the metal. If the fracture shows up fibrous with a dull appearance, it is iron. If the break is clean and the particles have a luster, it is steel.

This is the Logical Engine for You



FAIRBANKS-MORSE TYPE "Z" ENGINE

a wonder for power—durable and economical, BURNS KEROSENE and other cheaper fuels as well as Gasoline. THROTTLING GOVERNOR assures constant power under variable loads and weather conditions. Will do your work continuously—conveniently—cleanly—quietly. An engine you will get enthusiastic about. 1 1/2 H.P. (Gasoline), 3 H.P., 6 H.P. and 10 H.P. Don't think about buying an Engine until you hear more about the Type "Z"—a wonder for the price.

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Steam or Gas Tractors

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"THE GOVERNOR WITHOUT JOINTS" PICKERING

give greatest efficiency

FITTED TO EVERY BUILD OF ENGINE

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

Will increase speed 50% or more.

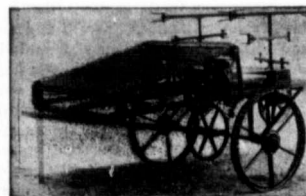
THE PICKERING GOVERNOR CO.

PORTLAND

CONN, U.S.A.



Advance Straw Spreader



DON'T BURN STRAW

The Weights Steel & Iron Co., Ltd.
Saskatoon, Winnipeg, Canada.
Ask about it without a charge book
on or buy it at once
Name _____
Address _____

Patented in Canada

Our Financial Institutions and Their Functions

By MARK LANE

IN our consideration of financial matters it is essential that we should define clearly the different functions of our institutions otherwise we shall fall into the all too common error of decrying particular sections of the financial world for not performing certain duties which are outside their prescribed spheres of operation. Briefly and roughly we may define the objects of our financial corporations thus:

Banks

To act as exchange intermediaries in the world's commerce; to receive moneys repayable on demand and to lend on short terms.

Mortgage Companies

To lend their capital funds and moneys received from the sale of debentures, on real estate for fixed periods corresponding to currency of debentures and customary borrowing terms (usually about five years).

Trust Companies

To act as mortgage companies and in addition (1) to hold mortgages in their own names for behoof of trust clients and (2) to act as trustee or otherwise of other corporations and of persons living or dead.

Investment Companies

To deal in stocks, bonds, real estate and other assets and to purchase under discount sale agreements and mortgages.

It will thus be readily recognised that an institution of one section cannot trespass upon other fields without jeopardising its financial strength. It would be radically unsound for a bank to have say 25 million dollars deposits repayable on demand, all lent out for periods of three or six months with the repayment even at maturity dependent upon nature's good graces. Hence our banks allocate a certain percentage of their funds for short term loans to commercial houses, farmers, and other borrowers; they carry for emergency purposes a certain percentage on call in New York or elsewhere at a low rate of interest; and they hold a sufficient reserve of actual cash on hand. Now our banks are not operating for the benefit of our American friends, nor do they prefer a low rate of interest if their banking wisdom would allow them to lend at a higher rate. The point is our banking strength is gauged by the percentage of liquid (cash or readily convertible) assets to liabilities and unquestionable security in banking is essential for the national fabric.

Recently banking and farming men have had several conferences

which have cleared away many misunderstandings, but still closer co-operation must be attained before the financial needs of the western farmer can be satisfactorily met. In the case of a bank advancing moneys for stock raising it would be unreasonable and highly detrimental to the farmer's credit if he were obliged to give as security a chattel mortgage on his stock and implements, yet the bank should be protected against the actions of other creditors who might be benefited by the live stock thus raised on the bank's advance. A special form of lien note might be arranged and prove acceptable to both parties while the loan itself would require to be of greater duration than has hitherto been customary.

On the other hand loaning companies do not lend on short terms as such a policy would entail a continual disturbance of the securities of the debenture holders. Incidentally this (with the initial expense of placing the loan) is the basic reason for exacting a bonus from a borrower who desires to prepay his mortgage, although, of course, it does not justify an exorbitant charge. If acceptable to the loan company borrowers might do well to stipulate for the privilege of paying off the loan applied for at the end of say, three years with a bonus of say, three or six months' interest. As a rule it is unwise to include in one mortgage two pieces of land not being farmed together as complications arise in the event of one piece being sold during the currency of the mortgage. The relations between mortgagors and corporate lenders are not always cordial, a state of matters alike injurious to both parties. Now both borrower and lender come together under the mortgage for the same reason, viz., the farmer expects to make a profit over the interest payable while the mortgagee is to receive a higher rate of interest than is obtainable on bonds or bank deposits and expects to receive it fairly regularly. Practically a partnership is formed, and if something of the partnership spirit ensued many of the sore points which exasperate and embarrass both parties would be avoided. It is good policy to keep the lender well posted from sowing to threshing on local conditions and prospects; it breeds confidence and may obviate inspection costs or even legal charges, neither of which benefit the mortgagee. The "trouble bureau" instituted by the Saskatchewan

UNION BANK

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A STRONG FAR-REACHING ORGANIZATION



Head Office: Winnipeg
Total Assets over \$109,000,000
Deposits over \$55,000,000

The local office of the Union Bank of Canada is but one of over 315 Branches in Canada, more than 200 of them in the West. Through this organization we offer a Banking Service covering the whole Dominion thoroughly. Open an account with the **Union Bank of Canada**, and take advantage of our exceptional facilities.

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The Increasing Interest

in Life Insurance and increasing knowledge of the subject cause intending applicants to look more closely than ever into the ESSENTIALS of profitable protection.

The strength and progressive record of The Great-West Life, its investment success, its favorable Mortality and low expense rates, the liberal Policy provisions and measure of Service to Policyholders—all reach the most rigorous standard of comparison.

Ask for descriptive literature and rates, giving date of birth.

The Great-West Life Assurance Company

Dept. "U"

HEAD OFFICE - WINNIPEG

In requesting information ask for a 1917 Desk Calendar

The Northern Life Assurance Company of Canada

Has found 1916 to be a year of

SPLENDID PROGRESS

as the following figures will show.

	1916	1911
Assets at 31st December	\$2,823,784	\$1,622,102
Income for Year	558,716	363,190
Surplus 31st December	101,514	53,135
Policies Issued and Revived	2,580,392	1,933,945
Insurances in force 31st December ..	11,181,726	7,856,197
Policy Reserves 31st December	2,052,827	1,088,947
Paid to Policyholders	119,598	39,861

The Company is extending its organization, and is prepared to offer advantageous terms to competent producers.

HEAD OFFICE - - LONDON, ONTARIO

Government some three years ago proved invaluable. It had sufficient authority to pacify the lenders and it "backed up" the mortgagors in the preparations for the following year's crop. The extension of this idea would prevent many foreclosures.

The day of obnoxious taxation is passing, and with the entrance of the prairie governments to the loaning field many of the abuses under the Noxious Weeds Acts may also disappear. The proposed reduction of registration costs and foreclosure proceedings will also ultimately benefit the borrowers.

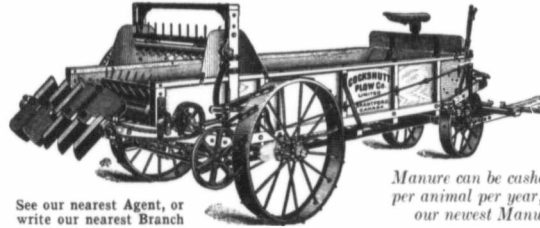
As to the earnings of the lenders, the private individual lending through a trust company will receive either (1) a fixed rate of probably 5 per cent per annum payable half yearly, the principal and interest being guaranteed by the company which thereby becomes entitled to the additional interest earned over the guaranteed rate, or (2) the mortgage rate (say 7 per cent or 8 per cent) less 1 per cent per annum on the principal sum and the initial 1 per cent commission to the local agents. The net yield on an 8 per cent loan is thus 6 per cent for the first year and 7 per cent for the remaining four or five years. Mortgage companies profits are derived from interest on capital funds and the surplus revenue on debenture funds, while trust companies in addition have their 1 per cent commission under plan (2) above and the fees earned for administering estates.

Cockshutt Manure Spreader

—HEAD AND SHOULDERS OVER THE COMMON RUN—THIS
**SPLENDID MACHINE PUTS MONEY IN YOUR POCKET EVERY
 DAY IT'S USED—IN SAVED LABOR, IN BETTER DIS-
 TRIBUTION AND IN BIGGER, STRONGER CROPS**

The Cockshutt ideals—simplicity, light-draft and super-efficiency are fully worked out in this Spreader. "Spreader"—that's the word—not a mere "dumper!" Our idea of a Manure Spreader is one that thoroughly carpets the roughest field and leaves man and horses unwearyed at the day's end. And we've got it. The revolving spike—studded delivery cylinders are fine but

we go further—a special Distributing Paddle pulverizes and DISTRIBUTES the manure in a very thorough way. Strong, direct chain drive—no bothersome gears or clutches; the driving and conveyor chains are extra heavy and strong, for years of hardest service; easily-oiled bearings and big wide-tired wheels make light draft; specially low for easy loading.



See our nearest Agent, or write our nearest Branch

When not spreading the machinery is not running—a handy lever does the trick. Flow of manure can be changed in a second, and it's absolutely independent of hillsides, ruts, etc.

Manure can be cashed at the rate, at least, of \$30 per animal per year, if it's used right. Write for our newest Manure Spreader folder at once

COCKSHUTT PLOW COMPANY LIMITED
 WINNIPEG REGINA CALGARY SASKATOON

MONTHLY NOTES "The Victory Loan"

The conspicuous success of the British victory loan is as gratifying to us and our allies as it doubtless is disquieting to our enemies. The fact that Great Britain after two and a half years of war financing can float a loan of £1,000,000,000 is an excellent token of our determination to win the war, and is in itself a mighty blow at our adversaries. The campaign was pressed home to the individual through factory, office, church and school in addition to the platform appeals by the nation's leading statesmen.

Food Rations

Here is the table issued by the British Food Controller as the utmost allowable per head per week consistent with national safety:

- Bread, 4 lbs. per week.
- Meat, 2½ lbs. per week.
- Sugar, ¾ lb. per week.

If this voluntary scheme fails in its purpose a stringent rationing system will be introduced. These allowances would appear ample for the average household particularly for families where the "common pot" would work out economically, and would permit a variety in diet not so easily obtained by the single individual. The list of prohibited imports has been greatly extended, but it is to be regretted that so far the new government has not initiated total prohibition of the liquor traffic for the duration of war.

United States and the War

Now that the intervention of our neighbours on our side is only a matter of time and nature the ability of the allies to finance the war to a victorious conclusion becomes doubly assured. With America's wealth thrown into the scales, Germany's fast diminishing hopes will be well nigh extinguished.

PENSIONS AND PAY TO SOLDIERS AND SOLDIERS' RELATIVES

The Dominion Government have appointed a Board of Pension Commissioners for Canada with offices in Ottawa. It is the wish of the Board to cause as little delay as possible in dealing with communications with regard to pensions. They invite the public to correspond directly with the Board of Pension Commissioners, Ottawa.

A great deal of delay may be caused by communications being

sent through other departments of the government.

The Patriotic Fund Association and the Military Hospitals Commission have kindly consented to give information and assistance to those wishing to write direct to the Board of Pension Commissioners. These societies have offices in certain localities throughout Canada.

In addition, in order to facilitate the granting of pensions, the Board is opening branch offices in the principal Western Cities.

WANTED

Live, Energetic Agents
 for a new and progressive Life Assurance Company whose policies are based on the **SCIENTIFIC SYSTEM** and are therefore **easy to sell**.
 Let us tell you of our 15 powerful reasons why our policies are superior to others.
 Do YOU want a Profitable Agency?
 Write us for particulars.
THE NORTHWESTERN LIFE ASSURANCE CO.
 Canada's Only Scientific Life Company
 Bank of Nova Scotia Building, Winnipeg

Money to Loan

on improved farm property

Lowest Current Rates

Apply through our representative in your district or direct to our nearest office.

National Trust Company Limited.

323 Main Street
 WINNIPEG

TORONTO MONTREAL
 EDMONTON REGINA
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MONEY TO LOAN

in moderate amounts on improved farm property occupied by the owner and situated not more than 10 miles from elevator and railroad.

Full particulars from our agent in your district, or

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NATIONAL TRUST COMPANY LIMITED

REGINA, SASK. WINNIPEG, MAN.

MEDORA Manitoba

2 1/2 Miles from Town

Choice half section of land all under cultivation; 75 acres in summer fallow, 65 acres fall ploughed and packed, balance in stubble; all fenced and cross-fenced. Good buildings, good house, extra large barn, granary, two concrete chicken houses and incubator house, good water. \$30.00 per acre.

F. W. WATT
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Winnipeg

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HIGHEST GRADE STEAM COAL
PRODUCED IN CANADA

Canadian Coal for Canadian Farmers
Equal to the best American Steam Coal. Semi-Anthracite. Smokeless, Sparkless, Low Ash, 14491 B.T.U.'s. Ask your dealer or write us for descriptive circular.

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Coal Co., Ltd.**
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SAVE your JOINT ILL FROM FOALS

FOALINE
given to the
PREGNANT MARE
for 60 days before foaling,
WILL PREVENT
NAVEL DISEASE
and Joint Ill
IN THE FOAL

WRITE FOR BOOKLET

FOALINE LABORATORY
WINNIPEG OF CANADA

HOW BILL OVERHAULED HIS TRACTOR

Continued from page 22

sure on each valve while grinding so as to make it cut quick?"

"No," continued Bill. "You want to do just the opposite; in fact, the weight of the brace with your hand on top gives just about the right pressure. After all the valves are ground it is necessary to clean off thoroughly every bit of the grinding paste—gasoline and clean waste is about as good as anything you can use. The valve stems I carefully rubbed over with a thick mixture of oil and fine graphite—not flake. Then assembled them all. The next step was to check up the clearance between the end of each valve stem and the push rods. This I tested with an ordinary tag, which is a trifle more than one sixty-fourth of an inch thick. The adjusting screws were set until the clearance was right.

"Then I numbered the pistons in the same way as the valves, turned the engine upside down, removed the connecting-rod caps, and took the pistons and connecting-rods out, fastening each cap back on its connecting-rod so nothing could get mixed.

"I cut three strips of tin from an old tomato can and very carefully slipped them under a piston ring on one of the pistons. I worked them round until they were about equally spaced; then the ring could be easily slipped off. In this way I took off all the rings without any breakage. One ring I found wedged tightly in one part of the groove, caused, I found, by a crack.

"I tried each ring in its cylinder, setting it about two inches from the top and measuring equally all round and found the split in some of them quite a lot more than the thickness of two tags, or one thirty-second of an inch. These rings would not hold compression well, so I replaced them with new ones and I tested each new one carefully to be sure I could just get the tags in the split while the ring was in the cylinder, so as to be sure it would not bind when it got heated. Another thing: I tested each ring to see if it would slip in its own groove; if it was too tight I scoured it over a sheet of emery cloth until it was right.

"The wrist pins were next tested and I found them all right, as there was no play up and down. Then I removed the caps of the crank-shaft bearings, after marking each one so it would go back in the same place and same way, and took out the crank shaft to see that the bearings were nicely polished and that there were no signs of cracks or other defects.

"I also examined the bearings and caps for signs of roughness or loose babbitt and, finding every-

thing O. K., put the shaft back again, also the shims and caps, leaving out as many shims as I guessed would take out all looseness. Then, tightening all bearings with my fingers, I tried the crank and found I could easily whirl it round. I tightened up the center bearing and tried the crank again. Still easy to turn; so I took out another shim. Now, although I could still spin the crank, there was a decided resistance.

"I loosened up this bearing until things were easy. I did the same to the other two bearings, putting the pistons and connecting rods into their proper cylinders, without the rings. I adjusted the connecting-rod bearings one by one in the same way. Having adjusted every bearing, I took out the pistons again one by one and with the aid of the three pieces of tin slipped the piston rings into their proper places, which I had marked beforehand, afterward twisting them round until the splits were evenly divided, or at 120 degrees apart.

"The various parts were then assembled again and the bearings and all bolts were tightened and locked with cotter pins or copper wire. All bearings were well oiled; also cylinders. This time it was quite difficult to crank, although with an effort I could spin it. New gaskets were put in everywhere, using plenty of shellac on the felt ones."

"How are you going to get the gaskets off again if you shellac them on so well?" asked Fred.

"Well, I never attempt to use a felt gasket twice and they will always strip or scrape off. Shellac makes them oil-tight, thus saving oil and also keeping the motor clean.

"The next thing to examine was the clutch. The lining looked in fairly good condition, but was loosening up a little along the edges, and as I wanted to take no chances I replaced it with some new. I was glad I did because as soon as it was off I could see it had worn pretty thin.

"The magneto and pump I did not remove, as they were in good running order. I cleaned them up well and put some new packing in the stuffing box of the pump. Let me tell you, though, that if you ever have to remove a magneto be sure to scratch a deep line across both flanges of the coupling so you can put the magneto back in exactly the same position as it was when removed; otherwise you will get the motor out of time.

"Also if you ever remove the timing gears which drive the magneto, be sure that they are marked so you can put them back in the same relation to one another.

"In the same way I went over

Well Drilling

By An Expert in the Business

Don't take a chance on not getting water through inexperienced drillers. First class work guaranteed. Sixteen years' experience in practically every section of Western Canada.

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Pace, Harrison, Ltd.
General Agents, Winnipeg

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FROM MILL TO CONSUMER
MILL F.M.T.C. CONSUMER

Buy your lumber, shingles, lath, doors, windows, fence posts, etc., direct from us. Save middlemen's profits. H. R. —, Milly, Sask., writes: "Your lumber is even better than I expected. I saved from \$8.00 to \$14.00 a 1000 feet by buying from you." We load cars with a number of separate orders, and mark and invoice each order so there is no confusion. Write for our prices delivered, freight paid, to your nearest station.

The **F.M.T.C. LUMBER CO.**
DEPT. 2 VANCOUVER, B.C.

FOR ALL BLACK LEATHER

EUREKA HARNESS OIL

is unexcelled for preserving and lengthening the life of black leather.

This scientifically prepared oil makes harness a rich, inky black—shiny, soft, tough.

THE IMPERIAL OIL COMPANY, Limited
Branches Throughout Canada

every bearing and every bolt, and tried every gear to see that it was rigid on the shaft. I shellacked new rubber hose to the radiator connections, put in some new wiring where the old had frayed, and adjusted the tractor all over. Then I reassembled the whole thing, being very careful that every bolt was thoroughly tightened and locked."

Know Your Machine

"The next thing was to block the tractor up off the floor so the wheels could turn; every bearing was thoroughly oiled and with some effort the engine was started; the clutch was thrown in and the tractor was allowed to turn round slowly for a couple of hours. Then, as everything seemed O. K., I speeded the engine up a little—say to about half normal speed—and let it run five or six hours."

"Don't you think you had those crankshaft bearings too tight?" asked Joe. "It seems to me you took a chance on having them seize."

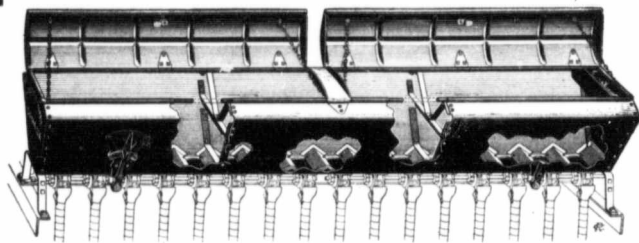
"No! I was very careful about them and they want to be fairly tight. Furthermore, I knew that there was no one bearing very tight, for I had adjusted them one by one and the tightness of the crank shaft was the accumulated tightness of seven bearings; also the new piston rings were a little stiff.

