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THE CANADIAN THRESHMAN & FARMER

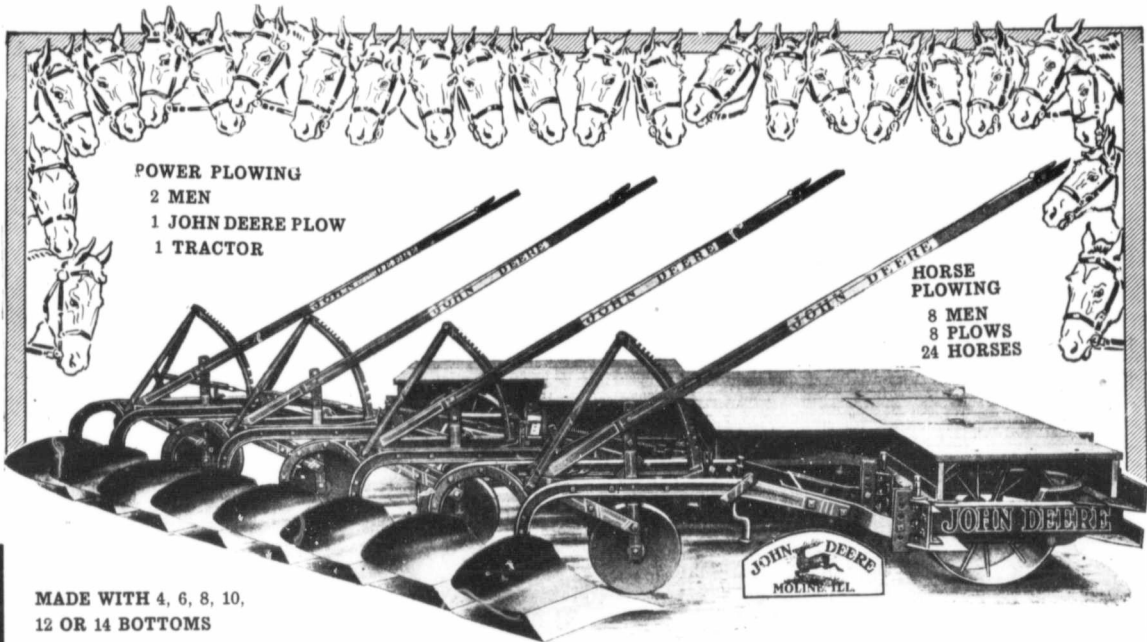
CANADA'S FARM-MACHINERY MAGAZINE

WINNIPEG CANADA

MAY, 1912



E. H. Heath COMPANY LIMITED Publishers
"OUR TENTH YEAR"



MADE WITH 4, 6, 8, 10,
12 OR 14 BOTTOMS

HERE ARE THE FIGURES

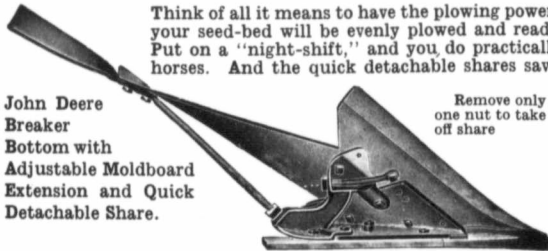
One man, with three horses and a single-bottom plow, will turn from two to two-and-a-half acres a day of ten hours. Figuring the man's time at \$2.00 a day (labor and board), the cost per day will range from \$1.90 to \$2.40—depending chiefly on the soil plowed. Data carefully compiled by the United States Department of Agriculture in regard to the cost of engine plowing shows an average expense of \$1.40 an acre for either steam or oil tractors. (In some extreme cases less than \$1.00 an acre.) This includes depreciation, interest on investments, repairs, labor, fuel and other items of expense ordinarily incurred. Plowing seasons are very often short, and it would take eight men, with eight plows and twenty-four horses, to do what one JOHN DEERE eight-bottom engine plow does. Even then the work would not be uniform.

JOHN DEERE ENGINE PLOWS

WITH QUICK DETACHABLE SHARES

Think of all it means to have the plowing power of eight men and twenty-four horses in 2 men. Furthermore, your seed-bed will be evenly plowed and ready for planting on time. You know how much that means to you. Put on a "night-shift," and you do practically three times as much plowing as can be done with twenty-four horses. And the quick detachable shares save the last available moment.

John Deere
Breaker
Bottom with
Adjustable Moldboard
Extension and Quick
Detachable Share.



Remove only
one nut to take
off share

TWO-LIFT BOTTOM; One man can readily lift all the bottoms—4 or 14—with the John Deere Two-Bottom Lift Engine Plow. Bottoms are raised without stopping the engine. Beams and bottoms are built in pairs and attached to the frame, so as to allow free up and down movement around the clevis pins as a center. This insures uniform work. Each pair of bottoms will raise over a hummock or go down into a depression without disturbing the others. Each bottom is braced and kept in alignment by its companion bottom. Attaching beams and bottoms in pairs permits plenty of spread between clevises, which prevent winging and passing around obstructions instead of over them. Plows cannot tip.

ANY STYLE of Stubble, Turf and Stubble or Breaker Bottom can be used. John Deere Engine Plows are equipped with quick detachable shares, that can be put on or taken off in a small fraction of the time required for ordinary shares. Only one nut to remove. An eyebolt attached to the share passes through a hole in the bracket, and one nut holds the share firmly in place. A lug in the share fits into a slot on the landside of the frog. This holds the share rigid and true. Remove one nut and give the share a kick, that's all that is necessary to take it off.

SCREW CLEVISES—There are 5 holes in the clevises for attaching to the plow beams. Each clevis on a John Deere Engine Plow is provided with a screw adjustment which raises or lowers the beam points just the amount needed. This can be easily done while the plow is in operation. Screw Clevises give the plow exactly the right set, are operated by an ordinary wrench, but a handy socket wrench goes with every plow. The plows are kept properly set by this simple screw adjustment at point beams.



MANY OTHER ADVANTAGES

John Deere plows have many other features of merit, including universal hitch, structural steel frames, perfectly level platform with tool box built in, and two pivoted front wheels, which turn freely from right to left, and will not skid when the plow is being turned. **WRITE NOW** for John Deere Engine Plow Book—free to any address.

JOHN DEERE PLOW COMPANY, LTD.

Winnipeg

Regina

Calgary

Edmonton

Saskatoon

Lethbridge

**JOHN DEERE
DOUBLE ACTION**

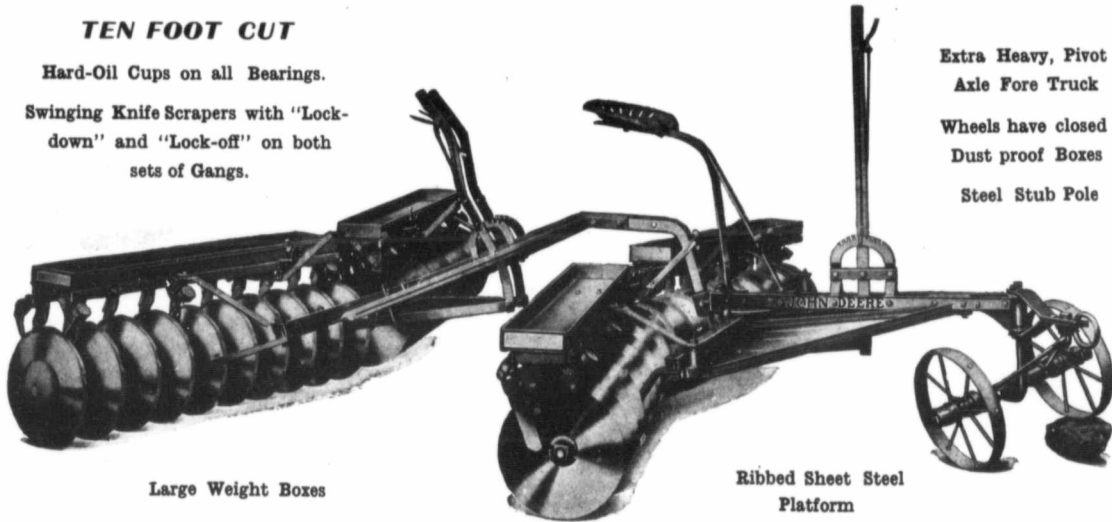
Engine Disc Harrows

Go Over the Ground Once and Disc It Twice

TEN FOOT CUT

Hard-Oil Cups on all Bearings.
Swinging Knife Scrapers with "Lock-down" and "Lock-off" on both sets of Gangs.

Extra Heavy, Pivot
Axle Fore Truck
Wheels have closed
Dust proof Boxes
Steel Stub Pole



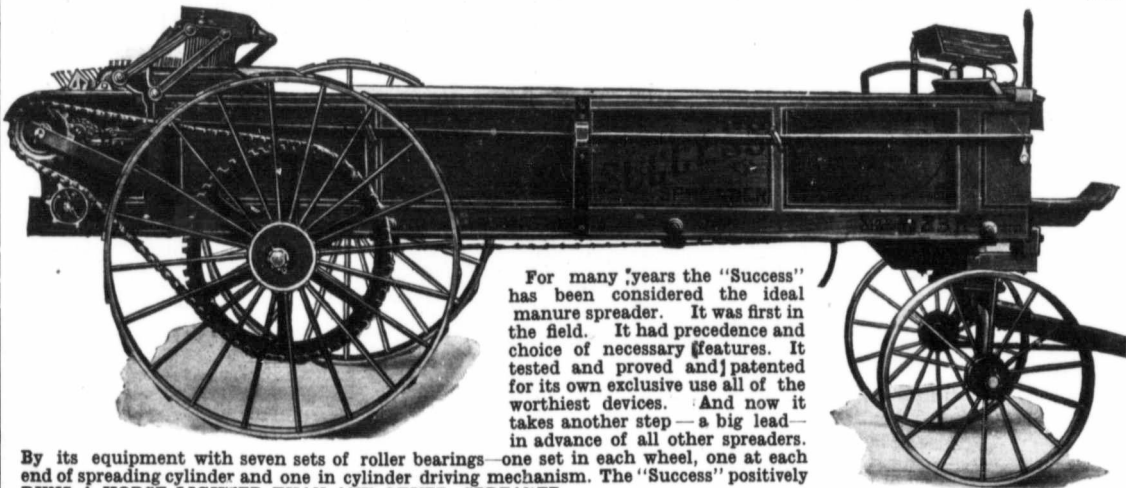
Large Weight Boxes

Ribbed Sheet Steel
Platform

Hitch this implement behind your engine gang plow. It has no rival among farm implements as a moisture saver. In one trip, at one operation, the ground while fresh from the plow is thoroughly disced twice, and is left perfectly level. The soil is thus settled and pressed down before it has been baked and hardened by the sun and making a close contact with the subsoil. There is no farm tool that will effect such a saving in labor or give anything like the results in the time.

The Success Manure Spreader

SEVEN SETS OF ROLLER-BEARINGS SETTLE THE MATTER. FRAME MADE ENTIRELY OF HARD WOOD—NOT PINE



For many years the "Success" has been considered the ideal manure spreader. It was first in the field. It had precedence and choice of necessary features. It tested and proved and patented for its own exclusive use all of the worthiest devices. And now it takes another step—a big lead—in advance of all other spreaders.

By its equipment with seven sets of roller bearings—one set in each wheel, one at each end of spreading cylinder and one in cylinder driving mechanism. The "Success" positively **RUNS A HORSE LIGHTER THAN ANY OTHER SPREADER.**

All 1912 "Success" Spreaders will be equipped with these roller-bearings. This is a feature we have been working on for years, and its value to spreader users cannot be over-estimated. The cold-rolled steel roller-bearings at the same time **SAVE THE HORSES AND SAVE MACHINE.**

The roller bearings do away with all friction and wear in the working parts, they lessen the shocks and strains from driving over rough, uneven ground, the entire machinery runs with less power, consequently with less breakage; they cause the spreader to run almost as smoothly and evenly as a stationary machine.

WRITE FOR CATALOGUE

JOHN DEERE PLOW CO. LTD.

Winnipeg

Regina

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Saskatoon

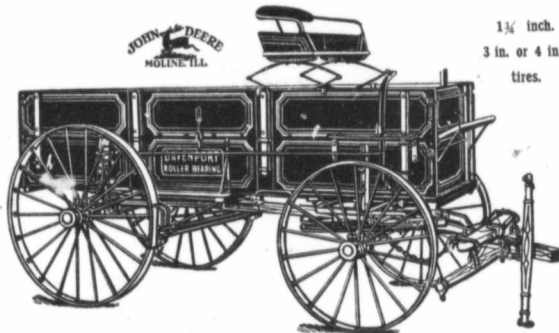
Edmonton

Lethbridge

Buy a **DAVENPORT** STEEL WAGON

While all other agricultural implements are being made of steel, why is it that the farm wagon remains the old timber truck of our forefathers? Would you have a wagon in which, with scarcely any increase in cost, you have the strength, durability and carrying capacity all increased with much lighter draft? Then pension or cremate your old "wooden walls" and get the

Roller-Bearing Steel Wagon



1 1/4 inch.
3 in. or 4 in.
tires.

Practically Indestructible

You can't begin to compare the **Running Gear** of this wagon with anything else made.

There are no annoyances from any kind of torsion, warping or bending which produce increased draft and invariably end in breakages.

No possibility of drying out, shaking loose, rotting or decaying.

ABSOLUTELY WEATHER PROOF

The John Deere Ironclad

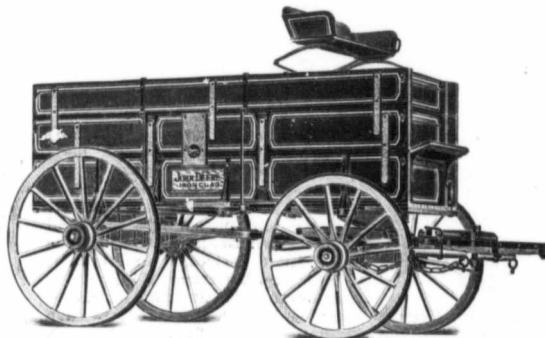
The Wagon

that has never belied its looks. Its face is fair, but its performances—its work—are at least fully equal to all it promises.

Remember that, unlike almost all other farm implements, the farm wagon is not in use only a week or two in the season.

It is on the go all the time doing the lion's share of the drudgery in winter and summer, rain or shine. Therefore, get a wagon with a strong constitution.

The Wagon with a **STRONG CONSTITUTION.**
The greatest armour-plated fighter among farm implements.



The Wagon

that does the biggest job with the least draft on the horses; that stands the worst abuse without a word of complaint, and comes up smiling like a new thing when it has had its evening bath.

The John Deere "Ironclad" is made of selected air seasoned oak and hickory, gears ironed to strengthen every joint and protect every place where severe strain or wear comes. The greatest armour-plated fighter among farm implements.

Men have told us that our wagon looks good after two or three years' of hard wear—better, in fact, than many cheap wagons after as many months. We **KNOW** this to be true, and that our "IRONCLAD"

Lasts Longer Than Any Ordinary Wagon

Write for Descriptive Catalogue

JOHN DEERE PLOW COMPANY, LTD.

Winnipeg

Regina

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**LUNKENHEIMER
AUTOMATIC INJECTOR**

is a durable and efficient boiler feeder and will satisfy the most exacting engineer.

They will outlast any other make, are very reliable and are guaranteed to give satisfactory results.

These injectors can be had in several different styles, with the connection so arranged as to enable them to take the place of any other standard make, without changing the piping.

All parts are renewable.

Your local dealer can furnish them; if not, write us. Write for catalogue.

THE LUNKENHEIMER COMPANY
Largest Manufacturers of high grade Engineering Specialties in the World.

General Offices and Works:
CINCINNATI, OHIO, U. S. A.

Valuable Book on Barn Building FREE



Write at once for this valuable book. It contains information that every farmer should have regarding the sanitary housing of dairy cows. It explains every fundamental of correct construction and gives proper dimensions and arrangements. It describes lighting, ventilation, stable floors, and their construction, and contains suggestions about sites, site, exposures, appearance, design, drainage and inside equipment. Besides, you will find in this book a number of practical barn plans and other information that may point the way to your saving money a dollar. We have designed many of the finest and most modern dairy barns in this country and this book is based on our long experience and expert knowledge in dairy barn construction. This book contains in concise, clear and condensed form, information necessary to any farmer who is planning to build or remodel. Understand, we send you this book absolutely free without any obligation on your part—just for answering those few questions: Do you intend to build or remodel? How soon? How many cows have you? Will you want a litter carrier? Will you want a hay fork outfit? Send to-day.

BEATTY BROS. BOX D BRANDON, MAN.

Your Grain SECURED

against all odds in climate, beast, or insect that can do it an injury.



Portable Corrugated Granary

is the most complete success in grain storage you can have on the farm.

Fireproof, Cheap, Durable
Write at once for our literature on how to combat the car shortage and make the best on the market.

Winnipeg Ceiling & Roofing Co.

Winnipeg, Man.

ABOUT OURSELVES

BY this time you have doubtless digested our big April issue. Did you ever, at any time, see a bigger one? Did it ever occur to you that in the Canadian Thresherman and Farmer you have the largest monthly agricultural journal published in the world?

Size in a farm magazine stands for something. It represents patronage both from readers and from advertisers. You will notice that we place readers first. They must of necessity come first, for without readers advertising space has no value, and in this connection when you pick up a farm paper where advertising columns are light you can come to the conclusion that the magazine in question has a small and not over enthusiastic clientele of readers, which makes its advertising columns of little value.

Some farm magazines in desperation even go so far as to either directly or indirectly request their readers to notify advertisers who do not patronize the journal in question, that unless the advertiser does patronize the said journal that they (the readers) will boycott that particular advertiser's goods. This, of course, is nothing short of blackmail, and no real reputable journal would stoop to anything so low and underhand.

The only enquiries that are of any value to an advertiser are those that are voluntary and that are prompted wholly and solely through a demand for the goods

in question. Enquiries that are sent in through a desire to help any magazine are misleading and the occasion of considerable cost and annoyance to the advertiser. It costs money to write letters. It costs money to send out catalogues; and it costs more money to have a travelling salesman visit a worthless enquiry. That is why a great many advertisers carry space only for publicity.

Mr. Advertiser, it will pay you to watch the methods employed by the mediums you use, to get their readers to enquire regarding your goods.

Prove your enquiries carefully and find out just how many are live and provoked by a real interest in your goods. One live enquiry is better than ten curiosity seekers or fifty enquiries that have been received from people who had no other interest in the goods enquired about than that of giving some journal a false boost.

Every reader of our magazine who enquires about an advertised article should by all means mention the journal in which he saw the ad. This is only fair, but as a business man and an honest one, don't answer an advertisement, because some editor in order to put a false cloak on his journal told you to.

Answer ads. by all means. You'll find advertised goods among the best, and it will pay you to investigate them. But do so for your own benefit and not for the benefit of any journal.

Who'll be President?



MAY be an important matter. But how about the number of productive hours in your next threshing season? With this Jack two men have the lifting capacity of forty men, and it works fast. Don't you see how the "Barth" Jack will help you out in your productive hours?



Ask your dealer for the Jack. Ask us for a Catalogue.

BARTH MFG. CO.
134 L STREET MILWAUKEE

DOMINION EXPRESS Money Orders

and Foreign Cheques are payable all over the World.

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

We give you a receipt and if the remittance goes astray in the mails, **we refund your money** or issue a new order free of charge.

TRAVELLERS' CHEQUES ISSUED. MONEY SENT BY TELEGRAPH AND CABLE.

When purchasing Goods by mail, ALWAYS remit by **DOMINION EXPRESS CO. MONEY ORDERS**

RATES FOR MONEY ORDERS:

\$ 5. AND UNDER	3 CENTS
OVER \$ 5. TO \$10.	5 "
" 10. " 20.	10 "
" 20. " 50.	15 "
" 50. " 100.	20 "

AGENCIES THROUGHOUT CANADA.

OUR OFFER

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



HAMILTON

HEAD OFFICE
AND
FACTORIES

CANADA



MAIL IT TO-DAY!

On one day skipped in mailing an order may hang the fate of your entire season. If you don't get

That Plowing Engine

on time—while spring plowing may be done to advantage—you might as well have pigeon-holed it for another season.

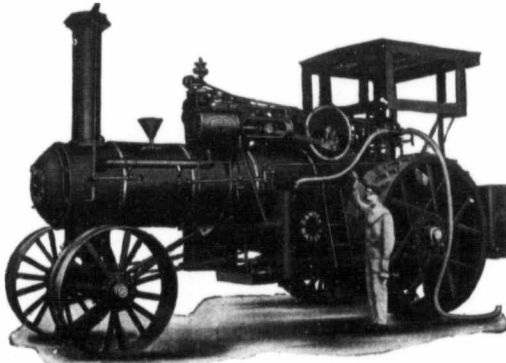
Don't be among the "rush" fellows at the last moment. You can't make wheat grow at a white heat, and the best transportation service will not ship an engine to your farm the day after it was ordered.



This Man Wanted A

Sawyer-Massey Rear Mount Plowing Engine

He did his own mailing on the day he made up his mind. He got it in time and if you will write him (WE'VE GOT HIS ADDRESS) he will tell you that this engine has been



HIS BEST FRIEND ON THE FARM

He can give you some funny experiences with other engines he has experimented with, but the SAWYER-MASSEY made the money in the

**Coal It Did Not Consume
Water It Did Not Require
Mens' Time and Labor It Saved**

Briefly: the practical engineer at the mail-box and the fellow standing by the engine are both "live wires" to-day. They will tell you that for

Easy Steaming Qualities—

**Fuel Economy—Strength and Durability of Construction—
Character of Work in the Plowing Field**

The SAWYER-MASSEY BEATS them ALL

REMEMBER that Sawyer-Massey engines meet all the requirements of the BOILER INSPECTION ACTS of the WESTERN PROVINCES, and the Sawyer-Massey People are

Not in a Combine



BRANCHES—WINNIPEG MAN. AND REGINA SASK.

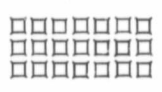




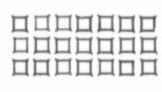
Vol. XVII.

WINNIPEG, CANADA, MAY, 1912.

No. 5.



Young Canada and Spring Time



THIS to us (readers of the "Canadian Thresherman and Farmer") is the best day of the best of all seasons of the best year in the world's history. In the words of the sage, "We are here," in the living present, the only certainty we possess, but it is worth clinging to, because it is so pregnant of Hope.

Scientists try to tell us where we came from, and the preachers prophecy where we are going to, but we need no help to the certainty, that "we are here," on the front doorstep of a season of new life, growth, and fructification.

The signs of the times all point to the human certainty that we are on the borderland of a year of progress that will eclipse the greatest that has yet been recorded of this western world of ours. We are moving at a pace undreamt of by men and women who went to their graves less than a quarter of a century ago. We are graduates of a school in which we have learned to be astonished at nothing, and to carry a heart big enough for any fate.

Some one has said that more has been done in the name of real progress during the past forty years than was accomplished in the previous two thousand years. That is probably true, in one sense, but the last forty years were the heritage of what had been in the making in all that preceded them.

FROM LINCOLN TILL NOW.

Think of what this means, and how eloquently it speaks of what is expected of us! Quite a few readers of "The Thresherman" will easily remember the day on which Abraham Lincoln was assassinated. Only forty-seven years have passed since that su-

preme figure in American history was torn from the nation.

Now the youngest of our school children requires no coaching as to what "Honest Abe's" life meant, not only to the nation, but to the whole world, for the world hung on his lips, and today his words of wisdom have no synonyms. Yet think of what has happened since Abe's day.

With all his knowing, Abe knew nothing of a steel sky-

Can any man who has not been condemned to penal servitude offer anything that is not in accord with the brightest hope that ever shone on a country? What brighter prospect could a creature have as he looks out of his window at sun rise any of these days than the reflection that this is a young country, and it is spring time? In this happy association is the fact that every self-respecting, self-helping man, woman, or child possesses all

children—how can we have a moment's despondency?

The very best "spring medicine" we can offer to any time-sick pessimist is to keep young; have his hair dyed if it will complete the illusion—but he will never see his grey hairs or even be reminded of them if he lives his time over again in the company of the young folks. We have used this medicine for a long time now. It never fails to work, and we have no other medicine chest for a spring clearance.

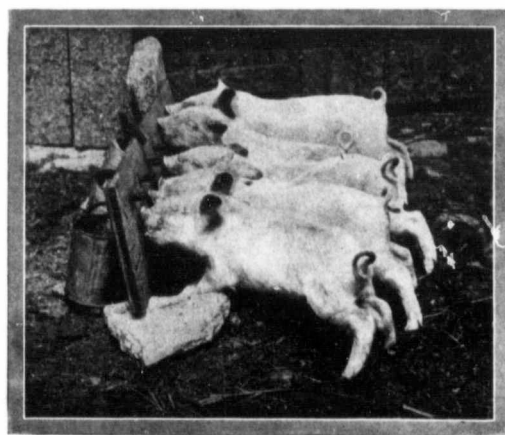
"Always cheerful" is a good old Anglo-Saxon motto. "Semper fidelis" is another, but it is Latin and we don't understand it at first sight as we do that of the old mother tongue. It doesn't matter, however, as its meaning is really contained in the other, for in ninety-nine cases out of a hundred the man who is "always cheerful" will also be always faithful.

Too many of our old folks, the people who are hoary with care even before they have reached life's meridian, dry up and get stale from lack of the development of the cheerful habit and neglecting the society of the youngsters.

LIFE'S BEST SAUCE.

A wise man said not long ago that if the private history of the men who had most moved round the world were inquired into, it would be found that they had derived their greatest inspiration from the bright young sparks who met around the family table at meal times.

We believe this is nothing more than the bare fact, and as we see and feel this talismanic influence at work all the time, therefore we write about it. The bairns are the great humourists of the world, and the man or woman deprived



scraper, of an internal combustion engine, of an automobile, of a type writer, of an electric car system, of the great pulman idea of which his own son is now the presiding genius; of an aeroplane, of wireless telegraphy, and a few score of staggering wonders that are the birth of our own day.

Coming to our own "garden patch," more particularly what is now universally known as the "three prairie provinces" of Western Canada—what is the outlook?

that is needful to work out a lifetime of success, a destiny that might well excite the envy of those "saints of former days," who "*wrestled hard with sins and doubts and fears*" that we know nothing of.

WHO SAID "DESPONDENCY?"

With an outlook such as this, in the presence of those young folks whom we have brought into the world, or in the presence of that infectious joy and expectancy we catch even from other people's

of the sense of humour carries an impossible handicap.

The only man who is fit to work is he who habitually looks on the bright side of things. He cheers you up with a smile when things go wrong, and never says "I told you so!" He has an unflinching sense of humour. He takes everything with a smile but other people's troubles. He makes you feel that your griefs are not nearly so hard to bear as they were before you confided in him. But nevertheless his advice is always serious and good.

What a splendid thing it is to have a fellow like that as your next door neighbor; but if you have a child or children of your own, or that you can borrow from anybody, you don't want another neighbor. The magazines and the newspapers are all preaching this gospel, and you will scarcely open a page without finding some well-worn platitudes clipped from some other paper, telling "How to keep young." You will find lots of neat little paragraphs like this taken from a woman's magazine.

PATENT "WRINKLES" FOR WRINKLES.

"The best preventives against growing middle-aged are cheerfulness, a strict determination not to worry over trifles, and a sense of humour that saves one from depression. A cold tub every morning and a walk every day in rain or sunshine, face massage, with cold cream at night, ten minutes' physical exercise, immediately on rising, friction of the hair to stimulate its growth, will keep any woman free from wrinkles, and will preserve the contour of her figure."

Now that's all very fine for a society dame, but the ordinary woman, the Real Woman of the Home, will smile at it, and with a real sense of humour ask her accommodating husband to fetch her a pot of cold cream from the drug store next time he goes to town. The cold bath tub is excellent; this advice is superfluous, however, because the real woman of the home knows all about the "bath tub." But will a bath tub, or cold cream face massaging ever do for a woman what the

warmth of a child's love will do for her?

No man and no woman (and we are particularly addressing our brothers and sisters of the Western Prairies) knows what it is to feel young and to take a real living interest in life and the common objects of their daily existence until they have begun to lose themselves in the hearts of the youngsters.

They say, and it is the fact, that "Canada is the young man's country." They also say, and it is the fact, that if you are to make anything good out of certain beings, you must catch them young. They also say, and it is likewise the fact, that there is nothing so strong and beautiful as youth.

NOT ONE GREY HAIR.

Well, we've got it. There isn't a grey hair in our history yet. In



spirit and verity, we are as young as the youngest nation on the earth. We are not boasting. We are simply asserting our youth, and reminding ourselves of what we've got, of what has been placed in our keeping, and of what is expected of us.

We've got the biggest workroom and the biggest playground on the face of the earth. No creature who has had the privilege of sampling the good things of both hemispheres will contradict us when we say that we've got the finest job to work at in our wheat fields and stock barns, and that there is any finer sport in the world than the frolics of our play-

ground of prairie and woodland.

As we write, the reveille is being sounded in the twittering of the early birds. The catkins on the willow remind us that the period of hibernation is over, and in common with all young life we spring to our work in the fields with a new hope in our hearts and an unwavering faith in the fulfilment of the promise, "In due season ye shall reap if ye faint not."

A GREAT "POWER PLANT."

You cannot dissociate the ideas of youth and the work hunger. It is of the very nature of healthy youth that it should have a craving for occupation. Did you ever see anything so lacking in composure as the average boy or the common school girl? What a "power plant" we could present to the world were it possible to concentrate and apply the pent-up

Some years ago some one wrote a book under the title "Blessed be drudgery." We read it at the time, but in every city and library we have asked for it since, it had not even been heard of. That shows the popularity of the "Here we suffer grief and pain" school of thought, and 'tis well for the world that it is so.

"BLESSED BE DRUDGERY."

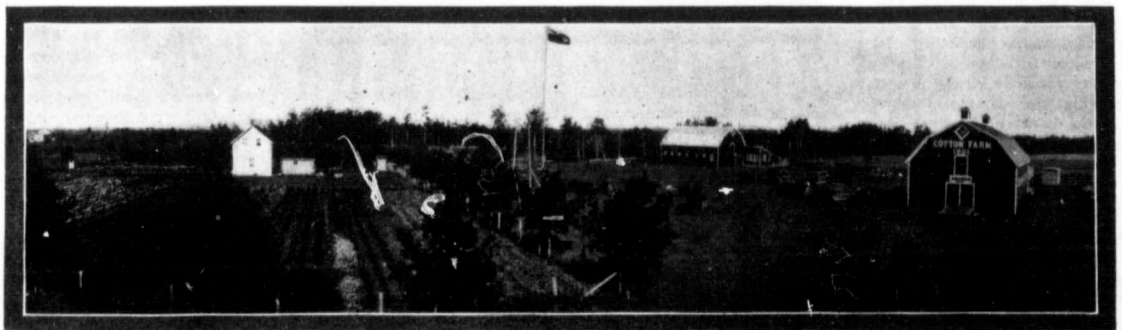
The "dignity of labor" finds no place for "drudgery" or any species of honest work that is beneath the dignity of men to engage in; and (especially to one who may have rubbed against the conventionalities of an older civilization) there is nothing so refreshing in the democracy of western life as to see the "man of means" standing in his jeans by the throttle-valve of his own planting engine, or digging and planting his garden patch with no less zeal and thoroughness than he would if the fate of the household hung by the product of the home acre.

Every man and woman who will read this knows exactly what he or she should do in conducting "the spring work." Every recurring season the home magazines have their little say about getting the seeder well oiled, having the wheels of the same carefully sand-papered, etc. Not a single subscriber to the "Thresherman," we believe, is at all short of information as to what he or she should do in any department of the farm work or household economy. What we are all seeking for is that divine elixir that will keep us in tune all the time, every day, all the year round.

We know our work, and we know how to do it down to the last fly-spot on the last page of the book of instructions; but what we want to get into the marrow of our spinal cord is that absorbing interest which we see the young folks take in their little affairs; that eager joy and satisfaction that never flags while daylight lasts, and knows no weariness till Nature calls us to our repose.

DIAGNOSING LAZINESS.

The gnawing of indolence and the fretting of an unworthy discontent is not the "voice of Nature." That tired feeling is





not always, nor very often, the legitimate warning of physical exhaustion. There is a common and comprehensive name for it, which will at once occur to the reader, and it arises solely from lack of interest in the work in hand.

Any one can test this. What a comfort it has been to us many a time to discover that our indisposition and feeling of lassitude was nothing more than the pangs of downright laziness! Start out to any job of which you are physically capable, and pursue it with that intent feeling we impart to the pursuit of a hobby. You'll go at it from daybreak till sunset, and be sorry that the shortage of daylight will not allow you to continue.

How far will a man walk (or run) in twenty-four hours if the prize at the end of the trip is something he is eager to obtain—say a quarter section, worth thirty dollars an acre? You'll not find that man "out of spirits" at any point short of his objective; but let it be the cultivation of a thirty-acre field of rather difficult gumbo, how is it he is so much the victim of perspiration, and so sparsely influenced by inspiration?

COVERING THE HOME STRETCH.

We are all more or less guilty of turning back for want of grit. Most lives are filled with half-finished tasks, which were begun with enthusiasm, but which have been dropped because the enthusiastic beginners did not have enough grit to carry them to a conclusion. How easy it is to start a thing when the mind is aglow with zeal, before disappointment has dulled ambition!

It does not take much ability to begin a thing, and we cannot estimate a man by the number of things he commences. We do not judge him by his speed at the beginning of the race, it is the home stretch that counts. The test of character is in a man's ability to persist in what he undertakes until he adds the finishing stroke. He must have persistence and grit enough to carry him through the line at the last heat.

The ability to hold on is one of the rarest of human virtues. There are plenty who will go with the crowd, and who will work hard as long as they can hear the music, but when a man is practically left alone it takes a very different

order of ability to persist. This requires real grit and stamina.

THE FATEFUL MOMENT.

Look out for that moment when you are tempted to turn back, to relax, to make up your mind that it's "really not worth while going on." That is the moment that makes a man or breaks him. All the great things of history, all that is of real account in your own life, gentle reader, have been accomplished after the great majority of men would have turned back.

Now the greatest safeguard against "tunking" is to keep young. We are young, and if we live many more years we will still be young, for we intend to measure the days more by the strengthening of our souls than the weakness of our bodies. "Senile decay!" Who can think of it who will surround himself with the



laughter of the children; who can find an interest in the everlasting "why?" of these great inquisitors; who can take an ingenuous delight in the perennial freshness and novelty the young mind discovers in the most hoary institution that comes within its horizon?

So we have three of the greatest possessions that flesh can fall heir to. We have youth, we have the spring time, and we have the greatest business and the most honorable "profession" on earth—agriculture!

WHAT SCIENCE IS DOING.

The ideal farmer of to-day and of the future is to be a man of science.

Hereafter scientific farming will cease to be regarded as it was in the days of Horace Greely as a sure means of getting rid of a bank account, and will be looked upon as the only way for a cultivator of the land to get into the

financial swim. More than that, if the present brilliant promises are fulfilled, the farmer of the future will actually transform the face of the earth, imparting to much of the soil several times its present degree of fertility.

The scientific discoveries of the past few years relating to the whole field of agriculture have been truly marvellous. They may be divided into two principal classes—those concerned with the fertilization of the soil and those that deal with the unfolding of hidden life tendencies in plants.

With regard to the soil, there is a curious relation between it and the atmosphere to be taken into account. Four-fifths of the gaseous mixture that we breathe and call air consists of nitrogen, and nitrogen is as mother's milk to plant life. At first sight, then, it would seem as if all that plants

for instance, tends to exhaust the soil.

The grain draws the nitrates from the ground, and, having ripened, is carted away. This is like taking gold from a hoard to which no additions are made. The soil, like the growing wheat, cannot absorb pure nitrogen direct from the air. When the ripened grain is carried away the soil is left sterile, and another crop can be raised upon it only after it has been artificially fertilized with manures, to supply the missing nitrates.

There is, however, another way to fertilize an exhausted soil, and in this method lay hidden the secret, whose discovery has opened up so splendid a vision of the agriculture of the future. It is known under the homely name of "rotation of crops."

From time immemorial farmers have known that when successive crops of grain have completely exhausted the soil of a particular field, a crop of clover will not only grow upon that same land, but will even fertilize it, and leave it richer, so that afterward it will support grain again.

Now, the puzzling question had always been: "How in the world does the clover manage to do what the grain cannot do—to take its supply of nitrogen not from the soil (for when exhausted it has none), but from the air?"

The finding of the answer to that question was the keynote of the now famous experiments of our Departments of Agriculture in the "inoculation of the ground."

The story of the inoculation of the soil has in it all the piquancy of the most engrossing dime novel. It is simply one of Nature's little secrets laid bare—her plan for keeping the soil young. To know and to make use of it will lead to a mine of wealth greater by far than the greatest "gold deposit" in the bowels of the earth.

And the digging need not be any deeper than that recommended by the old quaker to his son: "My son, says he, 'I give thee now a valuable parcel of land; I assure thee I have found a considerable quantity of gold by digging there; thee mayst do the same. But thee must carefully observe this, never to dig more than plow-deep.'"

had to do was to draw in nitrogen from the air.

NITRATES THE FOOD OF PLANTS.

But this, except in a case hereafter to be described, they cannot do. Great fields of wheat and rye and oats, waving in the summer wind, and bathed with nitrogen from bearded head to base of stem, would perish through lack of that very element in their composition, but for the fact that the roots of the grain are able to draw nitrogen from the soil, not in its pure state, but in the form of soluble compounds called nitrates.

In order, therefore, that the life of the grain may be maintained, nitrogen must pass from the air to the soil, and there be formed into nitrates. If this were a continuous process, if the ground could simply drink in nitrogen from the atmosphere all would go well. But, as every practical farmer knows, a crop of wheat,



"Everything Begins and Ends with the Soil"

MAY, 1912

THE CANADIAN THRESHERMAN AND FARMER

CANADA'S LEADING AGRICULTURAL MAGAZINE

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STILL THEY COME—LET YOUR HEART SPEAK

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Advertising rates furnished on application.

WHAT ARE WE DOING or what are we going to do in extending a welcome to the thousands of anxious-looking strangers who are pouring Westward in these days? We do not believe that there is a single reader of "The Canadian Thresherman and Farmer" who needs to be instructed as to his or her privilege in this matter of receiving the new friends and neighbors, but a gentle reminder will hurt no one and may do good to a great many.

THE LONELINESS OF THE CROWD bears down upon the stranger far more than the solitude in which he finds himself alone with nature. There are not many of us who have not gone to a strange City and looked around upon its sea of new faces with a sinking at the heart. In that moment our thoughts went back to the kindly home circle. Our hearts yearned to hear the kindly voice and feel the warm hand-clasp of one who knew us, for in this great "community of hearts" we were no more of it than the wind-swept flotsam of the street.

THE STRANGER SHRINKS from begging even the commonest information. He fears to break in upon the pre-occupation of this self-centred crowd of hustlers, much as he may need advice, and the most worthy is generally the least likely to bridge the gulf of silence. Unsolicited aid carries a double value over the common stock. There's no time in a man's life when he will ever forget the friendly voice that "spotted" him the first day he landed in the neighborhood, the face that was more eloquent than the words, "You are a stranger, are you not—can I help you in any way?"

FOR DOWN RIGHT GOOD HEARTEDNESS the world over there are few things in human felicity to compare with a real Canadian Welcome. Hospitality and an ingenuous desire to be of real service seems to have been inoculated into the parent stock and to have been transmitted with increasing potency all down the line. In the towns and cities, while the disposition is perhaps still inherent, it goes to sleep sometimes, or we become so absorbed in the rush of things that it doesn't find the same spontaneous outlet it enjoys in the country.

THERE IS NO LACK OF GOOD INTENT. To say that, generally speaking, the milk of human kindness does not flow in abundance into and out of our prairie homes, would be a base libel on our Western life. The inmates of thousands of habitations in Western Canada have long been accustomed to the giving and taking of neighborly assistance. There are

fine incidents occurring every day that show up human nature in a light that has never been outshone by anything in the world of fiction. These little pleasantries will never be written about because the greatest crime one of these old neighbors could commit would hardly feel so black as the act of being found out in some kindly deed.

THOUGHTFULNESS IN ACTION and a little more of it is all we can suggest. The strangers are in evidence these days at every way-side station and the city streets are filled with them as the last great special from the Atlantic comes in and they wander forth to find their bearings. We have felt a "strange warming at the heart" as we watched some little compact family circle standing by their household stuff and contemplated them and their future. True, it has no uncertainties for them that are not common to all of us, but then they are far from their home anchorage. We are riding at ours without a single fear. We have grown familiar with everything. To the stranger all is strange and can we blame him if he looks out

"On prospects drear!

And forward tho' he cannot see,

Will guess and fear."

SPEAK TO THEM; the risk is worth incurring for the reciprocal joy that it will mean in ninety-nine cases out of a hundred when we take it. A little bit of home-spun tact will do it and leave not the shadow of a misgiving. There is a great deal of happiness lost to the world through that insulated feeling that prevents us from breaking the ice. If any overtures are permissible at all, surely it is our part to take the initiative. Depend upon it, we can do it at any time without in any respect reflecting on the independence of our new acquaintance, and it may mean the "chance of a life-time" to all concerned.

THE VARIOUS INSTITUTIONS are doing a lot for the stranger who will avail himself of them. But after all they are but "institutions" and at the best they lack the human touch. The touch of a friendly hand has telegraphed a heart's message all down the ages that was never meant to be superseded by anything in heaven or out of it. It is one of our exclusive privileges as distinguished from all else in nature around us, and in our own phraseology it is "up to us" to take advantage of it on the many unique occasions that arise especially during the immigration season.

OUR GUARANTEE

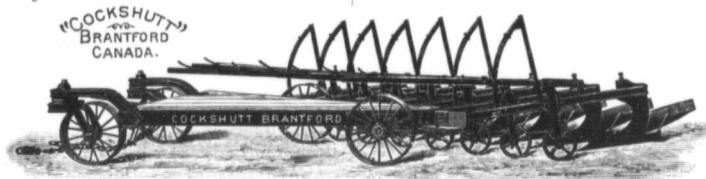
No advertisement is allowed in our columns until we are satisfied that the advertiser is absolutely reliable and that any subscriber can safely do business with him. If any subscriber is defrauded E. H. Heath Co., Ltd., will make good the loss resulting therefrom, if the event takes place within 30 days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

The COCKSHUTT ENGINE GANG

TO DELIVER TO THE PURCHASER THE HIGHEST WORKING EFFICIENCY and TO HOLD THAT EFFICIENCY AT THE HIGHEST POINT FOR A LONG TERM OF YEARS is the problem worked out in the Cockshutt Engine Gang.

Note carefully these outstanding facts :

- 1. Each of the plows moves independently, either in its automatic adjustment to unevenness in the land, or when controlled by the lever
- 9. The plows have the weight necessary to stay with the hardest ground



- 2. An obstruction is cleared by raising ONE plow ONLY
- 3. Number of plows used can be changed at a moment's notice
- 4. Plowing can be finished straight at the ends
- 5. There is no trouble in turning or in getting back into the furrow
- 6. Each plow can be adjusted according to the packing of the ground by the Engine Wheel, which often ends into the middle of a pair. This feature is very important
- 7. Gauge wheels are large and strong and furnished with steel compression grease cups. Gauge wheels are close to the points of the shares and protect the plows from stones and other obstructions
- 8. Standards and Shares are built strong enough to withstand the striking of immovable stones hidden in the ground. On striking same the plows raise up and glance over
- 10. Shares do not wing down. The furrows are of uniform depth and width
- 11. If an inside plow gets damaged it is easily unbolted and replaced with an extra one or with a plow from the end
- 12. It is operated by ONE man only
- 13. It can be readily attached to any make of Tractor
- 14. By detaching a few plows it can, without losing any efficiency, be adapted to engines of smaller capacity
- 15. It has the strength necessary for heavy work. The angle-steel frame, extra heavy double steel beams, strong standards and heavy shares stand the shocks and strains of engine plowing without injury

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HORSE power mechanical, and horse power animal are hardly comparable in estimation of power, for two reasons; first, the former is a fixed measure, while the latter is a valuable power; secondly, the standard of horse power mechanical is considerably higher than what the average horse could maintain for 8 or 10 hours' work. The term horse power was first adopted by "Watt" and the unit he allowed and which has since been retained is about 50 per cent. more than the power of an average horse.

Work, either mechanical or animal, is measured by foot lbs., that is the weight lifted or pressure exerted, multiplied by the distance through which the work is done. For instance, a horse hauling a load the tractive pull of which is 150 lbs., if this pull is maintained over a distance of 176 feet, the work done is 26,400 foot lbs. as $150 \times 176 = 26,400$. This 26,400 lbs. does not furnish us with any adequate idea of the power exerted because the time taken to perform the work was not stated. Power is the rate of work, and if we assume the above amount of work by 26,400 foot lbs. was performed in the space of one minute, then we can arrive at the power exerted. Horse power is 33,000 foot lbs. of work performed in one minute of time, it is therefore only necessary to divide the work in foot lbs. by this factor of 33,000 to find the horse power, usually expressed by H.P.

The power of the average horse is estimated at 21,000 to 22,000 foot lbs. per minute. Therefore, an engine of a given horse power will do much more work than could be performed by the same number of horses. This is speaking of actual horse power, but when it comes to a question of traction cultivation other factors are involved, and the tractive horse power is considerably less than the actual horse power, at least 25 to 50 per cent. less. This is due to the fact that a large per-

HORSE POWER—WHAT IT IS

By Walter Hodgson

centage of the available power is used up to move the dead weight of the tractor itself.

Many terms of horse power are in use, several of which might well be done without, as they are not only obsolete but misleading and not adequate to the engines of to-day. We hear of rated h.p., and nominal h.p., horse power actual, brake, indicated and tractive, to say nothing of calculated. Is it any wonder the general idea of horse power is a little vague? Rated h.p. and nominal h.p. are terms used by American and English makers of engines and have no definite meaning to the steam engine of the present time.

The brake or actual h.p. is the power that is developed and is available for work by the engine, with a specific steam pressure and piston speed. It is the b.h.p. that questions of power should be used upon, when the purchase of an engine is contemplated, as it is the power which the engine can exert.

The brake horse power is ascertained by an actual test of the pull exerted on the circumference of the fly wheel. This pull in pounds multiplied by the speed in feet per minute at the same distance from centre of axle as the point the pull is measured from, this result gives the foot pounds of work per minute, which divided by the h.p. factor of 33,000 will give the b.h.p. developed. The testing is effected by a brake usually known as a dynamometer, or sometimes as a friction brake. In cases where the dynamometer is not attached directly to the engine fly wheel, but is driven by a belt, it is termed a transmission dynamometer. The size of the fly wheel on an engine does not effect the power delivered, as the amount of pull exerted on a belt is in ratio to the speed

of belt in feet per minute. The larger the diameter of the belt pulley the less the pull that is exerted upon the belt, but what is lost in pull is made up by means of belt speed.

In considering matters of horse power it is well to remember there are two factors to reckon with, viz., maximum and economical horse powers, the former is the utmost that the engine is capable of exerting and the latter is the amount of power that can be delivered continuously and economically. This should be clearly understood and due allowances be made. It is the custom of American makers to give the maximum brake horse power, while English firms usually give the economical power. Apart from the fact that maximum power implies heavy firing and the possibility of overloading the engine, the extra power that is obtained does not compensate for the extra fuel required, where steam power is used.

When comparing the power of engines, the following factors must be considered: The mean effective pressure, the area of piston and the piston speed. In case of tractive horse power, the dead weight of engine and the surface of the ground.

The indicated horse power (I.H.P.) is the power exerted in the cylinder and is arrived at by use of that instrument known as the "indicator." The difference between the I.H.P. and the B.H.P. is the power required to overcome the friction and weight of the moving parts of the engine and is generally about 10 per cent. This percentage gives the mechanical efficiency of the engine. The mechanical efficiency is usually got by dividing the I.H.P. by the B.H.P. The steam engine usually gives

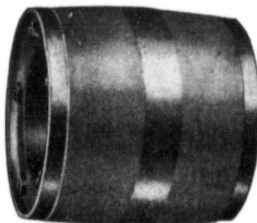
best results when worked at about half of its maximum power. An oil engine, however, gives better results if worked close up to its maximum power. For such purposes as threshing and ploughing, especially the latter, where the amount of power required varies considerably, it is advantageous to have ample margin of power in order to meet all likely contingencies. For this reason, the oil engine is perhaps not so suitable as the steam engine for traction work or work of a varying nature, if economy is to be considered. This will be especially so where tractive cultivation is carried on upon land of an undulating contour or where the tractive pull is very variable owing to the character of the soil.

Where work has to be done upon a gradient, the tractive pull is much increased, this is caused not by the draught of the load that is hauled, but by the lifting of the dead weight of the load the height of the gradient against the action of gravitation which has a strong attraction for anything avoidrupois.

If a gradient has a use of 1 in 10 or 10 feet in 100, it is a 10 per cent. grade and the extra power to haul load will be 10 per cent. of the dead weight of the load. The power required to move a tractor itself up a hill is likewise increased in the same ratio. To haul 1,000 lbs. upon the level may only require a tractive pull of 100 lbs. at say 2 miles per hour, but to pull the load at the same rate up a 10 per cent. gradient will require just twice the power. Ten per cent. of 1,000 lbs. is 100 lbs. and the pull upon the level plus the pull up the gradient is 200 lbs. 200 lbs. multiplied by 176 feet is equal to 35,200 and if this work is done in one minute the horse power is easily arrived at by dividing the 35,200 foot lbs. by that factor 33,000.

Only the surgeon is able to see the best side of some people—and then he sews them up.

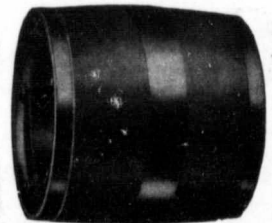
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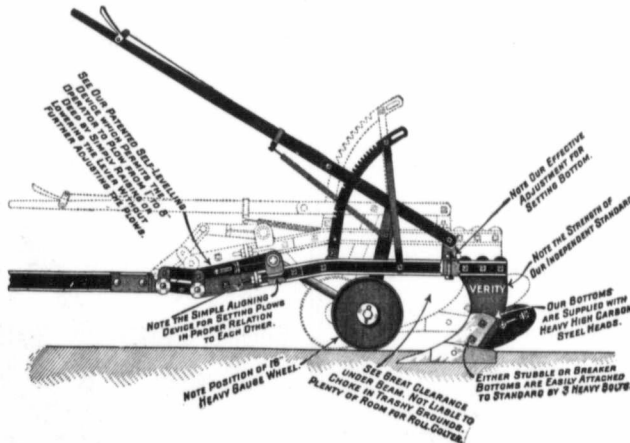
Josh Billings once said.

“Don't make a fool of yourself and then go around looking for someone to kick you. Get kicked first.”

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Farming a Big Estate

To operate a large farm profitably it is an accepted fact that it cannot be done with horse power only. Traction power of some kind or other must be used, and the question arises what make and style of engine is best. Where coal and water can be had at a reasonable price I do not think that it is as profitable to use a gasoline or oil engine as it is to use steam. The question of an engineer does not figure much into my calculations, because though the provincial government recognises the necessity of allowing only competent men to operate a steam engine, if as competent men were always set to operate gasoline and oil engines I am satisfied that better results would be obtained. The idea that any kind of a man is competent to run a gasoline engine is a mistake that was not made by the directors of the Boro' Green Estate. In Mr. John Rowell they have a gasoline expert that knows his business from "alpha" to "omega," and who can take out of their 30 h.p. model "C" big 4 engine all the power it can develop. This estate consists of 5,760 acres lying north and east of the Shell River in township 50 and range 5 west of the third meridian. The nearest railway point is McOwan siding, being the second north of Shellbrook on the Big River line of the C.N.R. Previous to the advent of Mr. Alexander McOwan, the managing director of the estate, and his staff, though this district had been settled for a number of years, very little had been done by the settlers in the way of grain growing, but now a considerable area has been brought under cultivation, and more will be in the future. These pictures give some idea of their development. On April 6th of last year the first load of lumber was hauled on the place, and that afternoon a gang of carpenters started to get houses built to accommodate the staff which arrived on the 20th of the same month from the West of England. Men, women, and children, there are 28 persons living on the estate. The men are mostly practical English horsemen, and the majority of them have been fortunate in locating homesteads, and all will make good settlers. Though the thermometer had registered as low as 59 degrees below zero none of them have any longing for the wet winter season they were accustomed to in glorious Devon. To accommodate the staff four houses are necessary, the fifth being used as an office and store. The other buildings besides Mr. McOwan's house consist of a horse stable, 48 feet x 24 feet, with an addition on both

sides of 16 feet x 48 feet. One of these lean too additions is used for a stable for the milking cows and the other for a granary for this season. An oil house and a cook house are also built of frame. Being in a country where there is an unlimited supply of good building logs they built a cattle shed 100 feet x 24 feet, and a hog house 62 feet x 20 feet of logs set on end. Each end of the cattle shed is partitioned off and used for housing the young cattle and the cows and heifers expected to calve through the winter. The hog house is divided into 12 pens, eight foot square, the balance of the building being used to store and boil feed and kill in. At present there are ninety-six head of swine and sixty-six head of cattle housed in those buildings. They also have nineteen head of horses and colts. The question of comfortable quarters during the winter for their poultry was solved by digging a pit thirty feet by twelve wide and four feet deep, lining this with logs to the ground level, and building a frame top four feet high with a shingle roof. In this building they house fully 100 head of poultry.

