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Judges Report Winnipeg Motor Contest 1912 - Page 25

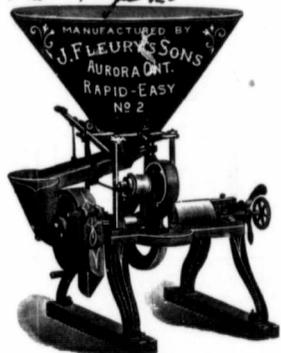
GRIND YOUR FEED



'Good Luck' Power with Grinder Attachment

As a power for driving any machinery with two or four horses the "GOOD LUCK" Triple Geared Power is unequalled. The above machine, set up with Arms and Tumbling Rod ready for horses and to drive another machine by rod direct, will be found one of the best time savers and effective dual-purpose machines now in use. The construction and finish are perfect. Thousands of them are now in active service and giving the highest satisfaction. A machine of highest capability.

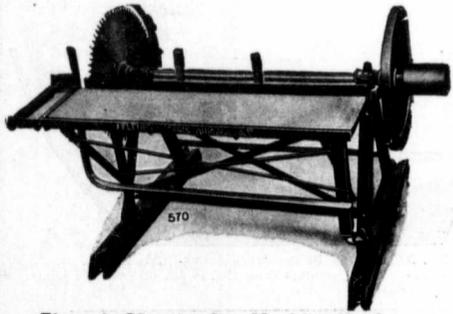
The "No. 2 Rapid Easy" with 10-inch plates, and its SOLID FRAME or BED, is not only an extremely handsome looking machine but the character of its work and its great capacity make it one of the best "paying guests" on the farm. Feed trough is long and broad giving feeding and screening capacity equal to the rapid work of the grinder. Heavy steel shaft with long bearings and heavy balance wheel. Rigid and durable, this machine is especially fitted for fast running and heavy work.



Fleury's "No. 2 Rapid Easy."

CUT YOUR FODDER

SAW YOUR WOOD

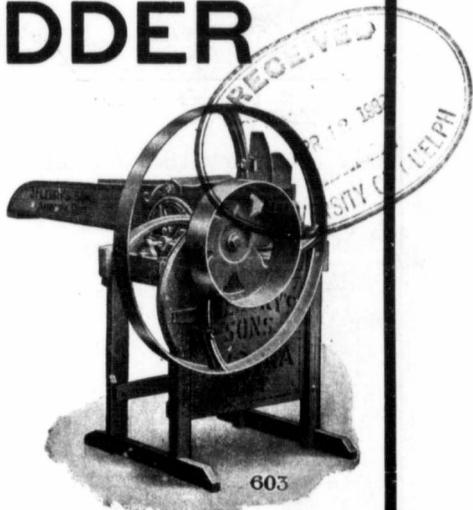


Fleury's Circular Saw Machine No. 3

Frame of steel, angle bars well braced and strongly riveted together. Main Shaft is of fine machinery steel, of great wearing quality, running in boxes babitted with high grade metal. On the table is bolted a hardwood board and in end of table near the saw is placed a roller which carries the timber to the saw.

Seven different styles of this popular and thoroughly efficient Straw Cutter are now made for hand, horse or belt power—with or without carrier or blower. Used largely by hand, it is equally successful when run by rod direct to main shaft (knuckle taking the place of the washer in front of knife-wheel) or by belt on 18-inch pulley, as shown in cut.

This machine cuts **four lengths**; is perfectly **Simple**, strong, well-fitted and finished. Will do **more work** with **same power** than any other style of cutter you can buy.



Fleury's Straw Cutter No. 2

With a Fleury Machine

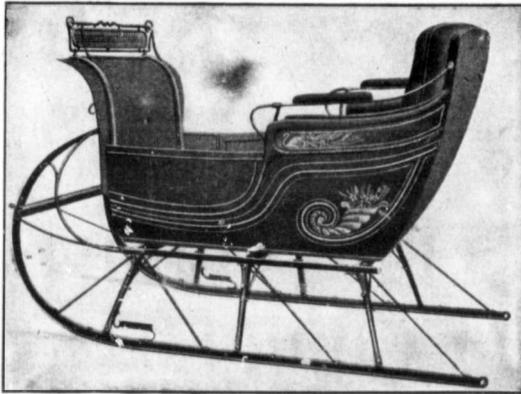
WRITE FOR BOOKLET "BETTER FARMING," GIVING COMPLETE INFORMATION.

JOHN DEERE PLOW CO. LTD.

Winnipeg Regina Saskatoon Edmonton Calgary Lethbridge

THIS IS THE STEEL AGE

THE LATEST IS A STEEL CUTTER



NO. 205. BROCKVILLE STEEL CUTTER WITH FORE DOORS.

PRESSED STEEL SIDE
PANELS, BACKS AND DASHES
STEEL FORE DOORS
SELECT HICKORY GEARS

The very Latest, the Strongest and most
Durable—Practically an

INDESTRUCTIBLE CUTTER

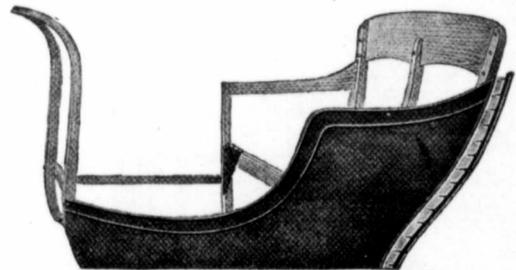
ALWAYS LEADING

BROCKVILLE cutters have always been recognized as the most stylish, comfortable and serviceable winter vehicles used in North America. When an improvement of any sort can be effected, it always comes out first on the "BROCKVILLE" line. STEEL FORE DOORS were first used on BROCKVILLE CUTTERS and nothing in its construction ever added so much to the comfort and appearance of the cutter. This Fore-door device is patented and is an exclusive Brockville feature. While leading in every new departure, its substitution of FINE PRESSED STEEL for WOOD bodies makes an entirely new and daring record in carriage building, and the BROCKVILLE CUTTER for 1913 will have

PRESSED STEEL PANEL BODIES—SIDE PANELS, BACKS AND DASHES ALL OF PRESSED STEEL

CUTTER TROUBLES CURED !

Cutters are used in a season often of excessive moisture from melting snow which very quickly finds its way into the wood panels. They have to meet the roughest usage to which a carriage of any kind is subjected and the panels open up very often before being used one season. STEEL PANELS put an end to this, and the sorry spectacle of checked, warped and split panels—mouldings broken or knocked off and having to be tacked on again. THE MOULDING ON THE STEEL PANEL IS A RAISED PART OF THE PANEL ITSELF. There are no defective joints to open up. Corners are covered with angle steel specially rolled for this purpose.



NO. 205. CUTTER FRAME WITH STEEL-CLAD PANEL.
Note the neat corner iron-moulding that is put on over the joints.

A LASTING FINISH

A better finish is obtained on the steel body than on the wood. The steel panels are treated with a special process which makes the paint adhere tenaciously to the body. Steel does not absorb nor is it affected by the atmosphere. The finish thus obtained is the highest possible in

BEAUTY AND PERMANENCE

THE BEST GUARANTEE

that any purchaser can get regarding the quality these cutters possess and the service they will give is the fact that they are sold by THE JOHN DEERE PLOW CO. LTD., because every DEERE LINE is a leader. See your nearest JOHN DEERE dealer for the very best the world offers in

QUALITY AND SERVICE

JOHN DEERE PLOW CO. LIMITED

Winnipeg

Regina

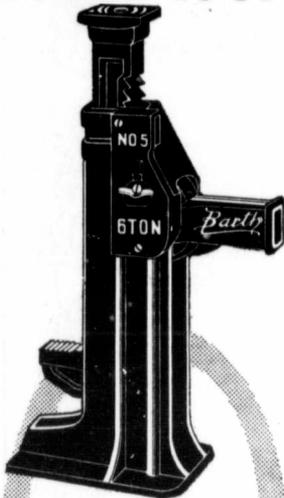
Calgary

Edmonton

Saskatoon

Lethbridge

LOOKS GOOD



WITH this Jack two men can raise or lower a load of 6 tons (12,000 lbs.), a distance of 11 inches in less than one half minute. Ask your dealer for the Jack. Ask us for the catalogue.

BARTH MFG. CO.
154 L. St., Milwaukee, Wis.

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and Foreign Cheques are payable all over the World.

They may be sent in payment of produce, tax, gas and electric light bills, interest on notes and mortgages, insurance premiums, subscriptions to newspapers and magazines, and in fact in payment of all kinds of accounts, whether in or out of town.

We give you a receipt and if the remittance goes astray in the mails,

we refund your money or issue a new order free of charge.

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AGENCIES THROUGHOUT CANADA.

OUR OFFER

One Thresherman's Settlement Book and the Canadian Thresherman and Farmer one year for

ONE DOLLAR

About Ourselves

IT HAS BEEN some time since we told you about that 50,000. That our message at that time bore fruit we have every reason to believe, for never in the history of this magazine have we enjoyed such a profitable summer subscription campaign.

We realize that the farmers are busy during the summer months and that it is a very easy matter to neglect to renew, but with such a large percentage of renewals as we have received this past summer, we cannot refrain from expressing to one and all our sincerest gratitude. All that we ask is that you keep the good work going. Don't ignore that renewal notice when you get it. Just send in that dollar and we'll do the rest.

If ever Western Canada had reason to feel grateful, surely the spirit of gratitude must be on the mountain top as she contemplates the result of the harvest of 1912! With the exception of little black clouds here and there that have never been absent in the brightest growing season that has gone, taking in the whole of the immense crop area, the grand aggregate is nothing short of splendid.

We not only "ought to feel" but we are grateful, recognizing as every sane man and woman must do that with all our smartness, erudition, skill or by whatever name we may seek to embellish our human intelligence, it would have been but a sorry reckoning had it not been baptised and blessed by that Almighty Power that never errs in its movements of justice and mercy.

We have in mind the less fortunate all the more keenly and sympathetically as we recall those neighbors almost on the other side of their fence who have come off "scot free" from blemish or disaster. No man who has been reared on Canadian soil and has drawn his life's breath from the prairie breeze ever rejoices at a neighbor's misfortune. Rather is it a luxury to him to help his friend in distress. The unfortunate neighbor knows this and he loses all the poignancy of what misfortune may mean to him in dollars and cents in the knowledge that the eyes of sympathy are all around his dwelling and that the hand is outstretched at every point of the compass to help him where he cannot help himself.

The Scotch have a proverb to the effect that "Giff-gaff maks gude freends." Artemus Ward had another to the same effect, and it seems that whether a man hails from Scotland, Kentucky or Kishbath Jerah he can't get away from the "family feeling" when he comes to Western Canada.

Silkstone Guessing Contest Extended



Owing to the harvest operations in progress throughout the West, the farmers and their wives have not been able to take advantage of the big opportunity offered them by G. F. Stephens & Co. Ltd., Winnipeg, through the Silkstone Contest, to try the merits of this beautiful wall coating, or enter their guesses as to the amount of money contained in the jar. This contest as advertised by G. F. Stephens & Co. Ltd., has attracted very wide attention and many of the Stephens' agents and other parties have requested the company to extend the time of the contest from September 30 to October 31. The company has considered it fair to do this as no one has yet guessed the exact amount of money in the jar. Until October 31, therefore, any one who has bought a quart of Silkstone, the beautiful and sanitary new wall finish, may send in a guess as to the amount of money contained in the jar now on exhibition at the Winnipeg Industrial Bureau. If more than one quart of Silkstone is bought a corresponding number of guesses is allowed.

NOTE THE DATE UNTIL OCTOBER 31st.

The jar holds (9-16) nine-sixteenths of a gallon of water and is now filled with money—gold, silver, bills and copper. The money contained is less than \$500 five hundred dollars and more than \$50 fifty dollars. Buy more quarts of Silkstone and send in your guess at the amount of money at once. You may be the lucky winner.

G. F. Stephens & Co., Limited
WINNIPEG, MANITOBA

What is YOUR Brain Worth?

Knowledge is earning power. The greater your knowledge, the greater your earning power. If yours is not a trained brain, it is not worth much in the present day labor market. But Canada offers a wonderful opportunity to the man or woman with the trained brain—the man or woman who has the expert knowledge required in our different industries.

"The Shaw Way is the Sure Way" to get this knowledge. We will provide you with this in your own home and in your spare time. Hundreds of successful students prove that we can qualify YOU for a better position, better earnings and success. If you really want to earn more, to make your brain worth more, write today. Initiative is the first essential to success. Act NOW!

SUCCESS

THE Shaw Correspondence School
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—a man or woman (without college or university) can qualify for the position or profession mentioned.

Chartered Accountant	Artist
Auditor	Designer
Cost Accountant	Teacher of Art
Makers Drafting	Journalist
Bookkeeper	Journalist
Stenographer	Telephone Reporter
Penman	Photographer
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Ad Writer	

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I Want Men

Like YOU, Who Want To Make \$3,000 A Year, or More

We need a good, live man right now in your territory to handle real estate deals for us. No experience or capital necessary. We teach you the Real Estate Business and appoint you our agent in your locality. Easy work, large profits. We operate everywhere. Write for free book.

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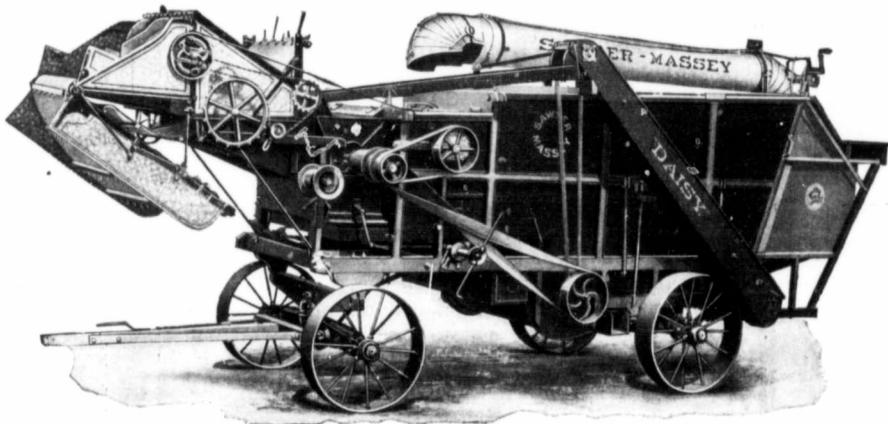


For Fast Flax Threshing

IF YOU have ever threshed Flax, you will appreciate that the less inside shafting and revolving forks and drums, the less trouble you will have with the flax straw wrapping itself around the cylinder and bearings.

Sawyer-Massey "Daisy" Separators are provided with an immense amount of room inside, and the special construction of the long decks makes it possible to do away with wing beaters, revolving forks and the like; thus handling flax straw to perfection. Doing away with these extra parts, "Daisy" Separators have fewer belts, require less power to run them, and have less vibration.

The "Daisy" method of separation provides for the very finest of adjustments of the cleaning fan, allowing the absolutely perfect regulation of the amount of air used and where it is placed. This feature is essential with a good flax thresher.



Wet Straw? It Likes It!

**MAKE THE HANDLING OF TOUGH GRAIN
A PAYING PROPOSITION**

SAWYER-MASSEY "Daisy" Separators, as their name implies, are "Daisies" when it comes to handling wet, tangled straw. Special separating features, serviceable construction, and absence of complicated rotary mechanisms, all help to make the "Daisy" the machine you need; an Outfit that will get you the jobs and make you money.

"Daisy" Separators are made in sizes suitable for use with 15 h. p. Gasoline Engines and up, are easy to operate and take care of, and we can offer you immediate delivery of the size wanted.

Write quick for catalogue or get in touch with our dealer in your town.

SAWYER-MASSEY COMPANY LIMITED

Manufacturers of Canadian Power Farming Machinery

Factories: HAMILTON, Ont. Western Branches: REGINA, Sask., WINNIPEG, Man.

A MAGAZINE
FOR



THE FARM
AND HOME

THE CANADIAN THRESHERMAN AND FARMER

Vol. XVII.

WINNIPEG, CANADA, OCTOBER, 1912.

No. 10.

Western Canada's Growth as Shown by Her Cities

EDMONTON, capital city of Alberta, has a plan which differs somewhat from that of the general city plan for growth and development. It is usual—far too usual, in fact—for a city to be self-centred; to fix its eyes upon that which lies within the city limits and to give a too little attention to the country which lies round about it. Sometimes, it is true, those who are interested in the growth of a city take some account of the near lying towns about them, usually for annexation purposes. This as a short-sighted view, but perhaps follows the lines of ordinary human selfishness in seeing things which lie close at hand and fixing an undue amount of attention upon them.

The Edmonton plan for civic growth reaches out and takes into its grasp all the country lying within a hundred miles of Edmonton. This is not to say that Edmonton arrogates to itself all of the rights and privileges which lie within such a wide expanse, but that it is the view of the men who are striving to make of Edmonton a city of

Edmonton and Its Surroundings

City with a Plan of Size and Circumference. How Edmonton sees some of the Problems of Civic Growth and is Reaching out into the Country round about for means to a good end.

Written for the Canadian Thresherman and Farmer, by George M. Hall, Industrial Commissioner.

adequate size and of power in keeping with its principal position in a great province, that all development which takes place

and progress which the country at large is making. In pursuit of this plan, Edmonton is striving to build up a city which

ties, trade communication, distributing houses, and the products of industrial work.

A City Situated in the Center of Things Valuable.

And Edmonton seems to be peculiarly well situated for the working out of just such plan as this. Around about the capital of Alberta are located a great number of smaller cities and towns. These secondary centres of population and trade are thriving and progressive. Between them, and contributing to their growth, lies a country second to none in the world for productiveness of soil and other natural resources. It is one of the contributing causes to the growth of Edmonton and all of the towns in Central Alberta, that the country in which they are located is not one given over to a single branch of agricultural work. There is much grain grown in the Central Alberta district; wheat, both spring and fall, produces heavy crops, and oats bring forth a harvest noted for its quantity and excellent quality. Barley and flax also



A potato field in the Edmonton District where over 1400 bushels have been taken from two measured acres

within such an area as this must, in the working out of natural results, bring to Edmonton a considerable measure of the growth

shall serve the country round about it for as great a distance as it is possible to serve any outlying district with railroad facilities.

and oats bring forth a harvest noted for its quantity and excellent quality. Barley and flax also

produce good crops, and it may be said, without exaggeration, that there is no section which produces more or better grain than the Central Alberta country which lies around about Edmonton. But the nature of the country is not of a sort to compel the farmers toward grain growing as a sole means of subsistence; in fact, the nature of the country rather induces them to take up a varied line of agricultural endeavor, and thus to place them beyond the necessity of depending wholly upon one crop for their income.

This Central Alberta district is one made up of conditions which point the way clearly to mixed farming. The country is fairly well clothed with trees and bush; there are many hills and corresponding valleys, the latter sheltered from the winds of winter and affording excellent shelter—together with the trees which grow in them—for cattle and horses from the cold and storms of winter weather. Comparatively high altitude and the plentiful rainfall ensure the stock farmer of feed at all seasons of the year—excepting, of course, the winter season, when some feeding may be necessary, although it is a fact that horses and cattle do reasonably well in Central Alberta throughout the winter without any extra feed.

The Straight Road to Mixed Farming.

These conditions lead straight to mixed farming, and Central Alberta is, therefore, a country of all-the-year-round products instead of a section where traction plows rip up a few miles of open prairie, sow these same miles with wheat, or flax, or barley, or oats, and then rest until the summer rain and sun shall have ripened the grain before another period of activity ensues; instead of being a spring and fall farmer, the agriculturist in Central Alberta is busy all the year round with grain, vegetable growing, dairy farming, or stock raising, and his income is correspondingly regular, although it does not, of course, come in such huge lumps as that of his wheat-growing brothers of the open prairie.

All of this leads up naturally to a civic growth along broader lines than that of a mere trade centre. In order to meet the demands of the large mixed farming population which occupies the country of which Edmonton is the centre, this community is endeavoring to build up a city as well balanced and as thoroughly well employed every day in the year as the farming country upon which the city's growth and progress must be based. Thus far, Edmonton has been rather successful in the working out of its plan. A prime necessity for a city which seeks to serve the

country which surrounds it in the best possible manner, is railroads, and railroads have come to Edmonton in considerable numbers and with completeness of equipment as far as time has permitted. It is only a few years since the only communication between Edmonton and the outside world was by means of cattle trains in summer and dog trains in winter. Some years ago the

far from two million dollars in terminal facilities in this city.

Seated in the path of Transcontinental Traffic.

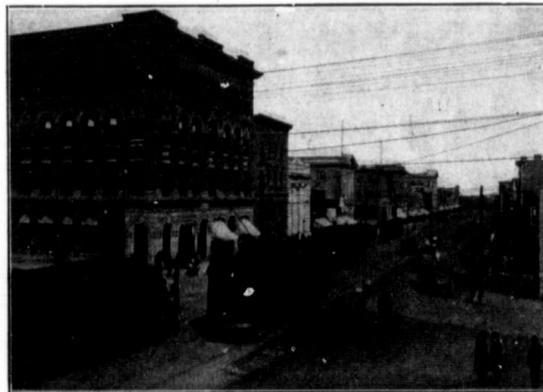
The Grand Trunk Pacific and the Canadian Northern, on their march across the continent, headed straight for Edmonton; in fact, the Canadian Northern was the first railroad to build directly into this city, and was the



Parliament Buildings at Edmonton. Nearly completed at a cost of \$2,000,000

Canadian Pacific Railway elected to build a road from Calgary north to the Edmonton district, but it also elected to make the terminus of that road on the Strathcona side of the North Saskatchewan. At that time it was the belief of many that Strathcona would be the city and Edmonton the town. As years went by it became evident that this order of things was to be more or less reversed, and now the manifest destiny of both set-

first strongly contributing cause to the march of Edmonton toward metropolitan size. Now the Canadian Northern is building its lines as fast as possible into the great country north and west of Edmonton, and is also connecting this city with Calgary. Work now being rushed toward completion will finish the Canadian Northern transcontinental line in Vancouver, giving Edmonton a Pacific coast outlet that will be in working order at about



Jasper Avenue, Edmonton. A street that was open prairie 25 years ago.

tlements has been carried out by the joining of the two cities under one corporate head. The Canadian Pacific is building a high level bridge across the river into Edmonton, and is constructing a terminal station in the very heart of the city. A big business block on Jasper Avenue is being added to the C.P.R. equipment in Edmonton and altogether this road is spending not

the time of the opening of the Panama Canal.

The Grand Trunk Pacific Railway sees Edmonton with the eye of faith. This corporation is showing its faith in the future of Edmonton by building a hotel which is to cost \$1,250,000. This hotel is no iridescent dream of the future, but is already begun, and will be completed as fast as men and money can hasten the

work. The Grand Trunk Pacific will also build a terminal station here, and this is another road which is laying steel to the Pacific coast with all the ardor and activity of men who are racing with other men for the completion of a great work. When the Grand Trunk Pacific and the Canadian Northern Railways shall have finished their lines through the Rocky Mountains to the waters of the Pacific, Edmonton will have two splendid ports of communication with the Orient and the Panama Canal at a distance of about 650 miles each.

Opening Up the New Northwest.

Corollary to this important proposition of a Pacific coast outlet for the products of the country, is the almost equally important fact that between Edmonton and the Pacific coast lies a vast stretch of country which contains very great possibilities of development. All of the facts about this great territory are not known; exploration has been considerable but not complete; men have made more or less of a study of the country from an agricultural, mining and lumbering point of view but this study has not been minute enough to determine any considerable part of the natural resources which lie within the country which is to be opened up by the invasion of the railroads. It is known, however, that there are at least forty million acres of land adaptable to farming and grazing; that there are timber limits of considerable value and wide extent; that pulp wood and water power occupy adjoining locations and can be worked with economy and much profit; that there is an almost inexhaustible supply of asphaltum, the value of which for street making purposes has been accurately determined by testing it on one of the principal streets in Edmonton; that there are other mineral deposits of great value; that building stone, marble, limestone, coal, copper, gold and other deposits valuable for industries are located in this great new Northwest. It is beyond question that the opening up of so rich and extensive a country, all of which will be closely in touch with Edmonton as the principal population point within reasonable distance, must have great effect upon this city in promoting commercial and industrial growth.

Strong in Municipal Ownership.

The Edmonton plan is designed to meet the obligations which geographical situation has thrust upon it. The city has started away with a well-defined scheme for conserving its resources and possibilities by keeping within its municipal grasp all of its

Continued on page 72

SIXTY-FOUR million bushels is the estimated grain crop for the province of Alberta for 1912. Most of this is grown in Southern Alberta, south of township 40. Last year—or from last year's crop—the Canadian Pacific Railway Co. handled over 30,000,000 from the Calgary district; yet Calgary was only a very short time ago the recog-

Calgary
Commercial Centre of the Canadian Middle West

centre when the big canal is open. In accordance with the Dominion legislation, next year will

a pay roll here of \$7,500,000 annually. A new industry is that of the Pioneer Tractor Company, which is now proceeding with the erection of a manufacturing plant in Calgary to supply its large western trade. This company is capitalized at \$2,500,000.

The International Milling Co., of Minnesota, recently acquired the Calgary mills, with 1,500 barrel capacity. The Canada Malt-ing Co. has almost completed its \$300,000 plant here to manufacture malt for shipment east.

Other old established concerns handle grain, flour and cereals; the meat-packing industry ranking next in order of provincial products. Apart from the dressed and preserved meats, there was a time this season when 1,200 head of cattle per week went through here to British Columbia.

Within the past year or two special attention has been drawn to the possibilities of developing the wonderful clays and shales found along the river valley. At present there is being built what will be, perhaps, the largest brick making plant in Canada, and yet it does not seem likely that anything near a sufficiency will be turned out, for the building permits this year to date are over \$12,000,000, and will probably reach \$20,000,000 before the end.

In the case of cement, it is common knowledge that there has been a decided shortage of the Canadian article, yet there is a mill in the city and another not far away which were reckoned as being ample for years to come.

So it has been with other building materials. Pottery clay, fire clay, china clay and cement-making material are available in quantity sufficiently near the city as to ensure their being manufactured here.

The largest sash and door factory in Western Canada is in operation here.

Natural gas is brought in from the Bow Island wells by the Canadian Western Co., which has four millions of British capital. Extensive coal fields begin at 40 miles from the city. Power at \$12 per horse power per annum; gas for domestic use at 35 cents per 1,000 cubic feet; and water for ordinary house at 80 cents per month, demonstrate the advantages of several sources of power.

The agricultural district, of which Calgary is the centre, comprises both irrigated and unirrigated lands of the most desirable quality. These have attracted good settlers and are fast being developed to a condition which means a balance of trade in its favor. Machinery firms maintain branch houses in the city, and cater to a territory extending for a few hundred miles around.

Having a population in May

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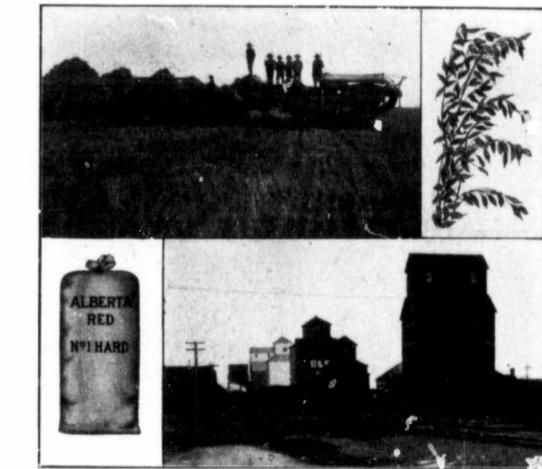


Raised on the Rolling Prairie

nized centre of a cattle and ranching district—no more, no less. Today it is the commercial centre of the Middle Canadian West. As the headquarters of the elevator companies, it controls nearly all the elevators within the Province.

It is the headquarters of the Western Trade Routes Association, an organization formed at a conference held in this city in June to consider the effect of the opening of the Panama Canal on Western trade conditions. That conference represented a district 300,000 square miles in area. Quite naturally, Western Saskatchewan and Alberta were deeply interested, for, as the map will show, this territory being at the end of the railway haul, looked around for relief, a relief that the Panama Canal will provide, not only in a lessened freight rate on grain, but also on raw material, which for some years yet must necessarily be brought from southern and eastern sources.

Already a great deal of Alberta's grain goes through Calgary via Vancouver, and either by the Suez Canal or round the Horn. Except for the disadvantages of poor terminal facilities on the Pacific Coast, a much greater margin of saving could be shown on grain shipped by that route. The Canadian Pacific Railway Co. is now surveying the line from Calgary to Vancouver for a double track, and it is announced that with certain cut-offs the grades may be reduced to one per cent. against west bound traffic through the Rockies. All this indicates just what Calgary will be as a grain

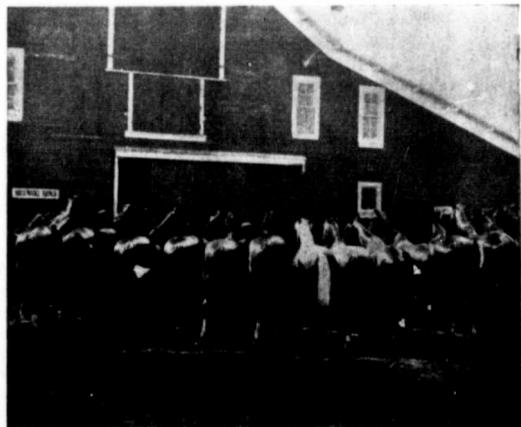


Some of Calgary's Life Blood

see a sample market established here, though opinions differ as to just how the grain growers are to profit thereby.

The Grain Growers' Association, the Grain Exchange, the United Farmers of Alberta, and the Live Stock Associations cover most of the province from here.

The greatest irrigation block on the American continent begins a few miles from the city. It is owned and directed from here by the Natural Resources Department of the C.P.R. Everything in fact, the the C.P.R. owns in Western Canada—and that is considerable—except its railways and steamships, is directed from Calgary. With the completion of the "Ogden" locomotive and car shops, where 5,000 men will be employed, the company will have



Breeding, Bone and Muscle of Sunny Alberta

"**E**SSE Quam Videri" is the motto of Prince Albert, and is eminently appropriate to a city possessing a record of sure and steady growth along the lines of a well devised plan.

Situated in a commanding position on the banks of the Northern Saskatchewan River, environed with incomparable

Tired of sports one may rest on the flower-bedecked boulevards by the river, or in the city

Electric Prince Albert

The White Coal City



Seager Wheeler, the Grower of the World's Championship Wheat in the Prince Albert District

scenery, adorned with picturesque residences, supplied by well built streets, flanked by verdant boulevards and avenues of shady trees it is truly a place delightful to the eye. Whether one strolls by the green clad banks of the mighty river, or wanders over the wooded eminence which shelters the city on the south, is abundant evidence that nature must have been in her happiest mood when she created this desirable situation. The wealth seeker who comes here to share in the toil and gain of this northern land sacrifices nothing in the way of comfort by choosing Prince Albert as the field of his operations. Not only has he the pleasure of locating in the midst of unrivalled scenery, but finds that the social side of life's necessities have not been neglected, for here he has the opportunities of pursuing his favorite sports, and finds the best of hotel accommodation and cuisine.

Devotees of cricket, football, baseball, lacrosse, tennis, golf can find ready welcome in the organizations connected with these games; the martially inclined can practise mimic warfare, and prepare in case of need to uphold the prestige of "King and Empire" with the 105th Infantry, the City Regiment, or with the squadron of the 29th Light Horse; while the disciples of Isaak Walton can pursue their wily arts in some quiet spot by the river. On the bosom of the waterway are all kinds of canoeing and boating for those who are followers of aquatic sports and lovers of the drama are well catered for in the fine theatre the city possesses.

vegetable productions, and one whose possibilities cannot be over estimated. Through this portal must pass the import and export trade of this vast territory, and with the completion of the transportation system a new era in the life of Prince Albert begins for her. Position as the distributing point for the richest portion of the province is assured.

The districts immediately east and south of the city have securely established their premier position in the agricultural world, for they boast the capture of both the American and the World's championships for wheat. In common with the south and west, they possess every essential required for intensive farming, natural pasture for stock, an abundant supply of good water, fine belts of useful timber, a con-

stant supply of edible game, and a soil capable of doing all that is asked of it. Here the position is of the brightest for the farmer, and he scores over his brother on the prairie in the fact that he does not have to place all his "eggs in one basket," for he can combine his corn growing with dairy farming and horticulture, and can find close at hand ready market for his wares. Provided with good means of transportation, and the completion of the line to Hudson Bay, the agriculturalist of the north will be secured quick and ready access to the great markets of the world.

The present railway service to Prince Albert is controlled by the Canadian Northern Railway, who operate by four branches to the city. So great has the increase in traffic become that the company find it imperative to extend the existing accommodation both for freight and passenger departments. Extensions of this company's lines in other directions are contemplated.

The system is also attracting the Grand Trunk Pacific, who have a graded entrance to the city, and the work is being hastened to completion. The C.P.R. are projecting direct communication with Prince Albert, and the coping stone of this transportation construction will be the direct line to the Hudson Bay, 50 miles of which is to be graded this year.

The title of "Electric Prince Albert" is no misnomer, for electricity, or "white coal," plays a conspicuous part in the life of the city both socially and industrial, for the citizens have the benefit of electric light at the lowest cost in the province, and it is the chief motor power used in the industries of the neighborhood; and here be it remarked, that this is the home of the largest lumber plants in Canada, and

Continued on page 74



One of the Great Flour Mills of Prince Albert

park, where rainbow tints flash from the spray of the central fountain, and enjoy the open air concerts given by the band, or retire to one of the comfortable social clubs, and scan the columns of the local papers which worthily uphold the traditions and liberties of the "Fourth Estate." The game season provides excellent sport for those inclined to indulge in the keen joy of "killing something," and well stocked larders rejoice the "inner man."

But, as the title suggests, there is a business side to the proposition, and the "White Coal City" has industrial advantages equal to its scenic and social attractions. She has been aptly styled "The Gateway to the North," for her position is on the threshold of an area wide in extent, diversified in character, but rich all the time in mineral, animal, and



The Prince Albert Lumber Mills: "The Boom."

WHILE the swiftness of Saskatoon's development constitutes a record new and wonderful, there is nothing in it at all startling or inexplicable to the logical mind—for, after all, the city's astonishing progress is merely the inevitable outcome of unusually favorable and most obvious causes operating in combination. Of course, to those unfamiliar with such causes, the development in question is so weirdly unusual that its stability invites an instinctive doubt, for the simple reason that individual credence is largely circumscribed by individual experience. For instance, confront most men with any circumstance extraordinarily beyond their experience, and, while they may outwardly evince a polite interest, incredulity is as a rule their mental attitude. And, hence it is that strangers visiting Saskatoon, and who are unfamiliar with the solid, tangible causes responsible for the very remarkable effects so apparent on every hand, are somewhat liable to view the city as an outstanding example of what can be accomplished by skilfully engineered inflation.

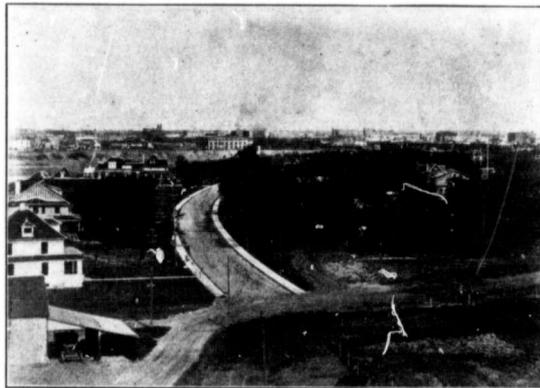
In the light of their experience, the swiftness of our development precludes solidity. However, after a very cursory investigation of our phenomenal potentialities, our stranger friends are compelled to admit that our present position very closely resembles that of the multi-millionaire who has, so far, employed merely a few trifling thousands of his capital. Let us demonstrate the contention by touching lightly upon the main, vital causes so largely accountable for the miracle of this, the youngest city in the Dominion; and let us divide these said causes into actualities and potentialities.

Unquestionably, the most important of our actualities is the

ada—just where all the railways meet. It will be observed that not only is the city in the centre of the West, but also in the very middle of Saskatchewan, and right in the heart of the world's most fertile and extensive hard wheat area.

Further, do not overlook the fact that Saskatoon is far removed from any other large point. Sister cities no more compete with her than does a hardware merchant with a butcher.

Now, there being no other large cities anywhere adjacent to Saskatoon, the surrounding territory is, consequently, hers—and she possesses the railway facilities and distributing freight rates to control it absolutely. The territory in question extends to upwards of 46,000 square miles, and even now embraces over 220



Glimpse of a Section of Saskatoon taken from East River Bank.

thriving points on operating lines. As a matter of fact, Sas-



C.N.E. Station, Saskatoon. Every train brings its flood of Newcomers, strategic, central isolation of our city. To locate Saskatoon, simply place a finger on the centre of any map of Western Can-

katoon wholesalers command the undisputed sway over 1,686 miles of operating railways—a distance greater by 243 miles than that

Saskatoon

A Big Farm Machinery Centre

that actual demonstration of its accuracy be simultaneously submitted, and to this end no proof is more conclusive than the following freight rates.

As a basic example, we take car loads of fifth class goods, such as groceries, hardware, liquors, paper, etc., while less than car load rate for reshipping



Saskatoon, 21st St, looking West from 2nd Ave. All this was prairie in 1905.

is taken as third class, although small lots of the commodities mentioned take various classes, according to the Canadian freight classification.

The nearest large wholesale distributing points with which Saskatoon has to compete are Winnipeg, Edmonton and Regina. So far as Brandon, Portage la Prairie, etc., are concerned, the rate situation upon which the Saskatoon and Winnipeg comparison is based will apply approximately.

The following rates are per lake and rail, and are per 100 pounds:—

NORTHWARD.		Competing with Winnipeg
Carload Rate, Toronto to Winnipeg	.....	\$0 65
L. C. L. Rate, Winnipeg to Kinistino	.....	0 77
Total Rate, Toronto to Kinistino, when distributed from Winnipeg	.....	\$1 42
Carload Rate, Toronto to Saskatoon	.....	\$1 08
L. C. L. Rate, Saskatoon to Kinistino	.....	0 34
Total Rate, Toronto to Kinistino, when distributed from Saskatoon	.....	\$1 42
SOUTHWARD		Competing with Regina
Carload Rate, Toronto to Regina	.....	\$0 98
L. C. L. Rate, Regina to Kenaston	.....	0 31
Total Rate, Toronto to Kenaston, when distributed from Regina	.....	\$1 29
Carload Rate, Toronto to Saskatoon	.....	\$1 08
L. C. L. Rate, Saskatoon to Kenaston	.....	0 18
Total Rate, Toronto to Kenaston, when distributed from Saskatoon	.....	\$1 26
EASTWARD.		Competing with Winnipeg
Carload Rate, Toronto to Winnipeg	.....	\$0 65
L. C. L. Rate, Winnipeg to Carmel	.....	0 71
Total Rate, Toronto to Carmel, when distributed from Winnipeg	.....	\$1 36
Carload Rate, Toronto to Saskatoon	.....	\$1 08
L. C. L. Rate, Saskatoon to Carmel	.....	0 24
Total Rate, Toronto to Carmel, when distributed from Saskatoon	.....	\$1 32
WESTWARD		Competing with Edmonton
Carload Rate, Toronto to Edmonton	.....	\$1 29
L. C. L. Rate, Edmonton to Innisfree	.....	0 29
Total Rate, Toronto to Innisfree, when distributed from Edmonton	.....	\$1 58
Carload Rate, Toronto to Saskatoon	.....	\$1 08
L. C. L. Rate, Saskatoon to Innisfree	.....	0 49
Total Rate, Toronto to Innisfree, when distributed from Saskatoon	.....	\$1 57

Continued on page 76

MOOSE JAW, the prince of the prairie provinces, with its 25,000 inhabitants, is a revelation to the visitor who passed through a few years ago, and then again this year. Then years ago there was a population of 1,550, all more or less poor people trying to get a foothold on the first rung of the business ladder. Now some of these millionaires and many are well on the way to that mark.

The prosperity and progress of this city is maintained by the rich wheat lands tributary; this being the centre of the greatest wheat-growing area in the world. There are several different grades of land, from the heavy clay loam to the light sandy soil. This precludes the possibility of a failure of crops for the great army of farmers. In a wet season the man with the sandy soil reaps his enormous crop, while his friend to the south has to be content with a smaller yield. But in a dry season the heavy loam soil carries the needed moisture, and the owner is well repaid for the extra labor in tilling his tougher land. From this it will be seen that Moose Jaw's tributary industry is safe and sure of an average yield in the worst of seasons.

The land values in the district are easily 30 p.c. below the values throughout the West. This is attributed to the fact that this dis-

trict has never been boomed. The values on both land and city property have gone up steadily and sanely, and this upward movement in land values will continue till it equals that of the other lands throughout Western Canada.

The farmers are up-to-date and carry on their operations systematically. Nearly all own steam or gasoline plows, and are in every way taking advantage of new inventions which facilitate the handling of their grain. It is interesting to note the increase in acreage and crops of wheat in

this area. They are as follows:—

Year	Total Acreage	Total Yield	Aver. Yield
1911	5,323,248	96,796,588	18.50
1910	4,664,834	72,666,399	15.58
1909	4,085,000	90,215,000	22.01
1908	3,703,563	50,654,629	13.68
1907	2,047,724	27,691,601	13.52
1906	1,730,586	37,040,098	21.40
1905	1,130,084	26,107,286	17.51
1904	910,359	15,944,730	17.51
1903	777,822	15,121,015	19.44
1902	580,860	13,110,330	22.57
1901	469,953	11,956,069	25.41
1900	383,540	3,443,671	9.00
1899	328,459	6,083,508	18.49
1898	276,253	4,780,440	17.30

The Canadian Pacific Railway well adapted to the task of being track their main line for several

miles east and west in order to facilitate the handling of grain and other exports from this point.

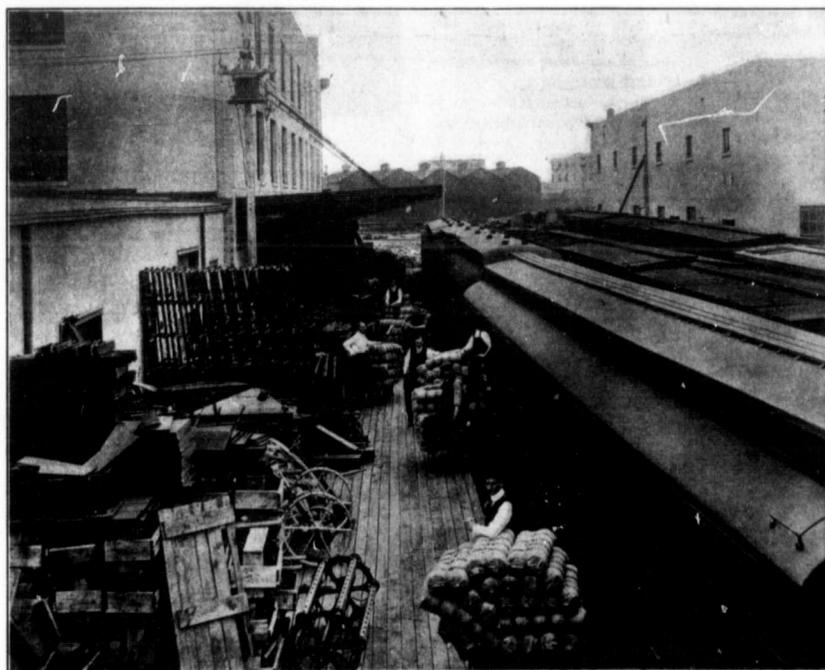
The Canadian Northern Railway have their steel laid and are operating on their line to within a mile or so of the city limits.

The Grand Trunk Pacific have plans laid for an entrance to the city, and are graded to within two miles or so of the limits of the city.

With these three transcontinental lines operating, Moose Jaw has fourteen distinct railway outlets, and this will solve the difficulty of the handling of the enormous quantities of grain which pass through annually.

Moose Jaw is thus particularly well adapted to the task of being the milling and distributing centre for this great grain-growing land.

Moose Jaw and the wheat industry of its tributary acres are only in their infancy, as will be seen from the fact that not 8 per cent. of the arable land is yet under cultivation. There are thousands of acres of good rich land in the southwest of Saskatchewan which is now being homesteaded, but up till this year farmers have hesitated to grow much grain owing to the difficulty of shipping. This year the whole country is being opened up.



Filling a Binder Twine Train at Regina, Sask. When loaded; the twine; represented 250,000 pounds of this invaluable material.

Regina

The Source of Her Wealth

By L. T. McDonald

ALTHOUGH it is a truism that effect succeeds cause, the varied forms in which the principle is clothed are often lost sight of to the corresponding detriment of real progress. Regina aims, for example, at being a big manufacturing and distributing centre. And that is an aim in every way commendable. Cities, like men, cannot live by bread alone. For good or evil our modern civilization makes cities inevitable. The troubles one reads about in such ancient systems as the Chinese and the Indian nationalities spring largely from the eagerness of the mass to congregate in big hives of population. Man is a gregarious animal. He becomes insane un-

less life is lifted out of the hum drum, and he associates with his kind. We must not forget, therefore, the troubles of the man in the small community, although here, for the moment, we cannot discuss that ticklish subject. Up to the present it has baffled great statesmen and turned others into the crazy arena of revolution. Here is a city in the heart of the province of Saskatchewan, ambitious of becoming a great Winnipeg—some even go as far as assert that the destiny of the

Queen City is to be a Canadian Western Chicago. Comparisons are often mere word-catchers. We are concerned with the great and avowed fact that Regina is already a "City of Certainties," and that it is aiming, working, and scheming to become greater.

Let us first of all enquire then whether Regina has in it the elements or conditions that warrant a vigorous promotion of that ambition. We admit that for location, Regina stands in a royal position, a position that pro-

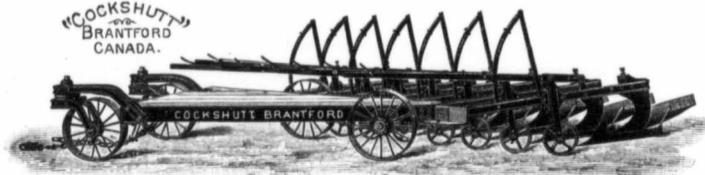
vincial statesmen recognized when they chose the site for the Parliament buildings, and all that has transpired since has justified the wisdom of their choice. With that magnificent piece of architecture to the south of Victoria Square, Regina looks, like Josephine, every inch a queen. There is palatiality about Regina. Then she has the atmosphere of a city. If this were a psychological study, one could roam into interesting fields of thought and enquire how it comes that this city in the heart of the great prairie is so city-felt. But we must avoid temptation. The main fact, we guess, is that the makers of Regina hied originally from the East and South. No more can an

Probably no Engine Gang on any market was ever accorded such unqualified endorsement by farmers, East, West, North, or South, as

The Cockshutt Engine Gang

now closing its seventh wonderfully successful year.

It is the Engine Gang made on the right principle: independent plows, each with its own beam. In the Cockshutt Engine Gang, this beam is STRAIGHT — the least length of metal results in the least amount of possible bending from strain. Not only that, but the strong Cockshutt beam has a second beam beside it to each plow. These beams separate to make a wide-bearing hinge,—impossible to slew the plow sideways out of line so it will wing. This hinge is ADJUSTABLE; each plow is always RIGHT.



THE COCKSHUTT ENGINE GANG

5, 6, 7, 8, 10 or 12 Furrows

has a strong channel beam triangular platform frame, with large, roomy platform. Wide-tired wheels close to the slanting beam which carries the hinges, keep all plow beams at the set height above sod or stubble. This means that the last plow always plows at set depth, makes an equally perfect furrow with the leading plow. No matter whether ground is over-soft or hard-baked, all plows turn furrows at the set depth and in the same way.

The Cockshutt Engine Gang plows fit the ground automatically. If there is a rock, the plow mounts it and resets itself. The other plows are not affected. The plows sink and rise automatically as the land sinks and rises, plowing a uniform depth. The outer plows, on a crown or ridge, plow full depth instead of scraping the surface. The plows sink to proper depth if in the rut of the Tractor wheel.

This flexibility between all the plows, and the low line of draft from Tractor, mean SPEED. The long levers mean an EASY and QUICK lift of all plows at furrow ends. The swivelled platform wheels mean a QUICK turn at furrow ends. There are NO STOPS of TRACTOR needed during work. This means economy: QUICKER plowing by covering MORE GROUND each working day.

The Cockshutt Engine Gang gets its economy of repairs from the fact that it is well built of the best materials obtainable. It stands up to all kinds of work, it does sod breaking and stubble plowing swiftly and cleanly, turning even furrows STEADILY and PERFECTLY.

See the Dealer

COCKSHUTT PLOW COMPANY LIMITED

Branches: Winnipeg Regina Calgary Saskatoon

Distributing Warehouses: Red Deer Lethbridge Edmonton Brandon Portage la Prairie

Ontario change his disposition than Ethiopia can its flesh-color. The busy man from Toronto, Hamilton and Montreal is seen in Regina as a sort of composite. Further, Regina has the steel apparatus for making a big city. Here the three great trunk lines converge, while thirteen rail roads run out from the termini of these same mighty corporations. Hence, Regina is a feeder—natural, strong, and reliable—for the agricultural districts that compass Southern Saskatchewan, the manufacturer must, it seems to us, turn to Regina as instinctively as the petals of the daisy opens their folds to the sun. And, of course, as is well known, Regina is determined, through its constitutional channels, to allure the best manufacturers to its embraces, not by wild-cat projects, but by solid and business propositions. We are willing to concede that Regina stands to realize its dreams, and that its schemes are likely to go through.

But what needs emphasising is that the source of all this strength does not lie in any of these causes of city progress. A man's strength does not lie in his fist, however tight its grip may be. It is in the blood that flows in his veins, and Regina's vitality is in the immense wealth of its agricultural district—and as others also who are unfamiliar with the fact that its potentialities are more germane to the prosperity of the city than would be the discovery of a gold mine. The great fact remains: on the surface all around Regina lies the true source of Regina's future. What will the future of the city be do you ask? The reply is on

the prairie. Seen today, with its fields tipped with the golden hue of the grain, it is easy to imagine a prosperity that will put the present in the shade, but only the few, after all, see and read out of what they see—the handwriting of greater things.