"Another precaution I took was to be in the barn all the time I was wearing them in, so if things started to drag or turn hard I could instantly shut down the engine and let it cool off before giving it another run. I used plenty of oil everywhere and kept feeling of all the bearings, so I could be sure they were not getting too hot.

"There was one thing I was very careful about, however, and that was to connect a pipe to the exhaust and lead it out of doors. The nearest pipe I had was larger than the exhaust pipe, but I packed it round with asbestos so all the exhaust had to go out of the building. This is very important, not only because it takes the smoke and bad odor out, but because the exhaust gases are very poisonous.

"After this wearing in of bearings I took the tractor out and ran it round the field for an hour or two. Back in the barn I oiled it up once more, drained the radiator, covered it with some canvas, and it was ready for another year's work any time I want it."

These Points Will Interest You



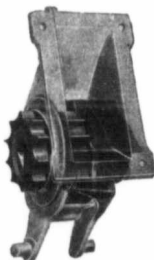
Steel Grain Box of Large Capacity

The Massey-Harris No. 11 Drill is the only Drill with Steel Grain Box. This Steel Box is the largest Grain Box on any Drill and saves the time and inconvenience of frequent re-filling.

Its construction is especially strong and there is ample strength in the frame to carry the weight of the drill when loaded to capacity, and all working parts are kept in the right relation one with another.

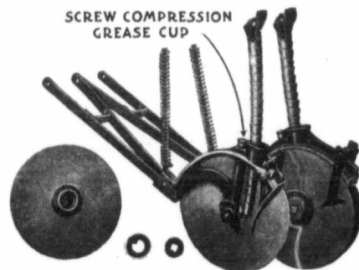
- The 14 Run Box holds 4 Bushels.
- The 16 Run Box holds 4 1/2 Bushels.
- The 24 Run Box holds 7 Bushels.

- The 20 Run Box holds 5 3/4 Bushels.
- The 22 Run Box holds 6 1/4 Bushels.



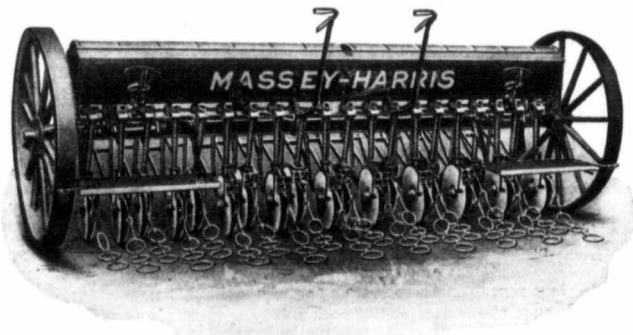
Reliable Feed Run With Machined Feed Roll

The Feed Rolls or Barrels have deep flutes which are milled to a perfect fit with the steel cut off washer, so there is no leakage of small seed. The Feed is uniform and there is no crushing or bruising of the seed.



Compression Grease Cup ensures perfection lubrication. The Double Discs are fitted with screw compression grease cup by means of which the grease can be forced to every part of the bearing. These Discs fit closely together in front without binding, run easier and last longer than any other.

Can also be supplied single Discs or with Shoes, 14, 16, 20, 22 or 24 Runs. Grass boxes if wanted.



See the Massey-Harris Agent or write the nearest Branch

MASSEY-HARRIS CO., LIMITED. Head Offices: TORONTO

Branches at Montreal, Moncton, Winnipeg, Regina, Saskatoon, Yorkton, Swift Current, Calgary, Edmonton.

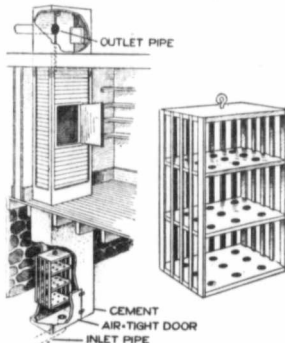
AGENCIES EVERYWHERE

Twelve Months of this Magazine for \$1.00

AN ICELESS REFRIGERATOR

In order to build the iceless refrigerator shown in the illustration, a shaft of suitable dimensions must be provided, having its bottom several feet below the surface of the ground, and the upper end extended above the receiving floor up to the ceiling, or, better still, up into the attic. The lower part of the shaft, for a distance of several feet—or up to the receiving floor if possible—should be built of cement, the walls being several inches thick; the remaining portion, up to the top of the shaft, can be made of matched lumber. At a convenient distance above the floor, a door should be provided in order to give access to the lift. This door may be attached with hinges or made to slide in grooves, as preferred.

To conveniently get into the shaft at the bottom, an opening can be made which should be provided with a heavy air-tight cover, to be closed when using the refrigerator. An air-circulating pipe, leading from the outside, should



be connected to the shaft at the bottom; another pipe should connect the upper end of the shaft with the chimney, thereby forming a complete and continuous air circulation which, together with the heat insulation provided by the cement walls, produces a temperature sufficiently low to keep almost any food.

A lift, or dumb-waiter, must be made, with its shelves perforated as shown. One of its vertical sides is left open for placing the food; the other three consist of strips with space between. The air in its upward course is thus enabled to freely circulate through the lift.

The lift is suspended by a rope, which is passed over a pulley attached to the top of the shaft. A weight attached to the rope is used to counterbalance the lift. Provision for an outside suspension of the counterweight must be made, if the shaft is so short that the weight and lift come together before the lift can be brought to its proper position before the shaft door. For this purpose,

a second pulley should be provided and conveniently suspended on one of the outside walls of the shaft; a hole must be bored for the lift rope, and the counterweight fastened to the loose end.

THE VALUE OF MUSIC

In peace or war, some of the greatest achievements of men have been reached, more by the inspiration of music than by anything in coercion from tyrants or the iron heel of necessity.

Happiness—the goal of all flesh—is a posture of the mind and environment need have little to do with it. Happiness is from within, and the boys in the trenches with their mouth organ or Jew's harp are as much kings



in their own right as the wearer of a crown or coronet who fain would buy the services of the trained choristers of heaven.

Of all the splendid things which have been done in recent years to bring the soul of real music into the humblest life or community of life, there is nothing that will "hold a candle" to the phonograph and its all but perfect imitation of any musical or sound intervals.

The great wizard of this marvelous development in human genius is of course Thomas Edison. He was the inventor of the phonograph and is the only one who has succeeded in making phonograph music life-like. Every one is familiar with the raucous, "noise" and sputtering attempts of so many cheap imitations of Mr. Edison's masterpiece, but not every one was able until recently to obtain the genuine article, by reason of its necessarily prohibitive price to all but a select circle of wealthy people.

Now that has been entirely overcome and the humblest soil owner can fill his shack with the choicest reproductions of the work of the greatest musicians as well as anything in popular music known to-day, and all at an outlay of little more than the price of the very cheapest instrument of the kind a year or two back.

It makes all the difference in the world to a man if he has or does not possess the soul of music to lighten the burden of his daily round, and what shall we say of its influence on the home life? Happiness is life—and real happiness is found only in a real home. And by a real home I do not mean a house with a yard or farm

No More Washday Drudgery

You wouldn't think of cutting your Grain with a Reaper, yet your wife to-day is probably doing the washing with a Washer just as much a relic of the past as the old reaper is.

Make life pleasant for the women folk by buying a Canada Power Washing Outfit, consisting of Canada Power Washer with Wringer, Belt and our Handy Boy 1 h.p. Engine, complete with magneto for only

\$69.25



The biggest labor-saving device ever invented

The Canada Power Washer has a reversible ball bearing Wringer five-year guarantee rolls. Will wash and wring at the same time. All gears are enclosed, no chains to tear the clothes, size of water tub, inside measurements, 12 inches deep by 22 1/2 inches diameter. Will wash clothes in a few minutes for the largest families. Price of Washer only \$22.50.

The Gasoline Engine supplied with this outfit is our new one H.P., guaranteed in every respect, and is built on most approved lines. It will run a Pump Jack just as well. We can supply a reliable Double-geared Pump-Jack for \$1.00 extra.

We Let You Test This Outfit 30 Days before you need keep it. Send us your order to-day and be convinced that the Canada Power Washing Outfit is one of the best values and labor savers ever made.

C. S. JUDSON CO., LIMITED

From Factory Direct to Farmer

Logan and Sherbrook Streets, WINNIPEG, Canada

PEERLESS LONG SPAN GATES

THE gate pictured below is a companion to the Peerless Perfection farm fencing, strong, durable, with heavy tubular brace, which stiffens it like a steel bridge. It swings true and rigid as an oak door hung by a master mechanic. Lateral and upright wires securely clasped at all intersections and stretched upon a strong rigid frame of tubular steel electrically welded into one solid piece.

FOR LOOKS, WEAR AND SERVICE

In appearance a Peerless Gate says: "I am guardian here." For durability it is of heavy open hearth steel wire, galvanized and can't rust at any point. For service it is put together to last a lifetime and is the cheapest, best gate made. You will be interested in our Catalog.

Write Today for Literature

describing all our many styles of Gates, all kinds of Farm and Poultry Fencing for farm, ranch, residence, park, etc. It will pay you well to get acquainted with Peerless Perfection standard of construction. Write today.

The Banwell-Hoxie Wire Fence Company, Ltd.
Winnipeg, Man. Hamilton, Ont.



Twelve Months of this Magazine for \$1.00

WAR LOAN

DOMINION OF CANADA

Issue of \$150,000,000 5% Bonds Maturing 1st March, 1937

Payable at par at Ottawa, Halifax, St John, Charlottetown, Montreal, Toronto, Winnipeg, Regina, Calgary, Victoria, and at the Agency of the Bank of Montreal, New York City.

INTEREST PAYABLE HALF-YEARLY, 1st MARCH, 1st SEPTEMBER.

PRINCIPAL AND INTEREST PAYABLE IN GOLD.

ISSUE PRICE 96.

A FULL HALF-YEAR'S INTEREST WILL BE PAID ON 1st SEPTEMBER, 1917.

THE PROCEEDS OF THE LOAN WILL BE USED FOR WAR PURPOSES ONLY.

THE MINISTER OF FINANCE offers herewith, on behalf of the Government, the above-named Bonds for Subscription at 96, payable as follows:—

10 per cent on application;
30 " 16th April, 1917;
30 " 15th May, 1917;
26 " 15th June, 1917.

The total allotment of bonds of this issue will be limited to one hundred and fifty million dollars, exclusive of the amount (if any) paid for by the surrender of bonds as the equivalent of cash under the terms of the War Loan prospectus of 22nd November, 1915.

The instalments may be paid in full on the 16th day of April, 1917, or on any instalment due date thereafter, under discount at the rate of four per cent per annum. All payments are to be made to a chartered bank for the credit of the Minister of Finance. Failure to pay any instalment when due will render previous payments liable to forfeiture and the allotment to cancellation.

Subscriptions, accompanied by a deposit of ten per cent of the amount subscribed, must be forwarded through the medium of a chartered bank. Any branch in Canada of any chartered bank will receive subscriptions and issue provisional receipts.

This loan is authorized under Act of the Parliament of Canada, and both principal and interest will be a charge upon the Consolidated Revenue Fund.

Forms of application may be obtained from any branch in Canada of any chartered bank and at the office of any Assistant Receiver General in Canada.

Subscriptions must be for even hundreds of dollars.

In case of partial allotments the surplus deposit will be applied towards payment of the amount due on the April instalment.

Scrip certificates, non-negotiable or payable to bearer in accordance with the choice of the applicant for registered or bearer bonds, will be issued, after allotment, in exchange for the provisional receipts.

When the scrip certificates have been paid in full and payment endorsed thereon by the bank receiving the money, they may be exchanged for bonds, when prepared, with coupons attached, payable to bearer or registered as to principal, or for fully registered bonds, when prepared, without coupons, in accordance with the application.

Delivery of scrip certificates and of bonds will be made through the chartered banks.

The issue will be exempt from taxes—including any income tax—imposed in pursuance of legislation enacted by the Parliament of Canada.

The bonds with coupons will be issued in denominations of \$100, \$500, \$1,000. Fully registered bonds without coupons will be issued in denominations of \$1,000, \$5,000 or any authorized multiple of \$5,000.

The bonds will be paid at maturity at par at the office of the Minister of Finance and Receiver General at Ottawa, or at the office of the Assistant Receiver General at Halifax, St. John, Charlottetown, Montreal, Toronto, Winnipeg, Regina, Calgary or Victoria, or at the Agency of the Bank of Montreal, New York City.

The interest on the fully registered bonds will be paid by cheque, which will be remitted by post. Interest on bonds with coupons will be paid on surrender of coupons. Both cheques and coupons, at the option of the holder, will be payable free of exchange at any branch in Canada of any chartered bank, or at the Agency of the Bank of Montreal, New York City.

Subject to the payment of twenty-five cents for each new bond issued, holders of fully registered bonds without coupons will have the right to convert into bonds of the denomination of \$1,000 with coupons, and holders of bonds with coupons will have the right to convert into fully registered bonds of authorized denominations without coupons at any time on application to the Minister of Finance.

The books of the loan will be kept at the Department of Finance, Ottawa.

Application will be made in due course for the listing of the issue on the Montreal and Toronto Stock Exchanges.

Recognized bond and stock brokers having offices and carrying on business in Canada will be allowed a commission of three-eighths of one per cent on allotments made in respect of applications bearing their stamp, provided, however, that no commission will be allowed in respect of the amount of any allotment paid for by the surrender of bonds issued under the War Loan prospectus of 22nd November, 1915, or in respect of the amount of any allotment paid for by surrender of five per cent debenture stock maturing 1st October, 1919. No commission will be allowed in respect of applications on forms which have not been printed by the King's Printer.

SUBSCRIPTION LISTS WILL CLOSE ON OR BEFORE THE 23rd OF MARCH, 1917.

DEPARTMENT OF FINANCE, OTTAWA, March 12th, 1917.



The
6.6.6.
"Upsala"
Cream
Separator

When you purchase an "UPSALA" Cream Separator, you are buying the best that money can buy. A strong, reliable machine, with no complicated mechanical bearings to wear out. Absolutely liberates all the cream from the milk.

For those who prefer cheaper separators, but well worth the money, we carry the "FAVORIT" and "TOR" Separators. Also other lines of Farm Machinery and Supplies.

PRICES OF G.G.G. "UPSALA" SEPARATORS

L. o. b. Winnipeg

- No. 1A Skimming capacity 35 Galls., \$45.50
- No. 2 Skimming capacity 45 Galls., \$51.25
- No. 3 Skimming capacity 66 Galls., \$74.25
- No. 4 Skimming capacity 90 Galls., \$98.00

Your Very Last Opportunity to Obtain a Car Free. See Page 53 of This Issue.



Best for Baby

After many years' use by parents of all classes, in Royal Nurseries and humble homes, Savory and Moore's Food has the reputation of being a thoroughly reliable food for infants.

The experience of parents, nurses, and medical men all goes to show that babies do thrive remarkably well on this famous food, that its use prevents infant ailments, and that it builds up a strong constitution, so important in later life. You may therefore bring up baby on Savory & Moore's Food with the assurance that you are doing the best you can for your child.

MOTHER'S GUIDE FREE

Savory & Moore's little Book, "The Baby," is full of useful information on Infant Management, and contains hints on Feeding, Teething, the Toilet, Infant Ailments, and many other subjects. It is just what a young mother needs, and will prove invaluable in the home. A Free Copy may be obtained on application to Savory and Moore, P.O. Box 1601, Montreal.

SAVORY & MOORE'S FOOD
Of All Druggists and Stores

around it. Oh, no! A real home is the place where the happy and united family gather together for mutual enjoyment and recreation. And the Edison makes this possible, for it stands supreme as the greatest home entertainer. It will mean more than entertainment and merriment, more than an hour of amusement, yes, it will mean genuine pleasure of the lasting sort—helpful entertainment and culture of the most beneficial kind. It will mean the family united—a new home.

Turn to pages 46 and 47 of this issue and see the simple means whereby the last desire of any reader of this paper for a constant environment of sweetest music may be obtained by the "Babson" plan.

NORTHERN LIFE REPORTS

The Northern Life Assurance Company of Canada, with Head office at London, Ontario, has just closed a very successful year. The policies issues in 1910 totalled \$2,580,000.00. The total insurance in force at the end of last year was \$11,181,000.00. The amount paid to Policyholders in 1916 was \$119,600.00. The total assets at December 31, last year were \$2,824,000.00. The Northern Life is a comparatively young company.

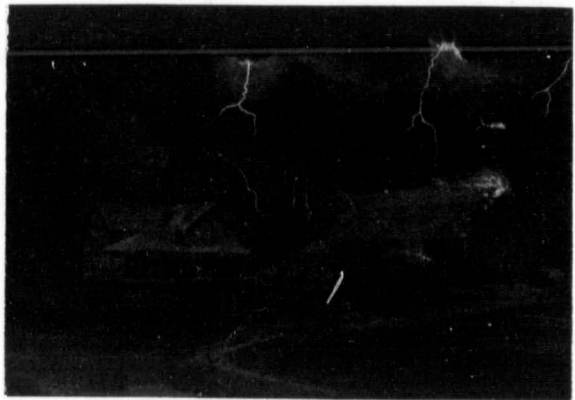
PREPARING POULTRY PRODUCE FOR MARKET

"Putting the finishing touches on a product before offering it for sale yields the greatest proportionate return of any labor done on the average farm. This lack of 'finish' is nowhere so clearly seen as in our poultry products as shipped to market."

"Probably nine-tenths of all the eggs produced have found their way to market through what is sometimes called 'the system' the outstanding feature of which has been the lack of system."

The foregoing are pithy sentences from Bulletin No. 88 of the Dominion Experimental Farms, written by F. C. Elford, Dominion Poultry Husbandman. That there is room for improvement is an admitted fact and indicated clearly in the quotations. To meet this need, this timely, well-illustrated bulletin has been prepared for general distribution, pointing out, as it does, the correct way of preparing poultry produce for the market, so that the largest price may be obtained, thereby largely increasing the profits, for, as stated by Mr. Elford, there seem to be few industries that promise brighter prospects to the farmer than poultry managed on a business basis.

This bulletin, which is replete with information of value, not only for the farmer but for the poultry specialist, may be obtained, free of charge, upon application to the Publications Branch, Department of Agriculture, Ottawa.



YOUR HOME AND BARN'S Absolutely Protected

From Electric Storms

You will also save the cost of thorough protection by reduction on Insurance Rates, if your buildings are rodded by the TOWNSLEY SYSTEM of Lightning Protection.

NOW is the time to make inquiry as to how, at an infinitely small cost, you can safeguard the lives of your family, your live stock and your property. Write us for full particulars—refer to "The Canadian Thresherman and Farmer."

Watch the Columns of Next Issue of this Magazine for some Startling Particulars

TOWNSLEY ELECTRICAL CO., Brandon, Man.



Are you tired of trying Gopher poisons ?

which are expensive, unsatisfactory and DO NOT exterminate.

"SUREDETH"

the new scientific preparation, offers the ONLY solution of the gopher problem.

The old method of dropping poisoned grain in and around gopher holes is not only wasteful but a source of death to wild fowl. "SUREDETH" is prepared differently and more easily and KILLS QUICKLY.

The gopher picking up the poisoned grain finds it bitter and spits it out, thereby getting rid of the poison and living to destroy. "SUREDETH" being different cannot help but reach the stomach and KILL. "SUREDETH" is put up in one size only, \$1.00 per package of 25,000 doses, and absolutely guaranteed.

To be had from your druggist, or write us for a trial package and full instructions.

Circular fully describing "Suredeeth" mailed on request.