On the 10th of May they got their engine home, and started breaking next day. The plow used is a Cockshutt gang, with prairie breaker bottoms, cutting seven 14 in. furrows to an average depth of 4½ inches. Last spring they broke and seeded to crop 142½ acres, sowing oats, barley, flax, and timothy. Some of the oats and barley escaped the frost, but the flax (which was seeded on the 12th of June) was of no value except for the straw which is being fed this winter, and on which the outside cattle are doing well. The picture showing Mr. McOwan in the oats grown on breaking is an index of what to expect when crop is grown under favorable auspices. Necessarily the land got very little cultivation. The 1912 crop will consist of approximately 550 acres. The intention is to try 100 acres of wheat this year, put in the same flax ground again (16 acres), and seed the balance to oats and barley. Generally speaking the land here is a very rich black loam to an average depth of 18 inches, with a clay subsoil. A large proportion of the district is covered with water, and the settlers have petitioned the provincial government to be organized into a drainage district. When this water is run off the danger of early frost will to a certain extent be eliminated. The clear ground is only in patches, and considerable clearing had to be done to get as much broken as has been. Poplar bluffs and

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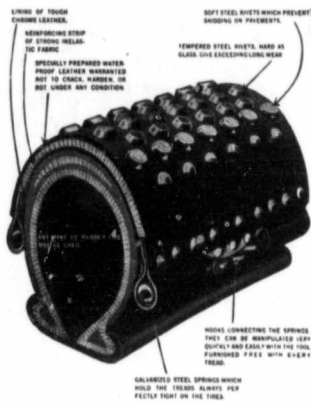
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LEATHER TIRE GOODS COMPANY, Niagara Falls, Ontario

Sold by John Millen & Son and the Russell Motor Car Company at all their branches and by first-class dealers everywhere.

willows are everywhere. To a man whose idea of farming is to have a large unbroken wheat area only this locality would not appeal, but when the temperature drops away below the zero mark, and the wind blows from the north the winter has no terrors. No such thing as fuel famine here, there being no excuse for either man or beast suffering from cold. The very best of pasturage for cattle and horses, pea vine and vetch and succulent grasses makes this pre-eminently a mixed farming country. This and the unlimited hay supply makes this a locality that appeals to the Old Country farmer, so when the gentlemen who put their money into the Boro' Green Estate did so, they felt assured that the farm would pay a good return for their investment. Not having personal experience of the merits or demerits of the different makes of tractor engines they had to take the opinion of others; still they are satisfied that their big 4 has filled the bill. As close as it can be figured, taking gasolene used, freight, wages, etc., into consideration, the cost of breaking per acre is \$1.75, and to disk about half that cost. No other work has been done with the engine except a few acres of fall plowing. At the end of the season the engine was in a good state of repair, and stood the work well. By another year they will know

what satisfaction the engine gives for threshing and running a saw mill. The firm having acquired a timber limit, and at present they are busy taking out logs. When discing they used two ordinary outthrow, and behind them two inthrow disc harrows. The worst trouble was to get a proper hitch for the trailer disc. The chain attached to the trailer passed over the frame of the front disc, and the point of the pole rested on the front disc. When turning they only gave trouble, and the trouble of fouling was partially overcome by taking wide sweeps at the turns. This trouble it is hoped to overcome this year by the use of two John Deere double engine discs. As regards breaking this year it will be done by three John Deere "Jumbo" brush breakers. Both these implements are new to this locality, but great things are hoped from them. All the drilling and harrowing was done by horse power. The question of drilling with the engine has been under consideration, but this year at least it will be done by horses. To get the best drawing power out of an engine the draught should come from the centre, and the writer's idea is that no piece of machinery should be directly attached to the engine. To get a good hitch for drills he would have a strong well braced evener bearing on two truck or wagon wheels drawn from the centre of

the engine by means of chains. A chain connected to this evener one fourth of the length of it from each, and would hitch this evener to the centre or drawing point of the engine. To this evener any kind of machinery could be attached, and no matter whether the engine was travelling straight ahead or turning all the draught would come from the centre. When drilling he would use three drills fitted with two poles each. The two outside drills would be close coupled to the evener, and the centre one riding just behind and overlapping these two. Each set of poles would be well braced together, and fitted with truck wheels to carry the weight similar to a binder or a horse disc truck. The draft of each drill would come by means of chains just as it does when horse power is used, but each pole would also be connected to the evener as well by means of stay chains. This is thought would prevent too much swinging, and at the same time each drill in position when turning. Though all the available homestead land is taken up around here it may interest some one to know that the country to the west has just been thrown open for homesteading, and it is expected that a large number of Old Country settlers will settle in this locality. Mr. McOwan is at present in England on a lecturing tour, and

this is the country he is to bring before the West of England intending immigrants.

Chas. L. Hutcheon,
Accountant for The Boro' Green Estate.

It is a mistake—To labor when you are not in a fit condition to do so. To think that the more a person eats the healthier and stronger he will become. To go to bed at midnight and rise at daybreak, and imagine that every hour taken from sleep is an hour gained. To imagine that if a little work or exercise is good, violent or prolonged exercise is better. To conclude that the smallest room in the house is large enough to sleep in. To eat as if you had only a minute to finish the meal in, or to eat without an appetite, or continue after it has been satisfied, merely to satisfy the taste. To believe that children can do as much work as grown people, and that the more hours they study the more they learn. To imagine that whatever remedy causes one to feel immediately better (as alcoholic stimulants) is good for the system, without regard to the after effects. To take off proper clothing out of season because you have become heated. To sleep exposed to a direct draught in any season. To think that any nostrum or patent medicine is a specific for all the diseases flesh is heir to.

GASOLINE TRACTION ENGINES

A DEPARTMENT FOR THE USER

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

Evidence that Plowing is Harder than Threshing.

In reply to your letter re plowing experience, I would say that my experience is rather limited, but I will be pleased to give what information I can.

I have a 45 h.p. opposed International engine purchased in the spring of 1911. I also bought a P. and O. eight bottom engine gang, but I soon discovered that I was loading the engine too heavily. This, I believe, is a very common mistake made by many operators. When an engine is strained to its utmost capacity, there is always something going wrong, which will cause the operator to lose more time than the pulling of the extra plows would gain, which in itself is sufficient loss without considering the extra and unnecessary wear on the engine.

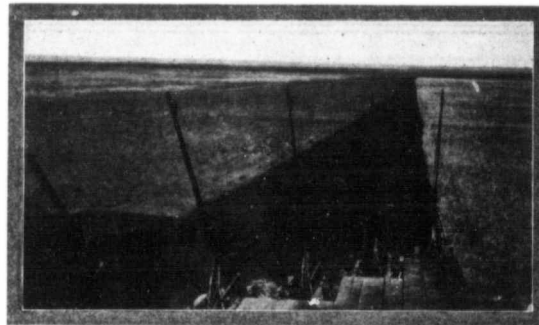
This, I believe, is one cause of so much dissatisfaction attributed to the gas engine as a power for plowing. It is absolutely necessary, no matter what kind or power of engine, to have some reserve power as I found it unwise to use more than six bottoms. I had some difficulty in arranging a proper hitch to prevent too much side draft. I finally found by dropping off one plow from each side I got satisfactory results from six plows on an eight bottom frame.

Last summer I engaged only two men, one to handle the plows and one to team supplies, while I handled the engine myself. I had one team of horses on the outfit, and the teamster's duty was to supply gasoline (which fuel I use exclusively), and to draw water, about three brls a day, in hot weather. He also changes off with the plowman and myself for meals. I do not think it wise to handle an outfit short handed, as the lack of a man often causes delays that might otherwise be avoided. I intend hiring three men this year, two of them to take the outfit from daylight till dark, while I spend my time much more profitably I think in keeping everything in repair.

My idea of keeping an engine, especially a gas engine, in running order is that of constant vigilance. A man must understand his engine and plows thoroughly, and, if necessary, work all night on his repairs to avoid the engine stand-

ing idle. He should not always be on the outfit as he can often detect trouble at a distance easier than he can near by. He should also at intervals examine both engine and plows while in motion. I have often repaired small things while the rig was running which, if they had remained unnoticed a moment too long would have cost hours of delay as well as many dollars in repairs. The only way to make a success with one of these outfits is to keep the wheels rolling.

In the kind of soil we have here where I pull six bottoms it requires about three gallons of gasoline per acre at a cost of 22½ cents per gallon and ¼ gallon of gas engine oil per acre, at a cost of 50c per gallon. The total cost of plowing an acre would be about \$2.00.



The way the Furrow looks to the Plowman

I consider breaking the hardest work an engine has to do. I run a 36-56 Aultman and Taylor separator with my engine last fall, and I am satisfied that it did not require more than half the power needed for pulling the six breaker bottoms. I pulled a four plank 16 ft. scrubber well loaded with stones, four 16-16 discs, one 22 wheel packer, and one 22 ft. drag harrow, and I found it took much less power than it did for breaking. Both cases are clearly proven by the fact that it required only about one-half as much fuel for threshing, and about two-thirds as much fuel for discing as it did for plowing.

Gas engines are used here altogether, as the scarcity of water and the price of coal is very much against the use of steam. I think I can explain my plan of hitches better by a rough sketch than by

writing. I have never used a drill hitch on my engine, but the accompanying sketch shows one I have figured out to use on two eleven ft. drills in the spring. I intend using a scrubber placed under the drill tongues close up to the engine, hitched as in the discing outfit, and the drag harrows behind the drills hitched to the centre of each drill.

I am sorry that I have no photos of my outfit, but am going to have some taken in the spring, and will send one as soon as possible. Yours truly,

William Sponebush,
Brock, Sask.

Oil for Him.

Your letter containing your liberal offer at hand. I take great pleasure in complying with your request.

shift of men we ran our outfit with three men: Engineer, plowman and teamster. We kept a team to keep us supplied with oil and water, which they did with ease, although we drew oil 18 miles part of the time.

We broke 1,322 acres through the breaking season. We might have done considerably more had we been experienced, but as this was my first year at engine breaking, I have several things to learn.

Our fuel consists of Silver Star kerosene, and we used from 4 to 6 gallons per acre according to the land. Some of your readers may be a little surprised that we used so much oil, but they must take into consideration we broke a fair depth. Our kerosene cost us 16 cents per gallon at the Imperial Oil Company's tank. We also used 2½ barrels of gasoline for starting, for the reason that the Oil Pull is not made to start on kerosene, and we used other oils, lubricating, hard oil, and grease, to the amount of about \$1.50 per day. Our day's run of kerosene averaged about 76 to 100 gallons, water about 80 gallons. Our largest day's work was 22 acres, averaging 17 or 18 acres. The cost of our breaking wages, oil and board was from \$1.75 to \$2 per acre.

We considered our work well done. We plowed deep in order to turn all the prairie. We found shallow plowing missed considerable in rough places. My experience in threshing was not large; I did not go out until late in the season. I furnished power for a 36 in. cylinder Red River special separator, feeder blower and high bagger attached. We had all kinds of power for that. I do not consider it as hard on the engine as plowing. The engine did not work as hard and, of course, the traction machinery was stopped altogether. The stuff that I threshed was stacked after the snow came and was somewhat tough. I think if I had got out in the first part of the season we would have found threshing considerably easier on our engine than plowing. My experience discing was also somewhat limited, as we were only discing for a short time. We hauled nine 7-foot discs on stubble land, discing

I am very sorry I haven't a larger picture of my outfit. This one was taken while breaking on the farm of Mr. Cahil, adjoining the town of Chauvin on the G.T.P.

My engine is a Rumely Oil Pull 30 horse power on the draw bar and 60 horse power on the brake. My plow is a John Deere engine gang 10 bottom frame, but we only had 8 breaker bottoms. I bought the 10 bottom frame in order to use 10 stubble bottoms.

We pulled 8 breaker bottoms through all kinds of land up hill and down. We could have handled 10 breakers in some of the land broken, especially this piece at Chauvin. Some other pieces were a little hilly, as well as heavy. We broke all our land at an average depth of five inches. As we only had one

The Secor-Higgins System of Oil Combustion

Phantom View Secor-Higgins Carbureter.



John A. Secor

THE internal combustion engine is the motor of the present and the future. Oil is the world's logical fuel. Fourteen years ago John A. Secor gave to the world a practicable oil-burning engine of the standard internal-combustion type with all the advantages of existing oil engines and none of their detracting features.

The United States Government recognized the basic novelty of his ideas and granted a patent so broad as to cover every possible means of producing an oil engine that will meet all engineering and commercial requirements.

Twenty-seven years ago Secor conceived the idea of an internal-combustion engine adapted to every power need — an engine that could use any fuel — and that especially could be operated *easily, flexibly and with certainty* on oil at all speeds, all loads, all altitudes, all conditions of temperature and humidity — one that would have finer regulation than the best steam engine.

No oil engine at that time approached the steam engine in usefulness and efficiency. None followed established gas engine practice — none equalled in simplicity, ease of handling, completeness of combustion, flexibility and close regulation the engines for burning gas or gasoline — none was so powerful for its weight and dimensions.

No oil engine except Secor's has attained those results to this day. No oil engine except Secor's will ever attain those results until the expiration of the Secor-Higgins patents permits universal use of the Secor-Higgins System of Oil Combustion.

Secor's greatest gift to the world was the doctrine that the oil engine in principle need not and must not vary from established gas engine practice — his second, the discovery of the *means* for using oil without sacrificing a single desirable feature of the best gas or gasoline engine.

The Secor System

The Secor System embodies more than a mechanism. It rests on a basic analysis of the conditions which are essential to the successful use of any fuel whatsoever in a gas engine. This system fulfills all essentials. It provides for a precise, unified control of all factors in exact correlation with the thermodynamic requirements.

It covers an automatic variation in the quantity of fuel mixture in accordance with the slightest variation in speed and load; a degree of compression dependent upon the quantity of the mixture inhaled; a correct proportioning of the mixture under all conditions, involving relatively weaker mixtures for higher compressions and increasingly stronger mixtures for the lower compressions; a temperature of combustion exactly adapted to the quality of fuel used and the compression; automatic control of the internal temperature through the admission of water as a part of the fuel mixture; thorough and uniform mixture of the fuel, water and air charge by mechanical means and without the application of additional heat; automatic variation in the time of firing in response to variations in the speed and power; means for changing by hand the limits of rotative speed within which all factors are simultaneously controlled; and means for starting on a limited supply of volatile fuel — all of which factors are vital to the control of internal heat, the transformation of heat into power, and power production.

John A. Secor was the first man on earth to adopt the throttling principle on an internal-combustion engine, and the Secor System provides for the combination with, and unitary control by, a throttling governor of an air-throttling valve, a fuel-throttling valve, a water-throttling valve, a piston, cylinder and combustion chamber, a common admission valve for all ingredients of the fuel mixture, variable means of ignition with automatic ignition timing receptacles for fuel and water, and a receptacle for a supply of volatile fuel — factors which together regulate every operation that occurs in the engine.

The fuel and water are atomized and thoroughly mixed with the air supply in the mixing chamber, where they pass in suspension to the combustion chamber, in which the air charge absorbs the vapors evolved by the atomized liquids in the presence of heat generated by previous explosions.

John A. Secor, now Chief Engineer of M. Rumely Co. and William H. Higgins, Manager Experimental Department, are now applying their entire experience and effort to the development for every purpose of Rumely oil engines embodying their joint discoveries. The Secor-Higgins System of Oil Combustion is covered by basic patents owned by M. Rumely Co. It is used only on the *Rumely* Tractor and the stationary and marine engines for which manufacturing licenses have been granted by this Company. All infringements will be vigorously prosecuted.

Write today for illustrated data—furnished free—describing the tractors and stationary engines embodying this system. A postcard with your name and address is sufficient.

The Secor-Higgins Carbureter

A carbureter produced by William H. Higgins, embodying the Secor System, regulates the quantity and proportions of the fuel mixture by means of a positively-controlled relative vacuum, *with all disturbing factors eliminated.*

The Secor-Higgins carbureter is as simple as an anvil. It gives automatic results with absolute precision by means of *positively actuated* mechanism, in place of automatic mechanism, hence it contains no automatic balls, springs or float valves. It has but one moving part, a heavy brass sliding plate, positively actuated by a governor which is geared to the crank shaft of the engine.

Mathematically correct air openings in this sliding plate, operating in conjunction with the piston and intake valve, enable the governor automatically to control the relative vacuum within the mixing chamber. This vacuum sucks through the fuel and water-throttling valves the precise amount of each liquid required for a correctly proportioned mixture. The exact proportion should — and does — vary instantaneously with the compression in the cylinder, and thus is produced a uniformly correct condition for combustion. The total quantity of charge is controlled by the throw of the sliding plate, and this movement is determined, through the governor, by the power need of the instant.

The Secor-Higgins carbureter has separate constant-level chambers for the supply of kerosene and water, with a small changing-level siphon chamber for gasoline. Gasoline is used but for an instant on starting, and none whatever *at any time* while running. If for any reason gasoline is objectionable, alcohol may be used for starting.

Water is inhaled automatically through the carbureter in the exact amount required to control, by its absorption of heat and by its disassociation, the temperature of the combustion chamber at each instant, and thus is secured under *all* conditions, perfect combustion of the heavy, complex constituents of low grade fuels. The water, furthermore, reduces the violence of the initial explosion, first absorbing heat and later releasing it to continue the explosive action, so producing a high mean effective pressure — a push rather than a blow — and contributing, therefore, to greater power and higher efficiency.

M. RUMELY COMPANY

1957 Dufferin Avenue,

Winnipeg, Man.

with full disc on, which was also a lighter load than 8 breaker bottoms. The attachment was a 6 x 6 24-foot long with the front wheel of a wagon on either end strengthened by truss rods like an axle. It was attached to the draw bar by a tongue well braced in centre, and one large rod from either end of axle meeting in same hole as tongue on drawbar. It worked very well. The discs were hitched on behind the axle in such a way as to give it a double discing, each disc lapping the other half.

I think engine farming has passed its experimental stage and entered on the practical, and has come to stay, especially on large farms. There are improvements that will be made yet; but there are several engines that have done very effective work in this district, both steam and gas.

There are several styles of both steam and gas in this district. I think they are about evenly divided, and if you should ask me which was the most economical and practical for farming I should say gas. While the gas engine has not yet reached the state of perfection that steam has, yet I think it has several points in its favor, for most districts in this Western country over steam. Two-thirds of the steam engines find it difficult to get good water, especially in some parts of the season; and if far from the station it is expensive to haul coal. The water in the wells in Alberta is generally of the first quality, but the average farmer has not got a well fit to supply a large plowing engine, while any well, almost, will supply enough to run any gas engine.

Another strong point in its favor is that it requires fewer men and horses to operate them, which is quite an item in these days. I might say further, before I invested in a plowing engine I was strongly advised by some steam engineers not to buy a gas engine on any account, and that I would have all kinds of trouble. The cylinders would score and the pistons would strip, in fact the engine would be a junk heap in a short time, and if I ever got into a mud hole I would never get out. We had our pistons out the other day, and found our cylinders as clear and smooth as new, and we have been in mud holes three or four times; once down on the drawbar and front axle, but we got out about as easy as a horse would do. Of course, we avoided them as much as possible.

I am sorry I haven't a hitch for drills, etc., of my own device yet. I have seen two or three, but I may need one. I am sorry I cannot give you one of my own. This has been my

experience, and you may use as much of it as you think fit. I hope it will be along the line asked for.

We will be very much pleased to receive your valuable paper, and hope this may be in time for your plowing number, I am

Yours truly,

Ernest F. Hawken.

Provost, Alta.

Real Power Farmers.

Replying to your inquiry 15th inst., where conditions are entirely favorable that is where the land is quite level, and lies high and dry, our experience is that all the operations for raising wheat can be conducted by a Hart-Parr 60 B.H.P. Kerosene tractor. We commenced traction cultivation in 1906, using the tractor for all purposes, except harvesting. Since the end of the season 1909 we have added harvesting to the operations, and with the exception of hiring a few teams to haul wheat to the cars we can entirely dispense with the labor of all horses except one general purpose team.

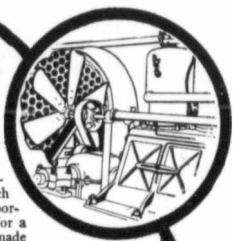
Your questions mainly refer to plowing, and this is of course the operation taking most time. We can give you no recent experience in breaking, having finished that work some years ago, and giving you our results at the time. We are now handling 600 acres of summer fallow yearly, and doing no spring or fall plowing. For this work the engine disc plow is the most advantageous. The claim that it will not cover long weeds is no detriment, as the first plowing in fallow work has got to be done early, that is, finished by June 30th.

We attach a drag harrow behind the plows for the reason that then is the time to harrow to save moisture and drag the loose weeds out of the soil, and shake the soil from their roots, so that they will wither and die. We have experimented three seasons cultivating the fallow afterwards with spring tooth harrows, and find this method is not absolutely reliable, as in wet summers all the weeds are not killed. The only efficient way to keep the fallow entirely clean is to plow it again in August. Here the disc plow works to perfection and comparison with the mold board plow ends.

In drilling, if the soil is loose and mellow we use 4 drills, and attach a wagon with grain tank to centre of one of inside drills. This sows a swath of 40 feet, with no stops to fill drills, as they can be replenished with pails while on the move. A marker is necessary to mark exactly where the steering wheel of the tractor is to run. This is accomplished by using a piece of 8 x 8 and 2 ft. long, turned up on one end, with under

No Danger of Over-Heating in The Twin City "40" All-Steel Gas Tractor

We provided the most advanced and effective cooling system for our wonderful Twin City "40." It is of an improved forced circulation type, using an enclosed radiator from which there is very little water consumed through evaporation and one filling of the radiator will last for a long time. The radiator consists of 181 flues made of a specially prepared soft steel, so that the water cools very rapidly. The fan is located at the rear end of the radiator instead of at the front, thus the cool air is drawn through the flues and blown into the cylinders of the motor, combining an air cooling and water cooling system in one.



Rear view of radiator, showing fan which draws air through it, and blows on cylinders behind.

Other Strong Features

The cooling system is only one of the many strong features of the Twin City "40" All-Steel Gas Tractor—only one instance which goes to prove that our 25 years of experience in the manufacture of high grade engines and transmission machinery has taught us how to make a better, a stronger, a more durable and reliable gas tractor than has ever been produced heretofore.

The Twin City "40" All-Steel Gas Tractor is the lightest farm tractor for its horse power on the market—a tractor that will actually deliver more power than the heavier and clumsier machines—and yet a tractor of greater strength and durability. It is built to wear and work—to hold together under the heaviest strains—to do the most work at lowest cost.

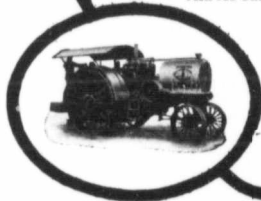
Backed by a Real Guarantee

The guarantee of a \$1,250,000 corporation—known from coast to coast for turning out engines that make good, a company with a high reputation for living up to its claim and backing up its guarantees. Learn more about this great tractor. Let us tell you what the Twin City "40" All-Steel Gas Tractor can do for you—let us figure together and see how cheaply it will do most of the work on your farm—how it will make your profits look bigger.

We will also tell you where you can go to see it, and witness an actual demonstration of what it will do. It will pay you to investigate at an early date before all the tractors we can make this year are sold.

Ask for Catalogue No. H

All-Steel Frame "Built Like a Bridge"



Minneapolis Steel and Machinery Company of Canada, Ltd
W. I. Barnard, Manager
Regina Sask.



There is QUALITY in every drop of
Lily White Engine Kerosene
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White Rose Gasoline

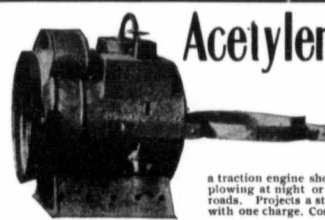
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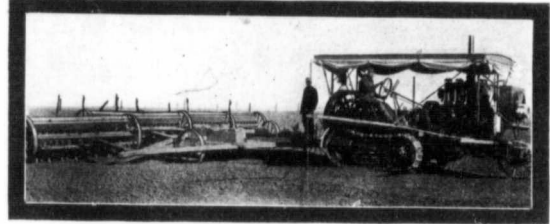
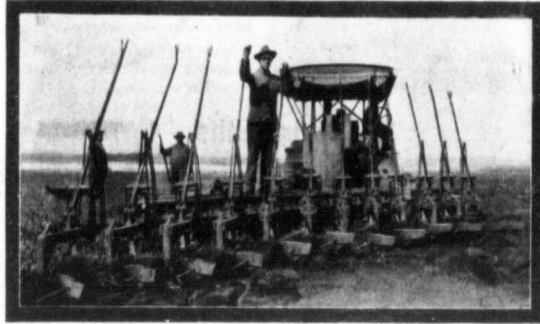
For Traction Engines

Complete in one apparatus. The latest and best on the market. All the light you want whenever you want it. Wind-proof. Jar-proof. Every man who operates a traction engine should have one. Indispensable for plowing at night or moving over rough fields or bad roads. Projects a strong light 300 feet. Runs ten hours with one charge. Costs 1 cent an hour. Write for Catalog

American Acetylene Stove Co., 516 Masonic Temple, Minneapolis, Minn.
CHAPIN CO., CALGARY, Agents for Alberta.

CATERPILLAR

Has No Wheels To Stick In The Mud---It Works on Soft Plowed Ground



DOES NOT PACK THE SOIL
Wins First Prize of \$3,000.00
In World Wide Competition

The "Caterpillar" clearly demonstrated its superiority by winning the First Prize of \$3,000.00 in the competition open to the world, recently held by the Argentine Government at Buenos Ayres, S.A., to determine the best Tractor for farm purposes.

The engine was subjected to the severest and most conclusive test Farm Tractors have ever been given, and the fact that the "Caterpillar" emerged victorious is a marked tribute to "Caterpillar" efficiency.

WE CAN MAKE IMMEDIATE DELIVERY OF 1912 60-H.P. CATERPILLARS FROM CALGARY OR REGINA

CANADIAN HOLT CO., LIMITED
 CALGARY - - - ALBERTA

Canadian Holt Co. Ltd., Calgary, Alta. C.T.F.

Please mail me Free Caterpillar Literature.

NAME _____
 ADDRESS _____

side studded with spikes, so that it will scratch a good broad mark. The marker is held out by a 2 x 4 x 18 attached to the end of the left hand drill, and pulled by a rope from the left end of the hitch truck. If the ground is hard packed in the spring we use a combination of 30 ft. of spring tooth harrows in front of the drill and three drills sowing 30 ft. and grain tank hitched behind centre drill. We should add that the fields have round ends, and we start at the outside and drill around the field, turning to the left.

Two men only are necessary to actually operate the tractor and implements, but a third man who is a competent machinist and general mechanic is necessary to keep tractor and machinery always efficient and up to the mark. These duties will not take all his time, and he is always available to attend to the multitude of details that are always cropping up on a "power farm" and that require intelligent attention.

Returning to your questions, we use kerosene for fuel, costing 15c per gallon F.O.B. per station, or 16c in the field. In an 8 hour day we use about 42 gallons of kerosene, 1 gallon gasoline, 1 1/2 gallons lubricating oil, and 15 gallons of water, and this amount of fuel

will plow and harrow 20 acres. The daily expense we figure:—
 42 gallons Kerosene at 16c \$6.72
 Gasolene, lubricants and water 1.00
 Labor board and men 7.00
 Int. 8 per cent on \$3,300, counting 120 days per year 2.20
 Depreciation estimating outfit cashing eight seasons 3.45
 Total \$20.37

Thus the cost of plowing and harrowing stubble is \$1.00 per acre. The amount we allow for depreciation daily, \$3.45, is considerably higher than is generally allowed by others, but we think our estimate is only barely conservative. Tractors are in a very rapid career of evolution at present. The number of years that any of

to-day's tractors will stand up to its daily grind is not definitely known, and far more likely to be over-estimated than under-estimated. Granting that to-day's tractor would stay, in commission eight seasons it will be then so obsolete that the up-to-date man who bought it will have had experience enough to recognize a better tractor, and will possibly sell for an amount about equal to the amount he has expended for repairs to keep it doing business for eight seasons, and his operating expense per day will be found to have been fairly estimated.

Trusting this information is in line with what you require.—
 Yours truly,

Edmonds and Shand,
 Welby, Sask.

Happiness in Action.

The happiness derived from doing deeds of kindness is the happiest, the purest, and the most lasting of all human enjoyments. The vilest sinner breathing, if he has ever performed a benevolent act in the course of his life, knows this to be true. How strange, then, that so many thousands should ruin health, fortune, and reputation in pursuit of pleasures that turn to ashes in the end, while they utterly neglect this source of enjoyment, accessible to all, and which not only brightens life, but softens the sting of death.

More hearts pine away in secret anguish for the want of kindness from those who should be their comfort than for any other calamity in life.

More Power OILDAG

(Reg. Trade Mark.)

Builds a film that is lasting. It is the only oil that contains Deflocculated Graphite. This graphite is not available in powder form. Oildag is put up in condensed form for mixing with 1, 5, 10 or 40 Imperial gallons of oil. You mix it with the oil you use regularly. As all Acheson-graphite sold as a lubricant is of highest purity, and Deflocculated Graphite is of molecular fineness, it is plain that Oildag has no equal as a lubricant to be used in place of plain oil, that drips, drips and drips away without affording enduring benefits.

To secure the greatest efficiency from either gas or steam engines, the cylinders should be lubricated with Oildag.
 Oildag and Gredag are lubricants that afford cumulative benefits.

GREDAg

Gredag is the only grease containing Dis-integrated Acheson-Graphite. It will easily do twice the work of plain grease because it forms a film that has wonderful endurance. The smoother that you can make surfaces that come in contact the less will be the need of lubrication, for friction will be reduced.
 We are General Agents for Gredag, made by the International Acheson Graphite Company



Ask your dealer or write for more particulars

Acheson Oildag Company
 SARNIA, ONTARIO

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. S. O. R. I have a 4-horse power gasoline engine with hit and miss governor and gravity feed mixer, in which air passing through raises the needle valve and lets the gasoline out. At times the engine will run for hours without missing a shot. Then it will begin to make back explosions and stop. Sometimes, by opening the relief cock, and leaving it open for a few minutes after starting the engine, it will work alright for an hour or so, when it will stop in the same way. At times even this fails, and it will not run right. The last two or three times it stopped I let it suck in half a teaspoonful of flake graphite through intake, after which it ran alright for an hour or two.

Another thing I have noticed, and that is when running without a load, and running from 8 to 20 revolutions without taking a charge, the charge would be ignited, and would have the right power, but if loaded to make it draw in another charge without skipping, it would fail to ignite, and if it did ignite it would give very little power, and if full load was put on it would stop. Changing the throttle never helps any when it takes a contrary spell. Have often examined the spark, and it gives a good hot spark. Can you tell me what the trouble is?

I have a 1 1/4 inch Schebler carburetor, which I could easily fit on engine. Would this give any better results? The engine has five-inch bore and six and one half-inch stroke.

A. The trouble is undoubtedly in the mixer. It either lets down too much gasoline or not enough. From the description it is not easy to tell which. If you take it apart and clean out the dirt, and make sure that the needle valve fits you will probably have no more trouble with your engine. If the spark is alright, and some of the explosions are weak, and some strong it shows a variable mixture. It would also seem that the piston rings might not be tight, or it may be that they are stuck down in their groove with a deposit of carbon. The fact that a little flaked graphite helped the performance of the engine would tend to show that such might be the case. We are inclined to think that in view of the action of the engine at other times that the trouble is with the mixture. The Schebler carburetor is a better carburetor than the one you are

using on your engine, and it might be well to make the change.

Q. C. M. S. I have a ten-horse power gasoline engine, 4-cycle, hit and miss governor type. At times it will pound heavily on the cylinder when pulling hard, and will exhaust black smoke, but not both at once. At times the engine will run alright.

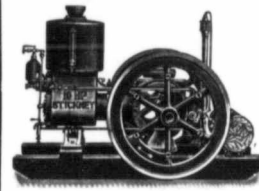
A. The trouble is probably to be found with the quality of the mixture. If the mixture is too rich it will cause black smoke at the exhaust, and if the engine is overloaded it is apt to pound. The pounding in this case is due to the cylinder getting too hot, and causing pre-ignition, or too early ignition of the charge.

Q. E. R. Why can a gasoline engine not be cooled with air instead of water? I mean have a fan blower and force the air through the engine in the same way as water is forced through. If not, why not? My engine is a 20-horse power, double cylinder, Masterworkman. The suction pipe to pump is a half inch inside and the exhaust pipe is one and a quarter inches inside. The cooling tank is outside, and holds twelve barrels, and after running an hour or two the water gets quite warm. In fact, after a day's run it is very hot, a great deal hotter than the air is, even after two hours. They consider the trouble draining the engine every night, nine months in the year. Even if it should take more power than the pump it would be a great advantage.

A. The specific heat of water is unity, and that of air is practically one-quarter. This means that water has four-times as much capacity for heat as air has, and, furthermore, water absorbs heat more easily than does air, and gives it up somewhat easier. It would be impossible to force enough air through the water jacket to take up the necessary amount of heat, especially in an engine as large as yours. In plain language you would be obliged to force four times as many pounds of air through the engine jacket as you are now using of water. When you consider how light air is, and how much it takes to make a pound you can readily see that your scheme is not practicable.

Q. J. A. F. 1. Can you tell me how I can keep the scales out of the water jacket of my engine?

"Stickney" and "Chapman" Gasoline Engines



hold the lead as all-around Farm power. In greater demand than ever before. 90 per cent of gasoline engine troubles have been eliminated in the construction of the Stickney & Chapman. Simple, economical, easy to start, always ready for work.

Get at the facts: write for Stickney Catalogue No. 15, or Chapman Catalogue No. 16.

Windmills

When you are considering the purchase of a Windmill, STOP when you run across the words "service" and "efficiency." For it is toward SERVICE and EFFICIENCY that we are speeding as rapidly as progress in Windmill building shows the way. If you will look INTO a Canadian Air motor as well as AT it, if you will analyze its make-up and take into account the important matters of material and construction, you will want to buy no other. For then you will understand it is not built OF or ON theories, that there is nothing in it, on it, under it or about it that is not a TRIED, TESTED and PROVEN BEST.



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A Barrie Engine is complete in every way. Designed by experts. Made from high grade materials. Perfectly balanced. Strong and Sturdy. Built to give reliable and lasting service. Few working parts. Automatic. Start it and it runs itself.

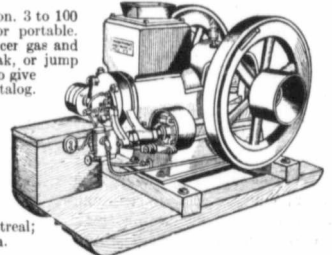
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and are economical in operation. 3 to 100 horse power. Stationary or portable. For gasoline, distillate, producer gas and natural gas. Make and break, or jump spark ignition. Guaranteed to give satisfaction. Write for catalog. Agents wanted.

The Canada Producer & Gas Engine Co., Limited.

Barrie, Ontario, Canada.

Distributors: James Rae, Medicine Hat; Canada Machinery Agency, Montreal; McCusker Imp. Co., Regina.



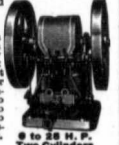
OUR ENGINES PAY FOR THEMSELVES

IN FUEL SAVING AND IN TIME SAVING!

They burn gas, gasoline, kerosene and distillates. They have no great cumbersome base and consequently are easily and quickly moved from one job to another about the farm. Write for information about our Free Trial Offer of our most improved

GASOLINE ENGINES

Note the compactness for ease in handling! Note the pullers on both sides! Write for facts regarding our new slow speed, High Duty Engine, the engine that gets up-to-date power from every quart of fuel—one that has the record for lowest upkeep cost—that is the quietest and easiest starter—has least vibration—perfect lubrication, shockless power, least wear and tear. Mail us your name and address on a post card, today, giving us the size of engine you need and the use you will put it to. We make 1 1/2 to 1 1/2 h. p. single cylinder engines; 5 to 10 h. p. two cylinder; 30 to 50 h. p. four cylinder. Quick action on your part is demanded to get this free offer. Don't buy or order an engine until you investigate the TEMPLE MAKE. This is our 60th Year.



1 1/2 to 1 1/2 H. P. Single Cylinder

5 to 10 H. P. Two Cylinders

TEMPLE PUMP CO., 445 W. 18th St., CHICAGO

2. How much below centre should a 10-horse kerosene engine be exploded, running at 310 r.p.m.?

3. How can I keep my engine exhaust from making very much noise?

4. I start my engine with gasoline and run with kerosene. I have an oil cock on the suction pipe. I have to close it some when running with kerosene. How can I tell when I am getting the right mixture in the cylinder?

A. 1. The best way to keep the scale out of your water jacket is to use rain water, or some pure water. If this cannot be obtained the next best thing is to take the cylinder off and clean jacket occasionally.

2. The crank should be about 10 to 15 degrees below center on the compression stroke when ignition takes place, with the engine running at this speed.

3. If you use a muffler similar to those used on automobiles the exhaust of your engine will not make very much noise. Considerable back pressure will be developed which will reduce the outward power of the engine. If the engine is a stationary one you can construct a pit in the ground using concrete and allow the gas to exhaust into this, and expand before reaching the atmosphere through a larger pipe, which should open up to the top of the pit.

4. The only way to tell if you have the right mixture or not is by the way the engine runs. You should adjust the feed until you get maximum power, and no blank smoke shows at the exhaust.

Q. T. K. S. 1. I have an eight-cell dry battery, four test 12 amperes and the others 4-22 amperes. When these cells are connected in series multiple they give me 34 amperes and about 6½ volts. When connected in this way I only get one-quarter inch spark at plug, but when they are connected in series I get 12 amperes and 13 volts. I get a spark about three-quarters of an inch in length. Is it because the primary of my coil is wound with too fine wire? I have tried adjusting the vibrator every way to secure good results when connected in multiple. I have a Splitdorf box coil.

2. I note a slight pounding in my auto engine, when I have the spark retarded, so it ignites on dead center, engine running at about 400. The pounding occurs when I open the throttle. I have tried setting fuel and air valves of carburetor, but that does not seem to make any difference.

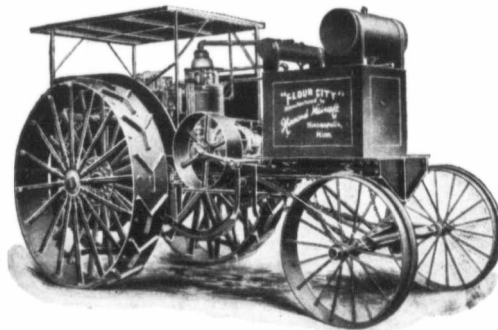
3. I have a single 10-horse power Oldsmobile, and it is equipped with a Schebler carburetor. I do not think the engine is giving all the power it could. It is ¼ x



The GOLD MEDAL Winner WON BY MERIT

And they were given for actual work done—not in response to the mere inspection of experts. The awards were made in contests open to the whole world and in which the "FLOUR CITY" was pitted against a phalanx of the world's acclaimed "champions." The verdict stands that the "Flour City" is King of Tractors

Built in 3 sizes: 20, 30 and 40 H. P. This is the ideal Farm Tractor. Burns Kerosene or Gasoline and there is no size of farm or character of farm work to which it is not perfectly adapted



For hard and continuous service, there is nothing like the "Flour City" on any condition of ground on which a horse can travel. It represents the very best value in Farm Machinery.

An outstanding feature of the "Flour City" Tractor is its remarkable fuel economy. The Kerosene Carbureting System is developed to perfection in this engine. No single or double cylinder tractor can compete with it in plowing or general field work or in any description of traction. In threshing or belt work of any kind it is unsurpassed.

Write for catalogue and complete information.

KINNARD-HAINES CO. ONTARIO WIND ENGINE & PUMP CO.
 828 44th Ave., North, MINNEAPOLIS, MINN. TORONTO, Canadian Agents
 WINNIPEG, CALGARY

6, and runs very smoothly at 800 R.P.M. Would a new coil help? It is a 1903 or 1904 model.

A. 1. It is hard to tell without making an examination just what may be the trouble with your coil. It may be, as you suggest, that the primary winding is too fine, or it may be that the number of turns of the primary wire are not proportioned correctly to the turns of the secondary winding. It is more than probable that the coil was designed to work with more than four cells in series. I have no doubt that if you used ten or twelve cells in series multiple you would get much better results from your coil.

2. We see no good reason why the mere retarding of the spark should cause a pounding in the cylinder. It would appear to

us that the slight noise is merely more apparent at slow speed than it is at a high speed. It might be an advantage to use a different coil, but we suggest first that you try using more cells with the coil you have, and see how that works. We think that your coil was designed to use five or six cells in series, and it will doubtless work better if that number is used.

3. We cannot advise you how to increase the power without knowing more, as to how the engine behaves and what seems to be wrong. Usually if the engine runs alright, the only way to improve the power is to make the spark come at the right time to regulate the carburetor, so that the mixture will be correct. If this is done, and there are no leaks of fuel past the rings the engine is doing all that it can do.

How we Say It.

In order to convey true impressions when speaking no need is more imperative than that of sympathy. When speaker and listener are far apart in habits and tastes, in standards of life, and modes of thinking and feeling, and do not come into each other's sphere, even in imagination, there is but little chance of mutual understanding. More than half the quarrels of the world come from this deficiency. The words spoken convey a radically different meaning to the hearer from what they did to the speaker; offence is taken where none is meant, and disputes and estrangements follow that have no deeper foundation than mistaken impressions.

If we cannot live so as to be happy, let us at least live so as to deserve happiness.

CARE OF THE GAS ENGINE

L. H. SNYDER

The gas engine should give good satisfaction if it is carefully looked after the same as any other piece of machinery. We often wonder why it is that some of our neighbors seem to have better luck than we, why it is that their buildings are in better condition, why they have better machinery and seem to prosper better generally.

It is often found that they are frugal in small things; for instance, after getting through with a plow the share is carefully greased and isn't left out in the rain; the plow not dropped just where the plowing was finished, but is put away carefully in the shed and is ready for use; and the next time it is wanted, it is not weather-beaten, rusty, warped, and started to the scrap pile.

Now concerning the gas engine, treat it humanly, don't put it in a place where the rain will beat on it, or the first thaw will drench it with water. The weather may turn cold, and there will be a hard freeze, to say nothing about the dirty mess and the rusty parts.

The writer knows that sometimes there are many jobs which seem to demand our attention all at the same time, and in the hurry we overlook our oil cups, with the result that the bearings seize or the babbit metal runs. Always make it a point to see that the oil cups are turned off and filled, when you shut down, then they are always ready for use. It soon will become a habit to do this, and to open them in starting. For this reason the writer prefers an engine which has grease cups rather than oil, because the grease will be used as needed and there is not the danger of going away and leaving the lubricators open, which means so much oil wasted, fire risk increased, and the cups run dry.

The cooling water should be adjusted so that the discharge is at a temperature of about 150° F., for the highest efficiency, and in the winter as an extra precaution, would advise drawing all of the water out of the tanks as an insurance against a cracked cylinder. Alcohol is used as an anti-freezing solution, but even if an anti-freezing solution is used, would go to the extra trouble of drawing out the water, especially if alcohol is used, as it will evaporate in time.

Why Won't The Gas Engine Start?

What makes one more fluent and forgetful of the doting mother's early training than when the gas engine won't go, or will give only one or two explosions. The vocabulary is exhausted, new

words are coined, but nothing doing. It is usually found that the failure to start may be one of the following causes:—

First—There is no gasoline in the fuel tank.

Second—No spark, weak batteries, loose or broken connections.

Third—Excessive back pressure or clogged exhaust.

Fourth—The firing apparatus not working properly.

Fifth—In the winter when the fuel tank is outside, and it should always be there as a precaution against fire, it may be found that the gasoline is too cold to vaporize and it will be necessary to warm the carburetor by wrapping hot cloths around it; never use an open flame.

Sixth—The mixture may be either too strong or too weak.

The writer believes that the usual failure to start may be attributed to one of the six conditions mentioned above.

Some time ago in one of the answers to engine troubles a cause was cited where the engine would not start because the oil cup leading to the cylinder was not open, and there was no oil seal between the piston and cylinder, consequently no compression; and it was pointed out how general lubrication could be very much improved by the use of fine flake graphite known as No. 2, and that the same could be fed to the cylinders by means of a "bug gun," removing the spark plug and squirting a little graphite into the cylinder through the aperture.

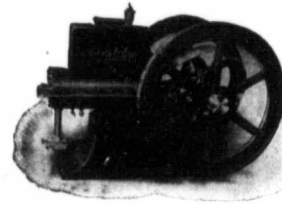
There also has come on to the market a special gravity graphite and oil lubricator which feeds a mixture of graphite and oil direct to the cylinders, thus insuring better lubrication, more power and smoother running.

In this connection it might be well to call attention to the many advantages of flake graphite as a lubricant. A metal surface, no matter how well polished, will always show under a strong microscope many irregularities. It is these irregularities, scraping one over another, and the constant crumbling away which is productive of hot and cut bearings. Flake graphite fills up all these irregularities, building up the low spots and forming over all a thin, tough, veneer-like coating of marvellous smoothness, and if for any reason the lubricant should fail, there is graphite to graphite contact instead of metal to metal, and the parts may be in contact for a long time without danger of their seizing or cutting.

Flake graphite may be put to a number of uses. One can mix

The Manitoba Gasoline Engines

are Great Labor Savers on the Farm



They are always ready for work, in winter as well as summer, are not affected by cold weather as every engine is Hopper Cooled. No large separate water tank with small connecting pipes and circulating pump to freeze up or leak.

Have a perfect Cold Weather Automatic Mixer that requires no priming to start.

The Gasoline Supply tank is carried in the base below the intake valve. No possible chance of Flooding the Engine, Leakage or Waste, as with gravity feed engines.

The hopper, cylinder and base are all cast separate; in case of an accident can be repaired at very small cost. Quite different to those that have these parts cast all together; the latter method cheapens the first cost but not the last.

All small wearing parts are case hardened tool steel (never wear out). Has automatic battery and fuel cut out which insures long life to the batteries and economy in fuel consumption.

Write today for free catalog giving complete description of all sizes from 1½ to 25 H.P. We also manufacture a complete line of Power and Pumping Windmills, Grain Grinders, Pumps, Saws, etc.

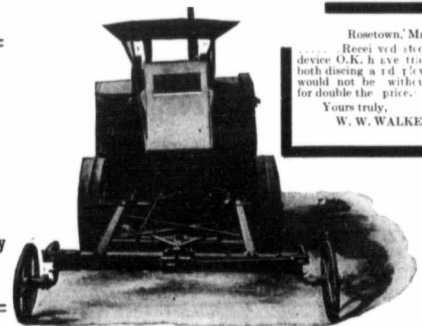
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The Manitoba Windmill & Pump Co.,
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BRANDON, MAN., and CALGARY, ALTA.

The Cuddy Patent Steering Device

The Best in the West

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Rosetown, Man.
Received steering device O.K. have tried it both disengaged and engaged would not be without it for double the price.
Yours truly,
W. W. WALKER.

Why not purchase now and save enough in wages to pay for your machine.

The Western Steel & Iron Co., Ltd.

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Sole Manufacturers

up his own grease, using the graphite in the proportions of a teaspoonful to a pint of grease, though best results will be obtained by using flake graphite greases compounded by some reputable manufacturer.

If one has any piping, a very good compound can be made for the joints by making a stiff paste of graphite and oil, and the connection can be broken at any time without straining the tools or spoiling the joint.

Referring back again to the causes of the engine refusing to start, fifty per cent of these will be found to be caused by no gasoline.

The writer knows of a very learned technical man a short time ago who wished to see how his auto had gone through the winter, and was surprised that his engine would only give two or three kicks then stop. He was advised to examine the gasoline tank, and sure enough it was nearly empty.

It seems as though some men have a hypnotic influence with gasoline engines, and only have to touch them to make them go. A professor who is now at the head of one of our largest Eastern technical schools, tells the story of how he tried to start a gasoline engine which was used to pump water for several cottages. He and his neighbor professors could not make it go. A milkman had observed the proceedings with much interest, and finally told the professor he could start his engine as he had one like it home, and sure enough he did make her go the first time.

A few "dont's" are:—

Don't tinker with the engine and try to improve running conditions; set the valves, etc., unless you are familiar with its design, have a good book of instructions, or a repair shop is handy.

Don't take a light to examine the fuel tank or you will lose it.

Don't neglect an unusual rattle or knock. It is a sign of distress, something is wrong; probably connections are loose.

Don't be satisfied because she runs all right. Read your instruction book, study the names of the parts, and be ready in case you have trouble.

Don't use axle grease in the grease cups. Get a good cup grease for this work. It will cost most at first, but will pay in the end.

Don't fill the fuel tank without first straining the gasoline through a chamois cloth.

Don't screw a cold spark plug into a hot cylinder. Let the cylinder cool, and coat the threads with a mixture of graphite and oil so that the plug will come out easy when you wish it.

Don't let the small boy hang around; he may lose his fingers.

Spring Talk

"Well, neighbor, I guess I've got things shaped up a whole lot better this year than I had last."

"How's that?"

"Why, I lost a whole lot of money last Fall—same as lots of others—through not getting my crop off early enough. Everybody 'round our place worked hard enough last Spring all right, but we were a long way behind some of them with our seeding. Then, along in the Fall when lots of farmers were hustling their crop in, I was waiting for mine to ripen, and when it was ripe, I was waiting for my thresherman to get 'round to me. Well, you know what happened."

"Well, what are you going to do about it?"

"Just this. I'm going to get a tractor and I'm going to own my own threshing outfit. The tractor will get my soil ready weeks earlier than last year, and with the threshing outfit, I can thresh when I'm good and ready. It's got to be that or run chances of another big loss this year and, by George! I don't like 'em two years running. It means good hard plugging and a tough pull to get those two things, but they'll pay me back pretty quick, all right."

Well, what have you done towards it?"

"Why, I've been getting catalogues and booklets from all the best tractor builders, to begin with. Then, I've had lots of time to study them out and make inquiries. Well, I've about decided to get a Fairbanks Oil Tractor now, and the threshing outfit later on."

Send for our special tractor booklet and learn what decides farmers to buy the **Fairbanks-Morse Oil Tractor**



15-30 Fairbanks-Morse Tractor, Breaking.

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Fairbanks-Morse Oil Tractors, 15-30 H. P.
 Gasoline Engines, all types, portable and stationary, 1 to 600 H. P.
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Please send me catalogue describing your 15-30 H. P. Oil Tractor.

Name

Address

CAN THE POWER OF A GAS ENGINE BE RESTORED

In the operation of gasoline engines the attendant is often confronted with the problem of how to get full power out of his engine.

He realizes that his engine is not doing all that it can do or is capable of doing. It is not developing the power it once did, it is not running with the vim and energy that it did at one time. It seems lazy and drags along in a half-hearted slow speed, languid manner under its load. Now, why is this so? What can the operator do to restore to it its best power-giving energy

In the first place, one who has

the care of such an engine must realize that there is a specific reason for the actions of the engine.

It does not go "hobbling" along just for "pure meanness" to tantalize the attendant, as we find certain operators inclined to believe.

An engine in action is very much like a man in action. If a man is sound physically, every organ, limb, and fibre of his body fit to perform its duty normally, then his daily tasks sit lightly upon him, and are a pleasure to perform. But let one of his limbs be broken, or a cinder get in his eye, or his heart miss a beat every

little bit, or a muscle of his back be sprained, or his head ache, or his body be racked with pain, and if he is not completely laid up for repairs, it is readily apparent that he goes about his labor not with his accustomed energy, but with a limp and a lack of interest that at once suggests a discord in his make up. For such a man, we at once become sympathetic, and are ready to offer our assistance, even though we fell our inability to relieve him of his malady or discomfort. In the mental weakness of man, we are not now, and may never be able, to gain complete control over the human organization, because it was designed and constructed by an infinite mind or power whose mysteries are beyond our comprehension. But fortunately for us, the design and construction of the gas engine is the result of human brain effort just

such as we are capable of, and if we are true to our calling, we will see to it that we know the reason why our engine is not doing its best, and why it is not giving its best service.

We have already concluded that it is not in prime condition. All its structural parts but one may be in good order, and if we fail to find that one, and bring it up to a good, serviceable condition, we fail in our duty as operator. It is therefore the operator's duty to know the function of every part of his engine, and to know when it is in proper condition to perform that function. Until he has learned this much, he must expect trouble, and he must expect that his engine will not perform at its best all of the time.

But we have the greatest regard for an operator who doesn't know it all. And while he may fail in some of his duties, because of lack of knowledge, he works out the problems as they come up, and thus by constant effort he becomes a finished artist in his calling and a grand good operator. It sometimes requires much physical and mental effort on our part to see the needs which may be trifling.

We recall an instance where a patient, well meaning fellow had worked faithfully for four weeks trying to start his 20 h.p. gas engine with a blank shot gun powder shell for the initial explosive charge. The explosion lacked just a little of enough force to carry the heavy fly wheels through the first compression stroke. He said he had shot over a hundred shells trying to get the piston over that stroke, but it would always stop just before it reached the highest point of compression and rebound. He felt sure that if it ever went through the compression stroke it would be off on its work. Consequently he would raise on his tip toes in his anxiety to see it go over. When the writer came to his assistance he took his eyes off the engine and watched our movements. After setting the pistons, we inserted the shell, and took the hammer with which to set it off in our left hand, and held our right hand ready for service. When we tapped the pivot with the hammer and the wheels began to roll we took hold of a spoke and with a quick lift at the proper moment helped it over the compression point, and away went the engine up to full running speed. The operator said he felt like thirty cents for not having forethought enough, after so much "fiddling" on his part, to assist the powder shell with a small lift. After this instance he could start his engine easily and needed no assistance.

We give the foregoing illustration to show that to succeed with a gas engine, it is not all in exerting our muscular strength and de-

YOU CAN'T AFFORD TO BE WITHOUT THE

Big Chief Gasoline Engine

Figure what it costs to pump water by hand when hired help is worth \$35 to \$45 per month. Also figure what it is worth to have a tank full of fresh water at all times for the stock. The Big Chief will do the pumping while the men are in the fields. It works all the time, wind or no wind, and hot and cold weather are all alike to the Big Chief. The time lost from the field in pumping water by hand will pay for the Big Chief in one season.

DOES ALL THE WORK ON THE FARM

The Big Chief will grind your grain, cut your feed, run the wood saw, hay press, fanning mill, grind stone, churn, cream separator, washing machine—in fact, it is the handy man on the farm and is ready for work at all times. Made in sizes from 1½, 2½, 4½, 6, 8 and 12 h.p. Write for our illustrated catalog. It tells the story.

THE HARMER IMPLEMENT CO.



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Agents Wanted

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BIG CHIEF
Is the Hired Man
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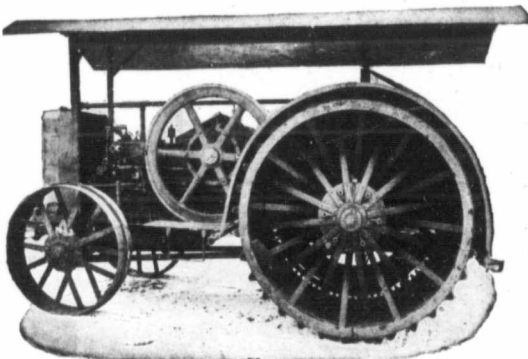
BUY A THIS YEAR'S TRACTOR

The "IDEAL" Tractor for 1912 contains all the good points of our 1911 model, with the addition of several good improvements over last year's machine.