Now, what we want to get at, in order to establish these premises is, what this source of wealth amounts to as a factor in creating stores, attracting of manufacturers and new settlers. The first thing that impresses one is that the land is after all only but sparsely cultivated. Millions of dollars are every year raked off the prairie and scattered among the forty thousand odd people who compose the population of Regina. But that represents only a tithe of what the land is capable of producing, and one only requires to imagine what a period of adversity would do, to realize that the land can be put to more uses than one. The other day, for instance, a hard-working fellow got 3,200 bus. off ten acres of land that he had had sown with potatoes last spring, a few miles outside the city limits. He sold these for a dollar a bushel, and, having the art of economy at his command, he almost thought of retiring from the hum drum order of life with the net proceeds. But this by the way. Those who think of the land in these Western Provinces as only wheat-producing, or real estate assets, will wake up some fine day to behold it a land flowing with milk and honey.

Under existing conditions, however, the surroundings of the city are well in hand. Progress is not only made on agricultural lines,

but the Government offices, the Federal Business College, and other agencies are engaged in promoting a scientific study of every subject connected with the better cultivation of staple crops and of other products. In the coming winter, popular lectures will be given dealing with egg farming, poultry and pigs. The time has gone by when the "anything-will-do" policy in relation to farming will be acceptable to the demands of the city or, indeed, of the farming community. Machinery, science and chemistry are now the handmaidens of the chief industry, and Regina, being the wheat centre of the world, is determined that what skill can devise, what capital can command, and what experience can teach shall all be placed as far as possible at the service of the tiller and cultivator of the soil. The late exhibition at Regina, and in a minor degree the Horticultural Society in the City Hall, provided a two-fold demonstration of the pleasing fact that the average citizen—in these parts at least—is taking a keener interest in the finer studies of land culture both on the farm and in the garden. These are straws which show how the prairie breezes are blowing. The spirit of a progressive policy animates the city, whose vision is not dimmed to the part that it must play in aiding the farmer by the fact that much of its energy is spent in endeavoring to make it a city of industry.

When one considers the direct effect of the farmer upon a city like Regina, he is compelled to lift his hat to him. As a money-maker the farmer is all right. His balances at the bank dis-

count the natural tendency of his class to take a gloomy view of the future. He plows, sows and reaps. He buys with his surplus wealth machinery, building materials and other utilities for the development of his industry. The city in these respects is his servant, and Regina, with its five implement distributing houses, acts as a very good servant too. There is the closest possible friendship, as well as business relationships, between them and him. The spirit of accommodation prevails. Who can measure the collateral good that this method of doing business has upon the stores of the city? The farmer banks here, he ships a big portion of his goods here, he has his fraternal special occasions here, and, to the man who watches the cause that I referred to, there is no more welcome person in the city than is the farmer. He is one of the bulwarks to the prosperity of the city.

The economic result of his labors in too obviously the mainstay of a city of the proportion of Regina to require illustrating further than to say that the farmer who is in touch with the city has practically few difficulties in regard to transportation and shipment. It pays him to keep in touch with Regina. The thirteen lines that run out from Regina provide a mutual bond of great marketing strength. The source of Regina's wealth, then, is on the soil, with the aid of the powerful arms supplied by the C.P.R., the G.T.P., and the C.N.R. And what Regina can do to maintain and promote the happy working of both forces will be done cheerfully and with spirit and intelligence.

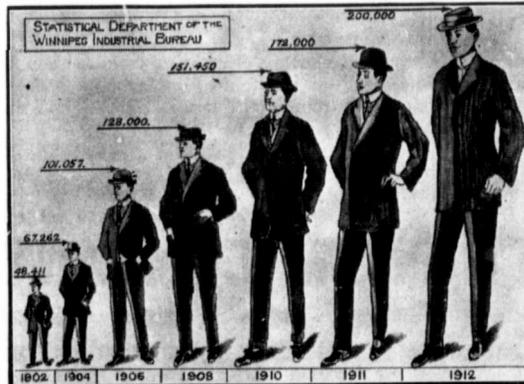
WINNIPPEG, the capital of Manitoba, is travelling fast toward her destiny as the Chicago of Canada. The same elements stand behind her growth that existed in the early days of that great mid-western metropolis. Back in the fifties people scoffed at the idea that Chicago would ever become more than a healthy frontier town, but the agricultural and commercial conditions demanded a great city on the spot where Chicago stands. And so it is with Winnipeg today, with this difference. No country in the history of the world has attracted to its borders a larger number of settlers in so short a period of time, or has attracted so much wealth in a period of equal length, as have the Canadian prairies. Never before has pioneering been accomplished under conditions so favorable as these that exist in Western Canada today.

The provinces of Manitoba,

Winnipeg
The Western Canadian Metropolis
By Chas. F. Roland, Industrial Commissioner, Winnipeg

Saskatchewan and Alberta have the largest area of desirable agricultural lands on the North Am-

erican continent, and the cultivation of these lands has just begun. Despite the fact that last



Stepping up to the 500,000 Population Mark

year's wheat crop alone amounted to 194,083,000 bushels, and that this year's wheat crop is estimated at 250,000,000 bushels, but a small fraction of the available area—estimated at less than 8 per cent.—is as yet under the plow.

Previous to 1911 the Western Canadian crop has never greatly exceeded half of 200,000,000 bushels, and the progress made by the West has been astonishing. The case of Winnipeg, railroad centre and business metropolis of the Canadian West, is the strongest of many strong proofs of this.

Winnipeg's Surprising Growth.
It is well known that Winnipeg has grown from a village of 215 souls to a city of 200,000 population in little over thirty-five years. It is not so well known that Winnipeg has trade and general business far in excess of the normal for a city of its size. Bank clearings form a sure index

of the volume of business transacted. In Canada, Winnipeg, with a population about half as large as that of Toronto, and a third as large as that of Montreal, is the only other city in the Dominion to have bank clearings running into over a billion dollars a year. Comparison with

ance. The new civic plant, supplying power at cost to consumers, has undoubtedly been a strong factor in inducing industries to locate in Winnipeg, and enquiries regarding manufacturing possibilities are being received by the Industrial Bureau in almost every mail. Provincial

Unequaled Growing Market.

These records of progress and development are sufficiently remarkable to command attention, but what about the possibilities of the future? Men and money are pouring in to Western Canada, Winnipeg's unequalled growing market for manufactured goods. From over the seas, up from the south, out from the east they are coming in thousands to develop the unlimited resources of the prairies. The Western Canadian farmer enjoys prosperity and buys liberally to supply his needs and often luxuriously to suit his tastes. He buys heavily of farm machinery, clothing, foodstuffs, household furniture to supply his necessities; and of pianos, jewellery, automobiles and other luxuries, because he has the money and chooses to spend it that way. His city brothers, doing business on the basis of the crop output and the other natural resources of the West, follows in the footsteps of the farmer, and is a liberal buyer too.

Some day the West will be

better able to take care of the demand thus created and maintained; at present it cannot hope to, and the task devolves upon the manufacturers of other sections of the country.

There is one sure way to gain access to this great, growing market—which has at present a purchasing power of \$300,000,000, and possibilities almost beyond computation—to establish a factory on the spot. At all events, the subject is well worth looking into, while the development of the Canadian West is little more than begun.

A CENT'S WORTH OF ELECTRICITY.

It Will Keep Your Feet Warm For Fifteen Minutes, or Run a Piano For An Even Hour.

Probably few people have ever stopped to think what a power electricity is. If one has never thought the matter over, says one writer in a technical publication, it will be surprising as well as interesting to know what can be done with one cent's worth of this power.

On the average rate and discounts of the ordinary consumer, a cent's worth of electricity will operate a twelve-inch fan for ninety minutes.

Will operate a sewing machine motor for three hours.

Will keep a six-pound electric flat-iron hot for fifteen minutes.

Will make four cups of coffee in an electric coffee percolator.

Will keep an eight-inch disk stove hot for seven minutes, or long enough to cook a steak.

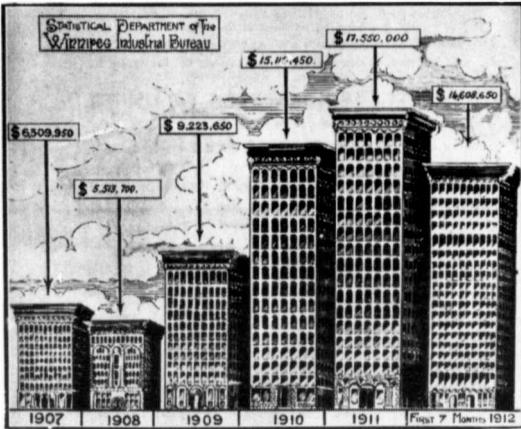
Will operate a luminous radiator for eight minutes.

Will bring to a boil two quarts of water.

Will make a Welsh rabbit in an electric chafing-dish.

Will operate a seven-inch frying pan for twelve minutes.

Will operate an electric griddle for eight minutes.



Bigger and Better Buildings Every Year

cities such as Portland, Oregon; Denver, Colorado; and Buffalo in New York state, shows that, while the population of each of these cities is double that of Winnipeg, the weekly bank clearings of the capital of Manitoba are as great as all the three named cities combined. Last year Winnipeg transacted, through its twenty-three banks, a local business which amounted to \$1,172,762,142, and this year's business, judging by the figures recorded for the first eight months, \$915,387,371, will reach a billion and a half.

Winnipeg's building figures are equally remarkable. Last year, Winnipeg put \$17,550,000 into new buildings. This was a record, and was expected to stand as such for some time. On September 15th, however, of this year the \$17,000,000 mark has already been passed, and there is now little doubt that before 1912 closed, the building records will show \$20,000,000. To this may be added some \$3,000,000 expended in new homes and public buildings in the immediate outlying suburbs.

Cheap Power Too.

Winnipeg's municipally-owned hydro-electric light and power plant, completed last year, is now firmly established on a paying basis, and also in the estimation of the people of the city. The fact that it has been the means of reducing the cost of domestic lighting by fully two-thirds of the price previously charged by a private corporation, has gained for it general patronage, and it is now learned that even at this low rate, the plant is now paying the cost of operation and mainten-

government returns show that 72 new Winnipeg industrial companies were granted charter in 1911, with a combined authorized capital of \$7,695,000, and established industrial firms increased their capital from \$2,330,000 to \$6,360,000 during the same year. At the close of 1911 there were 267 manufacturing establishments operating in the city, with an invested capital of \$40,000,000, employing 15,000 hands, with a monthly pay roll amounting to three quarters of a million dollars. The annual output of Winnipeg industries has increased from \$8,606,248 to over \$36,000,000 in ten years. Winnipeg also owns and operates its own asphalt plant, its own stone quarry, street lighting system, and water works with high pressure fire protection.

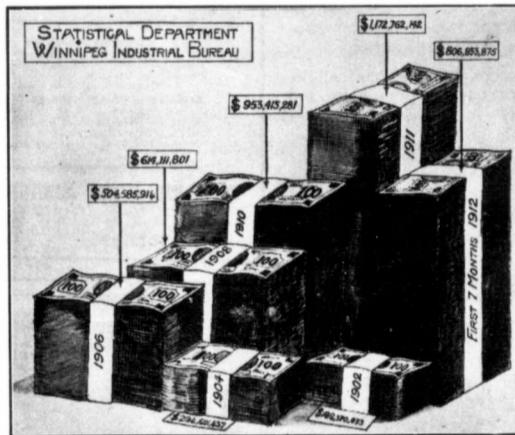
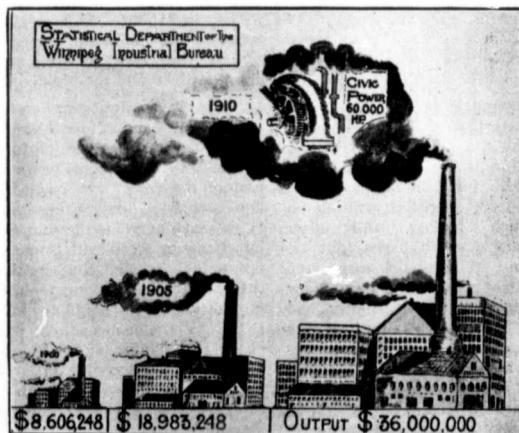


Fig. Business in Bank Clearings



Power and Light at Cost is making More Factories

THREE-YEARS' PROGRAMME

As to Cultivation and Equipment of 320 Acres of Land with 20 Acres Broken. By F. W. Crawford

IN taking up this subject, it is well for us to remember that there are hundreds of young men starting on farms in the West, but under widely varying circumstances and conditions; also with very different degrees of knowledge of agriculture. It will, therefore, be necessary that strict attention be paid to the special circumstances and conditions outlined, that deductions may be made therefrom.

The half-section of land, referred to in this article, is situated near Brandon, and has no improvements upon it, except 20 acres broken. It is gentle rolling prairie land, and is a good heavy clay loam, with a clay subsoil. There are about 15 acres of unarable land, which is occupied by a slough and a small creek. The land is worth \$25 an acre, making the half-section worth, as it stood, when work was commenced \$8,000. There is \$3,000 paid on the place, leaving \$5,000 still against it, carrying interest at six per cent. per annum. I have on hand \$2,000 cash, which, with the \$3,000 paid on the place, makes an entire capital of \$5,000 at the time of commencing improvements upon the farm.

To the average reader, it may, at first thought, seem ridiculous to outline a plan for starting on a farm with so much capital as that, because it is a well-known fact that not many have such a large amount to start with. But still it makes little difference, because if I start with \$5,000 I must make twice the outlay and have twice the income of the man with \$2,500 to make my farm pay as well as his. What may be applied to this farm of mine with that amount of capital may be applied to any other farm with a smaller or greater amount of capital in a modified or enlarged way, in proportion to the amount of capital on hand.

Starting work on the farm about the 1st of March, I would first build a shanty 12 by 16 and a stable 16 by 24, these being double boarded on the outside of 2 by 4 studding, first putting on half-inch lumber and after covering it with paper, put on shiplap; this would make the buildings warm enough for winter use. When shelter had been provided, a water supply would be the next thing to engage my attention, and I would dig a well at once, so that water would be available before it was necessary to commence work on the land. During the spring

months I would watch for farm sales at which I might be able to buy a plow, harrows and several other required articles at a reasonable price. I consider that it would pay to buy some of the machinery required at some farm sale, because I have seen lots of machines sold at sacrifice prices many a time, and these could be economically used by the young man just starting on a farm for himself.

Before work could be commenced, however, a team of horses would be necessary, and as soon as I had purchased these, as well as harness and a wagon, I would purchase the required horse feed for the summer and the seed grain for the twenty acres broken, and get both feed and seed drawn to the place before it was time to commence work on the land. A sufficient supply of fuel for the first while could be obtained from the creek and bluffs near at hand, thus saving additional expense.

After having completed all the preparations for spring work, and having got settled on the place, I would proceed as soon as conditions would permit to crop the 20 acres already broken. Five acres of this I would put in wheat and fifteen in oats. The cropping would take but a short time, and as soon after this was finished as possible, I would hire a steam plow to come on and do the breaking. I would hire out with the team to work by the day at whatever I could get that was profitable. There is, however, plenty of work to do on the roads and for other farmers in the district at this season of the year. The steam plow could break up the entire area during the summer; that would be about 280 acres, 20 acres being allowed for the slough, the creek and the area uncropped around the buildings.

There is always considerable hay in the slough; this I would put up in the early part of July, and also any that might be found around the creek. It could be done without purchasing any extra machinery for the purpose, by changing work with some of the neighbors, and thus getting the loan of their haying tools to do the work. It would be folly to go to the expense of purchasing a mower and rake the first year to put up the little bit of hay to be found on the place, especially with such a limited amount of capital at my disposal.

The breaking would be fit to

BULBS

Winter Fragrance and Spring Loveliness
**TULIPS, HYACINTHS, NARCISSI,
 CHINESE SACRED LILY, SCILLA
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These Bulbs are for Fall and Early Winter planting—they cannot be obtained in the Spring.

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 CANADA'S GREATEST SEED HOUSE**

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DEMPSTER AND HOWELL WELL AUGERS bore Wells from 12 to 36 inches in diameter, and from 100 to 350 feet deep. Write for our illustrated Booklets and our special proposition so as to get into this money-making business quick. The demand for first-class Wells in all parts of the West is now very great, and steadily increasing. Write us to-day.

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AUSTIN
 Well Digging and
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Rock Drilling Hydraulic Jetting or Hydraulic Rotary Machines to drill any depth in any formation. Operated by steam or gasoline engines or horse power.

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 Cure them with
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These Famous and Reliable Vet. Remedies Sold by all dealers:—

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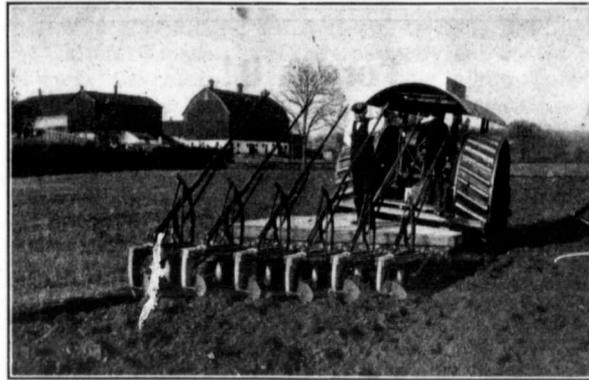
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St. John's Condition Powders.	Dr. Clark's Horse Collie Cure
Dr. Clark's Chill and Fever Cure.	Dr. Clark's Lung and Hoarse Cure.
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GOOD FARMERS APPRECIATE A GOOD POWER PLOW

Consequently many hundreds of our Engine Gang have been placed in Western Canada where they are adding laurels to MASSEY-HARRIS fame.

The only Engine Gang in the world with Self-levelling bottoms.



One man can operate. No tedious adjustments. One movement of lever to plow deeper or shallower.

MASSEY-HARRIS AUTOMATIC SELF-LEVELLING ENGINE GANG PLOW

ASK OUR LOCAL AGENT TO EXPLAIN OUR ENGINE GANG TO YOU

disc early in July, and for this purpose I would purchase two more horses, and harness for them, and commence discing as soon as the hay was all put up. The discing would be continued until the grain was about ready to cut, and then I would change work with one of my neighbors again, and thus get the use of a binder to cut the grain. By this means I would be saved the expense of buying a binder the first year for such a small crop. After stooking the grain, I would go ahead and disc until I could get it threshed, and after threshing I would resume the discing again, and stay working on the breaking until I had it all thoroughly disced and harrowed. This done, there would still be about a month before the cold weather that I would work out with my teams at threshing and plowing.

The preparations for winter and the work during the winter are not very difficult, because there is not a great deal to do, anyway on the average Manitoba farm in the winter, unless a large number of stock is kept. But, during the early winter, I would get up sufficient fuel and other necessities to make things as comfortable as possible during the winter. I would subscribe to some of the best agricultural publications, such as the leading

farm machinery paper, and some of the leading live stock and farm journals, and I would spend a great deal of my time during the winter in study of agricultural or other subjects in which I was interested.

I would keep an accurate set of books on the farm, and by this means I would easily know my income and expenditure. The account of my expenses and income for the first years appears as follows:—

EXPENSE ACCOUNT.

Stable 16 x 24	\$ 80
Shanty 12 x 16	80
Feed for horses (600 bus. oats at 35c.)	210
Feed for horses (4 tons of hay \$8 per ton.)	32
Team of horses and harness	500
Plow	10
Harrow	10
Disc Harrow	40
Second hand wagon	50
Seed wheat, (8 bus. at \$1.)	8
Seed oats, (30 bus. at 40c.)	12
Plowing (280 acres at \$3 per acres)	840
Team and horses and harness	500
Twine	5
Granary 10 x 12	40
Living Expenses	7.00
Interest on money due on farm 6 per cent.	300
Miscellaneous	50
Total expenditure	\$2,967

CASH INCOME, FIRST YEAR.

50 days work with team (\$4 a day)	\$200.00
20 tons of hay at \$5	100.00
125 bus. of wheat at 90c.	112.50
700 bus. of oats at 40c.	280.00

Work with teams (\$7 per day 45 days)	280.00
Total income	\$972.50
Cash on hand at beginning	\$2,000.00
Total Cash	\$2,972.50
Total cash income and \$2,000 on hand	\$2,972.50
Total Expenditure	2,967.00
Balance on hand	\$5.50

From the above account you will see that I have on hand \$5.50 after all expenses have been settled. There will be a few things enter into the system that can not be placed in the account But for good average conditions, the account is quite within reason.

During the latter part of the winter I would get seed wheat, draw it home and get it cleaned and prepared to sow, also get a supply of feed for the horses for summer use. A seed drill would be required, and I would purchase this, have it home and ready to use when spring opened. More force would be required to put in the crop, so I would purchase four more horses, and then hire a man to drive them. I would hire a man and his wife if possible, so that we would have some one to do the cooking. This would call for enlargement of my house, but this could be quickly and easily done in the spring before work commenced.

With a force of eight horses and a man to help me, I would proceed with the second season's work as soon as conditions would permit. Two hundred and fifty acres of the land would be put in wheat and the remaining fifty in oats. When the land had all been cropped and thoroughly harrowed, I would put the man out to work at road work, plowing for neighbors, and any other work that I could get. In the meantime I would put in a garden (some potatoes and other vegetables), fence a yard around the buildings, and make a small run for my horses. I would endeavor to have at least two mares with foals, and they would, at this time, be running on pasture. After getting things in order around the place, I would plant some trees for windbreaks and ornamentation. The man would be kept doing as much outside work as possible until haying time, when I would take him off the work and then we would put up the hay.

The season would now be far enough advanced to tell what the crop was going to be, and, providing the crop was all right, I would buy a binder and build sufficient granary room to hold the grain. The cutting of the grain could be done rapidly enough with one binder, by

Continued on page 56



"Everything Begins and Ends with the Soil"

OCT. 1912

THE CANADIAN THRESHERMAN AND FARMER

CANADA'S LEADING AGRICULTURAL MAGAZINE

PUBLISHED MONTHLY BY

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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.

WE KNOW WHERE WE ARE NOW and can once again plan a bit ahead. By the time this issue is in the hands of our readers all speculation on the season's crop will be over, except the marketing of it. Every one will know definitely whether the elements have left him anything to collect or sell, but from the outlook, as we write, it is probably the case that Western Canada holds somewhere, in prime condition or perhaps slightly out of condition, by far away the biggest and the most evenly graded crop of any year in Canada's record of wheat raising.

YOU MAY BE DELIGHTED or you may feel disgusted with your "luck." You may have been successful beyond your expectations or your most reasonable hopes may have been dissipated long before you had a ripened head of grain in your fields. In any case **FORGET IT** now. This is not the day on which a single dollar can be realized by sitting down to a drivelling admiration of any past attainment far less to a senseless repining on anything

that has come your way in a cup of bitterness. It cannot return. Wisely improve the present, which is the only bit of time we can handle.

"**THE MAN OF NOBLE PARTS.**" said Sir Thomas Moore three and a half centuries ago, "is the man who converts all occurrences into experience, between which experience and his reason there is marriage, and the outcome are his actions." You have had a run of bad luck, you say. How much of it was brought about by your own neglect, by that insidious sin of procrastination? How much was due to that ordinary, flat-footed human stupidity which can not or will not put two and two together and forge into a solid **EXPERIENCE** the common occurrences of the season? It will require no serious effort of the discriminating faculty to separate them from the losses and crosses against which no human provision could have been made.

DON'T NURSE YOUR REGRETS. Forget them and the cause of them except in so far as it will enable you to give the same mistakes and shortcomings a wide berth for all time to come. A few more weeks and the land will be locked up in the grip of the great annual freeze. But the great "Seeding time" of productive thought is just while all life is held in winter quarters. The next few months of apparent idleness may be made the red letter opportunity of your lifetime. We heard a preacher say the other day that all the great industrial successes had been reached by men who at certain periods appeared to be either asleep or mouthing.

ONE HOUR OF COOL THOUGHT is worth a week of purposeless experiments conducted at a white heat. What a sinful waste of good steam is let off by the man who is always "sizzling" at his job—who has been crowded on to it by the accumulation of neglect behind him! The sum total of 1912 is not that a "late season" accounted for much of the crop that was not in the stook before the rains came but that a very large percentage of the unfortunates who had a green crop when others were cutting well ripened grain were late men.

IN OUR BACK YARD we have a crop of tomatoes, sweet peas and parsley. The tomatoes grew plenty of foliage and a decent crop of—tomatoes, but they are now as green as the early foliage.

Forget It!

The sweet pea hulms shot up to a height of six or seven feet but no one has yet seen so much as a button-hole, while the parsley is like a "week's growth" on a man who shaves when the spirit moves him. The seedman is getting the blame, but the fact is that if the seeds had been sown by an archangel there would have been no other result. They were sown in the face of all natural law—they were not sown at "seeding time" but a full month behind that priceless moment in the growing period of our western hemisphere.

YOU ARE YOUR OWN BOSS, Mr. Farmer, or ought to be if any able-bodied man is entitled to hold that privilege. The "luck" is not always at your disposal but the playing of the game is. It is the simplest of all games—once you know it—only it offers not a single loop-hole for letting up while the game is on. Nature is very kind, reasonable, indulgent even, but there is one point on which she is inexorable—discourteous it would seem—and that is she will not wait for any laggard. Time, to her is worth all the wealth of Canada, which is only after all as a fly-speck to the broad acres of the Dominion to her great fields of operations. She has other things to keep in mind than our back yard, other interests to keep faith with than our belated little crop.

HAVE YOU THE EQUIPMENT to do your part in this co-partnery with Nature? You have acquired a section or one solid square mile of arable land. Do you expect to come out on top in the end if you are shaping to "cultivate" all this with two teams and a spare buggy horse? It is not to be done any more than you can do justice to a quarter section with a spade and a borrowed harrow. This may seem a ridiculous suggestion but it is positively a complete illustration of the position of men we actually know who are whining today because they haven't been able to make a harvest worth a song. They are a species of land gluttons who are attempting to digest more land than they even have teeth to chew and we close with this homely advice: Get rid of all you cannot handle with the means at your command, or get by some means, any honest means, the equipment that will at least give the assurance that your part will be fulfilled, come what may from the act of God. To get a crop of anything requires first and before all else that the soil that is to nourish it must be **DONE WELL AND DONE TO TIME.**

MISFORTUNE CUTS DEEPLY at the moment of impact but it's a wound that rapidly heals when the blow is aerated by a jovial spirit. When the blow has fallen, it is never a bad idea to seek oblivion in the life story of some fellow mortal who had to carry a far more galling load of woe. These "confessions" are the healthiest bits of all our national biography and they are as plentiful and as ready to hand as any stimulant or anodyne in the drug stores. They usually "do the trick" even in the case of the habitually morbid. To the naturally cheerful disposition their effect is instantaneous and they never by any chance leave a poisonous sediment. So if luck has not been kind to you at this time, whether it has been self-inflicted or come in spite of our best efforts—**FORGET IT AND GO AHEAD!**

OUR GUARANTEE

No advertisement is allowed in our columns until we are satisfied that the advertiser is absolutely reliable and that any subscriber can safely do business with him. If any subscriber is defrauded E. H. Heath Co., Ltd. will make good the loss resulting therefrom, if the event takes place within 30 days of date advertisement appeared, and complaint be made to us in writing with proofs, not later than ten days after its occurring, and provided, also, the subscriber in writing to the advertiser, stated that his advertisement was seen in "THE CANADIAN THRESHERMAN AND FARMER." Be careful when writing an advertiser to say that you saw the advertisement in "THE CANADIAN THRESHERMAN AND FARMER."

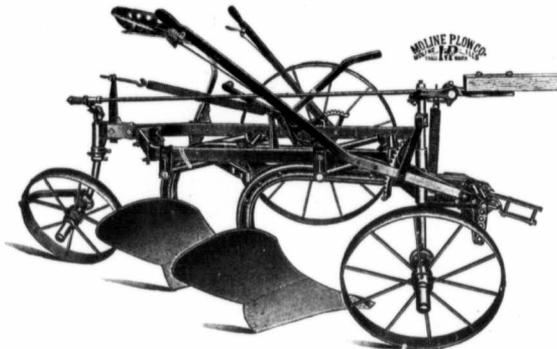
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The Moline Foot Lift Sulky and Gang Plows are the very last development in Agricultural Implements, specially designed and constructed for the rough and tough work of Western Canada. They are perfectly adapted to perfect plowing, and while doing uniformly splendid work, they mean an immense saving in human flesh, and there is not a plow on the market of greater durability or that is so easily operated.

Why?

Because the makers, realizing from actual and costly experience in the field that you can't monkey with Canadian Gumbo, have made a plow on a plan that the worst "excavating" job on earth cannot overset.

Acme Steel hardened Shares warranted not to break under any condition where plowing for crop is being done.



Why?

Because this plow, while it is of the most attractive design, is constructed in every detail of the highest grade material with a reinforced strength at parts which are ordinarily weak in other makes and court disaster from the beginning.

Acme Steel hardened Shares warranted not to break under any condition where plowing for crop is being done.

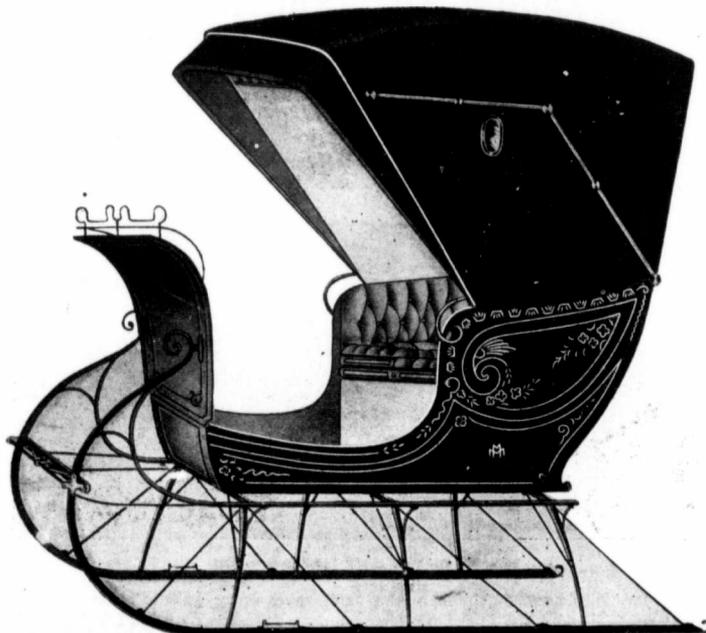
THE MOLINE PLOWS are of the double bail style with direct beam hitch. When raised by the foot, the frame is automatically leveled. This feature has never before been successfully accomplished on a foot lift and is of the utmost convenience to the operator. Write for complete illustrated literature.

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THE Glengarry

meets the last desire for creature comfort, elegance and value in winter travelling on the Prairie trail.

It is the very last word in style, construction, durability and finish. As a top cutter it has made its name of the **Prairie Monarch** by the enthusiastic appreciation of its merits every purchaser has continued to bestow since he first took his seat in it.



THE Glengarry

The "Prairie Monarch" the latest addition to the "Glengarry" line has a closed top with wide extension hood and inside levers.

Can be furnished with storm boards if desired.

Most comfortable vehicle made for winter travelling and it is the most classy article of its kind on the market at anything like the money.

Write us a postal at once for detailed catalog. It will pay you.

Canadian Moline Plow Co., Winnipeg, Man.

Branches: Regina, Calgary, Edmonton

JANESVILLE

THE QUALITY LINE

Wins National Plowing Match at Wheatland, Ill. Wm. Fairweather takes Sweepstakes Prize for 6th time with Janesville. We also took 10 out of 14 possible prizes at match. No other Plow Bottom can do such work as Janesville. Only Plow built especially for Canadian conditions which has met with permanent success.

The Champion Dreadnought Plow of the World. Goes in and out of the ground point first — levels itself automatically — same action as found in walking plow — any boy able to drive, can handle Janesville Driving Plows. Considered by experts the best and most satisfactory horse plow sold in Canada.



Get our proposition

JOHN WATSON MFG. COMPANY (Sales Agents) WINNIPEG

THE JANESVILLE MACHINE COMPANY, JANESVILLE, WIS., U.S.A.

The Big Four School of Gas Tractoneering will open Monday, November 11th, at the Big Four Tractor works of the Emerson-Brantingham Company at Minneapolis. This is the fourth season of practical instruction in work that means much to our agricultural production. Farm power operators realize the importance of preparing men for this field, as the results accomplished will be largely due to their efforts.

Rapid increase in population and the necessity for increase in food production mean better farming on the land now under cultivation, and the reclaiming of every acre possible. The producers on the farm must supply their own foodstuffs and also those for a population several times as great, not on the farm. The farm tractor means a powerful factor to till more land, to raise more crops, to feed more people. It means greater possibilities for work from the hands of the man whose capacity for production was formerly limited by the number of horses that he could handle conveniently. Think what can be done by the man who intelligently operates a gas traction engine—a machine that

TRAINING THE TRACTIONEER

Emerson-Brantingham Company announces opening of the Big Four School of Gas Tractoneering

can do the work of thirty to sixty horses and work both day and night if necessary.

The possibilities of traction

tractor pays big with a man at the helm who knows how and keeps it on the move, handles repairs and adjustments quickly,

engine owner. Several factories maintain a squad of 50 to 100 traction experts, who start the new engines on the farms an instruct the owner in their care and operation. Good men have been hard to find, and farmers often hire the experts who come with their machines, and pay them larger salaries as an inducement to stay. In the North-West, tractioneers receive \$100 to \$200 per month.

It was the need of such experienced help, together with the rapidly increasing demand from owners for a better and more thorough understanding of the construction and mechanical features of the Big Four that led to the opening of the school at Minneapolis. Here the owners of engines, their sons or engineers, and the prospective purchasers may learn the how and the why of the gas tractor. Practical laboratory work in shop and field is the slogan of this school, to train men to know the engine thoroughly, to operate it properly and to handle the problems that arise in the field. The factory with its many departments and experimental grounds affords good opportunity for such work.



Students at Gas Traction School of Engineering 1912.

farming depend on the man who is to handle the machine—the tractioneer. These men are not simply stationary engineers, but practical common-sense farmers, having a thorough knowledge of their engine and an all-round ability to handle every job that goes with power farming. The

and leaves in the wake of his machine a big streak of work well done.

There will probably be only one man fitted for such work this year for every dozen engines that go out from the factories, and the need of competent men worries the manufacturer as well as the



More Work – Better Work At Lower Cost

THAT'S the enviable record the Aultman-Taylor 30-60 Gas Tractor is making at actual, every-day, hard work on farms all over the United States and Canada. THAT'S what is shown by the Official Report of the Winnipeg Motor Contest. The remarkable performance of this four-cylinder tractor in winning **Gold** and **Silver Medals** and **establishing two new World's Records** simply produces more absolute proof that power farming can be done **best** and **cheapest** with

AN AULTMAN-TAYLOR 30 - 60 GAS TRACTOR

YOUR next year's crop will depend to a great extent upon the acreage turned over this fall. There should be no question in your mind but that the Aultman-Taylor 30-60 is the best tractor for plowing service. The plowing record made by this tractor at Winnipeg furnishes real, live evidence of its superiority for plowing purposes: Plowed 20% more acres per hour, and plowed each acre at lower consumption of fuel, than next nearest competitor in either Gasoline or Kerosene Class. Hundreds of letters from proud owners of these tractors, giving a detailed account of work accomplished, furnish still further evidence of its overwhelming superiority.

HERE'S the point: **The Aultman-Taylor makes good every time—delivers maximum efficiency at minimum cost**—is always on the job—can be run day and night if desired. The sun is never too hot. The season never too short—never tires. Animal power is too costly and uncertain. You know not what minute an epidemic may kill off your horses, such as is the case at present in Kansas. Can you afford to take the chances of these uncertainties when you can procure a tractor that will do your work **quicker, cheaper and better** and is **more reliable** than animal power? Then too, it costs you nothing when not working, while it is a fact, substantiated by Government reports, that it requires about one-fourth

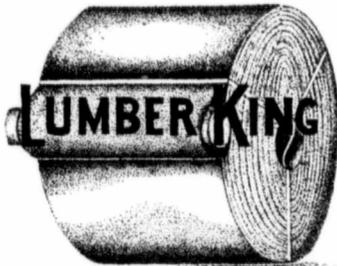
of the products of the farm annually to maintain the work animals. Its simple and direct transmission; its high drivers; its ease of manipulation; its superior design and construction; its fuel economy and its steady, never-failing power make it by far the best tractor built for all farm power purposes. Think this matter over—go to our nearest Branch House and look this tractor over—see it work—satisfy yourself of its efficiency—talk the matter over with our Branch Manager and learn the many superior features of this tractor, or if not convenient for you to do this, drop us a line and we'll send you interesting literature. Don't delay. Get in communication with us at once.

WRITE FOR CATALOG of A. & T. Steam Traction and Portable Engines; "New Century" Separators, "Matchless" Clover and Alfalfa Hullers, Bean Threshers and Saw Mills.

The Aultman & Taylor Machinery Co.
MANSFIELD, OHIO

Branches: Minneapolis, Minn.; Calgary, Alta.; Regina, Sask., Canada

Good Engine -- Good Separator Both Standing Idle -- WHY?



Your Thresher Belt has given out right in the middle of a job. Had it been a "Lumber King" or "Star"

it would have kept your outfit running at full capacity day and night if you so desired. This is the season when you need the BEST THRESHER BELT that money can buy. You also want that new belt QUICKLY. The time is too short to take any chances. See your nearest dealer and ask him for either of the above brands, and if he cannot supply you—wire us. Our entire force know that you want your belt quickly and they act accordingly.

Don't forget that any Thresher Company will supply you with either of these brands—"Lumber King" or "Star"—if you insist.

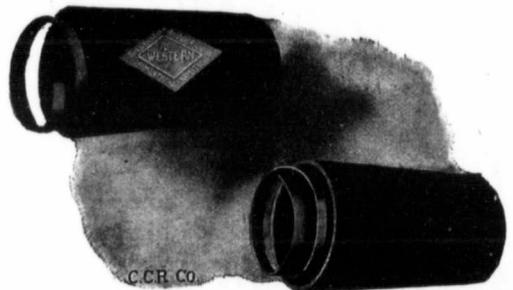
Leaky Suction Hose Are Bad in Cold Weather

We are the originators of the brand of Suction Hose illustrated below. It was made for the West to suit Western conditions. There is nothing like it for wear and service. Don't monkey and fret with that old hose, but get a new one and be sure you get either the "Canadian," "Dominion," "Western" or "J.C." brand. They won't leak. They are made to do the work under all conditions of weather.

And you've got the best that money and skill can make.

**CANADIAN CONSOLIDATED
RUBBER COMPANY Limited**
WINNIPEG

Calgary Edmonton Saskatoon Regina



Five courses are given, each lasting three weeks. Scholarships are limited to industrious men who wish to make the most of the opportunity. Application blanks are sent on request, and if one is accepted and enrolled, he receives a membership card which entitles the holder to one of the three-week courses.

Lectures are given each morning by the instructor, assisted from time to time by men well known in the engineering profession. The theory of gas engines and other necessary technical knowledge is handled in as simple and comprehensive a manner as possible.

Special attention is given to a thorough and complete understanding of the four-cycle, four-cylinder vertical motor. Students are required to take notes on all important points of construction, care and operation of the engine. Frequent reviews are given to force these points on the student's memory. Valuable books and bulletins that have been published by the company are furnished free to students.

The afternoons are given to practical work in every department in order to drive home the points of the morning lectures.

In the evening the students are divided into groups, and the foremen in the assembling and erecting departments give their attention to the respective squads. All day Saturday is spent in the testing room, which leads to a thorough knowledge of the motor.

The details of the field work

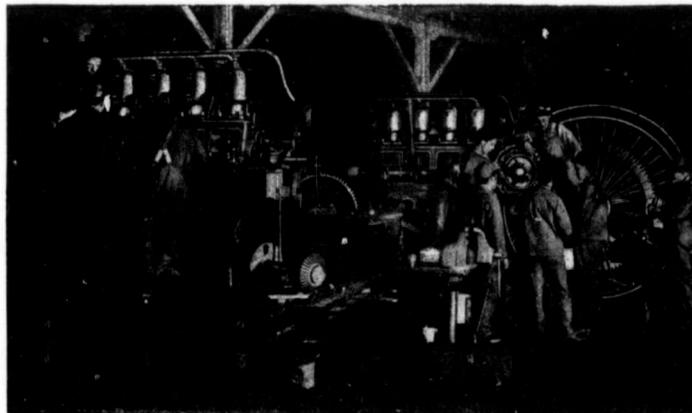
and is only for earnest, industrious men who wish to learn and give their undivided attention to the work of the course while there.

Convenient arrangements can be made for board and room near the factory, which is centrally lo-

half an hour when you "get going" than in two hours of half-hearted effort. Have an aim and purpose in every move. Strike your gait and keep it. Some task looks big. You wonder just how big it is. In a half-hearted way you make a start. No progress is made and you stop thinking to start on the morrow, when you can get a good start.

"Get Going!" Start right. Start with a determination to finish. In thirty minutes you can see progress. In two hours the task is finished, done right. The successful man "gets going" the day he starts to work. He doesn't wait until he gets a man's salary before he does a man's work. The successful man "gets going" the minute he reaches the office. He doesn't wait until he finishes his cigar, but throws it away and earns enough money in the extra time to buy a handful of fresh ones. "Get Going!"—Loose Leaf Sayings.

It will be a grand thing when our men of science really know everything they talk about, because then they will be able to tell us what it all means in plain English.—Sir George Reid.



Students at Work. Gas Traction School of Engineering 1912.

of plowing, seeding and harvesting receive attention, and such points as hitches for farm implements and arrangement of work are gone into carefully. Brake and dynamometer tests are made to cover ground completely.

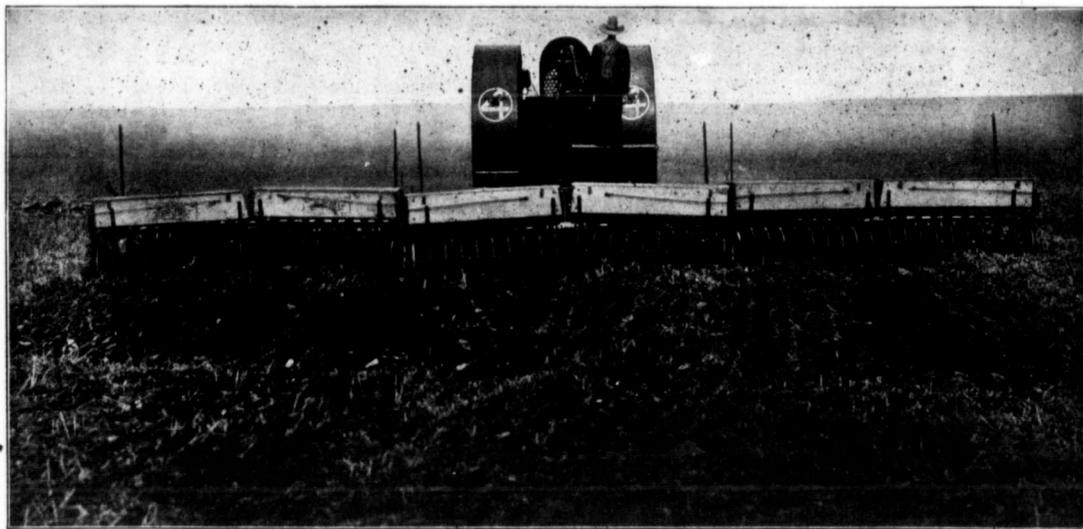
This school is maintained by the company at great expense,

cated between Minneapolis and St. Paul.

Last year more than 500 were enrolled. Surely great opportunities lie before the farmer of today.

GET GOING.

More can be accomplished in



A Great Combination

The Big Four "30," three 10-foot Emerson No. 60 Engine Disc Harrows — and one man to run both. A perfect seed bed thirty feet wide and twenty miles long can be doubled-disked in one day with this outfit, which does the work of at least thirty-two horses and eight men. No wonder up-to-date farmers everywhere are putting their seed beds in perfect condition for spring with this work-saving and result-producing combination.

The Big Four "30's" remarkable efficiency, economy, durability and adaptability are due in large measure to the fact that it was designed from the ground up especially as a farm tractor and was not adapted from a stationary gasoline engine. The Emerson No. 60 Engine Disc Harrow's unequalled record of efficiency in the field has been due to the same cause. It was designed especially for tractor use only, not adapted from the ordinary horse harrow. Both the Big Four "30" and the Emerson Engine Disc Harrow are the work of specialists who have spent years in practical work and experimenting with tractors and tractor implements. Working together they represent the maximum of efficiency and the minimum of labor and expense.

The Emerson Engine Disc Harrow is strong, durable and easily managed. The front section is set so the discs throw out while the rear section discs throw in, thus the 40 16-inch

discs thoroughly pulverize the soil—preparing a perfect seed bed with one operation. Setting all the discs straight makes a good sub-surface packer.

The disc blades are one-third heavier than those on a horse disc harrow, and the disc spools are twice as heavy, with wide flanges to reinforce the discs. Axles are one inch square instead of $\frac{1}{2}$ inch as used on horse discs, and there are four bearings on each gang in place of three on the horse discs. The levers are heavier than on the horse discs and are worked on the outside end of the gangs, giving the operator more leverage than in the center lever construction. The draw bar is fastened to the frame with a clevis around the end of the bar, and the front gangs are connected with the draw bar at both outside and inside ends. The platform is divided in the center and fastened with six U bolts so the discs can conform to their work properly. The levers are so arranged that the rear section can be set at a greater or lesser angle than the front section. At the same time the operator of one lever changes the angle of both front and rear sections on one side.

Rock, sod or sacks of sand or dirt may be piled on the weight pan between the front and rear sections, where there is room for a ton of sod.

The New Emerson Force Feed Seeder

is used on the rear section for sowing all kinds of small grains. By a graduated adjusting device a certain number of bushels of seed per acre are insured and every grain is planted at an even depth and thoroughly covered.

The seed spout extends from the seed box downward in front of the axle, thence down on the back side of the disc blade, in such a manner that trash cannot clog, nor stones or stumps injure the spout. Each disc blade cuts an oval bottom furrow about an inch or an inch and a half in width. In this furrow the seed spout deposits the seed. It is not all piled up, one seed on top of another, as is so frequently the case with a shoe drill, but the seed as it falls in this furrow scatters itself over the bottom of the furrow to the extent of about one and one-half inches in width. Then the next disc covers this seed at a uniform depth with the earth that it has taken to make the seed bed for the seed from the neighboring seed spout.

On the forward side of each seed spout is an opening or shutter device which may be turned by loosening a thumb nut, and the seed scattered broadcast in front of the discs instead of being drilled.

By attaching an ordinary tooth harrow behind this machine, the required dust mulch is made, and the field left in fine shape for the harvester; or where it is better practice to pack the seed bed, the common home-made plank made of three oak planks 2 inches thick, 12 inches wide, and 8 or 10 feet long, an edge of one lapped on top and nailed fast to the edge of the other, drawn behind the disc harrow, will crush all clods, pack the soil and leave a little fine mulch on top, or, if desired, both the plank and the tooth harrow could be used.

This machine is also make 8 feet wide, with 32 16-inch disc blades.

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School of Gas Tractioneering opens Nov. 11. at Minneapolis. Write Big Four Tractor Works, Minneapolis, Minn. for particulars.

Course in Gas Engineering

Conducted By D. O. BARRETT.

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

As one studies the results of the motor contest year after year, he is duly impressed by two facts, the greater uniformity and consistency of the figures which are obtained therefrom. There is no doubt but that some of the figures are incorrect and vary somewhat widely from the actual results, yet as the conditions under which the tests are made are being gradually improved, the undesirable features are being eliminated. More accurate results are being obtained, as may be seen by looking over the results for the last three years. The tests this year were conducted under much better conditions than in 1911, as the rain and wind caused considerable trouble throughout the brake tests. Another great improvement was in the method of weighing the fuel.

There are numerous claims that the tests do not properly bring out the various points, which will be of the most vital interest to the purchasers. In some respects this may be so, as it is impossible to so conduct a test of this character and bring out all the points most suitable to the farmer and the manufacturer alike. However, under any circumstance, the purchaser is the one who profits directly by the results, since the manufacturers are only too anxious to incorporate any changes in their designs which shall improve the general quality of their products, and, if possible, bring home the "gold medal." There were many instances of these improvements in the machines competing this year, and many of them were directly responsible for the better results obtained.

This year there were twenty competing tractors in the internal combustion classes, as compared with twenty-four last year, there being the same number, eight, in the kerosene class. The twenty tractors represented nine firms, as against eleven last year, so there was a slight falling off in the number of competitors. There were, however, not the same number of "repeaters" this year; that is, the same rig entered in two different classes. The small gasoline class was absent this year, while those using kerosene were divided into two classes. This gave a class for both large and small engines, using either fuel. It would have been much more interesting if two or three of the competing rigs which were entered last year

had again been in evidence in 1912, as results would have been obtained by which the growth and progress of the industry could be more closely watched.

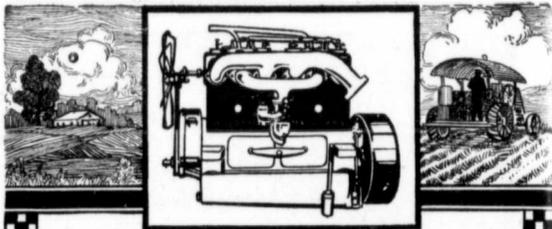
In class B there were four rigs of the opposed type of engine and one twin cylinder. In class C there were four 4-cylinder engines, three vertical and one horizontal, two being set lengthwise and driving through bevel gears and two using only spur gears. There were also two of the twin type and one opposed.

In class D two were single cylinder and two opposed, and in class E two twin, one 4-cylinder and one opposed. It is impossible to get any idea as to the relative merits or popularity of these different types, as compared with one another, for we find a gold medal going to each type, as well as a silver medal. The single cylinder and the opposed type are built mainly in the smaller powers, with one exception developing not over 35 brake horse power, the larger sizes being represented by the twin cylinder and the 4-cylinder type.

Looking at column "A" we find that the opposed engines run in weight from 10,000 to 14,000 pounds; the 4-cylinder from 17,500 to 23,000, the twin from 22,000 to 27,000. The percentage of total weight on the drivers was a little higher than last year, namely 74.7 per cent., as compared with 70 per cent. One reason for this is that the weights were not given by several of the contestants last year so as to be available for these results.

In the "weight per maximum brake horse power" column, we find the gold medal winner this year having 313 pounds, as against the winner last year having 300 pounds. The average this year was 389 pounds, as against 376 last year. This might indicate one of two things, that the rigs are being made slightly heavier, or that the maximum powers developed this year were not as great as last year, and this latter seems to be true in one or two cases. For instance, a rig which last year developed nearly 52 horse power, this year developed only 40.6. The writer contends that in determining the maximum brake horse power, the engine should be loaded by the judges, regardless of the operator, right down to the point where it would just hold its speed and no more.