Empire Chemical Company Limited
Dept. 1 BARKATON, Sask.



HOW TO FILE HAND SAWS

A subject of never-failing interest to the average worker in wood is the care of tools and how to sharpen them to the best advantage, says Saw Sense, a house organ published by E. C. Atkins & Co. That opinions differ as to the way the work should be done is not surprising, especially when the question of filing a saw is considered.

It does not necessarily require any great skill, as many people suppose to file and set their saws, but there are a few essential points which should be observed if you wish to get the best results. These observations are based on long experience and careful study, and it is earnestly hoped will prove of benefit.

The first operation should be what is commonly called joining. It is better to take a flat mill file and rub the teeth down until their length is uniform. For instance, in a straight-breasted saw, if you should put a straight edge along the teeth, every one should just touch it. Then comes the setting. Use, if you have one, a regular setting block, and care should be used in preparing said block not to have a sharp edge where the tooth bends down, as it is apt to cause breakage. Do not set your tooth too far into the saw. A turning of the point is sufficient and far better for the saws. The teeth should be set alternately right and left. A highly tempered saw, which will hold the edge best, must be carefully handled or you will lose many teeth in this operation. Do not put any more set than just enough to clean nicely.

Your saw is now ready to file, and you will find it advisable to select your files carefully. For a six and seven-point saw use a 7 in. slim taper. For eight and nine points use 6 in. slim taper, and for 10, 11 and 12 points use a 5 in. slim taper. After placing your saw securely in the vise, commence to file at the point and progress toward the butt or heel. Many skilled filers, however, file from the butt to point. Always file the teeth which are set away from you, and as to the amount of beveling, it is entirely at the discretion of the carpenter. It is essential, however, that the bevel be placed on the front of the tooth. When through with one side, reverse the saw and proceed as before. At this point it might be well to use the flat mill file, and do what is commonly called side filing the teeth. This is to guard against any uneven setting, and will be appreciated in the finished saw.

To prepare rip saws proceed as in hand saws, except always use 7 in. slim taper, and if the saw is intended to cut hard lumber a

slight bevel is advisable, but if for ordinary and soft wood it is best to file straight across.

To insure a keen, sharp cutting edge to your saw, it is well to pass a hard oil stone lightly over the sides of the teeth to take off all burr or wire edges left in filing.

One often sees the assertion published that cast iron cannot be soldered, but the following plan has been adopted with success, providing that the repair is not to be subjected to excessive strains or heat. The part to be soldered is cleaned with a brass scratch brush and then the entire surface is covered with soldering acid. The next step is to sufficiently heat the metal so that it will melt and retain a thin coat of tallow. The part can then be soldered in the usual manner.

SUMMER AND FALL FAIRS

- Manitoba
 June 30, July 2nd and 3rd, Carman.
 June 30th, Glenboro.
 July 4th, Roland.
 July 4th and 5th, Carberry
 July 5th, Miami.
 July 6th, Morden.
 July 6th, Morris.
 July 6th and 7th, Neepawa.
 July 10th, Warren.
 July 10th, Wawanesa.
 July 10th, Elgin.
 July 10th and 11th, Cypress River.
 July 11th, Sanford.
 July 11th and 12th, Killarney.
 July 12th, St. Pierre.
 July 13th, Hartney.
 July 13th, Emerson.
 July 13th, Manitou.
 July 16th to 21st, Brandon Provincial.
 July, 23rd and 24th, Elkhorn.
 July 24th, Shoal Lake.
 July 24th, Waskada.
 July 24th, Oak Lake.
 July 25th, Rapid City.
 July 25th, Deloraine.
 July 24th and 25th, Souris.
 July 26th, Melita.
 July 26th and 27th, Virden.
 July 27th, Minnedosa.
 July 27th, Cartwright.
 July 27th, Holland.
 July 31st, Rosburn.
 July 31st, Miniota.
 July 31st, Reston.
 August 1st, Binscarth.
 August 1st, McAuley.
 August 1st, Hamiota.
 August 1st, Pilot Mound.
 August 1st and 2nd, Boissevain.
 August 2nd, MacGregor.
 August 2nd, Rivers.
 August 2nd, Swan Lake.
 August 3rd, Gladstone.
 August 3rd, Harding.
 August 3rd, Treherne.
 August 3rd, Crystal City.
 August 7th, Ste. Rose.
 August 7th, Plumus.
 August 7th, Oak River.
 August 7th and 8th, Russell.
 August 8th, Gilbert Plains.
 August 8th, Swan River.
 August 9th, Roblin.
 August 9th, Birtle.
 August 10th, Shellmouth.
 August 10th, Dauphin.
 August 10th, Strathclair.
 Sept. 3rd, 4th, and 5th, St. Vital.
 Sept. 5th, Dugald.
 Sept. 6th and 7th, Kildonan.
 Sept. 18th and 19th, Headingly.
 Sept. 20th and 21st, Stonewall.
 Sept. 25th, Giroux.
 Sept. 26th, Woodlands.
 Oct. 2nd, Kalwood.
 Oct. 2nd, Langruth.
 Oct. 3rd, McCreary.
 Oct. 3rd, St. Jean.
 Oct. 4th, Glenelle.
 Oct. 4th, St. Eustache.
 Oct. 5th, Selkirk.
 Oct. 6th, Beausejour.

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Engraved from Photograph

"ALSASMAN"

**The Greatest Oat of the Century.
The Only Prairie-bred Oat Known.**

A product of intensive, careful breeding from selected and reselected individual plants of superlative excellence.

The Winner in Trials (with every point recorded), of practically every known variety.

Branching head; white, large, plump, heavy kernels, thin hull; good elastic straw: exceptional vigor.

A Show Oat and a Yielder

Our stock weighs between 45 and 50 lbs. per measured bushel. Yielded in 1916 on fall plowed wheat stubble land 110 bushels per acre. Thoroughly re-cleaned—not a grain of anything else in our stocks—all Oats. Sow 2 bushels per acre—Price: \$3.40 for 2 bushels, 12 bushels for \$19.00, bags included. Should be in the hands of every progressive grower in Western Canada.

BROME GRASS

Hay and Pasture—Our "Lion" Brand is the heaviest seed known—strong, clean and pure—the cheapest in the end. \$18.00 per 100 lbs; bags included.

PREMOST FLAX

Our stock is true to name, clean and strong. It will pay you to grow this Early, Heavy-yielding Strain. 10 Bushels for \$36.50; bags included.

ESSEX RAPE—Genuine English

5 to 6 lbs. per acre broadcast. The Great Forage Plant for Cattle, Sheep and Swine. Animals are very fond of it. Invaluable as a Weed Destroyer—makes a good catch crop—can be sown early and late—endures cold weather and lasts long after grasses succumb to frosts.

10 lbs. \$1.70; 100 lbs. \$15.25, bags included. All prices at Winnipeg.

Write for Catalogue of "Famous Seeds for the West"

STEELE, BRIGGS SEED CO. LIMITED

CANADA'S GREATEST SEED HOUSE

WINNIPEG

MANITOBA



**PEERLESS
Long Span Gates**

are so rigid—so strong—so thoroughly and scientifically braced that even after years of service they retain their original firmness. If properly hung, there will be no dragging on the ground—no necessity for having to lift or carry the gate open or shut. It will always swing easily and always hold its shape.

Made of Best Materials

Frame work of 1 1/2-inch steel tubing electrically welded together. Peerless pipe braced gates are all filled with No. 9 Open Hearth galvanized steel wire—built for strength and durability—weather proof and stock proof.

Write today for our free catalog which describes fully our complete line of ornamental, farm and poultry fencing as well as farm gates. A postal will bring it.

THE BANWELL-HOXIE WIRE FENCE COMPANY, Limited
 Winnipeg, Man. Hamilton, Ont.





Boys' and Girls' Club

Miss Innes of Headingly, a young teacher who is very enthusiastic about the work of the boys' and girls' clubs of the province, gave a very interesting talk about it at the convention of the Home Economics Societies. Miss Innes is blessed with a sense of humor, and with a vision, and there is no doubt that whatever she puts her heart into must go, and find eventually whether there is truth in it.

The work of the boys' and girls' clubs has been raising chickens and hogs and potatoes and canning and sewing, and many other things, and next year an attempt to raise good corn is going to be made. Miss Innes gave a tragic account of a young lad who had a precious ear of corn that he was prepared to plant. He put it down for a minute while he secured some of his implements, and on his return found about a quarter of the corn gone. The culprit was evidently a rooster that stood near, its head cocked enquiringly on one side.

The poor lad, with his hopes of winning the competition in the crop of the rooster, was driven to desperation. Nothing so small as a mere fowl could be allowed to stand in the way of progress, so after a short sharp struggle, the body of the rooster was laid on the altar of science, and the experiment in corn raising went on unhampered by the misdirection of a few of the grains in the first instance.

Miss Innes finds that she can teach weights, measures, arithmetic and many other things much more intelligently to the children by relating them to their activities than in the old way, and boys and girls who were backward soon gain the knowledge when offered in this practical way. The discipline of the school is also simplified, for the children are doing what they like instead of doing what someone thinks they should like, and there is all the difference in the world between the two.

In fact all through the convention from the note struck by Principal W. A. McIntyre, the first evening of the convention, to the end, the delegates showed a keen interest in education and the general feeling appeared to be that the old methods must go and give place to something new and more nearly in accord with the natural life of the child. The new way cannot be found in a day, and in the search, mistakes may be made, but the general trend will be in the right direction, and in the interest of the child.

School will become a place to which the children will look forward and not a place to which they must be beaten forward. It will be a place where they will like to stay and not a place from which they will play truant on every possible occasion. It will be a democratic institution where the absolute ruler idea will have given place to the co-operative idea, and pupil and teacher will work together in the search for Truth.

FARM SIGN BOARD

Mrs. McBeath and President Reynolds, in their addresses at the Home Economics Convention, emphasized the fact, that women need training in buying and selling, quite as much as in pro-

duction. Many of the things that were of old produced in the home, have been taken out, and are now produced in factories, and on the women falls the responsibility of buying the things from outside that they formerly produced in their own homes.

The people who have these things to sell study the art of selling, but the general public that does the buying does not study the art of buying. It was said by the manager of a very large business in Western Canada that his firm would have to go out of business if people bought only what they needed. Their profits were largely made on unnecessary purchases. If this was true it certainly shows that women need training in buying, for women are the greatest spenders, as it is their business to buy for the home and family.

Women also need training in selling. Some women ask much too little for their produce while others ask far too much. Some women are most particular in

make such sign boards in many parts good advertising.

Did you ever see the play, "It Pays to Advertise?" It is one of those light airy plays of Cohen's that everyone enjoys. It is so full of nonsense and fun and withal there is an underline of sound common sense. It tells the story of a staid old man who refused to use any of the new methods to advertise his soap. Unfortunately a young enthusiastic advertising man got hold of the old man's son and persuaded him that everything depends on advertising. He soon had the son shouting that it pays to advertise. The next to yield to the intoxication was the stenographer, and so on, but the old gentleman was adamant. However, when he found all the others in the firm in league selling his five cent soap for a dollar a cake, he became converted and shouted: "It pays to advertise," as loudly as the rest. Life is becoming more complicated every day, and the old methods will not

in the matter, and proving that it might be made a method by which selling could be revolutionized. The "From Farm to Table" campaign is one that might well be tried in the neighborhood of large cities, or even small towns, and by it the consumer could get the fresh produce from the farm at a reasonable cost, and the farmers could get a reasonable cash return for their produce.

Mrs. McBeath told of one farmer who kept several cities supplied with nice fresh apples every day, the apples bearing the motto, "An apple a day keeps the doctor away." Others sold other things very common on the farm, but a luxury in the city, such as eggs, berries, fresh vegetables, flowers, cream, butter, milk, and many other things. All these could be sent at a very small cost by parcel post.

DEVELOPING LEADERS

At the Grain Growers' Convention in Moose Jaw, the women's section, Mrs. Parlyb, President of the United Farm Women of Alberta, gave an address. She brought greetings from the sister organization of women in the West, and also many valuable gleanings from her work in the organization. Perhaps there was nothing more true or important in what she said than that the women in their organizations at the present time are finding and developing the leaders of the future.

This has been evident in all the conventions of women this year. The women of the prairie are no longer looking away east or to the cities for their help, but already they have realized that the only help that can really help, is the help that comes from within. Truth is never like butter that can be put on from outside. It must be in the composition of the whole, it is in the composition of the whole, and no one class can decide absolutely what is true for another class. The women who live on the prairie are the only women who fully understand the feelings and needs of the women on the prairie, no matter how beautifully other women may theorize about it. The truth about conditions, and the needs of rural life must be expressed by the country women, and they are learning to express all these things.

It is but a short time since every convention programme was filled with names of outside women and men. The farm women themselves took life or no part. But that day has gone forever. The conventions realize that the farm women have the knowledge they want, and they have a method of expressing it that they want and they are going to have what they want. And it is those conventions that are developing, and bringing out the leaders of the future.

There can be no doubt in the minds of those attending the conventions of farm women on the prairie this year, that already farm women in Alberta, in Saskatchewan, and in Manitoba have been found, or rather discovered, whose names will yet be known from one end of Canada to the other. There are women on the Western prairie who have most valuable contributions to make to the world if they only knew how to make them. If they only realized that what they have to give is worth giving, it is the great work of the organizations of women to help them to give to the world that which they alone can give.

In the discussions at the conventions this year there was no hesitation. The



These boys came six miles and camped in Gladstone to attend the Week's Short Course of the M.A.C.—Extension Dept.

regard to the kind of produce offered for sale while others quite readily slip in a doubtful egg if necessary to fill the case. On the whole there appears to be far too strong a desire to get the better of the other fellow, instead of making a fair computation of the cost of production of the articles offered for sale, and then gauge the price accordingly. This would mean a uniform or almost a uniform price, and all the consumer would consider would be the quality of the article offered for sale.

Mrs. McBeath pointed out the value of using sign boards when living on automobile routes. On these sign boards might be written up each day some farm ordinary commodity that would be a dainty for the automobile people. These signs are quite extensively used in British Columbia and there cannot be anything imagined much more enticing than a sign by the roadside, "Fresh berries and cream," or "Lettuce and radishes," or "Fresh eggs and homemade bread." Why automobile people cannot pass such signs, especially after one trip in, shows that the goods are up to specifications. Even in the West, there are enough automobile routes to

do, on the farm or anywhere else. We have to live up to the modern trend of life, and to hold their own farm women must know both how to buy and how to sell.

FARM TO TABLE

There was a campaign started in some parts of the United States to take farm produce straight from the farm to the table of the consumer. This was made possible by a splendid system of parcel post. In fact after this campaign started, the parcel post system expanded until refrigerator cars were put on, and everything possible was done, to make of this move to eliminate the middle man, a success. Many people on the farms have grown wealthy in this way.

Mrs. McBeath of Headingly, in a paper before the Horticultural Society of Manitoba, advocated a much wider use of the parcel post system in Canada. The unfortunate part here is that the distance allowed for the first cost is but twenty miles, which is much too short a distance in view of the great distances over which farm produce is shipped to the cities, but this can be remedied by all taking a deep interest

PATMORE'S RELIABLE SEEDS, TREES, SHRUBS AND PLANTS

TO THE HUSBAND OR WIFE WHO WANT TO INCREASE THEIR INCOME WE SAY:

Grow Your Own Vegetables for Summer Use.
Grow Your Own Vegetables for Winter Canning.
Vegetable growing offers every opportunity to reduce the high cost of living.

COLLECTION No. 1
Contains 22 varieties of our Reliable Vegetable Seeds in packets and ozs. 2 1/2 lbs. of seed for..... \$1.25 prepaid

COLLECTION No. 2
15 packets of Reliable Flower Seeds for..... 25c. prepaid

FARMERS' COLLECTION No. 3
Contains 1 lb. Mangel, 1 lb. Sugar Beet, 1 lb. Swede, 1/2 lb. Carrot, 1/2 lb. Kale and 4 lbs. Rape—8 lbs. seed for..... \$3.00 prepaid

SCHOOL GARDEN COLLECTION
School collection of 55 packets of the best varieties of vegetable and flower seeds for..... \$1.00

PERENNIAL COLLECTION
A Permanent Old-fashioned Flower Garden
From the tall Hollyhocks and Foxgloves, to the forget-me-not—This collection contains such old favorites as the Canterbury Bell, Iceland Poppy, Pinks and Sweet Williams, etc. 20 packets, for..... 75c. postpaid

PATMORE'S Manitoba SEED POTATOES

We have all standard varieties. Wee McGregor, Early Bovees, Carmana, American Wonders, Rose, Mortgage Lifters, Etc.

Write to-day for OUR 1917 CATALOGUE

In which we list all the hardiest and best varieties of Vegetables and Flower Seeds, Fruits, Trees and Shrubs, Grasses, Fodders and Seed Potatoes.

Profusely Illustrated and Cultural Directions



PATMORE'S Manitoba Grown

TREES, SHRUBS, PLANTS, ETC.

WHY EVERY MAN SHOULD HAVE A GARDEN

- It Is a Recreation
- It Is An Enjoyable Pastime
- It Is a Money-making Proposition
- Keeps the Home in Fresh Vegetables
- It Increases the Income
- It Beautifies the Home

IT IS NOT ECONOMY—IT IS NOT WISE

To allow one year to slip by. Plant a 50 cent tree now. In three years you will view it with pride saying it is worth \$25.00.

FOR ORNAMENTAL HEDGES Per 100
100,000 Caragana, 2-3 feet high at..... \$5.00
50,000 Lince, 2-3 feet high at..... 5.00

FOR SHADE OR SHELTER

Straight Young Trees
50,000 Maple, 5-6 feet high at..... \$10.00
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Trees will increase the value of property. Windbreaks will reduce the fuel bills. Shade trees make life a joy and pleasure. Hedges are cheaper than fences.

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Brandon, Man.