It has the best engine that can be made. Cooling system is of the automobile type, which means thorough cooling with minimum evaporation of water. Steering device pronounced by experts the best yet produced. Power transmission is accomplished in a manner that secures best results.

Having all operating devices handily arranged within easy reach, one man can run the "IDEAL" with ease.

Our latest catalogue goes thoroughly into the construction and operation of the "IDEAL" and also contains valuable information on tractors in general. It is FREE. Ask us for a copy and learn what to look for and what to avoid when purchasing a tractor.



GOULD, SHAPLEY & MUIR COMPANY, LIMITED

Manufacturers of

"IDEAL" Gasoline Tractors Windmills and Pumps of every description.
"IDEAL" Hopper Cooled Gasoline Engines Wood Sawing Outfits, etc., etc.
"MAPLE LEAF" Grain Grinders

BRANTFORD
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CALGARY

pending on chance, but we must exercise our mental faculties as well.

We have, in many instances, succeeded in getting more power out of an engine after mentally analyzing the more prominent symptoms of the trouble.

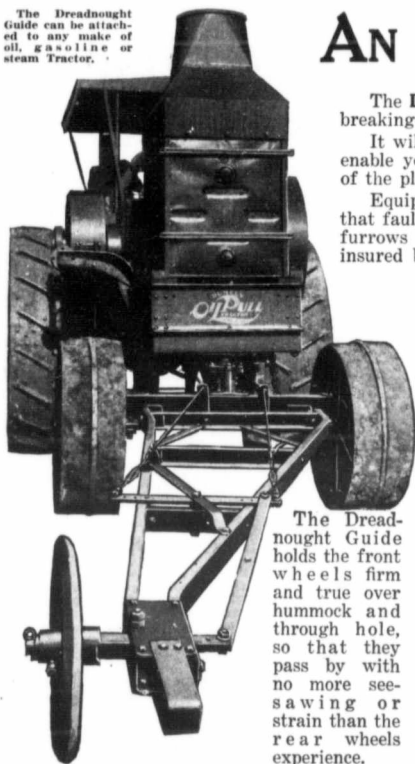
One engine we recall was just barely keeping up a slow speed at less than half load, and the owner was all out of patience with it. But he could not or did not notice that it was only firing about every third or fourth charge that it took. When this was pointed out to him, he said, "Oh, I need a new battery." He got it, but the results were the same. Consequently he and a friend agreed that the battery was too weak and procured another. This did no bet-

ter. Then they called on an electrician who had a storage battery with current strength sufficient to make dozens of igniting sparks at the same instant, but still no better results. They then concluded there was some trouble with the spark mechanism, but failed to find anything wrong there.

When we arrived, we looked over the engine and ignition system carefully, and endeavored to solve out the trouble by a process of elimination. We started by looking at the valves and noting their condition and the time of their action, also their lift and the time of the spark. When we had satisfied ourselves on these points, we looked at the carbureter, then tested the compression, all of

which gave assurance of good condition. We then removed the battery wires from their fastenings on the engine, and by wiping the bare ends over each other our eyes caught the first sign of the trouble. Instead of one large fat blue white spark, there were dozens of little tongues of fire scattering out in every direction. And since the battery had no connection with the engine whatever at this time, we could readily see that the cause of the trouble lay somewhere between the two ends of the wire and the battery. We disconnected the spark coil, and got a better spark without it than with it, but not strong enough for ignition purposes. We requested the owners of the engine to get a new coil, which was connected

The Dreadnought Guide can be attached to any make of oil, gasoline or steam tractor.



The Dreadnought Guide holds the front wheels firm and true over hummock and through hole, so that they pass by with no more sea-sawing or strain than the rear wheels experience.

AN ENGINE GUIDE THAT WILL

The **Dreadnought Guide** will automatically guide your tractor in plowing or breaking more perfectly than any man can possibly do it.

It will make it possible for you to operate both engine and plows *alone*. It will enable you to give your engine the attention it needs or to superintend the work of the plows, as occasion requires.

Equipped with the **Dreadnought Guide**, your engine will turn the furrows with that faultless precision which means so much to the success of a new crop. Straight furrows of equal width—no skips—no cutting-and-covering—all these things are insured by the use of the

Dreadnought Guide

The **Dreadnought Guide** is the most substantial and reliable device known to tractioneers today. It is made of high carbon *channel steel*, securely braced and *bolted* together. No threads to strip, no piping to break, no castings to give way under strain.

The entire construction of the Dreadnought Guide is as solid and secure as the steel structure of a sky-scraper.

It is the only steering device equipped with guide wheel protection. That long steel shoe at the front of the triangular frame does the trick, affording positive protection against an accident to the guide should the wheel drop into a hole or strike an obstruction.

The **Dreadnought Guide** saves Time, Temper, Labor and Money. No traction engine is complete without it—no Tractioneer can do himself justice without the Dreadnought Guide "up in front."

Ask for **Dreadnought Guide** Booklet. Address

M. RUMELY CO.

1954 Dufferin Ave.
WINNIPEG, MAN.

into the circuit where the old one was, and that engine not only went right off, carrying its full load easily at full speed, but had plenty of power to spare. The insulation was burnt through between two turns of wire in the old coil, which allowed a short circuit. In many other instances we found exhausted batteries and full power was restored to the engine by new ones. Cracked exhaust valves leaked out the compression and the explosive force, and the engine could do nothing until a new seat was supplied. Then its power came back like magic.

Worn cams and cam rollers caused incomplete valve action, and the intake and exhaust passages were thus occluded and kept the cylinder choked with dead burnt gases that could not get out and which prevented new ones

from entering. New cams or rollers properly timed would bring back the power, and make the engine fairly "smile" and "bubble over" with vim and energy.

We might go on relating instances of lost power causes, and how to restore power in great numbers, and yet not strike the one that many an operator is up against. And consequently we feel it of greater moment to urge all who have the care of an engine to fully understand that when an engine lacks in power there is some reason definite for it, and the operator who feels himself capable to locate it and then set to work with a will, will soon have the satisfaction of having discovered the cause, and the pleasure of seeing his engine doing its full duty with "snap" and power to spare.

ter, hay press, and his electric light plant, which are all essential to the up-to-date farm. In many cases it saves a hired man, and it saves the housewife much hard toil. It makes farm life more profitable and more pleasant, and is an inducement to keep the boys at home. All boys are more or less interested in machinery, and the energetic boy likes the idea of being the son of an up-to-date farmer, and it makes him proud of his home.

A small building may be erected at a small cost in which the gasoline engine may be put. The shop tools which every farmer should have may well be kept in this building. This building may be erected near enough to the barn so that any necessary machinery may be run there. The farmer can light his house with electricity at a comparatively small cost. He can generate his electricity while grinding, pumping, or doing other work at a very little extra cost.

While great advancement has been made in all utensils used on the farm, as comparatively great change has been made in the construction of gas engines, making them more economical and much easier to operate. Heretofore gas engines have been high priced and complicated in construction, and consequently the farmer very rarely used them, but in the last few years they have dropped in

price and increased in simplicity, thus enabling the average farmer with a few hours' study or a few minutes' instruction from an expert gasoline engineer, to operate most any make of gasoline engine with great success. The time will come in the space of a few years when the gasoline engine will be very essential to the farmer, and no more uncommon than is the riding lister or other riding implements on the farm to-day. In the near future the farmer will put his engine on the binder or header to drive the machinery, and possibly drive the machines entirely. But even if two horses are needed to pull the machine around over the field the engine will operate the binder cheaper than one can feed an extra team and care for them, and in this way the self shocker could well be used. The day is near at hand when the farmer must do all his work economically, and with the least possible cost. The eight-hour day laborer is hard to obtain when he is needed. It remains to the manufacturers to fill this vacancy on the farm, which is swiftly being done by the use of nearly a million engines that are to-day aiding the farmer in his hard, everyday labor. The farmer is coming to the front by the help of inventive genius. The farm is no longer a place of discontent if rightly managed.

THE GASOLINE MOTOR AND ITS RELATION TO THE FARM

W. R. MACEY

The word motor in its most common use is applied to the gasoline engine of the smaller type, usually from 1 to 5-horse power, although they are sometimes larger and sometimes smaller. The motor is used for light work usually, and runs at a much

higher speed than the average gasoline engine. They are especially adapted for use on bicycles, boats, and on the farm where various small articles are to be run. For example, the farmer may run his churn, washing machine, pumps, feed grinder, ensilage cut-

Course in Gas Engineering

Conducted By D. O. BARRETT.

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

LESSON XVIII.

There is perhaps an even greater variation in the design of the various tractor trucks and transmissions than in the engines themselves. It is almost impossible to form any intelligible classification and the best that we can do here is to point out some of the characteristics of each of the separate types.

The first point is the number of wheels. Of course, the majority of tractors are supplied with four road wheels, though there are a few still using three, many adopted the three-wheeled system at first but abandoned it after numerous trials. The one main disadvantage of the two-wheel front axle as usually used is that it is necessary to turn the front axle quite considerably in order to produce a small inclination. This disadvantage showed itself most prominently when the automobile was first developed and we find no machine of the present day using this system. Instead of having the two wheels on the same axle they are arranged to turn separately, that is, pivoted at each wheel so that they may be maintained parallel at all times. This system is now being used on several tractors and is a good substitute for the single front wheel.

The single front wheel is very easily steered as the slightest inclination is immediately felt. The wheel is also placed completely out of the way of the belt. However, the chief disadvantage is that the bearing surface is not sufficiently large nor properly distributed. Were the single front wheel to get into a mud hole or a soft spot, as often happens, the tractor is practically helpless. This was very forcibly demonstrated at the last contest at Winnipeg.

Chain Drive.

The final chain drive to the rear axle is used by only a few makers. This furnishes a very flexible connection and allows the disposition of the engine and transmission upon the truck to the very best advantage without reference to the rear axle. However, chains will wear and stretch to a certain extent. There are a great number of points at which wear can occur, namely, at the end of each link, and these should be kept well lubricated which is an almost impossible task where the tractor is subjected to mud and dust. Some means must be provided for adjusting the chain and taking up the slack as it occurs. Where

gears are used they can usually be kept inside the wheel rim so that they are shielded to some extent from the drippings from the wheel rim, while the chain must necessarily be kept outside and consequently more exposed. The cost of the chain must also be taken into account as the length is considerable while the sprockets are practically the same size as the corresponding gears. Replacement of the links is soon necessary and as the sprockets wear as well it means an expense for repairs a good deal higher than where gears are used.

Single Gear Drive.

Double Gear Drive.

This refers to the final rear axle drive. The usual practice in this country is the double gear drive, while on the Continent the single gear drive is more prevalent. Of course, on steam rigs where the drivers are mounted on the sides of the boiler, it is necessary to drive from both sides but the Continental construction for the steam tractors is to place the rear axle behind the boiler. Where the double drive is used the gears are usually centered on the hub of the driver and brace rods run from the rim of the gear to the rim of the driver. The drive is thus transmitted directly to the rim, the spokes being merely in tension or compression depending upon the construction of the wheel. Having a gear on each side also allows a wider gear face to be used, consequently with less tooth pressure per unit of width. Having only a single gear, means that the power to the one wheel must be transmitted through the rear axle to the hub of the wheel and thence outward along the spokes to the rim. The rear axle will then be subjected to torsional as well as bending strains. The wheels, of course, must be made heavier, flat spokes being generally used with cast steel hubs keyed to the axle. One tractor employing the double gear drive completely encloses these main drive gears so that they may be run in a bath of oil. Here also the drive is from the hub outward.

With the single gear drive the differential must be placed on the rear axle. This means that it will be subject to lower speeds but increased tooth pressures. This necessitates a much heavier construction and also places this most important member where it is subject to any dirt or dust that may be lifted by the drivers.



At 6's and 7's the world is sure to be to him who has not learned to center his effort. We will make—and sell—seventy-five thousand Ford cars this year—because we have concentrated our energies upon the building of one and only one—good car.

And today there is no other car like the Ford Model T. It's lightest, rightest—most economical. The two-passenger car costs but \$775, f. o. b., Walkerville, Ontario, complete with all equipment—the five passenger but \$850. Today get the latest catalogue—from the Ford Motor Company of Canada, Limited, Walkerville, Ont., Canada.

Made in the West = they are powerful and fresh!

GUARANTEED absolutely dependable for gasoline engine ignition. High amperage and a long life.

Ask your dealer for X CELLS or write the factory.

CANADIAN CARBON CO. Ltd., WINNIPEG

ELECTRIC LIGHT

For Your Tractor

ELECTRIC LIGHTING SYSTEM

This is entirely automatic and absolutely guaranteed. Electric dynamo connected to engine or motor charges a storage battery, which furnishes all current for ignition, also for two powerful headlamps which throw a light at least half a mile ahead, and for rear lamps, which show that plows are working properly. Costs nothing to operate. You discard your old gas tank, kerosene, dry cells and your magneto also, if you want to. A fat, hot spark all the time. Complete outfit costs you \$135.00

NEW GAS LIGHTING SYSTEM

A new tank out, resembling a prestolite tank, giving a better light, at only 14 pounds pressure, which you load you self with ordinary carbide. No danger, little cost to operate, and a pure white light, very powerful. Gas is made by its own pressure, and filtered and dried before using. No clinkers, no clogging of pipes, no carbide wasted. Complete outfit of tank and powerful searchlight costs you \$40.00. Absolutely guaranteed.

Anyone can install either outfit. Full simple directions given. Make your tractor run at full efficiency, put on an extra night gang, double your work, cut down that interest on cost of your machine, make the most of your short season. Either system will fit any gas, oil or steam driven tractor made.

WAYNE GASOLINE AND OIL STORAGE SYSTEMS

We can supply you with any type of storage system for your gasoline and oils, self-measuring. Or with a gasoline tank to mount on your own wagon. Keep a check on your fuel. How much are your men stealing, wasting, or losing by evaporation?

WESTERN MOTOR COMPANY

52 1/2 Princess Street — Winnipeg

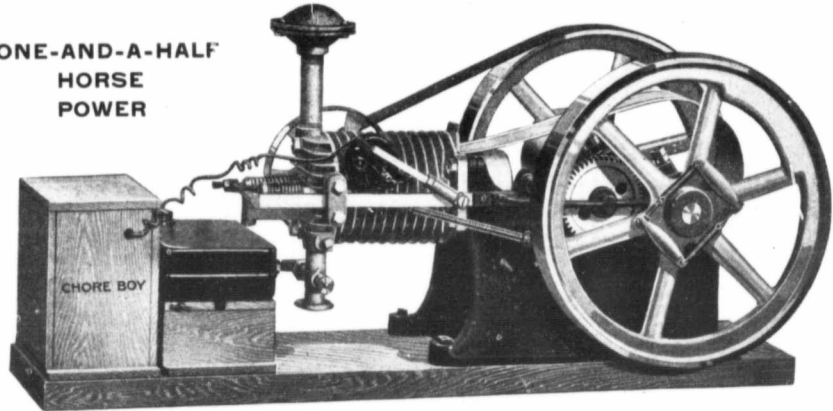
THE CHORE-BOY

That never kicks—is always at hand—always on time—never sick—has no lazy or "vicious" habits. Will cost less than "the common or garden" boy will cost you in a week's breakages and do the work of fifty boys—working every day all the year round without a holiday. Power in plenty for every job around the farm.

SPECIFICATIONS:

- Weight 320 lbs. This is the heaviest 1½ H.P. Engine on the market.
- FEED—Suction.
- SPEED—450 revolutions per minute.
- CYLINDERS—3¼ x 5. This is the largest bore of any 1½ H.P. engine in the world.
- FLY WHEELS—Diameter 17 in. Weight 40 lbs. Engine thoroughly bushed at all points where there is a chance of friction.
- IGNITION—Make and break. All other engines have cheap jump spark.
- COOLING—Air Cooler (Fan).
- CYCLE—Four.
- LUBRICATION—by means of sight feed oilers.
- PULLEY—6 x 4.
- COLOR—Base, green; Fly Wheels, red; Cylinder, aluminum.

ONE-AND-A-HALF HORSE POWER



Write for Complete literature of our Full Line of Farm Machinery

PRICE MARKS A RECORD IN GAS ENGINE VALUE.

CRANE & ORDWAY Co., Winnipeg, Man.

Placing the differential on the intermediate shaft causes it to operate at a higher rate of speed yet the tooth pressure is not as great and the construction is more durable. It is also possible to completely enclose this member so as to make it dustproof.

**Rear Axle, Rotating.
Rear Axle, Non-Rotating.**

With the single gear drive the rear axle must, of necessity, rotate while with the double gear drive it may either rotate or be held stationary. With the stationary axle the bearings for the drive wheels must be in the wheel hubs though the bushings are sometimes provided. As soon as any wear occurs, and this takes place in a short time, the wheels will naturally cant or lean out of their true position, throwing the gears out of mesh and causing undue wear. Where the bearing is directly in the wheel hub the only remedy is a new wheel. Where both wheels are driven the axle may be fastened to one, rotating with same. The other must be loose on the axle but the only movement taking place between the two is that caused by the turning of the tractor and occurs in both directions. Were the tractor to move directly ahead both wheels would turn with the axle. One maker has both drive wheels keyseated so that the shaft may be fastened to either or in

case of an emergency be fastened to both. This is only necessary should an accident happen to the differential or were one wheel to get into a soft spot where it would turn without getting a proper hold. The live axle allows long babbitted bearings in the frame and tends to preserve the alignment of the gearing.

Summing up, we may say the general trend in design is to use the double gear drive with gears arranged so that the driving force is directly transmitted to the rim. The live rear axle is also preferred with the bearings in the frame.

**Wheels—Round Spoke.
Flat Spoke.**

There is scarcely any choice between the round and the flat spoke wheels as regards the number of makers employing either, as they are almost equally divided. Where round spokes are used they are usually tapped into the hub, or else nuts are so arranged that tension may be produced in the spoke. This allows the wheel to be properly adjusted should any looseness occur, or may even allow a rim to be pulled back into shape after an accident.

Flat spokes are riveted at the rim at least, and must be cut to the proper length, as no adjustment is generally provided. For the heavier rigs a "crowfoot" is

Rumely Tank Wagon For Liquid Fuel

THIS tank is exceedingly well made. It will last a lifetime and stand hard service. It is indispensable as a part of the equipment for any internal combustion engine, and will pay for itself in a short time by its saving of oil and labor as compared with other methods of handling.

READ THIS DETAILED DESCRIPTION

TANK—Cylindrical in form, 36 in. in diameter, 10 ft. long, made from best 12-gauge steel, rolled to shape and all seams are closed by our special oxy-acetylene welding process—will not leak, break or separate at joints. Capacity 510 gallons.

FAUCET—Made from best quality brass heavy in weight, ample in capacity, will not leak and is specially constructed so that it can be locked shut.

PUMP—High grade standard make, easy to operate, and will fill the tank in approximately 20 minutes.

SEAT—Regulation wagon seat, with flexible springs, very comfortable.

MOUNTING—The tank is mounted on a rigid T-iron and wooden frame cradle, securely held to place by steel bands which pass entirely around it. The wooden frame is standard wagon bolster size, 38 in. between stakes, so that the Oil-Pull tank can be placed on any ordinary farm truck or wagon. A solid platform is built on top of tank so that the pump can be rigidly attached, and all necessary pipe connections are furnished.

TRUCKS—Best steel wheel construction, equipped with steel drawbar reach with loop in rear for hooking on other vehicles when pulled by tractor. Wheels are 34 in. front, 44 in. rear, 4 in. steel tire, standard 56 in. tread. The special swivel front truck makes it easy steering. Tanks sold with or without trucks.

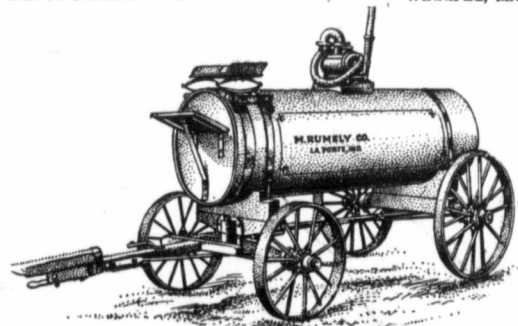
TONGUE—Combination extension for use either with horses or tractor.

FINISH—The Rumely Fuel Tank is finished in a thoroughly workmanlike manner, well proportioned in all its parts, painted a serviceable machine red and handsomely striped.

For further information drop a post-card to

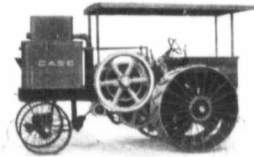
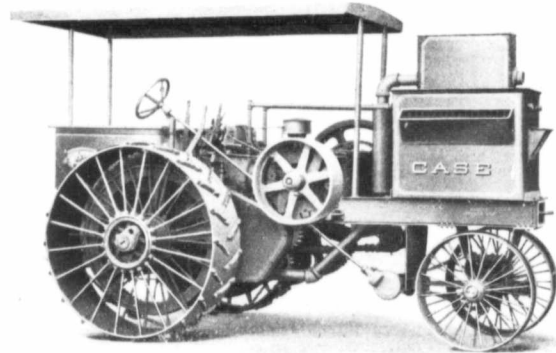
M. RUMELY CO.

1952 DUFFERIN AVE.
WINNIPEG, MAN.



CASE PRODUCTS LEAD THE WORLD

HERE IS GOOD NEWS
for Every Farm Power User
Who Is After Reliable Farm Power
at the Lowest Cost



Normal speed 350 revolutions per minute, rated H. P. 60, maximum H. P. 75. Actual tests have developed 80 to 90 H. P.

Here It Is—The Case Oil Tractor.

It burns Kerosene, Gasoline, Naptha and Distillate. Many new and reliable features are embodied in its construction, all Case-Tried and backed by the Old Reliable Case Policy so well known to all users of Threshing and Farm Power Machinery.

The Case Policy—It has always been the policy of the Case Company to do their experiments at their own expense—not at the expense of the customer. Before a machine or improvement is allowed to go on the market under the Case name, it is tried out time and time again by the severest tests that can be devised—subjected to strains and conditions far more severe than will ever be encountered in actual every-day use, so that when we are finally satisfied to put the name "Case" on anything, you know beyond all question of doubt that you can safely bank on everything we claim for it. So when we say—

"Buy the Case Oil Tractor—it is Best by Test",

we are prepared to prove our statement by actual demonstration. We can't begin to do the Case Oil Tractor justice in this limited space. We therefore urge you to go to the nearest Case Branch House and carefully examine this wonderful, simple and powerful machine. You will find it way ahead of all others in design and construction—as easily controlled as an automobile.

If you can't call at a Branch House, write us at once and we will mail you complete specifications and interesting literature on the 60 H. P. Case Oil Tractor and the 40 H. P. Case Gasoline Tractor.

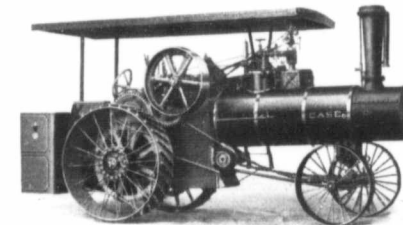
J. I. CASE THRESHING MACHINE CO.
INCORPORATED
RACINE, WIS., U.S.A.

EVERY 40 MINUTES
Of Each Working Day
Someone Somewhere Buys
a **CASE ENGINE**

Sales of CASE ENGINES equal those of all other makes undisputable evidence that CASE ENGINES are the best in the world.

CASE ENGINES

have won their position as the world's leading traction and plowing engines and because of their mechanical simplicity, their low cost of operation and their superior strength, durability, efficiency and power.



Every Case Engine will carry its full maximum load

over rough fields, up hills and through mire and clay. They can be depended upon as no other engine can to do their full capacity of work without annoyance and breakdown. In building Case Engines every possible accident due to careless or inexperienced operators has been foreseen and provided against. No element of chance enters into the purchase of a Case Engine.

Write today for a copy of the 1912 Case Engine Catalogue which tells plainly and truthfully what every Case Engine will do—every statement backed by a 70 year reputation for honest dealing—which explains in simple, easily understood language the superior features of their detailed construction.

Right now when so many are thinking of buying Separators, we want to drive home this fact: that three Case Steel Separators are sold to every one of other makes—and we will tell you why.

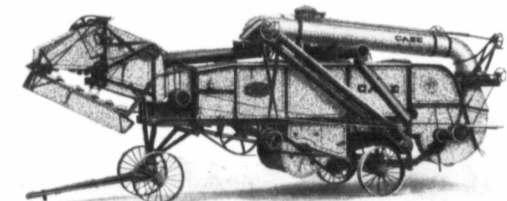
It is because the Case Separator for one thing, lasts twice as long as any other, it being the only separator on the market that is constructed entirely of steel throughout.

It is because the big Case cylinder and concaves give it greater capacity than any other Separator made.

It is because the Case does better work, threshes cleaner, saves the grain and pleases customers. It is because the Case Separator is the simplest in construction and design, more durable and reliable, costs less to operate and maintain, earns bigger profits for owners than any other separator in the world.

Let the experience of the most prosperous and most sought-after threshermen in the world be your guide. Write today for the 1912 Case Threshing Catalogue. It is the first step to threshing success.

J. I. CASE THRESHING MACHINE CO.
INCORPORATED
RACINE, WIS., U.S.A.



CANADIAN BRANCHES, TORONTO WINNIPEG, REGINA & CALGARY

The Stewart Sheaf Loader

Is now at work Loading Stooks and Flax that has stood out all Winter at the following Points:

Sedley, Indian Head, Weyburn, Tyvan, Pasqua, Tugaska and Elbow



R. Moir, Sedley, Sask., says:

"I have given your loader a very severe test in both flax and stooks that have stood out all winter, and to say I am pleased with it is putting it mildly. Your loader solves the threshing problem as I am saving six bundle teams and six pitchforks. My outfit is 44 x 64 Nicholls & Shepherd and a 40 horse power Reeves Engine. I would not again thresh without a Loader on any conditions."

J. H. Francis, Indian Head, says:

"We have used your Loader purchased this spring and are very much pleased with it and consider it a great success."

Write at once for Testimonials

The Stewart Sheaf Loader Co. Ltd.

Factory, Winnipeg.

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The Stewart Sheaf Loader Co., Ltd.
804 Trust and Loan Building, Winnipeg.

Please send me full particulars of the "Stewart Loader" as advertised in the Canadian Thresherman and Farmer.

Name

Post Office

forged on the end of each spoke so as to obtain a greater bearing surface and also to allow the use of two rivets. Of course the flat spoke possesses its greatest strength circumferentially, as the flat side is placed against the hub. For this reason it is especially suitable for single geared drives where the power is transmitted from the hub to the rim through the spokes. Such a wheel may be quite strong as regards its ability to withstand driving strains, yet when called upon to resist forces from the side, such as when turning a corner under a heavy load, or in case of skidding, the wheel may be quite easily dished. To prevent this, cross spokes are put in at intervals. The general practice on the continent, and it is used in this country on one or two machines, is to have all the spokes placed diagonally, that is, a spoke from the right side of the hub would pass to the left side of the rim, and vice versa. For the very best results, it is good practice to use a combination of the two systems.

Mud lugs are usually placed diagonally so as to present bearing surface at all times on a flat surface. To do this it is necessary for the ends to overlap, so that the weight will fall on the one before it has left the other. Where the lugs extend diagonally entirely across the rim, a side

thrust is developed either in or out, depending upon the angle of the lug the moment the wheel begins to slip, and to prevent this two rows of lugs are usually provided, each slanting in the opposite direction. The lugs are of either malleable iron or steel castings, and should have plenty of slope so as not to hold mud and earth between them.

One of the best types of lug in this respect is of the wave form, being pressed from the flat sheet and riveted to the rim. This cleans very readily, as there are no sharp corners whatever.

Frame.

Almost without exception the tractor frames are constructed of either I-beams or channels to carry the engine and gearing. There are two or three firms who use a frame of the built up or trussed type. Of course we might say that all frames are necessarily built up, but these in particular are constructed along the lines of a truss with re-inforced members, both in tension and compression.

I-beams for the same weight and height of beam will, of course, carry a greater load than the channels, but the flanges extending on both sides of the web do not allow brackets, etc., to be as readily fastened as with the channel, as the channel may be turned to prevent its face on either side. I-beams are usually

used where the frame is composed of only the two main members. In some tractors, and more especially the single cylinder, two auxiliary side members are provided to carry the shaft bearings, and for this purpose the channels are preferably used, while I-beams or angles serve as cross members.

In many tractors, to keep the rig as low as possible, the frame members do not run back over the rear axle, and the brackets or bearings carrying the rear axle are usually steel castings, securely riveted to the frame members. In fact it is now the almost universal custom to use steel castings throughout, in order to make the tractor as reliable as possible and to do away with any preventable accidents which would cause a tractor to be laid up for a considerable time, necessitating a great loss to the owner.

Most rigs are provided with either a Z-bar or an angle at the rear of the platform for attaching plows, harrows, etc. When the tractor is hauling a heavy load attached to the rear of the platform there is a heavy side strain developed when turning a corner. This not only tends to strain the platform but also to dish the wheels. A much better method of attaching is by means of the swinging drawbar. The point of attachment of the drawbar to the

frame should be directly under the center of the rear axle to help in overcoming these side strains, and this is issued on many rigs.

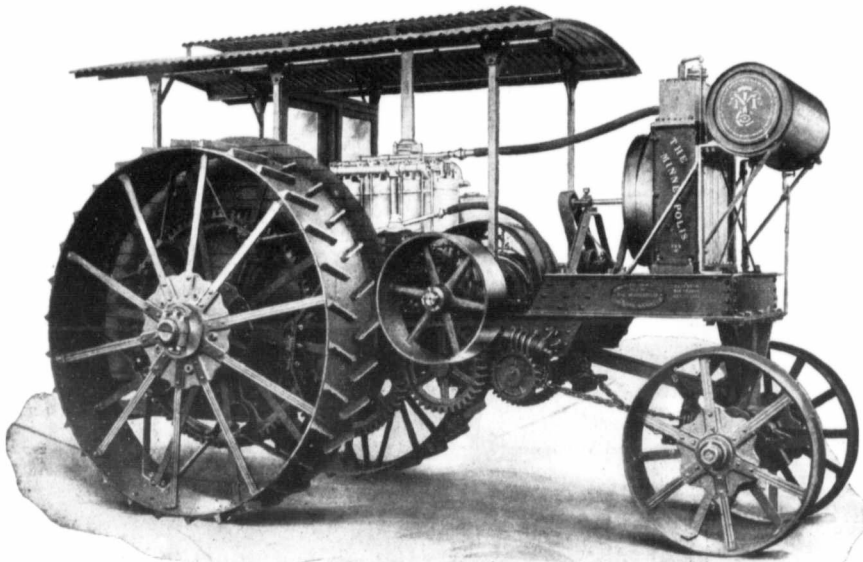
The Best Always.

The best is none too good for Business—the best of everything, the best of ideals, the best and highest standard of humane policy in this government of ours it has assumed. Only the very best will keep it and us off the rocks. To preach at it that it ought to do certain things because these things are prescribed in a code of morals, or to threaten it with law, dissolution, fines, and other punishments, is just to waste our good time. If it goes down dark alleys after vice and graft alliances, or arm-in-arm with San Francisco and Philadelphia rings, and if it continues to let poverty pile up, it will learn in time that these things do not pay. But whether it will learn this fact before it gets crumpled up by a nation where Business is wiser, or before it declines at home among a nation of slum-dwellers, nobody knows and evolution doesn't care.

There are two good rules which ought to be written on every heart—never to believe anything bad about anybody unless you positively know it to be true; never to tell even that unless you feel that it is absolutely necessary, and that God is listening while you tell it.

KINGS IN THEIR OWN RIGHT

**25
h.p.**



**25
h.p.**

Brother Farmer:—If you would make the very most of the unexampled opportunity that 1912 offers for Big Results from Good Farming, your very first move must be to secure the complete equipment represented by the matchless farm machines illustrated above and below,—the

Minneapolis Plowing Tractor and the Minneapolis Standard Separator

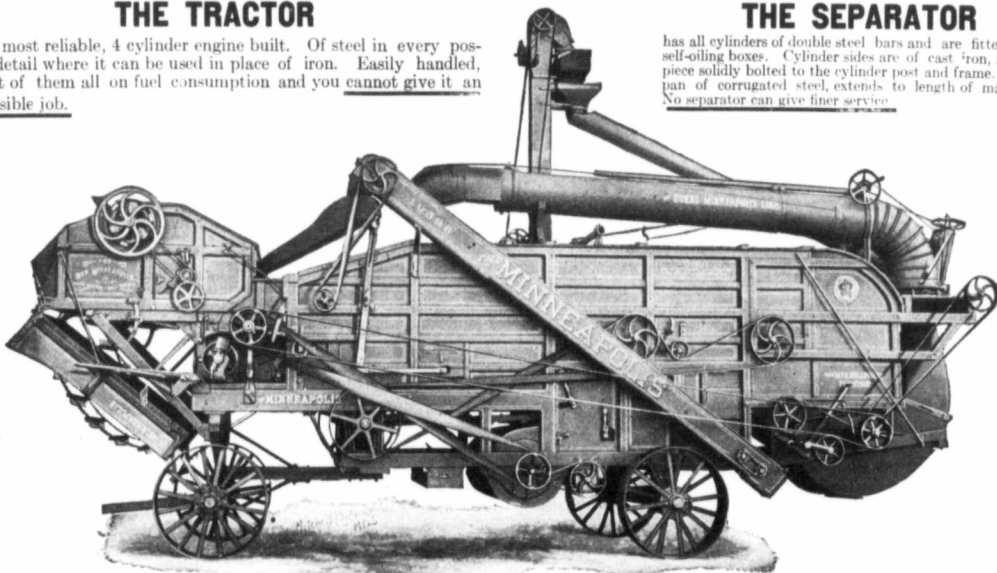
With a life's experience of plowing and threshing machinery and profiting by all past experiments—their successes and failures—the experts who designed and built the "MINNEAPOLIS LINE" have produced the last word.

THE TRACTOR

is the most reliable, 4 cylinder engine built. Of steel in every possible detail where it can be used in place of iron. Easily handled, easiest of them all on fuel consumption and you cannot give it an impossible job.

THE SEPARATOR

has all cylinders of double steel bars and are fitted with self-oiling boxes. Cylinder sides are of cast iron, in one piece solidly bolted to the cylinder post and frame. Grain pan of corrugated steel, extends to length of machine. No separator can give finer service.



WRITE AT ONCE FOR COMPLETE ILLUSTRATED LITERATURE TO

GEO. E. DUIS CO. Manufacturers' Agents **Winnipeg**
Office and Warehouse 753 Henry Ave. Box 456

TRACTION PLOWING

AS TOLD BY THE MEN WHO DO IT

On this and the following pages will be found a number of letters from traction plowmen in Canada West, the originals of which are on file in our office. We have inserted the letters just as they came to us, and we will, therefore, not hold ourselves responsible for any of the opinions or criticisms contained therein. Should anyone disagree with the statements made, we would be pleased to offer them the use of our reading columns for the purpose of criticism, etc.—Editor.

Burns Grass off Before Plowing.

I received your letter asking for information regarding my experience in the field with an engine gang plow outfit, and will say that I am using an American Abell 32 horse power steam engine and a 12 bottom Cockshutt engine gang 14-inch, which is giving me entire satisfaction.

In the fore part of the first season (1910) that I ran this outfit I ran only a day shift, pulling 10 plows, making 9 and 10 rounds on one mile stretch, thus making an average of 26.80 acres per day for about 10 or 12 days. Then I got two more plows and put on my frame and started to work night and day, taking the night shift myself and had a good man on the day shift. We would make from 14 to 16 turns a day on the mile run, thus making an average of about 50 acres for a week or so, then our trouble started; it got so dry and hard that we could not keep the plows in the ground, consequently we made poorer time cutting our average down to between 38 and 40 acres a day. We then broke a 5-inch counter shaft, which was replaced with a 6-inch, taking some ten days or so, including time waiting for same to arrive from Toronto.

In running night and day I use a crew of eight men and a cook, consisting of two engineers, two men, one for each shift to steer the engine while at the end of the furrow, the engineer takes the steer wheel and the steer man takes the plows out and puts them back in again.

I generally burn the grass off from the ground in patches of from 80 to 100 acres at a time, so it will not bother the plows. In this way it does not dry out too much before I get it plowed.

I keep a blacksmith to sharpen plow shares, and during the time we take coal and water at the end of every round, he can change about two shares and look after any other little thing that may need his attention, thus keeping the plows in good shape at all times.

The coal that I use is not a very good steam coal, yet I get very good results comparatively. It will run from eight to ten acres per ton on double shift work, while 7 or 8 on single, getting better results from the double shift, from the fact that

I do not have to bank the first or get up steam as the boiler is always hot.

I have a 12 barrel tank for hauling water, and I use it full to every round of the engine on a mile stretch, so in order to have plenty of water on hand with one team of 3 horses I must need find water not further than 1¼ miles from my work.

One man with six horses can supply me with coal for night and day shift, as I haul direct from the mines at Carbon, Alta. I pay \$2.50 per ton at the mines,

iron, the long end running clear through with a nut on to draw the logs. Then behind this are three sets of discs, consisting of an out-throw and in-throw, hitched close up behind, making things more compact, also leaving plenty of room for good work. The front discs and drills are equipped with tongue tracks; also notice 2 x 4 sway-braces to keep all machines in proper place, thus avoiding one interfering with another. These machines are all hitched direct to a heavy chain of the required

gine, which is a good economical engine, but did not use them, as the engine runs heavier and guides harder with them. I have a ten frame Cockshutt plow with eight rod bottom, but intend to put on two more bottoms this year. There were only two of us, my brother ran the engine and I did the steering, letting him turn the corners while I raised the plows. I hauled all the water. He would oil, look over the engine and plow, fix the fire, while I got a tank of water. Sometimes he would make a round by himself.

We were breaking our own land, so did not try to see how much we could do, but how good we could do it.

We hauled out a lot of coal in the spring, using two teams, piling it on the ground. In the morning we would load up enough coal for the forenoon, and take it along with us to one end of the field where we could run the engine alongside of the wagon and fill the coal box, and do the same at noon for use in the afternoon. We would leave the team hitched to the tank wagon, so it would be handy to fill tanks on the engine. We used from four to five 12-barrel tanks a day, and about 3,000 to 3,500 pounds of Edmonton coal per day. We are intending to use straw this season, as the engine is a fine straw burner.

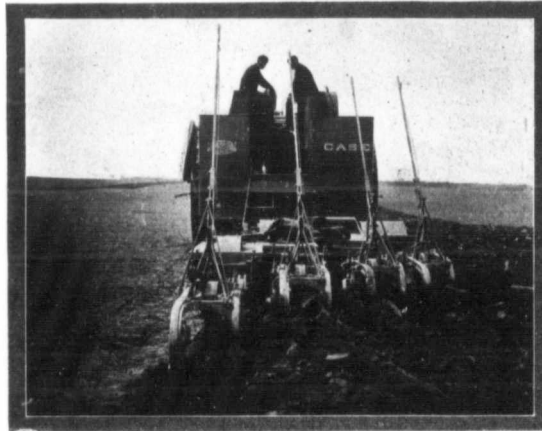
Plowing is far harder on an engine than threshing as it has to move over the rough ground with a heavy load. We had good luck and did not break anything on our outfit.

The coal cost us about 85c. per acre. As to other expenses I think the most of them get it too low, as you must figure interest on investment, also 10 p.c. for depreciation on the value every year; also the use of horses, harness, wagon and repairs, your own labor, etc.

We did our discing with the engine, pulling 9 discs double in discing, at the rate of ten acres per day. We double disc 100 acres with one ton of steam coal, costing \$10.50.

There are more gasoline tractors than steam in this locality, but I think the steam is the best. There is less vibration and you can pull a heavier load.

Yours respectfully,
Arthur Peterson.
Luseland, Sask.



Case John Deere.

making it cost me on an average of \$5 per ton in the field.

I have had the question asked me, which is the harder on an engine, plowing or threshing? My experience is that threshing is no work at all on an engine compared with plowing. Most any old thing will thresh if in the care of a competent man, but the best is none too good for plowing, or threshing either for that matter.

Now in regard to the discing and working up the land, you will find enclosed a rough sketch of the apparatus I used last spring, which put the ground in fine shape and left a good seed bed. I have used this for working ground that was broken the year before, also following new breaking for a flax crop with equally good results. It consists of one 24 foot log 12 inches in diameter and three 10 foot and three 14 foot coupled to the long one, with heavy chains, say ¾ with staples made from ¾

length. Anyone getting this put together as shown in the diagram will surely get good results. As I said before, I used this rigging last spring with entire satisfaction.

In case the logs are not to be had, railroad rails may be used instead. This can be made any size to meet the requirements of the power available. I will enter this sketch as a contestant for the prize offered by you.

Hoping this will meet with your approval, I am

Yours truly,
A. R. Strang.

Spokane, Wash.

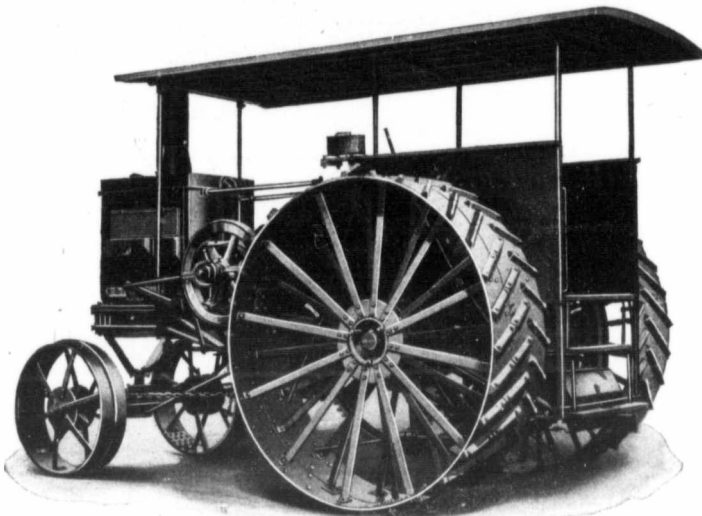
Coal Costs 85 cents per Acre.

In regard to traction plowing will say that the spring of 1911 was our first attempt. I have run engines in threshing and done some road grading for the past nine years. My brother and I own a 30 horse power Russell general utility simple en-

They Will Meet Your Requirements in a Most Satisfactory Manner.

The season of 1912 will be an epoch of mechanical power farming. Are you going to be one of the far-sighted up-to-the-minute farmers and line up with the "progressives" in agriculture? It is unquestionably a profitable method of farming. Dispose of the greater part of your horses—turn the many acres now used to feed these animals, over to the raising of grain for market. It will take but a very short time to convince you that mechanical power farming is "the way." Of course, be sure you buy the best gas tractor built—the **Aultman-Taylor "30."** Built on correct principles; has straight spur gear drive throughout; accessibility of all working parts; mechanical force feed; individual bearing oilers; a motor with little or no vibration; three distinct methods of starting; single lever control, forward, reverse and belt drive being operated by one lever; simple and efficient cooling system, will not freeze and requires no power from the motor to drive it; a truss frame construction relatively stronger than that used on a locomotive.

If interested, a postal is all that is necessary.

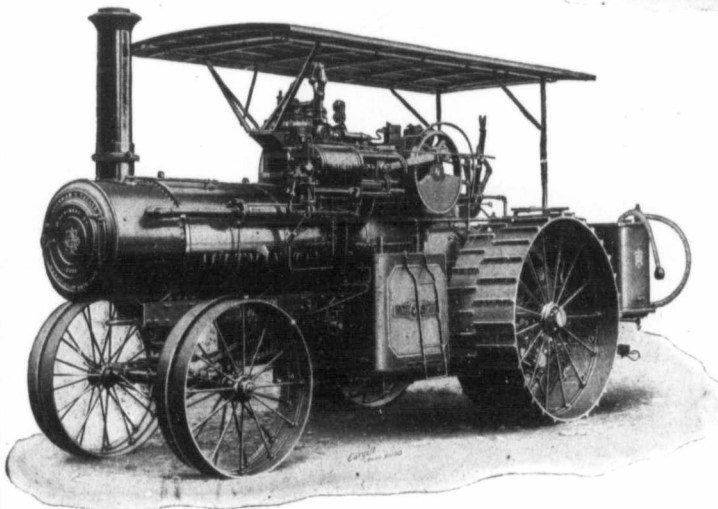


EQUIPPED WITH SELF-STARTER.

A Traction Engine That is Correctly Built.

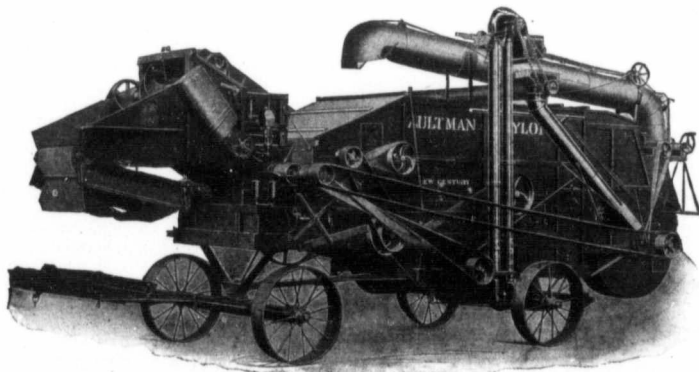
Engine mounted independently of boiler; double geared; large circulating water bottom boiler with an exceptionally deep fire box; flues beaded at both ends; proper wall space between flues; fire and ash pit door openings made by flanging the plates instead of using the undesirable cast ring commonly used in cheaply constructed boilers; interchangeable grates, large water carrying capacity; good, substantial hitch; economical in the use of fuel and water; cast smoke stack; full length, live axle.

An engine that is always on the jobs.



Write us to-day for Catalog.

The International Harvester Company of America, Canadian Sales Agents for "New Century" Separators.



The Aultman & Taylor Machinery Company

MANSFIELD, OHIO.

Sales Agencies: Minneapolis, Minn., Calgary, Alta., Regina, Sask., CANADA

Power Farming Equipment

Including BINDER HITCHES, DISK AND SEED HITCHES, PACKERS AND WAGON TRAINS.

Also and always the famous
CASWELL ADJUSTABLE BELT GUIDE.

Caswell Disk and Seed Hitch.

Our Binder Hitch is Automatic, Strong, Simple and Cheap. It works perfectly without a man on a binder. Our Disk and Seeder Hitch is built in different sizes, for any number of machines. Our wagons will carry 6 tons and hold any tractor engine over built. Our GOOD Old Belt Guide is still the best on earth. Keep up-to-date and send your address to-day for catalogue with full description and prices.

CASWELL MFG., CO.

Cherokee, Iowa.



Binders in Operation at Gadsby, Alberta.

Keep up-to-date and send your address to-day for catalogue with full description and prices.

A Good Harrow Hitch.

Replying to yours of recent date, will say we operate a Rumely Oil Pull 30-60 horse power. We had fairly good luck with our tractor and a Cockshutt ten bottom plow, but we only pulled 8 bottoms while breaking, for it was too wet this season for doing that work. We got our outfit about the middle of May, which was a little too late to do very much breaking, although we broke 420 acres and summer fallowed 130 acres, and did 520 acres of discing. In discing we went over it twice with a double cutter.

In regard to cost per acre, we figure about \$1.14 per acre for breaking and discing and harrowing all complete, and as far as breaking being harder than threshing, will say that breaking is a little harder on the engine because there is a big load to draw and a steady pull.

With regard to fuel we used about 70 gallons a day of Silver Star kerosene and one barrel of water in two days, while discing and three-quarters of a barrel while we were breaking. While we were discing we pulled five 8-foot discs and 8 sections of lever harrows loaded down with timber. This outfit of disc harrows we hitched to a rack supported by two bull wheels of a binder. The rack was made of a 6 x 6 24-foot long for a beam and a 4 x 6 18-foot long for a middle draw bar, and braced with a 4 x 4 14-foot long set on an angle.

In the spring we intend to make our hitch a little wider, so we can hitch four drills to the rack for doing our seeding.

With regards as to whether the steam or oil tractor is used most extensively in our neighborhood, will say it is about half and half.

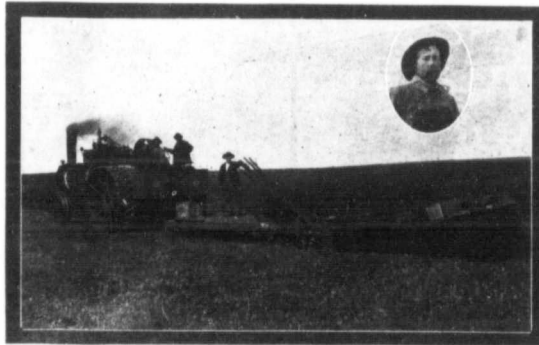
With regard to hitching our harrows to the rack behind the disc, we haul them all in one string, connected to a 1½ inch gas pipe and hooked to the rack with logging chains at each end and in the middle, which made a strong rig of harrows.

As I have told all of my experience in working an engine, I will tell a few things about getting out of mud holes or getting stuck in low places. I have lots of experience in that,

but have found a very good way out by taking a cable about 50 feet long, bolt it to the drive wheel and hold the other end by a crowbar driven into the ground about 1½ feet.

With regard to operating our outfit, we use only two men to do everything, including our plowing, hauling fuel; tending to the four horses, etc., and while discing one man operates the outfit.

Wishing to remain
Yours truly,
Miller Bros.
Glenside, Sask.



Threshing Mere Play as Compared with Plowing.

Regarding my plowing in 1910 would say that we commenced plowing April 6th, having traded our Reeves Cross Compound 32 horse power engine for one of the same make and same size and steel gear. We plowing during the year of 1910, nineteen hundred acres. Our plows are the Cockshutt make, and we drew nine plows all the time, and in spring breaking part of the time we had a roller behind and rolled the sod down as fast as we plowed, leaving the ground all ready for the drills. This we found worked very fine, unless sometimes the ground was too damp and sticky, and then we would draw a float behind the plows instead.

When plowing summerfallow we always draw a roller behind our plows, which leaves the ground smooth and level.

One man attends to the engine and another the plows and we use one tank and team and one man draws the coal and usually does the cooking and gets the feed, etc. We usually used about nine to ten tanks of water per day and about 3,600 pounds of coal.

Regarding the work on an engine. Would say it is a great deal harder on an engine than threshing; in fact threshing is only play compared to plowing and that the life of a threshing engine would be at least three times as long as a plowing engine. We have been running this kind of machinery in Saskatchewan for the last five years threshing in the fall and would say that our engine runs from the time the frost is out deep enough until it comes again in the fall. We use a Reeves Compound Separator 40 x 63, Hawkeye feeder and Uncle Tom stacks the straw with high wagon loader of the Perfection pattern.

I will send you a small photo of our rig at work last year. The roller was not attached as it was too wet, but was being drawn as close behind as possible, which was only about one round. You can see how smooth the sod is.

Yours truly,
I. N. Young,
Drinkwater, Sask.

Steam Ahead in this Locality.

We commenced steam plowing in the spring of 1908. With a Case 25 h.p. compound engine and a Cockshutt gang we bought a ten plow frame, with eight breaker bottoms. We only plowed about four hundred acres that year.

We hired an engineer, and I fired and ran the plows myself. The second year I ran the engine, and hired a fireman. We plowed about six hundred acres that year. We did very well, but the 25 h.p. engine was too light for plowing.

In November, 1909, we bought another section and a half of land, and I got a contract to plow 960 acres, and put it in to winter wheat the following year. Then we bought a 32 h.p. Case plow engine, and put two more plows on our frame. We plowed about 250 acres for ourselves.

On the 17th of May we commenced on our contract, pulling ten plows and a Campbell packer. We plowed half a section in nine days with one crew.

I ran the engine myself, and kept a fireman and plow man. As we had to haul the water nearly three miles and all up hill, we had to keep four horse teams to haul water.

On the first day of June the crown sheet of our boiler dropped. Then we went back to our 25 h.p. engine, which of course was not so fast, but we plowed 300 acres in three weeks, pulling seven plows and a packer, while the Case Co. repaired our 32 h.p. boiler.

After we finished plowing on our contract we still had a half section not disc'd or seeded, and as we had to disc it four times and harrow once we decided to use the engine, so we hooked on twelve half section in four days and a half.

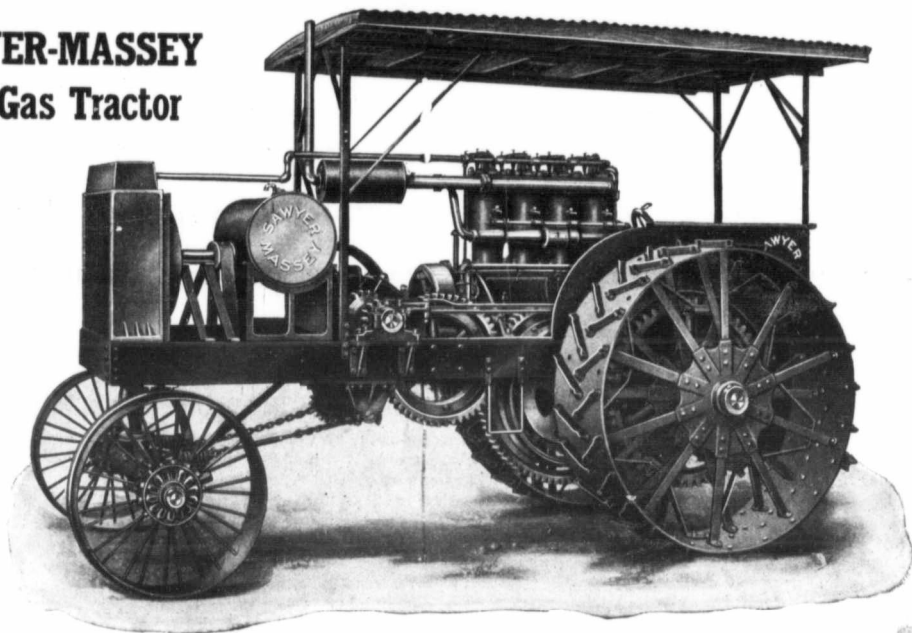
We then plowed 300 acres more for ourselves, after we finished the plowing we disc'd it length-wise four times and harrowed it.