Continued on page 57



Tractor Efficiency is a Matter of Motor Efficiency

Tractor service depends almost wholly on the motor. No tractor can be efficient unless the motor is efficient.

Any tractor equipped with the **Waukesha Long Stroke Tractor Motor** is efficient because the motor is efficient.

The **Waukesha Tractor Motor** is the result of years of study in tractor requirements. It has the flexibility and power to meet every demand of a tractor. Reliable at all times. Its unusually long stroke increases tractor efficiency by delivering more and steady power at less fuel cost. The highest priced automobiles and trucks are now using the long stroke motor because of its increased efficiency—get this high-priced efficiency in your tractor—it cost you no more than the average tractor.

The **Waukesha Crankshaft** has a tensile strength of 70 tons to the square inch. The Bearings outwear 3 of the so-called "best." The crankshaft and bearing metals are our own secret processes—you can't get this strength in any other motor. All parts of the **Waukesha** are unusually large. That reduces pressure per square inch and so reduces the wear.

The fuel economy of the **Waukesha** is remarkable—burns only 1 pint of kerosene per horse-power per hour; $\frac{3}{4}$ of a pint of gasoline. That's cheaper than the cost of feeding your best team of horses.

There are tractor manufacturers using the **Waukesha** because they want you to get every bit of the tractor efficiency your work demands. Write us for a list of these manufacturers and the facts regarding the wonderful **Waukesha Motor**. Tell us the size of your farm and your requirements of a tractor and we'll advise you as to the right size to buy. Write that letter now.

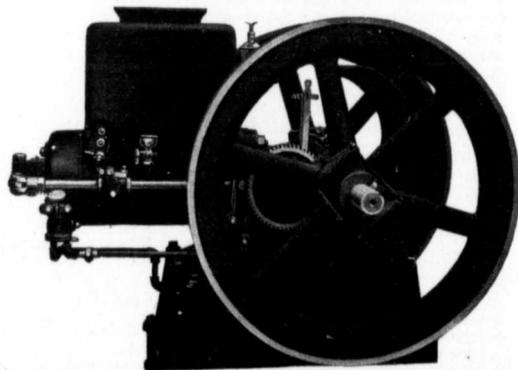
Waukesha Motor Co Second Street **Waukesha, Wis.**

We don't make Tractors, but just efficient Tractor Motors. [1]



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Stationary, Portable and Traction Engines—Always in Stock



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Our Full Line Includes—Fuller & Johnson repairs; repairs for the Wilkinson Plow Line; Shares for all kinds of Plows at reasonable prices, wholesale and retail. Engines for Pumping, Churning, Crushing, Grain Cleaning, Sowing, Threshing and Running Washing Machines.

WE HANDLE EVERY KNOWN FARM REQUISITE.

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THE ORIGINAL FARMERS' COMPANY
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Canadian Stover Gasoline Engine Co., Brandon: Please send me Catalogue of your Engines and Sundries, as advertised in the "Canadian Thresherman and Farmer."

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"HE FARMS WITH IHC TRACTORS"

When newspaper reports of the success of Canadian farmers are published in The States, one invariable comment on the methods followed is "He farms with traction engines." Out of a dozen farmers thus mentioned recently, nine are using I H C tractors. Nine

out of twelve successful men, taken at random, are I H C tractor farmers. That may not be proof of the superiority of I H C machines, but we are willing that Canadian farmers shall draw their own conclusions.

I H C KEROSENE-GASOLINE TRACTORS

are popular because they are dependable. When you own an I H C tractor you have power on tap whenever you want it. It furnishes reliable power for plowing, harrowing, seeding, harvesting, threshing, hauling, road making, irrigating and other pumping, and for a hundred and one other purposes on the farm.

useful and economical on both. The sizes are 12, 15, 20, 25, and 45-horse power. The I H C engine line also includes portable, skidded and stationary engines in 1 to 50-horse power sizes. The I H C local agent or nearest branch house will cheerfully furnish catalogues and full information to any Canadian farmer who wants the aid to success furnished by an I H C kerosene-gasoline tractor. A post card request will do.

Made in sizes for small farms and large, I H C tractors are equally

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WINNIPEG MOTOR CONTEST, 1912

CLASS	ENTRY NUMBER	MAKER'S NAME	CALCULATED RESULTS FROM JUDGES' REPORT																							
			WEIGHTS					PISTON		PRICE		FUEL CONSUMPTION					EFFICIENCY									
			Total Weight lbs.	Weight on Drivers lbs.	Percentage of Total Weight on Drivers	Weight per Max. h.p. lbs.	Weight on Drivers per 1 h.p. lbs.	Weight on Drivers per 1 st of Face, lbs.	Piston Diameter per Max. h.p. Cu. In. per Min.	Piston Diameter per D.I.B. Cu. In. per Min.	Price in Dollars	Price in Winnipeg Dollars	Price in Winnipeg per lb. Total	Price in Winnipeg per lb. Total	Per h.p.-Hr. Imp. Gal.	Per h.p.-Hr. Imp. Gal.	Fuel per Acre Imp. Gal.	Fuel per Day Coal- ^{lb.}	Thermal Eff. per h.p.-2 Hr. Per Cent.	Thermal Eff. per h.p.-2 Hr. Per Cent.	Transmission Eff. D.I.B. h.p. x 100	Speed of Engine in Miles per Hr.	Area per Day of 10 Hrs.	Cost per Day Gas-19 ¹⁶ / ₁₀₀ Gal. Ker-14 ⁵ / ₁₀₀ Gal.	Cost per Acre as Preceding Cents	h.p. 15 Hr. b.h.p. 3 Hr.
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w				
Gasoline	2	Can. Heer.	10000	8000	80.0	470	2.86	333	13155	20620	2700	127.0	27.0	.089	.097	2.95	28.3	21.9	9.4	63.8	1.69	9.60	5.52	57.6	1.08	
	3	Avery	11500	9000	78.3	339	2.87	225	11040	21730	2700	79.7	23.5	.090	.078	2.40	32.2	21.7	10.5	50.8	2.06	13.4	6.26	46.8	1.31	
	4	Case	13000	9000	69.2	370	2.02	225	9945	14910	2440	69.6	18.7	.088	.089	2.35	33.1	22.4	13.9	66.7	1.97	14.1	6.48	45.8	1.00	
	5	G. S. Muir	14140	9400	66.5	412	2.55	196	11505	18290	2600	75.7	18.4	.106	.108	2.45	30.9	18.4	13.8	62.9	2.21	12.6	6.02	47.8	1.02	
	6	Int. Harv.	16400	12400	75.6	372	3.43	282	9650	20800	2900	67.0	17.7	.084	.097	2.70	40.2	23.2	10.0	46.4	2.12	14.9	7.83	52.6	1.25	
	7	Sawyer-Mass.	17510	12650	72.2	431	2.54	211	13015	20990	2800	68.9	16.0	.115	.100	3.33	44.6	17.1	11.1	62.0	1.90	13.4	8.70	64.9	1.25	
	8	Int. Harv.	22000	16300	74.1	349	2.44	339	9110	16810	3200	50.8	14.5	.084	.088	1.91	45.9	23.5	13.7	54.2	1.92	25.6	9.55	37.3	1.12	
	9	Int. Harv.	21500	15250	70.9	353	2.37	318	10350	17545	3200	52.6	14.9	.091	.106	2.96	70.1	21.5	10.0	59.0	2.09	23.7	13.70	57.8	1.23	
	11	Can. Holt.	18800	16300	86.7	353	2.57	...	14590	21615	4725	88.8	25.1	.103	.099	2.19	47.7	19.0	14.8	67.5	2.13	21.8	9.30	42.6	1.18	
	12	Ault.-Taylor	23000	16500	71.7	313	2.33	343	9750	14190	3800	51.8	16.5	.077	.084	1.89	58.2	25.4	15.9	64.2	2.50	30.8	11.33	36.8	1.25	
Gasoline	13	Case	24760	18000	72.7	362	2.34	375	9560	17560	3440	50.3	13.9	.107	.134	2.66	67.3	18.3	10.8	54.5	1.82	25.3	13.13	51.9	1.24	
	15	Diamond	18000	15000	83.3	314	2.04	278	12540	20255	3250	56.7	18.0	.126	.143	2.71	67.5	15.5	10.3	61.9	1.81	24.9	13.15	52.8	1.12	
	1	Can. Heer.	10000	8000	80.0	457	...	333	12865	...	2700	123.0	27.0	.128	.228	...	...	14.5	...	...	...	...	...	...	1.10
	16	Rumely	16275	11310	69.5	440	...	336	10180	16805	2100	56.8	12.9	.158	.166	3.80	50.2	11.8	7.3	60.6	1.90	13.2	7.29	55.2	1.45	
Kerosene	18	Int. Harv.	16500	11713	71.0	570	3.39	244	12340	19220	2700	93.8	16.4	.117	.117	3.06	32.4	15.9	9.4	64.2	2.01	10.6	4.70	44.4	1.13	
	19	Avery	11500	9000	78.3	421	3.10	225	12215	20705	2700	99.0	23.5	.108	.144	4.03	47.5	17.3	5.6	59.0	2.09	11.8	6.90	58.4	0.99	
	21	Int. Harv.	21500	15250	70.9	373	2.31	318	10935	17190	3200	55.5	14.9	.111	.102	3.27	75.9	16.8	8.0	63.8	2.09	23.2	11.00	47.4	1.19	
Kerosene	22	Ault.-Taylor	23000	16500	71.7	376	2.88	343	11895	19215	3800	62.2	16.5	.106	.112	2.73	64.7	17.6	9.7	61.9	2.49	23.7	9.36	39.5	1.13	
	23	Rumely	27600	20000	79.7	361	2.91	333	9240	20530	3400	44.5	12.3	.101	.118	2.33	51.3	18.5	11.1	45.0	1.88	22.0	7.41	33.7	1.49	
24	Case	24760	18000	72.7	353	2.75	375	10065	21235	3440	49.1	13.9	.168	.200	4.13	91.3	11.1	6.0	47.4	1.90	22.1	13.24	59.0	1.32		
STEAM	Class F	25	Case	19275	14875	77.2	304	2.94	413	...	1800	28.4	9.3	1.53
	Class G	26	Case	28530	21830	76.5	306	2.71	455	...	2900	31.8	10.4	1.20
	Class H	27	Case	40460	31560	78.0	280	3.23	438	...	3840	26.8	9.5	1.36
29	Sawyer-Mass.	30850	23140	75.0	311	2.91	386	...	...	3750	37.8	12.1	...	...	...	...	...	...	...	...	...	...	...	...	1.25

Coal-\$8.30 per Ton

Gasoline 18,500; Kerosene 19,500 B.t.u. per lb.

D. O. Barrett, B.S., M.E.

Questions and Answers

For Gas Engine Operators

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

Q. J.W.B. Please state the difference and advantages between a two and a four-cycle engine.

A. The two-cycle engine forces its charge into one side of the cylinder or explosion chamber at the same time or a little after the exhaust gases from the previous explosion are leaving it on the other side;—therefore an explosion at every revolution. Generally the crank case is formed into a tight chamber for the purpose of receiving and compressing the mixture, which is forced through a by-pass into the explosion chamber on cylinder when the piston uncovers the by-pass port at the time the compression of the mixture in the crank case is the highest. The two-cycle is therefore nearly valveless—usually only one valve to admit the fuel air into the crank case—and even this can be eliminated by means of inlet port so designed as to be uncovered at the proper time by the piston. Advantages: Less mechanism, more frequent impulses, steadier motion, more power from same size cylinder, consequently less weight power for power. Disadvantages: Harder to cool, greater liability to crank case explosions or to auto ignition, greater fuel consumption for power developed.

The four-cycle engine takes a charge and compresses it in one revolution and explodes, expands and exhausts it on the next. Consequently one explosion only to every two revolutions on a single cylinder engine, and a more irregular speed and numerous valves and levers; but it is probably more easily handled and controlled by an amateur.

Q. S.D.P. I went out to start my engine the other day and found the suction didn't draw up any gasoline, so I put some in the priming cup, but that wouldn't explode. Everything was right but that. Can you tell me why it didn't draw up gasoline when I cranked my engine. Also when I put it in the priming cup it worked the same. Would like to know what the trouble is, if you can tell me. Does it make any difference what size wire you use on jump spark for running from coil to plugs? What should the speed of a 3011 saw go, engine running at 800 pulley on engine 1611 on saw 5?

A. On a cold, damp morning when the carburetr and cylinder

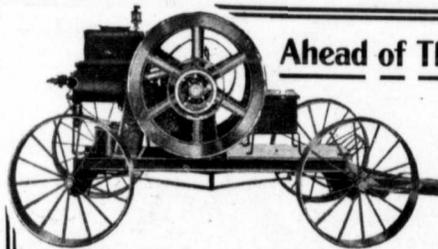
walls are cold, gasoline may be drawn into the cylinder, but the air being so cold, it will not vaporize or mix with it readily, and consequently ignition is doubtful. It is always well to heat some part of the inlet passage, or better, the interior of the cylinder through some port by means of a blow torch. This will cause vaporization and ready ignition.

It is best to use regular jump spark, high tension cord or cable from the jump spark coil to the spark plug on engine.

If there is no belt slippage, your saw would travel 2,560 r.p.m. with engine at 800 r.p.m. drive pulley 16 inches, driven pulley 5 inches.

Q. J.A.B. I have a 6 h.p. engine installed in my shop. The trouble is it labors as hard when running without load as with load or nearly so. The engine is 5½ x 9, has 2¾ in. compression space. What would be the compression in pounds? Is this standard or is it too much space? Have ¼ in. between connecting rod and crank box to lessen compression space, but makes no difference when connected to exhaust pipe. With exhaust pipe disconnected, it makes nine explosions less per minute with the ¼ in., less compression space gets 18 explosions less per minute. The valve and spark are set right. The exhaust pipe is clean.

A. The compression in your engine depends on the construction of the compression chamber, whether it connects with valve or other pockets, and also upon the condition of piston rings, valves, etc., as to their holding qualities. If there are no pockets in the compression chamber, and no leaks, you would have nearly 80 lbs. compression pressure, but a small pocket or two or a slight leak might reduce this way down to 40 or 50 lbs. The space is about right, allowing for ordinary valve pockets. Seems to be some back pressure from the exhaust, but hardly enough to attribute your trouble to it. Are you sure that your exhaust valve is holding tightly? Maybe the exhaust valve seat is cracked. Since you eliminate valve time trouble as well as spark time by saying that they are set all right, we are inclined to believe that you are turning by hand on to the compression stroke. Does it turn hard and rebound when let go, or does it turn easily, and can



Ahead of Them All!

IN
POWER
EFFICIENCY
AND
VALUE

Also in 5 and 6
H. P. Sizes

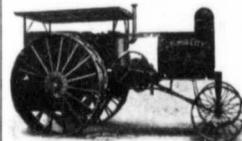
The Gilson 60 Speed Six-Horse Gasoline Engine

SETS AN ENTIRELY NEW STANDARD IN FARM POWER MACHINERY
IN ITS SIMPLICITY, POWER, EFFICIENCY AND PRICE.

This wonderful engine, mounted on truck as illustrated, is of same dimensions as other well known 5 horse power makes. It develops 9 horse power and the price is less or no more than other makes of 4 and 5 horse power and the price of a new Automatic Governor saves one third the fuel necessary in other makes. Positively the best and cheapest engine made. Write for complete illustrated particulars.

Renfrew Machinery Co. Ltd., General Agents, Winnipeg, Man.

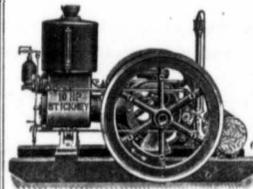
THE FLOUR CITY TRACTOR



still heads the list of Gold Medal Winners. It's the BEST Tractor made for driving Threshing Machinery. Get one to do your Threshing and Fall plowing. Write us for our SPECIAL FALL PRICES and TERMS. They will interest you immensely.

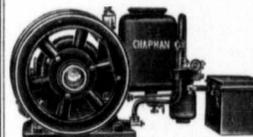
The Stickney Gasoline Engine

Sizes 1½ to 20 H.P.



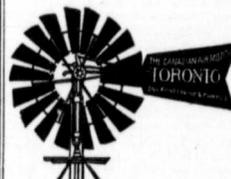
For your Fall and Winter work, the famous STICKNEY GASOLINE ENGINE will give you the best results for the money invested. Thousands of satisfied and enthusiastic users ready to testify that the STICKNEY is the BEST Engine for pumping water, grinding grain, sawing wood, or Threshing Machine.

The New Chapman 2 H.P. Gasoline Engine



The last word in Gasoline Engines. The best Engine of its size made—just what you need for driving your pump and other light work on the farm. The best value for the money ever offered. In some sections, SIX farms, side by side, are using a 2 H.P. Chapman for their pumping, the best evidence you want for their suitability for your work. They are having a tremendous sale, so be sure to get one.

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Pneumatic Pressure Tanks, Pumps, Wood and Steel Tanks, Troughs, Aylmer and Toronto Pumps, Pipe and Fittings, Well Casing. Everything in Water Supply.

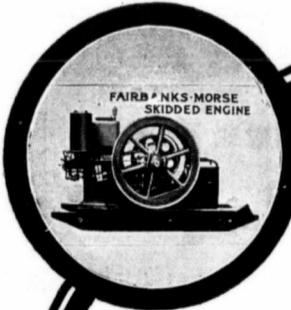
Toronto Plate and Roller, Grain Grinders, Pole Saws, Feed Cutters.

Aylmer, Standard and Truck Pitless Wagon Scales.

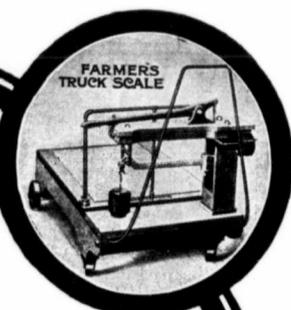
Ontario Wind Engine and Pump Co. Limited

CALGARY WINNIPEG TORONTO MONTREAL

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FARMERS TRUCK SCALE

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This engine has every modern improvement and several patented features found on no other machine on the market. Send for our special engine catalogue, writing branch nearest you.

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Gasoline Engines, all Types, Portable and Stationary, 1 to 500 H.P.
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Hand and Power Pumps for every purpose
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DOMINION PITLESS SCALE



FAIRBANKS-MORSE ECLIPSE PUMPER

THE CANADIAN FAIRBANKS-MORSE CO., LIMITED

WINNIPEG	SASKATOON	CALGARY
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you hear a blowing sound somewhere? Possibly the exhaust valve seat is cracked.

Q. J.H.L. What causes my gasoline engine (an old one) to spit at every explosion at intake? I put on a U pipe to save gasoline. It doesn't throw out gasoline, but blows a whole lot at intake. Air valve seems to shut all right. I understand that too much gasoline might spit, but we must use enough to get the explosion. Why is the air so forcible?—and it gets worse.

A. Your inlet valve is evidently leaking. Possibly the seat is cracked. It is also evident that the gasoline valve does not hold the gasoline, since it supplies it continually and allows a portion in the intake pipe all of the time, which is thrown out when the force of the explosion comes back through the leak in the inlet valve. It is possible that this spitting back is not in connection with the explosion, but results by the opening of the intake valve while there is still some pressure in the cylinder from the previous explosion. The exhaust valve may not open early and long enough to allow all of the exhaust pressure to escape. And when the inlet valve opens it

puffs out to relieve the remainder of pressure in the cylinder.

Q. E.W. (a) What will be the horsepower of a gasoline engine with a piston 6-inch diameter and 6-inch stroke.

(b) How close to the cylinder head should the piston be when at the compression end of the stroke?

(c) What is the rule for calculating the latter? I would like to have you assume such dimensions of the engine, as I have not given them, and that are necessary for the solution of the above question.

A. (a) Assuming that the engine is of the four-cycle type and that its speed is 250 r.p.m., the horsepower that would be delivered at the pulley would, under the best conditions, be 3 h.p.

(b) This distance depends entirely upon the shape of the compression space in the cylinder. If the valve opens directly into the cylinder, this distance should be about two inches.

(c) The general rule is to make the volume of the compression space from one-half to one-fourth that of the piston displacement.

Q. M.W. (a) Will you kindly inform me whether the jump spark has been used with success with stationary gas engines?

(b) If so, does it require a different battery or induction coil than is employed with the make-and-break?

(c) What is the comparative cost of maintenance?

(d) What material is employed for the electrodes?

(e) How often do they have to be cleaned to keep the carbon from bridging across?

A. (a) Yes.

(b) A jump spark requires an induction coil with two windings, usually known as a Ruhmkorff coil. About the same amount of battery power is required as with the make-and-break.

(c) The cost is dependent upon the method of making the spark. With a single break in the primary circuit the cost is less with the jump spark.

(d) An alloy of platinum and iridium.

(e) Usually once a day.

Q. L.B. Which of the following methods of handling the gasoline is the most reliable: The carburetor, the gravity feed, or the pump feed? Which of the three systems is the most used?

A. Each of the three systems mentioned is in use, and is the best for the purpose to which it is applied. The carburetor appears to be the favorite for trac-

tion engines, because it is not seriously affected by a jar. The gravity system is the favorite for launches, and the lift system for stationary engines. The reason of the preference for the lift system in the latter case is because it is practically required by insurance regulations, as they stipulate that the tank shall be underground and at a distance from the engine. We believe that the lift system is that most used.

Cleanliness, fresh air, pure food, and prevention of infection are the keynote of modern medicine.—Sir John Cockburn.

To be happy ourselves is a most effective contribution to the happiness of others.—Lubbock.

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The Carbon Oil Works, Limited
WINNIPEG - MANITOBA

DID YOU EVER MEET IT? THAT GAS ENGINE TROUBLE

To those who are inexperienced in the use of gasoline engines there are a great many things that are confusing. Usually the great trouble is in starting one of these engines, even though the rules are followed. There are three or four prime reasons which prevent an engine from starting: the battery may be out of order; there may be water in the cylinder, the cylinder may be flooded, or the air is too cold and does not permit the proper evaporation of gasoline. If the battery is a source of trouble, the first reason may be because of old age. An old battery may give indications of being strong, while in reality it is not strong enough to produce ignition. To test a battery without a testing meter is an easy matter, but this, of course, does not locate the weak cells, and only gives information concerning the battery as a whole. In testing a battery, disconnect the wires attached to the engine and bring the free ends together. If the battery is worn out, a yellowish colored flame is produced as the two wires come in contact. If the battery is in a healthy condition, there will be a dark blue or greenish flash. Another cause pertaining to the battery might also be found in a loose connection between two cells. The lock nut or thumb screw may be worked loose due to much handling; moving from place to place, if a portable engine is used; or by the vibration of the engine when the battery is attached to the engine skid or bed. Again, a person may find trouble in the leads or wires which connect the battery to the engine. This is usually a broken wire inside of the insulation. When the insulation is broken, such a break is very easily found, but if the insulation is not broken, then it is much more difficult to locate the trouble. A good method to use in discovering this break is to hold the wire between the thumb and forefinger, and with the other hand pull it through slowly. If the wire is moved carefully back and forth, or up and down, as it passes between the fingers, the break will be easily detected.

If, after properly inspecting the battery and all its connections, everything is found satisfactory, it would be well to investigate the igniter. There are times when water forms in the cylinder and collects upon the igniter points. This acts as a continuous

connection between the two points, and the electric current is not broken when the contact is broken. Lubricating oil sometimes acts in the same way when an excess is used. It takes but a moment to remove the igniter, and if such obstruction is found, it is easily remedied. If an excess of water is found in the cylinder when the igniter is removed, it will be necessary to remove the cylinder head and re-pack in order to prevent such a leakage. Another case which might be cited at this point is the over-charging of the in-going air, which often results in what is termed flooding, that is, too much gasoline is admitted for the amount of air that is being taken into the compression chamber. The gasoline does not evaporate and is drawn into the cylinder and acts to a certain extent as water.

If an engine does not start after two or three turns, it is best to investigate the battery, as has been explained, in order to prevent this flooding. The best method to remove moisture in the cylinder when the engine is flooded is to open the air cocks on top or on the bottom of the cylinder, if such are provided. If not, hold the exhaust valve open and crank the engine until the moisture is expelled. It is more difficult to tell when the moisture has disappeared if the air cocks are not provided, and probably the best method for determining this is to crank until you believe the moisture is out and then turn on the battery. If it is nearly removed and you now close the exhaust valve and give the crank one or two turns, you should receive a slight explosion, indicating that the cylinder is not dry enough to attempt starting. If in the case of the air cocks, place the hand near the outlet and note if there is an appearance of gasoline as the air is driven out. If not, the same methods may be pursued as spoken of concerning the exhaust valve.

Winter weather often causes more or less difficulty. The chief trouble is the slow evaporation of the engine. This can be overcome by applying internal or external heat. Some cylinders are provided with a primer for the purpose of charging the cylinder before the feed is opened. This method is found quite satisfactory, but also has its objections. An engine exposed to extreme cold, even if provided with a

ALASKA RADIATOR FLUID

WILL NOT FREEZE **WILL NOT BOIL**

Guaranteed to do no injury to the cooling system. Absolutely prevents the freezing of radiators.

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can be used during the coldest weather.

One filling lasts a whole season. Freezing point 49° below zero F. by actual tests. The cooling properties are of the best for its boiling point is higher than that of water. Boils at 239° F. by actual tests. Is a watery solution saturated with chemicals that will not injure in the least any part of the cooling system and does not affect the rubber hose connections. Unlike Alcoholic Mixtures, Alaska Radiator Fluid is always uniform in strength, for its essential elements never evaporate.

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BULK.....75c.
IN 44 GAL. STEEL DRUMS.....84c.

We stock Alaska Radiator Fluid at four Western points at Winnipeg price plus car-load rate of freight

We agree to allow \$3.00 for the steel drums when returned.

Continental Oil Co., Limited

WINNIPEG - MANITOBA

Branch Offices: Regina Saskatoon Lethbridge Calgary

This Oil Pump Will Outwear the Engine

The simple construction of the Madison Kipp Model 10 Oil Pump makes it at once the most reliable and the most durable pump that can be placed on an engine. Its strong, rugged design and few working parts are alone a guarantee of its effectiveness and durability but it has other features that stamp it as the PERFECT LUBRICATOR.



Model 10-In any number of feeds from one to ten.

Seriously; don't you think it would pay you to investigate the Madison-Kipp Line? Write for complete literature and DO IT TO-DAY.

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Sole Agents for Western Canada. WINNIPEG, Man.

Manufactured by the
MADISON-KIPP LUBRICATOR CO.,
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The MADISON-KIPP

is the pioneer line in automatic lubrication—the pump illustrated has reached its high state of perfection through years of patient labor.

The Madison-Kipp will pump without adjustment, the extremely thick oil of winter and the thin oil of summer and force the oil against any pressure required.

The Madison-Kipp pump positively will not freeze. It works equally well at 20 deg. below zero and 90 above zero. No valves, no springs or stuffing boxes to wear out.

The Madison-Kipp is more durable, economical and constant than any other device on the market. They easily pay for themselves in one season in oil saved.

primer, is very liable to refuse to run, and it will be necessary to resort to other methods. Gasoline engines are provided with cooling systems, and may be air, water or oil. The water system will be the hopper cooling system or the closed jacket circulatory system. If either of the two methods are used, it will be necessary to drain the cooling systems when engine is not running, in cold weather, unless an anti-freezing solution is used in the hopper cooler. If the engine is one which has the hopper cooling system, using water only, it is best to pour a pail of warm water into the hopper on a cold morning. This should be allowed to stand a few minutes before starting. It may be necessary to add boiling water if weather is extremely cold. This operation is more difficult if the closed jacket is used. In such a case it will be necessary to make a connection with the overflow water pipe which enters the top of the cylinder.

Another method of warming the cylinder is to lay a piece of heavy cloth which will absorb water very readily upon the carburetor or cylinder head or both, and upon this pour steadily a stream of boiling water. The hot water method has proven very efficient, and is much easier than cranking an engine until the cylinder is warmed up enough for starting.

Igniters.

The spark plug or igniter is often the occasion of much trouble, because of moisture causing a short circuit. The jump spark igniter is often found to be more troublesome than the make-and-break type. This trouble is caused by the moisture collecting around the metallic parts, making a connection which can be broken only by removing the plug and taking the same apart and giving a careful cleaning.

The writer was recently called to an engine which was used for a spraying outfit. The parties who were running the outfit had worked for three hours endeavoring to locate the trouble. After asking a few questions, it was learned that the force pump had sprung a leak and had thrown water toward the engine. The plug in this particular engine stood in a vertical position, and was so constructed that the water in falling had entered the insulation. This was the cause of the trouble, and when the difficulty was removed, and the plug replaced, the engine ran as well as before the trouble happened.

Many jump spark plugs are so constructed that water falling upon them would be sure to cause trouble, and there are others, so constructed that it would be impossible for such a thing to happen. Someone will say "I have

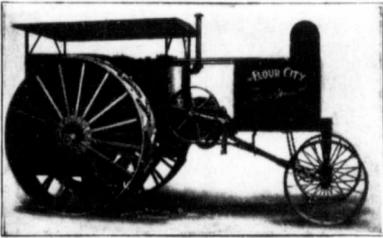
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The Tractor The Farmer Can Rely On

The "FLOUR CITY" stands for Quality. Our policy has been to build the best. We manufacture one line, and concentrated effort in one direction has resulted in the production of a Tractor of the best design and construction—a Tractor that will burn kerosene or distillate equally as well as gasoline—a Tractor that will develop the greatest power with minimum weight—the simplest, strongest, smoothest running and most economical of any in the field.

The "FLOUR CITY" is not a promoter's proposition but a proposition for the farmer. It is brought out with a view of supplying a REALLY and TRULY GOOD TRACTOR—one that will furnish the power, and hang together while doing the work. "Quality, not Quantity" is the "FLOUR CITY" slogan. We never indulged in panoramic train load shipments. A car load sold is better than a train load unsold. A quarter page of simple facts, stated conservatively, should be more effective than a double page of bombast. We make no claims that the "FLOUR CITY" cannot fulfill. Its record is open to you. If you want to look it up, send for catalog, etc.



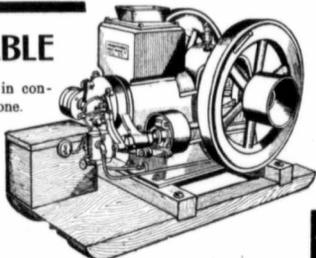
KINNARD-HAINES CO.
828 44th Ave., North
MINNEAPOLIS, MINN.

found condensation formed upon the points of one of the last-named igniters, and I can't see how the water could reach these points." Those who have yet to discover the water upon the points may also be desirous of deciding if there is water in the gasoline, or what else could cause this trouble.

The explanation most closely related to this trouble would be condensation, due to the passage of a warm air heavily charged with moisture. This air entering the cylinder, which is much cooler, causes the moisture to condense. In this way the whole interior of the cylinder will be covered with a slight amount of moisture. It will be found enough, however, to cause trouble. When the igniter gets into this condition, it is better to remove the igniter immediately than to try to start the engine by

Continued on page 32

SIMPLE, RELIABLE



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

BARRIE ENGINES

are staunchly built. Cold weather or long hours don't bother them. All ready to run. No skilled labor required to adjust them. 3 to 100 horse power. Stationary or portable. For gasoline, producer gas, natural gas, and distillate. Write for catalog. Agents wanted.

The Canada Producer & Gas Engine Co. Limited
Barrie, Ontario, Canada.

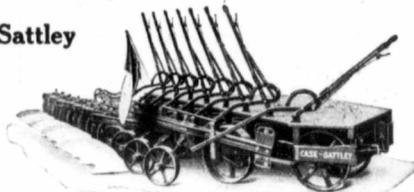
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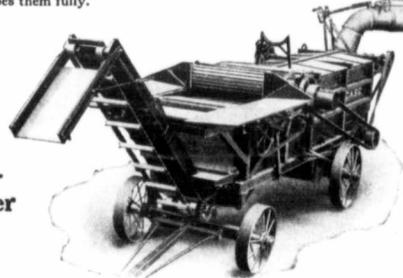
CASE OFFERINGS for FALL PROFITS

CASE-Sattley Engine Gang Plows



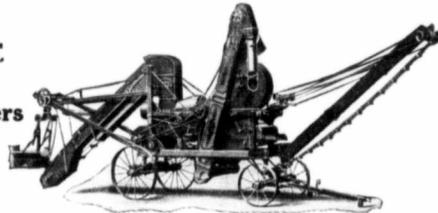
Are built especially for heavy work and hard field conditions. Strong and rigidly constructed, they plow with depth and uniformity and put the ground in the best possible condition for Seeding. They are built in five sizes, 4, 6, 8, 10 and 12 bottom stubble or breaker. Can be used with Steam or Gasoline Tractors. Easily controlled and pull easily. Write for catalog which describes them fully.

CASE 10-Roll Husker-Shredder

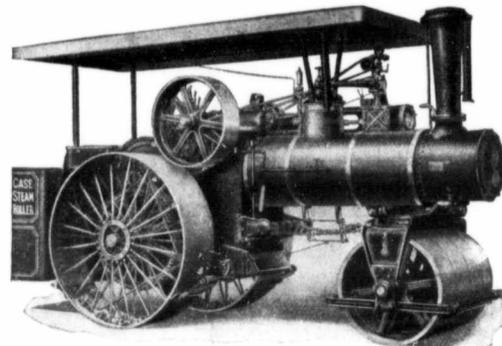


Now is the time to get a Case Husker-Shredder. There's a nice chunk of coin on every Corn-Raising Farm in your neighborhood that's just about ripe for some one to come along and pick up. You can get it if you go after it with a Case Husker-Shredder. The Fast Clean Work, the Big Capacity, the Small Percentage of Shelled Corn and the Excellent Manner in which it prepares the fodder to secure its full Feed-Value, makes the Case Husker-Shredder a universal Favorite with Farmers. You'll have no trouble keeping your Case Husker-Shredder steadily employed. Its good work will keep it busy. We can make quick shipments. Get your order in early and be the first in the field and you'll have the call on the choicest jobs.

CASE Corn Shellers

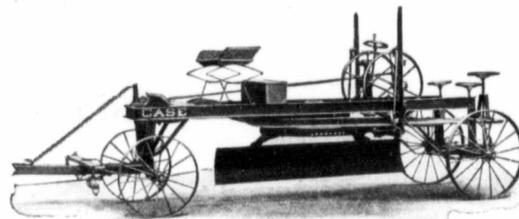


Scores of Threshermen in Corn-growing Localities are fattening their Bank Accounts by operating Case Corn Shellers. The same opportunity is open to you. We sell them with capacities all the way from five hundred to twelve hundred bushels per hour. They don't cost very much, don't require much power and are good for many years Service. They please your customers by delivering the Corn clean and free from broken kernels. Just say the word and we'll mail you catalogs and other interesting literature describing the Money-Making Possibilities of the Case Corn Sheller.



CASE Ten-Ton Road Roller

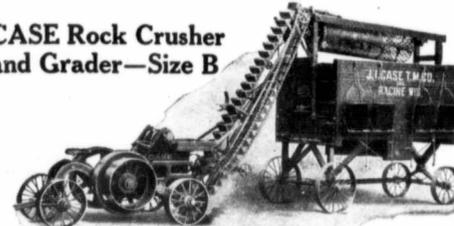
The most practical road roller ever constructed. Its utility is not confined to road building entirely. Unlike ordinary steam rollers it can be used for Hauling, Driving Stone Crushers and Concrete Mixers, Drawing Graders and for general power purposes. It is also convertible into a regular traction engine by the substitution of parts which we furnish for that purpose—so the Case Road Roller need never be idle. Its construction is fully described in our general machinery catalog. Write for a copy today.



CASE Perfection Reversible Road Grader

The Case Perfection Reversible Road Grader is designed both for the use of the individual Farmer and Land-owner and for Contractors, Municipalities and others engaged in road building. They embody many new improvements in construction, designed to prevent racking and vibration and to give a wider range of adjustment and manipulation of the blade. The Case Perfection is the only Road Grader made that has a full circle ring, thus allowing the blade to be set in any position and at any angle desired. We make them in three sizes. For Traction Power, Horse Power and a third model that can be used to good advantage in grading and leveling roads, cutting irrigation ditches digging trenches and a great deal of other arduous work ordinarily done by hand on the farm. Let us send you our special catalog and literature that describes the advantages of this grader more fully.

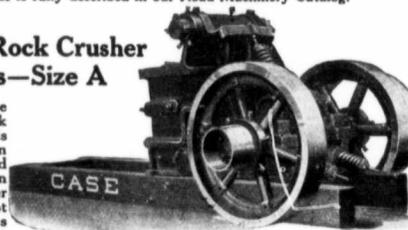
CASE Rock Crusher and Grader—Size B



Great Strength and Durability characterizes the construction of the Case Rock Crusher. Every requirement of the hard rough service a Rock Crusher is subjected to has been anticipated in the designing and building of this machine. Every piece of material entering into its construction is tested in our Chemical and Physical Laboratories, each part is carefully inspected before assembling and each finished machine is given a practical and severe test in actual service before shipment. Every little detail even down to the manner of mounting on the trucks has been carefully figured out. This machine has a jaw opening 20 inches long and about 10 inches wide. Its capacity is 15 to 25 tons per hour. Send for our catalog that describes its construction in detail.

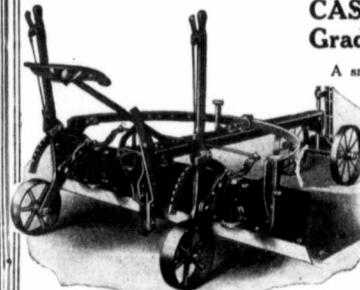
To be used in conjunction with Case Stone Crushers in high grade road construction we have the Case Stone Graders which separate the stone as it comes from the Crusher into various sizes and holds them in readiness to be quickly deposited into the hauling wagons without any labor except turning down the spout of the bin containing the desired size of the stone. This apparatus is fully described in our Road Machinery Catalog.

CASE Rock Crusher on Skids—Size A



The Case size "A" Rock Crusher is identical in principle and construction with the larger size "B" except that it is mounted on skids, is not provided with an Elevator and has a smaller capacity. The capacity of this machine is 10 to 15 tons per hour. The jaw opening is 15 inches long and about half as wide. This machine is also described fully in our Road Machinery catalog which will be sent free upon request.

CASE-Shelby Road-Grader and Leveler



A smaller grader designed for farm use. One man and one team can operate it easily. It is very useful and handy in keeping roads, drive-ways, and lanes in good condition and for general leveling and grading work around the farm. No farm is too small to use one to advantage. They last for years, being built entirely of iron and steel.

Price, only \$50



CASE Horse-Power Baling Presses

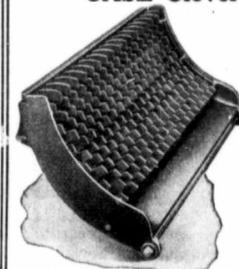
Case Horse Power Baling Presses lead all others in several important respects. An improved WITHDRAWAL MECHANISM found in no other Baling Press and automatic in its operation always insures a full opening to fork the hay into AND TWO FULL FEEDS EACH ROUND OF THE TEAM. Many other improvements in the way of more efficient Application of Power, a Lower Bed-Reach, an Ingenious Sliding Top to the Plunger (to prevent the Hay or Straw from falling through behind or telescoping over the Plunger when it recedes) and durable Steel-and-Iron Construction throughout, mean better work and a more profitable investment to the purchaser. Write today for our Baling Press circular.



CASE Belt-Power Baling Presses

Lots of Threshermen are keeping their engines busy in the Fall and making a lot of easy money at the same time with Case Baling Presses. The Case Belt Power Baling Press with its big 38x42 Feed Opening as compared to the ordinary 14x18 Feed Opening is a demon for work. Its extra capacity places the Case Belt Power Baling Press way out ahead of all others. It enables you to do more work in less time and with less labor and makes the Case the most profitable Belt Power Baling Press to own and operate. Think twice before you buy a Baling Press with half the Feed Capacity of the Case. The Case Extra Feed Capacity doesn't cost any more and it means a lot to you. Complete description and information of its great value to you will be sent you on receipt of postal

CASE Clover-Hulling Attachments



To enable Case threshermen to extend their profit-making season, we have specially designed attachments to fit the Case Threshing Machines that we guarantee will hull Clover and Alfalfa as quickly and thoroughly as the best Clover Hullers, in fact, many of our customers claim they can hull twice the amount of Clover with Case Threshing Machines and Attachments than can be hulled by the best Clover Hullers. You had better look into the possibilities of increasing your earnings by getting a Case Clover Hulling Attachment for your Thresher. They cost but little. You can pay for them and make a good profit besides in a single season.

J. I. CASE THRESHING MACHINE CO. INC. RACINE WIS. U.S.A.
CANADIAN BRANCHES, TORONTO, WINNIPEG, REGINA & CALGARY

Continued from page 29

cranking. The igniter should be thoroughly cleaned and dried by wiping with a soft, dry cloth or a piece of cotton waste. Such trouble as this will seem to the amateur very deep seated and very hard to locate, and since there are so many parts to the gasoline engine, how is it to be found? The more practice a person has with an engine, the more easily a fault is detected, and no definite rule can be laid down. A good method of procedure in such a case is to decide if the battery is in good working order. This can be done by bringing the ends of the battery wires in contact with one another. If a good healthy flash is received then the battery is in good condition, but if a weak, yellowish flash is received the battery is in very poor condition and should be replaced by a new one.

The make-and-break igniter will also have an occasional spell of refusing to operate. Moisture, however, does not affect this igniter as badly as it does the jump sparker. The greatest trouble which arises with this method of ignition is the accumulation of carbon, which covers the points of contact. The points of contact are the two points inside the cylinder which are brought together automatically by the mechanisms on the outside of the cylinder. If these points are covered with carbon to the extent that efficiency is lost, then there is no use for a person to even attempt to start the engine, for if he does the only result will be the flooding of the cylinder. If after three or four revolutions of the fly-wheels the engine does not start something must surely be wrong. After inspecting the battery, as has been stated, it is well to look to the igniter. This should be removed and all particles of carbon wiped off. Causes of the deposit of carbon are an excess of lubricating oil and gas or gasoline. Carbon is usually produced by ignition of the lubricating oil, or by gasoline burning in the cylinder. It would seem that such an occurrence as this would be of little account, but "The simple things confound the mighty."

The great trouble with the average operator is not in his lack of perseverance, but in his capacity to read the signs, so to speak. If he could get the principles of the gasoline engine thoroughly in mind many of the great troubles would be eliminated. This knowledge, which can only come by experience, may be greatly aided by reading literature which is devoted to the subjects that relate to the gasoline engine.

FIRING WITH STRAW.

By C. M. Townsend.

Threshing season has come again, and, with an aim to help those on the firing line, the writer will proceed to relate his experience.

It was during the latter part of 1908 that I discovered how to fire, to advantage, with different kinds of straw, both dry and damp, and under varying conditions of weather. Like other firemen, I considered that if I could make the steam raise sufficiently to escape through the safety valve when engine was working under a full load I had matters well in hand. However, I discovered that I was wasting more water than was required, and at once got busy to find a way to hold both steam pressure and water in boiler, at fixed or stationary points.

In firing, I kept the straw firmly pressed in the centre or middle of fire box, in order to make the flame pass as close to the fire box walls as possible, so that the heat units could be utilized to the greatest extent.

At intervals the straw was raised in the fire box, to allow the fire to work under, then when the fire was burning briskly, the fire box was filled as full of straw as could be forced into it, and then I hustled around and raked out the ashes and clinkers.

Again, I would press the straw into the centre of the fire box and then raise the little door above the arch and remove all plugs from the ends of the flues or a gummy black substance that formed in a sheet over the ends of the flues.

Between keeping draft and heat passages clear and a roaring fire going, it means quick action of body and mind.

One thing which helped to keep steam at fixed pressure and water at a constant level, was to set the injector. To some, this phrase, "set the injector," may not be understood, so an explanation will put matters right. To set an injector, open the valves of the water and steam pipes, and also the valve on the delivery or feed pipe until water passes freely into the boiler, then proceed to close the valves on the water supply and steam pipes, gradually, until both the water and steam are almost shut off, mark the present water level and constantly watch the water in the water gauge and likewise the index finger or pointer of the steam gauge. By adopting the foregoing methods, firing was play, whereas, before I made the discovery, firing was an exasperating and vexatious task.

Had to pay attention to the damper, to regulate the air draft, owing to atmospheric changes and other conditions inside and outside the fire box.

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"I am pleased to tell you that Mack's Thoroughpin Remedy has proved beyond my expectations. My horse had been lame with sore hocks on each side of foot for about eighteen months, and I had thought of shooting him at different times. I tried to work him but he would go so bad he would limp along on his own. My neighbors told me he would never be of any use as they had had horses with the same trouble. I tried other remedies without success, but when working him now and he is sound, and have tested him well. I recommend your Mack's \$1,000 Spavin Remedy to all. Yours truly, Somerset, N. C., Dec. 4, 1910. E. H. STEWART.

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There is a rule which we think would make all men constant, whatever their natural bias; and that is, in trifling services, as in great things, never willingly to disappoint a just and reasonable expectation.

Truth is so much stranger than fiction, that the bravest fear to tell it, in case they should be thought liars.—Vincent Laurens.

Instructing the Engine Operator

By R. B. White

No matter how good the engine, or how well it may have been installed, it cannot be expected to continue to work satisfactorily unless it is in charge of a competent operator. If there is not an experienced man available, the installing expert is expected and must teach some one to operate, fix and care for the engine. Its future dependment and the extent of satisfaction it will give will depend to a great extent on how well this part of the work is carried out. Here, if no where else, the competent expert earns his salary. On this point depends future annoyances to the manufacturer and the owner. If this has been well done, the manufacturer will likely forget some about selling this job, otherwise the time and expense of other men visiting this engine will likely impress it firmly on his memory. A man who does not know or cannot tell, or refuses to tell, or gets in too big a hurry to properly instruct the man who is to operate the engine is not a profitable or a suitable man to send out as a manufacturers' engine expert. Above all else, the operator must know the principles on which the engine operates and how to make ordinary adjustments, and make the engine start at all times and get the power out of it. How to teach each new operator these essentials is a problem that each expert must work out himself. He will likely have to change his methods to suit each new student. Methods that work on one do not always work on another.

The plan of the writer is to have the man who is to operate the engine assist with the installation. I usually keep him near me, and as each piece is placed I tell him what it is, and why it is there, and if there are adjustments, or anything liable to ever cause trouble with that particular piece I tell him about it as the work progresses. I answer his questions kindly and in such a way as to encourage others, the more the better. By the time the job is complete he has a pretty fair working knowledge of every part of the engine. I always try to give him a reason for everything; this makes it easier for him to understand and impresses its importance on his mind. Every detail should be done right, and in such a manner that it will stay right.

After the engine is started and thoroughly tried out, and I am satisfied that it is in perfect working order, I stop the engine and begin instructing the operator. First, I have him start and stop it until I am sure he can



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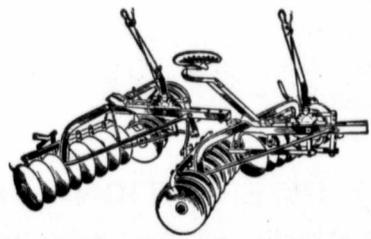
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do that right. Cautions about the cooling system, battery, oilers, fuel supply system and magneto are gone into as they are attached, so that the principal instructions can be confined to starting at all times, getting the power out of the engine, and what makes it go, and if it don't go, why does it not go? Here the working cycle is explained; also how the gasoline gets into the engine; how and when the valves close and open; how and when the spark is made; how the engine compresses the charge and why; as well as the other essential events in the working cycle. In short, I try to get the

fundamental working principles of the engine clearly into his head in such a way that they will be remembered. This done, I impress on him the importance of reading several times the printed instructions sent with the engine. In other words, I try to put him on the right track to help himself if he really and truly wishes to become an expert gas engine operator. If I can make him a student of the gas engine the problem is solved—he will help himself when in trouble.

There are four things that I never fail to impress:

First. The importance of using gas engine oil on cylinder.

Second. The importance of draining the cylinder in even frosty weather.

Third. The importance of not getting too much gasoline into the cylinder when trying to start and what to do in case the engine gets flooded.

Fourth. Keeping all the battery wire connections tight.

This ground having been covered thoroughly, I next take up the subject of:

Why a gas engine don't run and what to do to make it go. This is the one thing that must be taught, and at first sight it seems difficult to teach in so

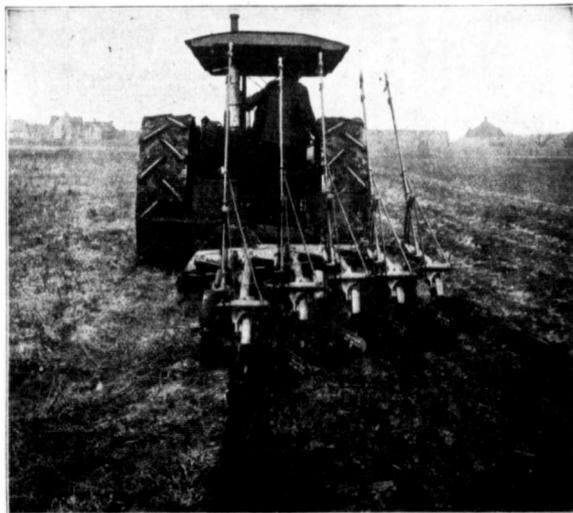
short a time, but not so difficult if you can get him started to thinking in the right way. I usually talk to him somewhat in this manner. There are three things necessary for any gas or gasoline engine to run. They are:

First. There must be a mixture of gasoline and air in the cylinder.

Second. There must be a spark to ignite it.

Third. The charge must be compressed, for otherwise it will not ignite; if it did, there would be no power. So if your engine fails to start, remember there is something wrong with the fuel,

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the spark, or the compression, and before you attempt to fix it you must first ascertain which of these things are at fault.

First. Test the compression by turning the fly wheel over; if it turns hard and springs backwards, the compression is not at fault. Hence the trouble must be with either the spark of the fuel mixture.

Second. Test the spark by putting on the switch and trying for a spark.

(a) If jump spark is used take plug out and lay it on the cylinder, then turn the engine over until the timer comes into contact; if you get a spark, the trouble is not due to the lack of a spark.