Saskatoon, Sask.

women knew what they wanted, or what they wanted to find out, and they went straight for that. Self-consciousness, that has robbed the world of many things appeared to be forgotten, and the women stood forth, from the cloak of self, earnest-eyed, capable members of society, with no apology for their ideas, their ability to speak, or for being there and taking the time. They realized that their ideas were as good as any and better than some, and that they had a right to be there and express themselves. It is a relief to know that the old-fashioned women who pride themselves on letting other people speak for them, and on being satisfied with whatever is given to them, is passing away. In their place we are getting the women who like to speak for themselves because they know they have something worth while to say, and they are not satisfied with what is given them because they realize that it is the strong who get what they want if it is right, and it is the weak and children who must take what is given to them. It is the triumph of mind over sex that we are watching, and the budding is beautiful and the fragrance of new ideas fills the air.

serve roast pork at the same meal with a salad rich in oil, and suet pudding or apple dumplings, all of which have an abundance of fat. When it is served have rather a light, fluffy dessert, and let the salad appear at luncheon or supper, instead of at dinner. It is just as natural to have buckwheat cakes with sausage in some families as it is to spread bread with butter, but, because of the large percentage of fat they both contain, the other meals of the day should be so planned that they overbalance this fat, or indigestion will follow. On this day let there be fish for dinner and such vegetables as beets, celery, potatoes, turnips, tomatoes or squash, all low in fat contents. A physician once said to me, "The belief that sugar and sweets are harmful to young people is a delusion. As a matter of fact, sugar is the most concentrated, nourishing and readily digestible form in which one can obtain heat and energy. It furnishes immediately available energy to the muscles, especially to those of the heart, and children crave sugar for perfectly natural reasons. Let Tom and Mary put lots of sugar on their cereal on frosty mornings, and give them candy sometimes instead of other desserts, and let them also enjoy bread

and jam. This extra fuel will be used up in supplying the energy for snowball fights, coasting, skating and playing in the keen air which causes quick burning of the body fuels." **Eat Plenty of Green Vegetables and Fruits** When fresh vegetables and fruits are scarce and expensive in winter, we all have a tendency to buy few of them, and eat macaroni, potatoes, bread and like food, but their value is not comparable to the loss of efficiency resulting from menus that lack natural laxatives and blood-purifiers. Onions, cabbage, cauliflower, Brussels sprouts, turnips, beets, parsnips are all filled with salts and acids which keep the body free from clinkers. Lettuce and watercress are valuable as blood-purifiers. Celery is also excellent, and can be procured in the country in winter more easily than the lettuce or cress. "The old saying, "An apple a day will keep the doctor away," has much truth in it, for this fruit has a seemingly magic effect upon the whole system, and the citric acid of lemons, oranges and grapefruit is better than pills for the liver. Their abundant use in winter will keep the blood clean and the waste channels

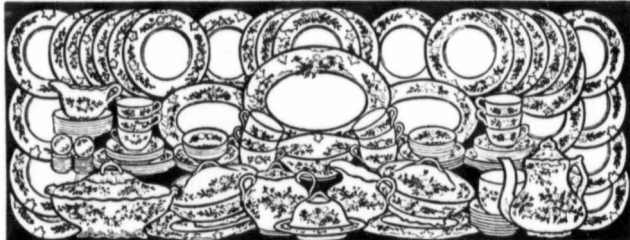
active. All English sailing ships are required by law to take a supply of lemons, or lemon or lime juice, so that every seaman may have a daily allowance of at least an ounce. And don't forget cranberries, not occasionally, but several times a week. They are a tonic food which counteracts the overburden of starch so prevalent in the winter diet. An old New Jersey physician—and you know cranberry bogs abound in that State—once said to me, "If people would eat cranberries all winter till greens come in the spring, and then eat plenty of these, I'll bet I'd soon have to go out of business." **Liquids Valuable** Don't neglect the soup-pot in winter. Try and have this or bouillon or hot fruit-juice at the beginning of every dinner. These hasten the cells of the stomach into activity and stimulate the gastric juices so that they will more quickly utilize the food to produce warmth. Water is also necessary. Many people will consume vast quantities of it during the hot weather and almost stop its use in winter, yet it is especially necessary for any one who wishes to be warm to drink plenty of water, for it serves as a distributor of body heat.

WHAT TO EAT TO BE WARM

Continuation of Article by MARY HAMILTON TALBOT

Try and plan your meals in winter so that they consist of one protein, one fat (besides butter), fresh vegetables or fruits, and several starches and sweets. Correct feeding when the thermometer is near zero will do more for comfort than piling on innumerable clothes and standing over the register. Have you any one in your family who cuts all the fat from his meat and can not be persuaded to eat salads with oil dressing, and who piles jelly on his bread instead of butter? I'll wager he is cold all winter and looks as if nothing stuck to his ribs. Fats of any kind are heat foods, and not only do they keep the body warm to-day, but they store up heat for to-morrow and the next day, and when an extra demand is made for strength, as in some stress of work or sickness, it is this reserve which makes the individual able to stand the strain. But, remember, do not try to store up strength and energy all at once; do it gradually. Maybe the man who works out-of-doors all day can consume a good bit of fat daily, for the cold makes the fires of his body burn more quickly, but in the ordinary family it is risky to

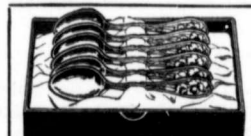
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We pay all delivery charges on these Grand Premiums

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You can easily do this because every one you know will be glad to learn of this grand remedy. It is one of the world's best known prescriptions, a tried and proven remedy for weak and impure blood, nervousness, indigestion, constipation and anemia. In all run down conditions of the system it will be found a grand blood builder and revitalizer, and as a general tonic for blood and nerves it has no equal. **Send No Money**—Just send your name and address to-day and we will send the 12 boxes postage paid. You will be able to sell them quickly and easily because every purchaser of a box can obtain a beautiful gift of the silverware from us free. Then return our money, only \$3.00, and we will promptly send you, all delivery charges paid, the beautiful set of spoons, and the hands-on dinner set you can also receive without selling any more goods by simply showing your first reward among your friends and getting only six of them to sell our goods and earn our fine premiums as usual. We pay all delivery charges right to your door. **REMEMBER YOU TAKE NO RISK.** You do not spend a cent of your own money. We trust you with our goods until sold and if for any reason you cannot sell them we will take them back and give you beautiful premiums or pay you a big cash commission on the quantity you do sell. Write to-day if you wish to take advantage of this liberal offer. It gives you the opportunity of a life-time. Address: **The International Mfg. Co., Dept. D 101 Toronto, Ont.**



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How about your home? Is it a real home? Is it something more than a place to eat and a place to sleep and to shelter you? Is it a place where the united family can gather together and be happy? Has it something that will make your friends enjoy visiting you? That kind of a home is a happy home. And anything that will bring you such a life means as much to you as food and clothing. It is a necessity.

Put music into your home and you will have the greatest influence for happiness that the world has ever known. It is the mother's lullaby, the warrior's cry, the lover's song—who, indeed, does not find the expression of all his moods and emotions in music? And now Mr. Edison's genius has put real music within your reach. You can make it part of your life.

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Outfit No. 475 New Model Instrument and handsome record cabinet complete—two pieces. An entire phonograph outfit, just like the very highest priced instruments and at one-fifth the price! Cabinet finished in dull brown fumed oak. Capacity 30 records. Height of outfit complete, 42 1/4 inches, width 14 1/4 inches, length 17 1/2 inches. Price, complete, with 12 Blue Amberol Records, only \$47.50. (See terms in coupon on opposite page.)



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Mr. Edison's Wonderful New Phonograph

AFTER years of labor on his favorite invention, Mr. Edison has made the music of the phonograph true to life. There is no reason, now—especially since we make this rock-bottom offer—why you should be satisfied with anything less than Mr. Edison's genuine instrument. You are under no obligation on this free trial offer. **Hear the New Edison in your own home before you decide to buy.**

Send No Money — Just the Coupon



home on free trial. See what a wonderful instrument it is—how it brings the music of the world's greatest singers and players, the sweet, old time melodies, the jokes of the funniest vaudeville actors, all right into your own parlor, as if they were there **in person**. See for yourself how much you **need** the New Edison in your life. See how much happier it will make your home. Just fill out the coupon and send it in. No money down, no C. O. D. You pay us nothing unless you keep the outfit. Send it back if you wish **at our expense**. Or pay only \$1 after the trial, and balance in easy monthly payments as explained below.

F. K. Babson, Edison Phonograph Dists., Dept. 373, 355 Portage Ave., Winnipeg, Man.
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A superb instrument, wonderful bargain. Handsomely plated and polished. Richly enameled. Size 13 1/4 inches high, 14 1/2 inches wide, 19 1/2 inches long. Regularly finished in mahogany and golden oak. May be had also in weathered oak or fumed oak. Price, with 12 Blue Amberol Records, only \$56.00. (See terms in coupon below.)

Convince yourself first. Get the New Edison in your

No obligation to buy in sending this coupon; this is just an application for a Free Trial

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Dear Mr. Babson:—As per your offer, I should like to hear Mr. Edison's wonderful new style phonograph with the new Diamond Stylus reproducer in my own home on free trial. Send me the outfit which I have checked below, including the twelve Blue Amberol Records. If I decide to keep the outfit, I will have the privilege of the rock-bottom price direct, from you on your special terms. I agree merely to take the outfit promptly from the depot, pay the small freight or express charges, and if I do not find it thoroughly satisfactory, I reserve the right to return the outfit at once at your expense. Otherwise, I will send the first payment of \$1.00 within forty-eight hours after the free trial or as soon as possible, in no case exceeding one week, and will make monthly payments thereafter of (Check the square below to the left of the outfit which you wish to have us ship).

- Outfit No. 36** \$3.50 for 10 months. Complete price with 12 records \$36.00.
- Outfit No. 475** \$4.50 for 10 months and \$1.50 for the 11th month. Complete price with 12 records \$47.50.
- Outfit No. 56** \$5.50 for 10 months. Complete price with 12 records \$56.00. Send me the outfit finished in.....mahogany.....golden oak.....weathered oak.....fumed oak.

My name.....Address or R. F. D. No.....City.....

State.....Shipping point.....Ship by.....Express. Occupation.....

Age.....Married or Single.....If steadily employed at a salary please state.....

How long a resident in your neighborhood and your vicinity?.....If there is any possibility of changing

your address during the next year, what will be your next address?.....

OUR YOUNG CONDUCTED BY Cousin Doris. FOLK

Our Navy's Glorious Hour at Horn Reef

The following letter was received from an officer in the British Navy who took part in the great naval battle of Horn Reef:

Well, it is all over for a while. The enemy came out and our battle cruiser squadron dashed in and held them up until our battleships came on the scene. Unfortunately, darkness came on, otherwise not a single one of their ships would have escaped. Although our battle cruiser squadron suffered heavily, they were outnumbered 10 to 1. They emerged from the action with great honour. I will never forget the thrill which passed through the ships when the message was wireless from the battle cruiser squadron many miles away: "Am engaged with heavy forces of the enemy." The day had come at last for which thousands of our sailors had waited. Then came the signal: "England looks to you," from the C. in C. Decks cleared for action, men at their stations cheering, singing. Absolute confidence, smiling faces, eagerness which increased as the distance decreased, first two hundred miles, then one hundred, then fifty miles, 20 miles amid the ceaseless mutter of the guns. Finally, the guns of the great battleships, the grandest ships in the world, manned by the finest men and most fearless sailors in the world, opened fire. The noise would be like one hundred heavy thunder storms rolled into one. Great masses of water rose in the air like water spouts; the din was deafening, the air was like an hundred electric storms rolled into one green smoke, yellow smoke, in fact all colors, and in the fading light the effect was awe inspiring. Shells tearing, shrieking, exploding with a noise that language cannot describe. Now and again when an enemy shell found a mark, laying out our men all around, but we smile and "carry on." A destroyer close by badly hit, signalled, "Am sinking." It was pitiful, but there was no help. It is war. Every sailor knows a chance shot may hit his ship, and as no boats are carried your chances of survival are infinitesimal, but, what matter, how can a man die



"SANDY" MACVICAR

"Nature might stand up and say to all the world: 'This was a Man'."—Shakespeare.

This brave man who has given his life for his country is the son of our friends, Mr. and Mrs. Donald MacVicar, of Portage la Prairie. "Sandy" gave up his position on the engineering staff of the C. P. R. shortly after war broke out, went to the Mother Country at his own cost and enlisted with the famous Highland Light Infantry.

He was one of the first over the parapet in the great advance of 1st July, 1916, was severely wounded early in the charge and succumbed from his wounds next day.

Could anything be finer, or could the splendid mother who bore him cherish a richer memory than the last words he wrote to her in a letter dated 23rd June? The following is a transcript of part of that precious memorial:

"Whatever the outcome may be, so far as I am concerned, I am not worrying. You know I'll do my little bit, and better than that no man can do. It is strange that I should be fighting over the same ground as my ancestors fought over for hundreds of years. Had I not thought that we were fighting in the cause of justice and freedom, I for one would certainly not have crossed the Atlantic. As time goes on we see more clearly what a savage tyrant we are up against. When our time comes we will be strengthened, knowing that ours is a just fight, that we have the Great General with us, so we shall go forward confidently. It is a man's job this, and notwithstanding all we have gone through, I'm glad that I've had the chance of doing my little bit to keep the bloody hounds at a safe distance from the women of our race."

better than doing his duty? What greater honour can a sailor have than a watery grave?

Ships were sunk, battle cruisers blown to pieces, destroyers and submarines sent with all their companies to perdition. The five battle cruisers, Lion, Queen Mary,

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Genuine, Hand Painted China! Exquisitely beautiful Tea Set, every piece full size; light, thin, transparent; the finest you ever saw—elaborately hand painted in a variety of lovely patterns of richly colored flowers and fresh, green foliage—a perfectly charming set, and NOT 1c. TO PAY—given for selling only \$5.00 worth of Grand, Big, Beautifully Colored Patriotic, War and Art Pictures, at 15c. each, or of lovely St. Patrick, Easter, War, Patriotic, Birthdays, Floral, Lower and Comic Postcards, at 3 for 1c. ONE AGENT SOLD 20 PICTURES IN 15 MINUTES; another sold \$5.00 WORTH OF CARDS IN 30 MINUTES. You can do the same. Now, HURRY! Don't let anyone get around ahead of you. ORDER sell, pay—your set is here waiting for you, packed ready to ship, the day the money reaches us. Be sure to say whether you wish pictures or cards. The Gold Medal Co., Dept. C.T.18, Toronto.

Tiger, Princess Royal and Indefatigable, bore the brunt of the fight for two hours with Admiral Beatty on the Lion until Admiral Hood hove in sight with three more battle cruisers, the Invincible, the Indomitable, and the Inflexible, only just in time, for the Queen Mary and the Indefatigable had gone. The Invincible rushed to the front and bore the brunt of the fighting, met her doom and sank quickly with all hands except four. The Queen Mary went down in the thick of the action under heavy fire from the German battleships, zeppelins from over head dropping 100-lb. bombs on her deck. She was simultaneously torpedoed on each side. She kept her guns going till the last, bringing down the zeppelin in a blazing mass close to her. The great air craft exploded and went to the bottom. The torpedo must have entered one of the magazines of the Queen Mary for she went up in fragments after a terrible explosion, only half a dozen being saved out of her 1,000 men and officers. She was the "beauty" ship of the English navy. The German flag ship received five torpedoes in quick succession; huge columns of water were seen rising in the air; the hull was literally torn to pieces. She went down in less than two minutes with all hands. Then came the British battleships the Valiant, Barham, Malaya and Warspite. Our battle cruisers had held the entire German navy until the battle fleet appeared on the scene. Shells poured in like a hail storm, the roar was deafening, the hard pressed and gallant cruisers which had been fighting the whole power of the German High Seas Fleet were ordered to retire and draw off, but the cowardly enemy who were brave enough when they outnumbered their opponents by 10 to 1 began to scamper for home. But the grand fleet pursued them right into the Bight of Heligoland. They had no stomach for an equal fight

and it was only darkness that saved them from being completely annihilated. Our destroyers had the time of their lives chasing and torpedoing the fleeing German ships in the dark. Two destroyers actually ran at 30 knots into two different battleships (German) and, of course, crumpled up like matchwood. Another of our destroyers received an eight-inch shell plump on her bridge, wiping out all her officers in the twinkling of an eye. She was brought in by a warrant officer. Another shell struck the battleship Barham and exploded in the auxiliary medical distributing station. None of the doctors and the sick berth steward were ever seen again. A shell struck the forward fire control, passed through and killed the Chaplain of the Colossus. Eight chaplains and eighteen paymasters died a glorious death. The Valiant rammed a submarine when going full speed; the result as described to me was similar to cracking an egg. Another shell struck the battleship Barham and exploded into a gas so dense that you couldn't see the tip of your nose, but with the ships moving 25 to 30 knots the result was futile and had no effect on the battle.

The Germans call it the battle of Skajerrack, which is the entrance to the Baltic and claim that they were 150 miles north of Heligoland and 150 miles west of Denmark. Would to God they had been, for they would never have escaped. They were so badly beaten we fear they will never venture out again. They have lost most of their destroyers, several cruisers, two or three battle cruisers and at least six battleships and several submarines. What honour and memories went with Admiral Hood and Admiral Arbuthnot when leading their divisions into the seething hell of fire. They and those under them died leaving behind immortal fame which will never fade, for no braver deed was ever carried out on

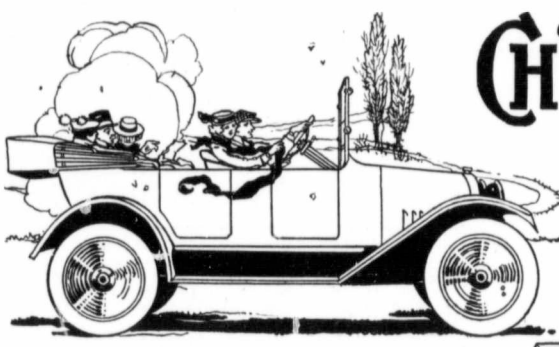
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FREE! REAL 22 RIFLE - FREE!

Dandy Take-Down Rifle. 22-cal. safety action, blued barrel, open sights; shoots hard and straight - they won't get away from you with this Rifle! NOT ONE CENT TO PAY - you may have one for selling only 20¢ for the Hunting type or 50¢ for the Military type, of our great, big, colored War, Patriotic and Art Pictures, at 15c. each, or lovely St. Patrick, Easter, War, Patriotic, Birthdays, Lower and Comic Postcards, at 3 for 1c. NOW IS THE TIME TO SELL; don't waste a minute, but drop us a card RIGHT NOW. YOU MUST GO SHOOTING THIS SPRING; it won't cost you a cent. Order the goods to-day, and be sure to say whether you wish Pictures or Cards. THE GOLD MEDAL CO., DEPT. C.T.30, Toronto.



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the high seas of which Great Britain still remains the mistress. The honours undoubtedly go to the officers and men on our destroyers. They fought to the death. Their attack on the enemy's destroyers, cruisers, and even battleships, surpassed in fury everything that has been witnessed before in naval warfare. Their glory can never fade but will be forever an inspiring memory to all Englishmen. A blue-jacketed officer does not serve his country for what he can make. They are undoubtedly the most poorly paid men in the world, but, thank God, the British tar prefers death and honour to mercenary remuneration. The British Navy has protected England for centuries and still holds to her high ideal and enshrines the very soul of England.

There, my dear good folks, you must be tired of this long rambling letter. British traditions are honorable and British officers and men are the soul of honour. Would that I were one of the glorious band of heroes whose memory will never fade and pass down into history forever and ever. They will never come out again, and we who survive mourn the fact. We are here to fight, and if given the chance would sink the whole German army. Personally, I am in fine fighting condition, plenty of work, and looking forward to the day when I shall meet you all again. If the enemy would come out again that day would soon arrive.

THE WISHING-STOOL
Florence M. Pettee

It was a flat little wishing-stool. It was a wintry one, with an icicle base and a melted-out, flat top, not unlike a toadstool in ice. It was so conveniently located right outside the window-sill. At least, little Snow-Wing thought so.

Now, Snow-Wing, as you may have guessed, was none other than a little snow-bird. He was a strange, wandering little fellow. Many a time already in his brief life he had heard:

"Now, Snow-Wing, why do you fly away so soon after breakfast?" And Snow-Wing always hid his head under his wing. But he managed to take it out in time to fly away—later.

FREE TO EVERY BOY AND GIRL



This ring is an exact duplicate of an 18th solid gold ring, and you can have it engraved with any monogram desired. You can earn this beautiful ring in less than an hour. Just simply send 15 packages of our assorted picture post cards. Each package contains 6 cards, which you sell for only 10 cents. A free coupon given with each package, will make your friends buy them on sight. Don't wait a minute, but order right now. You send no money until you have sold the cards, then send us the money you have received (\$1.50). We send you this ring, engraved, by return mail. Ask for our big catalogue of premiums. Address: Colonial Art Co. DESK T.L. TORONTO, ONT.

Let me say at once that Snow-Wing had an idea, and he hadn't told a soul, not even Long-Tail, his brother.

A week ago, Snow-Wing had gleefully swung away out on the tip of an elm tree branch. Merrily he called to the branches. Suddenly, a whispering voice had called his name.

"Snow-Wing, Snow-Wing," it said, softly.

Snow-Wing stopped swinging.

"Snow-Wing, Snow-Wing," it came again.