Two Farm Power Plants

The SAWYER-MASSEY 22-45 h. p. Gas Tractor

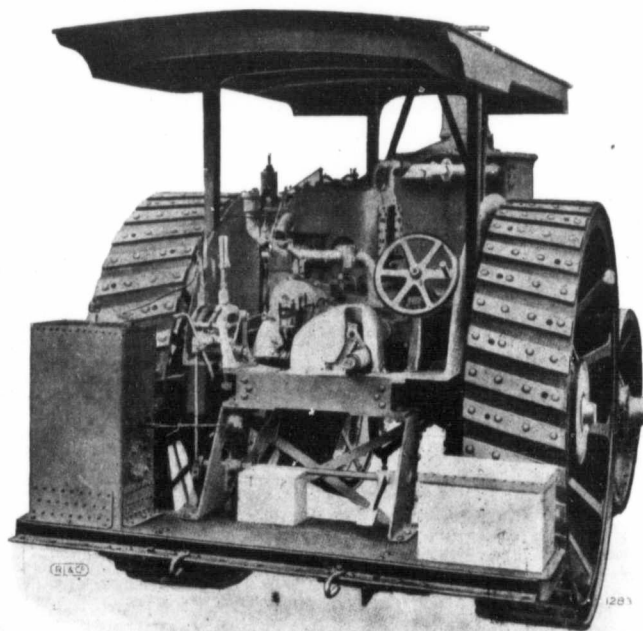
Does it not impress you as an engine that could accomplish anything within the capabilities of mechanical power?

Such is the fact and if you will get its record, we will establish its character from the mouths of your own neighbors.



Their Appearance Is Impressive

Their Plowing Record Is Superb



The BRITISH COLONIAL 16-35 h. p. Gas Tractor

Also Made in Size 32-70 h. p.

With all the 'bull-dog tenacity of a piece of English-made Machinery, its adaptability to all the difficulties of plowing in the stiff gumbo of the Western Prairies, has won the unqualified satisfaction and praise of every man who has used it. It is not possible to excel the quality of material and workmanship in the construction of the engine and the character of its work is unrivalled.

Write for complete literature.

NOT IN A COMBINE

SAWYER - MASSEY Co., HEAD OFFICES AND FACTORIES **Hamilton, Canada**
Branches: Winnipeg, Man. and Regina, Sask.

For Every Farmer A Moody Threshing Machine

It's for the Individual Farmer

Has a reputation covering three generations

Threshes Flax, Oats, Wheat, Barley, Rye, and cleans well

Its capacity is 600 to 1,000 bushels per day

An 8 to 10 h. p. Gasoline Engine will operate it

Write for Catalog "R"

The Matthew Moody & Sons Co., 409-411 Nanton Bldg., Winnipeg, Man.

Then we hooked on eight sets of discs and two sets of 32 ft. harrows and three 22 disc press drills discing twice, harrowing twice and seeding all at one operation and doing the work of sixty head of horses.

We seeded five hundred and fifty acres in a week.

In the season we broke and seeded 1,560 acres besides plowing 50 acres for spring crop. This last season we only plowed about four hundred acres, and discd about 125, as we could not get good coal.

When plowing hard we use about three tons of coal, and discing about two-tons per day. It is hard to estimate the exact cost of plowing, as some months repair bills run high, and when the ground is dry, it costs a great deal more to keep the plows in shape. We always use the shares as long as they will work good, and the plowman changes them while we take water.

On a mile stretch (two mile round) we use about twelve barrels of water, pulling the ten plows and packer, as it is pretty heavy plowing here.

We get four dollars per acre plowing. A photograph of our 25 h.p. engine pulling seven plows and packer appeared in the Traction Plowing number of the Canadian Thresherman last year.

In regard to threshing we commenced threshing with a 14 h.p. and a 28 x 50 Case Steel Separator. Hand feed and straw carriers in the fall of 1906.

The following year we got the 25 h.p. engine, and put a feeder and blower on our self as the horse power was too slow for the amount of work we had to do. Although the separator was small we did very well, and run it three seasons.

In the season of 1909 we averaged 1,600 bushels of spring wheat per day for three weeks, and threshed 85,000 bushels in the season. The season 1910 was a dry season here, and the crops were light so we sold our small engine and separator, and did not

thresh. Last season we bought a new 40 x 62 Case steel separator, and threshed 105,000 bushels of grain.

We threshed as high as 3,543 bushels in one afternoon.

Threshing is not so hard on an engine as plowing. There are a few gasoline engines in this part, but gasoline is so expensive, and coal and water cheap here, the steam engine is more economical.

We are, yours very truly,
Cridland Bros.

Steam Satisfactory.

Your communication to hand regarding traction plowing, and in reply may say we purchased in 1908 a Nichols Shepherd 20 h.p. traction engine, and threshed for three full seasons before doing any plowing, finishing the third sea-

son, and waterman with one team, using an average of 40 to 45 bbls. of water per day, and burning Edmonton coal, the cost of same averaging 65c per acre. Our engineer costs us \$4.00 per day, fireman \$3.00, and waterman and team \$4.00 per day. We consider engine plowing a little harder than threshing, and estimate our cost per acre at about \$1.75 per acre. We have had no cultivation experience with engine except plowing. With what little experience we have had, I may say we consider traction plowing ahead of horse power, on account of being able to get the ground turned over at the proper time, and also able to do a more even job. Yours truly,

W. S. Geddie,
Ruddell, Sask.



P. & O. and I. H. C. Getting the Prairie Ready.

son or the fall of 1910 with about 150 acres of plowing.

This season we made a business of it on our own place, doing about 350 acres of plowing without a cent's worth of repairs to our engine, and left it in good shape at the finish. I might say this season was rather against traction plowing in this section, it being so wet, but in weather at all favorable we could average 15 acres a day with a Cockshutt six furrow 14 inch bottom plowing, averaging 7 inches deep.

Our crew consists of engineer,

How to Look Well.

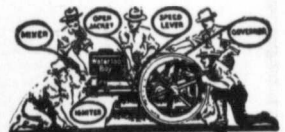
Look in the glass, and if the corners of your mouth are drooping and you look unhappy, alter your expression at once. Think of the pleasantest thing that has ever happened to you; the kindest thing ever done for you; the merriest time you ever had in your life. Then send out the most generous, sweetest, and most helpful thought you can think of to your friends.

No man can afford to do that which he ought to do.

THE IDEAL CREAMERY.

The Ideal Creamery Company, of Portage la Prairie, are finding trouble in procuring all the cream they require to cover the demand made upon them for butter and ice cream, and, like Oliver Twist, are "hollering for more." Since starting business in the thickly populated district of the Portage Plains, they have had phenomenal success, and their output has increased at a rapid pace from day to day. They are now advertising for cream, and we have pleasure in supporting them in the promise they give to shippers of complete satisfaction and punctual bi-monthly payments.

Little self-denials little honesties, little passing words of sympathy, little nameless acts of kindness, little silent victories over favourite temptations; these are the silent threads of gold which, when woven together, gleam out brightly in the pattern of life.



The Waterloo Boy has all of the good points that go into any gasoline engine besides many exclusive patented features. A few day's trial will enable you to recognize the superior points that make the

Waterloo Boy The Best Engine for Every Conceivable Purpose.

OUR SPECIAL Waterloo Boy One-Man Oil Tractor, 4 Cylinder, 25-30 H. P. Three Speed Sliding Gear transmission. Weight 7000 lbs. The Ideal tractor for small farms—will replace 16 Horses. Send for catalogs and price lists.

BURRIDGE COOPER CO., LTD. Winnipeg, Man. Regina, Sask.

CANADIAN AGENTS
WATERLOO GASOLINE ENGINE CO. Waterloo, Iowa.

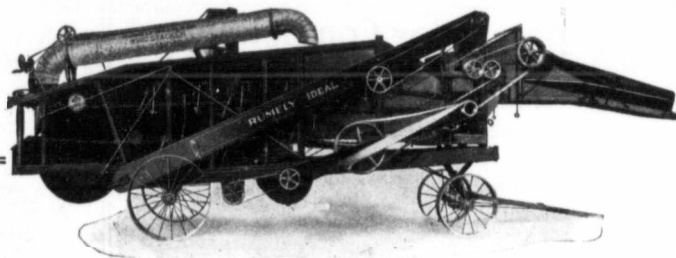
WARRANTY 40,000 MILES THE QUALITY LINE

Burridge Cooper Co., Winnipeg.
Please send me Catalogue and Prices of the "Waterloo Boy" as advertised in Canadian Thresherman and Farmer.

Name

Post Office

Rumely Separators Separate You and Separator Troubles



Right Hand View Rumely Ideal Separator

Rumely Threshing Outfits

They are *job-takers* and *money-makers*. Both ends *Save* and *Earn*.

At the power end, the *Rumely Steam Engine* steams easily—saves fuel, water and labor. Being simply built, strong, rigid and durable, it eliminates frequent stops and waits, saves time, cuts repair bills and greatly increases ultimate results.

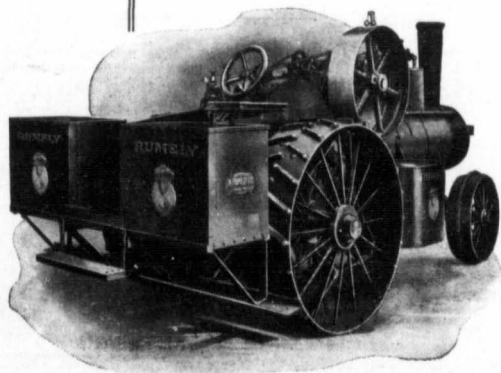
At the separator end, the *Rumely Ideal* and *Ideal Jr.*, may be relied upon for clean, fast, steady, thorough and dependable work. Every adjustable part and bearing is on the outside. Adjustments may be made while the machine is in motion. Daily oiling may be swiftly and safely attended to.



The inclined chain rake, extra length of straw travel, extra long chaffer and heavy cylinder bearings, all insure a smooth-running machine of big capacity with good saving and cleaning qualities.

We can supply Rumely *Big* Engines and Rumely *Big* Separators for the man who has *Big* work to do—or smaller engines and separators for those who wish only individual outfits.

"Power Farming Machinery" the 59th Annual Catalog of the Rumely Line is the most worth-while Catalog of farm machinery ever issued. You'll want a copy—to learn more of Rumely Goods and Methods. Your name and address on a post card will bring you a free copy post-haste, post-paid. Address



Rumely General Purpose Steam Tractor

M. RUMELY COMPANY

1955 Dufferin Ave.

WINGNIPE, - MAN.

Rumely Separators Separate You and Separator Troubles

Winnipeg Motor Competition July 3-20, 1912.

The Winnipeg Motor Competition is now an event of world importance. From a mere exhibition attraction it has grown into an event of the utmost moment to the farmers of Western Canada.

The contests that have been held have resulted in a better class of tractors being built, and it is safe to say that through the Winnipeg Motor Contest the fuel consumption of the average tractor has been reduced 25 per cent.

The contest for 1912 promises to be bigger and better in every way than any that have preceded it. A building will be erected to accommodate the brake tests, and the equipment for running these tests will be more complete and up-to-date. It is also fair to assume that the number of tractors entered will be far in excess of last year, and it behoves every one to look out for some "dark horses."

In addition to the motor competition an engine plow competition will be put on. This is a big step in advance. The engine gang has become a very common implement upon the farms of Western Canada, and a demonstration by the various makes should prove of untold interest and value to the farmers. The engine gang bears a very close relationship to the tractor. It remains for the 1912 plow competition to determine just how close.

Below will be found the new rules and regulations, as applied to the 1912 competition. Study them carefully and then come to Winnipeg and see them worked out.

1. The entries shall be classified as follows:—

- (a) Gasoline Engines whose piston displacement is 300 cubic feet per minute and under.
- (b) Gasoline Engines whose piston displacement is over 300 and under 500 cubic feet per minute.
- (c) Gasoline Engines whose piston displacement is 500 cubic feet per minute and over.
- (d) Kerosene Engines whose piston displacement is under 500 cubic feet per minute.
- (e) Kerosene Engines whose piston displacement is 500 cubic feet per minute and over.

(The piston displacement to be calculated on a basis of a piston speed of 700 feet per minute, and to be equal to a total piston area in square feet multiplied by 700).

Steam Engines.

Where A—piston area in sq. ft.; P—boiler pressure and 450 is taken as a standard speed.

- (f) $A \times 450 \times P$ 90 or under.
500
- (g) $A \times 450 \times P$ over 90 and
500 under 100
- (h) $A \times 450 \times P$ 100 or over

Prizes in each class shall consist of:
 First Prize Gold Medal
 Second Prize Silver Medal
 Third Prize Bronze Medal

In all classes where there is no competition a diploma of award only may be given, upon which will be set forth, together with the number of points scored, that it was the only entry in the class.

ENTRIES.

2. All entries must be made on or before June 1st, 1912, and must be made on the official form, with all data filled in accurately and accompanied with an entry fee of \$50.00 for each entry.

3. All entries must be accompanied by an affidavit that the information therein is true and that the engine in question is from their regular stock, not being built specially for competition. A blue print or photograph of blue print, of the boiler, with the approval stamp of the Alberta Inspector thereon, must also accompany the entry.

4. Each entry shall be allotted an official number, which shall be displayed during the competition.

5. Any firm or individual shall not enter more than one engine in each class unless the engines be radically different in construction. Such difference being understood to apply to the power equipment and not to piston displacement.

6. If the same type of engine is entered in both gasoline and kerosene classes, the identical engine may be used and operated in both classes, provided no change is made of parts or equipment, but there shall be a separate fee for each such entry.

7. Should the Judges find the entry data inaccurate in any particular, they may, at their discretion, rule the engine out of the contest. Competitors shall state at time of making entry the number of bottoms with width of furrow they purpose using in plowing test, so that ground may be surveyed in good time.

CONDITIONS.

8. The fuel shall be that furnished by the Exhibition Association at current prices at Winnipeg, approximately:
 Gasoline, 19½¢ per gall. of 277 cubic inches.

Kerosene, 14½¢ per gall. of 277 cubic inches.

Soft Coal, \$8.50 per ton of 2,000 lbs.

Wood, \$6.00 per cord.

9. Each competitor must have sufficient staff for the care and running of his own entry.

10. Two men only, except observers, will be allowed on the steam engines during a test; one an engineer and one a fireman.

11. Two men will be allowed to start the internal combustion engines; after starting, one man only, except observers, will be permitted on the engine. If more men are needed the engine will be penalized 10 points for each man.

12. No other person to be allowed on or close to the engine except the official Judges and observers.

13. The names of the operators to be furnished the Judges at commencement of test, and the same operators to handle the engines during all tests.

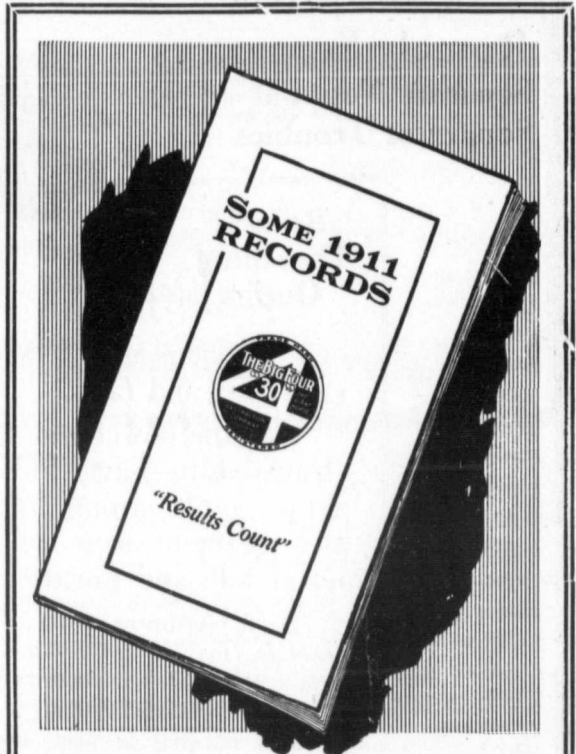
14. One man only, except the official Judges and observers, will be allowed on the plows.

15. The plows, belts, chains, water-tanks, sufficient recording dynamometers for their engines, with sufficient charts and such other things as may be required during the tests, must be supplied by the contestants.

16. All instruments, including dynamometers, shall be deposited with the Judges on the arrival of the engines on the Exhibition Grounds, for testing, and shall remain in their possession until all tests are completed.

17. All engines must be on the grounds not later than July 3rd, 1912.

18. Each engine shall be allotted a certain space on the grounds, where the engines shall be exhibited at all times except when being tested.



Send For These Records

To know what other farmers have actually done with their tractors is worth more to you than theories of mechanical construction. Records of work well done weigh heavier than brilliant probabilities. Facts are what you want.

The records in this little booklet were picked at random from the hundreds sent in by enthusiastic Big Four "30" owners. They do not represent the greatest amount of work which it is possible to do with the Big Four "30" in a season.



they merely tell what was actually done during the season of 1911. With every record is given the name and address of the man who sent it in—write to him and see what he thinks of the Big Four "30"

The thousands of testimonials we have on record mean just one thing—that the Big Four "30" makes good every time—delivers the goods. If it didn't do this—every time—we never could afford to sell it on approval—we'd have to get our money before it was unloaded. But we know that it makes good every time and we're not afraid to let you try it out in your own field before you pay a cent on it. That's fair, isn't it?

The Big Four "30" has many exclusive features which place it in a class by itself. Its self-steering device easily adds \$1,000 to the engine's worth.

SEND FOR THIS BOOKLET TODAY.

Gas Traction Co.,

First and Largest Builder in the World of Four-Cylinder Farm Tractors.

156 Princess Street, WINNIPEG, Man.

Canadian Factory, Winnipeg, Man.

General Office and Factory, Minneapolis, Minn., U.S.A.

Greenbacks In Green Stacks

Keep the grain out of your straw pile by using the thresher which saves it.

Put the money in your own pocket instead of throwing it away.

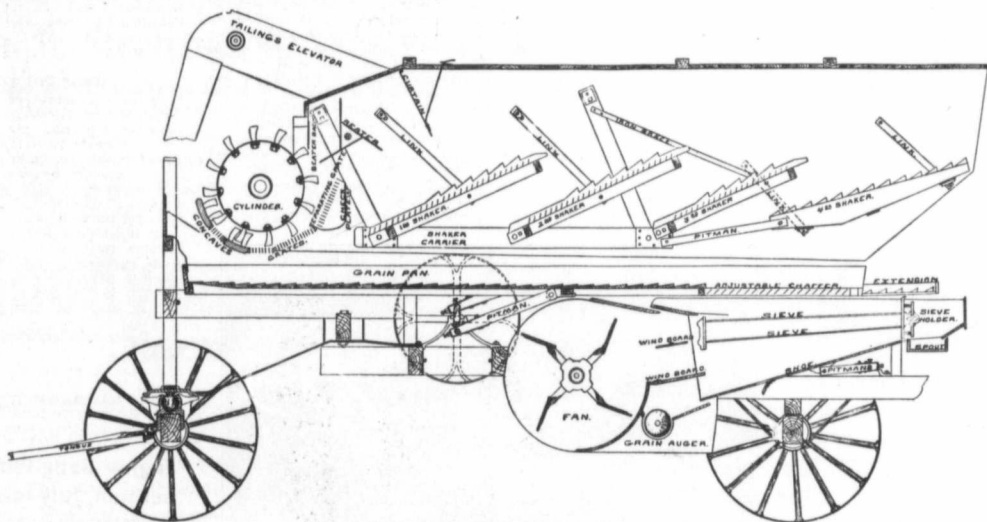
The Red River Special Line uses a different principle.

It Beats the Grain Out.

It Takes it Out by Force.

All others wait for the grain to drop out; it don't.

And there are Greenbacks in Straw Stacks.



The Junior Red River Special Separator Sectional Cut.

The Junior Red River Special is,—

THE Thresher for Individual Farmers.

THE Thresher for a Rough Country.

THE Thresher for Small Jobs.

THE Thresher for Gas Engines.

THE Thresher for Horse Power.

It Beats out the Grain.

It Has **THE MAN BEHIND THE GUN.**

It can be furnished with Wind Stacker and Self Feeder.

It will thresh, save and clean more grain and do better work than any other small thresher built.

Because it is Different.

It Beats out the Grain.

It saves the Farmer's Thresh Bill.

Send for special circulars describing it.

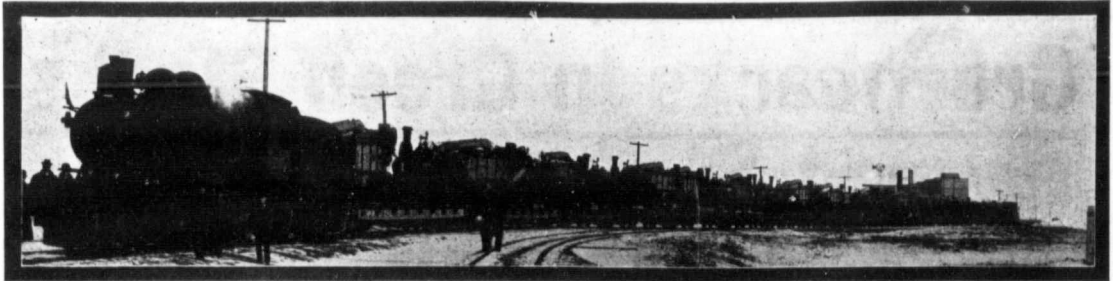
NICHOLS & SHEPARD CO., Battle Creek, Mich.

Sole Builders of the Red River Special line of Red River Special Threshers, Nichols Shepard Traction Engines, Oil, Gas Tractors, Universal Self Feeders, Stackers, Weighers and Supplies.

Calgary, Alta.

Regina, Sask.

Winnipeg, Man.



A Train Load of Case Engines Reaching Regina, March 9, 1912, over the C.N.R.

TEST.

19. Test to comprise brake-test, plowing-test, and such other tests as the Judges deem essential.

20. The Judges may test the engines in any order that may to them seem desirable. The contestants will be given one hour's notice when to be ready for test.

21. The rules of the Province of Alberta with regard to boilers and engines shall govern the pressures, etc., allowed.

22. Provision shall be made so that a standard steam gauge can be applied to all boilers during the test.

23. Before commencing the tests, the pop valves and steam gauges shall be inspected by the Judges and sealed, and any sediment or foreign matter that may get into these parts after being sealed shall not be taken into consideration.

24. Any engine failing to complete any test shall be disqualified.

25. Contestants shall be prepared to assist the Judges and their observers in taking dimensions, removing parts for inspection, and any other work that may be necessary for a complete inspection and test.

26. The Brake Test shall consist of a two-hour economy test. During this test the engines are to run at their greatest load consistent with economy.

27. Competitors will be allowed 15 minutes after they have lined up to the brake to try out their engines, and to state the amount of load they wish to carry. After the competitor has stated the load he wishes to carry, the operators will keep the brake as near that load as possible for two hours, and no change will be made.

Careful measurements of the fuel and water used will be taken and the condition of the engine noted.

28. After the two hours' run a test will be made of the maximum horse power the engine will develop for thirty minutes; the competitor stating the maximum load he wishes to carry, and careful measurements again being taken of all fuel and water.

29. Plowing Test may extend over a period of five hours or longer, if deemed necessary by the Judges, and each engine shall be allotted the same number of rounds. The contestants may use any kind of plow they wish. The depth of plowing to be uniform, and as directed by the Judges. A recording dynamometer will be placed between the engine and the plow, which will ac-

curately record the pull. Careful measurements will be taken of the fuel and water used; the acres plowed; the draw-bar pull; the fuel per acre; the distance travelled without replenishing, and such other data as the Judges deem essential. At least one two-hour chart spread over the time of plowing must be made by each contestant engine.

30. In connection with the plowing test the quality of plowing which is to be judged by prominent agriculturalists shall have special reference to: evenness of depth of furrow, uniformity of thickness of the furrow slice; straightness of furrow; finish at the ends and condition of the back furrow. In connection with the evenness of depth of

33. General.—It is to be expressly understood and agreed by the manufacturer that the engines entered in the competition are of the same material and construction as those he is selling in the open market. Only such pressures and speeds will be allowed during the tests as are used under ordinary working conditions. The Judges may limit the speed or pressure of engine when they deem it necessary to a fair test. Contestants must submit their dynamometers, steam gauges, etc., to such tests as the Judges deem necessary to assure them of their accuracy.

34. The competitors, upon being given notice of the testing of their engines, are to make all arrangements for



furrow, the exact depth prescribed by the Judges must be maintained throughout the test; the number of furrows opened at the commencement of each round shall be carried through to the end.

31. Design and Construction.—Under this head will be considered the protection of the working parts from mud and dust; dustproof bearings; accessibility of all parts, such as valves, igniters, bearings; ease of manipulation, such as starting and stopping, reversing, and the general handling of the engine.

32. Contestants will be prepared to take down such parts of their engines as may be necessary in actual practice in the field.

water, belts, etc., so that as little delay as possible will result.

35. The following are points upon which the awards will be made:—

SCORE CARD.

Brake Test (190).	Internal Combustion Engines		Steam Engines
	Internal Combustion Engines	Steam Engines	
Horse power hours per unit of fuel used.....	145	140	
Horse power hours per unit of water used ...	15	35	
Steadiness of running, vibration, condition of engine	30	15	
	190	190	

Maximum Test (65)

Economical load compared with maximum	35	35
Evenness of load	20	20
Condition of engine	10	10
	65	65

Plowing Test (215).

Draw-bar h.p. hours per unit of fuel	140	120
Draw-bar h.p. hrs. per unit of water	15	35
Acres plowed per hour per economy brake horse power	25	25
Quality of plowing	15	15
Distance travelled without replenishing fuel...	10	5
Distance travelled without replenishing water		5
Condition of engine, etc.	10	10
	215	215

Design and Construction (30).

Accessibility	15	15
Protection of working parts	10	10
Ease of manipulation ..	5	5
	30	30

Engine Gang Plow Competition, July 10-20, 1912.

RULES AND CONDITIONS.

The following rules and conditions will be strictly adhered to:—

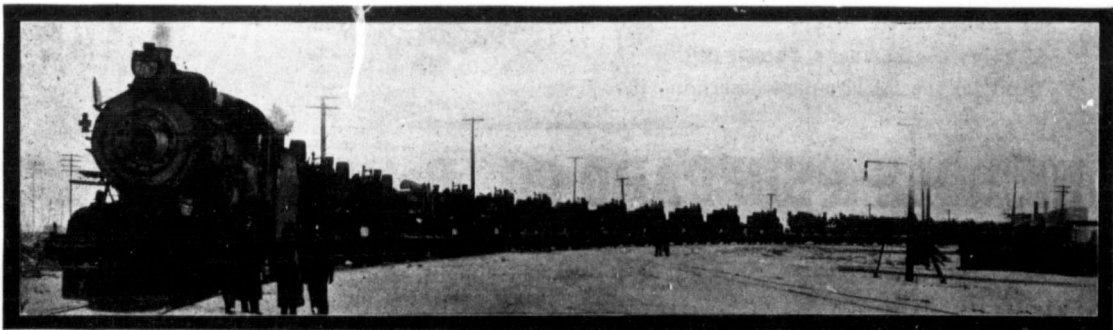
The entries shall be classified as follows:

- Class 77, Sec. (a)—Engine Plow with six bottoms and under.
- Sec. (b)—Engine Plow with over six bottoms.

Prizes in each class shall consist of:
 First PrizeGold Medal
 Second PrizeSilver Medal
 Third PrizeBronze Medal
 In all classes where there is no competition a diploma of award only may be given, upon which will be set forth together with the number of points scored, that it was the only entry in the class.

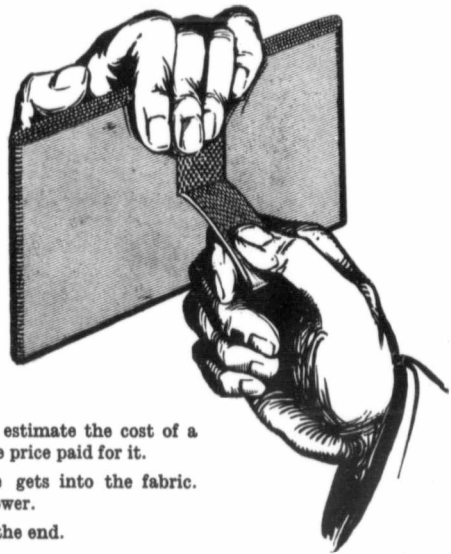
ENTRIES.

2. All entries must be made on or before June 28th, 1912 and must be made on the official entry form, with all data



A Train Load of Case Engines Reaching Regina March 6th, 1912, over the C.P.R.

Get Wear and Service— lower the Cost



THE cost of a belt is not just what you pay for it. If a belt slips off the pulleys it ties up your whole working force. A big loss of time.

If It Stretches It Wastes Power

You should add these losses to the cost of your belts. When you estimate the cost of a belt compare the service it gives and the length of time it wears with the price paid for it.

Some belts split and spread apart and then rot because moisture gets into the fabric. Some belts wear out quickly because they have not enough pulling power.

A belt that gives satisfactory service and that wears is cheapest in the end.

Goodyear Thresher Belting Will Not Slip Black Diamond Red Cross Will Not Split

The cover of Goodyear Thresher Belting is thick and tough—the first indication of strength and wear. It has a hard surface yet it is quite pliable. It bends without breaking. The seam is invisible, it is practically a one-piece cover. Moisture cannot get into the belt. Note how the edges are covered.

The cover is finished with a rough surface to make it grip the pulleys.

Try to remove the cover. Almost impossible, is it not? That is because the cover is vulcanized on.

Now look beneath the cover.

Try to separate the layers of duck. That black substance that holds them so tightly together is called "friction". The friction adds to the strength of the duck—makes it wear longer—prevents the duck splitting—protects it from moisture—prevents rotting.

All the duck used in Goodyear Belting is tested for weight and pulling power. The friction-compound is tested for its power to hold together.

The duck and friction are put together under heavy hydraulic pressure. Vulcanizing the cover on makes the cover and friction practically one. And every belt is thoroughly cured and stretched.

Having proven the strength, we subject all materials to careful laboratory tests to satisfy ourselves that the quality is up to the Goodyear standard. And each belt is tested at different stages of the making. And the records of the tests made on every belt are kept on file at the Factory.

Goodyear Thresher Belting is made in two weights—"Black Diamond" a heavy weight belting and "Red Cross" a lighter belting. The only difference is in the weight. The lighter weight belting is less expensive.

Do you want to give more thought to the choosing of your Thresher Belting? Write our nearest branch for Booklet.

Not one Thresher Belt returned in 1911.

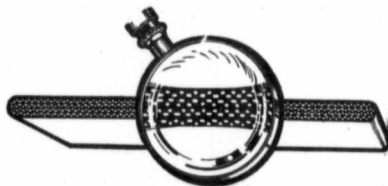
\$155.22 represents the total amount paid out for adjustment of claims by our Mechanical Department during the year ending Sept. 30th, 1911.

This was not for Belting alone but the sum includes claims on all such goods as rubber hose, packing, belting of all kinds and other rubber articles.

During the first four months of the present year starting on October 1st, 1911, in spite of a 50% increase in business, this Department has paid out in adjusting claims only \$23.93.

The only claim made on Thresher Belting amounted to \$1.50. And in this case the Belt was damaged in transit.

Not one Thresher Belt was returned to us in 1911.



Goodyear Tire & Rubber Co., OF CANADA, LIMITED.

HEAD OFFICE, TORONTO.

FACTORY, BOWMANVILLE, ONT.

BRANCHES IN WESTERN CANADA.

Winnipeg, Man.—41 Princess Street.
Calgary, Alta.—1012 Second Street East.

Regina, Sask.—2317-2319 South Railway Street.
Vancouver, B.C.—1213 Granville Street.
Victoria, B.C.—855 Fort Street.

THE
Greatest Commercial Sporting Event
 in the World



**THE
MOTOR
COMPETITION**

AT THE

**CANADIAN
INDUSTRIAL
EXHIBITION**

WINNIPEG

JULY 3-20



VISIT THE EXHIBITION

filled in accurately and accompanied with an entry fee of \$25.00 for each entry.

3. All entries must be accompanied by an affidavit that the information therein is true and that the plow in question is from regular stock, not being built specially for competition.

4. Each entry shall be allotted an official number, which shall be displayed during the competition.

5. Any firm or individual shall not enter more than one plow in each class, unless the plows be radically different in construction.

6. Should the Judges find the entry data inaccurate in any particular they may, at their discretion, rule the plow out of the contest. Competitors shall state at time of making entry the number of bottoms with width of furrow they purpose using in plowing test, so that ground may be surveyed in good time.

CONDITIONS.

7. Each competitor must have sufficient staff for the care and running of his own entry.

8. One man only, except observers, will be allowed to each plow during the test. No other person to be allowed on or close to the plow except the official Judges and observers.

9. The names of the operators to be furnished the Judges at commencement of test.

10. Each contestant must make provision for an engine to pull his plow or plows. He must also arrange for a recording dynamometer with sufficient charts so that at least one continuous chart can be taken for one full round. All dynamometers and other instruments must be deposited with the Judges not later than July 3rd, so that they may be officially calibrated, and shall remain in their possession until all tests are completed.

TESTS.

11. The plowing test shall consist of one round of the plowing field or longer if deemed necessary by the Judges. The contestants may use any kind of engine they wish. The depth of plowing to be uniform, and as directed by the Judges. Each plow must cut full width. A recording dynamometer will be placed between the engine and the plow, which will accurately record the pull.

12. In connection with the plowing test the quality of plowing, which is to be judged by prominent agriculturists, shall have special reference to: Evenness of depth of furrow, uniformity of thickness of the furrow slice, straightness of furrow, finish at the ends. In connection with evenness of the depth of furrow, the exact depth prescribed by the Judges must be maintained throughout the test; the number of furrows opened at the commencement must be carried through to the end of the test.

SCORE.

The following are the points upon which the awards will be made:—

1. Draft	40
2. Evenness of depth of furrow...	15
3. Lay of furrow slices	10
4. Evenness of cut of inside plow, and of thickness of furrow slice	10
5. Ease of adjustment and manipulation of plows	10
6. In and out at ends	5
7. Straightness of furrow	5
8. Stops attributable to plow	5
	100

ARTHUR C. FRITH,
Engineer in Charge.

A. W. BELL,
Manager, Winnipeg, Man.

The engine that **Saves the Grain** Millions saved in lost crops



Gilson Harvester Attachment

Works wherever horses can haul a harvester. Fits any standard machine. Has a light Gilson air cooled engine good for any work. Saves the grain, time, teams and men. Write for particulars. **The Renfrew Machinery Company, Limited, Winnipeg, Man.**

Manitoba Agricultural College

Gasoline and Steam Engine Short Courses

June 11 to 28, 1912

Practical Short Courses to help men who wish to learn more about running Farm Power Machines.

For circular giving full information, write

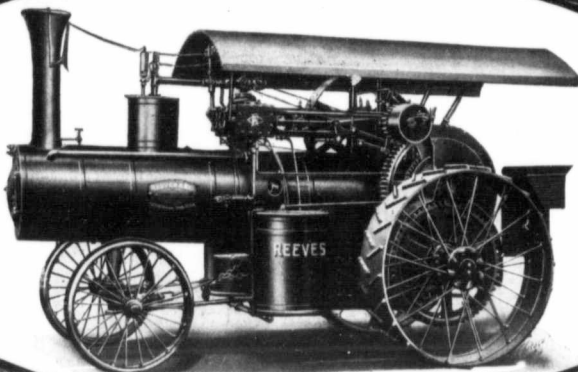
PRINCIPAL W. J. BLACK

Manitoba Agricultural College
WINNIPEG

REEVES

CANADIAN
BRANCH:

REGINA,
SASK.



Durability and Good Working Qualities in a Threshing Outfit Assure Profit to the Owner

Profit is what appeals to the buyer of threshing machinery, and when the qualities necessary to the greatest profit can be found in one machine, that is the one you should buy, even though, as is likely to be the case, the price is larger than on other machines. The following letter is right to the point and tells the experience of an operator of Reeves machinery:

Reeves & Co., Columbus, Ind.

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

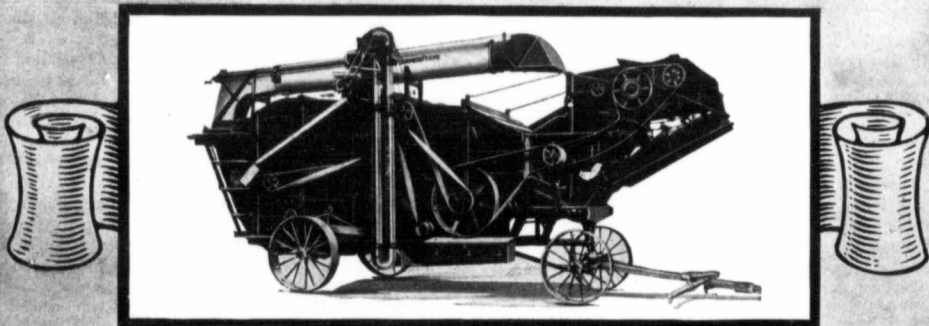
Dear Sirs:—Have you on hand lower pan for 40x60 separator No. 1052 bought in 1900? If you have, let me know and send price. This is the first repairs I have had to buy in eleven falls. I ran this separator six falls in Illinois and five falls in Dakota, and it is still in first-class shape excepting 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,

R. F. D. No. 2, Box 25.

Myron McKeague, Fullerton, North Dakota.

The Reeves Double Cylinder Engine and the Reeves Compound Separator make an outfit that will prove profitable to you, satisfactory to your patrons, and with reasonable care, will last a life time.



Our catalogs are free — ask for them
REEVES & COMPANY
COLUMBUS, IND. U.S.A.

REEVES

Conducted by
Professor
P. S. Rose

Practical Talks to Threshermen

Talk No.
LVII.

LESSON LVII.

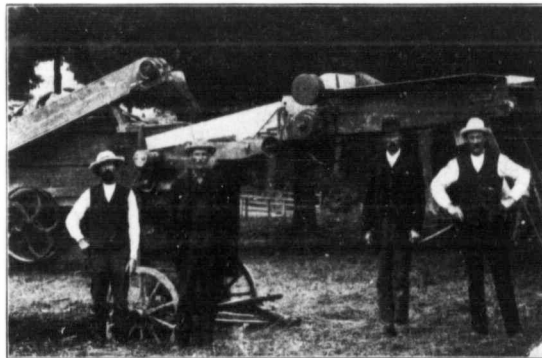
The troubles Mr. Darling encountered in finally getting his feeder on the market are set forth in his own words below. While the invention finally proved to be a success and was widely used, he never received very much recognition of a substantial character, barely enough to pay for the time and money spent in developing the idea.

"In 1886 we had as many self feeders on hand as we cared to look after, considering that, so far, it had been most all expense and no profit to us. Therefore, about all we did was to overhaul those that had been taken off, find places for them and look after those that were kept on. From our past experience we concluded it would be better to give more attention to those that were sold than to new work. In fact, we felt a little discouraged and were not as enthusiastic as we were in the start. But we knew we had at least one friend loyal to us, who had faith in the self feeder and he was no other than Mr. Mark Furr who lives about two miles west of Mellott.

"Mr. Furr was one of the oldest and best threshers in Fountain county and when it came to threshing, his word was law and gospel. Therefore, I spent from one to four days each week during the threshing season with Mr. Furr. I paid particular attention to the self feeder and we got along so well with that that Mr. Furr thought it would be a good plan to exhibit at the Montgomery county fair at Crawfordsville and proposed to take his separator. We accepted Mr. Furr's proposition and arranged for the power and two good sized loads of wheat to be on the fair grounds on Thursday, as that was the biggest day of the fair. Mr. Furr had his separator and self feeder there in good time and on Thursday afternoon we threshed the two loads of wheat without a stop. We were so well pleased with the exhibition that we had the machine photographed just after we finished threshing. The photograph shows four men standing by the side of the machine and from left to right they are John Slusser, the writer, J. A. Marshall, and Mark Furr. We also exhibited one of our self feeders at the Howard and Tipton county fairs but did no threshing at either place.

"In 1887 I spent most of the threshing season in Fountain

County looking after the feeder on Mr. Furr's machine and keeping it in the best of shape as the Advance Thresher Company had begun to make inquiries about it and might at any time send a man to see the feeder in operation. Mr. Furr had finished shock threshing and was threshing stacked wheat when a gentleman drove up to the machine and introduced himself as Mr. Snyder from the Advance Thresher Company and said that he had come to investigate the band cutter and feeder. I told Mr. Snyder he was welcome to any investigation or tests he desired. He stayed with us several hours and when he was ready to leave he was convinced it would do the work and promised us a favorable report to the company. It was several days before we heard anything from the Advance Company, but we



Darling's Self-Feeder Exhibited at the Montgomery County Fair at Crawfordsville, Indiana, in 1886. It threshed two loads of wheat without a stop.

finally got a letter from them saying that Mr. Snyder had made a favorable report on the feeder but they would like to see one tried on one of their separators.

"We shipped a feeder to them and some time afterwards they wrote us they had given it a trial in oat threshing and it worked all right. As their biggest trade was in the North-west they asked permission to ship it there and try it in wheat threshing. We heard nothing from them until April, 1888. We were getting a little anxious to know what had become of the feeder so I wrote them about it. They answered by saying that they had shipped the feeder to Minneapolis late in the fall but by the time it had got there threshing had stopped on account of the cold weather, but they wanted to try it that spring.

"I was engaged to make the trial and was ordered to report to Mr. Walter Gregory. He had been notified that I would be there and was looking for me and prepared to fire all kinds of questions at me to answer. I was satisfied he was trying to shake my confidence in the feeder and was prepared for him.

"The feeder was damaged in shipping and I sent home for repairs but I had plenty of time to get them as Mr. Gregory told me it would be two or three weeks before they could do any threshing. I got my repairs in good time and had the feeder ready to attach several days before they were ready for it. The feeder was to be tested at or near Mellette, South Dakota, and Mr. J. O. Humphrey, agent at Northville for the Advance Company, had charge of the arrangements.

feeder. We got everything in shape and made the test on Wednesday, May 9. Mr. Humphrey came to Minneapolis before I left Mellett and while there Mr. Gregory instructed him to give me all the assistance I needed in getting ready for the test.

"The outfit was run by a full crew of men, which made it better for me. They slept in a tent the night before and as the weather was rather cool in the mornings I deemed it necessary for me to take them something to warm them up and keep the microbes out. I had explained everything about the feeder to them the day before and they knew just how to handle it, so when we made the start everything worked fine and there was not a bobble anywhere.

"After we had threshed for two or three hours without a stop, Mr. Humphrey decided the feeder was all right and wired Mr. Gregory to that effect. Mr. Gregory wired back that he would be on hand the next morning to see the feeder in operation.

"Mr. Gregory was of the opinion that no man or machine could feed an Advance separator more grain than it could handle successfully and was afraid the feeder would not feed fast enough. It rained Wednesday night and we left two stacks of wheat open or only about two-thirds of them threshed. The gentleman who owned the wheat decided that it would be too wet to thresh on Thursday, therefore the whole crew was in town when Mr. Gregory arrived. He was not to be disappointed so he offered to pay for the wet grain if the gentleman would let him thresh it. His offer was accepted and we started the machine as soon as we could. When we were to start, Mr. Gregory got on the top of the separator to watch the feeder. We had tried all three speeds on the bundle carrier the day before and found the middle or second speed would give the separator all the grain it would handle and it was on that speed when we started Thursday. The speed was fast enough to keep two men very busy pitching all the bundles it would carry. We had run only a few minutes when Mr. Gregory concluded that it was not feeding nearly fast enough. I changed the carrier to fast speed and put on two more pitchers and it only took a few minutes to fill the separator so

I was at Minneapolis several days before the feeder was shipped to Mellette and went to Northville and waited several days more before they were ready.

"While at Northville I made it a point to get acquainted with the gentleman who owned the outfit that was going to do the threshing. I wanted to know how he felt with reference to self feeders and what assistance I might expect from him. I found him ready to do anything he could to assist me, although he was like a good many other threshermen, not overburdened with wealth. He had a 36 x 52 Advance separator and, if I am not mistaken, a 16-horse power Ames traction engine but before we could attach the feeder to his separator we had to take out the cylinder shaft and put in a larger one in order to put on a pulley to drive the

Continued on page 73

DO NOT BUY A WIND STACKER WITHOUT



THIS

TRADE-MARK

It Is For Your Protection as Well as Ours

See that it is on the Wind Stacker You Buy, and then no one Can Cause You Trouble

The Indiana Manufacturing Co.

Indianapolis, Indiana, U. S. A.

The Thresherman's Question Drawer

Answers to Correspondents

Q. T. E. H. Will you tell me how to proceed to babbitt the crank pin and cross head brasses on a single cylinder side crank engine? I have heard it can be done, but not how it is done.

A. We do not know any way in which the cross head boxes on a side crank engine can be babbitted while in place on the engine. These boxes are always brass boxes and of course would not be especially improved by babbitting. Reeves & Co. use a cast iron box with babbitt lining for the crank pin. When the babbitt is worn it can be easily repaired on the engine just the same as any other split box. The needful thing to do is to place a good thick shim between the halves of the box, and cut a number of V notches in this shim so that the babbitt can run through from the upper to the lower half. The box should be centered carefully on the pin before pouring the babbitt. Paper held in place by putty over the openings will prevent the babbitt from escaping when poured. After the babbitt solidifies, the keys holding the box in place can be taken out, the box separated with a cold chisel, and the halves of the box removed. The babbitt should now be scraped smooth with a good sharp scraper, and the edges of the box removed for a half an inch back from the edge. This will leave no sharp edges to scrape off the oil and there is less danger of the box becoming heated in consequence.

It would be perfectly possible, though we have never seen it done, to line a brass box with babbitt. To do this the brass would have to be bored out to a considerably larger size than the pin in order to have room for the babbitt. The surface should then be scraped perfectly clean, and coated with a soldering fluid. The next operation would be to tin this surface all over with solder. After this operation is completed the babbitt may be poured in the ordinary way. We see no especial advantage in doing this except possibly if the brasses happened to be badly cut, and then it would be possible only by taking the old brasses to a machine shop and having them bored out true and smooth.

Q. E. K. (1) Will a 20-horse power double cylinder engine pull any more than a 20-horse single cylinder engine fitted with a clutch?

(2) Is there any difference be-

tween the horse power of a double engine and that of a single engine?

(3) Are the cylinders the same size in the double engines as the cylinders of the single engine?

(4) Explain exactly what is meant by horse power.

A. (1 and 2) If the combined cylinder of the two cylinders is the same as that of the single cylinder, and if the speed of the engine, cut off, and all conditions are the same, both engines will have the same power. The horse power rating really gives one very little idea in regard to the capacity of an engine. What really counts is the cylinder capacity, speed, steam pressure, point of cut off steam, and the condition of the engine. The friction clutch and the cranks set at ninety degrees, both aid in starting the engine, but have no influence upon the power.

(3) The capacity of the two cylinders of the double engine should be approximately the same as that of the single cylinder engine.

(4) The term horse power means the doing of 33,000 foot pounds of work in one minute. In other words it means lifting a dead weight of 33,000 pounds one foot high, or what is the same thing, pulling with an intensity of 33,000 pounds a distance of one foot in one minute. Notice that time is an essential element and is just as important as pounds pulled or lifted. Again, if a pull of one hundred pounds were exerted through a distance of 330 feet, or 1,000 pounds through thirty-three feet, we would have the same work done in each case—that is, one horse power or 33,000 foot pounds.

Q. W. D. E. (1) Do you think that the copper around the flues by its constant expansion and contraction, due to the difference in temperature, would cause them to leak?

(2) Do you think that flues only half an inch apart are so close that they will clog with scale and burn?

(3) What is alkali?

(4) Please explain fully how to treat alkali feed water.

A. (1) It frequently happens that flues having copper ferrules leak from the cause which you mention. Furthermore, many such flues will leak when the boiler is cold and will not leak when it is steamed up, for the simple reason that copper has a higher co-efficiency of expansion than

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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.

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Go Hand in Hand as Pre-eminently the Best. Ask the fellow that has one

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iron, and consequently expands more with the same degree of heat, thus filling the space between the boiler sheet and the flue. When the ferrules are new, there is no trouble with leakage, but after expansion and contraction has taken place a great number of times the copper apparently becomes thin and crystallized and no longer performs its functions.

(2) In order to obtain a large amount of heating surface within a small boiler shell, designers formerly placed the tubes quite close together. At the present time they are placed farther apart and plenty of space is provided between them to allow dirt and scale to fall to the bottom of the boiler. The writer's opinion is, boiler tubes should be at least an inch apart. We have no doubt that the closeness of the tubes has much to do with the formation of scale and subsequent leaking in your boiler.

(3) There are about as many different kinds of alkalis as there are kinds of breakfast foods. In your part of the country I should expect to find sodium sulphate as the principal alkali which causes trouble in steam boilers. This is the alkali that causes much trouble all through the West. There is no compound known that will neutralize the effect of the sodium compounds. They can-

not be precipitated by any chemical means and for this reason they are exceedingly troublesome in boiler waters.

(4) The treatment of alkali water is constant change. The boiler must be cleaned frequently and the water changed as often as conditions will permit. It is well to let out as much water from the boiler as possible—two or three times per day, and then pump up with fresh water. In this way you can keep down the percentage of alkali remaining in the boiler below a certain troublesome amount. Alkalis, as well as other substances of similar nature, do not evaporate with the steam and consequently remain in the boiler.

Q. J. P. S. (1) Will a compound engine on a 20-horse power boiler develop more power with the steam gage set at one hundred and forty pounds than at one hundred and sixty?

(2) Is there any expansion in the high pressure cylinder of a compound engine where the steam is below one hundred pounds pressure?

(3) How would you pack the stuffing box in the center head of a Woolf engine?

(4) How could you tell if the packing was blown out between the two cylinders?

(5) In setting a valve should

the reverse lever be set in the middle notch of the quadrant?

A. (1) Certainly not. The higher the pressure in the boiler, the higher it will be in the cylinder generally and the greater the power of the engine.

(2) If the steam is cut off before the end of the stroke it will expand to the end, no matter what the pressure.

(3) Metallic packing is used, which is held in place with springs.

(4) The packing will wear in the course of time and steam will blow through. There is not much danger of the packing blowing out since it is held with machine screws. If the steam is admitted into the high pressure cylinder, between the piston and cylinder head, it ought not to blow through into the low pressure cylinder. If it does, it shows there is a leak. If steam blows through into the low pressure cylinder it will, of course, blow out at an open cylinder cock which proves the leak.

(5) In general, the reverse lever should be at one end of the quadrant during the setting of the valve.

Q. C. R. M. Why does steam from clear water produce more power than dirty water, when the steam gage is the same pressure in both boilers? Would it be

practical to increase the steam power to one hundred and fifty pounds by increasing the strength of boiler and engine in the same proportion as a traction engine?

A. We are not aware that a pound of steam from clean water will produce any more than the same quantity of steam from dirty water. We know that it is easier to make steam from clean water and that the boiler and engine will both give more satisfaction.

The use of dirty water always leads to priming or the drawing over of water into the cylinder and this, of course, reduces the power of the engine. Aside from this, the steam from one kind of water is as powerful as the steam from another, both, of course being at the same pressure and of the same degree of dryness.

There are many boilers built in which pressures of one hundred and fifty pounds and upwards are carried. Some of the traction engine boilers carry pressures as high as one hundred and eight pounds. This in itself is evidence that where the boilers are properly constructed you can carry any pressure you care to.

We do not advise carrying such high pressure in the ordinary traction engine boilers. In all cases the pressure should not be higher than that recommended by the builders.

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SIGNS OF HART-BROWN WING CARRIER

We Will Furnish Half Your Threshing Crew. How?

By furnishing you devices that will do half the field work of threshing.

By using the Hart-Brown Wing Carriers and Hart Universal Thresher Racks you save half the bundle wagons, drivers and all of your field pitchers, and feed your machine better than it was ever fed before.

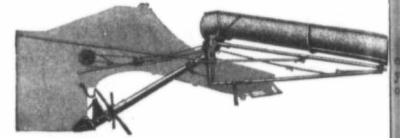
F. A. Snook, Cupar, Sask., writes: "I am more than pleased with your Wing Carrier, and Thresher Racks. They do all you claim for them, great savers of grain and labor. Anyone who has ever used them would not do without."

Notice from cut below the Carrier is supported by main sills and main frame of separator—no weight on feeder.

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A 1912 IMPROVEMENT Each Wing is provided with an adjustable friction clutch which prevents breakage and allows either Wing to be thrown in or out of gear independently of the other. Let us tell you about the other new improvements. State kind of Separator you use.

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One that gets all the sparks without clogging or interfering with the draft. Fits any engine. Screens adapted to any fuel.

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Turns night into day. Bracket to fit any make of engine. Throws light 400 feet. Operating expense about 1c. per hour.

FLUE CUTTER
You need this tool to get ready for your Spring Plowing. Is adjustable in length and size. Cuts the flue without burring the end. Try it.

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THE MAYTAG COMPANY, LIMITED, Winnipeg, Man.

Patronize those who patronize this Magazine

Q. T. R. H. (1) How long will it take the cylinder and valves of a traction engine to do any harm by doing without oil?

(2) How hot must the main bearings be before they will do any harm?

(3) Which is the proper way to run a governor belt, straight or crossed?

A. (1) They begin to cut immediately after they become dry. When the supply of oil is shut off it takes some little time for the parts to become dry if they were properly oiled before, but once they do become dry wearing begins at once. It may go on for some time before it becomes noticeable, depending somewhat upon the character of the workings surfaces.

(2) They should not become hotter than the boiler. The exact temperature can not be stated in degrees, but the cooler the bearing can be kept, the better.

(3) If the belt is run crossed it will grip the small pulleys better and is less liable to slip, otherwise it does not matter which way the governor runs.

the smoke box door about ten inches. The boiler is large and has a thirty foot stack.

A. (1) It would not produce any gain to remove the heater. Its purpose is to abstract heat from the exhaust steam and return it to the boiler. Without the heater all the heat of the exhaust is lost, with the heater some is saved.

(2) If the flues are cooled quickly by opening the smoke box door it will harm them. We should suppose with a high stack that there would be considerable draft and cold air would rush in. If the boiler were steamed up and a hot fire on the grate it would not be advisable to open the door. If the fire was not heavy it might not do much harm.