(b) If the igniter is the make-and-break type see that the circuit breaker is in contact, and then, with the battery switch closed, touch the insulated electrode and some other part of the engine with a metal tool; if you get a spark on breaking the contact, the battery and connections are not at fault. If there is any trouble with the spark it would be the sparkers points. To ascertain if they are in good condition bring the points together by pulling back the igniter trip tongue; while the points are in contact, try again for a spark as before. If you do not get a spark, it is because the current is passing through the points, which shows that they are O.K., and the fault is not with the spark, so it must be with your gasoline.

Third. To test your gasoline, see that there is gasoline in carbureter supply cup; see that the small opening into air passage is not clogged with dirt or trash. Next see that the intake valve is not stuck closed; if these are all in good order, the engine cannot fail to take fuel with the air.

The above three tests show that the compression, the spark and the gasoline feed are all right. There are a few other things that might prevent the engine's running, all of which effect the spark, the compression or the fuel mixture. They are:

First. Water in the gasoline.

Second. Fuel may be kerosene by mistake.

Third. The engine may be flooded with gasoline, in which case the needle valve should be closed, air pipe opened, spark left on and fly wheels turned over several times which will work out surplus gasoline through the exhaust.

Fourth. Weather may be too cold for the gasoline to vaporize; if so, warm the cylinder and air passage.

Fifth. The valves may be seating so slowly that the charge gets out before they close. Such a condition would be due to

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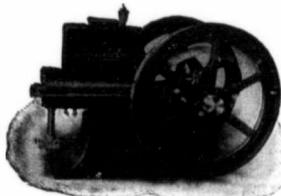
about buying a range you certainly owe it to yourself to know all there is to know about the "Sask-Alta." Its beauty—the ease with which it is kept clean and its many exclusive McClary features, all combine to make the "Sask-Alta" the favorite range of thousands of housekeepers surrounding you. Better ask the McClary dealer to tell you the reasons why the "Sask-Alta" is so much superior to the ordinary range. This will place you under no obligation and is likely to save you considerable money and worry in the long run.

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gummy valve stem guide or very weak valve springs.

Sixth. The igniter may be out of time. The spark should occur near the end of the compression stroke.

Seventh. The air passage may

be stopped. It takes air to burn gasoline.

If when applying the above test there had been no compression, the charge would have been escaping through the exhaust valve, the intake valve, the pis-

ton rings, igniter gasket, or by the cylinder head gasket. If by the exhaust valve, a sizzling noise can be heard in the exhaust passage; if by the intake valve, a similar noise will be noted in the air pipe; if by the rings, it

will be heard in front of the cylinder; if by the igniter gasket, it can be noted there; if by the cylinder head gasket, air bubbles will rise in the cooling water. The remedy is to grind leaky valves, renew leaky gaskets and clean or replace bad fitting rings.

Had the first test not shown a spark the trouble would have been with the battery or connections—usually loose wire connection, broken wire, short circuit, batteries dead or wrongly connected, metal or water on the cells, circuit breaker or timer not making contact—if jump spark

coil, the buzzer may need adjusting or the platinum points be pitted or corroded. Had the second sparker test shown a spark when make-and-break ignitor points were being held in contact, the trouble would likely have been corroded points or else failure to make contact. The remedy would be obvious on taking out the ignitor and examining it. Any troubles with the gasoline feed would have been noted on the first examination to make sure that all passages were clear and intake valve not stuck closed. Water on the ignitor may prevent engine starting.

Farmer Gullipot et al Discuss the Question of Mixed Farming

In the smoke room of a country hotel a group of farmers are standing around the stove. The question of **Mixed Farming** crops up, it is eagerly debated, a commercial traveller from Winnipeg likewise enters into the arguments.

MIXED farming be bothered, you had better boost that to the horse marines, what do you reckon farmers are anyway?" The indignant speaker of the above statement, presumably in the estimation of the Manitoba farmers today, sound wisdom, was Isaiah Gullipot, his audience a few farmers of the Mountpond district who were standing around the stove of the smoke room in the King's hotel.

There is no necessity to proclaim the Provincial location of the town and district of Mountpond, let it suffice that it is a well known wheat raising locality.

Upon this particular day Mr. Gullipot had arrived home from Winnipeg, the previous week had been the annual Bonspiel celebrations, reduced railway fares, etc. He had been assiduous in attendance at the special courses of agricultural tuition which a government interested in Manitoba's progress provided at the college out in St. James.

"There's a great sight by far too many folks giving advice to the farmer nowadays" continued Mr. Gullipot, who had been stirred up to air his views upon the mixed farming question by the remark of a Mountpond resident, an implement man, who had endeavoured to champion the argument that if the mixed farming plan was put into general practice, it must in the natural course of events accrue to the welfare not alone of the farmers themselves, but the Province of Manitoba as a whole. "This country is full of men who have tried those methods" continued Gullipot, "those fellows, railway magnates, Winnipeg civic officials, insurance men and such

like who did so much talking at the banquet in the Royal Alexandra Hotel give me a pain, what do these fellows know about farming of any kind, simply a set of know alls trying to tell us fellows what to do."

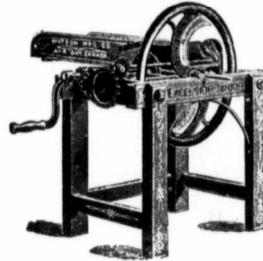
At this point of Gullipot's oratory, John Knotter, a neighbour, replied with the question as to the available markets for the products of this mixed farming venture if such were engaged in, it was not possible to consign the stuff to the markets of the United States, and owing to the greed of those whom Mr. Knotter designated as railroad sharks, produce could not be shipped eastward, for the reason that transportation charges would consume the entire profits.

The door opened and Bowen the hotel proprietor, entered the room, having heard the interesting dialogue from his office, he calmly endorsed the latter statement, expressing sympathy with the farming population in general through inefficiently equipped railroad companies, elevators full to the roof, no sale for that which farmers already produced, and concluded his remarks by a piece of generous advice that farmers should purchase steel granaries, hence be more independent, fifty dollars he understood to be the price of such in Winnipeg.

"That did not mean delivered at Mountpond though" answered the implement man, a statement corroborated by Gullipot as correct, he claiming that by the time the railroad company had collected the freight charges, the bin in question would cost much closer to the hundred dollar mark; however, this estimate was conceded by the company present to paint the extortionate railway corporation avaricious as they might be in too glaring color.

It now behoved Doem the implement man to retort the obser-

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ventions which had been made respecting the vexed question of Mixed Farming, he was at a loss to understand the reason why as was the case in the years passed away, the farmers did not return to the raising of cattle and hogs, let them give some reason for not doing so, this business would realise a good profit if proper methods were adopted in carrying it out.

Doem's prophecy of financial award accruing from stock yard transactions was greeted with rounds of laughter, cattle raising pay indeed, what next would be proposed?

"You know better than that" replied Gullipot, "just you load up a car of stock as a trial shipment and take the same into Winnipeg, the railway company will demand half the price of the animals for freight charges as a commencement, then when Morgan and Slicksides or some of those fellows get hold of the stuff, well, if you escape out of the yards alive yourself you can thank your stars, why don't you try this cattle business, Doem?"

But Mr. Doem was silent.

A man who had a few minutes previously entered the room, endorsed these remarks of Mr. Gullipot by relating an experience of his own along the cattle shipping proposition. When requested to state the financial result of his venture by one of the audience, his reply was to the point. "Not again for mine, by the time I settled up the transportation charges, and was through with the stock yard robbers, I was down and out, there is no use working for fun."

A stylish looking individual was sitting in a corner of the room, he was a commercial traveller, who had apparently enjoyed the pros and cons of the subject under discussion. As one of the company he ventured to ask Mr. Gullipot whether no good financial results were obtained by the farmers engaged in the dairying features of farming.

"Any amount of money in that business" replied the gentleman from whom the information had been requested, "there are a few milk monarchs in Winnipeg who gulp all there's in it, simply another combine of course, the farmers who supply the milk are being played for a set of suckers."

The commercial man appeared to be surprised, the answer of Mr. Gullipot evidently did not coincide with the drummer's idea of what the milk industry amounted to in reality. The combine question presumably interested him however. In his opinion the farmers placed everything they were unable to agree with down to combines and monopolies. He did not consider that but few if any of these bugbears existed as some

people endeavoured to create them for every occasion.

"Well, I'm hanged" said Mr. Ridge, amidst remarks of similar characteristic from various men in the room, "no combines indeed, it's all a combine to beat the farmers, look at the railways for instance, they do exactly as they please, that railroad commission isn't wo a e bi ger combination of jugglers you could'nt find; take the elevator question, there's a fine example, whilst the live stock business is in the clutches of a gang of pirates, that is what I call them, it is no mortal use saying more except that us farmers consider the whole business to be a confounded combine."

To the comments of Mr. Ridge there was marked approval, yet the traveling gentleman did not appear as convinced that the foes of the farmers were so numerically great. In support of this contention he requested some information, as to the reasons the



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Runabout	- - - - -	\$ 675
Touring Car	- - - - -	750
Town Car	- - - - -	1,000

These new prices, f.o.b. Walkerville, Ont., with all equipment. An early order will mean an early delivery. Get catalogue from Ford Motor Company of Canada, Limited, Walkerville, Canada.

New Light

Young housekeepers have discovered what the older ones have known for many, many years—that

Royal Household Flour

is the secret to all good baking. It never varies.

Ask Your Grocer for It

farmers did not amalgamate to destroy the forces claimed by them as conspirators against their welfare.

"Fight them, we'll make grease spots on the bunch yet" said Bowen, who previous to embarking upon the hotel business had operated a large farm, "that is if politics would not creep into future agricultural organizations the farmers are now getting in on the ground floor in some ways, people had no need to forget that."

Standing by the door was a little man who was fastening his fur coat, he had hitherto been a silent listener; however, he considered a few remarks might not be out of place. In his opinion the farmers of 1912 were not contemplating the feeding of cattle and pigs to create a few more Winnipeg millionaires, that was a tune played out some years ago, they had danced to that music long enough. As a concluding feature of his words he observed that the farming population nowadays were not such simpletons as they had been, experience had imparted wisdom.

The commercial man expressed agreement with these sentiments, at the same time he did not suppose that in a district like Mountpond there were many farmers encumbered with a mortgage upon their properties today.

"Mighty few of them" replied Mr. Gullipot, "not many years back the majority of us were, that was in the days millionaires were being created, it was impossible to walk along the main street of this town unless you butted into a dozen or so collectors from Winnipeg, these fellows have stopped coming now, there's nothing for them to do."

Gullipot's statement was received with cries of "that's right." It also produced from the traveller the remark that such state of affairs was indicative of great prosperity in the district, to which opinion Gullipot added further testimony that the land around Mountpond was good, nothing better out of doors; it was exactly the same years ago, but in those times the farmers were silly enough to dabble in the cattle business, as a result they were properly soaked.

"It does certainly appear as strange why this should have been so" the commercial man replied, "were not cattle and pigs at a good price in those days?"

His question elicited a round of loud laughter. An answer to the query was furnished by Mr. Ridge, who in plain and most emphatic language contended that "if the prices paid for such a few years ago were published in the papers today, people would doubt the truth of such figures, but it would demonstrate exactly the

manner in which the cattle kings had amassed the huge fortunes with which they are credited. As for the government stirring itself to do anything in the matter on these lines to better past conditions, even should the farmers return to methods of mixed farming, his opinion was that what with Mr. —," but the laughter of the audience drowned the speaker's further allusions to the political powers that be. "Never mind" said Gullipot, who was then preparing to leave for home, "it is not in a distant date when Manitoba will possess a million of people, then possibly the farmers may grow cattle and pigs, in those days some of the towns along this line may be thickly populated, so there may be a home market."

But Bowen the hotel man was evidently sceptical of this coming human invasion.

"When is that going to happen" he asked with a smile, "this town for example requires it bad enough."

To which assertion the traveller added, "That's correct, and all the other places along this line are urgently in need of a similar dose of medicine."

Our illusions are our chief treasure. To lose one's money is not always so bad; but to be bankrupt in illusions is as good as death.

It is by illusions that Nature gets things done. She keeps dangling impossible happiness and greatness before our noses to make us go forward, much as the carter holds a peck of oats before a balky mule.

When we grow so wise that we perceive the cheat, when we refuse to grasp at dreams and push on toward mirages, that is

what is known as Growing Old. Nature then kindly removes us, as being of no more use to her. She prefers an ounce of faith to a ton of experience.

When Solomon was a young man he built a temple and otherwise stirred about mightily. When he grew old, he wrote the book of Ecclesiastes, wherein he exclaims, "So I was great and increased more than all that were in Jerusalem before me; also my wisdom remained with me. And, behold, all was vanity and vexation of spirit. Therefore, I hated life."

Old age is not years; it is disillusion. It is not facts and conditions that keep life young; it is enthusiasms. The best part of you is the rainbow in your soul. You do not need furniture, you need enchantment. What you want is not a rich uncle, but a fairy godmother. Most of the good of our life is the sediment left by the passing over of dreams. Life is empty and homeless without Castles in Spain. Life is cold and lonesome without fays and ogres.

Little children, who are familiar with such unrealities, are the happiest portion of the race.—Dr. Frank Crane.

Thoughts and Aphorisms.

By Dean Swift.

I never yet knew a wag (as the term is) who was not a dunce.

I never wonder to see men wicked, but I often wonder to see them not ashamed.

If a man would register all his opinions upon love, politics, religion, learning, etc., beginning from his youth, and so go on to old age, what a bundle of inconsistencies and contradictions would appear at last.

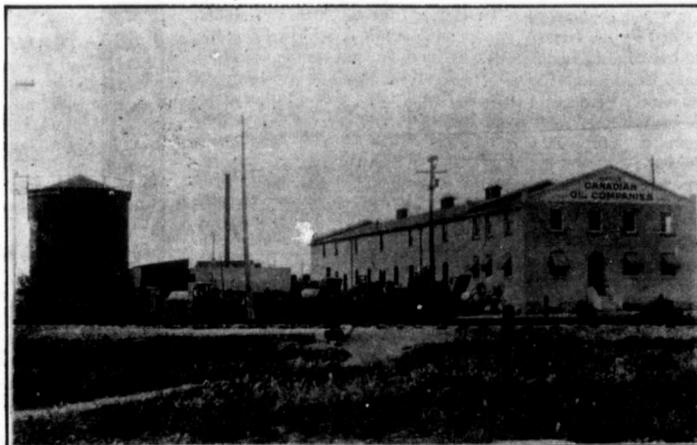
The stoical scheme of supplying our wants by lopping off our desires is like cutting off our feet when we want shoes.

The latter part of a wise man's life is taken up in curing the follies, prejudices, and false opinions he had contracted in the former.

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It gets the best jobs. It gets the best prices, and it does the best work.

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line, you don't have the best.*

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P. S. Rose

Practical Talks to Threshermen

Talk No.
LXII.

For a great many years the handling of the straw as it came from the machine was one of the hardest tasks around a machine. In the early times, in the days of the old "ground hog" thresher, the straw came out at the rear of the machine and had to be taken away by men with forks. Later, an elevating straw carrier was invented operated by a chain drive that carried the straw a little distance away and elevated it to whatever height the carrier was built for. This contrivance was a awkward and unsatisfactory for a number of reasons. It was easy for the man at the rear end of the machine to carelessly flip the chain off with his fork when he was crowded a little hard or when he got thirsty, as frequently happened. Furthermore, such a straw carrier did not handle the straw very far from the machine and then only straight back. On the big grain farms of the West it became necessary to have five or six men at the rear of the machine to take care of the straw and usually a team to buck the straw away. It was seen that a swinging straw stacker would be an advantage, but no one succeeded until in 1882 Reeves & Company, of Columbus, Indiana, brought out a carrier, mounted on gas pipe legs from eight to ten feet long, that did the trick. This was a great improvement over former methods, and the company enjoyed a large trade. This machine was improved in 1893 by Robinson & Company, of Richmond, Indiana, with a carrier that folded back on the machine and that could be supported with ropes. In passing it may be as well to call attention to a machine that Reeves & Company brought out in 1884, mounted on a light wagon truck that carried the stacker.

About the time these improvements were being made in the straw carriers by the firms above mentioned, other men were working on what finally developed into the wind stacker of the present time. The first man to take out a patent on a device of this kind was the Hon. James Buchanan, also of Indiana, and a lawyer. It is said he conceived the idea of his stacker away back in 1879. At any rate, he took out a patent in 1884, built a machine which he called his "Cyclone Thresher," and exhibited it at the Indianapolis fair in Indiana. It attracted a great deal of attention. Crowds gathered around and many of the wise ones, and

they were in the majority, said it would never prove a success. Many objections were raised. First, it added too much weight to the separator, and second, it required much more engine power to thresh the grain. These were the principal objections; then others said it wasted grain, that it drew grain out with the straw and threw it in the stack.

ed to the blower was thrown out violently and was easily felt by a man on the stack probably was responsible for this motion. With the old grain carrier anything that went over was dropped close to the rear of the machine and nothing was known about it until the straw was forked away. With the blower, on the other hand, what little was thrown out made

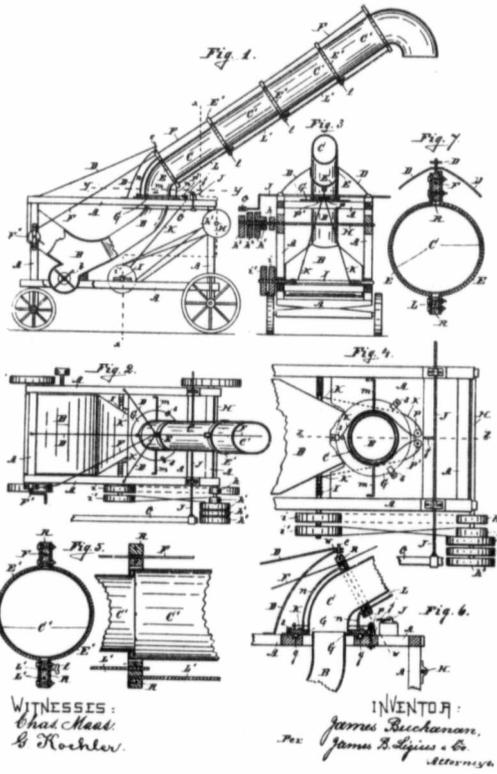
or two. Another argument that was very effective as showing the blower did not suck the grain over was to throw off the fanning mill belt, run the rest of the machine empty and then lay a five or ten dollar bill on the chaffer, at the same time betting that it would not be drawn over into the blower. It required a long, hard educational campaign and cost a fortune to introduce the wind stacker. As usual, the men who invented the new labor saver got very little out of it.

Mr. Buchanan did very little with his blower. He probably fitted it to a few machines and made a few exhibition demonstrations, but did nothing in the matter of founding a business.

His success, however, led a great many other men to study the problem, with the result that from 1890 to 1896 a great many patents were taken out. While the wind stacker is one of the simplest devices about a threshing machine, there nevertheless have been more than three hundred patents issued to inventors of wind stackers.

Mr. Buchanan's stacker was quite complete, as will be seen from an inspection of the patent office drawings, figure 130, and the accompanying descriptions taken from the patent specifications, number 297,561, issue April 29th, 1884.

In 1891, Mr. A. McKain, of Indianapolis, seeing the possibilities of building up a profitable business in the wind stacker business, interested some Eastern capitalists, and organized the Indiana Manufacturing Company. This company acquired the Buchanan patents in 1893, paying the inventor \$1,000 per year royalty, and all the other patents that had been issued up to that time, and began their campaign of educating the threshermen of the United States to the value of the new machine. During the first two years the company was a heavy loser. They encountered the most determined opposition from threshermen, from manufacturers and from farmers, and it required all the resources at their command to turn the tide. For one thing the cost, which was \$250, was rather high for those times, and added to that was the expense of having the separators shipped to Indianapolis and back to have the new machines fitted. In spite of all the difficulties, the wind stacker began to make friends, and the



WITNESSES:
Chas. Mead
& Kochler.

INVENTOR:
James Buchanan,
Per James B. Rogers & Co.
Attorneys

Figure 1 is a side view of the machine. Figure 2 is a top view of the same; figure 3, a vertical cross section through the machine on line *xy* in figure 1; figure 4, a horizontal section on a larger scale on line *xy* in figure 1; figure 5, detail drawings and sections through the discharge tubes; figure 6, a vertical section through the discharge-tube on line *xy* on figure 4, and figure 7 a vertical cross-section through the discharge-tube on line *xy* on figure 6.

The same letters refer to the same or corresponding parts throughout the several views. B is the receiver, into which the chaff and straw from the threshing-machine are discharged. The fan *b* in the lower part of the receiver *B* drives the chaff and straw out through the discharge tubes *C C'*, when operated by a belt directly or indirectly from the threshing machine or engine. The discharge tubes *C C'* are secured to and operated on the truck and frame *A* by flanges *s s'* or a flanged band overlapping the shoulder or ring *G*, to which the first joint *C* of the discharge tube is riveted, said ring *G* resting on anti-friction balls or rollers *g g'*.

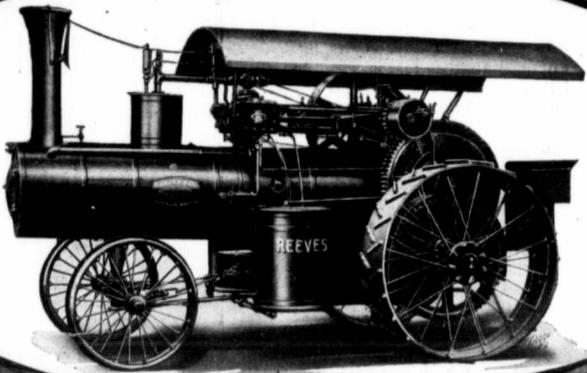
To the front of shoulder or ring *G* is secured the wire chain or rope *K*, which passes around at each side and to rear end of tube *C*, and through the pulleys *P* and *P'* back upon the shaft *I*, in such a manner that when the rope is winding up on one side of the shaft it unwinds on the other side, causing the discharge tubes *C C'* to turn. The discharge tube will turn in one direction until either of the arms *m* or *n* shall have moved around to the center of the machine, when it will strike the arm *j*, on the shifting-rod *J* and throw the belt *O* from one pulley to another, which will, by means of a crossed belt, reverse the motion of the shaft *I* and cause the discharge tubes to move in the opposite direction until the arm *m* on the opposite side of the discharge tube shall have moved around, and by striking the arm *j* on the shifting rod *J*, throw the belt *O* off from the pulley onto the one from which it came, and soon as long as the machine is operated.

... was a prejudice that was mighty hard to overcome. It persisted for many years and even yet there are men of the old generation who will maintain in all earnestness that the wind stacker will throw over more grain than it is worth. The fact that whatever grain was delivered

itself evident. Many arguments were advanced to show the wind stacker guiltless. It was demonstrated that a considerable number of kernels might be thrown out every second, in fact, enough to make quite a shower, and yet the sum total in a day's run would amount to only a bushel

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Reeves & Co., Columbus, Ind.

Fullerton, N. D., May 29, 1911.

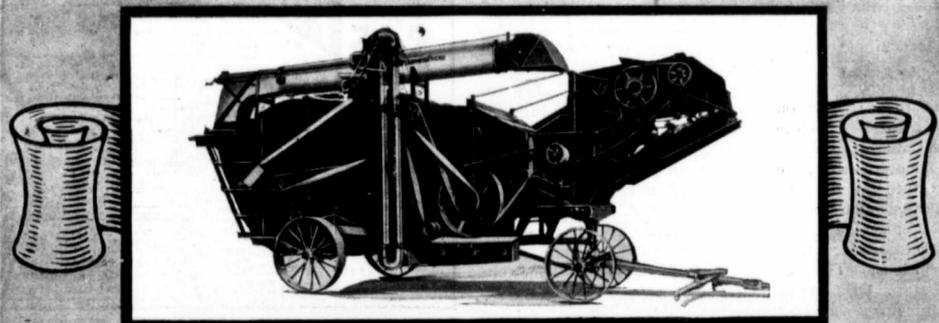
Dear Sirs:—Have you on hand lower pan for 40x60 separator No. 1052 bought in 1900? If you have, let me know and send price. This is the first repairs I have had to buy in eleven falls. I ran this separator six falls in Illinois and five falls in Dakota, and it is still in first-class shape excepting this pan, and today, with a new pan, I will put it up along side any new separator and do a better job. I also am using most of the belts that came with it.

Respectfully,

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REEVES

The Thresherman's Question Drawer

Answers to Correspondents

Q. G.H. How much does a rivet seam weaken a boiler sheet?

A. A single riveted seam, properly proportioned, has 65 per cent. of strength of the sheet. A double riveted seam has 70 per cent., and a triple riveted seam has 75 per cent. of the strength of the sheet.

Q. J.D. What is the cause of a safety plug in a boiler melting when there is water over the crown sheet?

A. This sometimes happens when the plug does not extend far enough through the sheet on the water side, and projects too far from the sheet on the fire side, and when the tin is partly melted out; in time the small part which is in the sheet is blown out. A fusible plug should extend at least three-eighths inch into the water, and the cavity for the tin made cone-shaped, so that the pressure tends to keep it tight and there will be no danger of melting or blowing the plug out when water is over the crown sheet.

Q. H.U. Why are the flues so much more apt to leak in the fire box end than at the smoke box? I notice that my flues are almost tight when I am pulling a load, but after I shut the engine down the water runs out of them at a great rate. What makes it do this? Someone has been telling me that the flue sheets are not thick enough to hold the tubes, but I find that it is one-half inch thick in the fire box and three-eighths inch thick at the smoke box end. Would a thicker flue sheet in the firebox keep the flues tight? Which is the best way to make them tight, by rolling or calking?

A. The flues or tubes are more apt to leak in the fire box on account of the great heat — the water not being able to carry off the heat fast enough — therefore the surface next to the fire box becomes overheated and too much expansion takes place, and the continual expansion and contraction works them loose. The reason the tubes are tight while running the engine, and then leak after the engine is shut down, is that while the engine is running the fire is made hotter and the tubes become tight in the holes by expansion, and after the engine is shut down the exhaust steam has ceased exciting the draft — therefore the tubes will cool off and contract, and in consequence become loosened. This tightening process from the heat will not last long. In a short time the tubes will become so loose that they cannot tighten

when the extra heat comes on. There is another reason why the leak is not noticed while the engine is pulling, and that is the hot fire dries up part of the leak and carries it through the tubes with the heated gases. A thicker tube sheet in the fire box would make the matter worse instead of better. The thicker the sheet the farther the water is from the fire and the less capable the water is to carry off the heat, and the more overheated the surface next to the fire box will become. Instead of making it thicker, the writer thinks if it were thinner it would do better.

When the tubes become loosened they should be rolled or expanded; calking or banding will do little good when they are loose.

Q. M.R. Which is the best, copper ferrules in flue sheet in fire box or flues put in without copper ferrules? I notice some boilers have them and some have not. I recently have replaced some flues in my boiler and found the ferrules burned out half way through the flue sheet. Would not a boiler be better without them?

A. Boilers are made with and without copper ferrules, both with good success. However, it depends very largely on the workmanship in either case. There may be more chance for poor work in the use of ferrules, as the usual custom is to make the hole in the tube sheet large enough to slip the ferrule in the hole and around the tube. In this case the tube has to be expanded enough to take up two loose joints. Another way is to make the holes smaller so that the ferrule can just be slipped in and then expanded in the hole and the tube slipped in the copper lined hole and then expanded. The latest practice in placing tubes without ferrules is to make the hole in the tube sheet smaller than the tube. In this case the tube is reduced on the end by means of a die, and then driven into the tube sheet to its proper place; this applies only to the fire box end of the tube. The smoke box end is made in the regular way, which is loose enough to slip the tube through. The fire box end, being put in the above way, is not unduly stretched, as after it is expanded it is about the same size at tube sheet as the other part of the tube.

Q. B.B. What is the best way to fasten loose boiler brackets to traction engine boilers? The brackets have worn loose on bolts and burrs cannot be drawn up



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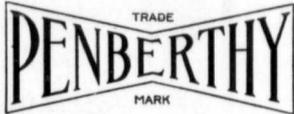
tight enough to keep brackets from working loose. Can this be fixed without putting in new bolts?

A. Sometimes the bolts fit so tight in the boiler that it is impossible to draw them down tight against the brackets. In this case the bolts might be taken out and the threads oiled and then put back. The taking out of the bolts and replacing them will wear the threads enough to allow them to go farther into the boiler. Some brackets are bedded in zinc. In this case the old zinc should be taken out, the bolts put in their place (not drawn up tight), and zinc run in again; then draw the bolts up solid. It is not necessary to put in new bolts when the old ones are good and tight.

Q. L.M. There is something wrong with the valve gear of my engine. When I place the reverse lever in the center notch while the throttle valve is open, the engine will continue to run. If I reverse the engine and again place the lever in the centre notch it will continue to run in the reversed direction. I will say that the engine will only do this running without any load. Should it not stop when the reverse lever is in the centre notch? Doesn't this show that there is something wrong? How can this be fixed? I sent to the factory for a man, and he went over the engine, moved the valve on the stem a trifle, set up the boxes a little, and it acted all right when he was here; but in a few days I discovered that it was all wrong again. The eccentric is keyed on the shaft. Do you think it should be moved? Do you think this trouble will have had a bad effect on the power economy of the engine? If so, I would very much like to know what to do for it.

A. This is a very common freak of reversing engine with a constant lead. That is, when the engine has the same amount of lead at all points of cut-off, and therefore it will have the same lead when the reverse lever is in the centre notch. Therefore it opens the port when the lever is in the centre notch, which fills the clearance with steam, and the expansion thereof is sufficient to run the empty engine. This is not a fault of the engine and does not show that there is anything out of adjustment. In fact, your engine must be set very accurately, as it often happens that an engine will run one way when the reverse lever is in the centre notch while the throttle is open, but when an engine will run either way under the foregoing conditions it shows that the rod connecting the reverse lever to the valve gear proper must be of the correct length.

If the eccentric is keyed to the



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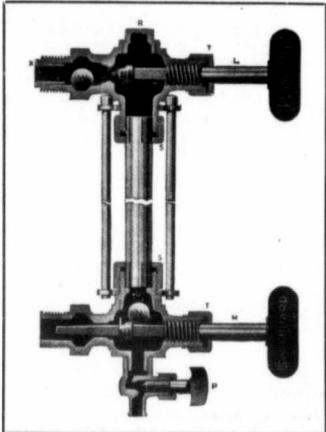
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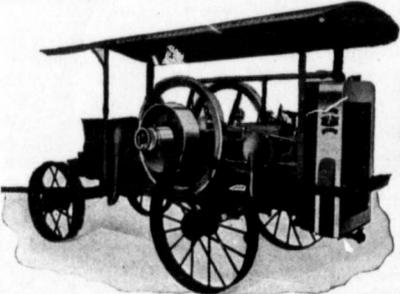


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shaft this shows that it is in the place which the builder intended it to be. The fact that the engine did not run when the throttle was open and reverse lever in the centre notch after the man from the factory adjusted it, shows that he made one or more of the boxes tight enough to make enough friction to prevent the engine running with the little steam which the

engine gets with the reverse lever in the centre notch. Tight stuffing boxes will make enough friction to hold an engine under such conditions. The fact that it runs so easily shows that it must be lined up and in good condition generally, also well oiled.

Q. E.H. Why don't threshing machine manufacturers build an automatic engine? Why could not such an engine be built in

connection with Wolff valve gear, so they could be reversed as readily as simple engines? I do not see why they would be much more expensive to build because they would not require a throttling governor. They would be more economical. Some engines, I think, require more fuel than they ought to use for the power furnished.

A. In the first place, the en-

gine would be more expensive. It would be also harder to keep in order. Simplicity is the thing sought for in the building of a traction engine. However, the day may come when traction engines will have an automatic cut-off. There are already automatic reversing valve gears worked out, but not as yet on the market.

Q. P.H. Will an engine, 7 x 10, with a balanced valve, give as much power as an engine with old style valves, 7½ x 10 cylinder.

A. All conditions being equal, the larger engine will give over 12 per cent. more power than will the smaller engine. The difference in the power of the larger engine will more than make up for the difference in the working of the valves.

Q. D.D. How is boiler horsepower determined?

A. The question of boiler horsepower may be divided into two parts. First: "The term boiler horsepower means capacity to evaporate 30 lbs. of water from 100 degrees F., temperature of feed water, to steam of 70 lbs. gauge pressure, or 34.5 lbs. from and at 212 degrees F.," centennial standard.

Another way to compute the horse power of a boiler is by the amount of heating surface it has. In general practice, 12 square feet to the horsepower is standard. This, too, may vary among the different builders of traction engines. Some give more and some less.

The way to compute the heating surface of a traction firebox boiler is to measure the surface in inches in the firebox above the grates, subtract the area of all the tubes and the fire door, multiply the circumference of all the tubes by their length in inches, and in most cases the front tube sheet is also taken into account, which is the area of all the tube holes subtracted from the area of the tube sheet in inches, which added to the tube and firebox surface and divided by 144, equals the heating surface in square feet.

A return flue boiler is computed in a similar manner; the circumference of all the tubes and fire flues multiplied by their length, added to the surface of the heads that is exposed to the heat, deducting the tube and flue holes, all in square inches, and then divided by 144, gives the heating surface in square feet, and this divided by 12 will give the rated horsepower of the boiler.

The regular working pressure is generally used in testing engines under the brake.

Q. H.H. If feeding too much cylinder oil, as well as not enough, has a tendency to cut rings and cylinder, will water

passing through the cylinder destroy the oil and cut the cylinder and rings? How much oil is required in running 10 hours? Cylinder is 8¼ x 11.

A. Too much oil will never cut the piston rings. Dirty water caused by foaming of the boiler will cut the rings, but not clean water. One pint of oil should be abundant to run an 8¼ x 11 engine 10 hours.

Q. R.H. How can one of the small cup lubricators be made to flow regularly? I can fill this and turn it on full opening and find that in the course of an hour it has not gone out of the cup at all while engine is running, but as soon as shut off it will all run out. Can you explain to me a way in which my trouble can be overcome?

A. The cup in question is a plain oil cup with nothing but a filling plug and a valve to shut off the pressure while filling, and same to leave oil flow down. There are cups of this kind made with a little equalizing tube to allow the pressure to get on top of the oil. This makes the oil balance and it can then run down. But without this tube the pressure holds the oil in the cup. As soon as the steam is shut off, the engine pumps a vacuum in the steam pipe or steam chest of the engine, and thus the oil is drawn out of the cup.

Q. P.R. Will you tell me how to babbitt the crank pin brasses?

A. You can fasten the babbitt in a crank pin box by drilling the inside full of small holes about one-fourth of an inch in diameter; or another way is to heat box and tin inside with a soldering copper. Put the box into its place, square the rod by the crank disc, have the key out as far as it will go to allow for as much babbitt as possible. Make two strips of wood to put between the boxes to keep the babbitt from running together. The top strip should be short enough to allow for a gate to pour the metal; about the thickness of the outside flange of the box is enough to admit the metal, so the upper stick can be that much shorter. The upper stick also serves to hold the box and rod up to its place. The top stick should be a little thicker so as to leave a little more space on the top side of the pin to allow a free course for the metal to run. The box should be put in hot so that the solder can unite with the babbitt. This makes a very solid job. The babbitt will wear down to the brass without coming off. When holes are drilled in the box instead of tinning the surface, the box does not have to be heated. The babbitt should be scraped to fit the crank pin, due to the shrinkage of the metal. A bab-

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bitted box will wear longer on a crank pin than a solid brass one.

Q. L.A. We have a Crosby steam gauge on our engine. When we pulled in and cleaned out the pointer stood at 0, but since then the pointer has traveled completely around the gauge, stopping within half an inch of the pin. Would it be all right to set the pointer on other side of pin, or let it go at that?

A. Your gauge must have been full of water, and has been frozen up. It is very likely burst, which you will find out the next time you steam your boiler. The part which is strained is the spring which is made of a flat tube; and even if this spring does not leak, the mere setting back of the hand will not do, as there is a pinion on the hand shaft, which engages into a sector, and the position of the hand would indicate that the pinion is about to the end of the sector. If the spring is strained by frost, it should be put back to its original shape; this will bring the pinion to the right end of the sector. To get the gauge to register accurately again it should be tested and adjusted, and if there is much out of place about it the best plan would be to send it to the gauge factory where they will make it as good as new for a very small sum of money.

Q. T.B. What is the best way to grind globe valves and stop cocks?

A. Use oil and emery or fine sharp sand screened through a piece of goods or bolting cloth. In the case of a globe valve, after the valve is taken apart, the valve disc should be fastened to the stem if it is of the loose type. This can be done by taking the disc off and putting a piece of cardboard between the disc and stem. If it is a regrinding valve, the bonnet or part that has the stuffing box can be put back, which will guide the stem while grinding. The stem can be revolved by a brace or by hand, taking hold of the hand wheel. If it is not a regrinding valve, screw the bonnet up on the stem and proceed to grind it by holding it as near central as possible. Always take the valve from the seat before attempting to screw the bonnet off on a valve that is not of the regrinding type, as you will be sure to ruin it if you do not observe this. A stop cock should be drawn occasionally while it is being revolved, so as not to cut grooves around the plug seat.

Q. J.O.D. Will an 8-gauge saw run much lighter cutting a 1/4-in. kerf than a 6-gauge saw with same kerf in hard wood?

A. There should be no difference if all conditions are good in both cases. However, in the case of the 6-gauge saw every-



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233



thing must line up better than with the 8-gauge saw, as there is but little less than 1/16 on an inch clearance with the 6-gauge saw, and as much more than 1/16 inch clearance with the 8-gauge saw.

Q. P.L. 1. What kind of packing is there in the gland between the high and low pressure cylinders of a Woolff compound engine, and how often does it need renewing?

2. How does an engineer change his valve for plowing to gain anything more than to have it set right? I hear some say that they always set it different for plowing than for threshing.

3. Will the location of the exhaust nozzle have anything to do with foaming?

4. What is up or down location in the stack?

A. 1. There is metallic pack-

ing between Woolff compound cylinders. We copy herewith instructions from the Huber Manufacturing Company's repair list. The metallic packing between high and low pressure cylinders should be examined once or twice a year. Take out the centre head and examine parts well; before putting centre head back to its place scrape or clean out any accumulation that may be found. Be sure to tighten set screws alike, draw them up tight.

2. There is no difference in the setting of the valve in an engine. When it is right for plowing it is right for any other kind of work.

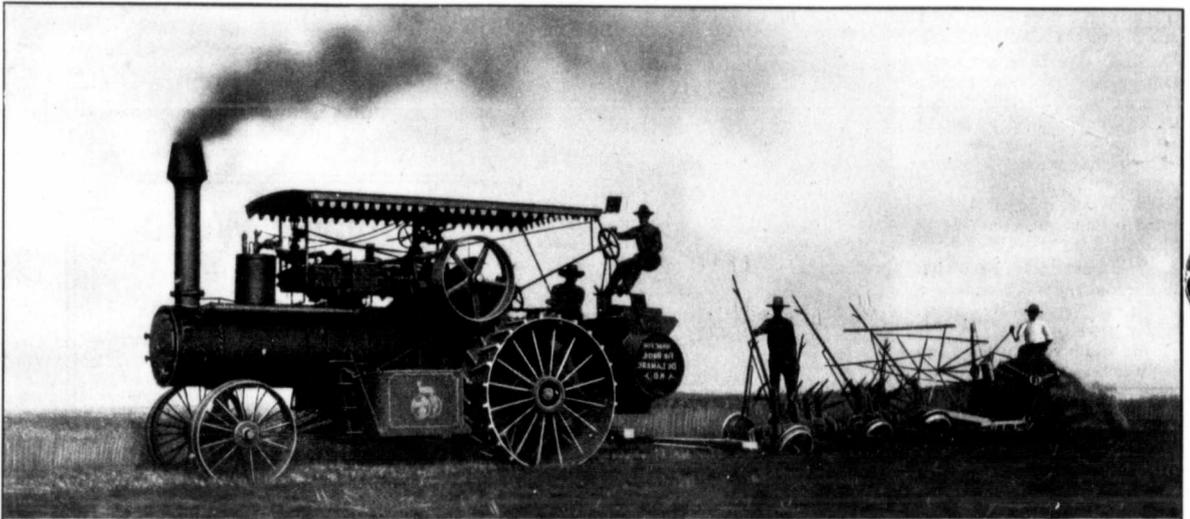
3. The location of the exhaust nozzle has nothing to do with the foaming of the boiler.

4. In some engines the exhaust nozzle extends up to the stack; in others it is below the bottom of the stack.

Two persons labored to a vain, and studied to an unprofitable end: he who hoarded wealth and did not spend it, and he who acquired science and did not practise it. However much thou art read in theory, if thou hast no practise thou art ignorant. He is neither a sage philosopher nor an acute divine, but a beast of burden with a load of books. How can that brainless head know or comprehend whether he carries on his back a library or a bundle of fagots?—Sadi (Persia, 1190-1291).

Speech is a mirror in which the soul reflects itself.—M. Lawrence-Wetherill.

There is only one religion, though there are a hundred versions of it.—G. Bernard Shaw.



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The morning start is quickly made with these engines—steams up in a hurry if your engine is a Rumely.

Rumely Steam Plowing Engines are the quick-firing, easy steaming kind. They are economical in the use of fuel and water too. All the pull is taken from every pound of fuel and an unusually large percentage is put to work at the draw-bar.

Rumely Steam Plowing Engines are dependable engines. They are always ready for work and will plow steadily from early morning to the sound of the dinner bell and from the mid-day meal to sunset. They will plow all night if you wish and run easily, steadily and economically every minute of the time.

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is another product of our 59 years of experience. Like our engines, its design is the result of careful study, and its construction the best that our perfectly equipped plants and the best materials can make it.

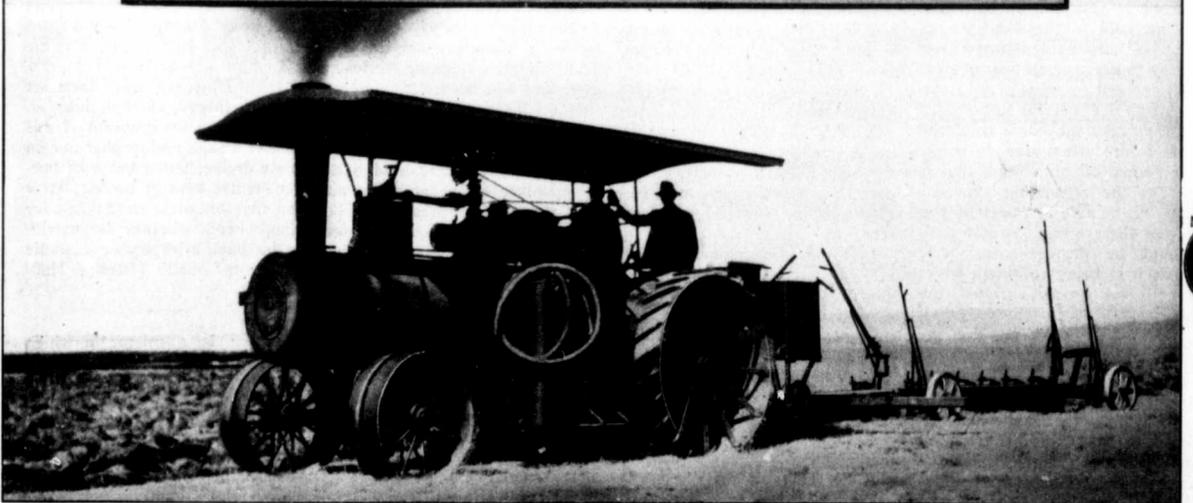
Couple it with one of our engines, and you have a plowing outfit that will serve you right, morning, noon and night. For catalogs send a post card to us or our nearest branch.

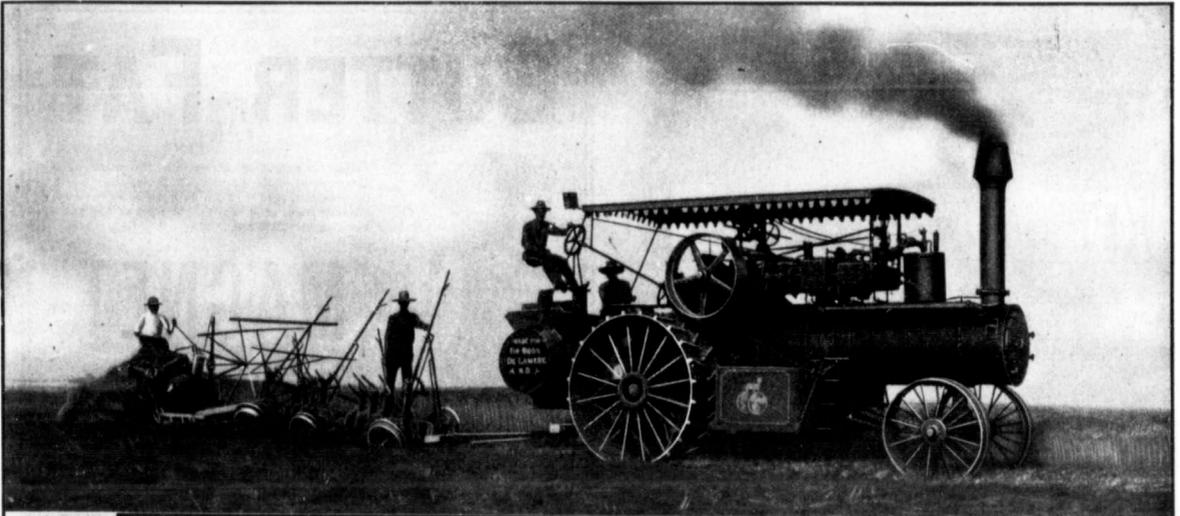
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With these engines the least fuel and water is consumed for the most power—the maximum of horse-power is given for the minimum of weight.

In design and construction nothing has been omitted that would make them more serviceable—more easy to operate—or more accessible for repairs, when repairs are necessary.

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The Farmer and His Wife.

By Everett Maxwell.

Do you recall, Lucinda dear, that day
In springtime long ago — 'twas
whæst May,
And many a bush in field and
grove drooped low
With clustered blooms that hung
like drifts of snow—
When proudly we, together side
by side,
Rode to this farm, a farmer and
his bride?
Sweet was the morn, and pleas-
ant was the breeze
That shook the pendant dew-
drops from the trees
In sparkling showers of gold and
amethyst,
Then wanted with your hair,
and softly kissed
Your radiant face that pictured
Eden's dream,
And blushing like the red bud by
the stream.

Long years have passed, dear
John, since by your side
I rode that fair May morn, a
happy bride.
I left my city home—a mansion
fair,
Exalted rank among a circle rare
Of cultured friends, a soft lux-
urious life
Of wealth and ease, to be a
farmer's wife.
For one I loved I gave up rank
and wealth,
And gained, beside, what I had
not—good health;
And never yet, dear John, have
rued the day
When for your love I cast my
wealth away.
Now we are old and gray, with
feeble steps and slow,
But happy, dear, as in the long
ago.
And as we near that bright and
heavenly shore,
We seem to love each other more
and more.

Our race is run, Lucinda dear;
soon Death,
A one-time guest of all, with icy
breath
Our cold pale lips shall kiss. We
have no fear,
Our title to a heavenly home is
clear.
To God and man we've rendered
what was due,
To trusts reposed in us we have
been true.

How much we have been blessed!
Of children ten
God gave, but two have passed—
beyond our ken.
Think you, my dear, our darlings
we'd surprise,
Should we this day greet them in
paradise?

Yet we love life—content, if it
please God,
To linger here a while, ere yet
the sod
Our forms shall hide; and long as
we shall stay,
Be happy, dear, as in that far-off
May
When proudly we, together side
by side,
Rode to this farm, a farmer and
his bride.
True love, we know, dies not
with youth; and so
I love you, love, as in the long
ago.
And when we reach that sweet
and blissful shore,
I know we'll love each other more
and more.

Don't Kill The Goose

If he who makes two blades of
grass grow where only one
grew before is a public benef-
actor, then he who reduces the
fertility of the soil so that only
one ear of corn grows where two
have been grown before is a pub-
lic curse.

Agriculture is the fundamental
support of any nation, and soil
fertility is the absolute support
of agriculture.

Without agriculture, America
is nothing. The forest and the
earth supply the timber, the
stone, and the metal to build and
equip railroad and factory and
the fuel to operate mill and loco-
motive, but directly or indirectly
these great industries are ab-
solutely dependent on agriculture
for their continued existence.

The Two Functions of the Soil.

The soil has two distinct func-
tions to perform in crop produc-
tion. First, the soil must furnish
a home for the plant, where the
roots can penetrate the earth
upon which the plant must stand.
Second, the soil must furnish
plant food, or nourishment, for
the growth, development, and
maturing of the plant.

To improve the physical condi-
tion of the soil is to improve the
home of the plant, while to add

BUTTER FAT



weight for weight is intrinsically the most valu-
able product of the farmer. It is literally "worth
its weight in gold." Then do not give away to the
hogs one atom of it that can be secured and mar-
keted as BUTTER FAT. The

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at less cost of time, money and labor than any
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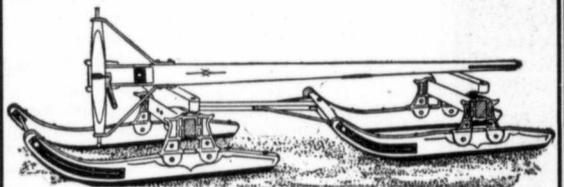
A child can operate it because, it is so EASY. The same child can clean its SMALL
NUMBER OF WORKING PARTS in a few moments. Neither the ravages of time
nor the roughest of usage can injure it because it is SO STRONG. A wild bull
couldn't toss it out of gear, because the SQUARE GEAR is mechanically accurate
and cannot be upset, because it is constructed and finished throughout by practical
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also the flanges which extend over the sides
to strengthen them. In buying sleighs, Get the
Best. The Gregg Malleable Knee Sleigh will last twice
as long as the common makes, and they cost
you the same.

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to the soil, or to liberate from the soil, fertilizing materials is to increase the available supply of plant food.

One soil may furnish an excellent home for the plant, but a very insufficient supply of plant food; while another soil may contain abundance of plant food, but the physical conditions may be such as to make an unfit lodging place for the plant.

The Six Essential Factors in Crop Production.

There are six essential and positive factors in crop production: (1) The seed, (2) the home or lodging place, (3) moisture, (4) heat, (5) light, and (6) plant food. Some negative factors are injury from insects and plant diseases.

Good seed is exceedingly important and the quality of the seed selected and planted is largely under the control of the farmer.