Snow-Wing cocked his head on one side and listened as hard as he could.

"Why, it's the voice of the Elm," said he.

"Yes," said the Elm, "and no one else has heard my faint murmurings before, though I've whispered all these snowy days. To you, Snow-Wing, I will tell this secret which the North Wind told me. You must fly, every morning early, straight to a tiny white house with a red roof at the edge of a pine grove. On one of the highest windows you will find the Wishing-Stool of the Ice King. Now go."

Every morning, as soon as he could find courage to fly boldly away, he had hunted the country over with no better success.

This morning, Snow-Wing had been very bold. He had even failed to blush and hide his head at the customary words of his family. He felt better and more wide-awake—and he didn't fly so far. He flew a short distance back of his own home, then looked the country over from a tall tree. A long way off he saw a patch of dark against the sky. He made fast for it, and—at last—yes, it was—a thick pine grove. He flew through it at an unmistakable red light ahead. It was not really a red light, but a red roof gleaming in the sunlight. And it was a white house, too.

Snow-Wing sailed high around it twice. He wanted to find the very window the first time. Finally he guessed that it was the highest one near the roof. As he looked at it the second time, the window opened and a small hand threw something out, then closed the window, carefully. Snow-Wing alighted above the spot. He pecked cautiously. Not a sound, and no one in sight. Something glistened in the sunlight—a queer, little flat-topped icicle. Snow-Wing was curious. He forgot the hand and flew for the glistening thing, and heaped upon its sun-kissed top—stuck fast so the wind couldn't blow them away—were scores and scores of the most delicious cookie and cracker crumbs.

Snow-Wing ate fast and hungrily. Just then, the North Wind scurried by.

"The Whispering Elm sent me," said he. "This is the Wishing-Stool of the Ice King, and if you'll stand upon it and wish hard, your wish will come true."

Snow-Wing was but a bird and a hungry one. Also, his mouth still tasted of the delicious crumbs.

"I wish," said he, "for this little table of crumbs every morning."

"You shall have it," said North Wind, and he flew merrily on, calling back,

"This is the play-room of the children—they always have goodies at this time." So Snow-Wing flew happily home.

Now, what would you have wished had you been Snow-Wing? Look hard for the Ice King's Wishing-Stool.

THE LITTLE FEATHERED RESCUER

By Dora Simpkins

It is almost unbelievable that our brilliant little feathered pet, the canary, should merit such an important rank among the heroes of the world; but there is scarcely another living creature which has done as much to save the lives of men in danger.

The canary is recognized to-day as an indispensable helper to the rescue worker at great mine disasters; so much so in fact, that Uncle Sam possesses about twenty of these birds which he keeps regularly in his service for this special work. They have become the pets of the professional rescuers of the Bureau of Mines.

Whenever a mine disaster occurs, this bureau rushes its rescue corps to the aid of the entombed miners; and the little canary birds go along also. A few of the intrepid rescuers, with oxygen breathing apparatus attached to their backs to provide them with fresh air, break their way into the gaseous and dusty depths to save all of the men, who have, perchance, been only injured.

These men start the fans going to keep the air moving and then begin to dig out the victims. Only a few men can do this perilous part of the work; the risk is too great for a number of men to be allowed to imperil their lives. But others press as close behind as they possibly can, to be ready to render first aid to the injured men delivered from within. In the company of these workers, the canary enters the scene to play its part.

Just a word to tell why the canary is picked for this heroic service and to explain what use he, a mere mite, can possibly be in any stupendous calamity. It has been found that the canary, of all tiny creatures, is the most sensitive to atmosphere. The slightest presence of an asphyxiating gas affects him. In the fresh air, he is happy and gay, preening his feathers and singing a gay song; at the least pollution of the atmosphere, he wilts and droops. His very charm acts as a meter

to indicate the purity of the air, and by its strength or weakness the rescuers are enabled to gauge the distance that they may safely penetrate, in their aid of the imprisoned miners within.

Before the canary proved its effectiveness as a rescuer, many other small creatures were used for experimentation. The white mouse was among this band and it was thought for a time that it would serve the purpose in an ideal manner; but the white mouse often takes to sulking and it sometimes sulks in action, which is not the way for a hero to behave at all, and the rescue men could not tell the difference between its sulking fits and its true response to asphyxiating gas.

Not so the canary; always chipper and sprightly, it proved itself the most dependable indicator of the condition of the atmosphere. So now the little canary's cage is held aloft at all of the country's great mining disasters; the little bird within is watched most carefully, for its actions regulate the position of the rescue crew.

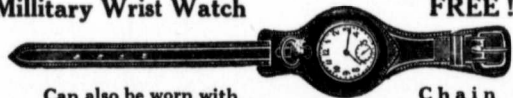
Sometimes, while the men are waiting for the injured ones to be carried to them, the contaminated air rushes out and the little feathered hero is overcome. But he is so carefully attended as the stricken miners themselves. Quickly he is thrust into another cage which has an oxygen tank attached to it. Oxygen is pumped into this cage and the bird immediately revives.

One of the rescuers owns a bird that has been asphyxiated seventeen times, and seventeen times has it been revived! Now the owner, who treasures it most highly, says that it must not be taken in dangerous places ever again. Seventeen heroic experiences, which would indeed suffice for a man, constitute a splendid record for a tiny bird, and the owner thinks it should be retired from active service.

Not only at disasters are canaries useful. Every day, before the miners descend the shafts of the coal or metal mines, the foreman walks through the subterranean passages, oftentimes two or three miles underground, to see that everything is all right. In his hand he carries a bird cage and his little pet fits about within. If the little chap makes this trip unaffected at the end, the miners are allowed to enter also and begin their work.

Military Wrist Watch

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Thoroughly reliable and fully guaranteed—the neatest and prettiest little Wrist Watch you ever saw—dainty lady's size given for selling 40 or gent's size for selling only 34, of our great, big, colored, War, Patriotic and Art Pictures, at 15c each, or lovely St. Patrick, Easter, War, Patriotic, Birthday, Love and Comic Postcards, at 3 for 5c. NOW IS THE TIME TO SELL! don't waste a minute, but drop us a card RIGHT NOW. The selling is a pleasure and the Watch is a beauty. Order the goods today, and be sure to say whether you wish pictures or cards.

THE GOLD MEDAL CO., DEPT. C.T.#4, Toronto

OUR WOMEN FOLK

CONDUCTED BY
PEARL RICHMOND HAMILTON



THE BEST DAY

Some skies may be gloomy,
Some moments be sad,
But, everywhere, always,
Some souls must be glad;
For true is the saying
Proclaimed by the seer,
"Each day is the best day
Of somebody's year!"

Each day finds a hero,
Each day helps a saint,
Each day brings to some one
A joy without taint.
Though it may not be my turn,
Or yours that is near—
"Each day is the best day
Of somebody's year!"

The calendar sparkles
With days that have brought
Some prize that was hoped for,
Some good that was sought.
High deeds happen daily,
Wide truths grow more clear—
"Each day is the best day
Of somebody's year!"

No sun ever rises
But brings joy behind,
No sorrow in letters
The whole earth can bind.
How selfish our fretting,
How narrow our fear—
"Each day is the best day
Of somebody's year."
Priscilla Leonard in Youth's Companion

Home Economics Society

The H. E. S. convention of Manitoba held a most successful annual convention from Feb 12th to the evening of Feb 16th. Between three and four hundred delegates from different parts of the Province attended. It is a real inspiration to attend these conventions because the delegates are women enthusiastic, energetic and are determined to promote movements for every form of better citizenship. These women with their splendid experience and keen intelligent insight are in a position to advance and carry through resolutions that define every phase of genuine patriotism. One listened with intense interest to the splendid reports of work done by the societies. In one society alone over three thousand dollars had been collected for patriotic purposes during the past year. In all, over \$15,000 in cash had been raised by the Manitoban Home Economics Societies for patriotic purposes, besides thousands of dollars' worth of material, such as scarves, socks, mitts, etc. It is very gratifying to be able to state that the provincial membership has now increased to 3,590.

It is a fact that the women throughout the country have kept up the interest in patriotic work continuously with increasing results, while in the city one who knows conditions says there is a decreasing lack of interest.

I feel that some of the best papers given at the convention would be a greater help to the members who did not attend and to our readers in other provinces of Canada than a condensed report, so we are publishing the addresses of Mrs. H. M. Dayton, Provincial President of H. E. S., and Mrs. G. T. Armstrong of Manitoba and also the one delivered by Mrs. McBeath of Headingly. This department has received many requests for these papers. More will be published next month. We have had requests for Mrs. Watt's address on library work and hope to have it in next month's issue.

During the last session several important resolutions were adopted which are as follows:

"Resolved that the H. E. S. of Manitoba, in meeting assembled, do place itself on record as approving of the national service scheme and would advocate that in the final carrying out of the scheme that it be done under national service and control by a national government, and further, that the wealth of the country be mobilized for war purposes by a graduated income tax or otherwise with the least possible delay."

Other resolutions of wide public interest, which received the approval of the convention were:

"Whereas, the conditions in England are unsatisfactory with regard to the unrestricted sale of liquor, offering great temptation to our Canadian boys.

"Resolved that we heartily endorse the resolution sent in by the Methodist Ministerial association of Winnipeg to Lloyd George in regard to the question."

"Resolved that, whereas, the formation of horticultural societies would be of benefit to the country, we request that any such society being formed and the

human hearts. Mrs. Dick has initiated some of the most important moves that have been made in women's work in the Province. Not only has she started them but she has worked hard on them until they were carried through successfully. Among them are the Public Playgrounds in Winnipeg, the Day Nurseries and the Widow's Pension Act. Just now Mrs. Dick is anxious to create public interest in the mobilization of capital. As Mrs. Dick has three sons at the front we feel that what she says comes from a patriotic heart that is genuine. In speaking to the resolution on mobilization of capital Mrs. Dick pointed out the unfairness of the way in which the state viewed the wealth of the Dominion and the man power. That while the present generation is being taxed the full loss of man power, the cost of the war is being left to posterity. The men who fight in the trenches to save our country, if fortunate enough to return, will have to pay taxes to repay the war loans which is most unfair.

The state comes to the man of wealth and says: "We need your money for this business of war, we will guarantee

of pensions, one of which states: "Thou shalt not rob the mother of the potential value of her son's career if you accept his life." It surely is a lesser sacrifice to give your money than to give your life.

Mrs. Dick urged women to advocate the mobilization of wealth by a graduated income tax, when they returned to their homes in the various districts, as it would be necessary to arouse public sentiment in order to procure legislation. Upon being asked by one of the delegates what was meant by income tax, Mrs. Dick explained that it was a tax levied on the incomes of the people, which was the most sane and just tax which has ever been levied, as every one pays according as he was able.

It has been in vogue in Great Britain for the past seventy-five years and has worked out most satisfactorily. Before the war broke out they had the tax so that the man of wealth paid a larger percentage than the man of small means. Since the outbreak of the war this percentage has been largely increased.

The delegates felt grateful that Mrs. H. M. Dayton was re-elected, as she has the rare combination of executive ability and genuine heart service. She understands the needs of the women of Manitoba both in country and city and is a woman who is held in high esteem by all who know her.

PRESIDENT'S ADDRESS

Opening Address by Mrs. H. M. Dayton of Virden, President of H. E. S.

Dear friends and fellow-workers: It is always a great pleasure to meet with you in these conventions. On looking back at our first convention, a handful of women in a class room of the old Agricultural College, almost afraid of the sound of our own voices, it is with keen pleasure I have watched the progress of this work throughout the Province. Our delegates are here to-day by hundreds, our membership has increased by thousands, and we are recognized as the social service councils of our various communities.

Our program is well proportioned and I hope you will all enjoy and profit by it, but to my mind the greatest benefit to us arises from discussion and the interchange of opinions.

Patriotic Work

We meet again under the shadow of the dark war clouds from which so many of our homes have suffered. During the past year I have visited many of our societies and I am glad to be able to tell you that even in the most remote splendid work is being done—not alone in sewing and knitting, valuable as these are, but our H.E.S. homes have been foremost in giving their husbands, brothers, sons, yes, and their daughters as nurses, in this great cause, in raising money for our R. S. A. Prisoners of War, Blinded Heroes, Belgium Relief, etc.; but one of the most noteworthy efforts was that of last autumn when during harvest many of our women took the place of men on binders and in other ways, and as help is going to be more scarce than ever next fall, I believe a course for women in running gasoline engines would fit many more to take men's places. In some places our societies have suffered through doing their patriotic work through other organizations. This is entirely unnecessary. No society is more patriotic, and I would like to speak strongly against multiplying women's organizations in small places. It is fatal to community harmony and good work. Every society should take up some definite line of patriotic work. The strongest societies are those that are doing this. Everything we can do is needed. The Red Cross is short of supplies. The St. John Am-



OUR FIRST LINE OF DEFENSE

The least of these little ones can say: "Give me standing-room and I will move the world"

work carried on by the H. E. S. should participate in the grant given by the government to horticultural societies.

Restrict Sale of Cream

"Resolved that the government be asked to restrict the making and selling of ice cream and iced cakes as a war measure so that cream may be released for the making of butter, and that more full milk be available for the public."

"Resolved that the old rural school board be supplanted by a municipal board and at least two women be on that board."

After a lengthy discussion on the law amendments recently proposed by the Political Equality league, it was decided that the matter be referred to next year's convention. Mrs. Dayton urged the societies to give the question careful consideration and study in the meantime.

During the discussion of the resolutions the delegates listened with intense interest to Mrs. John Dick as they said they felt she spoke with a genuine ring. Somehow sincerity finds its way to

the safe return of it, a larger rate of interest than we have been accustomed to pay and to further wheedle the money from him exempts it from taxation, which is a crime against the men in the trenches."

"To the parents of boys the state says: "We need your boys. We cannot guarantee their safe return, nor is there any recognition of the loss of their potential value to you, if they lose their lives."

I know of parents in this city, and I've no doubt there are many throughout the country, who have spent all their earnings and years of toil and anxiety in bringing up their boys. They not only looked forward to the joy of intercourse with them, but to leaning on them for support in their old age. They were their insurance against old age. The boys are all gone and the home left desolate. There should be indemnity for such as those.

The new British Minister of Pensions appointed by Lloyd-George has gotten up what he terms the ten commandments

balance asks for field comforts. Mark your parcels "Charge collect" and they are carried free. Our beloved Dominion is calling us to-day to sacrifice—individual sacrifice. Don't let any of us think that because we have made a few socks and shirts we have done our duty. We have not done our duty until we have done all we can every day until the war ceases.

Homes and Schools

If it is true that "the welfare of the nation is set in the homes of the people" then it is our great patriotic duty to see that out of these homes we shall send our young people equipped physically, mentally, morally and spiritually to take the places of those who have gone from us, first in taking every precaution as to health, without which the others fail. We are realizing as never before that the children are the greatest asset of the nation. They will have to take their places in the world's work earlier than usual. It is for us then to co-operate in the efforts of our government to promote healthful conditions in the home school and community. The appointment of district nurses is a step in the right direction, we can do much to pave the way for them and make their work more effectual. They can give valuable pre-natal advice to our mothers and help watch the children's health during the years before school age, and in the school the nurse is as valuable as the teacher. Every school must be medically, dentally and sanitarily inspected. Children are often called stupid when it is only adenoids or want of suitable glasses. There should be a free clinic and treatment in every town for children who cannot afford to pay for it. Remember when you lay your hand on the head of a child you may help the whole world. School trustees who a few years ago looked askance at our suggestions are now asking for our help.

Boys' and Girls' Clubs

We are doing much in fostering the work of the Boys' and Girls' Clubs with their 13,000 members everywhere. We are co-operating with Mr. Newton, Superintendent of Extension Service, M. A. C., in his splendid efforts to make this work a success. One of the most interesting community evenings I have ever known, six hundred people being present, was the presentation of the Boys' and Girls' Clubs prizes, combined with a silver medal spelling match, folk dances, patriotic songs, etc. by fourteen schools in and around one of our towns where silver medals were given as prizes to the best spellers. The whole program was arranged by the H. E. S. Net returns \$60.00 toward a library.

We may teach our children to be honest by the games we play with them and equally by this Boys' and Girls' Club work.

We should also interest them in protecting our birds.

Co-operation with Local Trustees Associations

If you have the report of the Department of Education, you will notice that in many places we are co-operating with the Trustees Associations for the betterment of school work. When you get the trustees, teachers and mothers together at a luncheon talking over school matters good results are sure to follow.

Manual Training, Domestic Science and Hot Lunches

We must see that our children are taught to use their hands as well as their brains. Let us work for manual training, domestic science, also a hot lunch for every child driving in. No child can keep well, going from daylight until dark in winter without something hot to eat or drink. I haven't a doubt that we have tubercular trouble among our children partly on account of a cold lunch five days in every week, half of which is often thrown away. The departmental examinations should be spread over the year, not crowded in a week at the end of the term. This helps to make nervous wrecks of some of our girls. If you want to interest the community in your work, first interest yourself in the children.

Debating Societies

Debating societies and a brighter social life should be encouraged by us. Loyal men are not in our legislative halls, who ought to be there because of their inability to properly express their views. Our daughters go to the city because of a lack of understanding by the parents

and the chance of a cheerful and sociable environment. We as mothers should teach life's truths to our children, not leave them to hear them often in a most vulgar way on the street.

Feeble-minded

In the proposed combing out of the feeble-minded we can render valuable service.

Our Foreign Women

The H.E.S. may do splendid work for our foreign women. In many cases the husband comes to this country first, and by mixing with other workers learns something of our language. When the wife comes he already has a start of her, he continues to mix and learn, she is left home alone and I verily believe this has something to do with the many cases of wife desertion among foreign men. Let us do more to help the foreign woman and her children to become good Canadians.

A Democratic Organization

We have our greatest asset in that we are a democratic organization. We are pre-eminently fitted to bring the people of all classes and creeds together to their betterment, being in close touch with and under the direction of our government, from which we receive valuable assistance, which we pass on then through our advisory board, we bring the people's view to our government. Could any arrangement be better?

Co-operation with the Women of the City

Many of our societies are affiliated with the local council of this city and they all should be if they trust to keep in touch with the best women's work for the Province. It is not long since the women of the city and country thought they had little in common. Our affiliation with the local council is helping to change all this. It is bringing us to realize that our interests are closely interwoven, that what affects one affects all. In this city splendid women are working to bring about conditions that shall promote the better development of our sons and daughters as they come here. We are also co-operating with them in obtaining better conditions for the women of the whole province. Legislation toward this end may be obtained this year. They also have our co-operation in their work for the stricken, and fairer censorship of moving pictures. They would also have our most hearty support in bringing in a vote of censure for the treasonable utterances of men formerly held in esteem. We all know that reforms are needed, but the time for these is not when the structure is threatened. To my mind these men have taken themselves too seriously in placing their opinions before those of the Empire's best men, who have not withheld even their own sons in the Empire's need, and these are the men whose voices we will hear and whose hands we will uphold in the reconstruction.

Appreciating the work of our government for women and children, we hold in high regard the splendid work of our present government for women and children, and its fearless legislature for prohibition, mother's pensions, rural credits, abolishing of bilingualism. For the work of the Hon. Dr. Thornton no praise is too great for his untiring efforts in the interests of our children: 44 new schools were opened in the Province last year, with accommodation for over 2,000 children. We should have one of our societies wherever there was a new school and have a woman trustee or a committee of mothers to co-operate with the trustees. We are an organization co-operating with our government for better homes and higher ideals of citizenship. Could any work be more splendid. We should be interpreters, not only of the needs but of the best possibilities of our communities and see to it that these are consecrated to our country's needs at the present time. To accomplish this we must put away entirely all pettiness, narrowness, harsh criticism, keeping our eyes on the goal—a nobler manhood, a finer womanhood. Canada—where right should be might.