After all that can be said about the advantages one man has over another there is still a wonderful equality in human fortunes. If the heiress has money for her dowry the penniless have beauty the other has credit; if one boasts of his income, the other can of his influence. None is so miserable but that his neighbor wants something he possesses; and no one so mighty but that he wants another's aid. There is no fortune so good but it may be reversed, and none so bad but it may be bettered. The sun that rises in clouds may set in splendour, and that which rises in splendour may set in gloom.

Q. A. Y. (1) I have a compound Gas Engine fitted with a pump. I find that it steams better by using the injector. Do you think that there would be very much economy in taking the heater off and letting the engine exhaust directly up the smoke stack?

(2) Do you think it will harm the front end of the tubes to open

OF PROGRESS

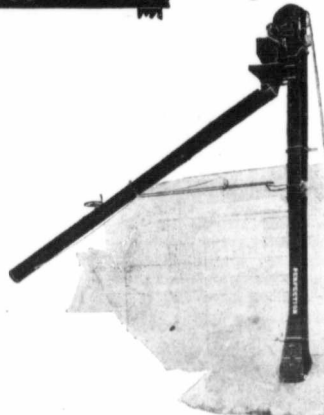
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PERFECTION WEAVER



How? Unloads instantly by a pull off gate. No waits to unload. No time is wasted in unloading. Has no sprockets, gears or cog wheels. No machinery means no bother.

Insist on having The PERFECTION. It's cheaper in the long run. The elevator chain is stronger. The sheet steel is heavier. The shafting is heavier. The Elevator is longer. The Grain spout is made telescoping. We were the originators of the PERFECTION type of Weighers and Baggers.



Doesn't it stand to reason that the PERFECTION is the safe machine to buy? We have the correct attachment for your separator.

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The HART RACK can be used on any wagon or truck gear, and can be unloaded at machine without stopping the team. Therefore, you can dispense with half the bundle wagons and drivers, and save all of the field pitchers. The driver pitches his own load.

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Science and Invention.

How Do Animals Avoid Poison?

Animals, either wild or domestic, are rarely poisoned. They avoid poisonous plants, as we say, "by instinct"—a convenient term for covering up our lack of knowledge regarding animal psychology. The sense by which animals detect poison is mainly that of smell, that of taste being usually deficient. Carnivorous animals, however, have a kind of half-way sense "between taste and stomach ache" which tells them when they have taken anything likely to disagree with them; and nature enables them to get rid of it by the throat.

"In common with human beings, animals seem to be affected by poison in certain forms when in a particular condition of health. At other times they can eat the same plant or shrub with impunity. In certain states of health a man can eat pork, lobsters, cockles, scallops, and other somewhat risky foods without bad effects. At other times the same edibles would produce on him the effect of ptomain poisoning. Two persons may eat of the same food at the same time, and while one is perfectly well afterward, the other may become violently ill. The curious cases of yew-poisoning among cattle or horses seem to be somewhat analogous. They will sometimes browse on shoots of yew and take no harm whatever. At other times they are obviously made very ill, or die from eating the leaves. They

have even been found dead with the yew fresh and undigested in their stomachs. Where poisonous plants are present in any great numbers in herbage it seems quite impossible to prevent cattle from eating them.

Animals will occasionally fail to recognize the poisonous plants of a strange poison. "Whatever be the reason for the fact, 'warning' notices of various kinds are frequently affixed by nature to poisonous plants, almost as legibly as the label which the law insists that chemists shall place upon poisonous drugs. Many of the poisonous fungi have an odious smell, so much so that no mammal or bird ever thinks of touching them. On the other hand, the scent of the mushroom is distinctly appetizing and pleasant. One of our most poisonous native plants is the ordinary foxglove, from which digitalis is made. Every part of it is toxic in a high degree—flowers, stem, leaves and roots. It has no unpleasant odor of any kind, but for some reason cattle never touch it. . . . In the hemlocks, several of which are poisonous to man or beast, the dangerous ingredient varies. In the spotted hemlock it is 'conin' which is present in great quantities in the seeds, though there is very little in the leaves and stem. The difference in the nature of the poison contained in plants so closely alike as these two hemlocks may perhaps account for the failure of cattle to

know the danger to which they are exposed in eating them. It may well be that one variety, though injurious to man, may

not affect cattle. Consequently they might naturally eat without any misgivings the other variety, which is deadly to them."

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Manufactured in England from the Highest Grade Cotton Duck to specifications called for by the Western Canadian market. Perfect satisfaction guaranteed. We are the sole importers and carry a large stock. All our belts are seasoned with non-freezing oil and therefore will not harden in cold weather.

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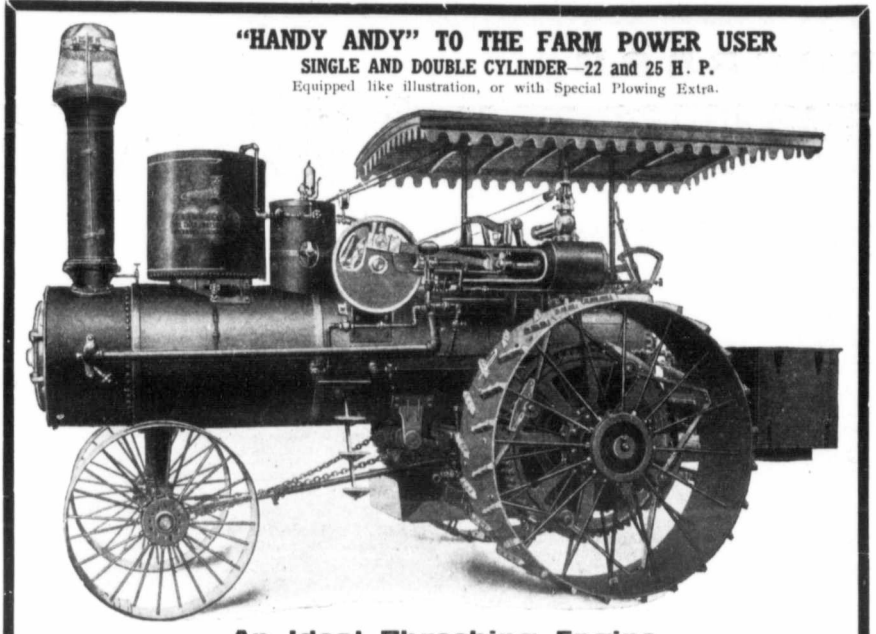
Here's an engine for every use, every place and every taste.

Its universal boiler gets full steaming value from either straw, coal or wood. It is made in our own factory on dimensions and from materials that meet fully the highest standards demanded by boiler inspection laws anywhere in the United States or Canada.

The eccentric spindle gives perfect adjustment of the traction gearing, uniform mesh and wear and prevents breakage and chipping of the cogs. Drivers are 76 in. x 26 in. x 10 in. with plate steel reinforced tires. There is no break or wear-out to them.

The steel pinions, 5 in. and 6 in. face-gears, heavy shafts, journals and brackets are all abundantly strong for the most severe traction stress.

These qualities, with uniformly strong and compact Tigerbilt construction, short turning and easy handling, make an ideal threshing engine.



"HANDY ANDY" TO THE FARM POWER USER
SINGLE AND DOUBLE CYLINDER—22 and 25 H. P.
Equipped like illustration, or with Special Plowing Extra.

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This "HANDY ANDY" has been our leading plowing tractor for a good many years, especially the 25 h.p. double-cylinder which we outfit for this purpose with 320-gallon water tanks, large fuel hoppers, steel and semi-steel gears, and a strong steel plow hitch. Special plowing engine circular tells what these tractors are doing in the field. Write for it.



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give complete uniformity in all seven sizes—20 in. to 40 in. cylinder. Every Gaar-Scott separator has:—

EXTRA LARGE SEPARATING PARTS and capacity secured by a generous average increase in rear width.

NEW MODEL EXTRA-STRENGTH FRAME with flat deck—the strongest and most permanent frame structure made.

STEEL TRUCKS tested to twice the weight and strain they will ever have to bear.

NEW STEEL-BOTTOM GRAIN PAN.—No "shake-to-pieces" or "wear-out" to it.

AUGER CONVEYORS FOR GRAIN AND TAILINGS.—Positive action, no sprouts or shakers. Auger at top elevator puts tailings in center of cylinder to give perfect distribution and complete thresh of the cylinder.

LARGE 16-BAR REVERSIBLE CYLINDER.—Journals poured to a templet on an exact radial center with concave circles to give nice adjustment, and thresh clean from the head, Turkey Red, bound and headed wheat, and all hard-to-thresh grains and seeds.

DOUBLE-BLADED STEEL TEETH.—Gaar-Scott design and patent. An important feature of the matchless "thresh-all-the-grain" cylinder.

In this space we can't even hint at the separating and cleaning parts. If you haven't received the Gaar-Scott 1912 Catalog, drop us a card to-day.



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TIGER
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Small Size Big Capacity

Separator made, because it's the only small machine with a

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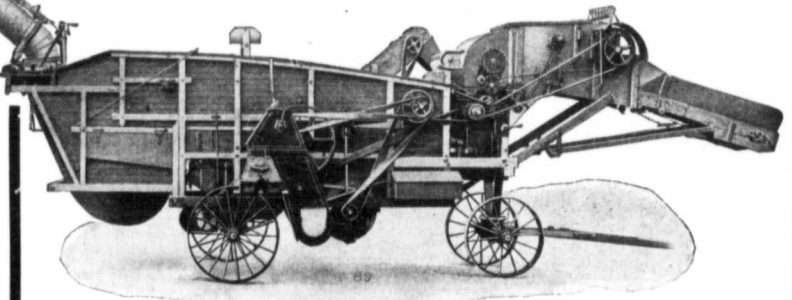
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Extra Strength *Superior* Frame Structure and faultless.

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It will thresh as much grain and save more than most separators several sizes larger. It hustles an average size crew to give it its capacity, but not an average size engine. If you run such an engine—oil, gas or a small steamer,

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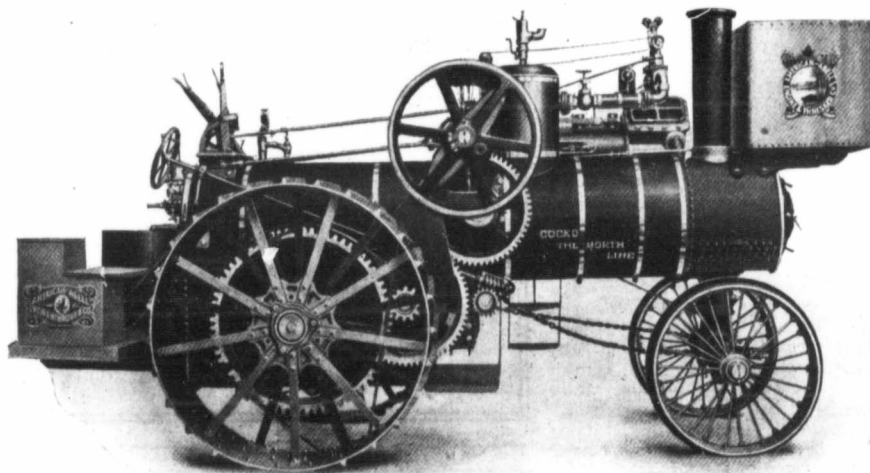
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Steam Plowing and Threshing Engines

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crop in the ground on time. **You can do things in a hurry with an American-Abell steam plowing engine.** These big easy steamers always have ample power in reserve. There's no straining. That's why they are so easy to operate—why they last so long. They are well adapted for belt work too. They give that **steady, reliable power on the belt that secures a big day's work every day, from your separator, huller, sheller or shredder.**

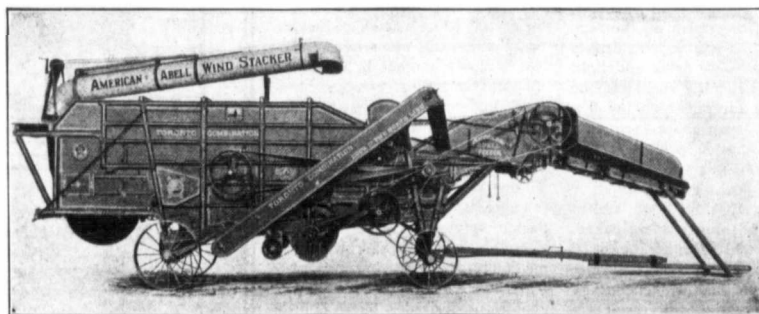
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We shall be glad to send Catalogs of American-Abell Steam Plowing and Threshing Engines and Canadian Advance Separators to everyone interested. Write for them to-day. A postal will do.

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The Spring Preparation of Land for Cereal Crops.

The preparation of land for cereal crops is perhaps one of the most important questions in crop production in Saskatchewan. The spring preparation of such land should be of much less concern than the work of the previous year, nevertheless, we are called upon daily to answer many letters on this subject, and it has been deemed advisable to put in condensed printed form a statement of the practices that from experience and experimental evidence have proven desirable under our conditions of climate and soil. Space will not permit extending the brief recommendations that follow, nor of dealing with local conditions as they exist in different sections of the province. For the further discussion of problems peculiar to local areas, the department welcomes correspondence from persons interested.

Fallowed Land.— Fallowed land properly cultivated the year previous requires little in the way of spring preparation. Generally speaking, normal soils that have been cultivated late the previous summer are ready for the seed in the spring. If, however, the season opens up earlier than it is desirable to sow, the harrows should be used. Harrowing lessens the evaporation of moisture, and helps to warm up the seed bed. It sometimes encourages blowing on old fields and light soils, but, generally speaking, the advantages far outweigh the disadvantages, even under these conditions. Discing in spring is seldom advisable on fallowed land. If there are low grassy spots or other areas that for some reason are hard and more or less baked, all such would be much improved by discing. If the fallow is loose and dry, packing will encourage quick germination and result in earlier maturity. Heavy, low lying, fallowed land should not be packed if wet. In certain districts weeds classed as winter annuals are prevalent. In such places if late summer cultivation has not been given the summer fallow it is advisable to disc in the spring in order to kill these weeds.

Breaking and Backsetting.— Breaking that has been done in good time, and well worked down the year before, or backsetting that has been packed

and well harrowed, is also in good condition for the seed, and generally requires no further work. Harrowing, however, is advisable, if time permits, up to seeding time. "Planking" is also a commendable practice for all crops where partially decayed sods lie on top of the ground, and it is particularly desirable where small seeds such as flax are to be sown. Where "breaking" was not firmly packed the previous year, or where "backsetting" has been done, it is well to pack the land. It has been amply demonstrated that packing encourages quick germination and induces early maturity when practised on soils that are not wet. Discing is seldom necessary in spring on breaking or backsetting that has been well prepared the year previous. (By "backsetting" as used here is meant second plowing the year the land is broken.)

Fall Plowing.— Land that has been fall plowed after bearing a cereal crop, differs from the fallowed land and "breaking" in two essential points. It contains less moisture, and the furrow slice is partially separated from the subsoil by a layer of stubble. This layer of stubble will, unless the land has been firmed in some manner, almost entirely prevent the movement of moisture from the subsoil to the furrow slice, where the seed is to be placed, and where the young plant must live. Unless a closer contact between top soil and subsoil is established in some manner the seed may not germinate, and the crop may dry out or "fire" when a protracted season of dry weather comes. To overcome this, firming the land is necessary, and it is here the packer serves its greatest good, although thorough harrowing immediately after plowing aids very materially in bringing about the conditions desired. There is little danger of firming fall plowed land too much, so long as a soil mulch is maintained on the top of the soil to prevent excessive evaporation.

Spring Plowing.— What has been said concerning fall plowing applies with equal emphasis to spring plowing. The problem is that of making the best use of the moisture in the subsoil, and to this end the closest possible contact between top soil and subsoil is desirable. The two most

Every Day Brings Fresh Cream To The



MAGNET'S REPUTATION

as the last word in Clean Skimming

Every new testimony is in absolute accord with all that has preceded it and crystallizes the fact once for all that it is the simplest and easiest of all separators to operate; it is the solidest and most durable of all dairy utensils; easiest to clean and the most difficult machine to put out of gear.

In fact you cannot upset its square gear drive but the commonly used worm pinch gear of other machines courts trouble and makes it all the time. Further: no mechanical conception, we affirm, will ever improve on the Magnet's patent bowl, supported at both ends to effectually check all tendency to wobble.

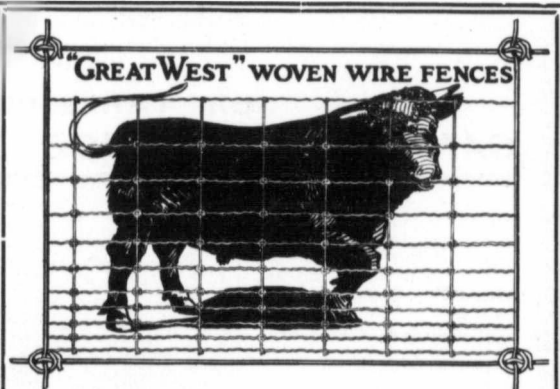
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Patronize this Magazine.**

desirable conditions in spring plowing are a good seed bed, which may be secured by harrowing immediately after the plow, or in some cases by discing and a firm soil, the result of thorough packing. Spring plowing and the necessary consequent cultivation consume time and require power. Unless these can be given, it is well that the operator think twice before undertaking it on a large scale for the crops requiring early seeding. Earlier maturing crops such as flax, barley, and oats in the order named, may be sown later than wheat and where these are used more time may be taken for the spring preparation of the land.

Land that has borne a Hoed Crop.—Such soil may, for all practical purposes, be considered similar to fallowed land, except that after roots and potatoes it is more loose. Corn ground or potato or root land should not be plowed for cereals. Surface discing will put corn ground in excellent shape and harrowing, with thorough packing, is good treatment for root or potato ground. The latter, being loose, is not so suitable for wheat as oats, and perhaps it is more suitable for alfalfa than soil prepared in any other way.

Stubble Land. — Conditions sometimes force a man to sow, without plowing, land that has borne a cereal crop. Such a procedure may or may not be advisable. Time and power are two very important factors in farming operations, and these may and should influence very materially the practices of the farmer. If it has been decided that for sufficient reason it is not desirable to plow the stubble field, the question is, should the stubble be burned or disced up well, or should the seed be sown in the stubble with no treatment. It is obviously impossible to recommend any one of these practices for all conditions. There are places where one would be best, and others where another might be desirable. The disposition of the stubble is the deciding influence. There is no doubt that where the stubble is entirely removed by burning, a better seed bed can be secured by discing, and as a result a larger crop. But there are men who hesitate to burn the stubble for the reason that vegetable matter and nitrogen are lost, and there are others who, on account of short or thin stubble, or both, cannot burn. Under the latter conditions, discing—not simply scratching the surface, but discing fairly deep and thorough—is advisable. In a situation where there is a heavy stubble that the owner does not wish to burn, it may be impossible to disc it thoroughly enough to permit the drill to put the seed as deep

as it should go in the ground. This is the only condition in which seeding in the stubble with no previous cultivation is desirable. And even in this case the land should be free from weeds and grass. When grass is present the land should be plowed, because wheat will not produce a crop in the grass. This condition is found mostly in old fields, but also in new fields that have been poorly broken or broken too shallow. The second crop on very early breaking is also often found to be grassy.

Seeding.—In seeding it should be borne in mind that heat and moisture, in addition to air, are necessary to produce germination. If the seed can be placed just into the moist soil it can get the moisture it requires from below and the heat from above. It is the business of the farmer to sow this land that the moisture line will be within 1½ to 3 inches from the surface, or else the rule mentioned will not hold. Large seeds such as wheat and oats may be sown deeper than small ones like flax, or to be more correct land intended for small seeds should be firm almost to the surface—that is, it should have a shallower mulch on top. Late seeding should be deeper than that done earlier. Sandy land may be sown more deeply than clay. A firm, moist soil may be sown shallower than a loose relatively dry one. It is hardly necessary to state that drilling is far superior to broadcasting the seeds of cereals under Saskatchewan conditions.

Crops. — Cereals: Different crops have different characteristics, and this fact is of value to the farmer. The maturity of our leading farm crops ranks from the earliest to the latest as follows:—six-rowed barley, flax, two-rowed barley, oats, wheat. This enables the farmer to choose a number of crops and to spread the work out over a longer season, thus lessening the labor problem. It is apparent also from this fact that the early maturing classes may, with safety, be sown later than the later maturing ones. Flax and barley do not root so deeply as wheat and oats, neither do they require a firm seed bed, while with oats and barley this is not so essential. Oats do best in a moist cool climate, and they like a heavy soil. The production of hard red spring wheat on the other hand requires a short, warm, relatively dry season. It may be stated, however, that all these crops respond equally well to good cultivation. Spring rye is an early maturing cereal that may be grown for grain, hay, or pasture. Winter rye, western strains of which are perfectly hardy, may be used for the same purposes.

Hoed Crops. — (Roots, corn, potatoes).—All hoed crops should be planted on fallowed land or

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While all this applies particularly to the users of inferior separators it applies likewise to the many thousands of DE LAVAL machines 10 to 25 years old. They are not worn out and are still superior to other new machines of today, but there are so many improvements embodied in the modern DE LAVAL machines that these old DE LAVAL users can well afford to make an exchange and soon save the cost of doing so.

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breaking of the year previous. The roots and corn ground may be matted during the winter with well rotted manure, or if spread thinly with fine green manure and either disced in thoroughly or plowed shallow. Roots should not be planted in high ridges. Either low ridges or on the flat gives better results. The rows should be 26 to 32 inches apart. Seeding should not be done till the heavy night frosts of spring are over. Corn should be drilled in rows 36 to 42 inches apart, or planted in hills 3 1/2 feet apart each way. It is not desirable to manure land for potatoes. Well prepared breaking or summer fallow will give large returns. They do best in rows about 30 inches apart, with the seed 12 to 14 inches apart in the row.

Treating Seed Grain for Smut.
—The fungous disease known as stinking smut of wheat and loose smut of oats, as well as barley smut, are practically preventable by annually treating the seed with formalin. Bluestone may be used on wheat, but it is not satisfactory for oats or barley. It is only necessary that the farmer, besides using the right strength of solution, take the precaution to see that the method of treating followed ensures the wetting of the entire surface of all seeds. With oats it is advisable to soak the seed for ten minutes in formalin and with wheat and oats and barley the seed should be covered with blankets for a time after treating so as to make use of the fumes of formalin vapor. In addition to this, if smut balls are present in wheat they should either be removed by fanning or skimming, or else other seed should be used. The seed should be sown as soon as dry enough to pass satisfactorily through the seeder. Labor saving treating machines are often advisable, but these are not a necessity. Thorough work is.

Formalin is a trade name for a 40 per cent solution of formaldehyde. For treating cereals, 1 lb. of formalin (16 oz.) should be used for every 32 to 40 gallons of water.

In treating flax as with wheat or oats, the surface of each seed should be dampened. In practice, flax seed has been found difficult to treat, but the following plan has been followed at the university with satisfaction. Using the same strength of solution as with wheat, the seed is spread on the granary floor, or on other smooth surface, and sprayed or sprinkled with the solution, and then raked over with a garden rake until the seeds are all moist. It is then left for a time to permit the fumes and liquid to work, and then raked over until dry. The danger is in getting the seed too wet and not drying it. Under such conditions it forms in sticky lumps,

which give difficulty in the feeder. This is entirely preventable if the seed after treating is shaken until dry.

Treating for Potatoes — Potato scab is a common disease of potatoes. The spores of this disease can be destroyed by soaking the seed for two hours in a solution of 1 lb. of formalin to 30 gallons of water, or in a solution of 1 oz. of corrosive sublimate to 7 gallons of water, to be submerged for 1 1/2 hours.

Cement on the Farm.

Keep your supply of cement stored in a thoroughly dry place, and it will keep indefinitely.

Old bale wires cut from hay bales make an excellent reinforcing material to use either in concrete floor work or in walks. Mix them in indiscriminately, and they help hold the mass together during the process of setting and drying out, and prevent cracks.

It takes only about twenty-four hours for the primary setting of cement; but really cement or concrete work should be allowed to stand two weeks, if practical, before the forms are removed, and before much pressure is put on it. It is in what technical men term the "green state" until it has passed the two weeks' period, and is comparatively tender and liable to damage from shocks, although one can remove the forms and use it sooner by being careful.

Using plenty of water in mixing concrete wall makes it harder to hold in the forms, but generally insures fewer "pockets" and a smoother job.

Where there are pockets in a concrete wall that make it unsightly the best plan is to plaster them over while the work is still green, with a mixture of one part cement to two parts of sand, or equal parts of cement and sand. Do not mix this mixture too thin with water or it will be hard to make it stick.

Crushed stone makes a stronger better concrete than smooth river gravel, but for some kinds of work the preference is often given to gravel, because it packs together better, and does not nest and form interior pockets or hollow places in the work.

Half cement and half lime make a good mortar for laying either stone or brick, that for some purposes is preferred to all cement or all lime.

The repeated whitewashing of the interior basement walls not only makes the place look better, but helps waterproof the cement by filling up the voids.

The man who fits in makes himself most valuable to his employer. He acquires an understanding of things around him, and adapts himself to all circumstances.

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The absolute need for pure air in our stables of all kinds is today conceded by practically every stockman. Yet only once in many visits does one find things right. The causes of imperfect success where efforts have been made are various. One of the most common is failure to give proper attention to the system installed. Another often met with is imperfect installation, while ignorance of what good ventilation

VENTILATING THE COW BARN

Some Notes and Observations on Stable Ventilation in general, with specific Information as to Ventilation Requirements of a given Dairy Stable, with Illustrated Instructions for Installation of a Suitable System.

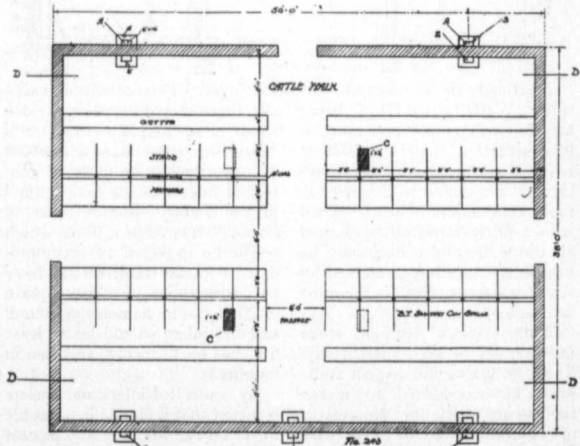
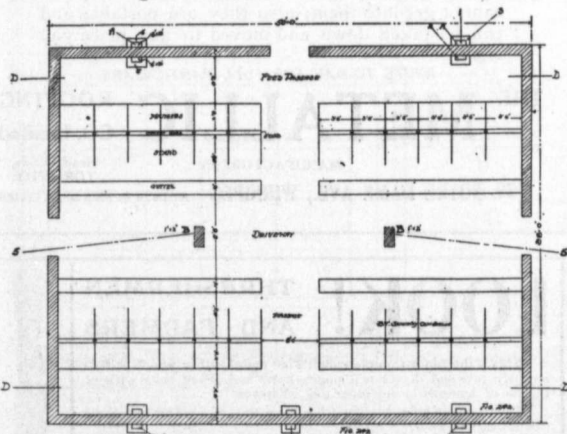
By J. H. GRISDALE.

ing system, only to neglect keeping it in operation, is criminal. No effective system ever devised for use in stables is automatic

some change in the arrangement of the controls or checks.

Neglect to open or increase the

might otherwise have been a good system. Another quite frequent cause leading to the condemnation of a system is the too small capacity of the installation. The average carpenter is apt to gauge the requirements of the stable in the way of air by the coldest weather requirements. For this reason installations are very apt to be too limited in capacity for average weather conditions, and



really is accounts for the most failures of all.

To spend good money and careful thought installing a ventilat-

adjustment to varying atmospheric conditions. Changes in temperature or variation in wind velocity will always necessitate

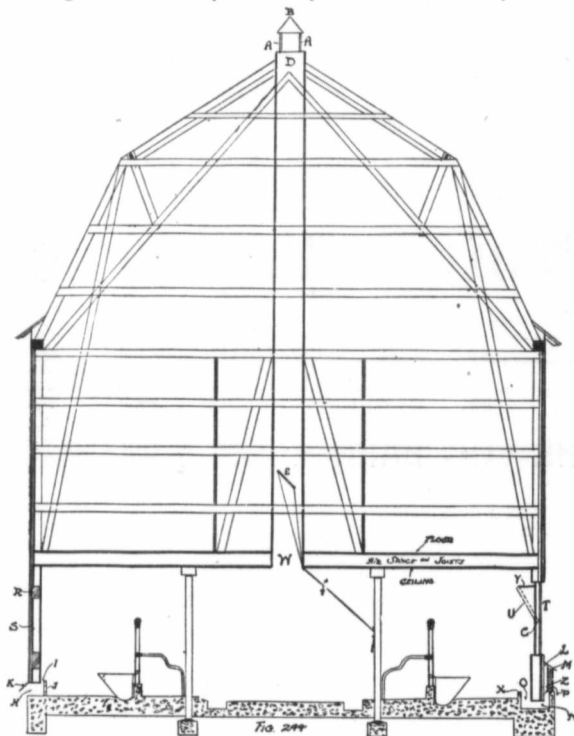
capacity once it has been cut off in some measure in a cold time is the most common cause leading to the condemnation of what

much too limited for warm weather.

Then again, an installation may be condemned unfairly because

the owner of a stable expects it to do more than any system of ventilation could ever do. A common standard by which the effectiveness of a system is judged is its ability to keep the walls and ceiling free from moisture. This is frequently a most unfair test. Precipitation of moisture on walls or ceiling is due to the warm vapor or water-charged exhalations of the animals, rising and lying for too great a length of time in contact with the cold wall or ceiling as the case may be. If the construction of wall or ceiling be faulty, as for instance, where only double boards with paper between constitute the same, then no system of ventilation could keep them dry without lowering the inside temperature

ness of any system. Too many cattle makes it difficult to ventilate in such a way as to avoid draughts, too few makes it impossible to keep the temperature up to the comfortable point and at the same time provide for sufficient air circulation. Low temperature does not always mean pure air, and here is a point where a great many stablemen make a mistake. The air in a stable where the thermometer shows several degrees of frost may quite easily be most vile. From all which it seems important, in the first place, to so arrange matters that there shall be about the right number of animals in the given stable, allowing, say, from 600 to 800 cubic feet of air space for each cow two years old



to practically the same as the outside. Walls possible of being kept fairly dry must have more or less insulation, that is, a dead-air space or a concrete core or shavings, or something to prevent too rapid conduction of heat. Then with a fairly rapid circulation of air the walls and ceiling may be kept dry. A ceiling protected by straw or hay overhead is the most satisfactory. Walls with a dead-air space may usually be kept fairly easily. Stone walls or solid cement walls must be wood-lined to insure their being fairly dry. No system of ventilation would otherwise ever keep them dry in very cold weather. The number of cattle in a given cubic space is quite an important factor making for the effective-

and over. This condition existing, there should then be provided about 15 square inches or more of controlled outlet area, and about 8 square inches or more of controlled inlet area for each animal in the stable. For instance, a stable 36 ft. x 30 ft. x 10 ft., which might be expected to accommodate 18 or 20 head, should have an outlet about 18 inches square or 20 inches in diameter, if round, and the inlets should be at least 6 inches by 12 inches, and two in number. By controlled inlets and outlets is meant that it should be possible to cut off the whole or any part of the inlet and outlet by means of some kind of damper or key. The controls are necessary for the reason that cold air being much heavier than warm air com-

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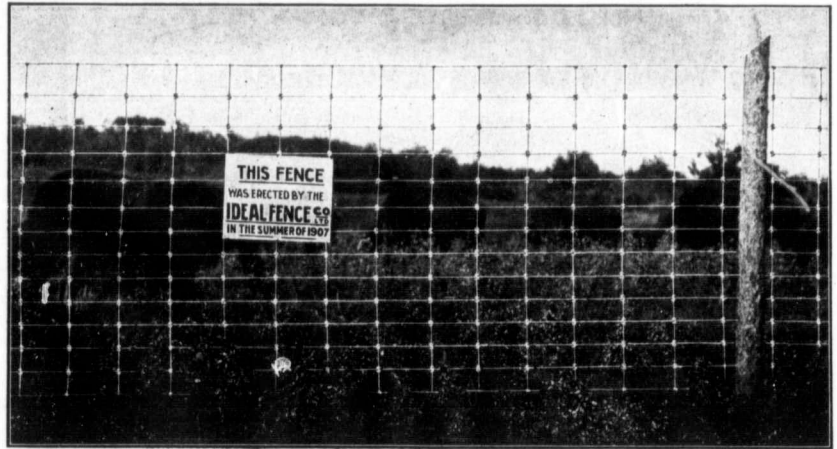
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The International Knife Co., St. Catharines, Ont.

pels a very much more rapid circulation or inflow and outflow of air in extremely cold weather than in warm. This must be controlled or temperatures will fall too low in cold weather and rise too high in warm weather.

The dimensions of shafts or outlets and inlets given below allow for friction of air currents in the shaft, for while 8 to 10 square inches per head in outlet area might be sufficient in very large stables, the same relative area in a small stable would certainly be found faulty. Outlet shafts must be neither too small nor too large. Where materially exceeding the area per head given above, they are likely to work unsatisfactorily and to be constantly dripping in warm weather and freezing in cold, due to the air currents being too sluggish. Where less in area by any considerable amount they are sure to be wet and dripping practically all the time, and to carry impure air off too slowly.

Many systems of ventilation have been devised and advocated. The perfect system has not yet been thought out. It is, besides, practically certain that a system capable of operating satisfactorily under any set of conditions that might be imposed never will be constructed. During the last ten years the writer has tested out some thirty or forty different schemes, systems or devices for ventilating farm buildings, such as cow barns, horse barns and piggeries, and has, during that time, learned two things very



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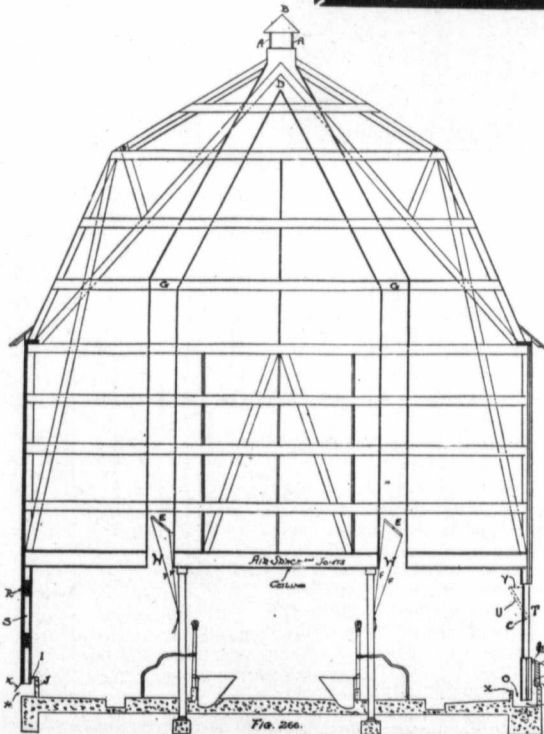
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thoroughly. These two items of information well learned are:—

(1) Good ventilation is a necessary and very profitable feature of any stable.

(2) No known system of ventilation is absolutely automatic or faultless.

It has also been possible to come to some conclusion as to the relative merits and adaptability of the various systems tried out. Many systems have shown more or less effectiveness, but of the thirty and odd systems experimented with, I may say that the system commonly known as the Rutherford System of Ventilation has proven much superior to any other tried. The superiority of this system is due to various features, the chief being:—

(1) Ease in installation, in buildings old or new.

(2) Adaptability to all classes of stables.

(3) Suitability to variety of weather and climate.

(4) Facility of operation and control.

(5) Effectiveness in control of temperature in all parts of stable.

As just stated, it is susceptible of easy introduction into old stables and may be readily and

conveniently installed in new buildings. A study of diagrams given will show probably the best relative positions for inlets and outlets. There is, however, but slight objection to any number of other possible or necessary different arrangements.

Fig. 242, showing floor plan of a stable for, say 24 cattle, also illustrates probably the best relative positions of fresh air intakes A A A and foul air outlets B B (beginnings of shaft in ceiling, see W D, Fig. 244). This arrangement suits where nothing in use in the loft or superstructure interferes in any way.

If a hay carrier is to be used in the superstructure, then it might be necessary to change positions of B B to C C, Fig. 243, where shafts would need to be constructed as shown in Fig. 266 by lines W G D. The fact of the outlet shaft changing directions at G and D will not interfere materially with its efficiency. These outlet shafts, provided they are staunchly built as described further on, may take almost any desired course so long as it is always more or less upwards.

The area indicated, 1 ft. x 2 ft. each, or 4 square feet for the two

outlet shafts, is somewhat greater than is really necessary, but it is much better to have shafts slightly larger than any smaller than the minimum of 15 square inches per cow mentioned above.

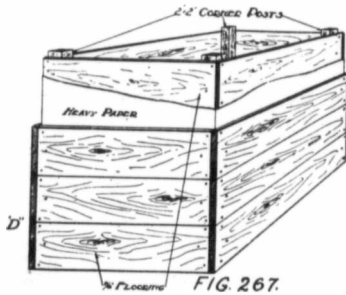


FIG. 267.

The intakes A A A A A might, if necessary, be changed to pass under or through walls at D D D D with slightly increased dimensions in each case, say 7 in. x 12 in., to make up for one opening less. This new arrangement would be advisable in case outlet openings had to be placed as C C.

In the intakes, see Fig. 243, fresh air enters at 1, passes under wall and enters stable at 2, with an upward tendency. The wall, 3, should be about 6 in. thick, and on this wall should be built the little guard shown at M in Fig. 244. The inner wall corresponding to 3 need not be over 4 in. thick.

Fig. 244, showing a stable in cross-section, will indicate the best method of building walls and ceiling, and also illustrates two different methods of introducing the fresh air in the Rutherford System. There is very little to choose between these two methods; that on the left is somewhat more cheaply installed and can be introduced at any time, while the method of the right is probably somewhat more effective, slightly more expensive, and must be installed when the building is being erected. The following explanatory paragraphs will help to a full understanding of the features illustrated:

The outlet shaft for foul air, W D, should be in duplicate, and should be about 1 ft. x 2 ft. inside measurement. The best construction is boards running vertically, two ply, with inch airspace and two papers between. The opening at the top should be roofed (see Fig. 244). The roof should be supported on four posts, A A, leaving a clear space about 15 or 16 inches between top of shaft and bottom of roof B. The amount of air to escape by these shafts in any given time may be controlled by means of a key as at E. The key may be regulated by cords F F. The key should never be entirely closed. Where the shafts are large enough there is no objection to their being used as chutes for feed or litter, but care

should be taken to secure the door as to insure its remaining tightly closed when not held open to allow of shaft being used as a chute.

The fresh air inlets require careful consideration. The method on the left is very simple of installation. The passage through from H to I should be about 12 in. x 6 in., the greater dimension being horizontal. K is a protection or roof, H the intake, I the outlet inlet to the stable through which the air passes with an upward tendency. J is a guard or band so placed as to direct air currents upwards. To do this it will need to extend about 4 inches above top of opening through wall. It will, of course, be nailed to the projecting 6 in. sides of this fresh air shaft inside the building, just as K will

be nailed to the same sides outside the building. These passages might be controlled by means of small keys or hinged covers, but it is not usually necessary or advisable to so control the intake shafts.

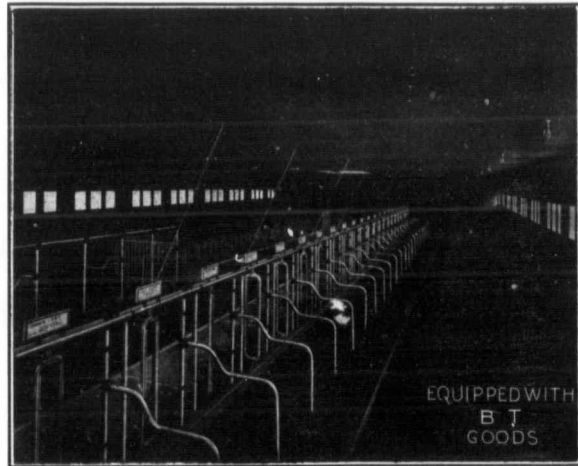
The method on the right hand side (Fig. 244) admits air by the passage N, 12 in. x 6 in. below the level of the floor. Air enters this passage L under shelter of the snow and rain guard M and flows into the stable at O, with an upward tendency. The cement or wooden guard X is to prevent dirt or dust being knocked or swept in. The top or opening should be protected by a grating of some description. It is possible, but seldom necessary or advisable, to provide these inlets with keys or controls. If it is found necessary to use some system of control, then the control P had better be outside the building but inside

the guard cabin M where it can be regulated by a cord passing out at Z.

The careful installation of this system of ventilation, with either method of fresh air intake, will insure an abundance of good fresh air at all times, provided it is allowed to operate. If, however, it is left to the mercies of the average hired man, it, like any other system, will be found useless.

To get best results in ventilating any stable and to insure a comfortable, dry building possible of being kept well ventilated, clean and hygienic, attention to the following small details in construction will be found very helpful.

1. Use simple fixings.
2. Ceil under joists.
3. Put in all the windows the superstructure will permit.
4. Let windows be high (see cut).
5. Hinge windows in bottom at C.
6. Use chains as at V to allow them to open inwards



A well lighted stable. The windows are hinged to turn down

at top. 7. Provide double windows for winter. 8. Walls should be built to include air space. Starting from the outside inward, the following construction for stable walls, see Fig. 266, will be found satisfactory:—Battens, R, inch dressed lumber, two tar papers, studding 2 x 6 and air space S, two tar papers, V-joint.

Construction of the Ventilating Flues.
A good ventilating flue should have all the characteristics of a good chimney. It should be constructed with airtight walls, so that no air can enter except from the stable. It should rise above the highest portions of the roof, so as to get the full force of the wind.

Stronger currents through the ventilators will be secured by making one or more larger ones than where many small ones are

provided, and it is usually best to have as few as possible, and not leave the impure air in distant parts of the stable.

A good form of ventilating flue is made of half-inch matched stuff with building paper or deadening felt between to make it air-tight, for every hole and crack lessens the ventilative power.

Light.

Flood your stable with sunlight for it is the best and cheapest disinfectant in the world. Sunlight will do much to keep the cattle healthy. Put in an abundance of windows, for a dairy stable should not have one dark corner. Four square feet of glass should be provided for each animal to be housed. In our cold climate the windows should consist of single sash, double glazed. They should be hinged at the bottom so that the tops will swing inward, as this will prevent draughts on the cattle by directing the intruding air towards the ceiling.

Dimensions

The size of the barn is determined by certain measurements of stalls, mangers, gutters, and passageways that have been found by experience to be the most practical. Following these measurements it has been found that for the best and most practical results a barn should be 36 feet wide, and thus have room for two rows of cows. This is not the most economical dimension when the relation of wall space to floor is considered, but the loss in this direction is more than made up in the ease with which the work of the stable can be performed. Better light and ventilation can be secured by arranging the barn with the cows in only two rows than in any other manner. The cuts on page fourteen show the best arrangement for various widths of barns.

There is considerable difference of opinion as to which is the best way to stand the cows; but we believe on the whole it is better to stand them heads together. The

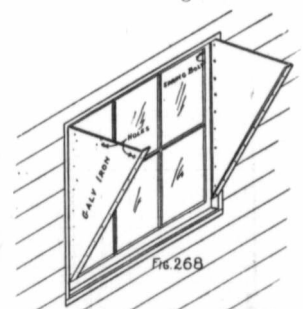


FIG. 266.

following are some of the main points in favor of this method:

By standing them heads together you get the light on the business end of the cow.

Continued Next Month.

SAVE YOUR PROFITS DON'T LET THE GOPHERS EAT YOUR GOLDEN GRAIN

**Some of the
Druggists
who sell
Mickelson's
Kill-Em-Quick**

If your druggist's name is not here, or if he is too far away to travel here *this week*, or if he does not sell Kill-Em-Quick, any of the following druggists will be pleased to send the 75c size for 94c, or the \$1.25 size for \$1.50 prepaid. The extra charge is for postage only. The value of Kill-Em-Quick cannot be measured in single dollars—it saves thousands! Get a box at once!

MANITOBA

- Alexander—W. S. Walker
- Arden—A. Fuller
- Belmont—W. F. Stephenson
- Brandon—J. F. Scott
- Brandon—G. E. McCulloch
- Brandon—W. A. Robertson
- Brandon—D. E. Clement
- Binscath—A. Langis
- Carberry—Spearin & Co., Ltd.
- Carman—E. M. Saunders
- Elkhorn—J. M. Money
- Foxwarren—G. N. Maynes
- Franklin—W. E. R. Coad
- Glenboro—N. B. Hens
- Hanouts—B. R. McNaught
- Hartney—E. W. Bailey
- Manitou—Charles J. Parker
- Meihta—W. Hewitt
- Minnedosa—R. T. Butchart
- Minnedosa—Minnedosa Pharmacy
- Minota—R. K. Chalmers
- Newdale—R. D. Kippen
- Newsway—W. M. J. Davidson
- Oak Lake—J. R. K. Graham
- Oak River—S. J. Kirk
- Rapid City—R. T. Hoskins
- Russell—William Ledingham
- Strathclair—H. A. Patterson
- Shed Lake—W. E. Arnes
- Souris—Morton Drug Co.
- Swan Lake—R. I. Davidson
- Virden—S. J. Hall
- Virden—Higinbotham & Son
- Wawanesa—C. C. Gorie

SASKATCHEWAN

- Alameda—The Alameda Pharmacy
- Abernethy—S. C. Kennedy
- Brownlee—J. M. Holmes
- Brownlee—Brownlee Drug Store
- Bruidford—H. J. Greene
- Broderick—James Brough
- Bounty—Geo. A. Heron
- Broadview—A. W. Allingham
- Broadview—Craig & Archer
- Bledworth—R. J. Eley
- Brinsman—The Brinsman Drug Co., Ltd.
- Caraduff—W. T. Lockhart
- Craik—A. C. Robertson
- Davidson—The People's Drug & Book Store
- Drakewater—Geo. Boyd
- Duck Lake—R. T. Shepherd
- Dunlop—T. A. B. Ferris
- Delisle—F. J. Deas
- Dundurn—F. E. Livingstone
- Eyebrook—Eyebrook Drug Store
- Estevan—D. L. Irvine
- Elbow—Elbow & Book Co., Ltd.
- Elroy—G. N. Crawford
- East Grey—F. C. Fowler
- Esterhazy—E. L. Smith
- Fillmore—R. G. Cook
- Forward—S. I. Cumming
- Francis—H. M. Woodhull
- Fleming—W. J. Hamm
- Foam Lake—W. E. Somers
- Gainsboro—J. A. Stewart
- Gull Lake—C. H. Morrison
- Glen Ewen—Glen Ewen Pharmacy
- Griffin—A. G. Robertson
- Greenfold—D. F. Patterson
- Govan—A. H. Roberts
- Howard—H. A. McDonald
- Hawarden—Thos. A. Davidson
- Hague—J. H. Hildebrandt
- Humboldt—W. N. Duff
- Husley—Red Cross Drug Hall
- Husley—The Canton Pharmacy
- Harbert—W. P. Peters
- Indian Head—A. G. Orchard
- Indian Head—F. P. McCarthy
- Kinderley—The Kinderley Drug & Stationery Store
- Kinderley—Dr. J. W. Lord
- Lang, Geo. A. McCuaig
- Lumsden—N. W. Anderson
- Lumsden—Lumsden Drug & Book Co., Ltd.
- Lanigan—C. A. Calvert
- Lemberg—H. S. Mann
- Leshburn—H. A. Ellis
- Lloydminster—Red Cross Pharmacy
- Lloydminster—The Medical Hall Drug Co.
- MacKlin—MacKlin Drug Co.
- Moore Jaw—F. W. Marlat
- Moore Jaw—H. W. Anderson
- Moore Jaw—E. L. Collins
- Moore Jaw—Moore Jaw Drug & Stationery Co., Ltd.
- Macoun—Alexander Mitchell



Anton Mickelson, President

Face this question squarely! What are you going to do about the gophers? Will you let them steal hundreds of dollars out of your grain profits or are you going to take the right step now towards killing them quick?

This is a serious problem, Mr. Farmer. Every gopher on your farm means a clear loss to you of at least 10c. There are about 1,000 gophers in an ordinary 40-acre field. That means \$100.00 loss every forty acres, if you let the gophers live. Here is a guaranteed gopher poison. It's the most effective, most economical and most practical way known, to rid your fields of every gopher, pocket gopher, squirrel, prairie dog, field mouse, coyote, rabbit, wolf and rat. It has been tried for years in every locality and proved perfect.

Kill Every Gopher Now

Don't wait! Gophers never lose their appetites. They are always ravenously hungry. They start eating the minute you start seeding. They eat every day. They store up enough grain to last them all winter. They not only eat the grain but the gopher shoots as well, and will follow a row plant. In dry weather they take pleasure in eating the juicy joints.

I've made a mighty careful study of gophers. I know their habits and I've watched them hour after hour and day after day. It was necessary for me to know how they acted, so I could get the information that would enable us to mix a poison that would kill gophers and kill them quick.

Save \$100.00 Every 40 Acres

When you figure it all up, gophers steal about 5 bushels of grain every acre. That means, 200 bushels every 40 acres—at 50c a bushel that makes \$200.00. Can you afford to lose that much every 40 acres? Wouldn't you like to put that \$100.00 or \$200.00 or \$300.00 or more to your credit in the bank instead of letting the gophers have it?

Remember, too, that every pair of gophers raises 20 to 36 young ones every year, and gophers are constantly throwing up non-productive soil which soon ruins the farms. Something will have to be done sooner or later. Why wait? Here is the poison that thousands of farmers have used in their fields with greatest success. It has saved hundreds of thousands of dollars for farmers throughout gopher-infested sections. It will save hundreds of dollars for YOU.

Kill-Em-Quick Costs 1c Per Acre

My gopher poison is different from anything else ever placed on the market. It has a very peculiar odor—an odor that is decidedly pleasing to the gophers. Kill-Em-Quick attracts them like a magnet, and they like the taste of it. And Kill-Em-Quick is so powerful that the merest atom kills a gopher. One grain of wheat, coated with Kill-Em-Quick means sure death. The gopher dies on the spot. He doesn't get time to find out what he ate. He doesn't have time to suffer. He dies quick and that's all there is to it.

**Mickelson's
Kill-Em-Quick
The Guaranteed
GOPHER POISON**

**ANTON MICKELSON, President
MICKELSON KILL-EM-QUICK COMPANY
Dept. C, Winnipeg, Manitoba, Canada**

One 75c box of Kill-Em-Quick will actually kill all the gophers on 80 acres—actually kill over 2,000 gophers. That means—less than 1c per acre, invested for my poison, will save you \$200.00 on 80 acres. A \$1.25 box of Kill-Em-Quick contains twice as much as the 75c box and will kill 4,000 gophers. Isn't it worth while trying? I guarantee you satisfaction absolutely. If Kill-Em-Quick fails to work, I want to know it. I'll refund every cent of money personally. Kill-Em-Quick is

Easy to Use

It is put up in powder form. Simply soak the grain over night—drain water off and mix with Kill-Em-Quick which sticks to the grain. This the poison forms a coating over the grain so it comes into immediate contact with the stomach tissues, causing death of the gopher instantly.

If you come in from the field some noontime after tending gophers at work, you can mix Kill-Em-Quick at once by placing the grain in hot water for a moment, draining it off and mixing with the powder and adding a little cornmeal. Place the preparation wherever there's a sign of a gopher.

There are many other ways to use Kill-Em-Quick. The directions are on every package. If you want any special advice, do not hesitate to write me personally. I will tell you just how to use Kill-Em-Quick for best results. I want you to be so satisfied with what Kill-Em-Quick does, that you'll tell your neighbors about it.

At the side and bottom of this advertisement, I give a list of some of the druggists who sell Kill-Em-Quick.

Ask Your Druggist

—even if his name isn't here. I didn't have space enough for them all. But nearly every good druggist sells it. If yours doesn't, please mail me his name with your order and I'll ship direct, express prepaid, with my guarantee of satisfaction or money back. Don't take anything except Mickelson's Kill-Em-Quick. Nothing else will kill gophers so quickly, so cheaply and with so little bother. Remember the postage shown below. Kill-Em-Quick is put up in two sizes, at 75c and \$1.25. The \$1.25 package contains twice as much as the 75c package, but the 75c package holds enough to kill all the gophers in an 80-acre field.

Write Me a Postal or Letter

Tell me whether gophers, squirrels, prairie dogs, sage rats, field mice, rats, coyotes, wolves, ground hogs, rabbits, badgers or pocket gophers are troubling you much. Let me know all the facts and I will write you a personal letter. I want to mail you my Free Book that tells all about Kill-Em-Quick. Ask me questions. I'm glad to be of service to you.

Now is the Time to Kill the Gophers and Kill-Em-Quick is the poison to do it with.

Mail me a postal or letter—in the meantime ask your druggist for Kill-Em-Quick.