By proper drainage and by the use of organic matter and by proper tillage, thus maintaining good physical conditions, the farmer may provide a suitable home for the plant, remove surplus water, render the soil more capable of absorbing and retaining necessary moisture, and control the temperature to some extent by lessening evaporation and by changing the color of the soil as by the addition of organic matter.

More than five times as much heat is required to evaporate water from the surface of the soil as would be needed to raise the temperature of the same amount of water from the freezing to the boiling point. It is because of this that wet, poorly drained soils are cold. Dark soils absorb more heat and consequently are warmer than light colored soils.

Light is a factor over which man has no direct or positive control, but he has full control over some negative factors, such as weeds, which, if allowed to grow might largely prevent the light from reaching the young plants. Indeed, the first and greatest damage caused by weeds is due to the fact that they shut off the light from the growing plants. If the supply of moisture or of plant food is insufficient for both the crop and the weeds, then the weeds may rob the growing crop of these essentials to some extent.

So-called nurse crops, such as oats or wheat when growing with clover, may grow so thick and rank as to injure to a marked extent the clover by shutting out the light, also by robbing the clover plants of moisture and plant food. To avoid these injuries or difficulties, the clover should be started with a very light seeding of wheat or oats (about one bushel to the acre)

preferably planted in drills running north and south, which will permit the strong mid-day light to reach the clover plants.

If oats are seeded as the nurse crop they should be an early maturing variety or they may be pastured off or cut early for oat hay. The surest method of obtaining a good setting of clover is to sow it without a nurse crop and clip the weeds with a mower if necessary.

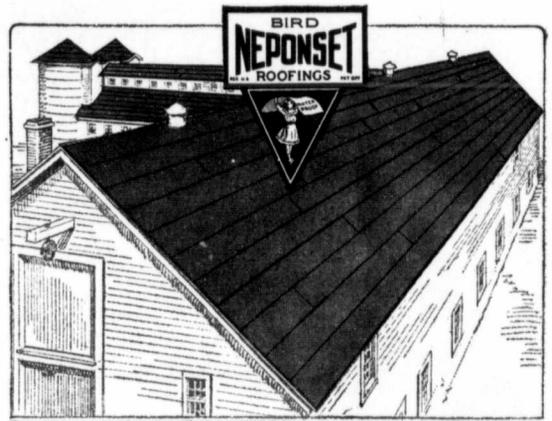
The least understood and the most neglected essential factor in crop production is plant food. Food of required kinds and in sufficient quantity is as necessary for plants as for animals; and it is even more important to provide an ample and balanced ration for corn than for cattle, because cattle are usually able to move about and find some food for themselves, while the corn plants are stationary and limited to the food within reach of their roots.

The Ten Essential Plant Food Elements. There are ten different elements of plant food, each of which is absolutely essential to agricultural plants. These elements are carbon, hydrogen, oxygen, nitrogen, phosphorus, potassium, calcium, magnesium, iron and sulphur.

Carbon, hydrogen and oxygen, which constitute more than 90 per cent. of most agricultural plants, are contained in air and water, the supply being unlimited. The four elements, calcium, magnesium, iron and sulphur, although absolutely essential to plant growth, are required in very small amounts, while they are present in practically all soils in inexhaustible quantities.

On the other hand, the three elements, nitrogen, phosphorus and potassium, are required by plants in considerable amounts, and soils are frequently found which are so deficient in one or more of these three elements as to limit the yields of crops. It should be understood that soils are never found which are entirely devoid of nitrogen, phosphorus, or potassium. Even the poorest and most unproductive soils still contain at least some small supply of each of these elements, and, as a general rule, such so-called exhausted soils contain at least one and frequently two of these valuable elements in large amount, the low productive capacity being due to the deficiency of one or two elements only.

Sometimes the element which the plant fails to obtain in sufficient quantity for its normal growth, the element which positively limits the yield of the crop, is actually present in the soil in very large amount. In such cases the practice should not be to add to the soil more of this plant food element, but to adopt



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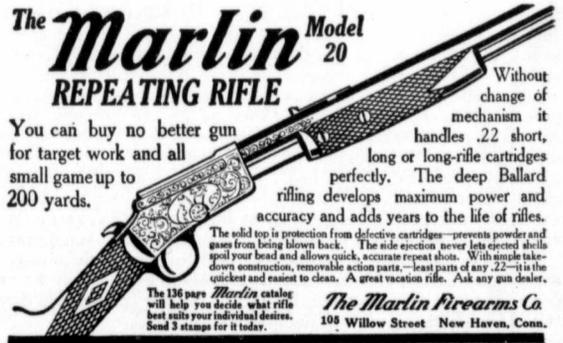
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You can buy no better gun for target work and all small game up to 200 yards.



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methods of soil treatment and management by which we can liberate a sufficient amount of this element for maximum profitable crop yields.

Nitrogen.

The element nitrogen ought never to be bought in general farming. The atmospheric pressure is 15 pounds to the square inch. Of this, about 12 pounds pressure is due to the nitrogen contained in the air. If we compute the value of this nitrogen at 15 cents a pound, the price commonly paid for the nitrogen in commercial fertilizers, we find about eleven million dollars' worth of nitrogen resting on every acre of the earth's surface.

It is true that such crops as oats, wheat, barley, etc., have no power to make any direct use of this atmospheric nitrogen, but there is a class of plants known as legumes, including such valuable agricultural plants as red clover, alsike, alfalfa, crimson clover, cow peas, soy beans, vetch, etc., upon the roots of which there are or should be small nodules or tubercles, varying from the size of pin heads upon clover roots to that of peas upon soy beans, in which live great numbers of very minute, microscopic organisms, called bacteria, which have power to take nitrogen from the air as it enters the pores of the soil, to

cause this free gaseous nitrogen to combine with other elements in suitable form for plant food which is then taken up by the clover or other legumes for its own growth.

If the roots and stubble are left to decay in the ground the nitrogen which they contain becomes available to succeeding crops of corn or other grains or grasses. If the entire legume crop is plowed under as green manure then all of the nitrogen taken from the air is left in the soil for succeeding crops.

If the crops are fed to animals provided with plenty of absorbent litter or bedding, so that all liquid excrement is saved, then about 75 per cent. of the nitrogen contained in the feed may be returned to the land in the farm manure.

In very intensive farming, as in market gardening near large cities where the land is too valuable to be given up even for a part of a year to the growing of legumes for fertilizing purposes, then it becomes necessary to apply nitrogen, and this is also profitable, for the products of one acre frequently bring \$100 or more for one season.

Where it can be obtained, stable manure is, as a rule, the most economical and satisfactory form in which to apply nitrogen in market gardening, although dried

blood, tankage, sodium nitrate and ammonium sulphate are also used with profit at times.

Phosphorus.

If the element phosphorus becomes deficient in the soil the total supply can be increased only by making an actual application of some kind of material containing phosphorus.

It is well to bear in mind that about three-fourths of the phosphorus required for ordinary grain crops is stored in the seed or grain, while only one-fourth remains in the straw or stalks. Consequently when wheat is sold from the farm three-fourths of the phosphorus required to produce the crop leaves the farm in the grain.

When the crops are fed to animals, especially to growing animals or milk cows, from one-fourth to one-third of the phosphorus contained in the feed is retained in the bones, flesh and milk, while about three-fourths is returned in the manure.

Potassium.

Potassium, like phosphorus, is a mineral element contained in the soil, and if the supply in the soil is deficient it can only be increased by a direct application to the soil of some material. As a matter of fact, aside from peaty swamp lands and some very sandy lands, the potassium con-

tained in most soils is practically inexhaustible.

Peaty swamp soils are frequently exceedingly deficient in both available and total potassium as compared with normal soils, and where the supply of farm manure is limited, commercial potassium salts may be applied to such land with very great profit. Potassium sulphate and potassium chlorid (frequently, though incorrectly, called muriate of potash) are the most economical and satisfactory commercial potassium fertilizers.

Kainit is sometimes used, but it contains only 10 per cent. of potassium, while potassium sulphate usually contains 40 p.c., and potassium chlorid contains about 42 per cent. of the element potassium.

Because soils deficient in potassium are usually abnormal and exist only in restricted areas, this class of soils will not be further considered except to mention in this connection that where such soils are found, as in some swamp regions, then the addition of potassium frequently produces most astonishing increases in crop yields.

Occasionally peaty swamp soils, like other soils, may contain some injurious alkali, as magnesium carbonate, in the sub-surface soil in such amounts as to prevent corn roots from living

in it, and hence liberal amounts of available potassium provided in the surface soil may greatly benefit the crop. Deep peat and peat underlaid by clean sand are, as a rule, deficient in both available and total potassium.

It is well to remember that the seed or grain contains only about one-fourth of the potassium required for a crop, while three-fourths remain in the straw or stalks; also that animals retain practically none of the potassium consumed in the food, almost all of this element being returned in the solid and liquid manure.

Making Plant Food Available.

It is an absolute essential in agriculture to have plant food in the soil. If it is not present in abundance it should be supplied in the manner that is most economical and profitable, and that which is removed in crops should be replaced so far as practicable and profitable, either by returning it in farm manure, or by plowing under green manures, straw, and other coarse products.

With a good supply of plant food stored in the soil, then the thing of greatest importance in the business of farming is the liberation of sufficient plant food during the growing season to meet the needs of maximum profitable crops. While thorough tillage aids in this process, by far the most effective and practical means within the farmers' own control for liberating plant food from the soils or from insoluble material, as natural rock phosphate, which may have been applied, is decaying vegetable matter.

The farmer or land owner whose farm practice includes these two points; that is, (1) plenty of plant food stored in the soil, and (2) plenty of decaying organic matter to liberate plant food for the crop needs, will have in operation a system of agriculture which is permanent.

The one point is no more important or essential than the other. The man who tries to maintain the fertility of his soil and who hopes to continue to grow large profitable grain crops without the use of legume crops or plowing under farm manures or coarse products, but who uses high-priced soluble manufactured commercial fertilizers, is unwise, and ultimately his land will probably follow in the history of the lands which have been practically ruined by such practice in the eastern states.

It is almost inexplicable that there are people who write and speak at great length and with great energy on the tremendous importance of adding nitrogen to the soil as an element of plant food, but who completely ignore and even deprecate the matter of maintaining in the soil a supply

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The contest is divided into three classes, and there are first, second, third and fourth prizes (\$50, \$25, \$15 and \$10) in each class.

CLASS "A"—Prizes to be awarded to the four farmers in each province who use most "Canada" Cement on their farms in 1912.

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In addition to thus being divided into classes, so as to give small users of cement an equal chance with those who use more, the Contest is also divided into nine divisions, one for each province. So you see you need only to compete with the other farmers of your own province, and not with those all over Canada.

Don't think that because you have never used cement, you cannot win a prize. Many of last year's prize winners had never used cement before they entered the Contest. We will send you a free book, "What the Farmer Can Do With Concrete," that will not only help you in the Contest, but will tell you everything you could want to know about the use of cement on the farm.

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of phosphorus and potassium from which we can liberate sufficient amounts for large crops.

No man can afford to ignore the truth. If there are soils which contain so little phosphorus or potassium that we cannot by profitable means liberate sufficient to meet the requirements of large crops, then we should increase the supply; and every man should be sufficiently unprejudiced to ask whether it is more sensible and more profitable positively to increase the total supply of any element of plant food in his soil or to continue to decrease it by means of crop rotations and the use of decaying organic matter.

For the ordinary strictly live stock farm from which only hogs and cattle are sold there is no such thing as reducing the supply of potassium if all liquid and solid manure is carefully saved and returned to the soil, because, as before stated, practically all of the potassium contained in the feed is returned in the manure. In dairy farming a small amount of potassium leaves the farm if milk is sold.

But even in live stock farming with all manure saved and returned to the land we still lose the phosphorus carried away in bones, flesh and milk, and this fact should not be ignored by the farmer whose crop yields are already limited because of insufficient supplies of phosphorus, even with abundant use of decaying organic matter supplied in clover and farm manure. Indeed, not infrequently we find farmers whose land is so rich in nitrogen and potassium that they grow great crops of straw and stalks, but the phosphorus is so limited that the actual yield of grain produced is only one-half or two-thirds what it should be.

Soils Deficient in Nitrogen.

It should be understood that the nitrogen in the soil is measured by the organic matter, for the nitrogen is practically contained in the organic matter. Consequently soils which are deficient in organic matter are also deficient in nitrogen.

There are two classes of soils which are commonly much more deficient in nitrogen than in other plant foods. These are the very sandy soils and the very rolling or steeply sloping hill lands.

Improving Sandy Land.

While the sandy lands are not rich in phosphorus and potassium, they are, as a rule, moderately well supplied with those elements, and such soils are so porous that they afford a very deep feeding range for the plant roots, so that the actual percentage composition in mineral plant food does not fully measure the possible productive capacity of sandy soils as compared with

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The Value of Farm Manure.

more compact soil or clay soils. As a general rule, if the three elements, nitrogen, phosphorus and potassium, be added separately to three different plots of very sandy land, the nitrogen will increase the yield, while little or no increase will be produced by either phosphorus or potassium. After plenty of nitrogen has been provided then the addition of potassium will still further increase the yield.

It is exceedingly important that as far as possible all crops shall be fed and the manure shall be carefully saved and returned to such land, not only for its plant-food value, but also for the organic matter which is needed to improve the physical condition of the soil.

The Value of Farm Manure.

Farm manure always has been and probably always will be the most important and most abundant material for soil improvement. It is a necessary product on every farm and on stock farms a product which accumulates in large amounts. If not used for soil improvement it becomes a worthless nuisance about the stables, whether in the city or in the country.

A conservative estimate places the annual production of farm manure in the United States and Canada at two and a half billion tons. The actual agricultural value of fresh farm manure containing both the liquid and solid excrements is not less than \$2 a ton, whether the value is measured in

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terms of plant food elements actually contained in the manure as determined by chemical analysis of the manure and the market values of the elements, or whether the value is measured by the actual increase in crop yields produced by the use of the manure on ordinary long cultivated soils.

Waste of Farm Manure and Land Ruin.

If fresh farm manure is spread out and exposed to the weather for six months in summer, one-half of its total weight of dry matter is lost, and more than one-half of its value as a fertilizer is lost. In most newer countries there is enormous and shameful if not wicked waste of farm manure. In older countries it is the rule to save all possible farm manure with very great care, although this rule is too frequently broken by the careless, ignorant or short-sighted.

As a whole, the unnecessary waste and loss of farm manure which occurs each year is equal in value to more than ten times the value of all commercial fertilizers used. Sometimes the waste of farm manure and the purchase of commercial fertilizers occur upon the same farm. In such cases the commercial fertilizer used is usually an acid phosphate, or a so-called "complete" fertilizer containing acid phosphate with a trace of nitrogen and potassium too small to add appreciably to its value, and it is commonly applied in amounts which supply less plant food than the crops actually remove, the small amount of soluble plant food applied being supplemented by that which the soil would naturally give up, together with what can be forced from the soil by the stimulating action of the soluble corrosive acid salts and manufactured land plaster contained in such fertilizers.

Saving Farm Manure.

In order to retain the full amount and full value of farm manure it should be removed directly from the stall or covered feed lot and spread at once upon the land. Where the winters are moderately cold and free from heavy rains there is little loss if the manure is allowed to accumulate during such weather in small uncovered feed lot, provided it is hauled out and spread upon the land in the early spring. Manure may be allowed to accumulate without much loss in deep stalls for several weeks if plenty of absorbent bedding is used, and then it may be hauled from the stall directly to the field and spread.

It should be the rule never to handle manure more than once. When taken from the stable or feeding shed it should be at once loaded on to the spreader and

hauled to the field. If manure is produced at the rate of two loads or more a week the convenience and importance of taking this manure directly from the stable and spreading it at once upon the field will certainly justify providing a manure spreader or special wagon to be used solely for this purpose.

Increasing the Value of Farm Manure.

While ordinary, fresh farm manure is worth \$2 a ton for use on ordinary soils, its value can easily be increased to \$3 a ton net, by replacing in liberal amounts of low-priced natural rock phosphate, the element phosphorus, which the animals have extracted from the feed and used in making bone, thus leaving the manure poor in phosphorus as compared with the crops grown and fed.

It should be remembered that practically all potassium contained in the feed is returned in the liquid and solid excrements,

and that the nitrogen, which is in part retained by the animal and in part returned in the manure, can be fully maintained by supplementing the farm manure with clover grown in the crop rotations or as catch crops.

As a rule, for use on land which is deficient in phosphorus, rock phosphate should be mixed with average manure in such proportions that at least 250 pounds of rock phosphate per acre would be provided for each year. Thus for a four-year rotation, including corn for two years, oats for the third year and clover for the fourth year, about 1,000 pounds of rock phosphate an acre should be applied to the clover ground in connection with all available farm manure and plowed under for corn. If the land is manured once in four years with ten loads of manure to the acre, then 100 pounds of rock phosphate should be applied with each load.

A very simple and satisfactory method of applying rock phosphate to the land, which involves practically no extra labor or loss of time, is to load the manure spreader part full of manure, then scatter 100 pounds of rock phosphate over it as uniformly as possible, finish loading, and drive to the field and spread the phosphated manure. This brings about a very complete and intimate mixture of the manure and rock phosphate, and this is exceedingly important because the decaying organic matter must be in intimate contact with the rock phosphate in order to liberate the phosphorus for the use of the crops.

Men and women are what their holidays have made them.—Canon Barnett.

Pure love is rare and hard to find, its parasites are avarice and lust.—Douglas McClymont.

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OCTOBER
1912

FARMER GOOD INTENTION

HENRY: Say father! Is it not enough to make a parson swear to find so many of our neighbors who have for the first time been able to raise a bumper crop can't ship it and can't raise a dollar on it at the bank? There's Tom Johnson who deserves the very best that luck can bring him. He has slaved summer and winter since he came West, and really, his crop this year was a picture at any time. He said he never borrowed a dollar in his life and wouldn't unless he was able to hand over twice the amount in gilt-edged collateral. Well, you know he put up a set of those fine weather and fire proof steel granaries to store his "Marquis" wheat. His idea is to keep it for seed, and of course he'll get a price for it in the spring, he could never hope to realize on it now. Well, Tom wants to give his brother a start with a small outfit and he thought he would have no difficulty in obtaining a few hundreds on his "Marquis," but the bank wouldn't listen to him. The manager would gladly do it but his hands were tied, he said.

FATHER: My boy, Tom is up against a stone wall when he tries to raise money on wheat stored on his farm, even if it were locked up in fire and burglar proof safes. Our banking system in some respects is one of the great anomalies of the country. There was, and no doubt still are good reasons in many cases why a man may not have an advance on grain held on his farm, the value and security of which there can be no doubt about. To my mind there need be no difference between the value and security of wheat bonded on a farm and that held up on any elevator in the country. It is an intricate problem I grant you, but it will have to be finally solved before long. Things have reached an acute stage with the tremendous increase in crop yield and the utter helplessness of the railways to take care of it. I don't actually know, but I have a strong suspicion that much of the crop now on the cars has been threshed before it was dry. Simply because the men who raised it need the money and are compelled to rush it.

MOTHER: I suppose it is generally understood that women know very little about the banking laws and hypothecating of grain, but all the same when there's any real move made whereby honest farmers can more easily handle the money value of their produce, I would like to take a hand in it. In the meantime as there seems little prospect of things easing up at all, what would you think, father, of doing a bit of banking yourself with Tom Johnson? I had a bit of confidence from Tom's wife lately and she told me Tom was dead set on getting his young brother out from Scotland. He's a capable young farmer and the very sort of lad we want out here. Tom has his grain in fine order, padlocked in his iron granaries. He has customers in sight who will give him a good price for it for seed. Is there any terrible risk in your advancing him the very reasonable amount he wants on that quantity of valuable stuff? I like Tom's independent spirit and my! isn't it fine to be independent of the banks? You can use that \$250 of mine that's lying idle. Tom and his "Marquis" wheat are good enough security for me.

JOHN: If you don't mind I would like to be in this deal too. I also have a wholesome respect for Tom Johnson and I take off my hat to any fellow who works like him. We had a debate on this very feature in the banking laws at the College last winter. One chap took up the case for the banks but the other fellow fairly wiped his feet on him. The bank champion only had three supporters out of 140 members present. His stock argument was the risk from dishonesty and the insurance difficulty, but every one saw that there was no more risk from dishonesty than there is in the case of a man who mortgages his house to another. There's no law made that will hedge in a dishonest man. The best the law can do is to make the punishment fit the crime, so that no fellow would think it worth his while to monkey with a parcel of grain hypothecated either to a bank or an individual. And as for insurance, my goodness, when a man can cover his growing crop against hail, need there be any difficulty in insuring ripened and properly stored grain against all ordinary risks?

FATHER: Well this rain is enough to break the heart of a camel. Not half of the crop cut and what is in the stook looks to me as if it were sprouting. I hardly expect that field of oats will ever ripen if it keeps on like this for another day or two and it certainly looks like that to me now. I can't understand how Watkins has got his stuff in so pat. His wheat was ready for cutting a full ten days before us and he has a big patch of it threshed. Of course its all a question of machinery, I can see. We really must get a new outfit of pretty well everything before next spring, and there's that mare looking as flabby again as a dog with the mange. I think I got swindled with that second-hand binder of Winkle's. Anyhow it hasn't done two consecutive hours of decent work since I took it out. Second-hand truck is no good, I can see. I can safely say that the money we gave for that binder is absolutely lost. Winkle was desperately anxious to sell and if it hadn't been the ridiculously low price I wouldn't have bitten.

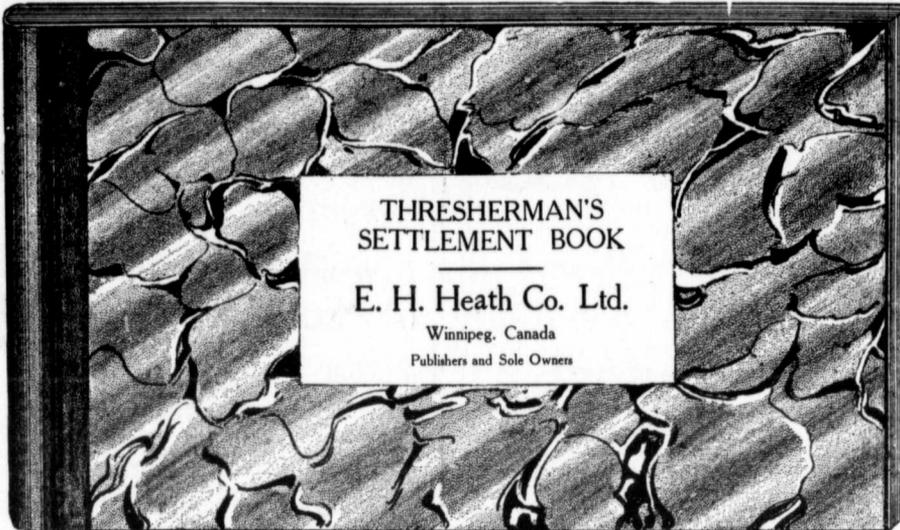
CHARLES: I haven't as long a memory as you have, Dad, but I can count at least fifteen seasons that I took a real interest in on this farm and I know we have had quite a few much wetter and later seasons in that time than we have had this year. We can't blame the weather. If we had done the best we might have done there would have been no one to blame, but this year I have noted every day since we had a chance to do anything after the frost began to move and I am as positive as I am of my own existence that if we had not wasted time with played-out tools we would have come out on top like Watkins. That's were the trouble lies. Our implement shed is like a junk store—we haven't a really serviceable plow, packer or harrow among the lot. Consequence is we have been all behind from the start and we'll be no better next year or any year after that till we have a sale, a burial or a bonfire of old junk. Really we must sell something or pledge something that will bring in as much as will buy some decent tools.

MOTHER: You're right, Charlie. We are worse off today than we ever were, in spite of all the fine plans and propositions we've made in the winter time for a fresh start. We haven't a ghost of a chance to cultivate our land and get the seed in at the right time, and this season's experience has shown that with the best crop we ever raised we cannot harvest it. I was told that they are in a far worse plight in the Red River Valley than we are, so far as the wet is concerned, and yet there are a large number of farmers in that district who have raised and gathered first rate crops in fairly good condition. But it seems anything I can say has no weight with your father. I am getting quite disheartened. I would like to find some decent excuse for ourselves. I don't like to speak of laziness. It's an ugly word but if that isn't at the root of our trouble, shiftlessness and off-putting has a lot to do with it. We don't need any more "object lessons." We've enough of them in sight to educate an empire in good farming.

BOB'S weekly letter: I hear crops are looking fine up our way but that the rain is likely to keep things back. I hope father and Charlie will not be humbugged but I got a shock in the hotel last night that makes me express this hope. Eavesdroppers, they say, never hear much good of themselves. Bill Smith and a stranger were conversing close to where I sat at table and I overheard the stranger say to Bill: "O you may be sure if there's a chance to get behind with anything, old 'Good Intent' will take advantage of it." Now I have no doubt of whom they spoke. I found that the stranger was the collection man of the P. & P. plow company. I daresay he's been fed up many a time with Father's notes and what it has cost him in time and temper to send excuses instead of remittances to his house. Upon my word, I dread meeting anyone from our neighborhood now and it gives me the heartburn to go into any of the implement houses on the simplest errand for father or indeed for anyone.

Threshermen

You lose money if you don't have it. Farmers—inist on the thresherman who does your job having one.



It Prevents Disputes

It is a Safeguard Against Lawsuits

Cut is exact size

The keeping of threshing accounts in a blank book is a dangerous method. Disputes arise and hard feelings between the farmer and thresherman result. The best time to adjust an account is when the job is just finished. With our settlement book a complete record can be kept of every bushel of every kind of grain threshed and a duplicate is given to the farmer. There is no come-back. The farmer is also protected in that he cannot be charged for more than he signs for. Forms are also provided for keeping track of wages, repair bills, oils, etc. In fact it is the handiest and most complete thing you ever saw. Lien note forms are also provided. You shouldn't thresh without it and every farmer should have one on hand as a safeguard against the mistakes of the thresherman. It will save you many dollars. It can only be obtained with a year's subscription to this magazine. If you are already a subscriber your subscription will be extended from date of expiration. Both the Settlement Book and a year's subscription to The Canadian Thresherman and Farmer, \$1.00. Book sent postpaid.

The Handiest Tool About the Farm or Threshing Outfit



Cuts belt lacings, makes belt holes, mends harness, is an excellent knife, punch, rule, guage, etc. Every Farmer should have one. Every threshing outfit incomplete without one. Made of the finest tool steel with wood handle. Sent postpaid with a year's subscription to this magazine for \$1.25. If you are already a subscriber your subscription will be extended from date of expiration.

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Winnipeg, Canada.

Please find enclosed \$.....for one year's subscription

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E. H. Heath Co., Ltd. Winnipeg, Canada

A SIDE LIGHT ON HIGH PRICES

The following is given for what it is worth. It presents some very valuable information in this day of high prices.—Ed.

HAVING investigated the pres-supply, marketing and dis-ent actual conditions of the tribution of food to the consumer in New York City and the other chief centres of population in New York State, the Committee on Market Prices and Costs, the special sub-division of the State Food Investigating Commission, has now reached definite conclusions and formulated them in its report with recommendations for legislative action. To meet the general complaint of the increasing cost of living, the committee's main purpose was to examine how far in the marketing of food commodities prices are raised to the consumer by inadequate and uneconomical facilities and methods of distribution. This involved public hearings with the ample means and opportunities afforded by the authority of the state, a personal examination of the facts and a statistical investigation of prices from the terminal to the consumer. A close comparison was also made between the various modes of marketing food at wholesale and retail by public and private organizations. The variety and universality of the marketing process in New York City afforded a most valuable field for the examination and demanded the greatest share of attention, which it received. The other cities of the state, as well as the country districts coming under the reflex of the cities as affected in the regulation of market prices, came within the purview of the committee, and have proportionately received due attention.

The committee found that the marketing agencies of Greater New York, the second greatest consuming centre of the world, are covered by 13 classes of food distributors, ranging from the municipal wholesale markets, the wholesale markets conducted by railway and steamship lines, and the farmers' markets, to the corner grocery and push cart types through the intermediate grades of stores. Among these distributing agencies the Markets Committee reached the conclusion, as the result of its minute investigation, that the large retail unit or food department store buying direct, receiving direct, and selling direct is the best economic type in point of efficiency, minimum of waste, satisfactory distribution and due rewards for management and capital. Towards the development of such stores the committee believes retailers, wholesalers, and private organizations should move. To

compensate for the comparative neglect which the municipal interest of marketing has suffered in comparison with those of transportation, police, streets, docks, water and others, the committee recommends that the charters of the various cities of the state be amended so as to provide for Department of Markets, charged with the economic and sanitary supervision of food supplies used in the municipalities. The Department of Markets, it is further recommended, should be charged with the duty of publishing accurate statements of market needs and prices to be sent to producers of food supplies, so that they may be protected from extortion and offered facilities for marketing, the committee finds that the primary or wholesale prices should be fixed by systematic auction in lots suitable for purchase by retailers.

Such auctions should be conducted under the auspices of the city or of a public organization, not for profit, so that this auction in which all parties interested should have a voice would constitute, on primary prices, a producers' and consumers' market. The system is successfully practised in foreign metropolitan markets. Finally, the committee recommends that the railroad and steamship lines entering the cities of the state should be encouraged and required to provide adequate facilities for the prompt deliveries of food products for their sale by auction on the premises, for temporary storage, both cold and general, to carry over one or two days' supply and for the publication of bulletins showing supplies to arrive.

Adopting as a guiding principle the elimination of all that tends to the unnecessary stoppage in transit, as multiplied transfers and delays must increase the ultimate cost to the consumer, the committee expresses itself adversely to the construction of public market structures and terminals that might impose heavy fixed charges on the community and be incapable of changing with altered conditions of population and habits. The history of New York City's markets is given as a warning example. It is pointed out that for the most part the buildings in the wholesale district where the transportation terminals are located on the extreme south-westerly edge of Manhattan, are old, ill-built or ill-planned, and none of them are located on railroad tracks or pier heads. If the

Big Ben



Big Ben ends the over-sleeping of Farm Hands

Will you spend Two-Fifty to insure yourself for years against that everlasting bother—getting the farm hands in the fields on time? Will you spend it to insure a full days work from each man six days out of every seven.

Then, spend it for Big Ben. He's doing it on thousands of farms every day right now. More than a million people have spent it for Big Ben to help them get to work on time. Don't you want to join the Big Ben Army. Don't you want your farm hands to be members?

Alarms are sold at \$1.00 and \$1.50 less than Big Ben costs but such alarms are merely things to wake up by, not to wake on time with. They enable you to make a guess at the right time, that's all.

Big Ben enables you to know the right time. When he wakes you he

does it at the time you want, the right time.

Then, cheap alarms may last a year but Big Ben actually lasts for years and years. He's built of steel. He's a handsome clock plus a punctual alarm. You can use him all day long in any room for he fits bed room, parlor, dining room or hall.

The city man can get the right time of his neighbor or by picking up a telephone but that's not so convenient for you. You need a reliable time-keeper always in the house. That's why you need Big Ben more than you need a plain "alarm."

Big Ben rings just when you want and either way you want five straight minutes or every half minute during ten minutes unless you flag him off. His big keys make winding easy and his great open face and large hands tell the time plainly across the largest rooms.

Big Ben is sold by 5,000 Canadian dealers. His price is \$1.00 anywhere. If you cannot find him at your dealer's, a money order sent to his designers, W. L. L. Co., La Salle, Illinois, will bring him to you duty charges paid. Put him right now on your Xmas list.

YOU CAN TAKE BACK THE PACKAGE

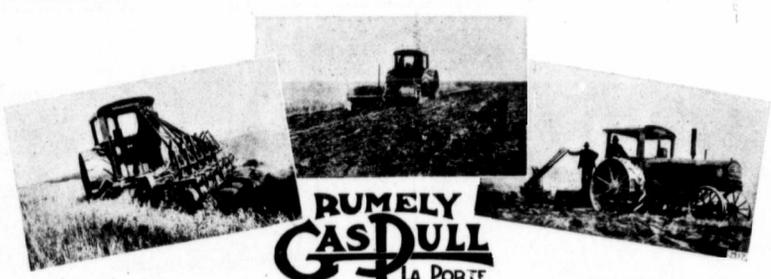


There is no chance of disappointment when you start using Blue Ribbon Tea. You need not use it more than once and if it does not fully satisfy you, take back the package and your grocer will immediately refund your money. We know you will like it.

matter were in the hands of a powerful commercial agency, the wholesale plant, for food handling in the city, would, with two exceptions, be "scrapped."

The fundamental aim, then, in seeking the reduction of the cost of food is to minimize the cost of distribution. The committee estimates that the annual food supply of the Greater New York costs at the transportation terminals \$350,000,000 or over, and that it costs in the consumers' kitchen \$500,000,000 or over. The testimony taken at the hearings, the committee thinks, shows that this addition of about 45 per cent. to the price is chiefly made by cost of handling and not by profits. In fact, the evidence showed that the smaller retailers are barely making wages, the corner groceries being generally a mere means of gaining a family livelihood. The suggested substitution of large unit retail stores capable of supplying 25,000 to 50,000 people and each with cold and general storage facilities would, the committee finds, bring about a system of food distribution at a cost of 15 per cent. without delivery and 20 per cent. with delivery, as against a cost of 25 per cent. to 30 per cent. for the present separate wholesale and retail systems without delivery and at a cost of 35 per cent. to 40 per cent. with delivery. Witnesses before the committee gave actual figures of operation from which it is inferred that the total cost of wholesaling, including profits, is probably about 10 per cent., and of retailing 33 per cent. added in both cases to the first cost. If the plans adopted by most successful agencies for wholesale and retail distribution respectively should be followed in New York City at large, the committee estimates that the reorganization of the facilities and methods of doing business would result in a saving of \$60,000,000 per annum, or 12 per cent. on the present retail prices.

While seeking to minimize the intermediary costs of transportation, the committee recognizes that a saving from improved facilities is only a part of the problem, and that the real object of the city should be to increase the supply and especially the nearby supply of food products. Not the least valuable portion of the report is that devoted to the market supplies and prices of particular products. The inquiry brought out in a comprehensive form, such as it has not hitherto been possible to secure, important information as to the marketing of milk, butter and eggs, and the effects of the cold storage system. From the sociological point of view, many points of interest are to be found



**RUMELY
GAS PULL
LA PORTE
TRACTOR**

20 Tractive H.P. 40 Brake H.P.

The New, Light, Low-Priced, High-Quality Tractor for All-Round All-Season Work

THE GasPull Tractor is just what you want for all of your traction and all of your belt power work. It will take the place of from 6 to 16 horses and will save almost 50% of their expense.

It is just what you want for fall plowing. One man and 25 gallons of gasoline will plow 15 acres a day in ordinary stubble with Rumely GasPull Tractor. Another man can plow as much more at night if necessary—the Rumely GasPull Tractor is always ready for work.

Rumely GasPull Tractor will drive a 30-inch separator in ordinary grain. It is the very best engine for baling hay, husking, shredding—the best for every farm purpose where a medium-power engine is desired.

Handiness is one of its most desirable features. "It is as handy as a pocket full of nails" for a farmer to have and almost as easy to take any place you want to take it. You can drive a Rumely GasPull Tractor any place you can take a wagon and team.

If you are interested in knowing about the handiest, most dependable and most easily operated tractor built, ask your Rumely Dealer about the GasPull.

We shall be glad to send catalog



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Agents Everywhere Agents Everywhere 251



in the sections of the report relating to the side issues which have an important bearing on the main economic problem, since the habits of the people, their preference, customs and idiosyncrasy have all to be taken into account. The influence of the telephone and motor truck upon changing the course of domestic marketing has been immense, and experience of store owners and consumers as related by themselves in the testimony recorded by the committee, throws a flood of light upon the subject. Illuminating facts are given about the extension of suburbs and its revival by use of motor trucks giving a longer range of haul to market. That large returns are still possible is shown in the instances quoted. A Woodhaven farmer realizing this July in the Gansevoort market a gross return of \$45 on a load



INDIAN CURIO COMPANY

ESTABLISHED 1880

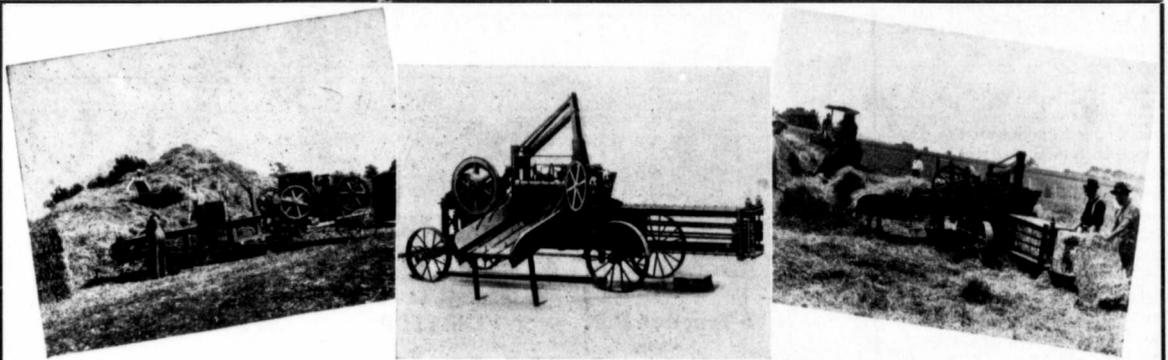
Expert Scientific Taxidermists

Buyers of Raw Furs

We have this summer installed the very latest scientific method of mounting, and specialize in mounting large game heads. When in town, call and see what there is between the old time "stuffing" and the artistic preservation and setting of natural history specimens with absolute fidelity to living nature. A large stock of the finest work obtainable in Indian Beads, Leather Work, etc. European Novelties—Tricks, Puzzles, etc. Complete line of Taxidermists' Supplies. Highest prices for Skins, rare Birds, etc.

Wholesale and Retail **549 Main St., Winnipeg, Man.** H. O. Morrison
Successor to
W. F. WHITE

of radishes, lettuce and small cabbage, the cost of marketing being 26-23 per cent; while a Staten Island farmer made \$50 on a one-horse wagon of lettuce and beets at a marketing expense of 17 per cent., and Buffalo farmers bringing in produce



BALE YOUR HAY OR FODDER!

Remember Baled Hay or Fodder is worth much more to you than that which is unbaled. This is not an idle statement, it has been proved by repeated experiment, as you well know.

A Few Advantages of Baling

1. Retains much more of its feed value.
2. Saves a great deal of room in your barns.
3. Is easy to fork out—eliminating waste.
4. Brings top price if you sell it.
5. Packs well when shipping—securing minimum freight charges.



Use the Rumely Automatic Baler

The only baler with a real self-feeder—a feeder that

1. Eliminates the man on the feed table, saving his wages and board.
2. Enables you to bale 35 tons per day—10 tons more than with a hand-fed press.
3. Will pay for itself many times over by the saving it effects in labor and in increased capacity.
4. Our Baler combines strength, speed and hardness in making a bale that will bring top price for quality.

The Rumely Automatic Baler provides another use for your engine, which might otherwise remain idle. Farmers, this is the secret of an economical machine, make it work. Write for our interesting Baler Booklet. It will tell you more about the Rumely Baler that you should know. Address us or our nearest branch.

La Porte, Rumely Products Company, Inc. Indiana

Canadian Branches

Calgary and Edmonton, Alta.; Brandon and Winnipeg, Man.; Toronto, Ont.; Estevan, Regina, Saskatoon and Yorkton, Sask.

249

within a radius of twenty-five miles net from \$100 to \$150 a load, after spending in the cost of handling 10 per cent. for all charges.

The committee, which has as its chairman William Church Osborn, consisted of, in addition to the chairman, Hon. Calvin J. Huson, Commissioner of Agriculture, and Ezra A. Tuttle, and was assisted by Horace V. Bruce, Expert Investigator, and Raymond A. Pearson ex-Commissioner of Agriculture.

Worth Their Weight in Diamonds.

If the mind is clear, even in a dark room there will be radiance; if the thought is dark, at noonday there will be demons.

Be not lenient to your own faults; keep your pardon for others.

When the sense of shame is lost, advancement ceases.

ABSORBINE
Cures Strained, Puffy Ankles, Lymphangitis, Puff Eye, Fistula, Sore, Sores, Wire Cuts, Bruises, Swellings, Lameness, and all sorts of Pain quickly without blistering, removing the hair, or laying the horse up. Pleasant to use. \$2.00 per bottle delivered. Describe your case for special instructions and Book & E-Fee.
ABSORBINE, J.R., ointment for man and horse. For Strains, Sprains, Knots, Swollen Veins, Milk Leg, Gout. Price \$1.00 per bottle at dealers or delivered.

It is spelled **A-B-S-O-R-B-I-N-E** and Manufactured only by **W. F. Young, P.D.F.**, 112 Lyman's Building, Montreal, P.Q. Also furnished by **Martin Ross & Wynne Co.**, Winnipeg, The National Drug and Chemical Co., Winnipeg and Calgary, and Henderson Bros. Co., Ltd., Vancouver.

Genius hears one individual and then comprehends ten.

Negligence looks at the battle field, then makes its arrows.

Seeking information is a moment's shame; but not to learn is surely a lasting shame.

A woman without jealousy is like a ball without elasticity.

Unless blind and deaf, one cannot be impartial.

The present is the frontier between the desert of the past and the garden of the future. It is redrawn every moment.

"O dreadful Death, why veilest thou thy face?"

"To spare me thine impetuous embrace."

In trying to straighten her horns, the cow was killed.

The sea-bird speeding from the realm of night

Dashes to death against the beacon-light.

Learn from its evil fate, ambitious soul,

The ministry of light is guide, not goal.

Man is the only morally cruel animal.—George Greenwood.

SPORTING OUTFITS

22-CAL. RIFLE OUTFITS

Outfit No. 73 CONTAINS Remington 22 Repeater, standard grade. One take-down rifle cover. 100 smokeless cartridges. Packed in neat box, complete with cleaning rod and directions.

PREPAID, ONLY \$13.00

Outfit No. 63 CONTAINS Savage 22 Repeater box Magazine Model 1903, packed in box with two magazines and cleaning rod. One take-down rifle cover. 100 smokeless cartridges.

PREPAID, ONLY \$16.00

OUR SPECIAL FALL LIST NO. 40 NOW READY - MAILED UPON REQUEST

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Threshing in Zero Weather

Requires the Best Belt You Can Buy. You as a Thresherman know that Cold Nights and Sleety Days Will Put a Thresher Belt to a Most Severe Test.



We have been building and supplying Thresher Belts to the West for several years and the fact that our customers are more than satisfied convinces us that we are building belts to suit the exacting conditions.

We sell belts to practically every Thresher Company doing business in Western Canada.



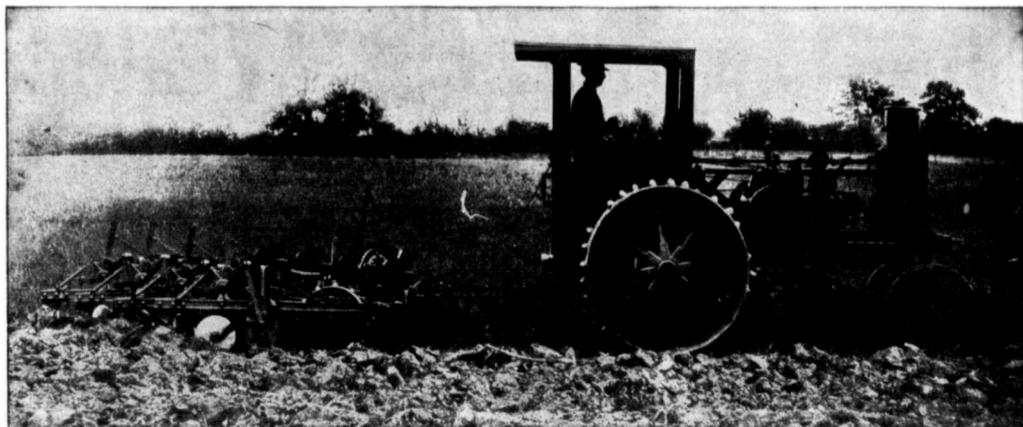
These companies know and appreciate the belt that keeps the outfit going. They want the belt that gives perfect service every minute of the day and they have found it in the

“LION” RUBBER Endless Thresher Belts AND “MAPLE LEAF” Endless Thresher Belts

Do not buy a belt because it happens to be a trifle lower in price. THE BEST is what you require and when you pin your dealer or supply house down to real facts, they will admit that the above brands are standard. They work well, they wear well. Slippage, shrinking, fraying and stretching have been reduced to a minimum in both the “LION” and “MAPLE LEAF” Brands.

Insist on the THRESHER COMPANY who sells you that late separator supplying you with either of the above belts. They can and will do it if you insist.

WINNIPEG RUBBER COMPANY, LIMITED
WINNIPEG NOT IN ANY TRUST OR COMBINE CALGARY



A New Baby Brother

A New Baby Brother has been born in the Avery Tractor Family. It's called our "12-25 Baby." It looks just like its bigger brother, the "20-35."

We believe that this is just the Tractor that the farmer with about 160 acres of ground has been looking for. It turns hard and will work in any size field.

Light Weight and Big Power

This "12-25" H. P. Tractor is exceptionally light weight—less than 7500 pounds. Just think of it—less than three and three-quarter tons—and yet it pulls three to four plows! It's the lightest weight Tractor built considering the power it develops.

Heavy weight Tractors are all out of date. They pack the ground and injure it; they cannot get around over soft ground and they waste fuel moving useless dead weight. An Avery Tractor saves fuel because the power of the Tractor is not wasted in moving itself around. You can get into the field early in the spring or after a rain. It will travel over soft ground. It will work on any ground that is in condition to be worked with horses. It will not pack your ground to injure it in any manner.

The Simplest Tractor Built

The Avery Tractor is the simplest Tractor built. It has the fewest gears of any Tractor—no intermediate gear is used in travelling ahead—the crank shaft pinion meshes directly into the compensating gear. It has no intermediate shaft—there are but two main engine shafts, crank shaft and counter shaft. It has but one friction clutch which serves for travelling forward or backward or when working in the belt. It has no power-driven cooling fan to cause trouble or consume power—the exhaust draws the cool air past the tubes. It has no water pump to leak and require packing. It has a simple double opposed motor and an oiling system that is contained within the crank case with no outside lubricator.

It doesn't take an expert to run an Avery Tractor or keep it in good order. It is so simple that anyone can handle it who is large enough to operate the levers, with a little training and experience.

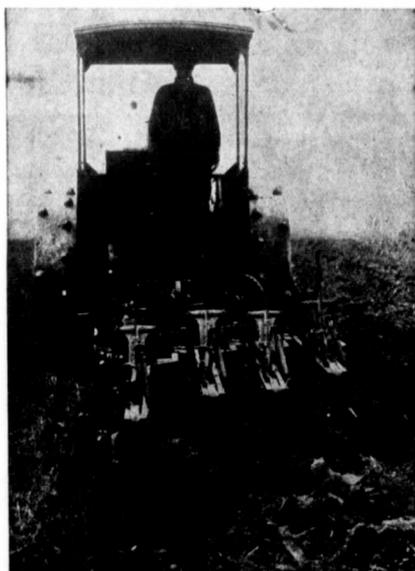
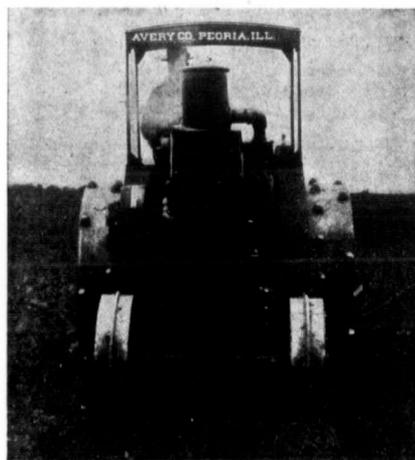
Burns Either Gasoline or Kerosene

You can have the choice of burning which ever fuel is the cheapest in your locality, no matter what the price may be from year to year—a thing which you can never determine in advance. Avery Tractors have demonstrated themselves in tests and in the hands of users to be unusually economical in fuel consumption, both when running in the belt or when pulling with the traction power.

Selling Like Hot Cakes

Avery "20-35" H. P. Tractors have been selling like hot cakes ever since they were put on the market. This new "12-25 Baby" size is sure to meet a demand that will keep us hustling to turn them out fast enough. The first man who placed an order for the "12-25 Baby" bought eight of them for some 160 acre farms he has. He had already used a "20-35" on his larger farm all this year and knew what he was buying.

A special circular just printed tells all about this new "12-25 Baby" Avery Tractor. It's right in price and guaranteed to be exactly as represented. Write, telephone or call on us or our Branch Houses at once and find out all about this new "12-25 Baby."



Avery Company, 675 Iowa Street
Peoria - - Illinois

HAUG BROS. & NELLERMÖE CO.

Winnipeg Regina Calgary Western Canadian Distributors

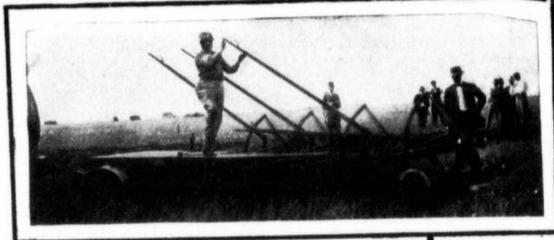
WHEN YOU BUY A HAND LEVER PLOW



You have to jerk your arms out like this



And ride the levers like this

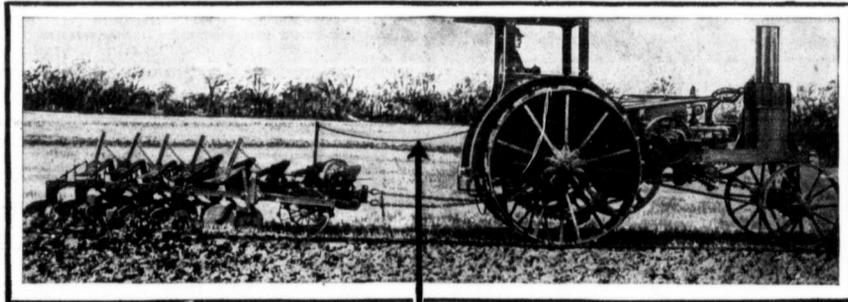


And hop along like this



And squat down like this

BUT WHEN YOU BUY AN AVERY NO-MAN AUTOMATIC "SELF-LIFT" PLOW



YOU ONLY HAVE TO PULL THIS LITTLE CORD

And that isn't all—

You not only save all the hard back-breaking work of lifting and lowering plows at the end of each furrow but you also save all the expense of the wages and board of a plowman. An Avery "Self-lift" Plow will pay for itself in a short time by the saving it will make for you.