THE IDEAL HOME ECONOMICS SOCIETY.

By Mrs. G. T. Armstrong

The ideal H. E. S. is one that fills a real need in the life of a community and is composed of the more or less ideal women citizens of the rural district multiplied by the number of women in that district.

It is the broadest, most comprehensive, most friendly women's society possible, with no qualifications for membership and practically no restrictions on its activities. Everybody belongs—not merely the clever woman or the woman of leisure, but all the women, and everyone is willing to work and fill an office so that there are new officers every year and a very varied programme. These conditions make the ideal H. E. S., everything else follows. Most societies are organized for some special purpose, and most of them are unnecessary where a healthy H.E.S. has been established. It is the one organiza-

tion with no set programme inspired from headquarters, but standing ready to take up any problem that the time and place present. Societies, as a rule, tend to separate the different elements of a community, but this one unifies. In fact, in this unifying influence lies its greatest value. Unite the women of a community in a friendly public-spirited association, and the welfare of that community is assured. There is nothing women can't do if they are united.

What special work any particular society ought to take up must be determined by local needs and conditions. At

present most people have little heart for anything but war work, and most of our H.E.S. are in reality, if not in name, war relief societies. One woman, asked what the Red Cross Society of her town was doing, said: "We are the Red Cross Society. We have one organization to handle everything of that kind, and that is the H. E. S." That is as it ought to be. War relief is the need of the hour.

But at this time there are other matters which justly claim what time and attention we can spare, matters which must be attended to right now during the war, not for our own good alone, but for the sake of those who are coming home when this awful war is over. Anything, for instance, relating to public health, public morals, or community welfare generally, ought to be considered. A doctor speaking in Winnipeg a couple of months ago on community sanitation said that in the next year prevention of disease will play as important a part in the saving of lives as surgery has played during the past year. Any public welfare association (that means ours) he claims can agitate for measures to prevent disease; and he emphasized the fact that clean wholesome bodies are as necessary to the public health as clean healthful places to work in. What can women do in that direction? Women give the first instructions in personal hygiene beginning with the baby's morning bath in the wash basin. That is a good place to begin, but a bad place to end. Dr. Stewart, of Ninette, says that the best of us are only beginning to learn to live in houses. What do women know about that? Some of us have fancied that we had house-keeping down to a fine art. Women are taking a hand in planning houses now-a-days. Do we really know anything of proper methods of ventilation, and we must not stop here. Fresh air is essential to healthfulness, but it is not the only essential. Dr. Stewart says that tuberculosis is contracted as often after six o'clock as before six, at hockey games and other amusements and dissipations. He says we must adopt saner, more regular, more restful habits of living. What can women do about that? These and kindred subjects must be seriously considered if our nation is not to continue to degenerate as examinations for military service show it has been degenerating. A woman who, after an absence of fifteen years, visited the Old Country shortly before the war broke out, suggested that the war might have come to check this very thing. She said she saw such a difference in the way people were living, a greatly increased fondness of luxury and a sort of general softness that did not look good. Dear knows, the average women in our rural districts has not a soft life exactly, but perhaps some plan can be formed whereby our work could be lightened or lessened so that we could give more attention to matters that affect our well-being almost as vitally as does our daily bread.

Another grave menace to public health and public morals is the number of feeble-minded people we have in our province with no institution in which to place them. Over seven hundred, the Minister of Public Works states, have been reported, and there must be many not reported, and the question of caring for and protecting them is at present under consideration. Now a society like ours can do a great deal to assist in this work. We know and could report the cases in our own locality, and perhaps by showing a sympathetic interest might make it easier for the parents or guardians to hand them over to an institution when we get one. These people ought to be taken care of for their own sake, because they cannot take care of themselves, and for the sake of the community, because it is claimed that every mental defective is a potential criminal through no wickedness of his own, and he does not live or die unto himself.

But the ideal H. E. S. is not wholly and entirely absorbed in these serious questions. If it were it would not be an ideal society, or any other kind of a society very long. On no account ought the social side of our work be neglected. If it is the practical, or what appears to be the practical work, will not progress as it might, if indeed it goes on at all. There is no doubt that some societies, not only H. E. Societies, have died because their social side was not thought of. If any society will endure, before all else it is

necessary that it hold fast to a little diversion of some sort. No matter how interesting the programme or how cleverly handled, the meetings to which we come and simply sit and listen, then get up and go home, are not so attractive, nor so satisfactory, nor so likely to continue, as those that provide for some social intercourse. A specified time ought to be set on every day's programme for sociability. This may be done by having a short intermission, or better still, by finishing the afternoon with a cup of tea. The most retiring person, who simply will not open her lips in a meeting, has no hesitation in saying, "Have some tea," "Do you take sugar?" These commonplace, which amount to nothing in themselves, almost invariably lead to real conversation, exchange of opinions, and suggestions that would never come to life otherwise. The woman who begins by bringing a cake goes on to give a paper or talk on some subject that perhaps you had no idea she knew anything about. It is quite true that our real social life must grow out of our work, and equally true that some of the best suggestions for work would never be made unless at a social gathering under the inspiring influence of free, informal conversation. And just here let us note that an ideal H. E. S. will make use of all available material.

are leaving our rural districts is that they do not want to work as hard as their mothers have done. Very natural. We must find some way out. It rests largely with rural communities to preserve our national characteristics.

"Princes and lords may flourish or may fade,
A breath can make them as a breath has made,
But a bold peasantry, their country's pride,
When once destroyed can never be supplied."

So we may profitably follow methods of working, and give and receive suggestions regarding labor-saving devices. However, there is not much danger that we shall confine ourselves to these matters. No body of women will gather together these days and discuss domestic duties, and domestic duties alone. There is too much else in the air. Many new opportunities of service are opening up to us, but in grasping let us not lose our hold on the equally important old ones that have always been ours.

And, lastly, there is hardly any rural district that might not have a more or less ideal H. E. S. Don't be afraid of small beginnings. Great oaks from little acorns grow. Not, of course, if you put the acorn on the clock shelf. For ex-

On the farm we would find it hard to live without a good sized garden to help feed our families and hired men. Nothing is so nice as good vegetables with meat and gravy. A small portion of meat goes a long way when served with well cooked vegetables, and our health and our pockets feel the benefit.

Nearly all gardeners, however, find that they have a surplus of everything, for the season is short and the early vegetables come in such quick succession that it is almost impossible to use them all up in season. To turn this surplus into a profit instead of a loss, our women are taking to canning their vegetables as well as their fruit, and so laying in a store for winter use at small cost. The process is exceedingly simple, and with care in following directions, there is not much chance of failure.

Canning in tin is cheaper than canning in jars or bottles, but the increased price of tin, owing to war conditions, will make it prohibitive just now. The ordinary price of the tin was about 3 cents, but to-day they are three times that, so that we will have to depend on bottles or jars. In this line I would recommend the Economy jar as being the surgest to use and also the most attractive container. Other kinds may be used if great care is taken with the rubbers.

Perhaps if I quote to you from letters received from some of the women who have been canning vegetables for the first time this summer, you may be encouraged to try also.

One says: "I have put up corn and tomatoes, as I got my outfit too late for beans and peas. Dad says he never tasted such delicious corn, and the tomatoes are really far too nice for soup."

Another says: "I put up fifty tins of beans and peas, and they are fine; also three hundred bottles of other vegetables and fruit, and I tell you I am proud of my pantry with the shelves full."

Another says: "My peas turned out so good that the neighbors ask me what brand of peas I buy. I only use them when visitors come. My sister and I put up a hundred cans of vegetables and wild fruit, and we are just sorry we did not do more, but watch us next year!"

There seems little doubt that the canning of vegetables will become as common as the making of preserves, and will indeed be a blessing in many families where vegetables are sadly neglected in the diet.

The variety is unlimited, early carrots, peas, beans, corn, tomatoes, cauliflower, spinach, greens, and mixed vegetables for soup. The cost is very small when you grow your own vegetables, as only water and a teaspoonful of salt are needed in putting them up. This fall I had quantities of tomatoes and put up enough to do me all season, at a cost of 5 cents the quart can,—probably one-third of what I could have bought them for.

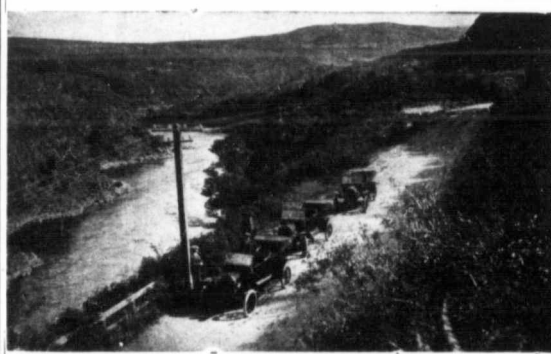
The women and girls in the States have taken up canning most enthusiastically, and are making a great success of it. Put up carefully and with attractive labels, they find little difficulty in selling to local stores or to neighbors, and thus adding to their income after supplying their own household needs. There seems a good opening here for enterprising girls, who in country districts might get for neighbors on shares.

A young man on a homestead was talking to me of the possibilities in his neighborhood. All around his homestead the wild strawberries and raspberries are in great abundance, and practically all go to waste as there is nobody to pick them. His idea is to put in an acre of garden stuff, beans, peas, tomatoes, and corn,—can the fruit as it came in, and when the fruit was over can the vegetables. The cost of equipment would be very little, and the local country store would take all his output. The idea is a capital one, and there is no reason why the same plan could not be followed out in many other places. This young man rents his farm, but in carrying out his canning campaign he would be adding considerably to his income, besides providing himself with light and congenial work.

To help those of you who plan to try out canning, I may add that the College is issuing a comprehensive Bulletin on "Canning," with instructions, which if carefully followed will ensure success, and I can only say that if you once make a start you will wonder why on earth you did not do it before.

THE GREATEST THIEF

the world has ever produced is procrastination and he is still at large. If you have not yet entered our Big Contest, procrastination is robbing you of pleasures and conveniences you may have a chance of enjoying.



THIS IS THE LIFE

There is no time like the present to enter the contest. See opposite page of this issue and act to-day. Don't procrastinate.

Don't forget the young girl who has just finished High School. Often she is brimming over with information and enthusiasm, she can do more than run errands and pass refreshments. She can sing or play or recite, she can prepare an essay or read one that she wrote while at school. She can teach us a good many things and revive in our minds things that in the stress and strain of our daily work we have forgotten. It will do the girl good too. If she does not make use of what she has been studying it will dry up and finally blow away like the withered leaves from the tree. We have a duty to the young woman as well as to the child. Make her feel that she has a place in the life of the community.

At every meeting there must of course be something definite for us to consider. This will necessarily be some matter of common interest, and in all probability some phase of housework. You say: "Don't talk of work, we want to forget it." So we do sometimes, but we are all interested in improving and making easier the work we have to do. Our work is the commonest thing we have in common, and the more quickly and easily we do it, the more time and heart we will have for reading and other recreation. One reason that our young girls

ample, let me tell you a story just as it was told to me. A friend asked me to come in for a cup of tea; a few other ladies were there, and while we were taking our tea our hostess remarked, "We ought to have a children's hospital in Winnipeg." The matter was discussed, and we decided to hold a series of literary teas in our own homes, the proceeds of these to be the nucleus of the fund for a hospital. Later the same lady conceived the idea of selling violets on Easter Saturday, a practice which now brings in thousands of dollars. So we may say that the result of one woman's energy and enterprise are before us to-day in the form of the Children's Hospital of Winnipeg.

CANNING VEGETABLES

By Mrs. McBeath, Headingly, Man.

Probably some of the members of the Horticultural Society have been urging on you the benefits of making a garden, however small, this season, and producing your own fresh vegetables, for the cost of living seems to be going steadily up till we will be largely dependent on our gardens for food.

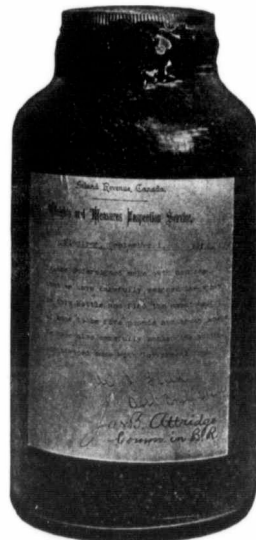
Your Last Chance To Get An Automobile Free

This Contest Positively Closes on April 1st

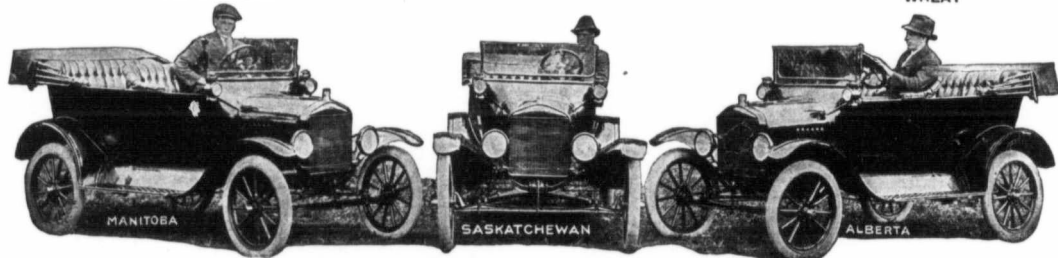
EVERY farmer wants a car, but unfortunately all those who want one are not able to gratify their desires. To some the chance to drive their own car seems still a long way off. Right here is where the Canadian Thresherman and Farmer steps in and solves the difficulty. Any farmer may have a car free with very little effort. Read all about the contest on these pages and act to-day.

HOW TO WIN A CAR

We will present a handsome FORD TOURING CAR (1917 model) to the first reader of The Canadian Thresherman and Farmer, in each of the three prairie provinces—Manitoba, Saskatchewan and Alberta—who estimates nearest to the number of whole kernels in 5 POUNDS AND 7 OUNCES OF NO. 1 NORTHERN WHEAT, BETWEEN THE 15th OF SEPTEMBER, 1916, AND 1st APRIL, 1917. The wheat is a fair clean sample of No. 1 Northern, grown in Saskatchewan, and weighs 64 pounds to the bushel. It was obtained from the Dominion Grain Inspector at Winnipeg. The wheat and bottle were taken to the Dominion Weights and Measures office, and exactly 5 pounds and 7 ounces were weighed out and poured into same. The bottle was then immediately sealed up in the presence of two witnesses, photographed, and deposited with the Union Trust Company of Winnipeg. It will remain in their vaults until the contest closes, 1st April, 1917, when it will be taken out and counted by a board of three judges, none of whom are in any way connected with The Canadian Thresherman and Farmer.



THIS BOTTLE CONTAINS FIVE POUNDS AND SEVEN OUNCES OF NO. 1 NORTHERN MARQUIS WHEAT



These Three Splendid Cars go to the Winners---FREE

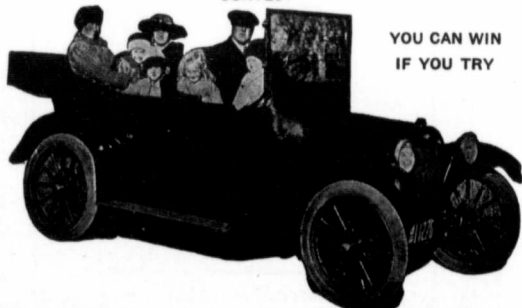
POINTS TO REMEMBER

- (1) The bottle contains 5 pounds and 7 ounces of No. 1 Northern Wheat.
- (2) It is Marquis Wheat grown in Saskatchewan weighing 64 pounds to the bushel.
- (3) The wheat is drawn from exactly the same sample as was used in our last contest.
- (4) The contest positively closes on 1st April, 1917.

A HINT TO CONTESTANTS

Frank B. Snyder, of Elkhorn, Manitoba, headed the last competition with an estimate of 47,038 kernels—the actual number of whole grains in the bottle being 47,037. The bottle on that occasion contained three and one-quarter pounds of No. 1 Northern Wheat, which weighed 64 pounds to the bushel. The grain in the present contest also runs 64 pounds to the bushel, the only difference being the amount of wheat used, which is five pounds and seven ounces in place of three and one-quarter pounds.

HERE IS THE WINNER OF OUR LAST BIG AUTOMOBILE CONTEST



FRANK B. SNYDER of Elkhorn, Man., with his wife and family in the handsome car he won in our last competition

YOU CAN WIN
IF YOU TRY

HOW TO SEND YOUR ESTIMATES

Everyone who sends us a subscription direct to this office between the dates mentioned, for The Canadian Thresherman and Farmer, either new or renewal, is entitled to estimates as explained below. These estimates may be credited in whatever way you desire, and you may send in as many estimates as you wish in accordance with the schedule below. Remember every additional estimate increases your chance to win a car. Estimate now and increase your chance of winning, because it is the first one in each province who estimates nearest to the number of whole kernels that wins an automobile. Estimates will be accepted as follows:—

- 1 year's subscription at \$1.00 gives you 3 estimates
- 2 years' subscription at \$1.50 gives you 7 estimates
- 3 years' subscription at \$2.00 gives you 11 estimates
- 4 years' subscription at \$2.50 gives you 15 estimates
- 5 years' subscription at \$3.00 gives you 19 estimates
- 6 years' subscription at \$3.50 gives you 23 estimates
- 7 years' subscription at \$4.00 gives you 27 estimates
- 8 years' subscription at \$4.50 gives you 31 estimates
- 9 years' subscription at \$5.00 gives you 35 estimates
- 10 years' subscription at \$5.50 gives you 40 estimates

Why not increase your chance of winning a car, by sending in more estimates? All you have to do is to donate—say five subscriptions to five of your friends, using the additional estimates obtained in this manner yourself. You may not wish to donate five, however—well, donate three, two or one if you wish, but send them all in to us in one envelope.

COUPON

E. H. HEATH CO. LIMITED, Winnipeg.

Please find enclosed \$..... for.....years' subscription for The Canadian Thresherman and Farmer, to be sent to Name Address Prov.

My estimates as to the number of whole kernels in 5 lbs. 7 ozs. of No. 1 Northern Wheat are

If more space is required for names and estimates, use a blank sheet and attach securely to this coupon.

MARKETING FARM PRODUCE

By Mrs. McBeath, Headingly, Man.

PERHAPS one of the biggest problems on the farm is the marketing of the produce profitably. It is a phase of farming in which we need help and instruction just as much as in growing crops or raising live stock. The laws of supply and demand, the art of selling, and the regulation of prices need to be studied just as much in farming as in mercantile business of any kind.

Marketing is where the farm women most often fall down. They may raise poultry or make butter, but if they cannot market their produce profitably the most of their work goes for nothing. In a new country like the West, it is long before staple prices and reliable markets get established; meantime selling and buying are rather haphazard and a real worry to both producer and consumer.

The problem of the woman far from town is different from that of the woman who is within easy reach of city markets. The woman in country places depends on the country store for a market. Now the country storekeeper has his problem just as well as the farmer's wife, and if we are ever to get at the root of the matter we must consider both sides of the question.

Take the matter of butter. How few women really make first-class butter. We all know the woman who keeps her cream too long before churning, and when it turns out "nippy", remarks that it is not very good and she will just send it to the store! What can the storekeeper do with it? He has to sell it for cooking butter, because the woman who sent it in may be one of his best customers and he cannot afford to offend her by refusing to take it. The loss falls, not on the woman who made this poor butter however, but on the other woman who makes good butter that will sell for a price that can cover the loss on the bad butter. This woman did not realize that every pound of poor butter sent to the store lowered the price of all the butter to the seller, and raised it all to the buyer. She ought to have kept the "nippy" butter at home, and the home critics would not have been long in voicing their opinions as to quality. That this is a common state of affairs everyone knows. Last summer I asked at a country store if they had any good butter. They said they had not a pound of eatable butter in the place and they had lots of orders they could not fill. Now one thing is certain; as long as butter goes to the stores of no uniform good quality, there can be no good prices to the producer. The storekeeper cannot give one woman a better price than her neighbor, for they tell each other, and his life would not be worth living after they found it out.