- Milestone—M. A. Elliot
- Moosomin—C. B. Nicholl
- Moosomin—Walter Pennington
- Murray—F. J. Williams
- Maymont—W. J. Mahoney
- Maidstone—R. W. Barclay
- Maple Creek—E. G. Hewitt
- Maple Creek—F. C. B. Wilson
- McTaggart—McTaggart Pharmacy
- Netherhill—R. A. Scott
- Nokomis—R. H. Norris
- North Battleford—N. T. Brown
- North Battleford—Harry W. Wright
- Ogema—Ogema Drug Co.
- Oxbow—J. P. Tripp
- Osage—R. J. Barrett
- Osage—E. A. Barrett
- Outlook—G. F. Daintry
- Paynton—Paynton Drug Co., Ltd.
- Perville—A. L. Keen
- Qu'Appelle—W. H. Hunter
- Regina—Regina Pharmacy, Ltd.
- Regina—Regina Trading Co., Ltd.
- Regina—E. W. Roberts
- Rouleau—W. A. Harkness
- Rosetown—C. B. Mark
- Rosetown—A. Beames
- Rosethorn—R. S. Fleury
- Radisson—The Radisson Pharmacy, Ltd.
- Saskatoon—R. T. Chown
- Saskatoon—The City Drug Co., Ltd.
- Saskatoon—Central Drug Co., Ltd.
- Saskatoon—P. H. Coad
- Saskatoon—Saskatoon Drug & Stationery Co., Ltd.
- Saskatoon—S. T. Atkinson
- Sedley—Sedley Drug Co., Ltd.
- Stoughton—E. Hull
- Stintaluta—V. J. Carson
- St. Adways—James Brough
- Sheho—Sheho Drug Store
- Strasbourg—E. S. Agnew
- Swift Current—P. Hooney
- Tyvan—A. N. Hardy
- Tugaske—Tugaske Drug Store
- Tuxford—J. H. Storey
- Unity—A. J. Tovey
- Weyburn—O. S. Mitchell
- Weyburn—H. S. Edwin & Co.
- Wolesey—A. D. Ferguson
- Wolesey—E. S. Cady
- Whitefoot—J. R. Bird & Co.
- Wapella—Thompson's Pharmacy
- Wilkie—F. A. Sitter
- Young—H. W. Paddell
- Yellow Grass—W. C. Sweet
- Zelandia—Zelandia Drug Store

ALBERTA

- How Island—G. B. Mills
- Barons—W. E. Walliven
- Bassano—J. H. Stiles
- Brooks—P. W. McNab
- Chauvin—T. H. Saul
- Canrore—A. M. Saunders
- Cardston—The Cardston Pharmacy, Ltd.
- Cardston—Cardston Drug & Book Co., Ltd.
- Champion—Champion Drug Co., Ltd.
- Carmanagay—Thos. Little
- Calgary—James Findlay Drug Co., Ltd.
- Calgary—The McDermaid Drug Co., Ltd.
- Calgary—MacFar'ue & White
- Calgary—Wendell MacLean
- Clareholm—W. G. N. Johnston
- Clareholm—O. L. Reinecke
- Calgary—Caristadt Drug Store
- Gleichen—Gleichen Pharmacy
- Gleichen—A. R. Yates
- Graoux—Graoux Drug Co.
- Hardisty—Alberta Drug & Stationery Co., Ltd.
- Hughesville—Austin Francis
- Innisfail—Innisfail Drug Store
- Irma—H. B. Armstrong
- Innisfail—M. Simpson
- Innisfail—William Geary
- Kitacooy—D. W. Whilans
- Laombie—Laombie Drug Co., Ltd.
- Lethbridge—Red Cross Drug & Book Co., Ltd.
- Lethbridge—Jackson & Cope
- Lethbridge—J. D. Higenbotham & Co., Ltd.
- Medicine Hat—C. S. Fingle
- Medicine Hat—E. M. Cawker
- Magrath—Magrath Pharmacy
- Milk River—Milk River Mercantile Co., Ltd.
- Macleod—Barnes & McNay
- Macleod—A. Young & Co., Ltd
- Nanton—Nanton Drug Co., Ltd.
- Okotoks—F. R. Brown
- Pincher Creek—D. L. McCrea
- Pincher Creek—Mitchell Drug Co., Ltd.
- Red Deer—Parker's Pharmacy
- Raymond—McDuffee Bros.
- Sterling—Sterling Drug Co., Ltd.
- Strathmore—E. Lambert
- Strathmore—A. W. Miller
- Stavelly—Stavelly Drug Store
- Taber—Alberta Drug & Stationery Co., Ltd.
- Vermilion—E. J. Kibbleswhite
- Vegreville—Red Cross Pharmacy
- Vegreville—The V. & V. Drug & Book Co.
- Viking—Viking Drug Co.
- Wainwright—Red Cross Pharmacy
- Wainwright—Wainwright Pharmacy
- Warner—S. Cope

Farmer Up-to-Date—Farmer Good Intention

Their Farms adjoin. Both of these Farmers live in your neighborhood. You know them and they know you. Are you one of them? If so, we sincerely hope you are the right one.

FARMER UP-TO-DATE

MAY
1912

FARMER GOOD INTENTION

Henry:—One of the boys asked me to join him in a trip to Regina to see the Winter Stock Fair and I'm not sorry I put in the time as I did. I've seen a bigger show, but seldom a better assortment of good stuff. The Clydes made the best exhibit of the bunch, but there were some rare beauties among the Aberdeen-Angus cattle. (By the way, have you seen that one of the breeders, who showed at Regina, bought an Angus Doddie heifer the other day at Perth for \$1,150? That is going some, isn't it? But I'll bet you the price of a summer outfit he'll make it pay.) I was still more impressed with the swarm of students at the Gas Engine "Schools" held during the fair week by the Rumely, the Hart-Parr and the Sawyer-Massey boys. I should say there were nearly a thousand young chaps pulling engines to pieces, fixing them up again, and running them under all sorts of conditions.

Father:—I'm thinking, Janet, it's about time the boy was home. We're likely to have some trouble with the help this year, and we'll want him, but I don't grudge him his trip to Regina. Wish we had taken a couple of days there ourselves, but when old Mac gets home that Angus heifer of his I'll take a day off to run up to Brandon to see it. Old "Good Intent" though I was an easy mark when I paid the price I did for that young Holstein bull, but look what he has done for us in the three years we've had him. He thought he had the laugh on me when he bought three scrub heifers at the same time for the price I paid for my bull, but he isn't laughing to-day I can tell you. Well, here's spring in good earnest, old lady. I see the Rumely Engine people and the Stewart Sheaf Loader Company are each offering a \$500 prize for a wheat sweepstake at the Lethbridge Dry Farming Show in October. I mean to win one of these little trinkets.

Mother:—Couldn't we do something for that unfortunate girl that lost her husband just a week after they landed in the country? She's an English woman, they tell me, and she had been married little more than a month. We were discussing her case at the "Home Economics" meeting yesterday, and I feel I would like to do something for her. Mrs. Jones told me she was a splendid cook and understood poultry keeping. I have only seen her once at the hardware store and she struck me as a clean, intelligent girl. You were saying the other day, Dad, that I ought to take things a little easier now, and I heard about that poor woman's misfortune I decided on the spot to take you of your word. I can see by your twinkle that I can, so I'll go down with the rig first thing in the morning and fetch her. We can give her a comfortable home and a bit of money to lay by.

John:—That's a good scheme of yours, mother, and I'll back you up in any bit of it where father bucks. I've booked some big jobs with the plowing outfit—night-shifts—all the time, and I expect we'll be able to start next week if the weather holds. The engine is in the pink of condition and the oil tank is bang full, so we're ready on the first stroke of the bell. Funny thing! I had been thinking of putting in the week at one of those Tractoneering Schools at Regina, but upon my word I have got so well acquainted with our tractor I seem to know her humors about as well as I know old "Madge's" little ways. That "Power and the Plow" book is sure a dandy and I've got to thank it for all I know and most of my enthusiasm for power farming. What a difference in the teams since we began to use them reasonably! I believe we could get half as much again for the whole bunch as we could have sold them at last spring.

Father:—Well, Janet, I took your advice and saw neighbor Watkins last night. He gave me some good advice, but he also gave me some that wasn't. For instance, he told me that I must do something—sell anything; sell half of the farm if necessary to get some well-bred stock and let the beasts I have out in the yard there go at any price. Now, it's all very well for Watkins to talk like that but how in heaven am I to get a price for half of my land that would enable me to do all he has in his little plan. Besides, I doubt if I would like to bring any buyer around some bits of the land in the condition it is in. You see, we've been here now some eighteen years and there's no doubt it has suffered a bit from what we've taken off it. But, apart from that, there's nothing he can say that will convince me that stock raising in this blamed country can be made to pay.

Mother:—Dad, I've stood by you now through good report and ill for twenty-six years, but, upon my word, I begin to lose patience with you. No, No! it isn't the other women that make me discontented. I would live on bread and water if that would help to make things pay, but it isn't any "saving" of that kind that will help us. Let me tell you what has been in my mind for a long time. You came on the farm with no farming experience and with very little knowledge of the ordinary rules of business. You've got among a bad bunch. Instead of running alongside of men who are helping themselves and finding their own way to the market, you've got the blues and the ill humor of those chaps who spend the most of their time at meetings to discuss "conditions" and in writing letters to the papers. Why, man—Watkins and Jones and others we know make conditions and you can, too, if you will.

Charles:—By gosh, Mother, you're on the square tack! That's the very thing young Jim Watkins was telling me last Sunday. Now, there's old Blinksop, that's never happy unless he's in the chair or on the floor at some meeting of agitators, or heading a deputation to get a bridge built that half a dozen of us could put up in a couple of days. And look at his farm! Did you ever see such a wilderness of mustard and sow thistles as he "raised without effort" on his place last summer. I tell you, Dad, that man and the like of him are a menace to society. He ought to be smothered or sent to work in a coal mine to keep him out of mischief if that would do it. Anyway, Father, Mother is right, and I gave you fair warning last time we spoke about this. You've got to take her tip, and if you can't well, sit down for a year or two and give me a chance.

Letter from Bob:—Dear Father, Mother and Charlie—I am having a ripping time in Winnipeg. Sorry I stayed so long on the farm. There's some life here and you get the money you work for. All the same, I would rather be in the open country, but never again if I have to put in the time I did on our "cinder-sifting" proposition. I am selling implements, but, candidly, I would far rather be using them on the farm. Only it makes my heart sore when I remember how we used to leave that fine binder and the disc harrow and plows out in the open from the close of the season till the next one started. Hope things are getting a bit brighter and better on the farm. It's a long time since I had any real news from you. Is it a case of "no news is good news," or is it that you haven't the heart to write? Sorry to see by the local paper that you got such a poor price for your steers and hogs.

Does This Kind of Competition Hurt?

Lewistown, Montana.

March 13, 1912.

Mr. F. B. McIntyre,

Billings, Montana.

Dear Sir:

The OIL-PULL is a piece of cast iron mounted on wheels intended to move backward and forward and it is claimed a man can make a trip around a whole city block in three hours and 15-3-4 minutes.

Sometimes a man can start the Oil-Pull by hand and foot but a cable should be provided to wind around the fly wheel. Hitch a span of mules to the end or call on your neighbors to pull the end.

It is claimed by doctors that the Oil-Pull is a sure cure for constipation and a 3-minute ride will give relief on account of the vibration of the engine.

In case of war the Oil-Pull may prove the greatest invention of the age. On account of the loud explosions in the exhaust pipe which sounds like a cannon it will put the enemy on the run without ammunition. It is understood several have already been sold to the government for experimental purposes.

It is also claimed the Oil-Pull will use less fuel than any other engine, on account of it being heavier, so when you get into a mud-hole you can stop the engine for three or four days until you can dig it out again.

Yours truly,

"An Oil-Pull Customer."

Thousands of letters like this fac-simile have been mailed in plain envelopes to farmers and threshermen, by some person or persons unknown to us.

Read it Now Whether You Got a Copy or Not

The idea of fair play in business has spread rapidly in this enlightened age—but many "business men" still prefer to prowl about in ambush.

A Question We want you to read this letter thoughtfully—you threshermen and farmers who are the backbone and the balance wheel of the nation. Ask yourself this question. "Does This Kind of Competition Hurt?" And whom? We believe that you will place no confidence in the order-seeker who stoops to veiled insinuation and anonymous letters to gain your attention—that you will demand facts—merit—a guarantee of service—open, honest competition—a mutual respect, and modern business-like methods.

You know from this letter that the shoe of honest, clean competition is pinching someone whose business methods and business conscience belong back in the days of pirates and robber barons.

The Answer You—your fellow-farmers and threshermen everywhere, have already answered our question by an enthusiastic response to the RUMELY IDEA—a square deal in business. You, too, perhaps are among those who proudly meet the *oil-pull* trains in the field—whose demand has raised our *oil-pull* output in two years from nothing to more than 75 tractors a week—and who are enabling us to run every department of the Rumely, Gaar-Scott, Advance and Canadian Rumely plants on full time, with a greater force in each than ever before in its history.

A Creed Two years ago, Edward A. Rumely, now General Manager, sent this prophetic message to all Rumely employees: "Our Company will grow as we make it perfect *** And, further, as long as we all work together harmoniously, and render farmers real service by offering them HONEST GOODS in an HONEST WAY the world will need the Rumely Organization."

Unclean methods cannot prevent the growth of an organization that clings to that simple, impressive creed.

We are at Your Service ALWAYS

M. Rumely Company, 1951 Dufferin Ave. Winnipeg, Man.



Scenes like this convey the effective answer of thousands of farmers: "Cowardly competition cannot destroy clean business"

Three Years Programme for a Half Section

This essay is to give a settler coming into this country an idea of a three year's plan for a half-section of land, with 20 acres broken. Now this plan would not do for all parts of Western Canada, because the method of farming in one locality is quite different to another locality. In some parts mixed farming is followed, while in other parts grain is the chief product. The plan about to be given is for grain growing chiefly. This particular district has not been damaged by hail for the past 10 years. The half-section is situated 10 miles west of Portage la Prairie and 1 mile from Barr Station on the Grand Trunk Pacific Railway in the Province of Manitoba. It is the west half of section 4, township 12, and range eight. The land is a heavy clay loam, containing very few stones. It is all prairie, and is not broken up by any sloughs or ravings, but gradual slopes to the north. The buildings are small, but will fill the operator's needs till he has the land pretty well broken up. There is one drawback, that is there is not an abundant supply of water, but this is overcome by digging large reservoirs. The price of the land is \$20 per acre.

The man who is to operate this farm is married, and has no family. He has no other trades, being a farmer most of his life. The capital he has to start with is \$4,000, with which he buys stock and implements necessary to work the farm. The first year he pays \$500 down, and is not charged with interest for the first year. After that he pays \$500 down with interest on the balance at 6 per cent., but has the privilege of paying more if he is able to do so.

In the spring of 1904 he purchases two teams of horses, each team costing him \$400. The feed for the horses for the summer, oats, 400 bushels, at 30 cents per bushel, amounting to \$120; hay, 7 tons, at \$4 per ton, equals \$28; implements, two sets of harness, costing \$60; one wagon and box, \$80; 1 plow, with stuttle and harrows, \$30; 1 mower and rake breaker bottoms, \$85; 1 set of \$70; tools for the farm, as shovels, pitch forks, and tools for fixing, amounting to \$15.

The necessary articles for the house he had before coming to the farm. The amount it takes to run the house for one year, including both clothes and provisions, is \$400.

This spring he plows and seeds the twenty acres of cultivated land

to oats and barley. It took 45 bushels of seed oats and 10 bushels of seed barley.

The middle of May commences breaking, each day averaging 4 acres per day, and breaks for a period of 30 days, in that time he should have broke and rolled 100 acres. This is now left to rot.

It is too early to start haying on government lands, he takes work with a contractor, who is digging a ditch. The contractor pays him \$4.50 per day for himself and team. Works at this ditch for 15 days, and receives \$67.50.

Haying commence, he hires a man at \$30 per month. They put up 60 loads of wild hay. The government permit cost him \$10. Finished haying 15 days after commencing, paid the man \$15 for his work, and let him go.

The crop is not ready to cut yet, so commences backsetting. He works at the backsetting for tens, and plows 40 acres.

The harvest is now ready. He then purchases a binder at an auction sale, which had only been run one year. The price paid for the binder was \$100. After cutting and stroking his own crop, he hired with a neighbor to help cut his crop, helping him 10 days at \$8 per day, amounting to \$80.

Threshing time has come, and he hires out with a thresherman with his two teams, receiving \$4.50 per day for the team he drove, and \$2.00 per day for the team the thresherman had to give the man for. The thresherman had a run of 30 days, so he received for wages \$155.00 after paying his own threshing bill, which amounted to \$40.

Returns home and finishes the backsetting. After finishing the backsetting, gives it a good discing and a stroke with the harrows, and leaves it in that condition till spring.

It is now frozen up, and all land operation has ceased. Let us now see how our farmer stands. This year it has all been nearly paying out, only receiving money for small jobs he could do while not needed on the farm.

This is his financial standing, ending the year 1904, as follows:

The total lay out for this year being \$2,439.80, the earnings for the year are \$654.50, therefore he draws on his capital \$1,985.38. The capital left is \$2,024.2, and 515 bushels of oats, 156 bushels of barley, and hay enough to feed the stock for the year.

The winter has now set in; it takes him till new year to deliver

FOR SALE BERGEN AND ROSSER LANDS

1840 Acres Known as the "Howe Farm." This splendidly equipped farm is owned by me and I am offering the same for sale. All the land is under cultivation. Two sets splendid buildings, 3 windmills and water for unlimited stock. 1000 acres ready for crop. For a quick sale **\$65.00 an acre.** \$25,000 cash; balance 5 years 6%

Saskatchewan Lands—Kindersley District

S. W. 1/4 Section 3-30-25 W. 3
S. 1/2 " 21-30-25 W. 3
E. 1/2 " 22-33-18 W. 3

ALL STEAM PLOW PROPOSITIONS

THOMAS GUINAN Pres. Red River Loan & Land Co.
913 Union Bank Bldg. Winnipeg, Phone M. 3735.

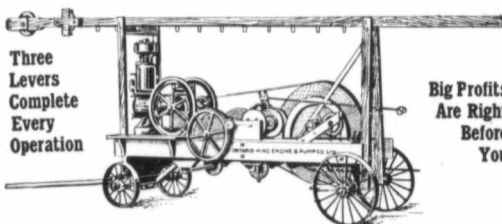
Mr. Thos. Guinan 913 Union Bank Bldg. Winnipeg.

Please send me full details of your land offerings as advertised in Canadian Thresherman & Farmer.

Name.....

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Big Money in Well Drilling Business



Three Levers Complete Every Operation

Big Profits Are Right Before You

The Well Drilling and Boring Business offers great possibilities for big, quick money making; every town, home, farm and ranch must have its own water supply. Many drillers have their time booked six months ahead at daily profits of from \$20 to \$50.

Climax Well Drilling and Dempster Boring Machinery

offer YOU the means to do likewise. Proven and tested under all conditions of service by both experienced and inexperienced operators. They are successful where others fail.

It is simply enough TOLD, but to appreciate what it MEANS write us today for Catalogue No. 12, which by word and picture tells you all about it.

We also have a full line of Gasoline Engines, Windmills, both Power and Pumping, Aylmer and Toronto Pumps, Cylinders and Pump Supplies, Toronto Grain Grinders and Roller Crushers, Steel Saw Frames and Aylmer Scales, in all styles and capacities.

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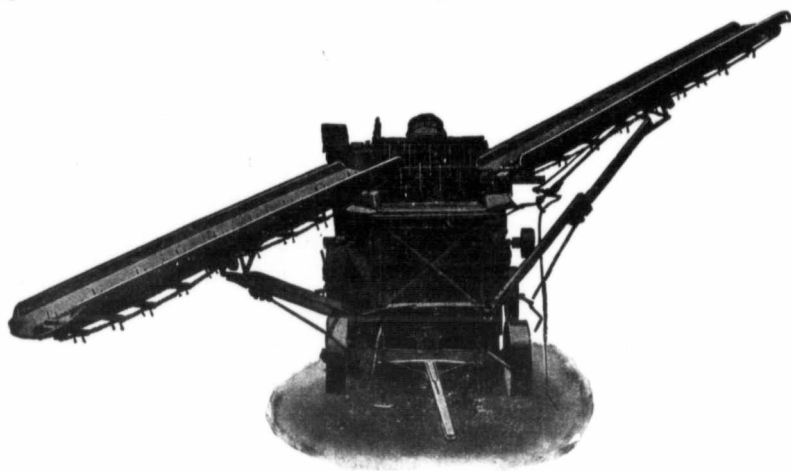
THE "GARDEN CITY" FEEDER

THE KING OF THE FIELD. The Feeder you have been looking for. The Feeder built upon common sense plans. The Feeder that does the **RIGHT THING** at the **RIGHT TIME**. The Feeder that **ALWAYS** feeds your Separator **EVENLY**, Let the Pitchers **PILE** the Grain upon the Carrier "**ANY OLD WAY**." The only Feeder that can "**MAKE GOOD**" on the following warrant.

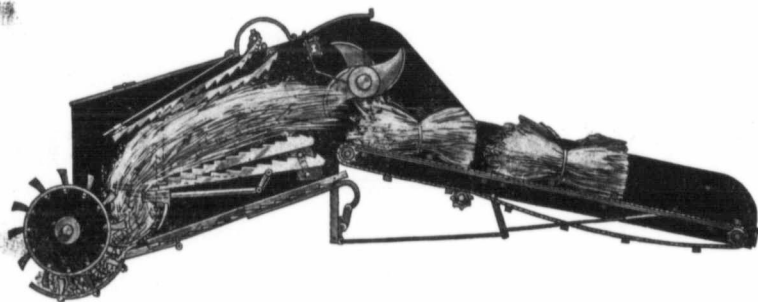
The Garden City Feeder is positively Warranted to feed any Separator to its full capacity, with any kind of grain in any condition, without slugging the cylinder, breaking any concaves or spikes, allowing any uncut bundles to enter between the cylinder and concaves, burning any belts, winding the knives or retarder, or delivering any bundles to the cylinder crosswise, regardless of how the grain is pitched upon the carrier.

Can your Feeder make good on the above warrant? Wouldn't you like to get one that can?

Then try a "**GARDEN CITY**," and if it fails the trial will not cost you a cent. **WE TAKE ALL THE RISK.**



Don't get left again this year on account of a poor feeder. The best is the cheapest. It will **PAY YOU** to throw away your old Feeder and put on a "**GARDEN CITY**."



Don't forget that we have the **MOST PERFECT WING FEEDER.** The one that **SATISFIES BOTH THE THRESHERMAN AND FARMER.**

Send for Catalog. It is **FREE.**

LET US QUOTE YOU PRICES.

The Garden City Feeder Company, Limited, Regina, Sask.

	Dr.	Cr.
2 Teams of horses at \$400 per team	\$800 00	
Feed for horses, oats and hay	148 00	
Wagon	80 00	
Harness	60 00	
Gang plow 12 in. with stubble and breaker	85 00	
Mower \$45, Rake \$25	70 00	
Tools	15 00	
Provisions for the house	400 00	
Wages	15 00	
40 lbs. of binder twine 12c per lb.	4 80	
Seed oats and barley	22 00	
Binder, second hand	100 00	
Drill, second hand	80 00	
4 Days helping neighbor to seed \$8 per day		\$032 00
15 Days working on ditch \$4.50 per day		67 50
40 Loads of hay for sale \$8 per ton		320 00
10 Cutting for neighbor at \$8 per day		80 00
30 Days threshing \$6.50 per day		155 00
Taxes and payment on farm	550 00	
	\$2459 80	\$654 50

the hay and do the necessary stores and work about the farm.

This is now the year 1905; he takes a contract to supply 100 cords of wood to the milling firm in the town, the price paid for the wood was \$4.50 per cord, paying the Indians \$1.00 per cord for the cutting, therefore the profits from the contract amounted to \$3.50 per cord, or \$350.

The spring is now drawing near, and seed wheat as to be bought and fetched home. It will take 175 bushels of wheat, allowing 1% bushels per acre. The cost per bushel being 90c, amounting to \$157.50.

Spring is now here, and the land

is dried off, and ready to receive the seed. He puts in the crop without any hired help. First giving the land a stroke with the harrow, then sowing the seed and giving it another stroke with the harrow crossways of the field. By the time he has finished sowing the wheat, it is now time the oats and barley were in. Taking the same 20 acres he used last year, and sows 15 acres of oats and 5 acres to barley, using the seed from the grain he grew the year before.

This is now the middle of May. He purchases from a neighbor a sow, which is due to farrow at the latter end of May, pays for the

sow \$20. Commences breaking again, and breaks 25 days, averaging 4 acres per day, and rolls it down in 4 other days. After this it is time for haying, yet his government permit on a quarter section of hay land for \$10. Hires a man for \$30 per month, and puts up 40 loads of hay. After this is done he starts backsetting, and backsets till harvest, which commences about August the 20th. Starts cutting wheat, taking him 7 days to cut the wheat and 1 1/2 days to cut the oats.

This year he stacks the crop, taking him 3 weeks to complete stacking. The stacks must have time to get over the sweating period, which last about 2 weeks. He therefore starts and finishes the backsetting. To get the plowing all done he has to buy another team and single plow, and sets the hired man to work to plow.

About October the 7th a thresherman comes along, and the threshing is done for 5c per bushel all round, and the thresherman boards the men.

He puts the grain directly on the cars. The crop averaging 30 bushels to the acre for wheat, and 35 bushels for the oats and barley. He shipped all the wheat excepting enough for seed, which 325 bushels. Two cars and a half were shipped, and the price received for the grain was 90c per bushel, amounting to \$307.50. The fall plowing is kept at till all the

land is plowed. The next year's crop will be 170 acres for wheat, 2 acres for oats, and 10 acres for barley. The 20 acres that were broken when he came to the farm must be summer-fallowed the next year. This finishes the land work for 1905.

Let us now turn to his financial standing. He does no outside work at all to bring money in from outside sources, being kept busy on the farm.

The following report will show: These are his expenses for the two years, it is what he has laid out on the farm and in stock and implements, and also the payments on his farm, is \$4,737.70. The money he has made is \$2,367.50, so by this we can see that he has drawn from his capital \$2,370.20, leaving in the bank a capital of \$1,629.80, with all implements and stock paid for, and seed and feed for the coming year.

This winter he does not do much but his chores. Cleaning the seed grain and hauling the wood and cutting it ready for the summer is about all that he would do.

The spring of 1906 has come round again, and seeding is about to commence. He hires a man for the summer at \$30 a month for seven months. He also finds that the man might as well be driving four horses as two, so he purchases another team, paying five hundred dollars for them.

	Dr.	Cr.
Last year's standing.....	\$2459.80	\$0654.00
Expenses for repairs and other tools.....	40.00	
175 bus. of seed wheat at 90c per bus.....	157.50	
1 Pair of bob-sleighs.....	25.00	
1 Man's wages for 4 months \$30 per month.....	120.00	
Binder twine.....	26.40	
Threshing bill.....	185.00	
1 Team of horses.....	400.00	
1 Single plow.....	30.00	
Money to keep the house going.....	400.00	
Sold 6 pigs at \$10 each.....		60.00
1 Sow bought.....	20.00	
Sold 2,675 bus. of wheat at 90c per bus.....		2307.50
Taxes.....	50.00	
Payment on place with interest.....	824.00	
	\$4737.70	\$2367.50

Seeding is now started; the man does the harrowing, while the boss does the seeding. He now must need a band packer, to pack down the fall plowing after seeding to overcome a better conservation of moisture. The price paid for the packer is \$120.

Seeding is now all done, and the breaking of the last 90 acres is broke and finished about June 1st. He and the man does any fixing of fences, and any necessary work about the farm. Now about June 10th he sets, the man plowing the summer-fallow, after plowing it, packs and harrows it well.

Now he also finds the stable is too small, and requires to have a large one, so builds a new barn, costing him \$1,500.

The haying time comes again. He then invests in a new binder, stock. After finishing haying, the

crop is not quite ready, and so starts the backsetting till the harvest is ready.

The harvest comes in about August 20th, and there is a rich bountiful harvest to be reaped, and he considers the one binder is not going to do it quick enough. He then invest in a new binder, costing him \$150. The harvest is now ready to be cut, and it will require two stokers to follow the binders. Mens' wages are going at \$2.00 per day, and cutting lasts 7 days.

This year the crop is too large to stack, so has a thresher come, and do it out of the stook at 8c per bushel for wheat, 7c per bushel for barley and oats, and boards the men at this price.

The wheat crop turns out 27 bushels to acre all round, the number of bushels of oats is 800, and

What the Oliver Center Draft Means

The center draft feature of Oliver Plows means easier work for horses, more and better plowing, and longer life for the plow. Study the following illustrations and see how clearly they bring out these three important points.

Easier work for the horses, because with the Oliver hitch four large horses abreast all walk on unplowed ground, distributing the work evenly among the four.

More plowing, because the work being lighter, the horses can draw the plow through more ground each day.

Better plowing, because the pull is evenly divided between the two beams and there is no side or pushing strain to throw the plows out of adjustment.

Longer life for the plow, with less time spent in making adjustments, because there is an even pull on both beams and no tendency to strain, bend or loosen the cross braces, thus throwing the plow out of adjustment.

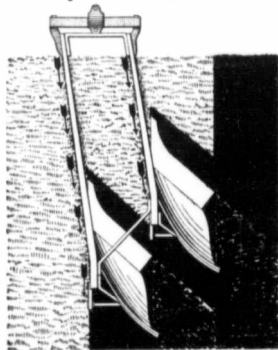


Diagram showing hitching of the Oliver No. 1 Gang plow. Observe that the hitch between the beams imparts an equal pulling strain to each. The pulling strain takes the direction indicated by the arrows, doing away with side strain on the beams.

All these points are important because they prove the economy of buying Oliver Plows. You cannot find them duplicated in any other plow.

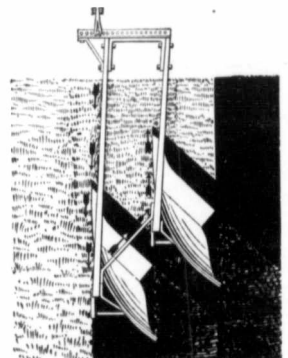
For further reasons why you should know all about and buy Oliver Plows, both tractor and horse drawn, see the I.H.C. local agent or write the nearest branch house.

Western Canadian Branches

International Harvester Company of America
Incorporated

At

- Brandon, Man.
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- Edmonton, Alta.
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- North Battleford, Sask.
- Regina, Sask.
- Saskatoon, Sask.
- Weyburn, Sask.
- Winnipeg, Man.
- Yorkton, Sask.



The distance from the edge of the furrow to the center of the hitch must be the same on all plows, consequently on plows that do not have a center draft, the hitch must be outside the rear beam. The arrows show the direction that the pulling strain takes. The rear beam is pulled and the front one pushed. Suppose the front plow bottom should strike a buried stump. It is easy to see that the front beam would become a pry around which the horses would pull the rear beam. It is to prevent such troubles as this that the Oliver plow beams are landed.

Cr.

654.00

60.00

307.50

367.50

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AN ENGINE GANG

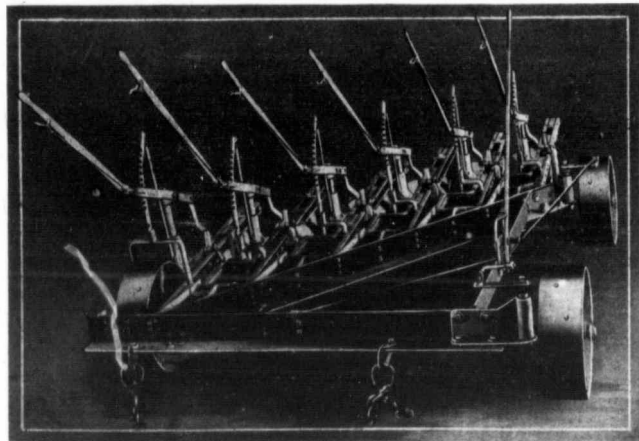
is no better than the bottoms of which it is made up—
good bottoms are the first essentials of a good plow.

RUMELY PLOW BOTTOMS are SCIENTIFIC IN DESIGN - PERFECT IN CONSTRUCTION

They run level, turn the soil thoroughly and scour readily, leaving a furrow smooth and clean-cut both on the bottom and on the landside. **Landside friction is eliminated by dispensing with the landside.**



Reg. U. S. Patent Of.
Known Round
The World



We lose none of the advantages of these perfect bottoms in building them into the gang.

Rumely Gang Plows

are built for strength, light draft, low cost, easy operation and adaptability to every kind and condition of soil.

Furnished in 4, 5, 6, 8 and 10 bottom sizes—both stubble and breaker bottoms.

Write for "Plow Folder," to-day. A postal will bring it.

M. RUMELY Co. 1954 Dufferin Ave. Winnipeg, Man.

barley 400 bus. The wheat is loaded on to cars, and shipped away all but what he requires for seed. The wheat is sold, 4,290, at 85c per bushel. He now starts the fall plowing, first finishing up the backsetting, and thoroughly discing and harrowing it. Then the stubble plowing is started, keeping the two outfits steady growing till freeze up. In that time he should have it all plowed and harrowed down ready for the winter.

This is the end of the third year, so we will now see his expenses and money made, and also take an inventory of the farm and equipment, so as to see where he stands.

Inventory Nov. 1906

320 acres of land with improvements at \$30 per acre.....	\$9600.00
Horses—4 teams of horses at \$400 per team.....	1600.00
Cattle—3 milch cows and 2 calves.....	120.00
Pigs—8 pigs at \$10 per head.....	80.00
Farm machinery, including binders, mower, rake, drills, wagons, racks, packers, plows, harrows and other articles about the buildings.....	1000.00
Household goods.....	200.00
Seed wheat, 430 bushels at 90c.....	387.00
Oats and barley, 1200 bushels at 30c.....	360.00
Total amount in the bank.....	1664.00
Liabilities—	
Amount still to be paid on farm.....	\$4940
Total net worth.....	\$1006.00

This farmer now is worth \$10,060. The fourth year's crop will consist of 250 acres for wheat, 40 acres for oats, and 20 acres for barley. He has got also a full

equipment of machinery and horses to run it next year. The expenses next year will not be nearly so great.

In this plan I have not gone and mentioned every little detail, but sum them up together, making it more easier to get at the progress. This plan of farming may drain the soil of its fertility if kept up at this too long, but I think for a man starting the system of cropping is alright. But he must change this plan of farming his land, as the land gets older, practising more rotation of crops, seeding down to grasses and clovers, and utilizing all the available farmyard manure to keep up the fertility of his soil.

Thos. Crosland.

Putting off an easy thing makes it hard, and putting off a hard one makes it impossible.

Expenses and money made for three years

	Dr.	Cr.
Last 2 years' standing.....	\$4737.70	\$2367.50
3 Milch cows \$35 per head.....	105.00	
1 Man's wages 7 months at \$30 per month.....	210.00	
1 Team of horses.....	450.00	
1 Land packer.....	120.00	
1 Fanning mill.....	35.00	
1 Barn building.....	1500.00	
1 Binder.....	150.00	
1 New wagon.....	80.00	
1 Threshing bill.....	463.20	
1 New gang plow.....	80.00	
Household expenses.....	400.00	
Harvest help, 2 men 7 days at \$2 per day.....	28.00	
Expenses for repairs and fixtures.....	50.00	
Set of harness.....	30.00	
Taxes.....	65.00	
Payment on farm and interest.....	790.00	
Binder twine.....	48.00	
Sold 4,290 bus. of wheat at 85c per bus.....		3646.50
	\$8340.90	\$6014.00

WAGON PAINT



Makes
the
Wagon
Last

Paint
protects the
life and vitality
of the wood and
iron used in the
wagon's construction.
Insure your wagon with

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You will be surprised how cheaply you can keep the wagon and all your farm machinery like new with an occasional coat of paint. It is wise economy to paint and save the dollars you'd have to pay for repairs. Get a can of Stephens' Wagon Paint—keep everything new. Sold by leading dealers. Write today for free book of "Suggestions"—for paint users.

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**CURIOUS
AMERICAN THRESHER FOLK**

**THE SCOTCH FARMER
OF OLDER CANADA**

By Felix J. Koch.

The poems of Burns have created in many a heart otherwise indifferent to the land of the thistle a yearning to visit Scotland. Not every man in the United States, it goes without saying, can afford a trip across the seas, but to those to whom Scotland calls there is a substitute to be found nearer at hand, and this one in Nova Scotia.

Nova Scotia—New Scotland has not been misnamed. Not only are the people even now very largely Scotch, but there are landscapes, rolling hills, and dales, which it takes but little imagination to find duplicate of over the sea.

If there be one place more than another where one will find this transplanted Scotch farm life it is centering round Antigonish.

One comes in, as a rule, at seven o'clock in the evening. A spring-wagon, such as Scotch country towns still afford, awaits to take you from train to inn. Aboard there are some tourists, going fishing in the lovely back country, and they wax enthusiastic over the prospect. While you listen to them you ride on to the hotel.

This is built much after the Scotch fashion. At one side of the hall are office and general sitting room in one, on the other the parlor, reserved for state occasions. Off at the rear is the dining-room.

There, ready and waiting, is Mary, "Highland Mary," they have dubbed her; she, the ward of the hotelier. She makes you think of the innkeeper's daughters you meet on the by-ways of Britain.

"There is a supper to-night as ye can be proud of," she tells you. "Mackerel and cold beef and potatoes." No Cotter's, Saturday night fare this.

After supper you follow the rustic Scotch custom—host and guests gathering to chat. There are innumerable Highlanders about here; in fact, two Highland societies have been organized in the province, and some of these may drop in. They tell of the dances in the kilts and of the games, which are played on the green.

Somehow or other you enjoy sitting back, and listening to their conversation. There is to be sermon preached in the Gaelic at St. John's next Sunday. The place is a Catholic settlement, and the Catholic priest there at present hails from Scotland. Hence the treat of the Gaelic. As these tell

it, this is the tongue of many of these Highland Scotch.

Highland Scotch, it would seem, make up perhaps one-half of the sixteen thousand people of the county. The Lowlanders are not nearly so numerous; many of the remainder of the population are Irish and French. The Highland Society, as a result, rather controls things. It is composed of men of either Scotch origin or descent. Once a year formal meetings are held, to elect the chiefs and marshals.

There are other features of the Scotch life which are interesting. Once, perhaps twice, a year, there is a meeting on the "green" for games. Most of these games are practically athletic contests—dancing, foot races, hammer throwing and jumping, and the like. Our host would have it that only the dances are typically Scotch.

There are one or two bag-pipers in the town, and they furnish the music for such occasions. Sometimes other pipers will be brought in from up-country. Most of these dancers as a rule come out in kilts, and enjoy the varied Highland dances. These, it seems, must be to pipe music, or they fail utterly. Favorite among them all, still, is the Highland reel. The dance will start with a grand march, men and women both. The women wear the Scotch plaid; the men, too, affect it. The bag-pipers strike up, now and then a

TRADE
PENBERTHY
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**"The Best by
Every Test"**

We also make
**Ejectors, Oils and Grease Cups,
Sightfeed Lubricators, Plain Engine
Lubricators, Steam
Whistles, etc.**

Specify our High Pressure Automatic Injector

For your Plowing Engines, Road Rollers, etc.
Works high 215 to 225 lbs. steam on 3 ft. lift, temp. water 74 deg.

Starts low 35 lbs. on 3 ft. lift water 74 deg.

Handles hot water 125 deg. at 100 to 125 lbs. steam.

" " " 115 " " 140 lbs. steam.

" " " 104 " " 160 " "

Our Standard Stock Injectors

works as follows:

Start low 20 to 22 lbs. steam on 3 ft. lift.

Work high 165 to 170 lbs. steam on 3 ft. lift.

Lift water 20 to 34 ft. on 60 to 80 lbs. steam.

REMEMBER—Our water gages and gage cocks have been passed on by both the Governments of Saskatchewan and Alberta. Specify our make and have the law on your side.

Manufactured by

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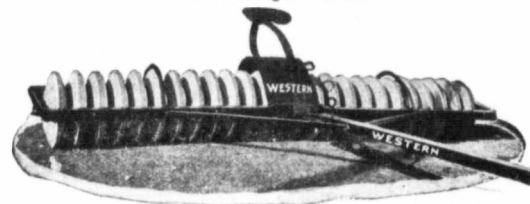
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Windsor, Ontario

The Fortune of Your Crop is determined by the PACKING of the SOIL

Last year, had you packed the land with a properly constructed and thoroughly effective packer, your crop would have been cut before the freeze came.

All successful Farmers agree that packing the land makes the crop mature earlier, which means a better grade and less danger of frost.



Efficient Soil Packing cannot be done with an ordinary cast iron packer

It only packs about one third of the surface, but

The New "Western"

will give just three times the service, and the shape of the rolls ensures the thorough packing of the whole surface. The Western is a complete departure in land packers. With frame of heavy angle steel all over, the rolls are made of highest grade cement, reinforced with steel spokes. This means weight, effectiveness and practical indestructibility.

The weight is about 3,000 lbs. and can be bought through any reliable dealers at **\$135.00 F.O.B. your station**, or if your dealer cannot supply you, write direct to the sole manufacturers.

The Western Foundry & Machine Co. Ltd.
Saskatoon, Sask.

violin accompanies. On they go, marching about, until finally they bear up at the opera house, where the real Highland ball occurs. There, then, it is not long before a Highland reel is in progress. Sixty, seventy couples will take part in the grand march, members of the society and their guests, the Irish and the folk of other foreign tongues, but the reel seems particularly for the Scotchman. Invitations go out in the Scotch, and the dance master directs in that language.

When the final wind-up of any affair occurs it is a Scotch reel always. The women are formed on one side of the hall, "step" dancing alone is permitted. As the music continues then they dance about the partner, and then the partner of their vis-a-vis. This dancing, round and round again, may consume ten or fifteen minutes. Then the dance is actually off, as any other might be. Refreshments, it seems, are not particularly Scotch, since the wave of prohibition has come in.

Outdoor dances, however, are quite the vogue with these transplanted Highlanders. There are sword dances now and then, in which two swords are crossed for center.

Then, hammer-throwing in the open is most popular, and the Highland fling is often engaged in. Folk compete, both in the fling and in the more usual dancing, and proud is she who holds the town's record. Women of 60 odd will often enter the lists to keep up their renown. Sometimes a medal is awarded as prize; this is to be kept until the holder is fairly conquered. Other, more ordinary sports, too, figure at holiday time.

Banquets, now and then, up in the great hall of the town, notably upon St. Andrew's Day, give the local folk a chance to distinguish themselves. Every member of the society, and prominent citizens as well, are gathered for the feast. There is a regular course dinner, then a toast of welcome.

After this comes the response to the chief. While that is in progress the piper enters, playing his pipe. A young woman, in typical Scotch attire, follows behind, carrying the haggis.

The haggis, it needs be explained, is a sheep's pouch, carefully filled with vegetable foods. Each item therein is thoroughly cleansed and prepared with special care. The vegetables and the several giblets of the sheep are arranged with an eye to the effect.

The piper and the woman march about with this, everyone rising as the pair reaches them. Finally, it is brought to the place of the chief, and there deposited.

Upon this, each person at the table rises, and goes to the chief to ask a helping of the haggis.

FREE to FARMERS, REEVES and MUNICIPAL OFFICERS

a Sample of the Easiest Laid, Strongest Frost-proof Culvert Ever Made for Farms and Roads, with Book of Facts.

EVERY farmer wants to reduce his taxes and statute labor. Pedlar's strong, non-rusting corrugated culvert saves excavation hauling and time, and makes a culvert that will not wash out or cave in like brick or cement. Much better than wood. Needs no attention. Time you now give to culvert repairs can be given to the road surface only. Learn about Pedlar culvert and how much better it is.



You put Pedlar's Perfect Corrugated Culvert up like this—right at the job



after tearing it there in handy bundles like this—



which fit into each other like this—



and are clamped in a three-flange stiff joint with a tool like this. Isn't that quick and easy? It is. There is no other way so good. Get Book.



YOUR own farm ought to have this culvert at every open drain. Useful for drains, feed chutes, stable ventilation shafts, barn bridges on sidehills. Strong enough for holding up traction engines. Remember it is easy to use, stands frost and ice, never corrodes, being made from non-corrosive Tonscan metal, takes only a short time to put in place. Get the free sample and book. Learn how to use it on your farm.

SEND NOW A SAMPLE OF THE CULVERT IN STRONG, NON-CORRODING GALVANIZED METAL WILL SHOW THE WHOLE STORY AND THE BOOK WILL HELP. WHY NOT LEARN ALL ABOUT IT NOW?



Established 1861
 413 CALGARY ST. JOHN, N.B. PORT ARTHUR
 Room 7, Crown Block 42-46 Prince William St. 45 Cumberland St.
 When writing ask for the Culvert Book No. 255.

The Why and How of this Wonderful Culvert

PEDLAR'S Perfect Corrugated Culvert is in very heavy and thick, strong metal, galvanized after being deeply corrugated. Unlike wood, it never rots. Unlike brick or concrete, frost and ice cannot burst it. A single man can make it up, clamp the wide, flat flanges tightly, and roll it into place. Not a useless shovelful of earth has to be lifted, as in every other kind of culvert, and Pedlar's Perfect Culvert is so strong it can hold up a traction engine on the ground itself. You save teaming, because the nested sections are compact. Without a possible. Once you use it, you have no more culvert-trouble.



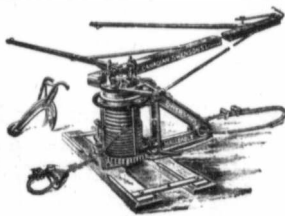
See what a neat bridge it makes across the highway ditch at your gate. Placed in half a day. Remember you can make any length culvert from sections of Pedlar's Nestable Culvert.

Below are two men doing statute labor. They are just setting a section of built-up Pedlar Culvert in place. See how little excavation is needed—hardly any. This means quick, easy work. This culvert will stand the heaviest loads and the hardest freshets without washing out. It comes from 8-inch sizes up. You build any length you need right at the job. Use Pedlar Perfect Culvert.



See How Easy it is to Use Pedlar Culvert Get Book and Sample Free To-day

- OTTAWA 423 Sussex St.
- QUEBEC 127 Rue du Font
- EDMONTON 563 Third St. W.
- CHATHAM 200 King St. W.
- VANCOUVER 108 Alexander St.
- WINNIPEG 76 Lombard St.
- REGINA 434 Kingston St.
- LONDON 86 King St.
- TORONTO 111-113 Bay St.
- HALIFAX 16 Prince St.



Stump, Tree & Bush Pullers

We have them made expressly for the North West trade. Now, it doesn't matter what kind of clearing you have to do, whether stumps, standing bush or burnt scrub of any kind, including willows.

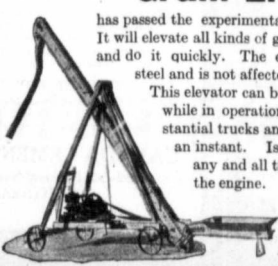
We sell these on a positive guarantee that they will clear the ground faster and cheaper than anything else made.

A Real Power Washer

for engine or electric power. Does the washing and wringing in a few moments and does it better than human hands.

Mr. Man! 95% of all machinery and utensils that you have bought has been something to assist you and to make your work easier and faster. Now, what are you going to do for your wife?

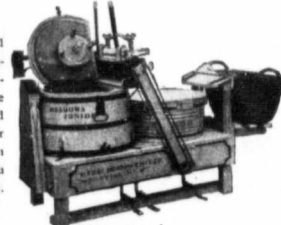
Our Portable Grain Elevator



has passed the experimental stage long ago. It will elevate all kinds of grain, wet or dry and do it quickly. The elevator part is all steel and is not affected by the weather.

This elevator can be raised or lowered while in operation. Built on substantial trucks and can be moved in an instant. Is ready for work at any and all times. Simply start the engine.

We issue special catalogues and literature on the articles which we manufacture and sell. Write for printed matter on the articles you are interested in.



CANADIAN SWENSONS LIMITED

410D Chambers of Commerce Building, WINNIPEG

All, it goes without saying, are given liberal portions.

To prepare a hyguss properly it seems is an art learned by but few. Heart and liver and the like each need skilled treatment. No other peculiarly native dishes are served at the feast. A goodly amount of ripe Scotch whisky manages to find its way in, and as the hours go by speeches and songs in the Gaelic help to beguile.

Around about Antigonish the people are largely farmers. These people took to this section, since it seemed a great deal like the Highlands of Scotland. The word Antigonish, however, is an Indian name.

The cutting of hay and raising of cattle and potatoes are the great industries of the country side. Oxen will frequently be seen, attached to the plows. In the winter it gets cold, sometimes down to the twenty-eight degrees, but this only lasts a day or two at a time, and there is plenty of both coal and wood to heat with. So the farmer folk of Canada East are quite content in their picturesque valleys.

ITINERARY—AGRICULTURAL COLLEGE SPECIAL.

- Tuesday, May 28th . . . Starbuck. Elm Creek. Carman.
- Wednesday, May 29th . . . Rathwell. Treherne. Holland.
- Thursday, May 30th . . . Cypress River. Glenboro. Treesbank.
- Friday, May 31st . . . Nesbitt. Carroll. Deleau.
- Saturday, June 1st . . . Sinclair. Reston. Souris.
- Monday, June 3rd . . . Kemnay. Griswold. Oak Lake.
- Tuesday, June 4th . . . Virden. Elkhorn. McAuley.
- Wednesday, June 5th . . . Wheatlands. Kenton. Lenore.
- Thursday, June 6th . . . Chater. Douglas. Carberry.
- Friday, June 7th . . . Sidney. Austin. MacGregor.
- Saturday, June 8th . . . Burnside. High Bluff. Marquette.
- Monday, June 10th . . . Morris. Altona. Gretna.
- Tuesday, June 11th . . . Plum Coulee. Winkler. Morden.
- Wednesday, June 12th . . . Thornhill. Manitou. La Riviere.
- Thursday, June 13th . . . Mowbray. Snowflake. Crystal City.
- Friday, June 14th . . . Cartwright. Holmfield. Killarney.
- Saturday, June 15th . . . Ninga. Boissevain. Deloraine.
- Monday, June 17th . . . Goodlands. Waskada. Lyleton.
- Tuesday, June 18th . . . Elva. Melita. Napinka.

- Wednesday, June 19th . . . Lauder. Hartney. Beresford.
- Thursday, June 20th . . . Miniota. Crandall. Hamiota.
- Friday, June 21st . . . Oak River. Rapid City. Minnedosa.
- Saturday, June 22nd . . . Russell. Binscirth. Birtle.
- Monday, June 24th . . . Shoal Lake. Newdale. Neepawa.
- Tuesday, June 25th . . . Arden. Gladstone. Macdonald.
- Wednesday, June 26th . . . Wellwood. Brookdale. Moore Park.
- Thursday, June 27th . . . Komarno. Balmoral. Stonewall.
- Friday, June 28th . . . Otterburne. Dominion City. Emerson.
- Saturday, June 29th . . . Gimli. Clandeby. Selkirk.

machines. The drill business became such an important factor in their trade, that the only way to give John Deere dealers what they demanded in the way of seeding machines was for Deere & Company to own and operate their own drill factory.

Back as far as 1860, Van Brunt drills began to attract attention and, from that time to this, their importance in the trade has grown each succeeding year. The Van Brunt drill is favorably known wherever seeding machines are used. Nothing in this line enjoys a higher reputation, is better known among the farmers, or is more firmly established in the trade.

The management of the Van Brunt factories will be continued

practically without change, and the famous Van Brunt drills will be a permanent part of the John Deere line from this date.

Food for the mind is as necessary as sustenance for the body, and both require that which will strengthen, refine, and elevate.

How often you are irresistibly drawn to a plain, unassuming woman, whose soft, silvery tones render her positively attractive! In the social circle, how pleasant it is to hear a woman talk in that low key which always characterizes the true lady. In the sanctuary of home, how such a voice soothes the fretful child and cheers the weary husband.

John Deere and Co., Acquire Van Brunt Drill.

Deere & Company, of Moline, Illinois, have obtained, by purchase, the drill factory of the Van Brunt Manufacturing Company, Horicon, Wis.

For many years Deere & Company through its branch houses, the various John Deere Plow Companies, have been among the world's largest jobbers of seeding





You can buy your oil and gasoline 1 cent per gallon cheaper if you have your own

Steel Barrels

Made of 16 gauge steel, galvanized inside and out. Won't rust, won't leak, won't wear out. LAST A LIFE TIME. Pay for themselves over and over in the saving of leakage, evaporation and loss from fire. Openings in head and side to insure perfect drainage. We carry stock in Winnipeg and have a large supply on hand. Can make immediate shipment.

Steel Barrel Company of Canada
363 Edmonton Building, Winnipeg, Man. Phone Main 7155
Remit by draft or money order

Capacity about 46 Imperial gal.
Price \$9.50 and \$10 each
F.O.B. Winnipeg.

Not only this  but these  as well

DON'T think that concrete can be used only for building bridges, silos, walls and walks; because if you do, you will probably overlook all the places where you can use it now.

T. L. Irving, of North Georgetown, Quebec, used concrete for 81 different purposes on his farm in 1911.

There are probably at least a dozen profitable uses for concrete on your farm at the present moment.

Perhaps you haven't thought of Concrete, except for a new barn, or a silo, or some other big improvement for which you aren't quite ready yet. That's why you should read

"What The Farmer Can Do With Concrete"

It will open your eyes to the hundreds of uses that other farmers have found for this material. In plain language, and with the aid of many photographs, it explains just what these uses are, and how they can be applied to your farm.

Concrete can not only be used for all the purposes to which wood has been applied, but also many others for which wood would never be suitable.

It is not only a building material; it's a "handy" material, something that you'll grow to depend upon more and more, as you learn its possibilities.

So write for this book. You'll find it isn't a catalogue, nor an argument for you to buy our cement. Every one of its 160 pages is devoted to telling you what farmers have done and can do with concrete.

IT'S FREE FOR THE ASKING.

Your name on a postal, or in a letter, will bring the book to you by return mail. Or use the coupon. Address

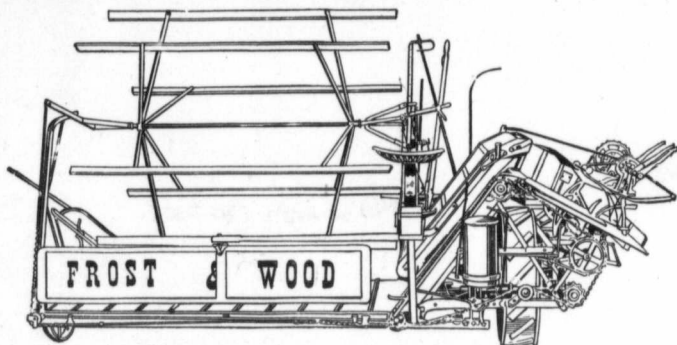
CANADA CEMENT CO., Ltd.
82-92 National Bank Building
MONTREAL

SEND ME YOUR BOOK



COCKSHUTT HARVESTING LINE

**Always
Ready for
Hard Work**



**Long Hours or
Lodged Grain
Do Not Bother
This Binder**

The Frost & Wood Binder

The Frost and Wood No. 3 BINDER was built purposely to stand up and work satisfactorily under the heaviest and most trying conditions to be met with in Canada. Long hours in the field may tire YOU, but the No. 3 is ALWAYS ready for more work. Lodged grain—short grain—long grain—the No. 3 cuts and ties it all into tight, compact bundles. In BUYING a Binder, you want to be assured of three things—a machine that will cut ALL your crop; that is able to elevate and bind it into sheaves without crowding on the deck or missing at the knotter and one that is easily handled and light in draft, yet capable of standing HARD WORK. You'll find these in all

Frost & Wood Binders

The cutter bar is so arranged that the guards get down under the most tangled grain and save it all. The Reel is easy to operate—back, forward, up, down—so you can instantly shift it to suit varying conditions. That means clean work.