SAVES EXPENSE—SAVES HARD WORK—SAVES TIME

That's what the Avery No-man "Self-lift" does. It's the only plow that will do it. It's the only plow built with a real "Power Lift-self Drop" device that does away entirely with the work and expense of a plowman. Originated and designed by the Avery Company and fully covered by patents Nos. 819,223; 900,919; 933,858; 936,768, and others applied for. We have numerous other applications for patents pending, also Canadian patents and patents pending in Canada. This plow won First Place and all the Gold Medals

in the 1912 Winnipeg Plow Contest. It also pulled the lightest draft of any plow in either the Motor or Plow Contests against the six most widely advertised makes of plows on this continent. Built in sizes 3, 4, 5, 6, 8 and 10 Gang. For use with any size or make of Steam, Gas or Oil Engine.

You can't afford to buy an Engine Gang without getting all the facts about the Avery No-man "Self-lift."

The Avery "Self-lift" Plow is in a class entirely above and far superior to any other plow in the world. W. J. Hewitt of Minto, N. D., writes: "You couldn't GIVE me a Hand-lift Plow," after he had used an Avery Automatic "Self-lift."

Hundreds already sold. You ought to read the letters that owners write about them. Write, telephone or call on us at once and get all the facts about the Avery No-man Automatic "Self-lift" Plow.

AVERY COMPANY, 675 Iowa Street

Peoria

Illinois

HAUG BROS. & NELLERMÖE CO., WINNIPEG, REGINA, CALGARY, WESTERN CANADIAN DISTRIBUTORS



NO. 1 HARD

October 2nd, 1912.

A GAIN the month of our heaviest crop movement is with us. Owing to backward threshing weather, the September inspections past Winnipeg were but one-half those of the same month last year, which, in turn, were counted comparatively small. But, as an offset to small Canadian marketing, the movement from the American spring wheat states has been exceedingly heavy. Snow, the American expert, now estimates the total American crops, winter and spring, as 742,000,000 bushels. A huge crop indeed, the greatest in the history of the United States!

Our own crop promises to be the heaviest and most profitable in our annals. The September rainfall all over the wheat belt was phenomenal, but the grain was mostly in shock, and withstood adverse conditions well, in fact, the damage did not compare with that suffered by the 1911 crop from August frosts. It might be noted that over 90 per cent. of our 1912 crop has been cut and saved without the slightest frost damage. Some wheat will lose a grade from bleach, but it is generally conceded that, barring further continual bad weather, the percentage of contract grade will be the highest in our history, and so the crop will bring the producer the most money.

The sole distributing feature in the crop movement to date has been the considerable percentage of tough wheat. Threshers, to hold their crews, have been compelled to resume operations frequently a day or so too soon, ere the grain was ready, but spreads for toughness are again smaller and the loss is more apparent than real, as the farmer, in selling his tough wheat, gets paid for the moisture it contains, less one per cent. Yet it is, at all times, advisable to thresh only dry grain.

In September, the October option sold off about 4½c. in sympathy with depression in American markets, due to extraordinary marketing. The whole world situation, at the moment of writing, is disturbed by the threatened war in the Balkans, and the steady decline in our options has been checked, but likely only temporarily, if the war scare blows over. Yet, with the world's visible only about 80 per cent. of what it was this date last year, and the European re-

quirements bound to increase as the season goes on, and, with high grade wheat eight to ten cents per bushel below the price at this time last year, it is quite possible that prices are, for the time being, low enough.

The Russian crop has suffered damage from excessive rains. France, Germany and Austria all report too much rain and much damage to crops. Australia and India are better off, with good prospects. The Argentine crop, which will commence to be marketed in January, seems to be doing well, and will prove a big factor in determining prices for our December wheat about the time that option month begins.

The financial situation in the United States is satisfactory, and despite enormous marketing of new crop, the accumulation of supplies in sight has not been large, thus implying a tremendous absorption of cash grain. Much wheat is required to fill their flour sales already made. And recently, when our high grades were delayed in movement, Montreal mills ground American wheat in bond. Sentiment in American markets has been bearish for weeks past on the general anticipation of supplies being excessive over requirements, yet the resultant technical oversold condition of the market has kept it nervous and responsive to any factor such as the present war scare.

Summing up, it seems that the high grade wheat, which big importing countries must have, is in North America this year; yet the impending car shortage renders it imperative that every farmer market what he can, preferably off-grade or lower grade, grain first, when he can get a car, keeping some of his higher grades till later in the season.

OATS

Oat prices have been helped somewhat by a short interest in the October option, and, in view of heavy fodder crops all over the continent, are very good just now. Early marketing seems advisable, especially if off-grade.

BARLEY

Barley has been steady, with a good demand for grain which will malt. This grain will be likely less in demand as the season passes.

FLAX

Flax has declined, due to weakness in the American markets,

FARMERS! SHIP YOUR GRAIN

TO THE

CANADIAN ELEVATOR CO. LTD.

GRAIN COMMISSION MERCHANTS, WINNIPEG

It is as much our business to give satisfaction as to secure grain shipments. We watch the grading of each car and allow liberal advances on all bills of lading.

Ship your Grain to Us!

Take advantage of our experience. We never sacrifice grain that farmers ship us. We know How and When to sell on bulges, and we avoid selling on declines. Our business has been built up on our motto:

"Good Returns to Farmers"

WE HAVE BEEN ESTABLISHED FOR TWENTY-EIGHT YEARS—DON'T YOU BELIEVE OUR EXPERIENCE COULD BE MADE VALUABLE TO YOU?

Our commission is ONE CENT per bushel—too small to pay anything to agents. We have no agents; you get THE FULL NET PRICE at which your grain is sold, less our 1c per bushel commission.

If your car is loaded and you cannot wait for shipping instructions, and if you are on the C.P.R. or G.T.P. Ry., ship to "McBean Bros., Fort William." If on the C.N.R. ship to "McBean Bros., Fort Arthur."

If at all possible we strongly advise loading direct from your wagon into the car, thus preserving the identity

of your grain, and also assuring that you get paid for every bushel you put into the car.

Send us a six or eight ounce sample of your grain and we will advise you its real value. Even the poorest qualities can be made to draw a good price if properly handled. We understand this business thoroughly, and those are the points that count. Write us for market prospects; you need the BEST; it means MONEY to you. We are not looking for very low prices this coming season. We are licensed and bonded.

NOTE.—A large yield of Grain this fall does not mean low prices. Europe needs every bushel of our Grain, and will be willing to pay good prices for it. Should prices get below fair legitimate value, don't sacrifice. Write us for advice.

McBEAN BROS.

ESTABLISHED SINCE 1884—AND STILL AT IT.
GRAIN EXCHANGE WINNIPEG, MAN.
REFERENCES: BANK OF HAMILTON, WINNIPEG, MAN.

Consign your Grain to a firm that will look after your interests: feel for re-inspection when necessary—obtain highest market prices, and make prompt returns:

Central Grain Company Limited

BONDED COMMISSION MERCHANTS LICENSED

707 Grain Exchange - Winnipeg, Man.

Car Tracin and Claim Department in connection. Send us samples of your Grain, we will look after the grading and advise you promptly. The permanent success of our business depends on our customers' continued satisfaction.

Paid-up Capital: \$150,000

References:—
Any Bank or Commercial Agency

TO THE GRAIN GROWERS OF THE WEST

Ship your Grain to us and make Bills of Lading read: care of Gibbs Commission Company, Winnipeg. Then you will realize the advantages of employing thoroughly equipped, wide-awake and up-to-date Grain Commission Merchants. Highest prices, liberal advances on Bills of Lading, prompt notification of weight inspections, prompt settlements, claims for car shortages.

Your grain is sold by us PERSONALLY—not by paid employees. Thirty years experience in selling Grain means TOP PRICE for your shipments.

Send us your name for Mailing list. We are in close touch with the great Grain Markets of the world, and will keep you thoroughly posted; it means money in your pocket even if you don't ship to us.

GIBBS COMMISSION COMPANY
LICENSED (Successors to Gibbs & Robinson) BONDED
GRAIN COMMISSION MERCHANTS, WINNIPEG, MAN.
Members—Winnipeg Grain and Produce Exchange, New York Produce Exchange, Montreal Board of Trade, Calgary Grain Exchange. References: Dominion Bank, Winnipeg.

Good Premiums for Spot Wheat and Oats Continue

Threshing has been so much delayed that Exporters with heavy contracts for first half October seaboard shipment have had great difficulty in filling their boats, and good premiums have resulted to the shipper. It is very probable that contract grades, both wheat and oats, will sell at premiums until after the middle of October.

Then ship your grain to get these premiums. Let aggressive men of long experience check your grade and sell your grain on the best markets. Tough cars particularly need the individual attention we give each shipment.

Send us samples of your barley before loading, as if it will malt, we can get you a good premium.

If you wish to sell on track, wire or phone us for a bid: it will pay you well to do so. Mark your bills our advice. A liberal advance made on receipt of shipping bill if requested.

BLACKBURN & MILLS

(A. M. Blackburn)

(D. K. Mills)

531 Grain Exchange - - Winnipeg, Manitoba

Licensed

TELEPHONE, MAIN 46

Bonded

and might decline a little more when movement has commenced, as it is much nearer Duluth prices than for many months past, and is not on an export basis.

The Western Canada Flour Mills.

That Canada is year by year becoming a centre for milling industries, is borne out by the increasing size of the export orders received by domestic mills. Unquestionably the largest shipment that has ever been made from one Canadian mill in one shipment to one customer at one time was made recently when the Western Canada Flour Mills Co., shipped from their plant at St. Boniface, a train comprised of thirty-seven cars containing nothing but their famous Purity flour, and consigned to St. Johns, Newfoundland.

This colossal shipment, which represents 15,000 98-lb. sacks, went forward in barrels—the style of package almost entirely demanded by the importers of the “outer isle.” The reason for this is that as soon as the barrels are emptied, they are repacked with fish and exported to Canada and the United States.

In order to catch a through boat leaving Fort William for Newfoundland, the Western Canada Flour Mills Co. had to make special arrangements with the

Canadian Pacific Railway, whereby this order was taken through by special train.

Possibly a greater idea of the magnitude of this shipment may be gathered from the fact that the flour alone weighed in the neighborhood of 735 tons. The barrels in which it was packed were coopered at the recently constructed cooper plant of the company at St. Boniface, while the staves, headings, etc., were the product of the company's mill at Rainy River, Ontario.

Naturally, the management of this concern are congratulating themselves on the fact that they have shipped in 1912 the biggest flour order ever sent to one firm in one shipment from one mill in Western Canada.

The Canadian Seed Growers' Association.

The eighth annual report of the Canadian Seed Growers' Association, which is now being distributed by the publications branch of the Dominion Department of Agriculture, Ottawa, is replete with matters of interest, not only to those concerned in the production of high-class seed, but to all who are interested in rural progress generally. In addition to the report itself, there are included several addresses by such prominent authorities as the

To the Grain Shippers of Western Canada

If you want highest prices for your grain, liberal treatment and quick returns, you will ship your grain to your own order Fort William or Port Arthur, and mark on your Bills of Lading: “Notify the N. Bawlf Grain Company Limited, Winnipeg.”

Ship us a car on trial and we know that you will be a satisfied customer.

The N. BAWLF GRAIN CO. LTD., 702 Grain Exchange, WINNIPEG

NICHOLAS BAWLF, President

W. R. BAWLF, Vice-President

Donald Morrison & Co.

ESTABLISHED 1904

GRAIN COMMISSION

711 T Grain Exchange
WINNIPEG

WE handle Wheat, Oats, Flax and Barley on commission, obtaining best possible grades and prices. Our work is prompt, accurate and reliable. Let us handle YOUR shipments this season. Daily or weekly market letter on application.

REFERENCES: Bank of Toronto, Northern Crown Bank and Commercial Agencies.

Hon. Martin Burrell, Dr. Jas. W. Robertson, Prof. C. C. James, Prof. L. S. Klinck, J. H. Grisdale, etc. Of special interest, perhaps, is the paper presented by Mr. Rufus Stimson, agent of Agricultural Education, Boston, Mass., on “Vocational Agricultural Education for Boys and Girls.” The means adopted in Massachusetts and other states of the Union in interesting the

boys in farm work and in correlating the work of the school with ordinary farm work is most suggestive and should be carefully studied by all who are interested in the more efficient education of boys and girls in rural communities.

The above report may be had free of charge by applying to the Publications Branch, Department of Agriculture, Ottawa.

THREE YEARS' PROGRAMME.

Continued from page 17

changing horses, while two men would be hired to do the stooking. I would have the grain threshed as soon after it was ready as possible. By making early arrangements with a thresherman I could get it done in good time. I would purchase another wagon at this time to handle the grain from the machine.

When threshing was finished, I would purchase two gang plows, and get as much plowing done as possible in the fall. On an average fall I could get enough done so that I could easily complete it in the spring.

At freeze-up I would let the man go and do the marketing of the grain myself. This could be pretty well done during the late fall and early winter. I would then have my notes to settle and other accounts for the year.

My account of expenses and receipts for the second year is as follows:

EXPENSE ACCOUNT.	
4 horses and harness	\$1,000.00
1 seed drill	130.00
375 bus. of wheat seed at \$1	375.00
100 bus. of oats seed at 40c.	40.00
Wages for man and wife 7 months.	350.00
One 8 foot Binder	160.00
One wagon	85.00
Two plows	160.00
Threshing bill (2,000 bus. oats at 6c.)	120.00
Threshing bill (6,250 bus. wheat at 7c.)	437.50
Twine, 900 lbs. at 10c.	90.00
Wages for harvest	100.00
Granaries to hold 7,000 bus grain	225.00
Horses and man keep	800.00
Interest on money due on farm (6 per cent)	300.00
Sleigh and cutter	90.00
Miscellaneous	35.00
Total expenditure	\$4,497.50
CASH INCOME SECOND YEAR.	
15 ton of hay at \$5 a ton	\$ 75
Work of teams 40 days at \$6.	240
6250 bus. wheat at 90c.	5,625
2000 bus. oats at 35c.	700
Total income	\$6,640
Total income	\$6,640
Total expenditure	4,497.50
Balance on hand	2,142.50
Payment on farm	2,000.00
Balance	\$142.50

During the winter, besides doing the chores, I would get posts and wire for fencing the farm, have these drawn home, and have my seed grain cleaned and prepared for the ground. Towards spring I would commence to get the harness and machinery in shape, get whipples-trees, neck, yokes, etc., fixed up and everything ready so that it would not be necessary to have any delay when the land was ready to work. I would hire a man again about the 1st of March, and as soon as the land was ready we would commence work again, putting 250 acres in wheat again this year and 50 in oats.

When seeding operations had been completed we would go to work to fence the farm. For this purpose cedar posts and woven wire would be used. This is rather expensive, but barbed wire is so disastrous to stock that I would not have it about the place. The erecting of this fence would take a large part of the summer, and with some more stable room to build and hay to put up the summer months would be almost entirely occupied.

At harvest time a couple more men would be required for the work, and the operations would be carried on much the same as the previous year, getting the threshing done as quickly as possible after cutting. I would, as before, endeavor to get as much of the land plowed in the fall as possible. In the fall of this year I would purchase some hens, a couple of cows, and two brood sows so as to get a little stock on the farm.

After having taken off the first two crops I would prepare to practice a system of rotation, and commence to grow grasses to maintain the fertility of the land. An endeavor would be made to stock the farm as soon as possible, but for the young man just starting on a new farm in this country there is nothing so profitable as wheat for the first couple of years.

This brings me to the end of my third season on the farm.

The accounts of income and expenditure for this year were as follows:

EXPENSE ACCOUNT.	
Man and wife wages	\$350.00
Keep of horses	500.00
Keep of myself and men	400.00
Seed wheat, 375 bus. at \$1.	375.00
Seed oats (100 bus. at 40c.)	40.00
Threshing 5,000 bus. wheat.	350.00
Threshing 1,800 bus. oats.	120.00
Twine (800 lbs. at 10c.)	80.00
Two cows	100.00
Two brood sows	30.00
25 hens at 50c. each	12.50
Stable improvements	100.00
Interest on money due on farm	180.00
Fencing farm	850.00
Harvest labor	100.00
Miscellaneous	100.00
Total expenditure	\$3,687.50

CASH RETURNS FOR THIRD YEAR.	
5,000 bus. of wheat at 90c.	\$4,500
1,800 bus. of oats at 35c.	630
10 tons of hay \$5 per ton	50
25 days work at \$6.	150

Total cash income	\$5,330
Total cash income	\$5,330
Total expenditure	\$3,687.50
Balance on hand	\$1,642.50
Payment on farm	\$1,000
Balance on hand	\$672.50

From these accounts I would have on hand at the end of the third year \$820.50; this would be in the bank, where it might be gotten at any time for extra expenses.

Besides the yearly account, I am giving a final account, or financial statement, of the whole three years' work.

All Records Broken in PIANO BARGAINS

The past three weeks have brought back to us a large number of pianos which have been rented for the summer months to schools, summer cottages, etc. These, together with the natural accumulation of used instruments incident to an extensive business such as ours, have crowded our show rooms to such an extent that an immediate clearance is imperative. These pianos have been thoroughly overhauled and are guaranteed to be in absolutely perfect condition. Price and terms are no object to us. We must have the room, and until we have disposed of at least seventy-five of these almost new pianos, the greatest opportunity of your life is before you. The following are only a few representative bargains. There are many others.

- CLINTON STYLE LOUIS XVI.**—Magnificent piano cased in finest San Domingo mahogany. Not a perceptible flaw on it. \$400, for..... **\$248.00**
- Another, same design, in walnut. \$375, for..... **275.00**
- WAGNER**—Fine example in quarter cut oak. Rich tone. \$350, for..... **217.50**
- DOHERTY**—One of our most popular designs in finely finished mission oak. Indistinguishable from a new piano. \$400, for..... **275.00**
- DOHERTY**—Circassian walnut. A magnificently toned instrument, in the richest specimen of this wood ever used in piano construction. Specially built for Canadian Industrial Exposition. \$500, for..... **375.00**
- CLINTON**—Another fine example of Circassian walnut casing. Neat, small piano, with a powerful voice. A real snap. \$350, for..... **217.50**
- R. S. WILLIAMS**—A splendid piano, richly carved panels. One of the most expensively cased pianos in our possession. A rare bargain. \$500, for..... **217.50**
- DOHERTY**—Fine burl walnut, Chippendale style. Specially designed and built for Toronto Exhibition. A dainty and most stylish parlor piano. \$450, for... **325.00**
- DOHERTY**—A small instrument with a rich and remarkably powerful voice. An ideal piano for the new home. One in mahogany and one in mission oak. \$375, for..... **275.00**
- DOMINION**—An exceedingly choice instrument in rich walnut, handsomely carved. A real gem, perfect in every respect. \$400, for..... **215.00**
- CLINTON**—One of the finest. Large size, and correspondingly great tone. \$400, for..... **248.00**
- DOHERTY**—Our celebrated style B. Almost new and absolutely perfect piano. \$400, for..... **275.00**
- WILCOCKS**—Fine English piano. Good tone. Handsomely inlaid case. \$350, for..... **100.00**

You never saw pianos like these in character, class and brilliance of tone quality at anything near the prices

Sale Begins Monday Morning, October 7th

W. Doherty Piano & Organ Co. Ltd.
Winnipeg Branch, 324 Donald Street

CENTRAL ALBERTA

NATURE'S STOREHOUSE FOR THE PRAIRIE PROVINCES

Central Alberta is attracting more attention today than any other section of Western Canada. It has more and richer Natural Resources than any other section of the Dominion. It has the **BEST MIXED FARMING LAND**. It has the **BEST CLIMATE**. It has **COAL, CLAYS** suitable for the manufacture of all kinds of Clay Products, including Porcelain Ware. It has **NATURAL GAS, BUILDING STONE, LIMESTONE, IRON ORE, TIMBER, GLASS SAND** and material for the manufacture of **CEMENT**. Central Alberta will be the most populous section of Western Canada, for it has the resources, the development of which will furnish employment for a large number of people. Central Alberta is an empire within itself, and could exist and prosper if cut off entirely from the rest of the world. More railroads are being constructed today in Central Alberta than in any other province. In Central Alberta there are being established new towns, which will be the leading Manufacturing and Wholesale Distributing Centres of all Western Canada. Among these new towns, the ones that today are attracting more attention than any others are **TOFIELD** and **CAMROSE**.

TOFIELD

The New Natural Gas City of Alberta

A' COMING MANUFACTURING CENTRE OF WESTERN CANADA

Tofield has one Natural Gas Well, with a capacity of **Two Million Cubic Feet** every 24 hours. This Gas Well **Belongs to the Town**—was sunk at the town's expense—and the gas cannot be piped away from Tofield. Two more Gas Wells are being sunk by the town. Natural Gas is furnished free to manufacturers, and desirable sites for manufacturing plants are supplied by the town at a nominal cost. The result is that many manufacturers are locating at Tofield. These will give employment to a large number of people, and the population of the town is rapidly increasing.

Tofield has **20,000 Acres of Coal** immediately adjoining the town, and a nearby market for every pound of it. Three Coal Mining Companies are developing the Coal Deposit on a large scale. **The Largest Excavating Machine in the World** is in use in one of Tofield's Coal Mines.

Tofield has large deposits of Clays suitable for the manufacture of Brick of all kinds, Cement Building Blocks, Fireproofing Material, Tiling, Sewer Pipe and Porcelain Ware. Tofield has Building Sand and Glass Sand. Tofield has an abundance of good Water. Tofield is surrounded by one of the best Mixed Farming Districts in all Canada. Tofield is situated on the Main Line of the Grand Trunk Pacific, and at the junction of the Main Line and the Tofield-Calgary Branch, the longest and most important branch of the G.T.P. System in the West. Tofield is destined to be one of the leading Manufacturing and Distributing Centres of all Western Canada.

Tofield real estate values have advanced 100 to 500 per cent during the past six months, and the advance has only begun. We are the owners of Tofield Heights and Tofield Park, both choice properties, mostly inside the original town limits. Many of our clients have made 100 to 400 per cent on lots purchased in these properties during the past year. Those who buy from us now can do equally as well. Write for full particulars, illustrated booklets, and price lists of lots, which will be sent Free and Postpaid. We sell on easy monthly payments and charge no interest.

CAMROSE

The Railway and Distributing Centre of Central Alberta

WHERE THE THREE BIG RAILWAY SYSTEMS OF CANADA MEET

There are today in operation or nearing completion railways running out of Camrose in eight directions. Three other lines are planned, and when they are completed Camrose will have **Railways in Eleven Different Directions**. These eleven railway lines include the Winnipeg-Edmonton line of the Canadian Pacific, the Tofield-Calgary line of the Grand Trunk Pacific, and Vegreville-Calgary line of the Canadian Northern, and what will later be the Main Line of the Canadian Northern from Winnipeg to Edmonton. Camrose was the first city or town in Alberta to have all three of the great railway systems of Canada, the C.P.R., the C.N.R. and the G.T.P. On account of its many railroads Camrose has **Practically a Monopoly of the Wholesale** business of at least 200 towns in Central Alberta, located in the Best Farming District of all Western Canada. Camrose already has **Twenty Wholesale Houses**, and new ones are locating there right along.

Camrose is located in a Rich Mixed Farming District. It has Coal Mines, Large Brick and Clay Works and other Manufacturing industries. Camrose will soon begin boring for Natural Gas, and has excellent indications for securing it. Camrose is already an important Educational Centre. It is the home of the Swedish Lutheran College for Alberta, and of the Provincial Normal School for Northern Alberta. Although only six years old, Camrose already has a population of close to 2,000 souls, and is growing rapidly.

We are about to put on the market at Camrose some very desirable, centrally located property that has heretofore been held in reserve while other property a mile further from the centre of the town has been platted and sold. This property is located close to the C.N.R. Station, close to the new \$50,000 hotel now in course of construction, close to the Scandinavian College and close to the site of the Provincial Normal School. The early buyers will have the choice of location. This will be the best opportunity offered this year for profitable investment in Western Canada town property.

Write for full particulars, Handsome Illustrated Booklet, plans and price list of lots, which will be sent Free and Postpaid.

CANADA WEST TOWNSITE COMPANY, Limited

OWNERS OF

TOFIELD HEIGHTS and TOFIELD PARK, Tofield, Alta.; and
McMILLAN PLACE and COLLEGE HEIGHTS, Camrose, Alta.

615-617 Somerset Block, Winnipeg, Manitoba

Cable Address: TOFIELD, Winnipeg

Correspondence in All Languages

Sign and Mail this Coupon for Full Information

CANADA WEST TOWNSITE Co., Ltd.,
615-617 Somerset Block, Winnipeg, Man.
Gentlemen: Please send me Full Particulars, Illustrated Booklet and Plans and Price List of lots in **TOFIELD** and **CAMROSE**, as advertised in the Canadian Thresherman.

Name.....
Address.....

This statement is as follows:

FINAL ACCOUNT.

Capital on hand at start	\$ 5,000.00
Cash returns	\$12,972.50
Payment on farm	3,000.00
Value of horses, mach, etc. (deducting depreciation)	2,387.50
Increase in value of land	4,800.00
Total cash value and cash income	\$28,160.00
Total expenditure for 3 yrs.	\$11,152.00
Total valuation at end of three yrs.	\$17,008

My own labor has not been taken into consideration in any case in this article. The possibilities of a bad year have not been mentioned. I merely took a good average year, with average conditions, and from these we must draw conclusions as to what would be the case under different conditions. There must necessarily be some things entering in to alter conditions, and, no doubt, a number of things will enter in that would materially alter my figures.

The increase in value of the land will be thought by some to be too high, but in the district referred to this is quite within reason.

The farm still has \$2,000 against it, but the payments have been met every year and the interest kept paid up.

During the following years I would try to get my farm clear as soon as possible, but would

also build better buildings as soon as possible, and get some good stock upon the farm, as soon as I was financially able. I would get a farm tractor to do the plowing, threshing and hauling on the farm, and would proceed to follow mixed farming.

GAS ENGINE COURSE.

(Continued from page 24)

From calculations and from previous tests it should be determined by the judges just what load an engine should carry, so that proper allowances may be made when the engine is on the brake. The object of this test is to determine the actual maximum capacity of an engine although, of course, the engine would not be expected to carry this same load for any great length of time. This test enables a fair comparison to be made between the different types of engines and also enables a designer to know whether the compression of his engine is as high as practically possible, whether valves are large enough and properly timed, ignition occurring at the right moment, etc.

Only what we appreciate gives us pleasure, not what we possess.—D. McClymont.

REAL COURAGE.

There is a picture of a man living out his life fully and bravely in spite of a terrible handicap in the form of an incurable disease, which must, year after year, gain a stronger hold on his body, and eventually end his life.

How do we face this side of things? Naaman faced it with courage. And it was courage of no mean order. It was not born of hope. We say sometimes, "While there is life there is hope." But that was not true in the case of the leper. He saw the long years of suffering, and knew, humanly speaking, that the way would only get harder the farther he went. Part of the work of life for him was to carry one of the heaviest burdens that a man ever has to carry—the burden of a dead hope. He could not say with regard to his disease, "While there is life there is hope"; but he found a better and a nobler thing to say, "While there is life there is duty." There is no braver story in history than the story of those who have to stoop and lift and bear the hope that might have lifted and borne them, if only both its wings had not been broken. Some of the world's leaders and deliverers and helpers have been men who have had

courage to look beyond the thing that could not be, and who have known that the only way to overcome some things is to accept them—the only way to conquer them is to bear them. The faith to remove mountains is not a complete equipment for life. We need also the courage and strength to climb them.

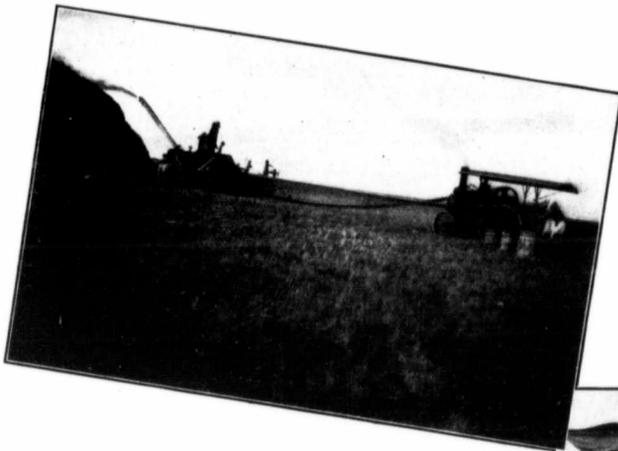
Percy C. Ainsworth
(The Pilgrim Way).

A man says: I have thrown away forty years; I have wasted my whole life"—or, as the more common expression is coming to be, "My life has been a failure"—because the thing at which he aimed has been lost. As if the man's life consisted in the abundance of exterior things which he possesses! As if a man's life were not hidden in his own self!

If anything is absolutely necessary to make an individual valuable, it is that he should clearly recognize his own powers and mark out his own path in the world. When he finds out that whatever he is to accomplish must be in one direction, and, accepting the discovery, applies his energies resolutely in that line, he has usually laid the foundation of a useful and a happy life.

YOU DON'T HAVE TO WAIT

Threshing time is going fast — don't wait for a Threshing outfit. You don't have to.



We have the outfit you want and are ready to deliver it now. We have Advance Gaar-Scott and American-Abell separators with engines to run them, in warehouses near you, and can deliver any of them on a moment's notice.

We are ready to save you days, now, when minutes mean dollars.

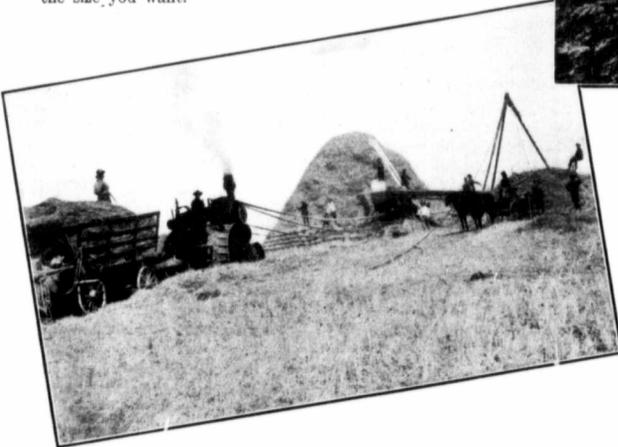
Advance Gaar-Scott and American-Abell Separators

Ability to do rapid, thorough work under even the worst conditions, with a minimum of power and

attention; long and satisfactory service and absolute reliability are features that have made our separators well and favorably known everywhere.

These separators are designed for hard work and are built strong enough to stand it.

We have a big range of sizes and can furnish just the size you want.



If your threshing outfit is selected from the Advance Gaar-Scott or American-Abell lines you have a machine for which supplies and repairs are always easily obtained. Aside from the value of our machines, Rumely service is worth while.

We have interesting catalogues describing our separators, automatic balers and other machines, and we shall be glad to send any of them. Send a postal to our Home Office or our nearest Branch.

Rumely Products Company

Incorporated
La Porte, Indiana

Canadian Branches

Brandon, Man.
Calgary, Alberta
Edmonton, Alberta

Estevan, Sask.
Winnipeg, Sask.
Yorkton, Man.

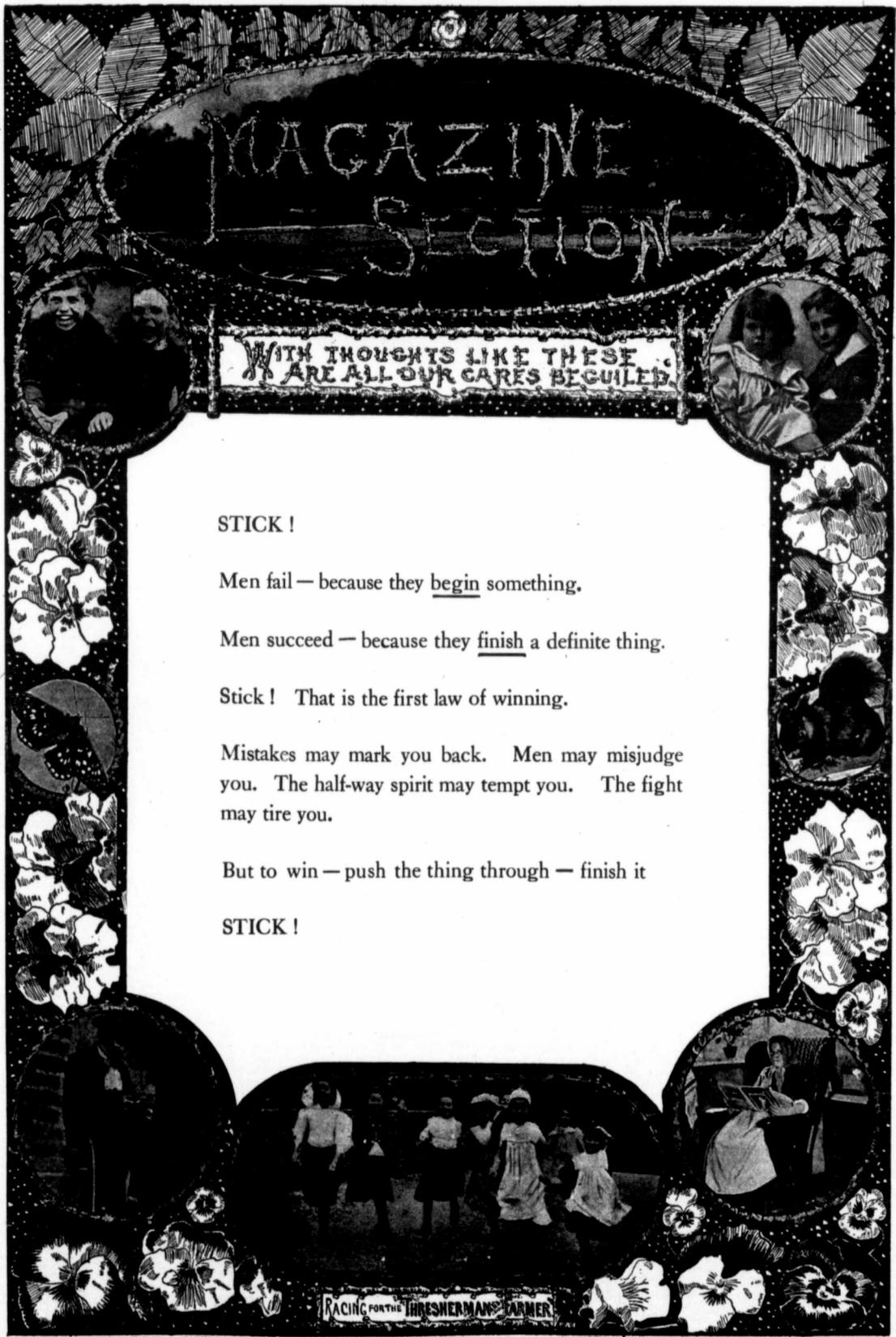
Saskatoon, Sask.
Toronto, Ontario
Regina, Sask.



AGENTS
EVERYWHERE



AGENTS
EVERYWHERE



MAGAZINE SECTION

WITH THOUGHTS LIKE THESE ARE ALL OUR CARES BEGUILED.

STICK !

Men fail — because they begin something.

Men succeed — because they finish a definite thing.

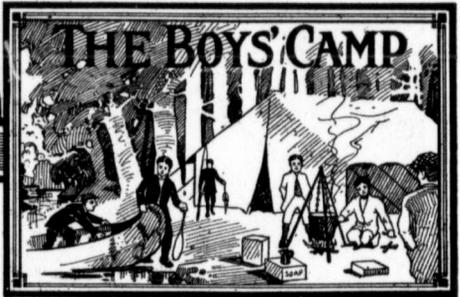
Stick ! That is the first law of winning.

Mistakes may mark you back. Men may misjudge you. The half-way spirit may tempt you. The fight may tire you.

But to win — push the thing through — finish it

STICK !

RACING FOR THE THRESHERMAN AND FARMER



Girls' Cozy Corner

THREE STEADY WORKERS.

(Leslie Mary Oylar in the Ohio State Journal.)

The earth, like our house, has its servants, you know,
The wind is the house-boy, his work is to blow;
He rises so early and sweeps up the leaves,
Great care every pathway and corner receives.
Because he can't bear to see anything shirked,
Poor thing, in the autumn he's quite over-worked!
Then down comes the rain, she's industrious, too,
For she, like the wind, finds there's plenty to do.
She washes the grass, that's what makes it so green,
And sponges the flowers till their faces are clean.
The sun next peeps out with his cookery book—
He gets up the latest, although he's the cook.
Still don't think he's lazy, indeed he is not,
But ripening the fruit makes him weary and hot;
For he and the others work hard every day,
So writing and happy and busy are they!

Dear Cozy Corner Girls:—
Have you ever thought of the many beautiful games you can play with flowers, leaves, stones, and all the free gifts bestowed by nature? My little girl and I play "I hear," when we take a walk, she says: "I hear a bee buzz." If I do not hear it, she has another turn. Perhaps she hears a chicken cluck, or a rooster crow, or a crow caw, or a mosquito, or the paddle of an oar, or the screech of a cricket. She listens and so do I and we have a fine game. In the same way we play, "I see." I see a poplar leaf, or a strawberry leaf, or an oak leaf, or a special flower. We try to distinguish little things. I cannot find everything she sees, neither can she discern everything that I see. This game

EXTENSION BRACELET FREE



This beautiful EXTENSION BRACELET HEAVILY GOLD-PLATED with best quality ROLL-PLATE and with SIGNET SET WITH 5 WHITE-STONE BRILLIANTS, can be adjusted to fit any size wrist. GIVEN POSITIVELY FREE for selling only \$3.00 worth of fast selling POSTCARDS to sell at 6 for 10 cents all beautifully embossed in gold and colors. Write now for cards, when sold send us the money and we will send BRACELET exactly like picture by return mail POST FREE. THE POSTCARD PREMIUM CO. Dept. WINNIPEG, CANADA.

is great fun. Then we play the game, "I smell." I blindfold her and place a flower under her nose and she tries to guess the name of the flower, when she guesses it then she blindfolds me.

In the same way we play the game "I feel." She has learned in this way to distinguish different kinds of leaves and flowers blindfolded. We play this game with trees too. She can tell the bark of an oak tree, a poplar tree, a willow tree and other trees. This develops the senses and is great fun. It is well to have amusements that stimulate the mind. You know our senses are the doors by means of which we receive knowledge about the big world. I hope our girls will play these games and then tell me of the fun they have.

How many of my girls can cook, or sew? Now, next month let us play we are all together in a great big cozy corner and some of the girls will serve refreshments while others sew. Let the girls write letters to me this month telling me about their favorite recipes. Let other girls write me about their sewing and others about their house work, school work or anything that interests them. Then next month we shall all gather in that big Cozy Corner of The Canadian Thresherman and Farmer and read all of these letters. I will ask the editor for extra space. With love to every one of you, I am, Sincerely

Cousin Doris

Girls' Prize Letter

Starbuck, Man.

Dear Cousin Doris:—Please let me join your charming club as I like it very much. I am a member of several clubs, but for letters I think this club has the best.

My sister and I were out picking strawberries, we could not find any berries so we stopped at a lake and got some cat-tails to make little easels to put pictures in. They look real nice. If any one wants to know how to make them just write to me and I will tell you the best way I can, we make different kinds of frames. But we do not keep them much more than a month as if you leave them too long they will burst and fly all over the house. The stalks are very tall, some are six or seven feet high.

We had an examination on the twenty-fifth of June, I passed. I got over seven hundred marks, and five-hundred is the pass mark. I guess I will take up part next year. How many like going to school and take up teachers' work. I don't know whether I will like it or not. How many have passed their entrance?

I suppose the readers like adventures, well, I do. One day I was driving out to a place (it is about five miles from our place) all alone. I had a blind horse and it had not been worked for quite a while, so it acted quite silly: well I was driving along when I heard a noise coming behind, it was our neighbors horse it galloped right along and stuck his nose right against my horse. My horse when it felt the other horse, it fell right down not knowing what had struck it. Then he got up and kicked and kicked and smashed the dash-board on the buggy, then he started running; my, but he was hard to hold. I never saw a blind

horse run like that before. But at last I got there, excited and my arms ached.

Hoping my letter will jump the W.P.B. I will close for this time.

Sincerely yours,
Hesper Olsen.

I should like to know how you make the frames, Hesper. What a brave girl you were to drive the horse. I am proud of your work in school. C.D.

Lacombe, Alta.

Dear Cousin Doris:—This is my first letter to the Girls' Cozy Corner. I am 9 years old. I go to school. My birthday is the 24th of December. I have no mamma nor grandpa.

I stay with my cousin, Mrs. I Morter. I am going to spend some of my holidays with my papa and grandpa. My brother stays with them. My papa has three horses and grandpa has four horses. We have one pet cat. I have to go two miles to school. My teacher's name is Miss A. L. Jones. I like to gather wild flowers. If I see this in print, I will write more next time. I remain,

Yours truly,
Alberta E Moore.

My dear Alberta, you wrote a lovely little letter. I am so sorry you have no mother. I am glad you can have a home with your cousin. Would it not be nice for the other girls to write to Alberta? I wish they would. C.D.

Rosenfeld, Man.

Dear Cousin Doris:—This is my first letter to the Girls' Cozy Corner. My brother has taken the Canadian Thresherman and Farmer and likes it very fine, and I do like to read the girls' and boys' letters, so I thought I would write one too. I have one sister and six brothers. We live on the farm and have three quarters of a section of land. We have ten horses and two colts and eleven head of cattle.

My brother and father went to Beausejour to-day. My grandmother died; now I have to do all the house work. I have to milk five cows and feed eight pigs, and we have about eighty-five chickens, six turkeys and three geese.

I have to close. Hoping to see my letter in print. Wishing you every success.

Lena Recksiedler.
Age sixteen.

I am pleased with your letter and it is such a pleasure to know you like our magazine. C.D.

Lacombe, Alta.

Dear Cousin Doris:—This is my first letter to your charming club. We live on a farm near Lacombe. My brother takes the Canadian Thresherman. I like to read the letters in the Girls' Cozy Corner.

I like reading books very much. These are some of the books I like to read the best. "Mildred Keith," "What Katy did at School," "Bessie at the Sea Shore," "Bessie in the City," "Black Beauty." We have nine horses, three colts, and three sheep, (our lambs all died) five head cattle, four pigs, one pet crow, and two pet cats. Mamma is keeping a little girl; she has no mother, her name is Alberta Moore. I am eleven years old. I am going to spend some of my holidays with my sister. I have three sisters and six brothers. Two of my sisters are married. My school work consists of reading, writing, drawing,

spelling, grammar history, and geography. I remain,

Yours Truly,
Ethel F. Morter.

You wrote a very neat letter Ethel. How kind of your mother to take a little orphan girl in her home when she has a large family of her own. I am sure God will bless her for it. C.D.

Roseville, Delmas, Sask.

Dear Cousin Doris:—This is my second letter I have written, my first was in the paper but I did not receive my book. I see there are no letters in the Boys' Camp this month. I thought we could beat them. I am looking forward to some good days at shooting this season, for there seems to be a lot of everything. It is nearly school time again. How many are looking forward to school? I am anyway, we go four miles every morning to school. I wish some of the members would write how many books

BOY'S COWBOY SUIT FREE

THIS WILD-WEST COSTUME, made of Khaki drill, has shirt with turned down collar and red necktie, fringed trousers and large Khaki Sun-boy hat. We have a Watch that from 2 to 14 years. Any boy can earn one very easily selling only \$4.00 WORTH of our high grade postcards at 6 for 10 cents. Our cards are all fast sellers, no cheap cards included. For girls we have a COWGIRL SUIT all ages from 2 to 14 years. Write now for cards, sell them, return the money and we will send the suit by return. THE POSTCARD PREMIUM CO., Dept. WINNIPEG, CANADA.

WATCH RING & CHAIN FREE

We positively give Free a Stem Wind, Stem Set, Beautifully Engraved Watch. They are equal in appearance to any Watch sold, and a beautiful gold-plated Ring, for selling only \$4.00 worth of our high grade postcards at 6 for 10c. Order the pictures and when sold send us the money and we will positively send the Watch, Ring and Chain. THE POSTCARD PREMIUM CO., Dept. C.T. WINNIPEG, CANADA.

DAINTY DRESSED DOLL

GIVEN FREE FOR SELLING XMAS BOOKLETS This large and beautiful doll is about two feet in height, and is dressed in the very latest style direct from Paris. Her costume is made up of fine silk, trimmed with Irish lace, and she has a very stylish hat. We believe it is one of the prettiest dolls ever shown. Given absolutely free for selling only \$3.00 worth of our high grade embossed and colored postcards at 6 for 10c, including Thanking, Hallowe'en, Birthdays, Comics, Views Christmas and New Years. All our cards are quick sellers. Write now for post-cards and when sold send us the money and we will send the Doll by return. THE JONES MFG. CO., Dept. C.T. WINNIPEG, CANADA.

they have read and the names of them. I have read 47 books. I am very fond of reading. I have read "Little Women" "Coral Island," "Daisy" "Blulak," "Christies Next Things," "Helen's Babies," "Escaped Nun," "Madcap Marigold," "Silver Fichers," "A Modern Cinderella," "Tanglewood Tales," "Tales from Shakespeare," and a lot more.

Yours Sincerely,
Cousin Prairie Flower,
(Elsie Tebbs.)

Your book has just been sent, Elsie, let me know when you receive it. C.D.

Canadian Boys' Camp

A VOICELESS SERMON.

(Helen M. Richardson in Our Dumb Animals.)

He stands beneath the noonday's blazing sun,
With head low drooping and the harness' load.

Upon his tired back: white from his neck
The empty feed bag dangled to and fro.

Long has he stood, a patient, faithful steed.
Flies sting and thirst assails, yet mindful still

Of slackened rein he stands at call of him
Who owns his faithful body every inch.

And though requited only by the lash,
Or vicious kick upon his galled side,

Yet with a fortitude that questions not,—
So human, oftimes, that we bow in shame,—

He waits the signal, or the onward goad.

A brute, we say, and forthwith use as such.

If manhood gained its measure by like deeds

As mark this creature, voiceless, soulless (7), mute,

Metethinks the heavenly welkin oft would ring

When such an one gain entrance to its joy.

INVISIBLE INK.

There are several ways in which two persons can correspond with each other unknown to even the persons before whose eyes the very letter is held.

For instance, new milk may be used as ink. When dried this is invisible, but if coal dust or soot be scattered upon the paper the writing becomes legible.

Dilute sulphuric acid, lemon juice, solutions or nitrate and chloride of cobalt or of chloride of copper write colorless, but on being heated the characters written with the first two becomes black or brown, and the latter green. And when the paper becomes cool the writing disappears, leaving the paper blank again.

Two good invisible inks are made by saltpeter dissolved in water and equal parts of sulphate of copper and sal ammoniac dissolved in water.

Dear Campers:—I am sure you have had great experiences this season in the fields, about the farm, and in the forests and sloughs. You have been hunting and working about the farm machinery.

Some of you have had experience with engines, others with plows and others with guns. What an interesting campfire we could have if you could all be present next month and tell of your experiences. You know the evenings will be long and we could have such a jolly time. I really do not know whether I should be with you or not but I would feel slighted if I were neglected.

Now boys, will you all write letters and we shall have a fine time reading these letters next month around our big camp-fire. I am sending out the book this month and I do wish the boys would write me when they receive their prizes. I never know whether they are lost or received.

And now I shall look forward to a splendid camp-fire meeting in November. Let us have letters from all the boys. Good luck, boys.

Sincerely, Cousin Doris.

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"The living voice of the Artist."

\$25, \$39, \$58, \$80, etc.

The 1912 Model Hornless



Latest and best.

Wonderfully loud and perfect tone.

We want you to compare.

Why Pay \$100.00?

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For those who still like the Horn Style of Talking Machine.



Terms from \$5.00 Down and \$3.00 Monthly.

These Prices include a liberal supply of genuine Columbia records of your own choice. 30,000 Records in stock, including all your Favorite Songs, etc. Specially imported English, Irish and Scotch Records.

Nordica, Constantino, Bonoi, Garden, Alice Neilsen, Cavalieri, Bishop, Zenatello, Emmy Destinn, etc., sing for the Columbia only.

The Columbia has no old fashioned Sapphire point to wear out your records.

Write for our new free illustrated Machine Catalog, No. 51, and Record List.

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LARGEST PIANO AND GRAPHOPHONE HOUSE IN CANADA.

Boys' Prize Letter

Dear Cousin Doris,— This is my first letter to your club. I rather think the girls will beat this time. We have been taking the Canadian Thresherman a long time. We have 50 head of cattle and 18 head of horses, and about 300 hens and 58 turkeys. I go to a school one mile and a half. I am in the fourth grade. My studies are arithmetic, geography, spelling, reading and singing. I have three brothers and three sisters. One of my brothers is up West taking a homestead, and one of my sisters is up in Souris College. I am 11 years old. Well, I cannot find any more news, so I will close. Wishing the club every success, I remain,

Harold Robinson, Oak Lake, Man. I am pleased to receive such a nice letter from you, Harold. Write again.

SEVEN WONDERS OF THE MODERN WORLD.

By R. H. Little.

After a long investigation by the scientists of the modern world, a practical conclusion has been reached as to what are the seven greatest wonders at the present time.

These seven wonders are placed in the order of their importance are: Wireless telegraphy; telephone; aero planes; radium; antiseptics and antitoxins; spectrum analysis; and the X-ray.

These are set opposite to the seven wonders of the old or ancient world which were:

Pyramids of Egypt; Pharos of Alexandria; hanging gardens of Babylon; Temple of Diana at Ephesus; statue of Jupiter by Phidias; Mausoleum of Art-emesia; and the Colossus of Rhodes.

Wireless telegraphy is given the first place in the modern wonders not because of what it has already accomplished, but for what it is quite certain it will yet accomplish. With the perfection of this system scientists have no doubt that ocean travel will become as safe as land journeying. Furthermore, it

is expected when the experiments of Marconi and others have been completed that the telegraph as we now know it, a series of poles and wires, will be done away with. The one difficulty or flaw in the present wireless system is that messages cannot be made secret.

The telephone is regarded as the second wonder, because to a large extent, it has supplanted telegraphy and there is every indication that within a comparatively very few years it can be used without wires.

The aeroplane receives third honor because it demonstrates that that which is heavier than air can be made to fly.

Radium receives the fourth honor because it has power in the curing of certain diseases and because it has brought to light the fact that the earth has radio-active power of its own.