The same tale can be told of the egg trade. One woman is short an egg to make out a dozen, and puts in a doubtful one. That one bad egg comes back like a boomerang and hits the price of the whole lot. The women who do business in this style usually demand the highest price. They are unbusinesslike from first to last. The difficulties of getting produce of uniform quality is the main reason for the almost universal movement towards co-operation. With creameries to take the cream daily, a uniform good quality of butter is produced which will bring a much better price than mixed lots of butter gathered at the stores.

The same with egg circles. Where the eggs are gathered regularly every day, they can be sold at better prices with little danger of rotten eggs getting amongst them. Therefore, in country places it seems the very wisest policy to encourage co-operative movements. It relieves the women of a good deal of heavy work, makes for better prices, eliminates the selling problem, and relieves the country storekeeper of one of his biggest difficulties.

There is also another way in which country districts can co-operate, and that is in producing specialties. In most communities, every one follows his or her own fancy in choice of stock or poultry, etc. Consequently when buyers come they find difficulty in getting big enough shipments of any one kind. To illustrate what I mean let me tell you of the experience of the fruit growers in the Okanagan Valley, B.C. Every settler

who went in there started to plant apples of every variety. They did not know much about it, but planted trees of all sorts and kinds. When the trees came into bearing, they were quite discouraged to find that they could not sell the fruit. At last they sent down to Oregon for an expert to come and go over the situation. He was not long in telling them what was the trouble, for the Oregon folks had gone through the same experience. He advised them to root out their trees and only keep well-known standard apples, and when an order came they could ship several carloads of those sorts instead of mixed cars of 150 different kinds, worth very little. Where he came from they all grew a variety of "Golden Pippin." They rooted out the other kinds and now have a regular trade, the Pippins going to England to supply the London market at a price much higher than they could have got for ordinary apples at home.

This was true co-operation. Why not get together; study the markets and possibilities of your district, and whether butter, cheese, or selling cream, will be most profitable, and all centre their energies on promoting what will give the best returns. Keep one kind of poultry, whether for laying or for table fowls, so that when a buyer comes he can fill an order for several crates of the same kind, instead of mixed lots of big and small for which he cannot give a good price. A community organized in this way gets up its name. Buyers tell each other, and so a business gets established.

Were creameries, egg circles, and poultry-fattening stations established generally, there would result a standard market and standard prices in place of the uncertain prices and haphazard selling, which are the discouragement of most country women to-day.

The disposing of produce near the city is quite different, however. There is a larger market to cater to, and many articles can be sold that the far-off country woman cannot send in.

The city woman likes to get fresh and good country produce a little more moderate than the price asked in the store, while the country woman is glad to supply them when she finds good customers; but the producer and consumer must get together and understand the situation thoroughly, or efforts in this line will fall through.

A town near New York made a move the other day which helped to bring the people together and which was voted a

TO INVESTORS

THOSE WHO, FROM TIME TO TIME, HAVE FUNDS REQUIRING INVESTMENT MAY PURCHASE AT PAR

DOMINION OF CANADA DEBENTURE STOCK

IN SUMS OF \$500, OR ANY MULTIPLE THEREOF

Principal repayable 1st October, 1919.

Interest payable half-yearly, 1st April and 1st October by cheque (free of exchange at any chartered Bank in Canada) at the rate of five per cent per annum from the date of purchase.

Holders of this stock will have the privilege of surrendering at par and accrued interest, as the equivalent of cash, in payment of any allotment made under any future war loan issue in Canada other than an issue of Treasury Bills or other like short date security.

Proceeds of this stock are for war purposes only.

A commission of one-quarter of one per cent will be allowed to recognized bond and stock brokers on allotments made in respect of applications for this stock which bear their stamp.

For application forms apply to the Deputy Minister of Finance, Ottawa.

DEPARTMENT OF FINANCE, OTTAWA
OCTOBER 7th, 1916.

WESTERN HOMES LIMITED

A Steady Annual Income For You

With Absolute Safety of Your Investment

LAST year the Western Homes, Limited, earned 12 per cent on its employed capital; 7 per cent dividends were paid the shareholders and 5 per cent was placed to reserve account to earn further profits for the shareholders and increase the value of their stock.

The Western Homes, Limited, incorporated in 1914, authorized capital \$500,000, divided into 5,000 shares par value \$100 each, loans money on first mortgages, discounts mortgages and agreements for sale and builds homes for clients, protecting itself in all cases with absolute security.

The officers and directorate are men of proven ability and integrity—men you may know personally.

Over half the shares are subscribed for. Shares selling at par \$100 each on 5-year terms—no interest charged. Profits declared on amount paid in. No more than 50 shares to one person. At the last shareholders' meeting it was voted that after this year no company shares would be sold for less than \$110.

Fullest investigation courted. Write to-day for particulars or if in Winnipeg make a personal call at our offices.

Western Homes Limited

707-708 Confederation Life Building
M. WILLIS ARGUE
President and Manager

LADIES—Send Us Your Combing

We make them up into switches at 50c per ounce



Switches Hair Goods

We will add new hair as desired to combings at from \$2.00 upwards.

Satisfaction Guaranteed

Elite Hairdressing Parlors
207 Enderton Building
WINNIPEG



For
**BREADS
CAKES
PUDDINGS
PASTRIES**

The only flour publicly and unreservedly guaranteed not bleached, not blended.



The is Best for none for the good Farmer

BOB LONG
UNION MADE
GLOVES & OVERALLS

Known from Coast to Coast
R.G. LONG & CO. LIMITED
TORONTO ONTARIO

splendid success. The Secretary of the Board of Commerce interested some of the representative men both in town and country, with the result that they held a festival which they called "The Country and City Get-Together". The country folks brought in all sorts of farm produce to exhibit, while the town folks demanded the city products. Afterwards there was a dinner, where five hundred sat down, and the country folks together and then they had an illustrated talk on "A Square Deal Between Country Producer and City Consumer". Now this is what is wanted: A Square Deal.

What the city woman needs to know is that when the cost of living has gone up so much the prices of farm produce have automatically gone up too, since the high cost of living hits the farmers just as much as the city folks. Eggs that used to pay a fair profit at 30c. will not pay a cent of profit this winter at 50c. Even in places like California where egg ranches are by the hundreds, and where the winters are like summer, the eggs have been 60c. a dozen this year, even before the tourist season started, and why? Because grain in the States is just as dear as here, and to get eggs you must feed your hens grain, while the poultry woman here has to contend with the extreme cold as well. Perhaps some of you may have noticed that the first shipment of eggs from Winnipeg went to Britain the other day—a million dozen. The wholesale price of eggs in Britain just now is 4s. the dozen, so that it can readily be seen that when there is a market like that calling for an unlimited supply, the prices here are going to soar.

Poultry has been high in price too, for the same reason—the high price of feed. Poultry cannot be fattened without grain and milk, and these are the most costly things on the farm to-day. The same with milk and butter; with bran and shorts at \$25.00 and \$30.00 a ton it is impossible that milk and butter can be produced cheaply. So the town folks must not blame the farmer unduly for the high price.

Our stumbling block to the city folks is the difference in prices asked by producers. This is a difficult thing to arrange, for some women ask an exorbitant price, while others who have never calculated the cost of production may ask so little that they lose money on every single transaction. This is where we need instruction to be able to calculate what our produce really costs, so that we can charge a reasonable profit and establish a standard price that would be fair to all. The city woman is rather discouraged by her essays in buying direct from the country folk, and I believe it is principally because people in town do not understand that if it is hard times in town it is equally hard times in the country.

It is well known that one of the principal causes of high prices is the cost of delivery, which in the end of course is paid by the consumer. To offset this the Public Market is open and the "Cash and Carry" system is one of the best features. To the ordinary householder these markets should prove a boon, as they have in other places where the Public Market movement is steadily increasing. There is a limited market just now for extra good products sent by Parcels Post. We are not yet accustomed to the convenience of this method, but it is especially suited to producers who have a limited amount to sell, and to buyers who like the very best and freshest of articles.

In the States, where the Parcel Post has been working for some years, Postmaster General Burleson issued a statement the other day which should encourage us to use this method of marketing. They had many difficulties at first; getting suitable packages, extremes of heat and cold in transport, apathy of the people, etc., but the Post Office started a "Farm to Table by Post" campaign, and the success is splendid. The business has increased with leaps and bounds, till now the Post Office has had to instal refrigerator facilities; even thermatic containers which will keep things either hot or cold for twenty-four hours are being developed. The list of articles that can be sent is increasing, and Parcel Post has evidently filled the longfelt want of delivering in the city home what is made in the homes in the country, and is largely helping to reduce the high cost of living.

Mr. Burleson says,—“Getting together is the secret as it has been the secret of all successful business. The consumer wants the best the market affords at the lowest price, and the producer finds he fares better by selling for cash than in trading. Both sides understand each other—neither side should demand the whole of the saving.” He refers instances where retail city prices were asked by the producer, while the consumer expected to buy at the lowest country price. When they agree to share the difference, then a good business can generally be done. The Post Office issues a bulletin with complete instructions how to pack for the mail, and also supplies a list of producers in all the postal districts for the help of city consumers who do not know how to get in touch with the country.

Our own Postal authorities here are busy extending the rural system, and on the routes already established there is quite an increasing business in postal packages,—eggs, butter, fowls, turkeys, cut of meat, etc. All go quite nicely by mail. The cost is less than express, and if our authorities would extend the limit of cheap rate from 20 miles to, say, 50, there would be a much bigger trade done.

I may mention the success of some of my neighbors with the Parcel Post. One woman has been shipping new laid eggs all winter by mail. In January she shipped sixty dozen, mostly for invalids as one customer told others, and she cannot possibly supply the demand. In summer she sent milk-fed chickens for which she has standing orders, also turkeys. Another woman sent roasts of pork and cuts of beef, sausage, meat, etc., and several others shipped eggs. So far there has not been a complaint, which says a great deal for our Postal Service. I dare say you all have some experience in the use of Parcel Post these times in sending things to your boys at the front, and have been surprised what you could send, so that you can realise what a simple method you have right at hand to help out your marketing.

I may tell you that lately the Post Office in Winnipeg had a shipment of two carloads of mail boxes for the Rural Routes, something like 2,000 boxes, so the possibilities of wider markets are before you.

All produce nowadays must be put up in attractive form if it is to command a good price, but the variety of containers now to be had is endless. As a rule they are mono-service, which does away with much trouble and worry over the returning of crocks or cases.

A good plan is adopted by people who club together and send orders to the country. This is a capital plan, and in some instances I know of has worked out very satisfactorily. The idea was started in the States by an apple grower who thought that there were possibilities of selling to men in offices, so he started in by putting up nice cartons of picked apples with the motto: "An apple a day keeps the doctor away," and delivered them in the offices. This led to other farm stuff being clubbed in the same way.

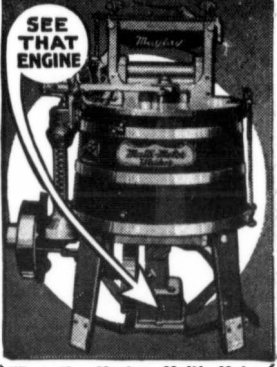
The saving comes in the amount sent, as express charges are less on the bigger quantity, and the produce is easily divided up on arrival. In offices this has been tried where there are several employees. One person acts as secretary, collects the orders on a certain day, with the payments, sends them off, and on the arrival of the goods distributes them. In only one or two cases have I heard of dissatisfaction, but a change was made and another producer gave complete satisfaction. And these little circles are becoming more common. Their motto is "Fresh Goods, and Cash with Order."

For those who live on an automobile route there are many chances of disposing of small quantities of produce. Many of the ordinary things on a farm are dainties to the city folks, and there are many inquiries from passers-by, for eggs, butter, cream, buttermilk, chickens, sweet corn, rhubarb and berries when in season. If the use of bulletin boards naming the articles for sale became general much more business could be done in this way.

There is also the matter of private customers in town who get in produce by express or delivery. Opinion differs as to this method. In many cases it is unsatisfactory, because the promised supply fails just when it is expected to go on—quality is sometimes not up to standard—

HERE IT IS AT LAST!

Maytag
Multi-Motor Washer



What the Maytag Multi-Motor Washer Will Do

It operates the washer and wringer. It will operate the sewing machine, churn, cream separator or any other small machine that does not require more than 1/2-H.P. Wash-Day, and that is Work-Day, changed into Play-Day. Good-bye backache, headache, nerve wreck! No woman need bend over the wash tub, as her grandmother did, nor turn the old-style washer, as her mother did, if she has a Maytag Multi-Motor.



THE MAYTAG POWER WASHER

In general construction is the same as the Multi-Motor. It has a pulley so it can be driven by a separate engine. The above 'cut' shows the wringer in a position to be used while the second batch is being washed. Washing and wringing being done at the same time. There is a Maytag Washer of every type—Hand, Power-Driven, Electric—all built to the enviable Maytag standard.

We furnish an Electric Motor on the Maytag Electric Washer, so that it runs perfectly when a "Direct Current" is used, such as the Delco, or other similar outfits.

Drop us a card and we will mail you a copy of **The Maytag Laundry Manual** (48 pages). Even if you do not buy a washer, it will be a great help to you, as it contains many valuable formulas and recipes that can be used to advantage in any home. It is **Free**.

MORE THAN 800

Dealers in Western Canada sell our Washers. If the store you trade at does not, write us.

ADDRESS
The Maytag Company Limited

WINNIPEG, MAN.
If you live in Alberta, write direct to The Merchants' Hardware Specialists, Ltd., Calgary.

difficulties of delivering on set days comes in when the horses happen to be extra busy on the farm. Then there are difficulties on the other side of collecting payments and getting returned empties sent back, and so on. It is not an uncommon thing too for the country woman to be done out of her goods. I heard of one woman who had fresh eggs sent to her, and after some months wrote to say she would not pay the price, as half the eggs were rotten! Just lately I heard of two cases where crocks of butter had been sent in. One woman kept her crock in a damp cellar and said the butter was mouldy and refused to pay. The other kept hers next a steam pipe and declared her butter went rancid and she refused to pay. Well there is a very simple remedy for offenders in both cases. "Cut them out," and stay only with those who deal fairly. While some customers are unsatisfactory, there are others with whom it is a real pleasure to do business; considerate, punctual, and efficient; there is no trouble at all in dealing with them. I know of one such, who on receiving poultry sent in, returned two cents a pound more than the price asked, because the quality was so good, and another gentleman who paid three cents a pound for turkeys more than was asked, for the same reason. Little wonder there is satisfaction on both sides there. It was a pleasure for those buyers to show their appreciation in that way, and the farm woman could not fail to feel pleasure and encouragement, which might show itself in an extra pot of cream or some other dainty popped in with the next order.

In trading, as in any other line of life, we should remember the Golden Rule: "Do to others as you would be done by"—and many of the present difficulties in marketing would disappear.

TRUE ECONOMY

The following is a reproduction of paper read to the Home Economics Convention last month, by Mrs. D. A. Baxter, of Transcona. Although a lengthy article, there is not one paragraph of it we have the heart to cut out. We strongly commend it to our readers and bespeak a careful perusal of it. The space it occupies would probably only be filled with one or two shorter but less important matters, and therefore we make no apology for the length of it, particularly in these times.—N. Ed.



COLLECTING waste paper alone, one railroad, in one year, realized we are told \$5000. Spikes, pens, nails bottles, tin cans, are all gathered up along the route by all railroads and turned into money. Even the ashes are sold, or used to improve the road bed.

These things seem small to command the attention of a rich railway company, but that company became rich because it looks after the little things.

The largest corporations in the world are not above taking care of little things, even the fraction of a penny.

Waste forms one of the vital questions in economics, not only for the railroad and manufacturing plant, but for the home. It is impossible for any great sum to be realized in saving waste, and yet the waste in the home is relatively greater than that of a railroad.

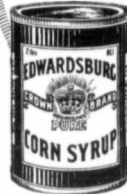
This is only one side of economics, there is a greater and more important side. Thrift as popularly understood, means only one thing, saving money, but it means much more than that. Saving money is one of the foundation stones in the building of a thrifty character, but it is no more the sum total of thrift than one stone is the sum total of the foundation of a building. A woman may see that every bit of food is used and not wasted, she may save and pinch and plan, and work and lay up money for a rainy day and yet not be thrifty. True thrift consists in the judicious use of all our mental, material and physical resources, and when we merely save money we have only gone part way.

Give the "Kiddies" All They Want of CROWN BRAND CORN SYRUP



It is one of the delicious "good things" that has a real food value. A slice of your good homemade bread, spread with "Crown Brand", forms a perfectly balanced food, that is practically all nourishment.

So—let them have it on biscuits and pancakes, and on their porridge if they want it. You'll like it, too, on Griddle Cakes—on Blanc Mange and Baked Apples. And you'll find it the most economical sweetener you can use, for Cakes, Cookies, Gingerbread and Pies. Have your husband get a tin, the next time he is in town— a 5, 10 or 20 pound tin.



THE CANADA STARCH CO. LIMITED
MONTREAL, CARDINAL, BRANTFORD, FORT WILLIAM.
Makers of "Edwardsburg" Pure Corn Syrup and "Silver Glaze" Laundry Starch.

220W

Our new recipe book, "Desserts and Candies", will show you how to make a lot of really delicious dishes with "Crown Brand". Write for a copy to our Montreal Office.

The greater thrift is constructive, scientific, liberal; it builds character. It is the thrift that comes through education, not school education only, but the education which comes from true thinking. It is what we might call personal economies in its broadest sense. It is the art of true living, and this should be the aim of all who are living in these strenuous times.

The greater thrift is mental, as well as material preparedness, and it is only through the process of education that it can be developed. It cannot be taught in a haphazard manner. Through our children the practices of this great virtue must be introduced. We are teaching our boys and girls arithmetic, history and geography, our agricultural schools are teaching them to till the soil scientifically and to develop the resources of the land. We are teaching household science, morality and hygiene, and everything worth while but practical thrift—and we are neglecting one of the most important branches of education. If he who practises the greater thrift is a valuable citizen, a benefit to his fellow men, and an aid in the progress of civilization, then is it not worth while that we look into this problem more carefully and discover how and by what means we may develop this virtue in our people?

It is only through education, both at school, and in the home, that we can become a thrifty nation. If character building, sensible living and thrift in its broadest sense, are worth while, then why not lay the foundation right? Why not teach these things as we teach all branches of education?

If this thrift is character building, then our aim, as home makers should be, to teach it in its broadest sense, and lay the foundation right. We should know and understand these things, and teach them in our homes or we fail to do our duty to our children and to our Empire.

The nation of to-morrow, can never be any greater than the truths, we, the home makers, teach our children, through what they see in the home.

To become good home makers, our first duty is to ourselves. We must learn to save, not only material things, but ourselves. Success as a homemaker is far from easy. It demands, as much, I think, more brains, than it does in the business life. Success here makes demands on a woman's physical strength, as well as her mental. It makes demands on her time, her judgment, her laughter and her tears. These demands both of soul and body are unceasing. How can it then be easy? Love alone can oil these wheels and keep them running smoothly. The vital power which drives them morning, noon and night is love for home and home life.