Elevators have ample capacity for handling the heaviest and lightest crop, and FROST AND WOOD KNOTTERS have yet to be equalled for sure and positive work. Run the Binder as fast and as long as you like—you'll find it always ready to tie the next sheaf.

Are Light Draft Machines

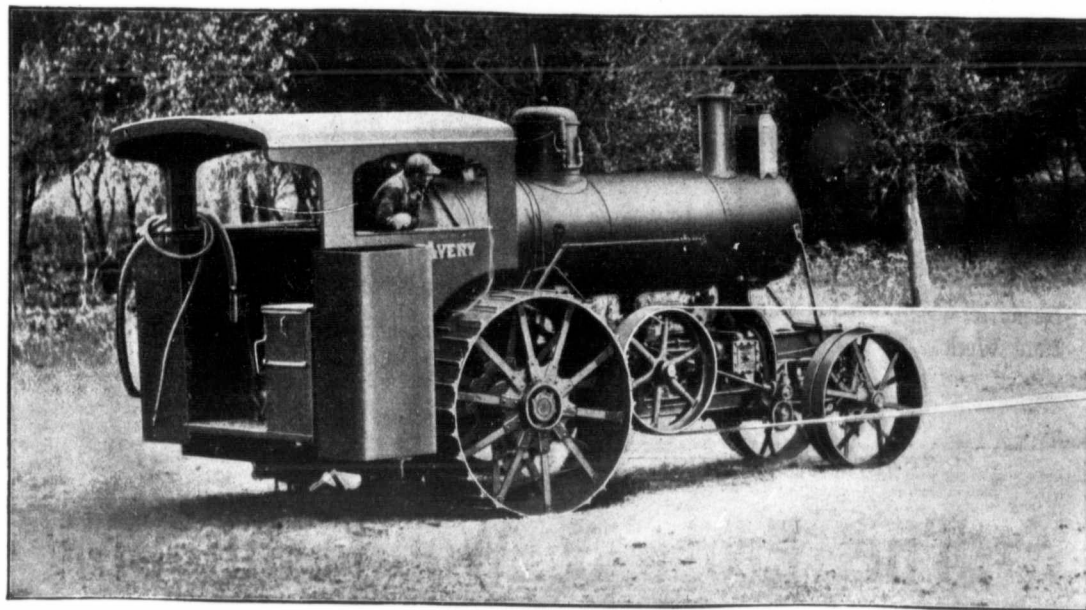
Carefully fitted Roller Bearings are put in every part where they will make things run easier. These bearings on Frost and Wood Machines are made to last and do their work. They won't fall apart and clog as do some others. They are there to make the Binder draw light, and they DO it. The No. 3 is certainly easy on horses. There are features other than the presence of many Roller Bearings that account

for this—for instance the Eccentric Sprocket Wheel. You should get our Special Binder Book describing the Machine in detail. It contains much information that will prove interesting to you. A Frost and Wood Binder will do the work on your farm as you want it done, so don't wait another day to get more information about it

See the Dealer

Cockshutt Plow Co., Limited

	Branches				
Winnipeg	Calgary	Regina	Saskatoon		
	Distributing Warehouses				
Red Deer	Lethbridge	Edmonton	Brandon	Portage la Prairie	



Avery Undermounted Engine

The Greatest All-Around Traction Engine Built

It makes no difference whether you only want to do belt and lighter traction work or whether you also want to do plowing and heavy hauling, the Avery Undermounted Engine has advantages for every kind of work. It is the Greatest All-around Engine built for every kind of Traction and Belt Work.

YOU GET THREE IMPORTANT ADVANTAGES IN AN AVERY UNDERMOUNTED ENGINE OVER A TOPMOUNTED ENGINE.

First.—It is much **More Durable.** There are no pulling strains on the boiler. The cylinders, gearing, shafting and drive wheels are mounted on a steel frame independent of the boiler. The boiler is simply carried around to produce steam and does not have to serve as the frame work of the engine as in the Topmounted style.

Second.—It is much **More Powerful.** The pull of the cylinders through the gearing and back to the load is in a straight line, instead of down at an angle from the top of the boiler as in topmounted engines. It is also a double cylinder engine which is the only kind of an engine really suitable for all-around work.

Third.—It is much **More Convenient to Handle.** You can reach all of the working parts for oiling or adjusting while standing on the ground without having to climb around over a hot boiler.

YOU GET MUCH STRONGER GUARANTEES WITH AN AVERY UNDERMOUNTED ENGINE THAN WITH ANY OTHER TRACTION ENGINE BUILT.

Below are the guarantees which we give with Avery Double Undermounted Engines. They are printed right in the order blank. They are the **Strongest Warranties ever given with a Traction Engine.**

WARRANTY ON ENGINE SHAFTING AND GEARING.

We guarantee against breakage for a period of one year following date of purchase, all gearing and shafting, including crank shaft (not only on our plowing engines, but all of our engines). We guarantee to replace, free of charge, not at the factory, but freight prepaid to the owner, anywhere in the United States or Canada, and supply a mechanic if necessary, free of charge to install any gearing or shafting, including the crank shaft, broken during any usual or unusual use of the engine, upon receipt of notice that such replacements are required.

WARRANTY ON BOILERS.

The boilers on all Double Undermounted Engines delivered on and after this date are warranted to the purchaser at the time of delivery to be steam tight under 200 pounds pressure, and should any leaks in flues or boiler develop within one year they will be repaired or replaced free of charge to the purchaser, providing the engine has not been abused by poor firing or operated for too great a period at a time with an overload.

WARRANTY AGAINST LEAKY BRACKETS.

All Avery Undermounted Engines are warranted for one year, or longer, against leaky cap screws attaching any brackets to the boiler, and defects of such nature will be made good free of charge.

WARRANTY ON ECONOMY, DOUBLE UNDERMOUNTED ENGINE.

As Avery Double Undermounted Engines are the most economical double engines entered in the Winnipeg Motor Contest, we hereby guarantee any of our stock engines to show the same economy in fuel and water as was shown by said engines at said Motor Contest.

THE AVERY UNDERMOUNTED ENGINE WON FIRST PLACE IN ITS CLASS AND THE SWEEPSTAKES IN THE 1911 WINNIPEG MOTOR CONTEST.

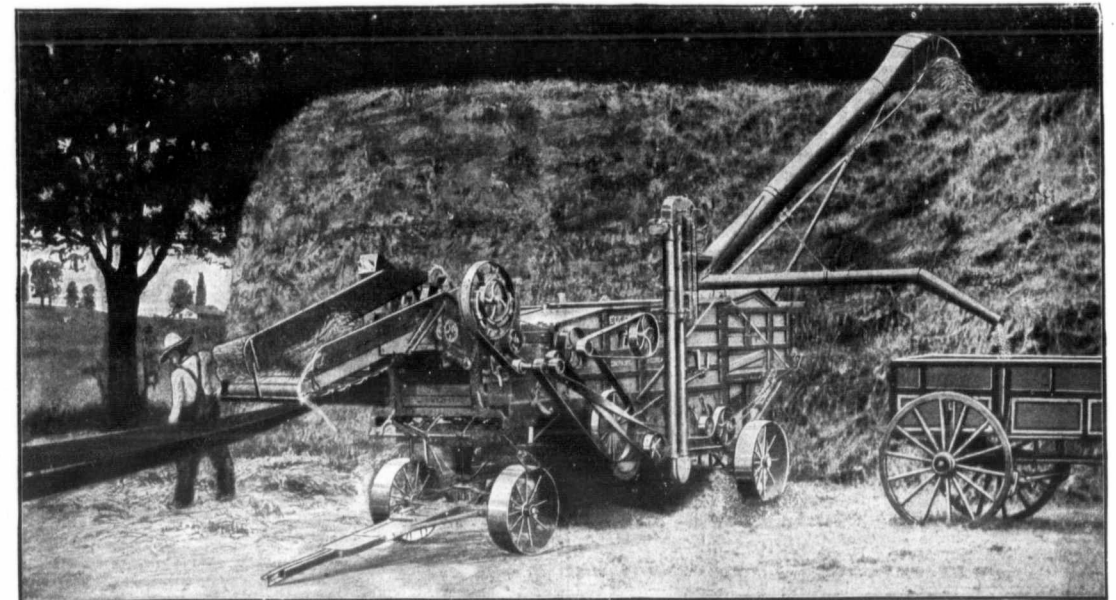
It scored 439 points out of a possible 500 which was 25 points over the nearest competitor in its class and 14 points more than the nearest of the 29 competitors in the entire contest. In the maximum brake horse power test it developed 159 horse power—the highest horse power ever pulled in any Motor Contest. In Design and Construction it tied with the Avery Truck for the highest points in the entire contest—93½ points out of a possible 100 with the next nearest competitor 6½ points below. It also scored Three "Perfects" out of Five markings. Avery Machines scored the Only "Perfects" in Design and Construction that were scored in the Contest. Ask Any Owner of An Avery Undermounted Engine.

Thousands of them are in use. Find out what the men who already own them say.

Get All the Facts About the Avery Undermounted Engine and "Yellow Fellow" Separator

Investigate the work of an Avery Machine in your neighborhood. Ask any owner of an Avery. Learn all about how they are built and the work they do. A lot of the facts are given in our large

AVERY COMPANY, 675 Iowa Street, Peoria, Ill.
HAUG BROS. & NELLERMÖE CO., Ltd. WINNIPEG REGINA CALGARY
 Western Canadian Distributors



"Clean in the Wagon Box and None in the Straw Stack No Delays Whatever"

Is what a Farmer wrote us about the work done for him by an Avery "Yellow Fellow" Separator

CLEAN IN THE WAGON BOX

When you want to know whether a separator puts the grain "Clean in the Wagon Box," ask a Farmer or the Elevator man. They know. Here's what some of them say about the Grain Cleaning work an Avery "Yellow Fellow" Separator does.

"We took in wheat and oats that were threshed with your machine and it came in good shape, well cleaned so that it did not need recleaning before sending to market. The farmers in neighborhood were well pleased with the work done."

"In handling grain I find that the Avery machine can't be outclassed in any way. We are always pleased to handle grain threshed by same. We find it **cleans the grain the best of any machine in our territory.**"

"Mr. Fred Lierman threshed for me this fall with his Avery machine. He gets it all out of the straw and gets the grain clean in wagon box better than any other machine I have been using before."

"We received your letter and are pleased to answer we were more than satisfied than ever before and have had many of the leading makes of separators, but **none as free from dirt and dust as yours** and we'd like to get that outfit again."

"Last fall Mr. D. A. Beebe done my threshing with his new Avery threshing machine and I think without any exception it was the **cleanest job I ever had done** and have had it done a good many years with different machines."

NONE IN THE STRAW STACK.

There is just one way to absolutely prove what a Separator will do in Saving the Grain and that is to make a Field Test.

For three years we have been making Field Tests on Avery "Yellow Fellow" Separators to prove what they will do. 27 tests have been made. Each of these tests was made on a different machine in a different locality and while working in the hands of the owner. Each of the tests was witnessed by a number of farmers who have voluntarily signed statements showing the average percentage of saving.

These tests prove that Avery Separators are Wonderful Grain Savers. **The average saving in the 27 tests was 99.9-10 per cent—practically perfect.**

Just think of it! 27 Actual Field Tests threshing on Canvas and an average saving of 99.9-10 per cent. **This is the Best Proven Record of Grain Saving ever made by any make of Separator.** No other make of Separator is backed up by such a record of Grain Saving as this. It is so good that we have added the words "Grain Saver" to the name of the Avery Separator and now call it the "Yellow Fellow—Grain Saver."

And besides this—when you buy an Avery "Yellow Fellow—Grain Saver," Separator you get the Strongest Guarantee on Grain Saving ever given with any make of machine. You get the following Guarantee printed right in the order blank.

WARRANTY ON SEPARATORS.

"The separating device will shake out 99.52-100 per cent, OR MORE of the loose grain that is in the straw, the grain to be dry and in fit condition to thresh. When desired we will submit the machine to test."

These Tests and this Strong Guarantee prove that you get a Genuine Grain Saver when you buy an Avery Separator.

NO DELAYS WHATEVER.

Many letters from owners of Avery Separators tell us that they have run the entire season through without a single stop on account of any break downs. No expense for repairs and no expense for idle crew, and customers well pleased with the steady work.

And they are long lived machines. They are built right to stand up on the job and to last a long while. If they didn't do it, we couldn't give the strong guarantees we do on castings, shafting and teeth. These are the guarantees you get when you buy an Avery Separator.

WARRANTY ON AVERY JUMBO RAZOR STEEL CYLINDER TEETH.

Our cylinder is guaranteed to thresh one hundred thousand bushels of grain with out breaking or losing a single tooth, and any replacements necessary to make good this warranty will be made free of charge, and any replacements on account of wear, will be made with the same proportionate discount from the list price. Avery Jumbo teeth are further warranted for five years or longer against breakages caused by pitch-forks, bolts, spades, or other foreign materials accidentally entering the cylinder.

WARRANTY ON AVERY SEPARATOR CASTINGS AND SHAFTING.

All castings and shafting on Avery Separators are warranted against breakage for one year from date of purchase and if broken while threshing will be replaced free of charge F.O.B. purchasers railroad station.

THE RIVAL OF THE IRISH BULL.

The Hibernian Product Has Long Furnished Food for British Laughter, but the Mixed Metaphors Perpetrated in the English House of Commons Have Afforded Amusement for the Entire World.

For many years there has been an impression that the linguistic bull is a distinctively Irish animal. The fame of Paddy Bull is world-wide, but the fact is he often is compelled to answer for the sins of his neighbor, Johnnie Bull, who, as a perpetrator of mixed metaphors, is without a peer.

In no deliberative body in the world is the mixed metaphor so much in its element as in the British House of Commons. As examples of its activity in that institution, London Tit-Bits submits the following list:

"Sir, we are told that by this legislation the heart of the country has been shaken to its very foundations."

"Among the many jarring notes heard in this House on military affairs this subject at least must be regarded as an oasis."

"The interests of the employers and employed are the same nine times out of ten—I will even say ninety-nine times out of ten."

"Our tongues are tied, our hands are fettered, and we are really beating the air to no purpose."

"I will now repeat what I was about to say when the honorable member interrupted me."

"The West Indies will now have a future which they never had in the past."

"A thorny subject which has long been a bone of contention among us."

"A slumbering volcano which at any moment a spark might set aflame."

"The honorable member would denude us of every rag of the principles which we have been

proclaiming from the rooftops."

"Ah! The honorable member opposite shakes his head at that. But he can't shake mine!"

Barristers are usually credited with possessing accuracy of speech, but some expressions recently reported indicate that they are capable of a blundering use of words. A member of the bar, in his opening speech for the defense, said:

"Gentlemen of the jury, the case for the Crown is a mere skeleton, for, as I shall presently show you, it has neither flesh, blood, nor bones in it."

"Gentlemen of the jury, it will be for you to say whether this defendant shall be allowed to come into court with unblushing footsteps, with the cloak of hypocrisy in his mouth, and take three bullocks out of my client's pocket with impunity."

In his "One Thousand and One Anecdotes" Alfred H. Miles records some exceptionally amusing bulls. Among these are the following:

Sir Boyle Roche described himself on one occasion as "standing prostrate at the feet of royalty"; and, in the days of threatened rebellion, wrote to a friend: "You may judge of our state when I tell you that I write this with a sword in one hand and a pistol in the other."

Even worse than the foregoing was the climax of the honorable member's speech in the House of Commons: "I smell a rat; I see it floating in the air; and, by heaven, I'll nip it in the bud!"

A Scotchwoman said that the butcher of her town only killed half a beast at a time.

A Dutchman said a pig had no marks on his ears except a short tail.

A British magistrate, on being told by a vagabond that he was not married, responded: "That's a good thing for your wife."

A Portuguese mayor enumerated, among the marks by which the body of a drowned man might be identified when found, "a marked impediment in his speech."

A Frenchman, contentedly laying his head upon a large stone jar for a pillow, said it was not hard because he had previously stuffed it with hay.

An American lecturer solemnly said one evening: "Parents, you may have children; or, if not, your daughters may have."

Two Scotchmen were discussing the relative merits of churchyards and cemeteries when one of them boldly expressed his aversion to the latter in the remark, "I'd rather no dee ava than be burried in sic a place"; to which his companion retorted, "Weel, if I'm spared in life an' health, I'll gang naewhere else."

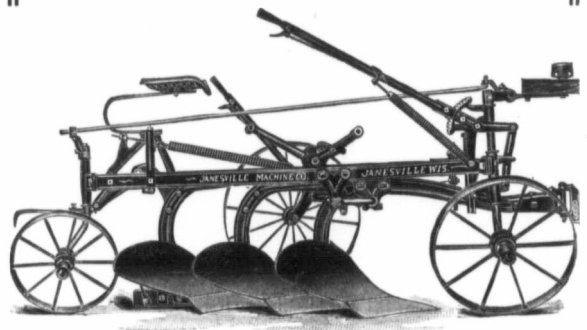
IF YOU DO IT WITH A JANESVILLE Northwestern Gang Plow

Your plowing will become as pleasant as a pastime. This great implement has been designed and constructed with the single purpose of overcoming all the difficulty and worry of handling the heavy gumbo soil peculiar to Western Canada. No ordinary plowshare or combination of plowshares will make headway against these conditions and do satisfactory work. After years of study and racking experience we have successfully met the case with the JAMESVILLE GANG

ITS CHARACTER

Among other exclusive features, the "JAMESVILLE FOOT TRIP" horse lift on this plow gives it an advantage over every other plow made of priceless value to the plowman. You simply trip the lift with the foot while riding or throw the hand wheel lever while walking and the horses will pull the plow bottoms into the ground at the start and out of the furrow at the end.

Made of the very best material in every detail, its EXTRA HEAVY beam especially guarantees a strength and resistance quality that will not break under the most grilling test any plowing job is likely to give it.



ITS BUSINESS

Its business is to successfully deal with and overcome the unyielding tenacity of the worst prairie and scrub lands instead of skipping it or breaking at the first real obstacle. In entering the ground, the heel of the plow bottom is held up so that the point MUST go down first. In leaving the ground the heel of the bottom is held down so that the point must come out of the ground first. The plow works almost automatically and so easy is it both on the draft horses and the man, the work is done with half the sweat of an ordinary plow in ordinary soil.

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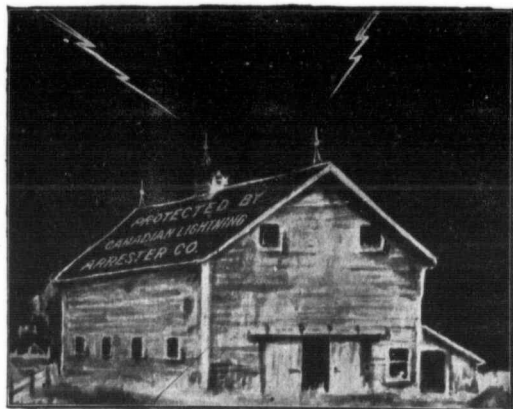
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PRACTICAL TALKS TO THRESHERMEN.

Continued from page 44

full of straw that the belts came off. We stopped, cleaned the straw out of the separator, put on the belts and were ready to try again. Mr. Gregory finally concluded the second speed for the bundle carrier would be about right for damp straw. I changed the speed of the carrier back to where I had run it the day before and we finished the two stacks without any trouble. Mr. Gregory was more than pleased with the feeder and wired the factory it was all right and insisted on my going to Battle Creek with him at once and arrange for the Advance Thresher Company to build them. I did not go at once with Mr. Gregory to Battle Creek but concluded to spend a few days in looking around. After I had spent two or three days in Watertown I went to Minneapolis and went from there to Battle Creek with Mr. Gregory and on May 15 I gave the Advance Thresher Company an exclusive contract to build our feeders on a royalty and arranged to superintend the building of the first feeder they made and furnish them with the different parts we might have on hand. I came home and spent a few days in getting things arranged and went back to Battle Creek to build self

feeders and worked there until the last of June.

"In the meantime we had got several feeders ready to ship and, if I am not mistaken, the first one was sent to Hopkinsville, Kentucky, and it was the first one I attached and started after the company began building them. I got the feeder attached and started in good shape but as I had been there several days waiting for the outfit to start I had no more time to stay with it. I don't know how many feeders the company put on that year but I know there were a good many more than I could look after. I went to Geneseo, Illinois, next to look after a feeder that had been started and failed to work right. I found the main cause was due to the way it had been attached. I got it in shape and left it going all right. The same condition existing there that I had found in many other places, and that was the hand feeders' determination to make the self feeder fail if they could and many of them did it as soon as I had left.

"For the first few weeks I was kept busy starting and attaching feeders, but it was not long after threshing began before trouble commenced and we had plenty of it the balance of the season and about all I did from that time on was to put on and start feeders that had been condemned and

taken off. Every feeder I put on and started worked fine as long as I was with it and as soon as I left, in many cases trouble began.

"The feeders were built without governors, therefore we had to depend upon the pitchers to feed the machine evenly. I had been with Mark Furr in Fountain County, Indiana, long enough to learn how to speak out in meetings and whenever I found the pitchers trying to give the feeder the worst of it I always had something to say. Of course I would find a contrary one once in a while but usually managed to trade him for a better one.

"I was in Kentucky, Iowa, North and South Dakota and Minnesota during the threshing season and my experience was about the same wherever I had anything to do with self feeders. I stayed in the North-west until the first of November and I concluded to come home. I wanted to do a little more experimenting with the self feeder so I took the outfit my brother had been running and ran it three years longer. The center board in a feeder has always seemed to be a necessary nuisance but I had an idea that I could make a feeder that could handle the bundles successfully in any shape or condition and before I quit threshing I had a feeder without a center board. I tried several different devices,

such as cutting the bands from the bottom and a side shake feeding device, and found they were not as good as the old way. I did not find that I had to make the fight right at the cylinder to keep it from slugging. The last season I threshed I told the pitchers they had a space thirty-six inches wide to pitch onto and to pitch the bundles straight if they could, and to pay no attention to the ones that went crosswise. In fact, I had the feeder going so good that I got an extra half cent a bushel for using it and to keep a long story from getting much longer will say that all we got out of the feeder would not any more than let us out even for the time and money spent on it, although the companies were building them on a royalty."

Life is made up of trifles, just as great edifices are built of small materials. Therefore, it is best to conjure smiles to the faces of friends and acquaintances whenever one can do so. Tears in the household cast a gloom over it; smiles fill it with a light that is more radiant and genial than that of the noonday sun. It is so easy to be cheerful, aye, and it is so easy to be sad. The wise man and woman will do their utmost to be the former. Only miserable folk yield to trifles, and feel bad.

HAIL INSURANCE

No, I don't need it. Never had any Hail loss in our district. Every season thousands of Western Canadian Farmers say this and do not insure. Hundreds of them lose their crops by hail and regret their dependence on what had been. Some districts undoubtedly are less subject to hail loss than others, but the experience of each succeeding season proves the fallacy of believing that any district is hail proof. Our plan provides for a lower rate of premium where there has been little or no loss. The value of one crop destroyed would have paid the premium on many years insurance. Can you afford to leave the stable unlocked until after the horse is stolen? It is a business proposition. Figure it out.

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Our competitors find the trail we have made comparatively easy to travel, but they do not know the danger points as we know them, and none have our record to commend them to the insuring public.

OUR RECORD

IN 12 YEARS WE HAVE NOT ASKED A CLAIMANT FOR INDEMNITY TO ACCEPT A SETTLEMENT ONE DOLLAR LESS THAN THE AMOUNT AT WHICH HIS CLAIM WAS ADJUSTED, AND HAVE FOUND IT NECESSARY TO ADJUST BY ARBITRATION LESS THAN ONE IN EACH THOUSAND OF CLAIMS PAID.

What we have said here can be verified by enquiry of those who are acquainted with the history of Hail Insurance in Western Canada, and the only recognition we ask for what we may have done to put this much-needed protection against loss on a sound business foundation is the continued confidence and patronage of our friends and their kind recommendation to others who may not know us.

We introduce several new features this year that will please our patrons.

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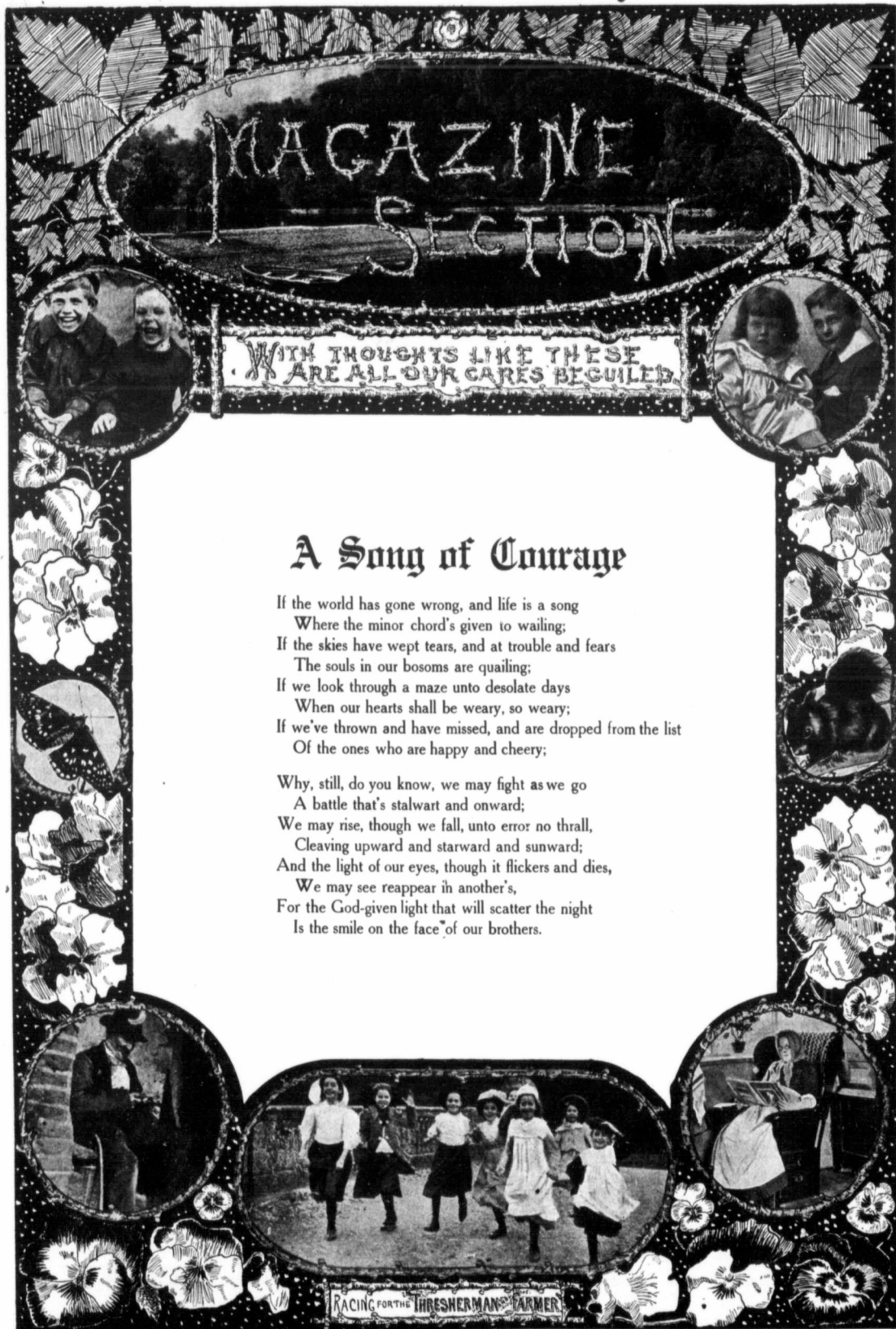
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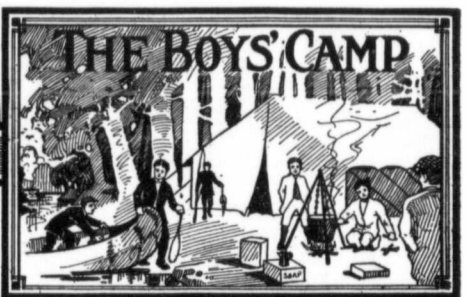
A Song of Courage

If the world has gone wrong, and life is a song
 Where the minor chord's given to wailing;
 If the skies have wept tears, and at trouble and fears
 The souls in our bosoms are quailing;
 If we look through a maze unto desolate days
 When our hearts shall be weary, so weary;
 If we've thrown and have missed, and are dropped from the list
 Of the ones who are happy and cheery;

Why, still, do you know, we may fight as we go
 A battle that's stalwart and onward;
 We may rise, though we fall, unto error no thrall,
 Cleaving upward and starward and sunward;
 And the light of our eyes, though it flickers and dies,
 We may see reappear in another's,
 For the God-given light that will scatter the night
 Is the smile on the face of our brothers.



RACING FOR THE THRESHERMAN AND FARMER



The Girls' Cozy Corner

THE 'TOOTUMS.'

By Jean Halifax.

Johnny's started in at school. He recites the Golden Rule (Not the Rule of Three). But every morning you can hear Him recite a table queer, And it puzzles me, It's the Tootums family Twelve of them there seem to be, Such odd people, too! For I cannot understand All about this Tootum band, Such queer things they do, "Tootums won er'tu," dear me! Now, what can "ertu" be That a Tootums won't? I've asked Tommy to explain, But he cannot make it plain Just what Tootums done! "Tootums Threer's sick!"—poor thing! Thus does Tommy ever sing, "Tootums Forer ate." What he ate I do not know, "Tootums ate a sixteen," tho', I've heard him relate. Tommy knows the Tootums well, But he really cannot tell Of this family anything! But he says that is the way That the children, every day, Stand in line and sing.

Girls are ahead this month!

March 20, 1912.

Dear Canadian Camp:—This is my first letter to the Camp and I would like to see it in print next time. We have 5 horses, 20 head of cattle, 3 pigs, 68 chickens, 2 dogs and 3 cats. We have a lot of mice too. We have a hundred and sixty acres of land and a barn. I have trapped a few musk rats. We sold hay all winter. We had to haul it five miles. I have 4 brothers and 6 sisters. Two of my brothers are married and three of my sisters are married. I have a grandfather and I have caught 4 jack rabbits this winter. Two of my brothers have each a threshing machine and they did a little chopping and one of my brothers plowed with his engine. It is a 25 Case engine and a 36-58 Case separator. My other brother has a 20 Sawyer-Massey engine and a 28-50 Case separator. I have fired my brother's engine for two falls. The last was a cold fall. We threshed from the 25th of September on till the 31st December. There was about a foot of snow when we quit.

Yours truly,

M. M. Seibold, Kendal, Sask.

McTavish, Man., March 19, 1912.

Dear Cousin Doris,—I would like to become a member of your club. I have often thought of writing to this club but I thought I would wait awhile. Now I have started, let me see, what will I write about?

I guess I will tell you what my brother has done. I made biscuits for tea. He came in from the wood piles looking for something to eat, found my biscuits that I had put away. He took one off of a special plate and when I wasn't looking put another one on. When I found it out, I chased him out of the house. When

he got outside he turned around and laughed at me.

How many of the cousins ever had the fun of nearly missing a train? Well I did. I had some eggs and butter to ship. I was in the store playing a game and trying to watch the train at the same time. The last time I looked the train was the length of three telegraph poles from the store and was coming a good speed for it was late. I started out and ran as hard as I could and the trainmen called out to me: "You will have to run." I got there just as the baggage car was at the station door. I got everything shipped after all. I will close, wishing this club every success. From Gladys Kerr.

Tawatinaw, Alta., Feb. 29th, 1912.

Dear Cousin Doris,—This is my first letter to your club. We have been taking the Canadian Thresherman and Farmer for the last few months. I like reading the boys' and girls' letters very well. We are living at Tawatinaw. We all like the place. There is a spring here; everybody tells us it is worth one thousand dollars alone. The water comes out of a nice hill. There is going to be a town here soon. Train passes on the land we live on. We have one team of horses, two colts, two cows, three calves and eight hens and we get four eggs a day. I guess I will close for this time. Wishing the Club every success. I remain your new member.

Winifred Saunders.

Gilbert Plains, Man., Feb. 29, 1912.

Dear Cousin Doris,—This is my second letter to the girls' cozy corner. I thought I would write again as my last letter was not in print. I had the tooth-ache yesterday but I went to the doctor's office and got it out. For pets I have a dog named Boney and a little dog named Tiny. I am 11 years of age and in the third book. Hoping to get a prize this time, I remain your cousin.

Eva E. Wilson.

Likes Living in Town.

Craik, Sask., March 20, 1912.

Dear Cousin Doris,—This is the second letter to your charming club. We used to live on a farm near Aylesbury, but we moved up to the town of Craik in December and like to live in town very much. My father has taken the Canadian Thresherman for two years. I like to read the letters in the Girls' Cozy Corner.

I like reading story books very much; I will tell Cousin Doris the books I like to read best. "What Katy Did," "Not Like Other Girls," "Black Beauty," "Little Women," "Lady of the Lake," "Little Lord Fauntleroy." I think every boy and girl should read the book "Little Lord Fauntleroy" for it is a very interesting book. I am 12 years old, my birthday is on the 25th of August. My school consists of reading, writing, spelling and geography. I remain,

Yours truly,

Hallie Harrop, Craik, Sask.

Craik, Sask., March 20.

Dear Cousin Doris,—This is my second letter to your charming club and I hope to see it in print. My father takes the Canadian Thresherman. I like to read the girls' and boys' letters in it. I am fond of reading books. I am 12 years old, my birthday is on August 25th and I am

in the fourth grade at school. I like to go to school very much. I haven't been to school for nearly two weeks. I hope to get a prize. I have five brothers and one sister. I had the mumps and had to stay at home nearly two weeks. My father is the policeman in Craik now. I remain yours truly,

Hazel Harrop.

Rouleau, Sask., Jan. 28, 1911.

Dear Cousin Doris,—This is my first letter to the Girls' Cozy Corner. I think it is a very nice club. Papa has taken the Thresherman and Farmer ever since I can remember. I love to read the letters.

I am the oldest of us children. I have two sisters and a brother. My sister, brother and myself go to school, we have a mile to go. I am in the fifth grade. I think we are very fortunate, we have a Shetland pony. He is a little beauty, his name is Dandy. It just suits him. How many of the members have a Shetland. We live on a ranch ten miles from town. It has a nice grove of trees. I think it is very nice for girls to learn how to bake and keep house. I am twelve and can bake, keep house, ride horse back, drive, and do most everything. I have always lived on the farm and drove to school when I was seven. Well, as my letter is getting long, I will close.

Yours truly,

Vera Ball.

P.S.—If you would like some pictures I can send one but please return them as they are all we have.

Ringwall, Alta., Feb. 24, 1912.

Dear Cousin Doris,—This is my first letter to the Girls' Cozy Corner. I have been reading the girls' letters. My brother takes the Canadian Thresherman and Farmer and likes it fine. I go to school and am in the fourth class. My studies are arithmetic, geography, grammar, British and Canadian history, agriculture, spelling, reading, writing, drawing and hygiene. I walk one mile to school. I have four sisters and four brothers. There are three of us going to school. I am thirteen years and will be fourteen in May.

As my letter is getting long I will close and hope to see my letter in print and hope to receive a prize. I remain, your cousin, Hilda Helgren.

Benden, Sask.

Dear Cousin Doris,—This is my first letter to the Cozy Corner. My brother takes the Canadian Thresherman and Farmer and I enjoy reading the letters. It has been very cold for a few weeks now and it has been down to fifty degrees below zero.

I am with my father and mother on a farm seven miles north from Benden. I have got only one sister and her name is Helen and I have got five brothers, one of them is in Brandon College and another has a traction engine and separator. It is two miles to school from here. I have left it now. My brother used to go to it but there is no school here just now because the teacher left here at Christmas and went to Regina. I am fourteen years and four months old. I weigh one hundred and forty-two pounds. My hair is medium brown and my eyes are blue. Hoping to see this letter in print, I remain your loving Cousin,

Carrie Nordin.

The Canadian Boys' Camp

HOW LITTLE MORGAN "BROWED" THE LOG.

By C. A. Stephens in Youth's Companion. That one log made more than twelve hundred and fifty feet of lumber, and if it had been sawed with a hand-saw, it would have saved considerably more; but we used circular saws only in those days. It was three feet seven inches in diameter, and was eighteen feet long. It was the butt log from a grand old "pumpkin" pine—the pine that we had had to fell with the "Samson," because it leaned back over a deep gully.

To Elder Witham it seemed impossible that one little horse, weighing only eight hundred and fifty pounds, could draw that log. Two spans of heavy work-horses had been used to haul it from the woods and "brow" it at the mill. It was one of the last logs on the brow, and lay there till about the first of April, when nearly all the other lumber was sawed.

That winter the old squire had started his birch-dowel mill at Lot 52, in the Great Woods, and had Elder Witham for sawyer. The mill was on the south side of Lurry's Stream, where a fall of eleven feet furnished power to drive an "overshot wheel." It had for a millrill on a broad gravel bank that sloped down on one side to the saw-carriage, and on the other side for fifty yards to a "logan" in a former bed of the stream—now merely a stagnant water-hole.

Although not a professional sawyer, Elder Witham was a good one. He was, in fact, good at almost everything to which he turned his hand. He did not in the least hesitate to labor with his hands. "The best thoughts for my sermons come to me while I'm at work," he was wont to say. I think he actually loved that big circular saw.

But he had more occupations than one. He was gardener, farmer, millman, road-maker, constable, policeman at country fairs, and also the first agent for the Society for the Prevention of Cruelty to Animals in that part of Maine. And he was a vigorous preacher besides.

But we boys disliked him; he was

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and sometimes harsh with us. There were times in my youth when I hated him, he so often reproved and humiliated me. My cousin Addison liked him no better than I did. For several years nothing so delighted Addison as to get Elder Witham at a disadvantage.

And Addison was by no means a safe person to match wits against. He had a habit of looking innocent, and then of bringing forward some strategem or device that completely bewildered his opponent. In time the elder grew shy, and became cautious about entering into arguments and contentions with him.

The big log had got away from us at the mill-brow. By April, even in Maine, the sun is climbing high and the weather is growing warm. The snow and ice melted away on the back side of the log, and one night it started and rolled down from the brow, toward the logan, and almost to it, a distance of a hundred feet or more. When we started the mill the next morning, lo, our big log had taken to the woods again, so to speak, and would have to be hauled back up the brow, in order to be rolled on the saw-carriage.

A few weeks before, while the teams were at the logging-camp near the mill, the problem would have presented little difficulty; but now the work-horses had been sent down from the woods to the farm—all except Little Morgan, whom we kept for hauling slabs, edgings and boards from the saw to the lumber-yard. That was work that Addison, Halstead and I attended to, for the most part, while Elder Witham and a hired man ran the mill. The old squire came round now and then to see how work was going and to measure up the lumber.

About ten o'clock that forenoon, while the mill-carriage raced to and fro, the elder shouted to us that he was all ready to saw that big pine log. Then he asked, with a laugh, "How do you expect to get that log up on the brow?"

Now Addison had been thinking this over all the morning, and a scheme had just occurred to him.

"Oh, I guess I can haul it up," he said, carelessly.

"What with?"
 "Why, with little Morgan."
 "What, that big log with Little Morgan!" the elder exclaimed, severely. "He never could do it!"

"I guess he can manage to haul it," Addison said. "Anyhow, there's no harm in trying."

"I tell you he can't haul that log!" the elder rejoined, with some heat. "He's a smart little Morgan horse and a free little horse, but he can't haul any such load as that. You oughtn't to put him to it."

"I guess he will pull it," Addison repeated, nonchalantly.

"Are you crazy this morning?" cried the elder. "I supposed you had better judgment."

"Little Morgan's a smart horse," Addison answered.

"Anybody that will hitch a horse of that weight to a load like that isn't fit to have a horse!" Elder Witham said, sternly.

"You will see him snake that log up the brow," Addison replied.

"I protest against it! I won't stand by and see a good horse like that abused in any bush way. If you don't know any better than that, it's time somebody interfered."

The elder turned and strode off indignantly, to lay the matter before the old squire, who was chalking boards at the farther end of the mill-yard.

"Ad, you know Little Morgan can't draw that log up there," I said, as I unhitched the horse from the board skid.
 "Of course he couldn't drag it up there," Addison replied. "But I know a way. Keep still. Let Elder Witham talk. He thinks he knows more than all the rest of us. We will show him a new trick—and then you watch his face. Get the log-chain and drag it round here. Bring a crowbar, too."

The log-chain was a half-inch cable chain than he had on the windlass, attached to the water-wheel of the mill, for pulling logs up the slip from the mill-pond above the dam. It was nearly or quite eighty feet long, and pretty heavy. I unbound it from the windlass, and then started to drag it over the brow and down to the runaway log by the logan.

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Port Arthur, Ont.	May 20th	Grenfell, Sask.	May 29th	Mora, Sask.	June 5th
Port William, Ont.	May 21st	Walden, Sask.	May 30th	Swift Current, Sask.	June 5th
Kenora, Ont.	May 22nd	Sialista, Sask.	May 30th	Marie Creek, Sask.	June 6th
Winnipeg, Man.	May 23rd	Indianhead, Sask.	May 30th	Melville, Sask.	June 6th
Morden, Man.	May 24th	Qt Appelle, Sask.	May 30th	Tabor, Alta.	June 7th
Carleton Place, Ont.	May 24th	Regina, Sask.	May 31st	Stadler, Alta.	June 7th
Killarney, Man.	May 24th	Moose Jaw, Sask.	June 2nd	Lethbridge, Alta.	June 9th
Boksarain, Man.	May 24th	Turford, Sask.	June 3rd	Claremont, Alta.	June 10th
Deloraine, Man.	May 25th	Eyebrow, Sask.	June 3rd	Starley, Alta.	June 10th
Napiaka, Man.	May 25th	Elbow, Sask.	June 3rd	Nanton, Alta.	June 10th
Hartley, Man.	May 25th	Outlook, Sask.	June 3rd	High River, Alta.	June 10th
Souris, Man.	May 25th	Milestone, Sask.	June 4th	Oroonoke, Alta.	June 10th
Brandon, Man.	May 27th	Yellowgrass, Sask.	June 4th	Langdon, Alta.	June 11th
Verden, Man.	May 29th	Weyburn, Sask.	June 4th	Strasbourg, Alta.	June 11th
Elkhorn, Man.	May 29th	Estevan, Sask.	June 4th	Gleichen, Alta.	June 11th
Moosomin, Man.	May 29th	Caron, Sask.	June 5th	Hansma, Alta.	June 11th
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Meanwhile Addison was coming round from the mill-yard, with the whiffletree under his arm, leading Little Morgan. He was whistling cheerfully to himself, and looked the picture of careless good humor. Just as we met, however, the elder came hastening to intercept us; the old squire was following a few steps behind.

"Now, squire," the elder exclaimed, "I wanted you to see for yourself if I want a horse of yours, a good little horse like this, put to such a load as that! Why, sky above us, that's a load for four horses! I won't stand by and see it! I protest against it!"

The old squire looked a little puzzled; he glanced inquiringly at us boys. "That is certainly a big log for one horse to haul," he remarked.

Addison may possibly have caught his attention with a wink or some sign that induced the old gentleman not to express an opinion or interfere hastily. "Why, my boy," he said, "do you really think Little Morgan can draw all that?"

"Draw it, yes!" Addison exclaimed, confidently. "If it were twice as heavy, Little Morgan could draw it."

Elder Witham regarded him with an astonishment akin to contempt.

Addison grinned, and taking the crowbar, made a hole beneath the log, midway of its length. He then thrust the

chain-hook under it, from the front side, and drew the chain through for nearly the whole length of it, then brought it back over the top of the log, thrust it under again, and continued winding the chain until he had wrapped it round the log seven or eight times, and of the whole eighty feet, only about two feet and the hook were left free. These rested on the top of the log.

"Now follow after with the bar when I start," Addison said to me. "Don't let the log swerve or swing round endwise, and be ready to trig it when I stop, so that it needn't roll back."

I attached Little Morgan's whiffletree to the chain-hook on top of the log; then, taking the reins, Addison spoke kindly to him and bade him pull.

The little horse had been casting his eye back at that log. He understood as well as anybody else that he was now to do something fine. The muscles tightened under his brown, glossy hide, and with a forward lunge he was off up the brow. But he did not need half his strength. With twenty inches of leverage from the center, the log rolled after him, rolling over and over instead of being dragged along. It did not appear to roll hard. The log-chain unbound as the horse went up the slope, and was nearly all off by the time the log was half-way up to the crest of the brow.

"Trig!" Addison shouted. I stayed the log with a block of lumber, and then steadied it with the bar until the chain was again wound on as before. The next pull brought the log to the top of the brow, ready to be rolled down to the saw.

The old squire had followed us up the brow. He looked amused, but said nothing. The elder was a step or two behind. The log had kept me busy, but I stole a look at him now and then. The expression on his face made me laugh—he looked so completely baffled.

When the log was up there and trigged, Addison turned with a smile.

"How's that?" he said.

Elder Witham eyed him hard for a moment. "Young sir," he said, stiffly, "you are a pretty cute fellow. You're bright enough. You're smart enough. But you'd better take care that some day you don't prove a little too smart for your own good."

"Never mind, elder!" the old squire exclaimed, smiling broadly. "It ought to be a comfort to us old fellows to know that all the wisdom in the world isn't going to die with us."

The elder strode back into the mill, and gave the lever a jerk hard down; the circular saw began to hum again.

Little Morgan had browsed the big log, and was evidently none the worse for it.



Womans' Department

Conducted by PEARL RICHMOND HAMILTON

A HOUSEHOLD FORUM FOR THE DISCUSSION OF EVERYTHING THAT PERTAINS TO THE HOME



A Wee Bit Sang.

When my hert is wae an' I'm like tae greet,

An' a' seems bitter that aince was sweet,
An' life's road hard tae my weary feet,—
I juist sing a wee bit sang.

When the herth is cauld an' the cup-
board bare,
Whaur aince there was a' thing an' tae
-spare—
I munch my crust, an' it's denty fare,
For its 'kitchen's a wee bit sang.

When the fowks in braws frae the near-
by toon
Scorn my hodgen gray an' my muckle
shoon,—
I care nae mair nor the Man o' the Moon;
I juist sing a wee bit sang.

When at Lammis the ribbons an' sweet-
ies I see,
An' some bonnie lassie a fairin' wad gie,
An' feel i' my pooch an' fin' n'er a law-
bee,—
I cot wi' a wee big sang.

Ay, I sing when I'm merry, I sing when
I'm sad;
I mak my ain cheer when there's nae to
be had.

Life never can be a'thgether bad,
While it leaves me a wee big sang.

*Kitchensauce.

Annie M. McLeod.

About Women

Miss Clara Barton, founder of the American Red Cross Society, died at her home in Glen Echo, Md., April 12, of chronic pneumonia. During her experience she was in many battles often directly under fire, but she seemed to bear a charmed life, for, although her clothing was often grazed or pierced by bullets, she was never wounded.

After the Franco-Prussian war, the Emperor of Germany presented her with the Cross of Merit. The Grand Duke and Duchess of Baden gave her a red cross brooch, the gold cross of Remembrance and the colors of Baden. She had many decorations. During the Spanish-American war Miss Barton, who was nearly eighty years of age, went to Cuba and directed the work of the society on the field. For years she had borne a large share of the expenses of the organization. Charles Sumner wrote of her: "She has the talent of a statesman, the command of a general, and the heart and hand of a woman." She was a citizen of the world.

Miss Katherine Kline has been appointed a regular member of the police department of Jersey City, N.J., being the first woman policeman in the state. Miss Kline has long been interested in movements for the education of children.

Miss Allstrum, a successful business woman in Tacoma, Washington, has made Tacoma famous for its model food ordinance. She was appointed Food Inspector by a mayor who thought her printing business would prevent her from interfering much with poor food, as he was not in sympathy with the movement. She proved, however, to be most thorough in her inspection. After many battles with butchers, bakers, and political bosses, she came out ahead and the city now buys clean, fresh meat, sanitary bread, and other pure food. It also

has a weights and measures law, and her work in Tacoma now is supported by her former enemies.

In Middleford, Maine, is living and working to-day the oldest cotton-weaver in America. She is Mrs. Melissa Hodgdon, a woman seventy-six years old. She earns a dollar a day for her work. For fifty-five years she has toiled at this work, and in the noisy, busy factory she still has her place. Over thirty-thousand times she has gone into the cotton mill and yet she says: "I just couldn't live without my looms! They're kind of like a stimulant to me. I love to hear 'em better than the sweetest music. Nothing can keep me from my work. My looms are the only things I've got left to care for me."

Mother's Corner

The Motherlook.

You take th' finest woman with th' roses in her cheeks
An' all th' birds a-singin' in her voice each time she speaks;
Her hair all black an' gleamin' or a glowin' mass o' gold—
An' still th' tale o' beauty isn't more th'n halfway told.
There ain't a word that tells it; all description it defies—
Th' motherlook that lingers in a happy woman's eyes.

A woman's eyes will sparkle in her innocence and fun,
Or snap a warnin' message to th' ones she wants to shun.
In pleasure or in anger there is always han'someness,
But still there is beauty that was surely made to bless—
A beauty that grows sweeter, an' that all but glorifies—
Th' motherlook that sometimes comes into a woman's eyes.

It ain't a smile exactly—yet it's brimmin' full o' joy,
An' meltin' into sunshine when she bends above her boy
Or girl when it's a-sleepin', with its dreams told in its face;
She smoothes its hair an' pets it as she lif's it to its place.

It leads all th' expressions, whether grave, or gay, or wise—
Th' motherlook that glimmers in a lovin' woman's eyes.

There ain't a picture of it. If there was they'd have to paint
A picture of a woman mostly angel an' some saint.

An' make it still be human—an' they'd have to blend the whole.
There ain't no picture of it, for no one can paint a soul.
No, one can paint the glory comin' straight from paradise—
The motherlook that lingers in a happy woman's eyes.

—Chicago Daily Tribune.

The booklet entitled *Helps for Expectant Mothers* will be sent free upon request to any wife. P. R. H.

"Count your blessings—name them every one,
"Oh it is a wonder what the Lord has done."

W. T. Stead, who lost his life in the recent Titanic disaster, said in his pre-

face to "Hymns That Have Helped," that the hymn which helped him most was:

"Begone, unbelief, my Saviour is near,
And for my relief will surely appear.
By prayer let me wrestle, and He will perform;

With Christ in the vessel, I smile at the storm.

His love in times past forbids me to think

He'll leave me at last, in trouble to sink."

Referring to the above hymn, he said: "It has been as a life buoy, keeping my head above the waves of trouble when the sea raged and was tempestuous, and when all else failed."

Judge Mack tells the following experience:

"An incorrigible or so-called "bad" boy of the streets was hailed before a judge. The judge contemplated sending him to a boys' prison, but the culprit began to sob:

"I ain't no thief. I wants work. I don't want to go to prison.

Now, the judge had the power to put the boy to work—at any kind of work suitable to his age and strength. But he deemed it wise to ask the boy:

"What kind of work do you want?"

The over-matured face and the somber eyes lightened as the reply came:

"Kin I run an engine?"

"Most certainly you can," replied the judge, "after you have learned to thread bolts, handle ashes and oil, clean parts, and know the laws of heat, water, steam and their relation to machinery. In ten years time you ought to be able to run an engine."

"Tee!" exclaimed the boy. "Give me de chance!"

He got it and slowly, painfully, he is creeping out of the pit of inaction—idleness—into the knowledge of true action, and he is no longer incorrigible. Getting the action he hungered for has aroused a new moral nature in him. Beginning to understand the law of mechanical things that of the spiritual is forced upon his attention.

Lucy Eames, M.D., writes in an article entitled *Keeping the Girls' Confidence*, the following:

"So many opportunities are offered the mother for keeping close to her daughter. She has the girl with her during the period of transition from girlhood to womanhood—the time when the girl is longing for someone in whom she can confide—the time when she so sorely needs practical and spiritual help. During adolescence the girl is so apt to indulge in vague hopes and enervating dreams, a thousand and one frivolous calls on her time and thought await her at the threshold of life, good habits and bad are incessantly struggling for mastery in her innocent being, and her future character depends upon the result of those conflicts. It is the one time in her life when she most needs her mother's comradeship and the interchange of confidence, such comradeship would give.

Some mothers are easy going and expect things to come out well for their children with little effort on the parental side. Such a mother will say her little girl does not even feel curious yet about life's secrets. Ask the little girl what she knows and you will find she is not curious because she has been told it all, perhaps in the least pure way by older and wiser companions. The girl's mother has lost a golden opportunity.

Other mothers would tell their girls conscientiously if they had time, but they are conscientiously cooking, scrubbing and sewing for their children. God give grace and help to the woman who is busy every minute with household cares, and give her also a glimpse of things as they are and teach her to put first things first!"

The bowels of a child are often affected during teething. Give the child plenty of water. There is no better cure for constipation than irrigating the bowels with plenty of water. Olive oil is excellent for constipation as is also cream and butter. Graham biscuits are good, too, also orange and prune juices.

It is cruel to pull a child by the arm. Sometimes we see a parent lift the woe weight of the body by the arm till it seems as if it must come out of the socket. Another thoughtless act is that of slapping a child on its ears. It may cause deafness. I know a child who had carache for years because of this careless way of punishing him.

The cart is a vehicle of torture for an infant. There is not room enough in the cart for him to be comfortable and it is hard on his back. Besides it brings the baby too near the ground where he catches much of the dirt and dust of the street. Some of us would have back-aches if we had to be bumped in a go-cart.

Mouth Breathing.

Teach a child to breathe through its nose. "There are several bad results that follow close upon the heels of the habit of mouth breathing. The first bad effect is adenoids or trouble with the tonsils. Another trouble develops more slowly. Because the passages of the nose are not used for breathing, the middle part of the face does not grow as it should, while the jaws and cheek bones develop to full size. Unless the habit is checked before the bones pass the period of growth, the child will go through life with what is known as a "flat face."

Another effect of mouth-breathing is that the upper jaw does not develop to full size, and when the adult teeth appear there is not room for them. As a result the teeth crowd together and push each other forward, producing the familiar disfigurement of a bulging upper jaw and protruding teeth.