Antiseptics and antitoxins receive fifth honor because of their alleviation of human suffering.

The spectrum analysis wins sixth place owing to the new control of color which it gives and the new knowledge of other planets and stars which it has brought about.

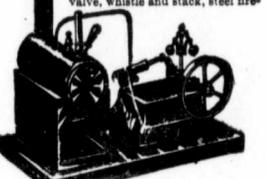
The X-ray receives seventh place because it enables surgeons to see the inside of the human body without the use of the knife. All these wonders are practical, while few of the ancient ones were practical. The ancient wonders were largely ornaments and luxuries, giving very little of value to the general people.

The Pyramids of Egypt were erected for religious and astronomical purposes. The Pharos was merely a work of art; the hanging gardens, a luxury; the Temple of Diana, religious; the statue of Jupiter, a fable; the Mausoleum, a tomb; the Colossus, a commemoration of triumph.

The enumeration of these wonders of modern times shows how far the world has advanced over ancient times in striving in work to do good for all. There is not one of the seven wonders named that is not of practical benefit to the entire human race. Through their medium disease is decreasing, means of communication are easier and cheaper, travel is possible for all, there is a great gain for the humblest as well as the highest.

STEAM FREE ENGINE

This Stationary Steam Engine has brass lacquered boiler with safety valve, whistle and stack, steel fire-



box with spirit burner, fly wheel with speed regulator on metal pedestal, entire engine on wood base. We give it to you free for a few hours work selling our beautiful lithographed postcard, including Thanksgiving, Christmas, Halloween, New Year's, Birthdays and others. Write for \$1.00 worth of postcards, and when sold send us the money and we will forward Engine by return.

THE W. C. T. WINN CANADA.

BOYS AND GIRLS WATCHES

FREE



These high grade WATCHES GIVEN ABSOLUTELY FREE. THE BOYS WATCH is GERMAN SILVER-PLATED, and has fine Swiss Movement, is so constructed that spring cannot break by overwinding. THE GIRLS WATCH is solid silver and stem-wind and set. Swiss Movement. Send now for a copy of our LATEST ART POSTCARDS. FULLY EMBOSSED IN COLORS. GOLD. These only include very best cards and all fast at 6 for 10c. (For Boy's Watch \$4.00 worth or Girl's \$3.00 worth) When sold return money and we will mail WATCH FREE by return of mail. THE POSTCARD PREMIUM CO., Dept. WINNIPEG, CANADA.



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Womans' Department

Conducted by PEARL RICHMOND HAMILTON

A HOUSEHOLD FORUM FOR THE DISCUSSION OF EVERYTHING THAT PERTAINS TO THE HOME



BEAUTIFUL LIVING

Keep the sunshine in your heart,

Wear a smile;
Live a happy, hopeful life

All the while;
Do some helpful work each day,
As God's leading lights the way.

Ask for calmness from above;
Keep your place;
Let the Master's mind and thought
Help you trace
Heaven's purpose day by day,
In noiseless, tender way.

Days will come and days will go,
Yet 'tis well;
For in joy or sorrow's hour,
Life shall spell

God's dear message, line by line.
In this life of yours and mine.

Rev. I. Mench Chambers.

Going Her Own Gait

By Pearl Richmond Hamilton

Jack Benton folded his navy blue coat carefully and placed it in the tin trunk near the window. The top of the little table in the corner was bare—all the familiar objects were on the bed ready to be packed in his underclothing. The shaving mug his mother had given him for Christmas, the fancy ink well his sister had bought for him with coppers of sacrifice, the paper blotter from tiny May and a little red bound dictionary from Bob the Baby—these treasures were wrapped one by one and put in the center of the trunk that they might not be broken.

On the faded wall paper a bright square of pink roses and green leaves revealed the fact of a picture removed. The picture was the family group—father, mother, and the four children. Father and mother sat in the center and Bob the Baby posed on the edge of his mother's knee while his long white dress reached to the floor. Tiny May stood by father and looked with staring surprised eyes at the big black curious camera in front. Jack and Kathleen, straight and self-conscious, gazed in opposite directions in obedience to the photographer's request: "Will the young lady and the young gentleman please look at the pictures on the wall!" This picture of family life before the public was supported by a three-inch gilt frame. Kathleen washed the fly specks off the glass and wrapped a big newspaper around it and crowded it in the only place left in the bottom of the trunk. Jack finished the packing while Tiny May, Kathleen, Bob the Baby and mother all looked on with a great deal of interest. Finally Mother choked back a rising lump in her throat and went down stairs to finish the dinner which was a feast of Jack's favorite dishes. Kathleen stood near the window and watched earnestly every movement Jack made. They had been companions since childhood and this would be their first separation. Jack pulled the rope around the trunk four times and tied it into a strong knot. Then they all went down stairs in answer to Mother's call: "Dinner!" Just as Jack went into the dining room his father handed him a roll of bills saying:

"I hope you'll make good, Jack; this going away to school costs money, and a lot of it. But I guess it will help the

farming along. Don't get into any nonsense and work hard."

Jack's father sat down at the head of the table with a swelling feeling of generous paternal pride.

Kathleen saw the roll of bills and turned her face to hide burning, blinding tears, Jack sat near his father and talked bigly of what he would accomplish, while all the others listened in large-eyed astonishment. "But, father," he urged, "I wish Kathleen could take a course at the Agricultural College, too. I think Sis deserves it as much as I do," and Jack reached for the plate of fried chicken.

"This high-strung house-keeping is all nonsense!" exclaimed Jack's father.

"I guess if Kate knows how to cook as well as her mother she'll get all that's coming to her. I've no time for those new fangled ideas about balancing meals. What I want and what all men want is a good square one. It makes no difference which side of the spoon it is prepared on. Besides Dick Martin will soon be marryin' her and what will be the use of her education then? It's money thrown away.

Kathleen could bear it no longer and she left the table and ran to her room for she could keep back no longer the overflow of a disappointed heart.

Jack's father gave a look that out-sharped all other sharpness. "If Kate plays her cards right she'll marry Dick Martin and he's worth a fortune in stock and land. Dick seems to like her and she'll do well to get him!" exclaimed Jack's father as he moved his chair back with a scraping noise and put on his hat and coat that "hung" on the floor in a corner.

When the good-byes were said the mother went back to her work with toil-haunted eyes. While she felt sad at the parting of her boy, her heart ached for Kathleen who wanted to go with her brother. Meanwhile Kathleen walked down to her favorite place under the trees. Emotion, feeling, impatient will—all were at their highest. She stood upon the edge of despair.

Her mind-house was filled with memories of shattered hopes. There was the time her father refused to buy new paper for her room and the time he borrowed her egg money and forgot to return it, and then the new coat and hat that were promised and never came, and now the hopes of a course at school were shattered. "I'll just run away and never come back," she cried to herself. "There's something for me to do besides fiddling around for a husband as father wishes. I'll work in this martyr industry no longer. I'll work with an object in view."

It is curious how friendly trees and flowers are to discouraged people. They breathe a feeling of sympathy, and Kate rested, and soothed by the kiss of the soft breezes, turned to go towards the house. She searched for the newspaper that came into their home every Wednesday and turned the pages over to the advertisements—"Milliners, dressmakers, clerks, stenographers, domestics, chocolate dippers, binding girls, factory help" all appeared in headlines of pronounced letting-under the words in capitals—"Wanted—Female Help." Kate ran her finger down the column until she came to the appeal—"Wanted—Girls for the shirt department. Inexperienced girls may soon work up to \$9 a week."

She folded the paper and put it carefully away in her box of "keepsakes" and went into the kitchen to talk to her mother.

"Mother, you know Mrs. Stevens asked me to help her a few days. May I go?" Kathleen took the towel from the nail and began to wipe the dishes.

"I need you Kathleen but I know you want some money for clothes so I'll have to let you go, though I really do not know what I shall do without you." Kathleen knew that her mother's life had been one of silent sacrifices, but girlish ambitions outweigh filial sympathy at times and Kathleen was bent on earning a little money.

That night Dick Martin with his team of splendid black horses and shining top-buggy drove up to the post near the gate. Kathleen's face turned pale and then red as she nervously hurried about "the room" to put the chairs in their correct corners. Dick had reached the path now and pulled his large handkerchief out of a pocket of his best suit as he walked leisurely up to the door. Kathleen waited for the familiar knock and when it came it started her though she expected it.

"I'm glad you came, Dick. It is lonely without Jack and I want to go over to see Mrs. Stevens. I'm going to the city." Kathleen waited for an answer, but Dick acted as if he had none. He fingered his hat—first turning up one side and then the other.

"I'll take you over Katie, but what started this city deal? I want you here, I shall find these parts lonely without you. Girls are scarce as hen's teeth here and girls like you are even scarcer."

Kathleen stood before the mirror pinning on her hat.

Without a word they walked out to the gate, climbed up to the seat and drove down the shaded road toward the setting sun. There was the perfume of the feeling of autumn—the breath of miles of flowers. Poplar trees decked in shades of green and yellow breezily whispered the message of the falling leaves. White winged butterflies hurried from golden rod to golden rod as if eager to gather the riches of the yellow lure. Bristly harvest fields bare of the season's grain waited for the fall plough, while the hum of distant threshing machines sang notes of Canadian progress and prosperity. Near the road a herd of cows lazily browsed in evening content—full of the wealth of the farmer's milk-pail.

At the turn of the road a man was nailing some boards to a fence to prevent saucy colts from wandering on forbidden ground.

"The young spirit may flame up over the wrongs of parental penitence, but environments such as we find in Western Canada lift that young spirit up among the mountain peaks and show it visions of new worlds.

Everywhere Kathleen saw growth and growth is life. Kathleen had discovered her individuality.

The spell of the evening with the turmoil of the inner souls silenced the couple and they had a ride without words.

The next week Kathleen returned to her home with a five-dollar bill. She packed her few clothes in an old leather valise and walked down to the gate where her mother stood heart-sore and sad at the departure of her "main help and stand-by."

At the station the thrill of excitement made her extremely nervous as she waited for the train.

Her father's words to her burned in her heart: "Remember, if you take the bit in your own teeth, you'll travel your own gait. You needn't call on me if you

get into trouble. I'm through with you."

Mother's last words were different and they cheered her, "God bless you child—be a good girl I wish I could send you to school, and buy you the clothes you need." These were the parental pictures in the gallery of Kathleen's mind as she picked up her valise and walked down the platform to board the evening train. Every seat was taken save one near a well-dressed woman who graciously offered it to Kathleen. Kathleen was flattered by the attention and sat down. The cushioned seat and the motion of the train with its attractive surroundings gave the girl a new idea of the world. It seemed as if she were riding in another sphere.

"Where do you live, my dear?" the woman with the plume in her hat asked of her as she handed her a box of chocolates.

"Take one of these—they are very fresh."

Kathleen shyly reached her sun-burned hand for one and thanked her. This made her hungry for another and again she took one from the box.

By this time she and the woman with the plume in her hat were very good friends.

Kathleen told her that this was her first trip away from home and that she was going to earn money to pay her way through a domestic science course. The woman with the plume in her hat seemed very much interested.

"You poor child, when you reach the city, I can find work for you in an office where you can earn fifteen dollars a week. Kathleen's eyes beamed with hope and surprise. Her whole body trembled with anticipation. She wanted to throw her arms about the woman's neck and kiss her.

But the beautiful hat, the fine dress and the dazzling rings all hushed Kathleen's excitement.

She ate more candy—a big brown chocolate one, then another with little silver colored ornaments, and another long one wrapped in paper till she became satisfied and sleepy. A strange sensation blinded her mind but she thought it must be the movement of the train. She drifted then into a dreamy sleep.

When she awakened she was on a long bench in a big waiting room. Near her a big kind faced woman with gray hair smiled gently as she smoothed her brow and kissed her forehead.

"My dear, they nearly had you but I caught you just in time."

"Who—where am I—what is the matter?" Kathleen sleepily yawned out as she sat up in bewildered surprise.

"Why you are in the station waiting-room, and you came off the train with a woman and man who are white slave agents. I saved you just in time for you had been drugged."

"Drugged! drugged!" exclaimed Kathleen now coming to her senses.

"Yes, drugged" replied the motherly woman with the gray hair.

"I am a traveller's Aid Agent and I am here to rescue just such victims as you. I do not find all but I am thankful I saw you just in time," she explained patting the girl kindly on the hand.

"How could I be drugged? I do not understand. I drank nothing," Kathleen asked with that far-away-look that suggested she was not yet clear in mind.

"Did you eat anything, my dear girl?" asked the woman pinning more securely her badge of identification—a big Maltese Cross on enamel of silver metal.

Kathleen tried to collect her thoughts. "Nothing but candy," she answered innocently.

"Ah that's it—my dear—the candy was drugged. It is well I found you, else your mother would never have seen her girl again.

With the advertisement clipping in her hand Kathleen, directed by the kind Traveller's Aid agent, found the factory, and walked up to the first office near the door. There a thin man with a high pitched voice directed her upstairs. On she went past rooms heavy with the smell of machine oil and greasy cotton, past rolls and rolls of heavy denim and gingham, past dark rooms where dirty windows revealed a dim haze of artificial light—on till just ahead of her "Employment Office" stood out in ugly blackness.

Kathleen trembled as she stood before the office window.

Finally she shyly asked:

"Is this the man who employs help?"

"Yes," came the answer in that I-hate-to-be-bothered-tone.

"Can I get work here?" she asked surprised at her courage.

"I don't know, I'm full up. I'll see though—Maggie!" he called, and a little foreign woman in a blue print dress came forward.

"Need any more girls?"

"Vell I don tink so," Maggie hesitated, wondering if the applicant were a foreigner or a Canadian.

Poor little Canadian Kathleen—if she had been from southern Europe, she might have had a better chance, for foreign forewomen will favor foreign girls.

Kathleen went down the stairs with a heavy heart. It was Saturday afternoon and she had no place to go and only a dollar left. She went into the first house, the front window of which was decorated with a "Rooms and Board" card, where she stayed until the next afternoon. Her room-mate invited her to go to a young woman's club in a near by church and Kathleen accepted thinking this place at least was safe.

"Are you a stranger in the city?" asked the leader as she kindly welcomed her and asked her to wait in for a cup of tea after the lesson hour.

The room was crowded with girls and Kathleen choked big lumps down her throat—one right after another.

After the lesson the leader went to her and took her cold nervous hand into her own warm hand.

"My dear, can I help you in any way?" she asked for her creed was mutual helpfulness "In His Name."

Then Kathleen told her story. The leader promised to go with her to the factory the next day to apply again.

They went and secured a place for Kathleen. The girl in her own application had been too timid to say she could sew, and like many others who fail in securing positions, showed a lack of self confidence.

Kathleen, strong and healthy, began her work at a little power machine among dozens of other power machines that made a din of noise in the long dark room. Kathleen sewed and sewed until nerves half paralyzed stung her tired body. She did not stop for lunch because she wanted to finish her bundle. Besides other girls did not stop for lunch. At last the gong sounded, the machinery stopped and the days work ended.

Kathleen walked out into the street; she was cramped, tired, hungry and lonely, and she thought of the family at home sitting down at their evening meal.

She bought five cents worth of soda biscuits and went to her room on the third floor of a cold attic.

Kathleen went to her work the next Saturday brighter than usual because it was pay day and she would have earned seven dollars that week for she had worked very hard.

But at the close of the day she was paid only two dollars.

"Two dollars, miss, is all we pay you to-day—we always keep back part of the pay!" explained the paymaster as he handed her the envelope.

Kathleen did not understand that this method of paying netted the factory much free work as every girl who left had from three to five dollars owing her.

"Two dollars, and she owed three dollars for her room and a few meals, and



That makes them neater, crisper, daintier, more appetizing. The one biscuit good enough to take the place of your own baking. Fresh as the biscuits from your own oven. Think what that means! Freedom from a broiling kitchen—leisure on the porch or in the parlor. Time to do the little knick-knacks that have been neglected.

MOONEY'S PERFECTION SODA BISCUITS

are the creamiest, crispest crackers made. They are baked in the big sanitary factory in Winnipeg—right at your very door.

Use **MOONEY'S** and be sure of a biscuit that is absolutely fresh; a biscuit that will satisfy the family,

In tempting packages or sealed tins as you prefer.

"LET MOONEY DO IT"



she had not had anything to eat that day. Her shoes were worn out and she did want to buy writing material, for mother and Dick Martin must each have a letter.

Kathleen went out into the street sick with discouragement. In the same city her brother was enjoying the comforts and joys of college life. He must never know.

Down deep in her heart burned the words of her father:

"Remember, if you take the bit in your own teeth, you'll travel your own gait. You needn't call on me if you get into trouble. I'm through with you."

[This story will be concluded in the November number.]

Mothers' Corner

OLD WORLD MADONNAS
By Charles Hanson Towne

There are Madonnas in mysterious guise,
With the lost look of Mary in their eyes,
And in their humble hearts the ancient good of perfect motherhood.

They pass us in the streets, in crowded marts
They hurry by us with love-laden hearts.
Sad Alices, unfamiliar with our tongue,
whose song is never sung.

How wistful are their faces!—Lit with hope
For a new world wherein they blindly grope:
Their worn eyes filled with yearning
that the years may hush their children's tears.

Dear Sisters:—
The spell of autumnal nature has woven its web of charm about me. It is a calm pure evening in the early days of September. I am sitting near the waters of Lake Winnipeg and they are calm—so calm that one can scarcely realize they ever rage in wild fury. But they, like human beings, have their contrasts in disposition. Only last week they lashed boats against the rocks and buried men in their depths.

The sky is painting the lake to-night with a brush dipped in the hues of the Divine. First it was blue—very blue, and so were the waters, illustrating the reflection of a beautiful soul in the face.

The dark blue sky was changed to azure tints and so have the waters. Now by a Heavenly mixture of colors a pale delicate pink is created and water and sky are pink.

Ah—man cannot reach the Divine in Art! God's pictures are not locked up in treasure houses but are free and generously scattered about for men to read of His presence everywhere.

A fish has disturbed the peace of the waters by a splash—just so do troubled thoughts make wrinkles on the face of women.

Near the shore the rich foliage of trees in shades of green, yellow and crimson reflect lessons of early life and suggest beauties of old age. On a branch near me are a few brown leaves—decayed and dead. When they were in the green of youth they became diseased—in their autumn they are dark and ugly and lifeless. On the same tree is a branch of crimson leaves rich, beautiful and lovely. I knew these leaves in their spring time and in their summer. They were clean, healthy and green but they are more beautiful than they have ever been. I pluck this branch and philosophise. There are no spots, no decay on these leaves in the early days of their life, consequently clean nourishment developed health and beauty and now they are in their supreme stage. Everyone stops to exclaim: "What a beautiful branch!" "Yes," I answer, "they have not faded but are rich and lovely."

How like human beings! If the life through youth and middle age be clean and pure and noble, the autumnal soul will be Christly.

Last winter I met one of our readers for the first time at the Home Economics Convention at the Manitoba Agricultural College. She seemed surprised and said: "I had pictured the writer of this department as a sweet-faced old lady with gray hair." For a moment I was disappointed. But not for years has a remark helped me so much. I have thought of it so often since and have wanted to write to her to express my appreciation of her remark, and to tell her that some day I hope to be the sweet faced old lady that she had pictured.

These lessons of nature, sweet-faced woman like the one who spoke to me, and a desire to be useful—all tend to develop one's life into autumnal beauty. Good people are those who advance toward the good.

In a prayer of my own which I have written for my little one to repeat every night I have expressed my creed:

"God bless everybody and me,
Make me happy as can be,
Make me good and make me strong,
And make my life a helpful song."

Sincerely,
P.R.H.

One of our readers—a mother of five beautifully trained children—has contributed the following to our Mother's Corner. I am sure it will give us food for thought.

JUST TO BE TRUTHFUL That is not asking too much

Recently, I had the pleasure of riding on the train with a young woman and her little girl who were quite a study in the way children should not be trained. The child was eating candy, this awful dark brown fly-specked kind, of which the mother had a great supply.—I offered a substitute in the form of some sandwiches, which I had in my valise. The sandwiches were accepted, and eaten, and then the little girl began to look for her candy. The mother had hidden it, but instead of telling the child that she could not have any more she told her that I had taken her candy. "Scold the naughty lady—she's got your candy!" The little girl came across and scolded me, good and plenty. I ventured to remonstrate with the mother on the subject of telling the truth to children, but she exclaimed with perfect sincerity "Why! I could not get along with Jean all if, if I didn't tell her things!"

When Jean ran down the aisle, her mother told her she must not leave the seat, for there was a bad man down there who would get her.—Jean decided to take a chance on the bad man and did not allow her mother's dismal prediction to interfere with her enjoyment. Jean was not quite two years old, but she had found out a thing or two about her mother.

Surely it is not asking too much for our children, that the truth be told them. Lie to the neighbors, if you must lie, but try to be truthful to the children. Poor little things! they are so dependent on grown people for their ideas of life and so many of the grown people are so utterly untrustworthy of the work of training them.

It is a pretty hard matter to decide sometimes just how a child should be trained.—there is often room for doubt as to the wisest course, but it does require the brain of a Solomon to tell the truth. That is within the reach of all!

Questions and Answers.

It appears that a great amount of patent medicines is used among women who are far from a doctor. Some women write to me after they have taken them and ask for relief remedies for the damage done them through the use of patent medicines. One who takes patent medicines is running a great risk. Last month we published in this department a list of injurious medicines for children. If any woman wishes to know about any medicine and writes to me, I will consult a doctor about it. The following is an answer to a request made by one reader. I give it here as it may help other readers. It is quoted from a reliable conscientious medical doctor whom I consult on matters concerning this page:

"Blue tablets are a poison, and a strong one. They should not be used apart from a doctor.

Acid Carbolic 1 per cent. solution means one drop to 100 drops of water. The water should be boiling. 5 per cent. would be 5 drops to 100 drops of water.

Acid Boric is a harmless drug. Water will only dissolve it so much. As much as water will dissolve is right for baby's eyes or mouth."

I wish the mothers who have been successful in the feeding of babies

with the bottle would write us of their experience. I receive so many letters from mothers asking for information on this subject and different babies require different foods.

To M. J.—Your baby's feet and legs should be kept very warm in woolen stockings and fauties. If your baby has colic or stomach trouble be sure to keep its legs and feet warm. I think many babies lose their lives because their feet and legs are not kept warm. If the baby's mouth is sore, wash it out every two hours with a solution of Acid Boric. If the mouth is not kept clean, the sores are apt to effect other parts of the body. No mother with a baby should be without Boric Acid. I usually put a teaspoon of the powder in a glass and fill with boiling water. After it is dissolved and cool, I put a piece of clean absorbent cotton on my finger, dip it into the solution and wash the mouth out very carefully. My little one never had a sore mouth and I used to wash it out twice every day. A sore mouth will heal in a few days if it is washed carefully in this way every two hours.

C. J.—Rub the child's chest and shoulders with warm camphorated oil for a cold on the chest.

M. H.—I like castor oil for children who begin with a fever. Give a dessert spoon full to a four year old child at night. It heals the stomach and cleans it out. A teaspoon full is enough for a baby.

Be sure to write to this department for any advice you desire concerning the care of children.

The booklet entitled "Helps for Expectant Mothers" is in great demand. It is sent free to any wife who writes for it.

For the Tired Hour

Little John.—Papa, what is a critic?
Professor Broadhead.—A critic, my son, is a person who couldn't have done it himself.

In the Museum.

Mamma.—Willie, this is a warming-pan. They were in use many years ago.
Willie.—Wow! I'm mighty glad that I live to-day instead of then. That makes a hair-brush or a slipper look pretty soft, doesn't it!

Some people are so constituted that they seem to get a lot of enjoyment out of never having any fun in life.

The wife.—Fred, do you suppose that if we took as good care of the weeds as we do of the vegetables it would kill them.

Duty.

The immigrant girl had been careful to provide herself with a false beard, but the quick eye of the customs inspector penetrated her disguise.

"You purpose going into domestic service," he said.

"Yes," said Gretchen, perceiving that equivocation were useless.

"You know how to bake bread and you want only one afternoon off per week."

"I cannot deny it."

"Then you are a jewel and must pay duty accordingly," said the inspector.

The average woman's notion of the cozy corner is one so full of sofa cushions that no one can get into it.

One woman said to me: "I just keep cheerful—I don't keep house."

Another said: "I keep house—I can't keep cheerful."

A happy combination of both would produce an ideal condition.

Conquer the future in the present.

"What animal," asked the teacher, "is satisfied with the least nourishment?"

Looking over the raised hands, she said: "Well, Harry, you may answer."

"Please, ma'am, the moth. It eats nothing but holes."

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\$550 Heintzman & Co. (used less than two months)	\$410
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\$750 Bell Player-Piano (cannot be told from new)	\$475
\$750 Newcombe Player-Piano (used one year)	495
\$950 Wheelock Pianola Piano (Perfect Condition)	625

We guarantee absolutely each and every instrument. We want you to be satisfied; we feel assured you will be. If you are an intending purchaser, do not hesitate to call or write us to secure the instrument that best suits you. We are not aware that there has ever been a better opportunity to get a good used piano at a fraction of its real value, and on such liberal terms.

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All the Tulips, Crocus, Daffodils (see Catalogue for best sorts in the West), Scilla Siberica, Bleeding Hearts, and others.

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Patronize Those Who
Patronize This Magazine

Love puts a mysterious charm into every common place work. What we do with love in our hearts, though it be not according to the rules of art, has in it a beauty which even the most artistic work, done without love, does not possess. Then when love has done its bit the master comes and enters the poor, imperfect effort and transfigures it.

Love is the essential quality in our human relations.

In ourselves the sunshine dwells,
In ourselves the music swells;
Everywhere the heart awake
Finds what pleasure it can make;
Everywhere the light and shade
By the gazers eye is made.

There's only one method of meeting life's test;
Jes' keep on a-strivin' an' hope fur the best;
Don't give up the ship an' retire in dismay
'Cause hammers are thrown when you'd like a bouquet.
This world would be tiresome, we'd all get the blues,
If all the folks in it held just the same views;
So finish your work show the best of your skill,
Some people won't like it, but other folks will.

If you're leading an army, or buildin' a fence,
Do the most that you kin with your own common-sense.
One small word of praise in this journey of tears
Outweighs in the balance 'gainst cart-loads of sneers.
The plants that we're passin' as commonplace weeds
Oft prove to be jes' what some sufferer needs.
So keep on a-goin'; don't stay standin' still;
Some people won't like you, but other folks will.

Philander Johnson in
"The Washington Star."

ested in the Manitoba work. You have in your reports proved that you are accomplishing great good. We invite the Saskatchewan secretaries to send in reports of their work. I am thankful for the recipes sent in by the societies. They are valuable because they are reliable.

Will the secretaries kindly inform me of members who do not receive their copies of The Canadian Thresherman and Farmer?



Mrs. H. W. Dayton, of Virden, Vice-President of the Home Economics Society of Manitoba

Home Economics

SWAN LAKE

As the work for October must be at the printers early this time, the reports are a little late for publication but they will all be in the November number. The Saskatchewan women are becoming inter-

The August meeting of the Swan Lake Home Economics was held on Saturday, 31st, and was well and punctually attended. After the Secretary had read the minutes, the President claimed the attention of the meeting for a short time to record the regret that was felt by all the members at the death of Mr. John Couch, and the Corresponding secretary was requested to write a note of condolence to his daughter, Mrs. Robert Blair, conveying the sentiments of the meeting. The Corresponding secretary was also requested to send in her account for postage, etc., to the Secretary and the afternoon programme was then opened by the reading by Miss Etta Shirley of a most interesting paper written jointly by Mrs. W. W. Shirley and Miss Ashdown on "Preserving Fruits."

Various ways were given; the use of the ordinary fruit kettle, the placing of the fruit in sealers and cooking them in a pan of boiling water on the stove, or proceeding on the same method and placing the whole in the oven and cooking by a slow fire. An interesting discussion followed during which Mrs. C. K. Willson gave a recipe for preserving crabapples which will be found below with others. Preserving fruit in cold water for future use was also mentioned and Mrs. Sparling told of the success she had had with cranberries, the fruit being put into a stone jar and covered with cold water which must be changed every three weeks.

Mrs. Downey was unfortunately prevented from attending so the promised paper on "School Lunches" was read by Miss Ralston; it contained many practical hints and emphasized the necessity of making the lunches as varied and attractive as possible so that the children should eat a hearty midday meal. A discussion on "Pickles" then followed.

As the programme for the next meeting was open, the President suggested that a paper on Banking would be a welcome variation and Mrs. C. K. Willson promised to prepare one for the Sep-



Mrs. R. W. McCharles, of Manitou, President of the Home Economics Society of Manitoba.

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will please and help you in the choosing of pretty Christmas, Birthday or Wedding Gifts, more than you can imagine.

It shows many of the finest pieces of Jewellery, Silverware, Brass Goods and Leather Articles in our stock—with a number of them reproduced in actual colors. This book will soon be ready for distribution, and that you may obtain your copy without delay, fill in the spaces below and send to us.

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JEWELLERS & SILVERSMITHS
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He Bought Her a 1900 Washer
ONE OF OUR READERS TELLS
HOW HER HUSBAND LEARNED
What Washday Means to a Woman



John's "Busy Day"

I am not very strong, and the washing, with all my other work, finally got the better of me. I had quite a sick spell, and after things had gone at sixes and sevens for nearly two weeks, I suggested to John that he had better do the washing. We couldn't hire a girl for love or money, and the situation was desperate.

So one morning he started it. My, what a commotion there was in the kitchen! From my bedroom I occasionally caught glimpses of poor John struggling with that mountain of dirty clothes.

If ever a man had all the "exercise" he wanted, my husband was that man! Couldn't help feeling sorry for him, and yet it made me laugh, for I remembered how he made fun of me when I hinted so strongly for a 1900 Gravity Washer. When he finally got the clothes done and on the line, he was just about "all in."

That evening John came to my room, and said kind of sheepishly—"What's the name of the firm that makes those washers you were telling me

about?" I looked up their advertisement and found the following address:

M. G. MORRIS, Manager,
The 1900 Washer Co.
357 Yonge St. - Toronto, Can.

That's all he said, but he lost no time in sending for their Free Washer Book. The book came in due time and with it an offer to send the 1900 Gravity Washer on thirty days' free trial. My husband jumped at the chance to try the Washer without having to spend a cent. "We'll have four weeks' use of the Washer anyway, even if we don't decide to keep it," he said. So he told the Company to send on the Washer.

It was sent promptly, all charges paid, and the 1900 Washer Company offered to let us pay for it in little easy payments. The next week I felt well enough to use it. It is the nicest Washer I ever saw, and it almost runs itself. Takes only six minutes to wash a tubful, and the garments come out spotlessly clean.

We were all delighted with the Washer, and wrote to the Company that we would keep it and accept their easy payment terms of 50 cents a week. We paid for it without ever missing the money and wouldn't part with the Washer for five times its cost if we couldn't get another just like it.

If women knew what a wonderful help the 1900 Gravity Washer is, not one would be without it. It saves work and worry and doctor's bills. Takes away all the dread of wash-day. I feel like a different woman since I have quit the use of the washboard. And if any woman's husband objects to buying one of these labor-saving machines, take a hint from my experience. Let the man do just one big washing by hand-rubbing on the old-fashioned washboard, and he will be only too glad to get you a 1900 Gravity Washer.

Anybody can get one on free trial, by first writing for the Washer Book. Excuse me for writing such a long letter, but I hope, Mr. Editor, you will print it for the benefit of the women readers of your valuable paper.

Sincerely yours, MRS. J. H. SMITH.



tember meeting. After roll call, the National Anthem was sung and after a dainty lunch the meeting dispersed.

MINNEDOSA

The Minnedosa Home Economics Society spent a very pleasant afternoon at the home of Mrs. Grierson on August 22nd. After the Social that always accompanies the afternoon tea, the meeting was opened and the business transacted.

Mrs. Cooper suggested the advisability of having a separate section for children of fifteen years and under at the Summer Fair.

Many proposals were made as to the best distribution of the prize money and the most necessary classes to be included.

Mrs. McLean read a most interesting article on "Beekeeping for Women." This dwelt not so much on the remunerative side of the question as the health-giving occupation and the valuable lessons to be learnt by watching bees at work.

There is no doubt that beekeeping is a pleasant way of earning extra pin money but the woman who studies bees will also learn to keep cheerful and calm, industrious and methodical, content to do her best and let others do theirs without interfering.

The meeting closed with the National Anthem.

May we have the paper on Bee-keeping for publication in this department please?
P.R.H.

Recipes

CRAB APPLES

Mrs. C. K. Willson

Take flowers from apples, stick clove in every other apple, leave stalks in. Put in sealers, fill up with syrup two cups sugar and one of water; put sealers in pan of water in oven and cook two hours, slow fire.

DILL PICKLE

Mrs. C. K. Willson

Put one row of small cucumbers in stone crock, layer of grape leaves and layer of dill stalks; do this alternately till crock is full; cover with brine in proportions of three or four teaspoonfuls salt to two quarts of water.

BEAN PICKLE

Mesdames Herbert & De Ro

One pk. beans cut in half and boiled till tender. Dressing—two pints malt vinegar, one pint water, two lbs. brown sugar, one cup mustard, one cup flour, two dessertspoonfuls turmeric, two dessertspoonfuls celery salt. Mix with a little of the vinegar, then add the rest and cook till thick, pour over beans and seal.

RHUBARB MARMALADE

Mrs. W. W. Shirley

Two lbs rhubarb cut in small pieces, add a little water and the finely chopped rind and juice of five lemons. Boil 20 minutes stirring often, then add six lbs. sugar and one lb. walnuts. Poil till clear and thick.

I have wanted the recipe for Rhubarb Marmalade a long time.
P.R.H.

JAPANESE CARROT SALAD.

Equal parts of finely shredded raw carrots and turnips. Let these stand about an hour in sweetened vinegar. The vinegar must not be too strong. Serve on lettuce-leaves, and garnish with a few raw beets.

RICE WITH CREAM AND PRESERVES (OLD ENGLISH).

Take four ounces of the best whole rice, put in a stone jar with a quart of new milk, and bake slowly in the oven until the rice is quite soft. Then add sifted sugar to sweeten to taste. Arrange in a glass dish, leaving a hollow in the center, which should be filled with

preserves or raspberries or fresh strawberries, crushed and sweetened. Pour over all some good cream and serve. The sugar should be added the last thing before putting the rice to cool or the color will be spoiled.

PLAIN OR FRUIT FRITTERS.

Beat yolks of two eggs slightly, add gradually a half cupful of cold water and beat until light and foamy. Add one-half cupful of milk and mix well. Make a hole in the center of one cupful and a half of flour to which has been added one-half teaspoonful of salt; add liquid, slowly stirring all the time; beat until smooth, then add carefully one heaping teaspoonful of baking-powder and the whites of eggs beaten stiff. Fry in hot fat until brown.

SALAD DRESSING (Sent from Manitou)

Two Eggs, four tablespoons vinegar, two tablespoons sugar, one teaspoon salt, a pinch of white pepper, butter size of an egg, one tablespoon mustard, one cup cream.

PEACH PUDDING.

Soak a cupful of bread crumbs in two cupfuls of boiling milk, stir in a table-spoonful of butter, three beaten eggs and five table-spoonfuls of sugar. Mash some canned peaches to make a pint and pour them in. Beat light, put in a buttered pudding mould set in a pan of boiling water. Cover and cook an hour in the oven. Turn out and serve with whipped cream or just sweetened cream.—Miss Sarah J. Fisher.

CORN BREAD.

This rule makes two good sized loaves of corn bread so that one-half the amounts given below will make enough for a family of five or six. Use two cupfuls of corn meal, one cupful of white flour, one pint of milk, two eggs, one teaspoonful of butter, melted, one teaspoonful of baking powder sifted with half the flour, a saltspoonful of salt and one teaspoonful of sugar. Use a teacup for measuring. Stir up quickly and bake at once.—C. B. Shiveley.

POTATO SALAD.

Beat the yolks of two eggs well and add one table-spoonful of mustard. Put these in a teacup and fill up the cup with sweet cream. Let one teacupful of vinegar come to boil and stir the cream and egg into it after it has been taken off the fire. If these ingredients do not thicken sufficiently, a little cornstarch moistened in milk can be used for this purpose. Cut into dice enough cold boiled potatoes, and add the same measurement of celery, onions and pickles cut into small pieces. Use equal quantities of the last three ingredients. Season well with pepper and salt. When the dressing is cold, pour it over the salad materials. Garnish the salad with parsley or watercress. Lettuce can be substituted for celery.—Nellie Armstrong.

HAM PIE.

This is a favorite dish in our family. Cover a baking dish with bits of bread, buttered. Cut into small pieces a slice of ham and sprinkle a layer over the bread, then add a layer of canned tomatoes and moisten with the juice. Chop an onion fine, mix with the rest of the ham and sprinkle on; then add slices of buttered bread on top, moistening with the tomato juice. Cover and bake in a moderate oven two and one-half hours.—Isabella Arnold.

About Women

Johannesburg, the commercial centre of South Africa, has entrusted its city government to the leadership of a woman, Mrs. A. M. Ellis, who bears the title of "Mayoress."

Governor McGowen of Wisconsin has appointed Mrs. Ada F. Howie of Elm



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"Black Martin" Broad Stole Collar, finished with silk tassels on ends \$125.00
Muff, Large Oval Pillow..... 60.00
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Square back and front finished with tails and pass. Very handsome new design... \$175.00
Extra Large Bolster and Pillow Muffs..... \$60.00 to \$125.00
Smaller Mink Scarfs... 45.00 to 55.00
Large Imperial Muffs... 25.00 to 30.00

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Very Large Shawl Stole..... \$40.00
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Full Length Persian Coats in a variety of grades..... \$250.00 to \$500.00

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Natural Mink Collars, Musk Rat Lined, Best Quality Cloth Shells and Workmanship..... \$85.00, \$100.00, \$125.00, \$150.00

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A big variety of selected Skins at prices (varying according to size) from \$40.00 to \$50.00.

CHILDREN'S MUSK RAT COATS

Fine Quality, tailored to stand continuous wear and rough usage..... \$25.00 to \$45.00



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Grove, a member of the Board of Agriculture. Mrs. Howie is the first woman member of the board.

The wife of an important native Hindu ruler has just issued a book, a message to her country women to awake and seek a share in the world's work. Miss Sorabji of Calcutta is a barrister with a well-paid position under the government. Another woman in Madras edits a woman's paper. The Begum of Bhopal, a Mohammedan ruler, is very progressive and has given much attention to the education of the girls in the state over which she rules.

Mrs. Carrie Chapman Catt, who has recently been in India, writes: "Indeed no one has known what has been going on behind the Indian purdah, but when it is lifted, I think we shall find women whom we Western women will feel proud to call sisters. The customs concerning women have been peculiarly cruel, but they have been enforced by superstition rather than by a belief in the inferiority of women as in other lands. Women in Bombay have the municipal suffrage, and a considerable number of Parsee, Hindu and Mohammedan women have voted there."

Equal Suffrage in New Zealand.

R. H. Parker of New Zealand, who is a warm believer in woman suffrage, made an address before the Detroit equal suffrage club, in which, in speaking of the workings of equal suffrage in his own country, he said: "There is none of the former rowdism and drunkenness on election day. Women know as well as the men what is good for the country, and vote intelligently. Factories are better lighted and ventilated; chairs have been placed in shops; wages increased; child labor is unknown; overtime for women and girls discontinued, and employment bureaus established, where the charge is 3 1/2 per cent. of the first month's wages—all since women secured the vote. The state practically supports all hospitals, asylums and homes for the aged. The cities are cleaner, parks and playgrounds improved, and old age pensions granted after 25 years' residence, if the record is good. In no country in the world are women held in higher respect and esteem than in New Zealand. Remember, your wives and sweethearts have brains, so give them the vote. It is the country at large that gains."

Women are Excluded.

The Spanish academy has refused to open its door to the Countess Pardo-Bazan on account of her sex and in spite of the fact of her eminence as an author, says the San Francisco Argonaut. A few years ago France was in a turmoil over a somewhat similar disability inflicted upon Mme. Curie, and perhaps it would be well for these dignified institutions to see to it lest the weight of intelligence be found outside their doors rather than inside.

The Journal suggests that America try to catch up with China, for: "A dispatch from China states that the provisional Assembly of Kwantung has adopted a provincial constitution consisting of 49 articles, providing for provincial Assembly composed of representatives chosen by the people as a legislative body, female representatives being included." This Assembly will also elect and appoint the president of the high court of justice, Canton, the capital of Kwantung has a population of 1,800,000, and it is there that the Assembly with its women legislators will meet."

Hunnell, Kan., knows what it is to have a woman mayor. It is so well pleased that on the anniversary of the election of Mrs. Ella Wilson to that office her desk was covered with flowers, and the men in the city council who a year ago were in a bad temper over her election, and actually refused to attend meetings called by her, refused to confirm her appointments, and were generally disagreeable in many ways, are now of a different mind. They called on her to congratulate her on her administration and to offer their assistance in any way. The reason is not far to seek. Mrs. Wilson has gone quietly to work doing what her offices as mayor required of



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Only SEAMLESS Hosiery Fits Right!

You should wear Pen-Angle Hosiery, and no other kind. For this is the only Canadian-made hosiery that is seamless AND priced moderately AND guaranteed. All three merits ought to be in your hosiery. Because no hosiery that is not SEAMLESS can be comfortable—and Pen-Angle machines are the only ones in Canada able to knit such hosiery, form-shaped to the leg and foot, instead of merely water-shrunk into shape. Thus, though priced reasonably, Pen-Angle Hosiery holds its shape indefinitely. And it is reinforced wherever wear falls.

To these merits add the GUARANTEE you read here—two pairs for one if Pen-Angle Hosiery disappoints. Note next the modest price you need pay to get all this—and then remember name and trademark when next you need hosiery.

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FOR LADIES

No. 1760—"Lady Fair" Black Cashmere hose. Medium weight. Made of fine, soft cashmere yarns, 2-ply leg, 5-ply foot, heel, toe and high splice, giving strength where needed. Box of 3 pairs, \$1.50; 6 pairs, \$3.00.
No. 1020—Same quality as 1760, but heavier. Black only. Box of 3 pairs \$1.50; 6 pairs, \$3.00.
No. 1150—Very fine Cashmere hose. Medium weight. 2-ply leg, 4-ply foot, heel and toe. Black, light and dark tan, leather, champagne, myrtle, pearl gray, oxblood, helio, cardinal. Box of 3 pairs, \$1.50; 6 pairs, \$3.00.
No. 1720—Fine quality Cotton Hose.

Made of 2-ply Egyptian yarn, with 3-ply heels and toes. Black, light and dark tan, champagne, myrtle, pearl gray, oxblood, helio, sky, pink, bisque. Box of 4 pairs, \$1.00; 6 pairs, \$1.50.
No. 1175—Mercerized. Same colors as 1720. Box of 3 pairs, \$1.00; 6 pairs, \$2.00.
FOR MEN
No. 2404—Medium weight Cashmere. 2-ply Botany arm with special "Everlast" heels and toes. Black, light and dark tan, leather, champagne, myrtle, pearl gray, oxblood, helio, slate, oxblood, helio, cadet blue and bisque. Box of 3 pairs, \$1.50; 6 pairs, \$3.00.

No. 500—"Black Knight" winter weight black Cashmere half-hose, 5-ply body, spun from pure Australian wool, 4-ply silk splice heels and toes. Box of 3 pairs, \$1.50; 6 pairs, \$3.00.
No. 1090 — Cashmere half-hose. Same quality as 500, but lighter weight. Black only. Box of 3 pairs, \$1.00; 6 pairs, \$2.00.
No. 330—"Everlast" Cotton socks. Medium weight. Made from four-ply long staple combed Egyptian cotton yarn, with six-ply heels and toes. Black, light and dark tan. Put up in boxes. Box of 3 pairs, \$1.00; 6 pairs, \$2.00.

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Ask at the store first. If they cannot supply you, state number, size of shoe or stocking and color of hosiery desired and enclose price, and we will fill your order postpaid. Remember we will fill no order for less than one box and only one size in a box. BE SURE TO MENTION SIZE.

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her, and has governed the town with tact, so that there is practically no opposition, and her first anniversary saw all the men offering to support her in every way.

The Gold Medal of the Professional Photographers' Association of Great Britain was this year voted to Miss Lena Connell of London, whose establishment employs women workers entirely.

The Governor of Porto Rico has appointed Miss Helen H. Hill, Chief of the Bureau of Information. The bureau is established to aid business interests considering investments in Porto Rico.

The Editor of the Delinquent says: "Whatever American laws remain unjust to women the fault lies with the women."

"There is no longer any excuse for women saying that they do not know where wrong legal conditions exist.

Newspapers, magazines, lecturers, pamphlets, to say nothing of the eight hundred thousand club women of the country, see to it that every injustice has an airing as soon as it becomes evident.

"The great majority of men are willing to sacrifice much of what they have considered their rights, if thereby they can still further protect motherhood.

"The difficulty lies in the inertia, the indifference, of the happy woman. It is almost impossible for her to look around her safeguarded life and realize that the very security of her position should impel her to efforts to place all her sisters in the same position.

Women's Club Convention.

The biennial convention of the General Federation of Women's Clubs met in San Francisco last July. The attempt to induce the federation to indorse women suffrage was unsuccessful, for the majority of the delegates preferred that the educational mission of the federation

should not be changed. Resolutions were adopted thanking President Taft for appointing a woman as the head of the new Child Labor Bureau; urging instruction in sex hygiene in the state normal schools; approving the plan of having women police officers in the large cities; objecting to prison contract labor; advocating the study of Bible literature and the placing of Bible study on the program of literary clubs; approving the plans of medical inspection in the schools and for school nurses; protesting against the comic supplement of the Sunday newspapers, and favoring uniform marriage and divorce laws. Mrs. Percy V. Pennypacker of Texas was elected president of the federation, and Mrs. Eugene Reilly of North Carolina recording secretary. Mrs. Sarah Platt Decker of Denver, Colorado, former president of the federation, was taken ill while attending the convention, and died on July 7th, after an operation in a San Francisco hospital.

Experienc Extracts

When Plants do not Thrive.—Bury a small piece of beeksteak close to the roots, or lay a piece of raw potato on the surface of the ground near the roots. If there are worms around the roots, they will come to the meat or potato to eat and may easily be removed.

I had such success in washing a white ostrich feather not long ago, that I would like to pass on the method. Make a suds of lukewarm water and pure Castile soap, then put in the feather and dip it up and down, gently pressing the dirt out with the fingers. When the feather looks clean rinse twice in lukewarm water, and hang in the air by a string for an hour or two. Then bring it in and shake until quite dry. Now take a pair of small scissors not too sharp, and carefully curl. One must have patience and not break the feather; make the curls loose and when done the feather will look like new.

To Make Ferns Thrive.—My Boston and asparagus ferns have done wonderfully well since I began to give them weak coffee twice a week. I take what is left over from breakfast, add an equal quantity of warm water, and pour around the roots while it is still warm, not hot.

To Hem Napkins.—When hemming napkins by hand first run them through the machine hemmer adjusted to the right width, without threading the needle. This will crease the hem more evenly than it can be done by hand, and with less trouble. Then turn the hem back flat against the right side of the napkin and overhand the edges, taking small stitches straight with the thread of the goods. This makes a much neater hem than to take the stitches at an angle across the thread of the goods.

Beefsteak Pie.—Cut nice steaks, and stew them till half done, put a puff paste in the dish, lay in the steaks with a few slices of boiled ham, season the gravy very high, pour it in the dish, put on a lid of paste and bake it.

To Remove Grass Stains.—To remove grass stains, use tartaric acid or cream of tartar dissolved in boiling water. Apply when the spot is fresh, and afterward wash as usual.

PATTERN DEPARTMENT

Any of these patterns supplied by the Pattern Department of the E. H. Heath Co., for 10c., or stamps. Please order by number and state the month in which pattern appeared.



STYLISH, BECOMING AND EASY TO MAKE.

7537 Sacque Night Gown, 34 to 46 bust. With Square or High Neck, Three-Quarter or Long Sleeves, with or without

Applied Yoke and Pocket. 5½ yds. of material 30 in. wide 1½ yds. of banding, 2¼ yds. of lace edging, for medium size.

7562 Fancy Blouse, 34 to 40 bust. With Edges Over-Lapped in Envelope Style, with Square or High Neck, with or without Lining with Under Sleeves. 7563 Three-Piece Skirt, 22 to 30 waist.

With High or Natural Waist Line. 7555 House Jacket with Peplum, 34 to 42 bust.

7494 Five Gored Skirt, 22 to 32 waist. With High or Natural Waist Line.

6½ yds. of material 27 ins. wide when material has figure or nap, 4¾ yds. 27 when material has neither figure nor nap, for medium size.

7571 Girls Guimpe, 4 to 12 years. With Round or Square, Dutch or Low Neck and with Yoke Facing to Any Desired Depth, with Short, Three-Quarter or Long Sleeves.

7553 Two-Piece Skirt, 22 to 30 waist. With High or Natural Waist Line.

The above patterns will be mailed to any address by the Fashion Department of this paper, on receipt of ten cents for each.



ATTRACTIVE GARMENTS FOR ALL OCCASIONS.

7541—Fancy Draped Waist, 34 to 40 bust.

With Low or High Neck with or without Under-Sleeves. To be made over Fitted Lining.

7552—Fancy Blouse, 34 to 44 bust. With or without Lining, with Fancy or Plain Sleeves in Three-Quarter or Full Length.

7414—Morning Jacket with Peplum, 34 to 44 bust.

With Short or Long Sleeves, Round or Square Collar.

3½ yards of material 27 in. wide for the banding and 5¼ yd. 27 in. wide for the piping, for medium size.



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7387—Six Gored Skirt, 22 to 30 waist. With High or Natural Waist Line, with or without Box Plait Effect.
 7547—Girl's Double Breasted Coat, 6 to 12 years.
 in Seven-Eighths or Full Length with Straight or Cutaway Fronts.
 4½ yds. of material 27 in. wide for over collar and cuffs, ¾ yard 27 in. wide for under collar, for 10 year size.
 7546—Five Gored Skirt for Misses and Small Women, 14, 16 and 18 years.
 With High or Natural Waist Line with or without Panel Effect at the Front.
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A SMART SUIT AND OTHER GOOD MODELS.