Our first thought must be for ourselves. This may sound selfish, but not so, if we think about it for a short while. To be true to ourselves, we must know

This Washer Must Pay For Itself

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right, but pay me first, and I'll give you back your money, if the horse isn't alright."

Well, I didn't like that. I was afraid the horse wasn't alright—and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity"



Washer does the work so easy that a child can run almost as well as a strong woman, and it doesn't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, I said to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for the people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is? And you can pay me out of what it saves you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week (I'll pay it for). I'll take that cheerfully, and I'll save for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

State whether you prefer a washer to operate by Hand, Engine Power, Water or Electric Motor. Our "1900" line is very complete and cannot be fully described in a single booklet.

Address me personally, S. A. MORRIS, Mgr., Nineteen Hundred Washer Co., 357 Yonge St., Toronto, Ont.,

ourselves. How many of us do? We may know what our friends looking at us, through the more or less rosy glasses of love, tell us we are like; we may know what we hear Mrs. so-and-so said we were like. Perhaps her glasses were not rosy! This of course we do not believe—like all gossip it cannot be true. It has no foundation. Perhaps, though, it is true—for we do not know ourselves.

seriously. What have I achieved in life? Perhaps we will say, "I have been honest and truthful, I have kept the ten commandments as faithfully as I know how, I have worked hard in my home. I have saved and economized, I have fed and clothed and trained my children," but if we think further, these are the things we all do, these are the things we must do, but what about the real things of character? Are we free? Do we follow our own

We must face ourselves alone, and ask

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Two pounds of pork should be minced finely. Mix the product with a quarter of a pound of stale bread soaked in cold water, and squeeze as dry as possible. Add pepper and salt to taste and a little sage; mix thoroughly and pass through the mincer again. If made into little rolls they will fry equally well without being put into sausage skins.

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\$10.00

The New Model 3A Brownie

Here is a new camera for pictures of the post card size (3 1/4 x 5 1/2 inches). Manufactured under experienced superintendents by skilled mechanics with whom honest workmanship has become a habit, it has quality. Designed by the men who have helped to simplify photography, it has been possible, through quantity production combined with high efficiency, to produce this camera of real quality at a low price.

It has the new Brownie Ball Bearing shutter, with cable release, having both time and "bulb" actions and snapshot speeds of 1/25, 1/50 and 1/100 of a second and is equipped with Kodak Auto-time Scales as an aid to correct exposure.

Loads in daylight with ten, six or two exposure cartridges, has automatic focusing lock, reversible finder, two tripod sockets, durable leather bellows, is constructed of metal throughout and is covered with a genuine and attractive imitation leather of the finest quality. With its black enamel fittings it is a handsome as well as an efficient camera.

It is autographic, of course, all of the folding Brownies and folding Kodaks now incorporate this valuable feature by which you can date and title each negative at the time of exposure.

No. 32 Folding Autographic Brownie, meniscus achromatic lens, \$10.00
Do., with Rapid Rectilinear lens, \$2.00

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ideals in all things? Do we decide what we should do, without a thought of what others will think about it? Have we the courage to do it, in the face of the storm of what folks will say? It is far from easy. We all like to be liked, and to be liked we often must do as others do. Otherwise we are odd, we are not doing our duty to the community and we are not living useful lives. It is hard to hear these things said of us but we must rise above all this, we must think for ourselves, and act as we have thought or we are not free. There is no freedom in following the lines laid down by others, else the prisoner behind the bars, doing exactly as he is told, is free.

This does not mean that we can do as we like in all things, with no thought for the other fellow. That is not freedom. If we sit down quietly and invite our soul to talk with us, we will think of our neighbor, as well as ourselves and know what freedom is. True thinking does not make a selfish soul.

I cannot tell what your duty to yourself or neighbor is, and you cannot tell what mine is; but I can find mine as you can find yours if we only look for it.

The best satisfaction we can have is to approve ourselves, and alone with the All judging One say, "This I have done in defiance of man's approval or blame. It may be right, it may be wrong, but I have acted according to my standard set by myself, after considering, as well as to myself." Our standard ever changes. It grows upward; it must or there is no mental or spiritual growth at all.

Having decided what we owe to ourselves, it comes easier to know what we truly owe to others. We cannot live alone. What we do effects some one. No matter how humble we are some one looks to us and copies us. Here comes in our service to those outside the home. Have we done what we could by the light of our characters to make it easier for others, perhaps, weaker than we, to live up to their standard; or have we by the darkness of our character kept others, who look to us for light, from reaching their ideal? We cannot walk alone, even though we must decide alone just how we are going to walk.

Have we by industry and wisdom kept our home in such a manner that it is the loveliest place on earth—the place where love abides—or have we failed?

The hardest work is not the washing, the cleaning and the cooking. It is doing all these, and yet keeping sweet. It is natural sunny and lovely in the eyes of others. Home may be mortgaged to poverty. Anxiety may be there. Want and pain may enter in but we must not let these things sit brooding at our fire-side. Find something for even them to do in this wonderful task of home making. They can all help. Joy and pleasure will not alone make home. Life must be lived there, or it is only a house,



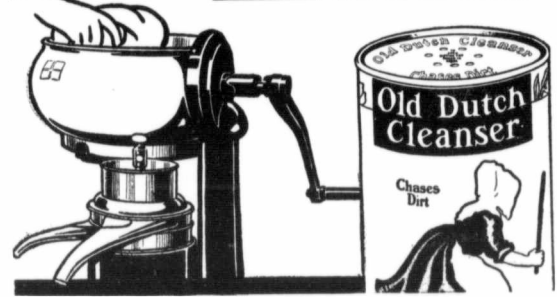
(Sandy McBain is about to bury his FOURTH wife, and the undertaker has called to invite Sandy's neighbor, McNab, to the funeral.)

McNab (indignantly)—"I tell ye, Weelun, I'm no gaun tae ony mair o' Sandy McBain's wives' beerials until I'm in a peshoonun tae reciprocate the compliment!"



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REGAL WHITE WYANDOTTES—Yearling cockerels bred from the famous John S. Martin's stock, \$10 each. T. G. Oddie, Deloraine, Manitoba.

SPECIAL CLEARING SALE—Single Comb White Leghorns, utility and show birds. Ask for bargains. Mating list free. J. J. Funk, Winkler, Man., Canada.

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PURE BRED BARRER PLYMOUTH ROCKS—Eggs (guaranteed) for sale at \$2.00 per sitting. Mrs. Dumbrell, Charleswood, Man.

FREE FOR SIX MONTHS—My special offer to introduce my magazine, "Investing for Profit." It is worth \$10 a copy to anyone who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how \$100 grows to \$2,300; write now and I'll send it six months free. H. L. Barber, 496, 20 W. Jackson Boulevard, Chicago.

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An immense area of the most fertile land in Western Canada for sale at low prices and easy terms ranging from \$11 to \$30 for farm lands with ample rainfall—irrigated lands up to \$50. One-tenth down, balance if you wish within twenty years. In certain areas, land for sale without settlement conditions. In irrigation districts, loan for farm buildings, etc. up to \$2,000, also repayable in twenty years—interest only 6 per cent. Here is your opportunity to increase your farm holdings by getting adjoining land, or to secure your friends as neighbors. For literature and particulars, apply to Allan Cameron, General Superintendent of Lands, Department of Natural Resources, 912 First Street East, Calgary, Alta.



SYNOPSIS OF CANADIAN NORTHWEST LAND REGULATIONS.

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. Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the District. Entry by proxy may be made at any Dominion Lands Agency (but not Sub-Agency), on certain conditions.

Duties—Six months residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres, on certain conditions. A habitable house is required except when residence is performed in the vicinity.

In certain districts a homesteader in good standing may pre-empt a quarter-section elsewhere his homestead. Price \$3.00 per acre.

Duties—Six months residence in each of three years after earning homestead patent; also 80 acres extra cultivation. Pre-emption patent may be obtained as soon as homestead patent, on certain conditions.

A settler who has exhausted his homestead right may take a purchase homestead in certain districts. Price \$3.00 per acre. Duties—Must reside six months in each of three years, cultivate 50 acres and erect a house worth \$300.

The area of cultivation is subject to reduction in case of rough, scrubby or stony land. Live stock may be substituted for cultivation under certain conditions.

W. W. CORY, C.M.G., Deputy of the Minister of the Interior. N.B.—Unauthorized publication of this advertisement will not be paid for.—44222.

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Kill-Em-Quick

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and houses are cold places mostly; but home no matter how poor is always home. Mrs. McClung expresses this through Pearlle, when she makes her cry, as she looks through a window at her own home, hearing the stamp of poverty. "It does look shabby, but it's home, and I love it. You bet, nobody would ever know to look at it the good times that go on inside!"

The thing that counts much in our success in keeping the home machinery going is intelligent energy. Many women are energetic and many intelligent, but the combination of the two is not as commonly found, as one might expect. A woman may be energetic, may be a hustler and forever on the go, and yet accomplish little. Most of her energy is wasted for want of directed and concentrated effort. She is lacking in a clear conception of what she is trying to do, and of the best and quickest way in which to do it. She has not considered the result she is trying to achieve. All she thinks of is that the work must be done, and she must do it some way.

The intelligent woman again is often lazy. She likes to take life easy. Likes a good time, no matter what comes. She often has her ideals, she knows how things should be done, but she lacks the push to do it.

Both these women should study their method, find out what they lack, and apply the remedy. With both the fault goes by the same name, misdirected energy. It falls short in one and over-reaches in other. One fails to let her hand save her feet, and the other fails to have her feet obey her head.

The woman who combines intelligence and energy goes about things differently. She uses her brain and employs method; she has a clear idea of what she wants to do, of the best way for her to do it and just how much she can do at one time. She plans her work and her play to save her strength as well as her time, for she knows that energy directed by intelligence wins the best results for her and her home.

We women are not all alike. We see one with a natural aptitude for pickling and preserving, another for baking and broiling, another for entertaining, another for sewing, and so on, each with a different gift, and each liking to do what she does best, but each having to do all, and many more to make home harmonious.

The wife comes to her home, unprepared so to speak. The milliner, dressmaker, stenographer, and teacher fits herself for her vocation, both in theory and practice. She must master these things or fail; but the wife, who was a year or so ago, a happy hearted care free girl, had no training for home making or motherhood. The real things of life have come to her. She may have no knowledge of child training, but she must train that little child that has come into her life.

Even though she learns to train him wisely, learns the ins and outs, the sun and the gloom, the goodness and the badness of her first born, she cannot know, from experience about the training of another child, because no two are alike. Individuality which counts for so much in man and woman, is the very thing which, in the child, upsets our carefully compiled regulations, and flings our plans, and processes to the four winds of heaven.

Nature boasts no two flowers just alike, although there is much similarity. Yet these flowers grow and flourish under uniform conditions. In the garden where we grow our human flowers, we find there must be discrimination. Every plant needs separate care. One needs more sunshine, one more space, one is delicate and needs special care from root up. One is developing too quickly, coming forward too rapidly and must be kept more in the shade. Another is too backward and wants to be placed in the warm, genial, sunshine. It is only by this nursery along of our plants in the human garden, that we can have them develop into the full blown flowers of maturity and show the beauty of soul and character that conforms with the perfume of the gardens on our lawns.

We each must find ways and means

for ourselves. Few have the gift of child-training, and few now think that women know how to train children, from instinct. Here in this department of home making we have need for a partner, not an advisor only, but an active working partner for the weeding and care of the human garden is very, very hard.

We are always busy, but let us remember one thing, that is important if we are to be true home builders, in its broadest sense. None of us will ever have leisure enough to atone for the thing done in haste, the angry word spoken when tired and nervous, the scornful glance which hurt some one far more than a blow would have done; the expressed doubt of a friend's ability, which prevented his rising to higher ground, the hint we dropped against some one's reputation; the evil story we repeated, and the hundred and one other things we do or leave undone, can never be wiped off memory's slate though we would give the whole world to atone for it.

There will be lots of stormy weather for us. There are days at a time when the skies are grey; we have lost youth's golden dreams; we have, perhaps, lost faith in mankind. Our neighbor may have done us a wrong; no one seems to care for us; the wonderful things we planned to do have never been accomplished, and our troubles are many, but just think how brightly the sun shines after a few days of rain, if our dreams have fled, we have other joys far ahead of any dream. Perhaps they were silly dreams anyway, so let them go. It is nobody's fault as much as our own if we lose faith in our friends. Every one has some good along with the bad; look for the good. Maybe the neighbor did you a wrong, but it is more than likely he did not mean to do so. If you show a forgiving spirit, he will meet you half way, and not repeat the offence. If no one cares for us it must be our own fault, for if we love our neighbor rightly, we get love in return. It may not be too late now to begin to do what we had planned to do, but if it is we can always remember that we can be happy, and so make happiness around us. Make the home folks happy, give them a good time. Remember we must take the good times as we go along if we are ever to have them. Good times do not cost money. We can soon learn to enjoy the common things of life. The best times any of us ever have is the time we spend making our home people happy.

Let us live now so that in after years, those who have been in our homes may have happy memories of that home. In memory we have one of the loveliest things of life. See that the memories are good. The reason we like to look back is because the memory brings up such beautiful pictures of mother and the home of our youth; of the beautiful places we have seen; of the good times we have had. We often hear a white haired mother say, "My best days were when my children were small." Why? Because of the many beautiful pictures hung on memory's wall. Memory must not have beautiful pictures only. The time will come when old age keeps one from his usual activities of life, and then will come from his memory box, the things stowed away and for a time forgotten. That beautiful chapter from the Bible; that story he once read; that idea for making something of interest; that piece of history; that fact of science. Yes! that memory box must be big and strong. It must hold the things of childhood days, the wonders of boyhood; the beautiful things of early manhood; and the more solid things of middle life, and yet leave lots of room for what he garners from the master minds of science, literature and art. Can we make our homes so beautiful and happy that the memories will be beautiful and worth while?

So let us live that these days, in looking back, may prove As rich with happy memories, as bright with constant love That we may call them also, when our heads are white like snow. The good days, the dear days, the days of long ago.

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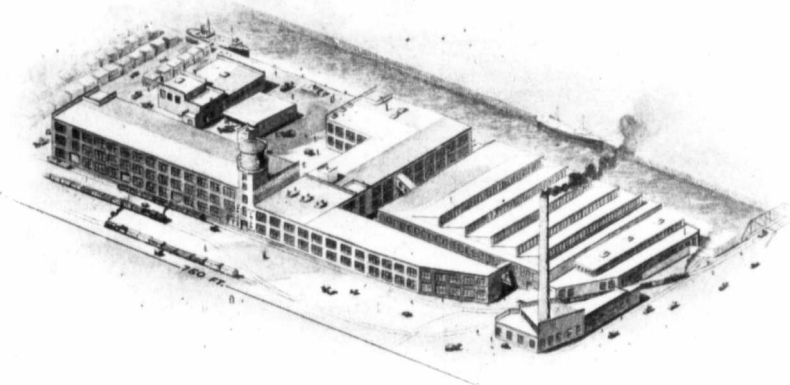
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Direct from Factory-to-Home, cutting out all unnecessary profits; you pay nothing down; you are not tied up by long-term payments—you pay all cash—but the Vista costs you only \$59.50 instead of \$150.00, \$200.00 or \$250.00. Isn't that a saving worth while?

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- 2—Three Jewel Point Needles with each machine which ordinarily retails for \$5.00.
- 3—Six Silver Toned (made in England) Records, making 12 selections with each instrument free.

THE VISTA IS FULL CABINET SIZE, 42 inches high, 19½ inches deep; 17½ inches wide; compare these dimensions with other so-called cabinet size machines on the market.

THE TONE produced by the Vista is wonderful, mellow and life-like owing to its resonating chambers and the smooth accuracy of a perfect motor. It plays without rasp and produces the most difficult compositions with utmost fidelity.

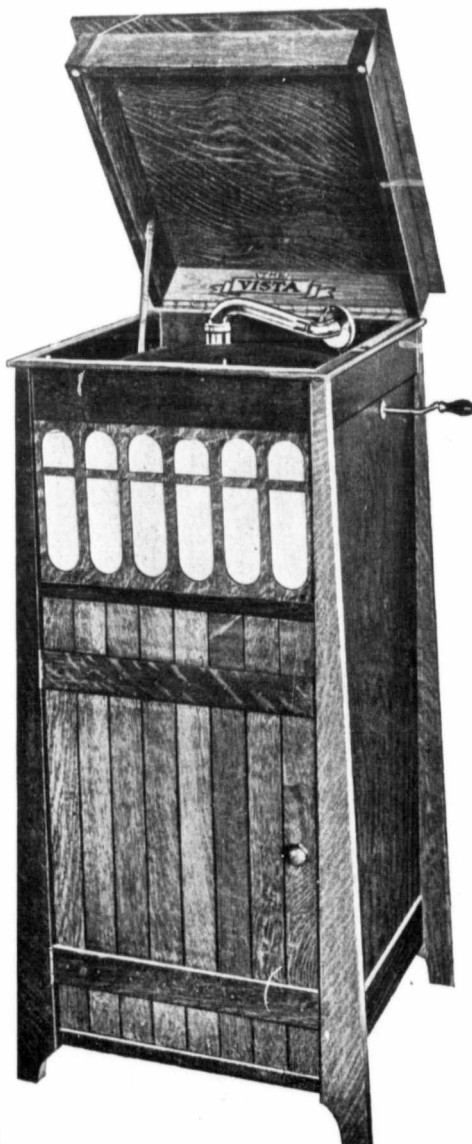
THE CABINET is encased in genuine oak of simple and beautiful design, making the Vista an instrument in perfect harmony with the most luxurious or the simplest furnishings. Mahogany finish \$5.00 extra.

ONLY 150 MACHINES OF THIS MODEL FOR SALE. If you want to secure one of these wonderful Vista Phonographs—the counterpart in appearance and tone of \$150.00, \$200.00 or \$250.00 Phonograph you will have to act quick. There are only 150 machines of this model left. This is a wonderful opportunity to provide yourself and your home with an ever-present source of enjoyment at a price ridiculously low for a full cabinet size machine. You take no chance whatever if the Vista is not in every way what we represent it to be. Your money will be refunded at once.

Fill in the enclosed coupon and send in your Money or Express Order at once. The same day your order is received a Vista Phonograph will be sent you to ensure prompt delivery.

Remember again—there are but 150 machines left, so take advantage of this offer promptly.

The Vista Phonograph Corporation
Keewayden Bldg. OF CANADA WINNIPEG



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Enclosed please find \$..... for which please send me at once Full Size Cabinet Vista Phonograph as advertised above..... finish (state oak or mahogany finish). If I do not find this machine as represented my money will be refunded.

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P.O. Prov.

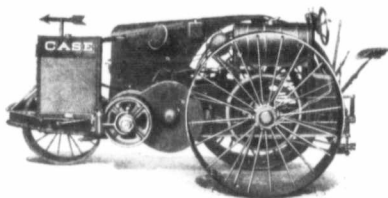
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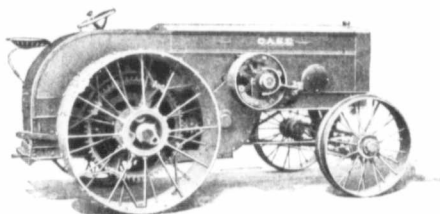
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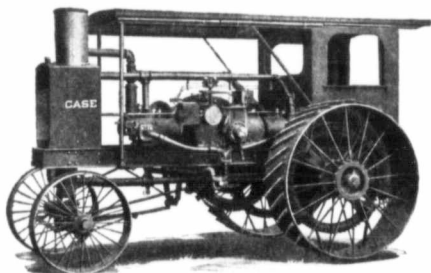
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