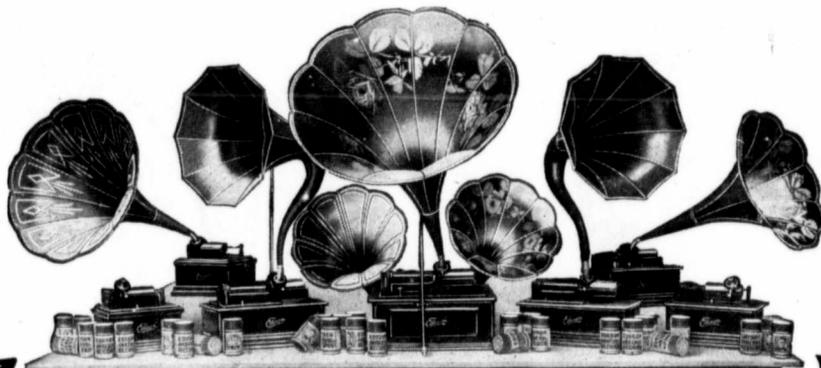
7573—Mackinaw or Belted Coat for Misses and Small Women, 16 and 18 years.
 With or without Hood, and Pockets with Sleeves Drawn in at the Wrists or Plain.
 7525 Plain Blouse or Guimpe, 34 to 44 bust.
 With High, Square or Round Neck, Long or Elbow Sleeves, with or without Peplum.
 7554 Two-Piece Skirt, 22 to 30 waist.
 With High or Natural Waist Line.
 7552 Fancy Blouse, 34 to 44 bust.
 With or without Lining, with Fancy or Plain Sleeves in Three-Quarter or Full Length.
 7452 Five Gored Skirt, 22 to 34 waist.
 With High or Natural Waist Line.
 5 yds. of material 27in. wide, 3¾ yds. if there is figure or nap; 2¾ yds. 44 if there is neither figure nor nap; ¾ yd. 27 in. wide for panel.
 7559 Two-Piece Skirt, 22 to 30 waist.
 With Round or Square Corners, High or Natural Waist Line.
 7572 Six Gored Skirt, 26 to 36 waist.
 With High Waist Line, with or without Point at Back or with Natural Waist Line.

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CHARMING MODELS THAT ARE NOVEL AND NEW.

7562 Fancy Blouse, 34 to 40 bust.
 With Edges Over-Lapped in Envelope Style, with Square or High Neck, with or without Lining with Under-Sleeves
 7557 Semi-Princess Dress for Misses and Small Women, 16 and 18 years.
 With Four Gored Skirt that can be made in Panel Style or Gathered at the Back, with High or Square Neck, Three-Quarter or Long Sleeves.
 7442 Single Breasted Coat, 34 to 44 bust.
 With Cutaway or Straight Fronts, Elbow Sleeves in Bell Shape or Long Sleeves that can be made Bell Shape or Plain.
 4¾ yds. of material 27 in. wide, 3¼ yds. 36, 2¾ yds. 44, with ¾ yd. 27 in. each.



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wide for collar and trimming, for medium size.
 7507 Four-Piece Skirt, 22 to 32 waist.
 With High or Natural Waist Line.

5 yds. of material 36 in. wide when material has figure or nap, 2¾ yds. 36 when material has neither figure nor nap, for medium size.
 7549 Four-Piece Skirt, 22 to 32 waist.
 With Side Plaits at Left of Front and Right of Back, with High or Natural Waist Line.

7561 Closed Durt Fitted Knickerbockers 24 to 34 waist.
 With Knee Bands or Hems and Elastic.

3¾ yds. of material 27 in. wide 1 yd. of beading, for medium size.

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ENDURANCE.

Life is a fight, but that does not mean that it is always a point-blank charge against the enemy, or that it is safe for every man to adopt the tactics of sledge-hammer blows, delivered in rapid succession right along the line. The battle of life is set for every one of us, but it is one of life's surprises to find out what different formations the battle takes. Usually it is very different from what a man supposes it will be. Robert Louis Stephenson said that he knew he

was cut out for a battle, but he did not think that it was to be this dingy one of medicine bottles and a sick bed. He won through what seems to us now one of the bravest personal fights a man ever put up, though it seemed to him often as if it were a mere sliding around here and there to avoid contests where he knew he would meet with defeat. We carry very little by storm, and a great deal by siege. Inaction is sometimes a positive inspiration. To endure is often a greater thing than to do.

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Practical Talks to Threshermen

Continued from page 36

business began to pick up. Among other schemes of getting the business started they tried the plan of sending a crew of men into the field to put on machines in various parts of the country, starting them in Texas, and sending them north as the season advanced, until when it closed they were as far north as Manitoba. In this way they gave practical ocular demonstrations in every one of the great Western grain growing states.

The next season orders began to come in in sufficient numbers to insure the success of the new undertaking, the thresher companies began to make provisions to add the stackers at the factory and changes were made in the design of both stackers and separators enabling a stacker to be attached by any handy man in the field. The fruits of the extensive advertising carried on by the Indiana Manufacturing Company now became evident, and they gradually went out of the manufacturing business and began to sell on royalties, charging the various companies \$30 for the privilege of using their patents. The business by this time was highly profitable, and the faith of the early promoters was seen to be fully justified.

Much has been said of the monopoly enjoyed by the Indiana Manufacturing Company of the wind stacker business, a monopoly which they were enabled to enjoy by buying all the patents having any material bearing on the business as fast as they were issued, but there is here, as in most businesses of a similar nature, another side to be considered. They quickly put the wind stacker before the public, educated the public to its benefits and on account of its merits doubtless saved to the public more than they ever were paid for. Besides, they spent money royally, and helped the entire thresher business from a manufacturer's point of view, by their extensive advertising. Moreover, they were continually at law in an endeavor to protect their own claims, and all this cut heavily into the profits.

Even with all their endeavors to maintain a complete monopoly they were not entirely successful. Quite a number of new companies sprang up and succeeded in doing a considerable business, among which may be named the Russell Wind Stacker Company, which is still in existence, the Maplebay Company, and the Fosston Wind Stacker Company. The two latter have gone out of business as separate concerns.

In the next article we will describe some of the other important patents and finish tracing the growth and development of the wind stacker business.

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THE DAY AFTER.

By John Nicholas Biffel.
Thoughts inspired by a Get-Together Banquet in an Eastern Manufacturing City that is struggling to get out of the rut.

The big night is over. Our guests of honor have spoken, and have gone their way. We have toasted our country, our President, our distinguished speakers, our city—and ourselves. We have filled the air with applause when an inspiring thought was sent reverberating across the great armory. We have sung "Has anybody here seen Kelly?" and we have sung "The Maple Leaf Forever." We have stood on our feet and have tossed our voices in mighty cheers.

And now?
Another day has come, and we are back at our work. Sometime before the hour for bed comes tonight, let us sit back and let the world run by for a few minutes—and think deeply. Let us ask ourselves the question: What did that night mean to us? What was the big dominant thought we carried home with us?

The principal speaker uttered one word that is the keynote of big success. That word is Enthusiasm. It is the beginning—and the culmination—of all things worth while. All other qualities are as nothing if we lack enthusiasm. As the speaker said, it is the whet that fuses all the other qualities into one effective mass.

An enthusiast is a constructionist. His first impulsive ideas for building great structures may have faults, but if the enthusiasm is present the proper ways and means to an end will come of themselves. Anyone can be a destructionist. Anyone can tear down. The profession of the knocker is the easiest for which to qualify. It is the man, who, recognizing all his own limitations, goes ahead and fights for what he wants, that wins.

To make our country, our city greater, we must make our individual selves greater. We must believe in ourselves. There is nothing selfish in saying, "I am strong. I can do things. I believe in myself." Only the narrow-minded will look upon a man who speaks thus as an egotist.

The day of the humble is passing. This is the age of the strong—of those who can make good. Success is not for him who stands back.

To make our city and ourselves greater we must first decide what we want to do. The plan is the thing. Along what lines shall we develop? What do we want to do? Let's get right down to close thinking and decide the question. Then let's cast about for ways and means to accomplish our ends. Knowledge is power. And knowledge comes from experience, and observation, and asking questions of men who have made good.

What is the biggest thing we want to do? Let's concentrate our energies on the big things, and the smaller things will follow of themselves. And to do big deeds we must broaden our outlook. No success is greater than the outlook of the man who achieved it. Narrow minds and knockers go hand in hand. We knock our neighbor and forget our own shortcomings. Let's cheer up and get at the big thing.

Too many of us are lashed to the mast of tradition. We fear to attempt the new because we are afraid to abandon the old. We bend the knee to the same gods to which our ancestors knelt. We vote as our fathers voted. Men say, "If that party was good enough for my father to vote for, it is good enough for me." They forget that times are changing. Each day finds the face of the world transformed.

We must become better optimists. There is too much fear in our hearts—fear of the unknown. When business slows up, too many of us stand around and tell how bad it is instead of devoting efforts to bring about betterment. We stop planning for the future, we stop radiating good cheer, and look for new ways to cut down expenses.

When we begin to paint gloom pictures we admit that the gods have us guessing—that we are duly qualified candidates for the toboggan.

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was made to the giant factories four years ago, why have they not answered? Why have not these factories produced a watch equal to the Burlington? And this challenge did not ask our competitors to produce a watch better than the Burlington. NO. If they should produce a watch equal to the Burlington we should be the losers. Our \$1,000 still lies in the bank for competitors to cover.

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east. Let's turn a look of pity on the man who is thoughtless enough to say that business is bad, or that the country is going down-hill. Let's lift him up. Let's inoculate him with our own enthusiasm.

This is a great country and a great world. Both are growing better as the days mount into years. We are not going backward. We must go on.

LATE NEWS FOR BOYS.

Invigorating rain.—Most persons have noticed that the first rain after a long drought has an almost magical effect on stunted vegetation. Part of this effect is now believed to be due to the fertilizing power of the ammonia that

collects in the air during a drought. Samples of the first rain-water after a drought have contained as much as .525 of a grain of ammonia in each gallon, or about seven times the amount in normal times of rainfall. According to the Lancet, this indicates that the amount of ammonia in the air increases in spite of winds, and that rain alone removes it. Thus a delayed rainfall apparently carries to vegetation a specific stimulant.

The waters of the Strawberry River, which for centuries have emptied into the Gulf of California through the Colorado River, are now to empty into basin that has no outlet to the sea. Utah Lake, in the great continental

This is made possible by the recent completion of the second largest irrigation tunnel in the world. It pierces the Wasatch Mountains for nearly four miles. The waters of the river will irrigate sixty thousand acres of farm lands in the valley settled by Brigham Young and his followers in 1847; the crops raised on the land will find a ready sale in Salt Lake City, and the Pacific Ocean will not greatly miss the water thus diverted.

In mental vision there are four ranges: "The man who can look no further than the present is mentally blind; the man who can plan for the future has his eyes open; he who can plan for a life time is a general; and the man who can plan for generations is a genius.—Sh Idon.

EDMONTON AND ITS SURROUNDINGS.

Continued from page 8

power and privileges. No other city in Canada is so strong in municipal ownership as Edmonton. The city owns its street railway, its power, light and water works departments, its telephones, and operates the necessary departments for building streets, constructing sewers, side walks, boulevards and all the various things which go to make a city practical and beautiful. Edmonton has acquired a public park area of 650 acres, and has taken time by the forelock in this respect by securing land within the city limits which nature clearly intended for parks, but which might, with civic officials shorter sighted than those who have had Edmonton's public affairs in charge, have been lost to the people of this city for park purposes.

In other ways Edmonton is peculiarly well fitted to become the greatest city in Canada west of Winnipeg. Edmonton has a great advantage for civic growth in the fact that it is located directly over an enormous coal bed. This coal is a high grade lignite, free burning and with good fuel content.

It is good for domestic purposes and a good steam coal, because it is so easy of access, Edmonton coal sells at a low price. Grades suitable for burning under boilers can be bought as low as \$1.25 a ton, and coal for domestic uses is supplied at \$4.50 a ton. This makes the problem of heating houses, stores, business blocks, factories—in short all manner of buildings—easy and cheap, and disposes of one of the large problems of domestic and industrial growth in Western Canada. A city with power, for instance, is only partially equipped for furnishing the seeker after an industrial site in the West with requirements suited for his purpose. Cheap power answers half the question of proper location and economical working, and leaves the other half unanswered.

A Question Answered Fully.

Thus Edmonton is answering the question of location to those who seek a desirable home city, and a place in which to engage in business or in the establishment of an industry. In the industrial field the limits are somewhat narrowed by the absence of many lines of raw material, but this is true of any given place in the world—no place admits of establishing various industries, supplying the raw material needs of these industries from the place itself. There still remains to Edmonton a very considerable field of industrial endeavor which is bound to prove profitable for those who engage in it. There

are a number of lines of manufacturers which can be thoroughly supplied with raw material in the Edmonton district, and these lines are being taken up by manufacturers from other parts of Canada, the United States, and the Old Country, and so far as they have been pursued, warrant the belief that this is one of the industrial sites of Western Canada, where money is to be had from any properly managed manufacturing plant.

Because of its obvious fitness for trade, commerce and industrial organizations, Edmonton is coming to its own very rapidly. It is true that up to two or three years ago Edmonton was rather over-looked in the rush of people to Western Canada. All of the figures and facts pertaining to the growth of the city during the past two years point the fact that Edmonton is making a strong impression on the people of other parts who have, in some way or another, come to know its advantages.

Bank clearings, that indubitable index of commercial progress, show what Edmonton has been doing in a business way since 1908. In that year, the bank clearings of Edmonton amounted to \$38,486,496. In 1910 they had mounted to \$71,633,115, and for eight months of the year 1912, Edmonton bank clearings have piled up the considerable sum of \$135,877,548. There is no better proof of what a city is doing in real business, than the bank clearings; men do not transact business with banks—nor banks with men—upon any except a cash basis in the final outcome of that business. Every transaction that passes through a clearing house means that so much cash has exchanged hands, and there is no jockeying with bank clearing figures, nor any transactions for the sake of the humor that is contained in them—bank clearings, in other words, represent sober, sane, solid business.

Big and Busy in Building.

The building permits of a city are another not-to-be-disputed mark of that city's progress, and in this respect the quotation of Edmonton's building figures is a case remarkably in point. In 1908 the building permits for Edmonton amounted to \$1,086,864. It was thought to be a considerable advance when these figures went up, in 1910, to \$2,159,106. But in eight months of 1912 Edmonton builders took out permits for not less than \$10,250,562 of new structures to be erected in this city. There has been no slacking up of the building business since the 1st of September, and it is within the certain knowledge of men who are conversant with the building prospects of Edmonton for the

Continued on page 74

WHY MAN OF TO-DAY is Only 50 Per Cent. Efficient

By Walter Walgrove

If one were to form an opinion from the number of helpful, inspiring and informing articles one sees in the public press and magazines, the purpose of which is to increase our efficiency, he must believe that the entire Dominion is striving for such an end—

And this is so.

The Canadian Man because the race is swifter every day; competition is keener, and the stronger the man the greater his capacity to win. The stronger the man the stronger his will and brain, and the greater his ability to match wits and win. The greater his confidence in himself, the greater the confidence of other people in him; the keener his wit and the clearer his brain.

The Canadian Woman because she must be competent to rear and manage the family and home, and take all the thought and responsibility from the shoulders of the man, whose present-day business burdens are all that he can carry.

Now, what are we doing to secure that efficiency? Much mentally, some of us much physically, but what is the trouble?

We are not really efficient more than half the time. Half the time blue and worried—all the time nervous—some of the time really incapacitated by illness.

There is a reason for this—a practical reason, one that has been known to physicians for quite a period, and will be known to the entire world ere long.

That reason is that the human system does not, and will not, rid itself of all the waste which it accumulates under our present mode of living. No matter how regular we are, the food we eat and the sedentary lives we live (even though we do get some exercise) makes it impossible; just as impossible, as it is for the grate of a stove to rid itself of clinkers.

And the waste does to us exactly what the clinkers do to the stove; make the fire burn low and inefficiently until enough clinkers have accumulated and then prevent its burning at all.

It has been our habit, after this waste has reduced our efficiency about 75 per cent., to drug ourselves; or after we have become 100 per cent. inefficient through illness, to still further attempt to rid ourselves of it in the same way—by drugging.

If a clock is not cleaned once in a while it clogs up and stops; the same way with an engine because of the residue which it, itself, accumulates. To clean the clock, you would not put acid on

the parts though you could probably find one that would do the work, nor to clean the engine would you force a cleaner through it that would injure its parts; yet that is the process you employ when you drug the system to rid it of waste.

You would clean your clock and engine with a harmless cleanser that nature has provided, and you can do exactly the same for yourself, as I will demonstrate before I conclude.

The reason that a physician's first step in illness is to purge the system is that no medicine can take effect, nor can the system work properly while the colon (large intestine) is clogged up. If the colon were not clogged up the chances are 10 to 1 that you would not have been ill at all.

It may take some time for the clogging process to reach the stage where it produces real illness, but, no matter how long it takes, while it is going on the functions are not working so as to keep us up to "concert pitch." Our livers are sluggish, we are dull and heavy—slight or severe headaches come on—our sleep does not rest us—in short we are about 50 per cent. efficient.

And if this condition progresses to where real illness develops, it is impossible to tell what form that illness will take, because—

The blood is constantly circulating through the colon, and, taking up by absorption the poisons in the waste which it contains, it distributes them throughout the system and weakens it so that we are subject to whatever disease is most prevalent.

The nature of the illness depends on our own little weaknesses and what we are the least able to resist.

These facts are all scientifically correct in every particular, and it has often surprised me that they are not more generally known and appreciated. All we have to do is to consider the treatment that we have received in illness to realize fully how it developed and the methods used to remove it.

So you see that not only is accumulated waste directly and constantly pulling down our efficiency by making our blood poor and our intellect dull—our spirits low and our ambitions weak, but it is responsible through its weakening and infecting processes for a list of illnesses that if catalogued here would seem almost unbelievable.

It is the direct and immediate cause of that very expensive and



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dangerous complaint—appendicitis.

If we can successfully eliminate the waste all our functions work properly and in accord—there are no poisons being taken up by the blood, so it is pure and imparts strength to every part of the body instead of weakness—there is nothing to clog up the system and make us bilious, dull and nervously fearful.

With everything working in perfect accord and without obstruction, our brains are clear, our entire physical being is competent to respond quickly to every requirement, and we are 100 per cent. efficient.

Now this waste that I speak of cannot be thoroughly removed by drugs, but even if it could, the

effect of these drugs on the functions is very unnatural, and if continued becomes a periodical necessity.

Note the opinions on drugging of two most eminent physicians:

Prof. Alonzo Clark, M.D., of the New York College of Physicians and Surgeons, says: "All of our curative agents are poisons, and, as a consequence, every dose diminishes the patients vitality."

Prof. Joseph M. Smith, M.D., of the same school, says: "All medicines which enter the circulation poison the blood in the same manner as do the poisons that produce disease."

Now, the internal organism can be kept as sweet and pure and clean as the external and by the

same natural, sane method—bathing. By the proper system warm water can be introduced so that the colon is perfectly cleansed and kept pure.

There is no violence in this process—it seems to be just as normal and natural as washing one's hands.

Physicians are taking it up more widely and generally every day, and it seems as though everyone should be informed thoroughly on a practice which, though so rational and simple, is revolutionary in its accomplishments.

This is rather a delicate subject to write of exhaustively in the public press, but Chas. A. Tyrrell, M.D., has prepared an interesting

treatise on "The What, The Why, The Way" of the Internal Bath, which he will send without cost to anyone addressing him at Room 751, 280 College Street, Toronto, and mentioning that they have read this article in The Canadian Thresherman and Farmer.

Personally, I am enthusiastic on Internal Bathing, because I have seen what it has done in illness as well as in health, and I believe that every person who wishes to keep in as near a perfect condition as is humanly possible should at least be informed on this subject; he will also probably learn something about himself which he has never known through reading the little book to which I refer.

Continued from page 72

rest of the year, that the same strong demand for new structures that has marked the first two-thirds of the year will be carried through for the remainder of 1912, so that it is almost absolutely certain that the building figures of Edmonton for this year will run into the enormous sum of \$15,000,000.

And so Edmonton is justifying the faith of those who started this city in the very path of progress, by doing big things in this year of our Lord 1912. A card census taken in June showed that the population of Edmonton is 53,383, as contrasted with a little more than 18,000 so lately as 1908. It has been a year of excellent crops. It has been a year of marvellous growth. It has been a year of remarkable railway construction. It has been a year which points to other years of even more rapid progress toward the great ultimate which Edmonton is certain to attain—that of one of the first cities in Canada, and, beyond a doubt no lower down in the scale of Western development and growth than second place. Winnipeg may retain the lead it has at the present time and which it has attained by that wonderful process of building up which makes it one of the most remarkable cities in the world. No other city in Western Canada has to-day so many, and such good, claims to second place among the cities of the West within the next decade as Edmonton, the capital of Alberta.

CALGARY.

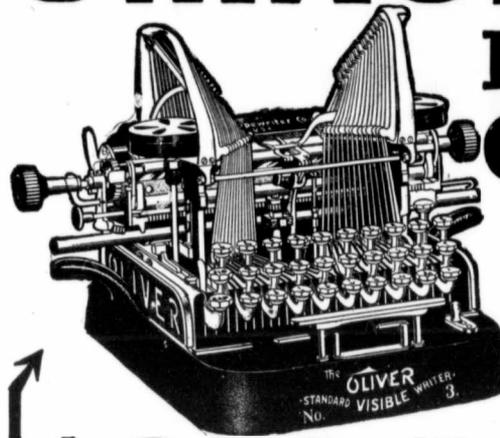
Continued from page 9

last of 61,340, increasing at the rate of 1,000 persons per month, Calgary draws heavily on the surrounding district for food-stuffs, yet there is a greater demand than the immediate vicinity can supply.

General, mixed or diversified farming is coming more and more in evidence as the country is opened up, though the grain area is also increasing. Some of the largest bonanza farms of the west are located in Alberta; also some of the finest dairy farms, fancy horse and sheep ranches, as well as the everyday homesteader and small rancher. The official returns give six per cent. of the land under cultivation. Homesteads are no longer to be had near existing railroads, but land is very cheap considering its producing power.

This summer saw an oil boom resulting from the discovery of an oil basin, where it is expected there will be obtained an outlet from the oil known to be underlying much of this district, but which so far has not been successfully reached.

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The possibilities for agriculture are very great here, because this city seems destined to become, as Senator Loughheed says, one of the great cities of Canada, and the fertile soil, good water and good climate with which this district is favored offer opportunities to reap a rich reward in supplying the market which is now here, and will be to a still greater extent in the future.

Calgary has an interurban railway system projected, and grading done on a portion of the road. This company, with a

charter for 1,200 miles of country street railway, will use this city as a hub.

A municipal electric street railway built by the city runs fifty cars over fifty-three miles of track and turned \$100,000 into the civic treasury last year.

Churches, schools, a university affiliated with the old McGill for degree-conferring powers, two more transcontinental railways working within the city limits to link up the connections, and a north and south line from the

international boundary are among the facts not to be lost sight of in a consideration of the city phenomenal of Sunny Alberta.

ELECTRIC PRINCE ALBERT

Continued from page 10

so important and valuable is this branch of employment that a recent issue of a well known magazine devoted space to an article entitled "The City of Silver Saws," which dealt minutely with

the lumber works of Prince Albert.

These busy concerns provide the necessary work for the homesteader during the winter months, who thus earns his maintenance and also capital to devote to the cultivation and improvement of his homestead, during his six months occupation. The flour mills is a progressing business, and the number of them and the capacity is to be increased to meet the demands of the augmented supply of grain imported to the city.

Today, Prince Albert stands at the dawn of a new era in her existence, for arrangements have been made for the establishment of enormous iron works, wood factories capable of turning out complete house and all kinds of building materials, special wood-work shops, and large paint manufactories. The municipality has granted a free site of 15 acres to the firm putting up the proposition. The discovery of oil also in the neighborhood has added one more to the sources of wealth and the company working this has already been formed and received its charter, and the foundation of another important industry securely laid.

Each week sees representatives of firms spying out the land and one can safely predict that the immense natural wealth of Northern Saskatchewan will not remain unused much longer.

That the position of Prince Albert destined it to be the centre of manufactures and the distributing point for the area has been recognized for some time past, and to meet the new conditions power will be needed. Power, cheap and continuous, which will be the moving spirit in great industrial concerns, providing healthy and remunerative employment for the increasing population (the census has increased by 50 per cent. during the past two years) and the hundreds teeming into the city each month, and bringing wealth to the speculator.

Necessity was ever the mother of invention, and this district is giving birth to the power essential to its conditions.

Twenty-five miles east of the city the La Colle Falls are to be harnessed at an ultimate cost of \$1,000,000. The resultant energy will aggregate 15,000 horse power, and of this 13,000 horse power will be transmitted to the city for use. The contract has been let to the Ambursen Hydraulic Co., and the work is proceeding rapidly. No wonder then, that the name of "Electric Prince Albert, the White Coal City," is on the lips of every opportunity seeker. Flourishing as the great agricultural returns are, their wealth supremacy will be chal-

lenged by the revenue from manufacturers ere long.

A fair test of a locality's progress is that of its buildings permits, and here a record has been

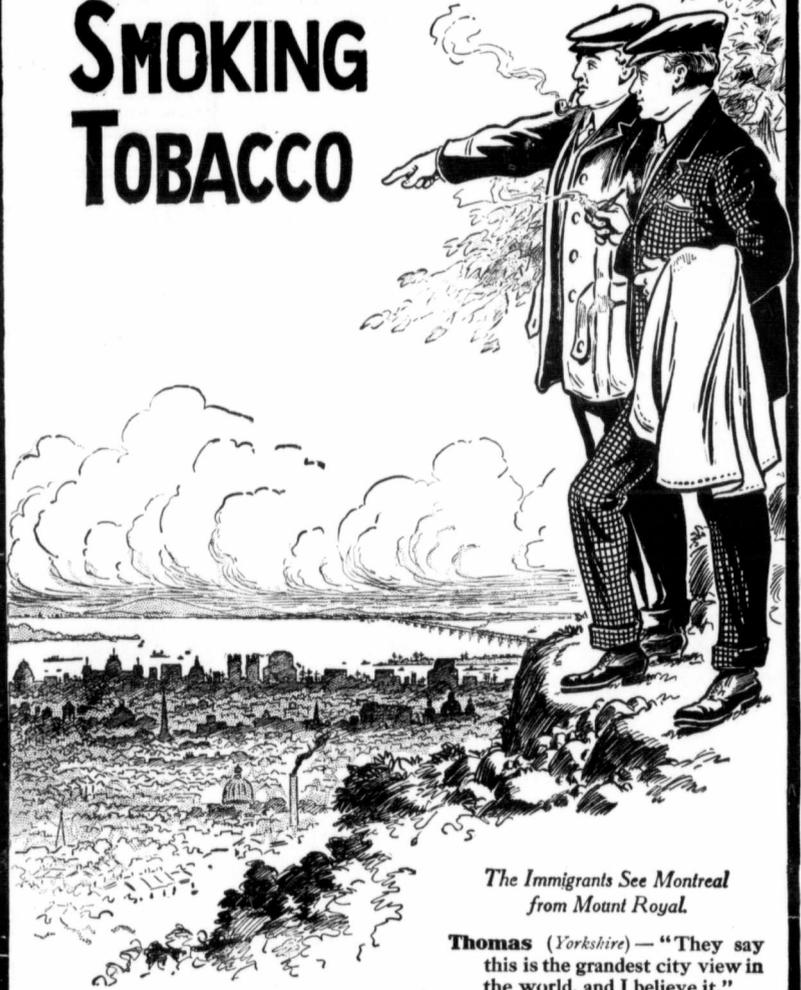
established in the passing of the \$1,000,000 mark by the end of July of this year.

Everywhere new structures are rising, and the local brick yards

and the labor market are taxed to the utmost to meet the requirements. This activity is not a philanthropic movement, but stern and keen business.

MEERSCHAUM

SMOKING TOBACCO



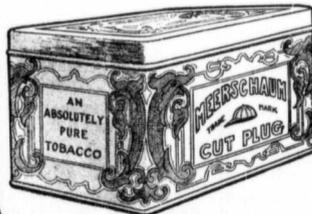
The Immigrants See Montreal from Mount Royal.

Thomas (Yorkshire)—"They say this is the grandest city view in the world, and I believe it."

Andrew (Fifeshire)—"I'm no so sure o'that, though I must admit it's bonny."

Thomas—"See yon big concrete factory? It's where they put up this 'Meerschaum' we're smoking."

Andrew—"Well, we're in the right place Tammas. We'll no run short o' 'Meerschaum.' It's an absolutely pure Smoking Tobacco."



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SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS

Any person who is the sole head of a family or any male over 18 years old, may homestead a quarter-section of available Dominion land in Manitoba, Saskatchewan or Alberta. The applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the district. Entry by proxy may be made at any agency, on certain conditions, by father, mother, son, daughter, brother or sister of intending homesteader.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead as a farm of at least 50 acres solely or used and occupied by him or by his father, mother, son, daughter, brother or sister.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price \$3.00 per acre. Duties—Must reside six months in each of six years from date of homestead entry (including the time required to earn homestead patent) and cultivate fifty acres extra.

A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may enter for a purchased homestead in certain districts. Price \$3.60 per acre. Duties—Must reside six months in each of three years, cultivate fifty acres and erect a house worth \$300.00.

W. W. CORY,
Deputy of the Minister of the Interior
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Such is Prince Albert, beautiful in location, central to a large tributary district, champion in the world's agricultural field, of unsurpassed productive capabilities, the birth place of cheap power, healthily sound and progressive in administration, it offers to the residence seeker, the investor, the man of business acumen, the progressive agriculturalist, and the searcher for work, ideal opportunities, and a welcome for each and all.

SASKATOON.

Continued from page 11

From this table it will be evident that the over 200 thriving points in our district can draw their supplies with greatest economy and dispatch from this city—and, that is why they do so. Hence, the enormous and continually-expanding volume of our wholesale distributing business; in proof of which it might be mentioned that within the past six months, the freight receipts of one of our railways show an

increase of over 100 per cent. This is doubtless characteristic of the experience of our other roads.

And now for our main potentiality—our agricultural land—and it is entirely safe to say that in the whole Dominion there is none more fertile, more easily and economically operated or more generously supplied with the transportation facilities so essential to the success of the farmer.

And, so far, we have scarcely touched the outer fringe of the above stupendous potentiality. Merely a fraction of our arable lands have as yet experienced the rude wrench of the breaking plow.

Now, in December, 1903, Saskatoon was but a slender sprinkling of tiny shacks, housing in all 113 hopeful souls. Today, however, the most conservative estimate places our population at, at least, 27,000—indeed, Henderson's Directory Co., of Winnipeg, who were recently here in connection with the issue of a new city directory, stated their emphatic conviction that there were fully 30,000 people here.

While on the above matter, it is interesting to remark that on the 18th October, 1911, our sworn civic census gave us 18,096 inhabitants. It will thus be seen that within the last ten months Saskatoon has experienced a population increase of 50 per cent.

Of course, the development of a city in any agricultural country is in proportion to the development throughout the territory tributary to such city; and I can only add that the pheno-

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Both including Pipe for the nominal sum of **\$1.25**

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1911.
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Winnipeg, Man.
Find enclosed \$1.25, for which send the "Weekly Free Press and Prairie Farmer" one year, and the "Canadian Thresherman and Farmer" one year, together with pipe, to the following address:
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"I have a large stock of horses and am a user of Kendall's Spavin Cure. I must say that I always had the best satisfaction from its use, and can recommend it to any horse owner." JOSEPH PFUND.

PIGION LAKE, MAN. DEC. 24th, 1911.

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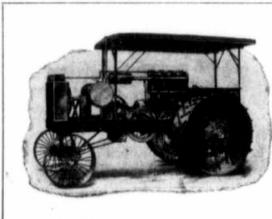
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menal record of progress already achieved by Saskatoon has involved merely the slenderest draft upon our agricultural potentialities. Admitting the foregoing—and it cannot be gainsaid—it is reasonable to predict that by the time we have brought merely 25 per cent. of our land into cultivation, Saskatoon shall have become one of the largest and most important cities in Canada. Nor will it be long until this comes about, for the simple reason that the recent general advent of the engine upon the farm has precipitated the whole situation. Every farmer who can possibly afford a tractor now possesses one. For example, last year the little village of Rosetown, on the Goose Lake line southwest of this city, took no fewer than 200 outfits. The number of engines that have been distributed from this city within the past three years is almost incredible; and every one knows how much more can be accomplished by gas or steam power than by the usual horse or ox method. As some indication of just how important the engine now is as a factor toward agricultural expansion, it may be mentioned that about seven years ago it was possible to drive west into Alberta, a distance of about 136 miles, and merely touch one house upon the way. Yet, last year fully 16,000,000 bushels of all grains were shipped from points along the 125 operating miles of the Canadian Northern Railway's Goose Lake line, while this season the increase in acreage under cultivation at some points on the railway in question is as high as 300 per cent, and in no case lower than 50 per cent. It is the engine on the farm that has rendered such things possible. In addition, the engine has played a most important part toward the better cultivation of the land. This, for the reason that, in the normal season, there are really only a few weeks for spring work and a similar period for work in the fall; and such work must be handled thoroughly in order to ensure a profitable crop. There is much to be done and little time to do it—and the employment of power on the land is the one and only solution.

In conclusion, let me add that the industrial life of our city is now awakening most encouragingly. We are entirely alive to the economic desirability of securing just as many sound manufacturing concerns as possible; and with a view to this end our citizens recently and within four and a half days, subscribed the sum of one million dollars toward their Industrial League, organized to encourage the location of suitable industries. It is respectfully submitted that the



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Great Canadian Iron and Steel Horses, built for Western Canadian Service. A 22-horse team all pulling together, that will respond to your slightest touch,—always willing, always ready. Wouldn't you like to drive these modern horses?—can't you almost hear them as they go puffing along, turning over their twenty-five or more acres a day? Wouldn't you like to have them do your work this Fall?

Send quick for free catalogue or get in touch with our Dealer in your Town.

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Factories: HAMILTON Ont. Western Branches: REGINA, Sask, WINNIPEG, Man.

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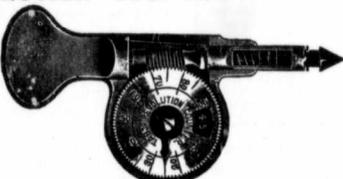
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above fact indicates many things; for instance, it demonstrates the commercial solidity of our city and the consequent prosperity of its people. It also displays our possession of that priceless asset so potent in its influence upon the progress, development and whole life of any city—a truly sincere and splendid type of citizenship.

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Commissioner.

TIDES OF INSPIRATION.

There is an element of inspiration, in all great work which is never wholly at command; with the greatest as with humbler men, it ebbs and flows. There are times when it comes in with the rush of the flood; when the mind is suddenly fertilised with ideas, when the heart is "a nest of singing birds," when the whole visible world shines and glows. There are times, also, when its ebb leaves mind and heart as bare and vacant as the beach from which the tide has receded. These alternations of ebb and flow, of darkness and light, are not unknown to the greatest souls; they are the invariable accompaniments of that quality of soul which makes a man the interpreter of his fellow and of the world which is common ground between them. There is something above us whose instruments we are; there are currents of inspiration which touch us and our strength is "as the strength of ten"; which pass from us and, like Samson shorn, we are as pygmies with other pygmies. No man wholly commands these affluent moods, these creative impulses; but some men learn the secret of appropriating them, of keeping within their range. These are the men who hold themselves with immovable purpose to the conditions of their work; who refuse all solicitations, resist all temptations, to compromise with customary habits and pleasures; who keep themselves in their own world, and, working or waiting, achieve complete self-expression. "I am always at work," said a great artist, "and when an inspiration comes I am ready to make the most of it." Inspiration rarely leaves such a man long unvisited. One looks at Turner's pictures with wonder in his heart. In this rushing, roaring, sooty London, with its leaden skies, its returning clouds and obscuring fogs, how were such dreams wooed and won? The painter's life answers the question. London had small share of Turner; he lived in a world of his own making, and the flush of its sky, the glory of its golden atmosphere, never wholly faded from his vision.

OF CAUSES.

I have often amused myself with remarking how many persons' good and ill fortunes have flowed from the most trifling events; and by what strange and intricate combinations things are brought about. Epictetus hath well

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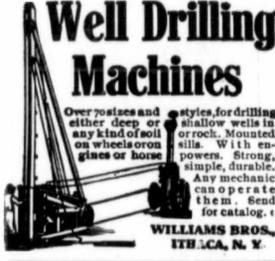
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INVENTIONS

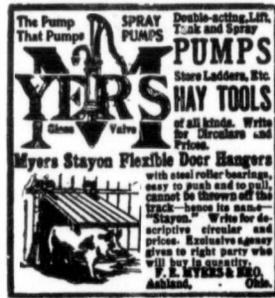
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said, "that common and vulgar people ascribe all ill that they feel to others; people of little wisdom to themselves; people of much wisdom to no one." This saying is one of the most profound of that philosopher. He was neither surprised to see a pitcher broken nor a child die, because his experience had taught him that one was fragile and the other mortal. Nor was he able to ascertain why these two accidents occurred, because himself being mortal, he could not remount to the source of causes; he could not follow backwards, through infinity, the chain of those causes, nor embrace in in his view all the other combinations connected with them; but he was clear-sighted enough to have discovered that there were no less causes, and no fewer combinations, to cause the woman's pitcher to be broken, whom he perceived weeping at the catastrophe, than there were to occasion the downfall of an empire—the introduction of a new sect of religion or philosophy—or the discovery of a great truth in geometry or mathematics, or their offspring, mechanics. The discovery and civilisation of countries may, and indeed have been, owing to just as trivial causes as those that lead to the breaking of the pitcher. Contentment, then, is the most solid virtue, the soundest philosophy, the purest religion, and the most profound wisdom.

Maltravers.

THINK OF JONAH.

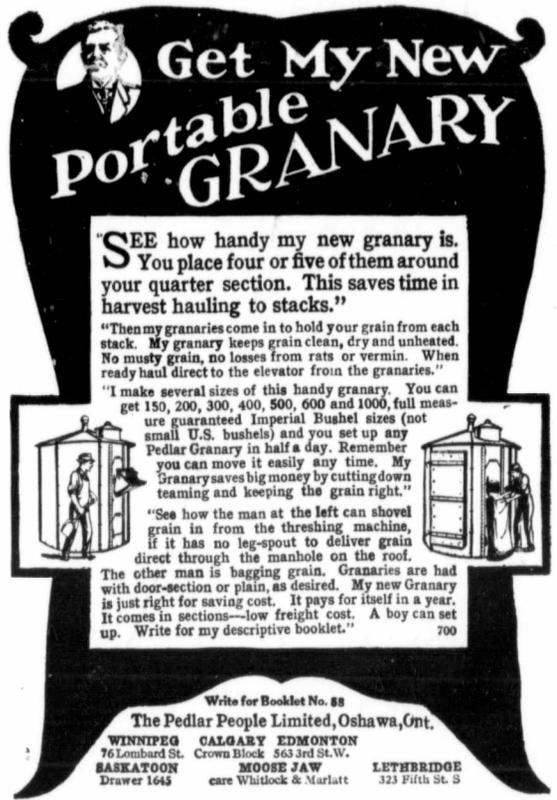
Did you ever stop to think of it? If Jonah had stayed with that Whale we should never have heard of him again! He came out all right, however, and did things worth remembering.

A salesman from a provincial town one day—that is, the man was there, but the sales were not. The weather was exceedingly trying, the crops in the country were poor; factories and shops were working on half time. There were several others, but Van Atkin himself was the real cause. He was down in the mouth. He wrote a five-page letter to "The House" and went to bed.

When Van came down next morning, later than usual, he was handed a telegram. This is what he read—

"When you are down in the mouth, think of Jonah! He came out all right!"

At first, Van laughed, just as you are doing now. The sales manager who sent the message intended that he should laugh. Then Van grew serious; and that was according to the manager's plan too. The salesman returned to his room. But just what happened in that room perhaps no one but Van Atkin will ever



Get My New Portable GRANARY

"SEE how handy my new granary is. You place four or five of them around your quarter section. This saves time in harvest hauling to stacks."

"Then my granaries come in to hold your grain from each stack. My granary keeps grain clean, dry and unheated. No musty grain, no losses from rats or vermin. When ready haul direct to the elevator from the granaries."

"I make several sizes of this handy granary. You can get 150, 200, 300, 400, 500, 600 and 1000, full measure guaranteed Imperial Bushel sizes (not small U.S. bushels) and you set up any Pedlar Granary in half a day. Remember you can move it easily any time. My Granaries save big money by cutting down teaming and keeping the grain right."

"See how the man at the left can shovel grain in from the threshing machine, if it has no leg-spout to deliver grain direct through the manhole on the roof. The other man is bagging grain. Granaries are had with door-section or plain, as desired. My new Granary is just right for saving cost. It pays for itself in a year. It comes in sections—low freight cost. A boy can set up. Write for my descriptive booklet." 700

Write for Booklet No. 88
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Sore Lungs
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all Stiff Joints**

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Cornhill, Tex. — "One bottle Gombault Balsam did
my rheumatism more good than \$100.00 paid in
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OTTO A. BEYER
Price \$1.50 per bottle. Sold by druggists, or sent
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The LAWRENCE-WILLIAMS COMPANY, Toronto, Can.

know. At any rate, "he came out all right." He took some samples under his arm, called on the trade and made sales. He is "high man" with his company now, with good prospects of becoming sales manager at an early date. The thing that gets a man overboard is not important. The particular brand of fish that swallows him is of no consequence. It may be despondency, discouragement, lack of initiative, doubt, fear, timidity, or any other kind of fish. They all are lurking just beneath the surface, waiting with open jaws for victims.

It's getting out that really counts. Jonah was in for three days and three nights, but according to the story he came out all right. It may take longer than three days and three nights or it may take less, but get out of it, if you are down in the mouth. If you don't get out, your career is ended; if you do, your chances are better than ever.

THE DAY OF REST.

One of the facts upon which all men are agreed, whatever may be their view of life, is the need of a frequently recurring season of spiritual and physical refreshment. The life which was an unending vista of dusty days in the city would be a life from which we should all turn in despair. The hum of the wheels would drive the world mad. The soul would perish under the strain of material things and the body would perish with it. There is, therefore, no question of cant in the desire to keep our Canadian Sunday: it is a supreme necessity, and never more supreme than in these days, when the pace of life is always being quickened and men are becoming more and more like the parts of a giant machine whose operations they do not understand and whose roar dulls the mind.

ODD MOMENTS.

All that I have accomplished, or expect or hope to accomplish, has been and will be by that plodding, patient, persevering process of accretion which builds the ant heap particle by particle, thought by thought, fact by fact. If I was ever actuated by ambition, its highest and warmest aspiration reached no further than the hope to set before the young men of any country an example in employing those invaluable fragments of time called "odd moments."

Half the world is on the wrong scent in the pursuit of happiness. They think it consists in having and getting and in being served by others. It consists in giving and serving others.

Henry Drummond.



**We
Needed
More
Room**

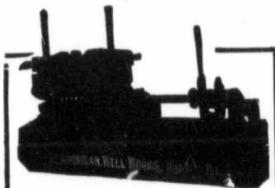
— so we built at Regina this great Warehouse 250 ft. long by 90 ft. wide with an extra large shipping platform. This we

thought would hold us for awhile, but it seems everybody in western Canada wants to buy Sawyer-Massey Canadian made machinery. In order to take care of our friends properly, and keep up our reputation for prompt, careful service, and immediate delivery of the size outfit wanted, we have been forced to spend \$40,000 in doubling the size of this already enormous Warehouse by adding 250 ft. more to it.

The above picture taken August 15th shows part of this Warehouse, and in the distance our overflow stock, for we were forced to rent part of a quarter section to take care of the machinery ordered for Fall delivery. When completed this Fall, we will have a Warehouse and Office Building 500 ft. x 90 ft. with a Platform 500 ft. x 25 ft., which will be one of the largest, if not the largest, Threshing Machine Warehouses in Western Canada.

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Manufacturers of Canadian Power Farming Machinery
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On receipt of order in Money Order or cash (no checks) we will send you the Clogs EXPRESS PREPAID to your home.

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A. F. KEMPTON, Secretary-Manager

Amount of Insurance in force Dec. 31st, 1911	\$21,243,598.00
Assets over Liabilities	522,944.15

THE NUMBER OF FARMERS INSURED 21,543

The Largest Farmers Mutual Fire Insurance Company in Canada. Agents wanted in unrepresented districts

The Occidental Fire Insurance Co.

Head Office: WAWANESA, MAN.

A. NAISMITH, President R. M. MATHESON, Vice-President
A. F. KEMPTON, Sec. and Mgr. C. D. KERR, Treasurer

Subscribed Capital	\$500,000.00
Security to Policy-holders	640,817.29

Full Deposit with Dominion Government
Agents wanted in unrepresented districts

**Be sure To Renew Your
Subscription Before It's Too Late**

WESTERN CANADIAN IMPLEMENT DIRECTORY

EXPLANATION.—First find the Implement Wanted and the Number opposite will be the Number of the Concern, in the first column, that handles it.

1—AMERICAN SEEDING MACHINE CO., Winnipeg. 2—BEATTY BROS., Brandon. 3—BELL ROBT. ENGINE & THRESHER CO., Winnipeg. 4—BRANDON PUMP & WIND MILL WORKS, Brandon. 5—BRITISH CANADIAN AGRICULTURAL TRACTORS, Saskatoon. 6—BUFFALO PITTS CO., Moose Jaw. 7—BURRIDGE-COOPER CO., Winnipeg. 8—CANADIAN FAIRBANKS CO., Winnipeg, Calgary, Saskatoon, Vancouver. 9—CANADIAN HOLT CO., Calgary. 10—CANADIAN MOLINE PLOW CO., Winnipeg. 11—CANADIAN RUBBER CO., Winnipeg, Vancouver. 12—CANADIAN STOVER CO., Brandon. 13—CANADIAN SWENSONS CO., Winnipeg. 14—CASE, J. I. T. M. CO., Winnipeg, Regina, Calgary. 15—COCKSHUTT PLOW CO., Winnipeg, Regina, Calgary, Edmonton. 16—CRANE & ORDWAY, Winnipeg. 17—DEERE, JNO. PLOW CO., Winnipeg, Regina, Calgary, Edmonton, Saskatoon, Lethbridge. 18—DE LAVAL SEPARATOR CO., Winnipeg. 19—DOMINION SPECIALTY CO., Winnipeg. 20—DUIS GEO. & CO., Winnipeg. 21—EMPIRE CREAM SEPARATOR CO., Winnipeg. 21½—GARDEN CITY FEEDER CO., Regina. 22—GAS TRACTION CO., Winnipeg, Saskatoon, Regina, Calgary. 23—GENERAL SUPPLY CO., Winnipeg. 24—GOODYEAR TIRE & RUBBER CO., Winnipeg, Regina, Calgary. 24½—GOLD, SHAPLEY & MUIR, Winnipeg, Regina. 25—GRAY-CAMPBELL CO., Winnipeg, Brandon, Moose Jaw, Calgary. 26—HAUG BROS. & NELLERMOE CO., Winnipeg, Calgary, Regina. 27—HARMER IMPLEMENT CO., Winnipeg. 28—HART PARR CO., P. la Prairie, Regina, Calgary, Saskatoon. 29—HERO IMPLEMENT CO., Winnipeg. 30—INT. HARVESTER CO., Winnipeg, Regina, Calgary, Edmonton, Saskatoon, Brandon. 31—LISTER R. A. & CO., Winnipeg. 32—LOUDEN HARDWARE & SPECIALTY CO., Winnipeg. 33—MANITOBA WINDMILL AND PUMP CO., Brandon. 34—MASSEY-HARRIS CO., Winnipeg, Regina, Calgary, Edmonton, Saskatoon. 35—MAYTAG CO., Winnipeg. 36—McLAUGHLIN CARRIAGE CO., Winnipeg. 37—McRAE ALEX., Winnipeg. 38—MELLOTTE CREAM SEPARATOR CO., Winnipeg. 39—MINNEAPOLIS STEEL AND MACH. CO., Regina. 40—MOODY MATHEW & SONS, Winnipeg. 41—NEEPAWA MFG CO., Neepawa. 42—NICHOLS & SHEPARD CO., Regina, Winnipeg. 43—ONTARIO WIND ENGINE & PUMP CO., Winnipeg. 44—PETRIE MFG. CO., Winnipeg, Calgary, Vancouver, Edmonton. 45—PIONEER TRACTOR CO., Calgary. 46—RAYMOND MFG. CO., Winnipeg. 47—REEVES & CO., Regina. 48—RENFREW MACH. CO., Winnipeg. 49—RIESBURY PUMP CO., LTD., Brandon. 50—RUMELY M. CO., Winnipeg, Regina, Saskatoon, Regina. 51—SHARPLES SEPARATOR CO., Winnipeg. 52—SHARPLES SEPARATOR CO., Winnipeg. 53—STEVENS BRUSH CUTTER CO., Didsbury. 54—STEWART SHEAF LOADER CO., Winnipeg. 55—TUDHOPE-ANDERSON CO., Winnipeg, Regina, Calgary. 56—VIRDEN MFG. CO., Virden. 57—VULCAN IRON WORKS, Winnipeg. 60—WATERLOO MFG. CO., P. la Prairie, Regina. 60—WATS N JNO MFG. CO., Winnipeg. 61—WESTERN FOUNDRY CO., Saskatoon. 62—WESTERN STEEL & IRON CO., Winnipeg. 63—WHITE, GEO. & SONS, Brandon. 64—WINNIPEG CEILING & ROOFING CO., Winnipeg. 64—WINNIPEG RUBBER CO., Winnipeg. GARDEN IMPLEMENTS, INCUBATORS AND POULTRY SUPPLIES. LAND ROLLERS AND PULVERIZERS. THRESHERS' MACHINERY, SELF FEEDERS, WIND STACKERS AND ATTACHMENTS. BUGGIES AND CUTTERS. CREAM SEPARATORS. CULTIVATORS AND STUMP PULLERS. DISC AND DRAG HARROWS. FEED AND ENSILAGE CUTTERS AND PULPERS. FEED GRINDERS. GASOLINE ENGINES. HARVESTING MACHINES. HAY LOADERS, HAY PRESSES, SWEET RAKES, HAY STACKERS AND SHEAF LOADERS. RIDING ATTACHMENTS, HARROW CARTS, WHEEL BARROWS AND HAND CARTS. ROAD SCRAPERS AND ROAD MACHINES. SEEDING MACHINES. MANURE SPREADERS AND LITTER CARRIERS. GANG PLOWS, ETC. THRESHERS' SUPPLIES. WAGONS AND SLEIGHS. WIND MILLS, TANKS AND PUMPS.