—Mother's Magazine.

Tonsillitis is often directly due to decaying matter collected by the child's teeth and passed on to the sensitive tonsils.

The child with decayed teeth falls behind in his studies.

"Parents should themselves live at a high level of vitality and eagerness if they are to help their children develop this new attitude toward fuller, richer living. Many mothers slave for their children so many hours a day that they have little energy left with which to love them and enjoy them. One mother for some years has taken at least an hour a day for rest and quiet reading by herself. Nothing but absolute necessity could induce her to break into this hour. The result has been that she has not only kept her own splendid health but she has been a constant joy and inspiration to her children, her husband, and her friends. It is true that she might have done more dusting and

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TOO MUCH BAKING HAS KILLED MANY A WOMAN

Too many hours over a hot stove—too few for rest and recreation, **MOONEY** has changed all this.

MOONEY'S BISCUITS are made especially to replace home baking—to give the tired woman a chance.

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If you have never used them you have a delightful treat in store.

They sell in dainty packages or tin boxes—in either case free from every adulteration

"LET MOONEY DO IT"

darning stockings than she did, but it would have been at the sacrifice of that part of her which meant the most to herself and her children. Children grow away from mothers who do not keep their own minds vivid and their lives growing into greater vitality. Merely ministering to the physical needs of children is not enough. They need our best selves long after their childhood. During the years of their childhood we shall serve them best by living, rich, joyful, resourceful lives."

—Mothers' Magazine.

Filling up the Idea Box.

By Annie Burnham Bryant.

One mother, whose home is the embodiment of sunshine and pleasantness, whose children do not know the meaning of dullness, even on the rainiest of days, regularly gives half an hour a day—no more, no less—to what she calls "filling up her idea box." Sometimes it takes the form of reading a child's paper or a book of fairy tales. The "idea" in this case is to get some little tales in mind for bed-time stories or for a story-hour. Again, it is the "Mother's Corner" in some household magazine, or a perusal of her own particular periodical, specially devoted to her interests; or it is a chat with her neighbor in the morning flower garden; or it is a ramble through the bewildering and enticing rooms of a day nursery or kindergarten. Whatever shape it takes, it is both helpful and entertaining, and many a worn and worried mother might copy the practice with benefit. Home-keeping and child-training are no more to be carried on without ideas than are other occupations.

Pensions for Mothers.

The Illinois state law for the benefit of indigent mothers, having children to support, without the aid of a husband, went into effect in November when the first payments were made. The law was designed to prevent the breaking up of homes by the inroads of poverty.

It had been found through the experience of many social investigators in Chicago and elsewhere in the state that after the death of a husband or his desertion of his family many mothers

were unable to keep their children about them. The home life was broken up, not alone to the detriment of the children, but of the mother herself.

As a result of this the last legislature passed a law authorizing country agents of the poor to investigate deserving cases of this character and to pay them a fixed monthly pension in order to keep the family together. Chicago was the first to put the law into practical effect, the lowest pension paid being \$15 a month and the highest \$20 a month.

HOME ECONOMICS.

For Every Home in Canada.

To exalt household labor, to encourage simplicity, more genuine and more simple hospitality, the use of nutritive foods, and to spread the thought that it is not the house we live in, but the life we live in it, that is important; all this is worth while and is part of your work."

"It's a good thing to have money and the things that money can buy; but it's good, too, to check up once in a while and make sure you haven't lost things money can't buy."

Six thousand girls in Iowa took part in a bread-making contest.

EXHIBITION OF DOMESTIC SCIENCE CLASS.

An exhibition of the work in the Domestic Science class at the Manitoba Agricultural College last month called forth highest praise from a large crowd of visitors. Miss Kennedy's display was carefully examined by most interested men and women. I believe that every father who could visit this exhibition would be eager to send his daughter to take a course in this work. It would mean a saving of many dollars to him, because during the term the girl must learn to make her own hats, dresses and underclothes, while in the department under Mrs. Salisbury she learns laundry work, the science of food values, home nursing, sanitation, and home furnishings; and under Miss Duncan the art of cooking. I cannot understand how it is possible to learn so much in five months' time. But the work is ac-

complished through most efficient management, due to Principal Black and his staff of teachers.

In Miss Kennedy's exhibition every hat and garment had pinned on every item of cost. Economy was the key note of everything in the room.

A navy blue tailored suit made by Miss McQuaig cost about seven dollars. It was made of the best of material.

Miss Madeline Nicholson had on exhibition a beautiful outfit—coat and hat—costing six dollars and sixty cents. Another dress made by Miss Margaret McKillop cost one dollar and a half a cent—so carefully was the bill itemized. The dress was very neat and was a pretty summer gown. The hat she made to wear with it harmonized in color. It was trimmed with ribbon and flowers—all good material and the cost was \$2.03. The material used in the hats, dresses and underwear was all good.

One hat made over cost seventy cents; another, ninety cents. These hats had not been trimmed over but made over entirely. Miss Eleanor Christopherson had one of the prettiest hats, costing \$1.70. Miss Cameron made a very pretty hat costing \$2.80. These hats would cost from twelve to fifteen dollars in the stores. One feature of the work was that each girl was required to make a drawing of the hat before she made it.

Miss Kennedy is an artist in her line of work and the girls who have the privilege of taking this work under her are fortunate.

Miss Duncan's exhibition was interesting to the woman who likes to cook. Her work has been extremely successful this year.

I copied the following receipts from the tempting display of food on her tables. I thought some of our readers might like to try them for they have been so splendidly tested:

Suet Pudding.

2 scant cups flour, 2 teaspoons baking powder, 2 teaspoons ground ginger, ¼ cup chopped suet, ¼ cup sugar, ¼ cup molasses, speck salt, ¼ cup currants, ¼ cup raisins, 2 lbs. citron peel.

Standard Cake.

2 eggs, 1½ cup flour, 4 tablespoons butter, ¾ cup sugar, ½ cup milk, 1½ teaspoon baking powder, ½ teaspoon flavoring, speck of salt.

Cream Puffs.

½ cup of water, 2 eggs, ½ cup flour, 2 tablespoons butter, ½ cup sugar, speck salt.

Spice Cake.

1 egg, ½ cup brown sugar, 1 teaspoon ginger, 1 teaspoon mixed spices, 1½ cup flour, ½ cup sour milk, 2 teaspoons soda, ½ cup molasses.

Mrs. Salisbury's exhibition of laundry work showed that the girls can launder beautifully everything from a lace dress and dainty nightgown to flannel blankets.

Most of Mrs. Salisbury's work is in the form of lectures and we who are familiar with her in that line know that her girls are well trained in the scientific part of domestic science.

REPORTS.

Will the societies kindly send the reports in by the fifteenth of the month, in order to have them in time for publication?

SWAN LAKE.

The meeting of the Home Economics was opened by the reading of the minutes of the last meeting which were adopted as read, after which the President, Mrs. Gordon, most feelingly voiced the sentiments of the whole society in the words of regret which she expressed the sense of loss under which the Society is suffering in the death of one of its most valued members, Mrs. Murray Simpson, and the loss of a clever little helper in the person of Delta Hartwell, who so often brightened the programme by her pretty recitations.

After a vote of condolence had been passed to those so sadly bereaved, the matter of finally settling on a programme for the current year was entered upon and after discussion the subjoined programme was drawn up. The President also spoke again on the need for systematic caretaking of the Cemetery which is a duty women can well undertake and it was decided that a day for this work should be chosen at the next meeting in May. The need of extending the numbers and scope of the Society was also urged by the President, who asked each member to try and bring a new recruit to the next meeting.

The subject for the programme at this meeting was "Home-making" and two

papers, contributed by Mesdames Hodgson and Downey, were read. It was soon evident that the choice of ladies and subject had fallen happily; both papers were interesting and well thought out; Mrs. Hodgson discussed Home-making more from the religious and parental standpoint. Mrs. Downey, while taking an equally serious view of the subject, showed the absolute need for true unity and co-operation not only between husband and wife but also between parents and children. The reading was listened to with interested attention and a vote of thanks, standing, was unanimously passed to the two ladies, who had added, not only to the entertainment of the afternoon but who had fulfilled the raison d'être of the Society, that of giving helpful ideas and suggestions to their fellow members.

The March meeting having been postponed until this date and the busy seeding time being at hand, it was decided not to hold another meeting until May 25th.

After roll-call a dainty lunch was served and the meeting adjourned.

Programme of Swan Lake Home Economics Society for 1911.

- January
 - Demonstration of Cakes
 - Mesdames Gardner and Blair and the Misses Gordon and Docking.
- February
 - Delegates Report
 - The President, Mrs. Gordon, and Miss Couch.
- March
 - Home making
- April meeting omitted.
- May
 - Salads Miss Couch
 - Patriotic Exercises
 - June
 - Social at Mrs. Armstrong's
 - How to Keep Cool. Mrs. Gardner.
 - July.
 - Flies, their Menace, and how to get rid of them. Dr. Rice.
- August
 - Dessert and Cool Drinks
- September
 - Preserving Fruits
 - Mrs. Shirley and Miss Ashdown
- October
 - Bread and Butter
 - Mrs. Moffatt and Mrs. Blair
- November
 - Christmas Gifts. All Members
- December
 - Annual Meeting.

MINNEDOSA

The Minnedosa Home Economics Society held their regular monthly meeting on March 28, in the town hall, at 15 o'clock. After a pleasant chat over the afternoon tea, the meeting was opened by singing the "Maple Leaf for ever." The regular business was then transacted. Mrs. Cooper, the president, spoke of the agricultural meetings which had recently been held in Minnedosa and the surrounding district, under the direction of the Manitoba Agricultural College.

At several of these meetings Mrs. Cooper and Mrs. Boyd had given interesting addresses, speaking chiefly of the Home Economic's Societies, the aims and objects of same and the work the Minnedosa society wished to take in hand during the coming year. The members discussed various topics that would be suitable for programmes at the meetings.

Mrs. Cooper called upon a number of the ladies present for their methods and recipes for "their most economical meat dish, made from the cheaper cuts of meat."

The result was a variety of excellent ways of using up the tough pieces of meat. In fact I fear the local butcher will have some trouble in disposing of his more expensive joints this summer. After arranging the programme and appointing a tea committee for next month, the meeting adjourned.

E. M. Ewens, Sec. Treas., Bethany, Man.

Will the Minnedosa society kindly send in some of the meat recipes? I am sure they would be useful to others.

P. R. H.

MANITOU

The regular monthly meeting of the Manitou H. E. S. was held Saturday, March 10th, with the president, Mrs. C. H. Brown, in the chair. There was a good attendance and one new member.

Mrs. Hamilton's paper on "Co-operation the Key to Success," which had been read at a previous meeting, called forth a lively discussion. One member taking exception to the point that girls working in the home did not receive the same remuneration as the girl working in the shop or office. Very often a girl will go and work in a shop or office for about \$35 a month. She finds after paying for her board and clothes, and other expenses she has very little left. Yet it seems the average girl prefers work outside the home to work in the home.

Several members took part in this discussion and the conclusion arrived at was: That office work was preferable, first, because there were regular hours; second, because there was companionship with other girls and thirdly because the working hours were shorter. After intermission Mrs. T. A. Pybus gave her impressions of the convention in Winnipeg. Mrs. Gayton read Mrs. Salisbury's paper on bread-making. Several members reported their success in growing bulbs during the winter. The chief topic for next month's meeting is to be gardening. If satisfactory arrangements can be made the society intends bringing Miss Edna Sutherland to the town in the near future. Meeting closed with the National Anthem.

In answer to the above, let me say that in many cases the girl who leaves the country for the city does not receive as much as when she lived at home for she does not have nourishing food and a comfortable room—but she sees and handles the money she earns and that is what she wants. Girls come to me from the country and, after having worked here for a while, they tell me they would gladly go back to the farm if they could have some of their earnings to handle themselves. They say their brothers are given an opportunity to make money but the girls feel as if there is nothing they can call their own. They want to be included in the "business" of farming.

Among the country girls who work in offices are many who are paid from fifty to sixty-five dollars a month.

Many of these girls tell me they prefer the country life to the office life, if they could be paid a reasonable allowance and could have a bit of real home life in their home. They realize that the grind and wear of office life, poorly ventilated rooms, bad food, and often city loneliness are not so good for them as



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We call special attention to our Home Department in this issue and particularly to our service of dress patterns of fashionable garments which we are supplying at a uniform charge of 10 cents per pattern.

Any pattern will be mailed to any address for 10 cents.

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Use coupon at bottom and we will send complete details of a household necessity that will be an infinite saving in labor and money to any one using it.

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the life in the country, but want a certain sense of independence.

Now, I realize that there are many homes in the country where the girls are treated with consideration and in most of these homes the girls are contented. There are always exceptions, of course. But I am giving the experiences that have been told me by girls who left their country homes for the city, and I might give you examples of splendid country girls who have not earned enough to buy more than one meal a day, yet they would not go home to face the ridicule of brothers and sisters and parents who would laugh at them because they had not "made good." Country girls have urged me to appeal to parents to give their girls more consideration. Then, too, I was a country girl myself, and have experienced personally a bit of the difficulty mentioned in the paper. I am thankful, however, for the discussion and am grateful for the frank exceptions, as they will create interest in the subject which I have so sincerely at heart. I want the girls to remain in their country homes. They are needed there and their health and strength and influence will be of greater use there. That is the reason I am pleading their cause—that they may be made contented and happy in the country home.

P. R. H.

VIRDEN

The Canadian Thresherman, Winnipeg: Sirs,—The Virden Home Economics Club is certainly in a very flourishing condition. It now has a membership of one hundred and thirty, with an average attendance of at least sixty. It has been a great factor in bringing together the women of the town and district who would never otherwise meet. It provides a social hour, when women meet and forget for a little while "the daily round, the common task." Women attend these meetings who attend no others of any kind and to these especially it has been a blessing.

In our programmes we have rather avoided topics dealing especially with house keeping, topics such as recipes, demonstrations on cooking, etc. We did have one demonstration of a vacuum cleaner, but the topics dealt with have been along more general lines, aiming to have the topic suit the season of the year. During the typhoid season a paper on "Typhoid, its cause, cure and prevention" was read by one of our doctors. In February a paper was read by another of our doctors on "How to secure and maintain the health of our town."

In March a paper was read by one of our members on our motto "For Home and Country," a copy of which I am sending you if you think it worthy of publication.

If a visitor of interest or of note visits our town we try to have them take a part in the programme. We always aim to have music; usually two vocal selections are given and they do add so much to the program.

Another special feature is our cup of tea. Four ladies are invited to act as hostesses and they provide simple refreshments; a cup of tea, bread and but-

ter and cake. During the serving new members are solicited and not many refuse to join, and the officers move around among them trying to speak to all, strangers especially.

During this year we are hoping to make our club count for much in the life of our town, standing for helpfulness and profession.

Mary L. Bayne, Sec.-Treas.

FOR HOME AND COUNTRY.

Paper written by Mrs. W. F. Fitch and Read at the March Meeting of the Virden Home Economics Club.

As a source of pleasure, the Home Economics Club helps to bring the women of the town and country together, giving them opportunities of becoming better acquainted and letting them see that their interests are not so far apart. We all enjoy the same things, according to our tastes and talents.

Our work in the club has enlarged our ideas a great many directions. It gives us food for thought out of the usual routine as we go about our daily duties. It helps us to take a more intelligent interest in matters not only in the home but outside of it also, of finding or making beauty spots around us, and improving them, as well as in using our influence in getting desolate and forlorn looking places very much improved which by and bye will become a place of beauty.

It helps us not to spend all our energy on what we eat or wear, but helps us to make the most of our surroundings, thus making our homes more home-like, by having more and better books, magazines and flowers in and around the home, for it is written "He that planteth a tree showeth his faith in God, and is a benefactor to unborn generations."

The Club in another way is a benefit to us. It has broadened the range of our sympathy and makes us feel that it is a privilege and not a duty only to be able to extend the hand of friendship, and give words of good cheer to strangers arriving in our town and community who have left all friends in the east or in the old land, and who are lonely and perhaps home-sick amongst so many strange faces. Even one bright face and gentle voice may convey untold happiness and make them feel they will not long remain strangers in this new country.

Still another help. The clever, interesting and instructive papers we have listened to from time to time makes us think along different lines that have proved a benefit to us during the past year and will in the future help us to better thinking and doing, especially along the lines of sanitation, conservation of time and strength, the value of rest, proper food values, and in the preparation of properly balanced meals, both nourishing and appetizing, thus make a large part of life more simple. In the care of children too and their ailments, about using simple remedies as often a preventive is better than a cure. Of home hygiene—the necessity of plenty of fresh air in our homes.

Labor saving devices—all these things have been discussed at different times and I am sure must have been a benefit to all of us.

In a country like ours, I mean anywhere on these broad prairies, God has set high ideals before us; clear skies, bright sunshine and ever-changing climate. In Manitoba the climate is neither that of Great Britain, Switzerland or California. Between January and December it is all of these. Nowhere does spring approach in a lovelier mood than over these broad prairies and nowhere do happier beings greet her than the rested recreating people of Manitoba. So they accomplish greater things in three seasons of the year than are to the credit of the people of other lands with their unceasing toil. Why? Because as Shakespeare says "If all the years were playing holiday, to sport would be as tedious as to work." Thus the first sweet breath of spring finds the people eager to return to their labors. This same energy runs through all nature, waking everything to new life.

Then, indeed, comes the making of Manitoba a land of sunshine. Myriads of flowers, one variety after another, till



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We are constantly receiving in exchange for Mason & Risch Player Pianos and Pianola Pianos, good upright pianos of nearly every standard make. We renew these instruments in our workshop, so that we can guarantee them to be in perfect condition, and sell them at very reasonable prices and on extremely easy terms. At the present time we are offering a number of exceptional bargains in used instruments, of which the following are samples:—

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- One Dominion Piano, Walnut case, Louis XIV. design, cannot be told from new, regular \$400. Sale Price \$285
- One Heintzman & Co. Piano, Walnut case, used a few weeks only and good as new, regular \$550. Sale Price \$345
- One Mendelssohn, Studio Size, nice condition, Regular \$365. Sale price \$210

Write for complete list of bargains in our Exchange Department.

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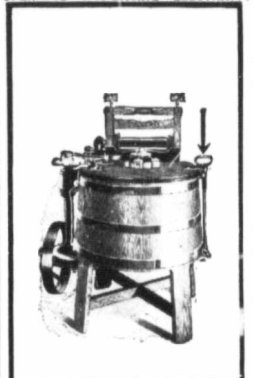
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we are charmed with their beauty. Lastly comes the golden rod and the summer is gone. Now comes the glorious fall, with its cool, crisp nights and bright, breezy days, making us feel that it is good to be alive.

Our winters are cold, but the snow and the keen, dry air appeal to the hearts of the people. In their sports and pastimes youth gets more vigor and age is forgotten. But our country's greatest assets are not in her rich wheat fields, or fertile plains, nor her undiscovered minerals; but in her sturdy children.

Here in Manitoba are almost ideal conditions for the upbringing of children. We have nearly all the advantages of most other countries, with very few of their disadvantages; and the children of to-day who are being trained in the highest ideals, to be noble and emulating men and women, will in the future be the ones to fill the important positions

in our land, perhaps even guiding the helm of state.

Is it any wonder in such a country as ours, with its exhilarating and life-giving atmosphere, making us feel bright and optimistic, that we feel we could do almost anything? Perhaps it is not so hard under these favorable conditions to keep up our aim of elevating our lives and helping others in striving after the perfect standard of the greatest leader of any organization, even "Jesus Christ our Lord," the greatest teacher too since the beginning of time.

In our club, with secular outward appearance but with the heart and spirit of Christ weaving in and out through all its activities, not showing mien perhaps but ever felt as our aim and object, we are striving to help each other to a better and more complete life, social, moral and religious. For it is the small things, well done, that make a perfect world.

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

No. 7209. The kimono that is made in genuine oriental style with sleeves and body portion in one is both graceful and simple. This one is seamed at the back and gives becoming lines. It can be made long or short and with loose elbow sleeves or with longer ones gathered into bands. The pattern, No. 7209, is cut in sizes for girls of 14, 16 and 18 years of age. For the 16 year size will be required 3 yards of material 36 or 44 inches wide with 1 1/2 yards of any width for the bands.



7071. The kimono that is full below a yoke is liked by many girls. This one is charming and is admirably well adapted to small women. The separate sleeves are sewed to the armholes. Cotton crêpe, challis, lawn, batiste, all materials of the kind, are appropriate with either silk or lawn for the bands. The pattern, No. 7071, is cut in sizes for girls of 14, 16 and 18 years of age. For the 16 year size will be needed 5 1/4 yards of material 27 inches wide with 1 1/2 yards for the bands.

7006. A house jacket tucked to form its own yoke that is very pretty and at the same time easy to make. Lawns, batistes, organdies and all similar materials are appropriate; and thin silk and albatross also are pretty with any banding for finish. The pattern, No. 7006, is cut in three sizes, 34 or 36, 38 or 40, 42 or 44 bust. For the medium size will be needed 2 1/2 yards of material 27 inches wide with 4 yards of banding.

7101.—Every young girl likes to have a variety of pretty negligees. This one is cut in one piece with the sleeves, is easy to make and at the same time is smart. Lawns, batistes, challis and albatross all are appropriate, with bands of lawn or silk. The pattern, No. 7101, is cut in sizes for misses of 14, 16 and 18 years of age. For the 16 year size will be required 3 1/2 yards of material 27

inches wide with 2 1/2 yards of banding. 7239, 7254, 6919.—Morning gowns that are made with simple skirts and jackets are much liked. This one is charming. The five gored skirt is tucked to give the effect of a tunic. The jacket is cut in one piece with the collar that is sewed to the neck edge. With the suit is worn one of the breakfast caps that are so fashionable as well as practical. For the gown can be used and pretty washable material. For the cap lawn, batiste or any material of the kind. The pattern of the jacket, No. 7254, is cut in one size only, of the skirt No. 6919, in sizes from 22 to 30 waist, of the cap, No. 7239, in one size. For the medium size will be required 2 1/2 yards of material 27 for the jacket, 7 1/2 yards 27 for the skirt, and 3/4 yard 27 inches wide with 2 yards of lace for the cap.

The above patterns will be mailed to any address by the Fashion Department of this paper, on receipt of ten cents for each.

No. 7270.—Blouse for Misses and Small Women; No. 7134—Two-Piece Skirt for Misses and Small Women. A simple blouse and skirt combined to make a most attractive frock. The blouse is cut in one piece with the sleeves. The skirt is made in two pieces that are lapped onto side panels and can be made with a high or natural waist line. The 16 year size will require 1 1/2 yards of material 36 inches wide with 5/8 yard 21 inches wide for the blouse; 3 1/2 yards 36 inches wide with 1 yard for the panels for the skirt.

No. 7263.—Fancy Blouse for Misses and Small Women. 7184.—Three-Piece Skirt for Misses and Small Women. A simple straight gathered skirt finished with hem and tucks combined with a blouse that shows the very newest sleeves that can be made in three-quarter or full length. The neck can be finished with a high collar or a simple



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with round or standing collar or with both. Challis, cashmere and materials of the kind are suitable. The 16 year size will require 2 yards of material 36 inches wide with 3/4 yard of for the blouse; 3 yards 36 for the skirt.

No. 7247.—Fancy Peasant Blouse with tunic for Misses and Small Women. No. 6835.—Two-Piece Skirt for Misses and Small Women. This tunic frock is simple as it is charming. The skirt made in two-pieces. The tunic con-



sists of straight portions that are overlapped and joined to the peasant blouse which is made over a lining. The tunic with blouse is adapted to chiffon, messaline and materials of the kind, and also lawn and batistes and the like, the skirt to silk and washable materials. The skin is draped over the blouse. The 16 year size requires 3 yards of material

36 inches wide with 2 yards of wide banding and 2 yards of fringe, 3/4 yard of all over lace and 4 1/2 yards of lace for the frills for the blouse with tunic; 3 yards 36 inches wide for the skirt.

All the above patterns are cut in sizes for 14, 16 and 18 years of age.

No. 7251.—Child's Dress with Bloomers. A simple one-piece dress with sleeves sewed to the armholes. The opening is cut at the front a little to the right of the center and there are bloomers to match. It is adapted to simple wool materials and to those of linen and cotton. The 6 year size requires 2 1/2 yards 36 inches wide for the dress, 1 3/4 yards to the bloomers. The pattern is cut in sizes from 4 to 8 years of age.

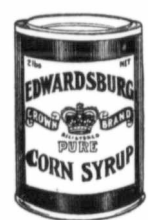
No. 7257.—Child's Dress. A pretty little one-piece frock with kimono sleeves. There are two sections that are lapped onto a panel and finished with a yoke. All materials that are used for children's dresses are appropriate. The 6 year size required 3 1/4 yards of material 36 inches wide with 1 yard for the trimming.

The above patterns will be mailed to any address by the Fashion Department of this paper, on receipt of ten cents for each.

No. 6922 Work Apron. It is made with sleeves in raglan style that are extended to the neck edge. The backs are held in place by means of a belt. Percale, gingham and the like are appropriate. The medium size will require 5 yards of material 27 inches wide.

No. 7193—Work Apron with Body and Sleeves in One. A plain apron with either short loose sleeves or long or three-quarter sleeves gathered into bands and with round, square or high neck. When narrow material is used the front can be cut in two pieces, seamed at the center. Gingham and all apron materials are suitable. The medium size requires 4 3/4 yards of material 27 inches wide.

No. 7088 Work Apron. It can be made either with or without sleeves, with square, high or round neck. The medium size will require 7 yards of material 27 inches wide.



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All these aprons are cut in three sizes, 34 or 36, 38 or 40, 42 or 44 bust.
 No. 7235—Girl's Yoke Apron. A pretty little model that is simply full below a square yoke. It can be made with or without sleeves and with high or square neck. The 8 year size will require 4½ yards of material 27 inches wide. The pattern is cut in sizes from 6 to 10 years of age.
 No. 7143—Child's Apron. It can be made as illustrated or with high neck

and long sleeves. The closing is made at the back and the apron can be worn with or without a belt. The 6 year size will require 2½ yards of material 27 inches wide with ½ yard for the trimming. The pattern is cut in sizes from 2 to 8 years of age.
 The above patterns will be mailed to any address by the Fashion Department of this paper, on receipt of ten cents for each.

HELPS FOR THE HOME

By Edith Charlton Salisbury, Manitoba Agricultural College

Walking is good, but the exercise is better taken out of doors.

Dear Martha,—I have been doing a lot of thinking lately and it has mostly to do with the work of the women on the farm. It is a sad state of affairs when the more prosperous a farmer becomes the harder his wife and daughters must work, and I believe you will agree with me that this is the rule; there are enough exceptions of course to prove the truth. There are farm homes where the farmer's wife has quite as modern an equipment for her work as the prosperous farmer, her husband, has for his, where the woman's time and strength are considered as economic factors just as much as the man's, but that is not the average home in any farming community. The up-to-date farmer who is succeeding in his business usually branches out along various lines and every time he does, while it probably increases his income, it increases the work in the house as well and the very hardest part of it all is that the more work there is to do in any house the more difficult it is to get help.

Well, what are we going to do about it? The problem must be solved and I trust that the majority of women will work it out in some way, other than by abandoning the farm altogether and moving into town. That is the biggest mistake most farmers make, for as a rule it leaves them unsettled and uprooted ever after and it hurts the country and rarely does the town to which he moves any good. When a farmer moves into town it is for one or two reasons and generally in either case the women folks are at the bottom of it. Either his wife and daughters won't stay and work so hard any longer or else they want to move into a town house where they can have modern improvements. The last reason is without foundation for we can have any modern convenience on the farm that we have in town, and at very little more cost, if any. But I'll prove that to you some other time, if you are inclined to be a Doubting Thomas on the subject; it is about the first reason I want to chat with you in this letter.

When Rebellion is Pardonable.

I don't blame farm women for rebelling against the amount of work required of them. I wish they had rebelled long ago, before so many of them took to filling early graves, prematurely wearing out or worse still going to swell the crowd at the insane asylums. They tell me there are dozens of farm women in those institutions all over Canada. If their rebellion had only taken another form we would have been so much farther ahead now. Of course I know one can be too busy and too hard pressed to even put up a sensible fight, when the only thing possible seems to be to just stop and refuse to go on—that is generally called balking, is it not? But if instead of doing this they had put their wits to work to try to save, instead of spending themselves so unreasonably, how much better it would have been!

Do you know, Martha, I am convinced beyond a doubt that there is more time and energy wasted over housekeeping than there is over any other industry in the world. I know a man who has a box factory—making boxes doesn't seem one-half so important as making people comfortable in homes—but his plan of work has certainly many valuable lessons in it for housekeepers. Do you suppose he uses any more nails than necessary or wastes times going hither and

yon, up-stairs and down-stairs, for this tool or that? Indeed he does not. There are just the necessary number of nails and no more on each side and end of every box and the tools are in the most convenient spot for his work. And besides, since he started to make boxes he has worked out a number of excellent schemes for reducing the amount of energy required to do certain routine tasks. Heigh-ho! Then think of the thousands of steps we take going about our work, some of them necessary, many of them not, and as for searching out short-cuts in house work, I don't believe there have been a dozen in our time sufficiently interested in the job, or brave enough to try it.

Well, it is spring again Martha and our busy time is close at hand. I have been thinking and dreaming how I can make things a little easier for myself. I am not a "shirker" and I'm not lazy but I've come to the conclusion that while there should be something definite to fill most every hour of every day, the "something" need be, in fact should not be, entirely physical work. That fact has been rather firmly impressed upon me lately by a sentence which I read in a recent periodical. It was this: "Housekeepers in town and country have taken one long stride ahead when they have learned how to save steps in routine work."

Gracious! Here's a new injunction! We have been told we must be more economical in buying food, clothing and other supplies—that means saving money; we have been cautioned to save this, that and other because just ordinary keeping soul and body together is expensive business these days. And now here comes along a didactic person who says we should save steps. One day when I was in an introspective and retrospective mood I gave some serious thought to the subject and the first thing that impressed itself on my mind was that up to the present time, steps round about the house, taken in doing routine tasks, is one thing that I had considered, if I had thought about it at all, one thing that I might save or spend or waste just exactly as I pleased. But now just for amusement or curiosity I began figuring on the problem: Can a woman do her housework equally well and walk less? I hadn't figured long before I was, what John calls, "dumfuddled" at the amount of space I had been covering in the course of a week, just going about the house. You may be interested in the result of my calculations, Martha, for I daresay you and plenty more farm women hold quite as high a record for pedestrianism as I do. This is the record of my weekly jaunts as I tabulated them:

Many Steps Make Several Miles.

Forty steps from stove to pantry and return means about 80 feet, making about 20 trips a day, this distance equals 1,600 feet. In 3½ days at this average 1 mile will be covered or I walk two miles in about a week just going from stove to pantry and back.

Fifteen steps or 30 feet from cupboard to dining table, setting and clearing the table three times a day, means at least 30 trips for about 900 feet. This amounts to one mile in about 5½ days and in one week amounts to about 1½ miles.

Forty steps from centre of kitchen to table in the cellar equals 80 feet, or 100 feet going up and down cellar. I often make this journey 15 times a day, covering about 2,400 feet which averages one mile in 2 1/5 days or about three miles in a week. Then there were the



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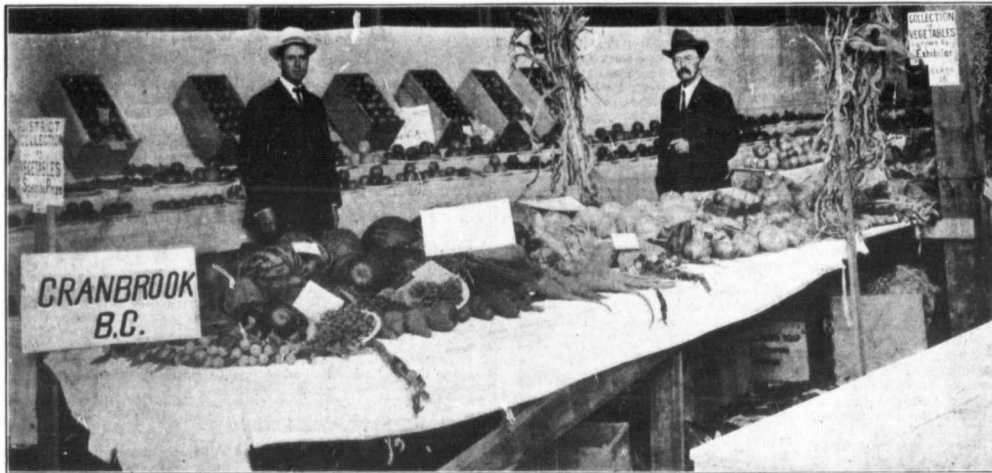
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have been established among the home-gardens around Cranbrook as well as in poultry raising. The local market has taken practically all of these so far and can take all that is likely to be grown in the locality for a long time to come and to pay the most gratifying prices.

As a mere investment, absolutely secure and yielding a big return, you cannot do better in Canada. If you purchase now with the purpose of occupying later, a local expert of the highest standing will clear, cultivate and plant trees and make other improvements for 10% of the actual cost, with my personal guarantee of satisfaction as to the quality of the work, and that the fruit trees will be of the best of such varieties as have been thoroughly tested in the Cranbrook district. No irrigation is necessary and prices are \$75, \$100, and \$150 per acre—payable \$10 in cash and \$10 per month for a Five Acre Tract.

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steps to the well, steps up-stairs, steps here there and everywhere, many of them unavoidable, many of them seemed unnecessary. But when I estimated that if in three ordinary, oft-repeated, tasks such as I have shown you, I had been walking over six miles each week, I was not surprised that I was often foot sore and back weary by bed time and had little inclination to walk across lots to call on my neighbor.

When I showed John my calculations and also gave him the information that I intended to cut down that weekly indoor walk to at least one-quarter, he answered with a masculine grunt and "you women are the limit." Just how the remark should be interpreted and if I might look for any assistance and encouragement in my proposed reform I hadn't an idea. Still, most men are open to conviction if things are made plain enough, so I counted on his help, at least after my plans were made. Then I set about figuring how I could save steps between the stove and pantry and I found it could be done simply enough. In the attic I found an old cupboard of three shelves and two small drawers. I had it fastened to the wall just over the kitchen table which I moved as near to the stove as possible. In this cupboard I put receptacles of various sizes, most of them empty tin boxes of one, two and three pound sizes, such as are sold with baking powder, coffee, lard, preserves, etc., and in these I kept small quantities of sugar, spices, a little flour for gravies and soups or enough for a cake, and other ingredients that are used many times a day in the preparation of an ordinary meal, and I found I had lessened those 20 trips to the pantry to less than one-third. Once a week, or whenever necessary, I replenished the cans in the cupboard, carrying them all on a tray to the pantry or storeroom, filling them and bringing them all back in one trip. That single experiment proved so successful that I next tried decreasing the walking record between cupboard, stove and dining table. I have spent \$10 on this venture and you may think I have been extravagant. I don't think I was because already I have had results that more than balance the outlay.

I bought a dinner wagon for which I paid \$10.00, but that sum might have been considerably lessened if I had had time or sufficient ingenuity to make one myself. This dinner wagon is really nothing more than a table about 24 x 40 inches, having a three inch edge around the top to keep the dishes from slipping off, and fitted with ball-bearing castors. There is a shelf underneath exactly like the top which of course doubles the capacity of the wagon. When I am ready to set the table I load all the dishes, silver, linen, etc., on the wagon and wheel it to the dining table and set it without making another trip. When the meal is ready to be served the food is brought to the table on the wagon which is then left in the dining room while the meal is in progress and as the dishes are removed after each course they are placed on it and one journey takes all to the kitchen. My plan is to put all the food on the lower shelf and pile the dishes neatly and ready for washing on the top. This makes only one handling from table to dish pan. Not only has the dinner wagon saved me many steps but I find I can prepare, serve and clear away an ordinary meal in fully ten minutes less time than without it. That in itself is half an hour saved a day and three and a half hours a week without counting the saving in steps. I consider my dinner wagon has paid for itself already.

There are two ways by which I can shorten the journey from kitchen to cellar and I have not yet fully decided which I shall adopt. The first and better method would be to have a dumb waiter to operate from kitchen to cellar but in an old house that means considerable alteration which it may be necessary to defer until winter when John has more leisure. It will be a comparatively simple matter to put in a small waiter, say 24 x 36 inches, near the cellar steps and have it operated by rope and pulley. But in the meantime I have made a window cupboard on the north side of the kitchen in which I can keep some of the food during the greater part of the summer. This cupboard is only

an ordinary packing box, the width of the window, fastened securely to the frame on the outside. It is lined with several thicknesses of paper and has a shelf in the middle. To reach it I open the window from the inside and when it is lowered the sash curtain conceals the cupboard from the inside.

Yes, the box fastened to the window does obstruct the light a little but there are two other windows in my kitchen and the room is not darkened to any extent.

My method of saving steps may not appeal especially to you, Martha, but if I have only set you thinking about the matter of making work easier I shall be satisfied. Your house may be differently arranged, you may not have these long distances to walk in doing routine tasks, but it will be strange if you do not find you are spending time and strength doing a bit of work that in any other industry than housekeeping would be considered a direct waste and loss. Do let us try to realize that housekeeping should be put on an economic basis which, to do so, may require an expenditure of money in order to realize an ultimate gain in other factors quite as essential in successful living as are dollars and cents, viz., physical strength, intelligence and time.

Your Country Sister.

THE HOME MAKER'S CALENDAR.

"Dear common flower, that growest beside the way,
Fringing the dusty road with harmless gold;
First pledge of blithesome May."

This is the month when it is well to make a decided change in the diet. Don't slight the vegetables, they are getting scarcer now and possibly the variety is limited to carrots, beets, cabbage, turnips and potatoes. Even so, try preparing them in a different way but have at least one of them every day. Carrots are rich in iron and that is a mineral particularly useful in the blood at this season.

Use less fat in the food, fry less. Frying is the least desirable method of cooking any way and the tendency is to use too much grease on the farmer's table. With the coming of spring we need much less fat food. Vegetables and fruits, those foods rich in mineral matter, are what the system needs this month.

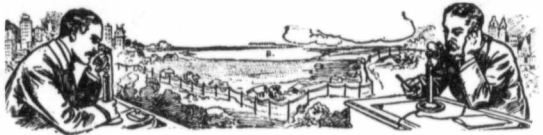
Plan your work so as to have at least a day or two this month to spare for "wild-flower hunting." The prairies are beautiful in their gay spring dress and invite you to inspect their spring opening. It will do you a world of good to drop everything and spend a day looking up the spring fashions in wild flowers.

Whoever is fire-tender or "stoker" in a Manitoba home has a long and busy season. But don't let him give up his position too soon. These chilly days in early spring are really more trying than the below-zero days in mid-winter. Keep up the fires but don't forget to open the doors and windows and let the spring breezes blow into the house, blowing out the old air that may be laden with many kinds of germs, grippé, pneumonia, measles, mumps, etc.

It's time to begin work on the flower and vegetable garden. Give John an extra good dinner, smile your sweetest and be your most fascinating self, then ask him to help you get the seeds in early. Before these lines reach you, spring may have advanced so much that the garden should be made. But don't neglect it. The early green vegetables, young onions, lettuce, radishes, dandelions, etc., are worth their weight in gold during the spring months.

I wish many Home Economics Societies would follow the example of the Emerson society and offer some small prizes for the best kept garden and the best pansy bed and I wish every member in each society would enter the competition. Besides being an excellent way to improve the appearance of the farm home, it will encourage the women to spend more time out of doors and that will mean wealth paid in the coinage of good health.

TOFIELD PARK



DID YOU SAY?

Get into it by all means. Tofield has all the natural wealth of a great productive centre, and it cannot fail to have a big and a rapid development. Taking the very lowest estimate, any investment in the Townsite is as safe as the best property in Canadian Lands is safe, and while a good return is positively assured, the probability is almost a certainty that it will become one of the **biggest profit making land developments in Western Canada.**

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It is the **Junctional Point** of the main line and Tofield-Calgary branch of the G. T. P. It is the proposed junctional point of the main line and the Battleford branch of the G. T. P. It is the trade centre of one of the best farming districts in the west. It has 20,000 acres of coal—three mines in operation and other developing—large clay deposits, natural gas, cheap fuel and is close to good markets. It is an ideal location for factories and an ideal distributing point. It has Beaver Lake, destined to become a famous summer resort. It is two years old and has grown more rapidly than any other Grand Trunk Pacific town between Winnipeg and Edmonton.

THE PROPERTY, Tofield Park.

It is **Right in the Heart of the Town**—from one-quarter to three-quarters of a mile **Inside** the original town limits—within less than two blocks of Main street—within three blocks of the town hall—within four to five blocks of the present business centre—the town is already built right up to it—it is high and dry—it has 80 foot streets and borders on a 100-foot boulevard—it is in line with the town's growth—it immediately adjoins property that has increased 100 per cent in value the past year.

IF THESE ARE NOT FACTS, DON'T BUY.

We simply want a chance to **satisfy you** that these are **facts**—we don't want you to rely on our statements alone—we want to give you the information that will enable you to **investigate for yourself.** We will abide by the result.

MORE MEN NEEDED AT TOFIELD

Charles E. Taylor, manager of the Tofield Coal company, has just returned from Germany, where he purchased a large bucket excavator which will be installed ready for operation by May 15. This machine alone will more than treble the output of this one mine, increasing it from 300 tons to more than 1,000 tons a day. Fifty men are now working in this one mine, but a much larger force will be required when the new machinery is installed. The other mines are also preparing to largely increase their output this summer, which means work for more men and more population for Tofield.

The Imperial Oil company is erecting a large warehouse and storage tank at Tofield, which will be the distributing point for surrounding territory. An electrical power plant, a brick plant, and other industries are planned for the coming summer. It is announced that the Tofield-Calgary branch of the G. T. P. will be in operation into Calgary by July 30, giving Tofield rail connection with the leading cities and towns of Southern Alberta. Tofield is the northern freight terminal of this branch.

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It is time to pack away the furs and winter bedding. Some bright, breezy day put everything out doors where it will get well aired and shaken, brush off dust and mud, then pack every thing away in dust-proof bags or boxes. There is nothing better to insure freedom from moths among clothing than a generous sprinkling of camphor moth balls placed between the folds.

Teach the small boys and girls how to brush and put away their own clothing. Show the older ones how to remove grease spots by sponging with gasoline or soap and water. The lesson will be valuable in making them careful, more particular about their appearance and more self-respecting generally. It is always easier to think well of yourself when one's clothes are fresh and clean

than when they are spotted with grease and stains.

FOR THE TIRED HOUR.

To wish is to will with the back-bone left out.

The woman lecturer to man who would not marry: "What are you waiting for—an angel? You'd look pretty by the side of an angel, wouldn't you?"

Josiah Allen's wife said: "A good, noble, true man is the best job old Nature ever turned off her hands, or ever will."

It is unreasonable for an unreasonable man to expect others not to be unreasonable too.

If you sit in a draft, doctors will cash it.

"Why was it you never married again, Aunt Sallie?" inquired Mrs. McClane of an old colored woman.

"Deed, Miss Ellie" replied the old woman, earnestly, "dat daid nigger's wuth moah to me dan a live one. I gits a pension."

Kicker—What were the wild waves saying?

Booker—They didn't get a chance to say anything. My wife was in bathing.

Four O'clock.

Little drops of water,
Little grains of tea,
Make a sweet emotion
In the midst of me."

Jinks—Do you believe that a man becomes what he eats?

Blinks—Yes, I'm inclined to think I do.

Jinks—Well, what kind of an animal is he after eating oxtail soup, cracked crab, roast turkey, spring lamb, and an omelet?

The youth who was smoking a cigarette opposite the monkey's cage took another from his pocket. "Would it do any harm," he asked, "if I offered him one of these?" "Not a bit," responded the attendant, "he wouldn't touch it. A monkey isn't half as big a fool as he looks."

All the vices were not given to one sex, nor all the virtues to the other.

THE WRONG WAGON

By C. T. Revere.

Scotty swung himself to the seat of the old army-wagon and turned to his grinning, smoke-begrimed partners.

"Don't overlook the dried peaches," bellowed Jake.

"Nor the bacon and flour," added Slim.

"An' don't let Scar-Faced George get you and the four thousand," was Jim Dunnell's parting advice.

"Get——" Scotty vented his contempt in a scornful flick of his whip. "Get-app!" He released the brake, and sent the long lash curling over the back of the "nigh" leader, and the mules started on a gingerly trot down the rocky trail. Scotty had no time for chaff when important business demanded his attention. It was forty miles to San Marcial, and he meant to get there before dark.

Once out of the stinky roadway which the canyon grudgingly afforded, he urged his mules into a swinging gait, and betook himself to the refuge of whistling. Scotty was not in a particularly merry mood, and the tune which pursed his lips—"Never Take the Horseshoe from the Door"—represented his optimism as to the future rather than any cheerfulness over the present. It was an air conducive to meditation, and wrinkles of thought lined his forehead as he bowed along over the mesa, giving an occasional snap with his whip at a brilliant cactus bloom.

Scotty's mind was busy with the mightiest problem that corrugates the brow of man—how to get money; not money to live on, but money to do things with.

Scotty and his three partners were in the same tantalizing strait in which thousands of prospectors have found themselves. Only two hundred feet of granite separated them from what they believed to be a fortune. The outcroppings and discovery-shaft had lured them on to regard themselves millionaires in embryo. This hope had sustained them through months of grinding toil. Then they came to earth. Prospects were not assets. The weighing-up process was inevitable. Into one pan of the scales they put forty dollars in cash, a week's grub, half a box of dynamite, four mules, and the condemned army-wagon bought from the commandant of the fort a year and a half before. These would not balance against two hundred feet of necessary tunneling, even when topped by the freely given energy of four eager young miners working for themselves.

"We'll have to sell an interest," said taciturn Jim Dunnell, reluctantly voicing what had been the common thought for weeks.

And so Scotty, the light-hearted and glib-tongued, bearing in his pocket the forty dollars and samples of ore taken from two branch leads cut by the tunnel, was selected to go to San Marcial to dispose of a fifth interest to Sam Hersheimer, general supply merchant and owner of the New York Store. The last time Scotty had been in town Sam had offered six thousand dollars for a half-interest, and by the logic of barter the four partners concluded that he might be brought to pay four thousand for a fifth.

That night Scotty stood at the bar of the Happy Days saloon waiting for his quarry in all the trim sleekness of the predatory creature. Four dents quartered accurately in his spick-and-span Stetson, a brilliant handkerchief flamed against the bronze of his neck, and the pungent perfume of moth-balls arose from his blue flannel shirt. He looked prosperous, and he meant to. The purchases had been made at Sam's emporium with a free display of gold and silver within easy reach of Sam's observant eye. With a "See you later," he had shaken off the storekeeper's detaining salutation and shot out of the door to the livery-stable. This was the time for coquetry. Persuasion might have its inning later.

And so Scotty leaped with his back to the bar of the Happy Days, a lazy confidence in his full, gray eyes. It was good to be in town again. It was good to run one's hand over a chin smoothed by the barber, to bandy horse-play with friend and stranger alike, and to feel the tingle of the invigorating tonic for which the Happy Days was famous.

It was also good to have Sam walk in just as he trumpeted out a command ordering all hands up to the bar. It bespeaks affluence to stand untrifled before the thirst of a score, and Scotty beheld the response with unblinking nonchalance. His friendly glance included Sam in the invitation, and a crowding shoulder made room for him at his side.

"Flush, eh?" grunted Sam.
"Oh, I dunno," said Scotty, with blunt half-truth. "Got to keep up appearances. Yere's to our red noses!"

Their elbows crooked in unison as they gulped down the fiery libation to good-fellowship, and they

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el one another with smarting
s.
His debt paid to hospitality,
erty once more was the statue
unconcern. Absently he dis-
ssed the weather, the town, and
e price of sheep. In laconic
ms he replied to Sam's inquiries
out his partners.
"Haf you struck pay yedt?"
ked Sam.
"Pay!" snorted Scotty. "Got
at at grass roots." He took
om his pocket an ore specimen,
d tossed it up carelessly.
"I know dot," pursued Sam. "I
as oudt dere ven you was sinking
ur shaft. Vadt do you gedt in
e tunnel?"
"Nice, hard granite that keeps
e sharpenin' drills about half the
me," returned Scotty, fingering
e bit of ore.
"Dot gray carbonate dondt
ok much like id," remarked Sam
vetously, as he took the spec-
en from Scotty's unresisting
ngers.
"That's from a spur we cut in
e tunnel. She'll run eighty dol-
ars to the ton."
"Id's good stuff. How much
you got of id?"
"About a ten-inch pay streak, I
reckon, yawned Scotty. "We cut
another branch lead a leetle wider
hat runs about the same. We ain't
aying no attention to them
ough. Jest wait till the tunnel
hits the main lade." And Scotty
ave a little hum that could have
een translated into voluble boast-
ngs of prospective wealth.
Sam's black eyes twitched ner-
ously.
"I suppose you ain'dt thinking
of taking in any new pardners
redt," he ventured at last.
"Well, o' course, we might if we
could get the right kind o' people,"
drawled Scotty. "But don't you
never think we're goin' to take in
no limberjawed tenderfoot with no
sand in his gizzard. He's got to
be a man that'll stic without
hangin' on to the horn o' the sad-
dle. A feller like that couldn't buy
a fifth interest in there for fifty
thousand bucks."
Sam was not quite certain
whether he came up to specifica-
tions. But where fortune beckoned
he was bold.
"Vodt size interest vill you leet
go?" he inquired.
"Not a picayune over a fifth,"
snapped Scotty, with an impres-
sive thump on the bar.
"For how much?" Sam, too, was
laconic when it got down to busi-
ness.
"Four thousand, an' if any
man—"
Sam cut short the flow of em-
plasis. "Dot sounds briddy sdeep
v n your tunnel's got two hundred
feedt to run."
"Forty thousand wouldn't buy
the privilege of scraffin' the
dump when we cut the big vein."

In Scotty's aggressive manner Sam beheld the rock bottom of price. Hagging would be a waste of breath, but sleep would give wisdom to his deliberations. He would talk the matter over in the morning, and he might go back to the claim with Scotty.
"All right," assented Scotty, with brave indifference. "We ain't runnin' after nobody. Don't mind lettin' you in, though, 'cause you've always been square, an' I don't reckon you'd tear off a feller's galluses while he was turnin' around to spit."
Sam's narrow shoulders stiffened to this tribute to his probity; he coughed his appreciation over another tear-compelling glass, and trundled home to bed.
The enticing staccato of chips drew Scotty to the faro-table. The fire of many glasses had roused the fever of his veins, and his old foe, the imp of chance, held forth allurements that he could combat but feebly. He didn't have more than fifteen bucks? Nope. He needed more? Sure. Supposin' he asked Sam to stake him to a month's grub and supplies, after all this bluff about striking it rich, wouldn't it look queer to Sam? Well, wouldn't it! And a good winning would fix it

all right? Aw, say!—or words to that effect.
The imp of chance paved the way for broken resolutions. Just as Scotty reached the table, a lanky, raw-boned player got up from his chair, cleaned out, with the curse of the luckless gambler still upon his lips. His hat was slouched down over his eyes, all but concealing a purple seam over his right cheek-bone, which stood out like the welt from a whip. As he stepped back he jostled Scotty, and his ill humor took a more personal turn.
"Pears to me like you could wait till I got up," he growled, with a savageness that sent the scarlet into the seam across his cheek.
"Wouldn't think o' disturbin' you, pardner," said Scotty, with a suavity that refused to bristle. "An' what's more, I ain't certain I'll take a stack." Irritation was not proof against such geniality,

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and the luckless one slunk into the crowd.

But the more Scotty looked on, the more certain he became. A wealthy sheepman was "keeping cases," and losing everything else. The regularity with which the dealer raked in the bets made Scotty suspicious. He watched the dealer. It was a sure thing for the "house." The sheepman stood no more chance of winning, except through courtesy, than one of his lambs would in a tussle with a bobcat.

"Now, as he's bettin' twenty on a card," said Scotty to himself, "it looks to me as if the house would rather have his money than mine if I hold my bets down to two. So I reckon I've got as sure a thing as the house if I 'copper' him." He shoved forward ten dollars, and asked for a stack of "reds."

Scotty's reasoning proved correct on the first turn. The sheepman had played the king "to lose" and the jack "to win." Scotty played a "copper" on the jack, and played the king "open." When the cards came up, the dealer raked in the sheepman's bets, and "sized up" Scotty's chips with a frown. By the time the deal was out the ranchman was calling for more chips, and Scotty had four times as many as he started with. The dealer was showing some ill temper.

"You're poorty lucky," he snarled, as he eyed Scotty's accumulations. "Would it be jest the same to you if you made your bets a leetle quicker? 'Taint always polite to 'copper' other gents' judgment."

"If it's all the same to you," returned Scotty, "I'll make my bets when I damn please, so long as I don't delay the game. The house is doin' well enough not to bother about me."

With this kindly thrust, Scotty proceeded to collect his hard-wrung blackmail. Whenever the chief pigeon was plucked of twenty dollars, the dealer paid the price of silence by handing over two to his successor, and by the time the ranchman's buckskin bag had been drained of its gold, Scotty was smiling behind a rampart of chips negotiable at the "bank" for nearly one hundred and fifty dollars.

"Think you're good, eh?" sneered the dealer, after the sheepman had confessed his penury and sought the bar.

"Some," smirked Scotty. "But if it's all the same to you, we'll try another box."

"They all look alike to me," hummed the dealer, with professional indifference. He drew another faro-box from the drawer of the table, handed it to Scotty for inspection, and the game began.

In less than half an hour Scotty stood before the bar, and spent

his last quarter for a drink—spent it with the contempt a profligate feels for the dregs of his purse. He gulped down the liquor with a sinking heart, his blitheness wilted under the smart of his ignominious position. He had gambled away the last dollar that belonged to the boys. Without money he would expose his hand to Sam. He would have to go back with his mission a failure, without a pound of grub.

He stumbled through the darkness toward the livery-stable, and into his befuddled brain sneaked the suggestion that the six-shooter at his hip would be the best means of ridding him of his disgrace. The lights from the railroad station cut through the gloom and showed him the way to the little footbridge that spanned the arroyo, now half-filled with slimy water. Just as he stepped upon the first plank, a crouching form rose before him.

"Hanzupp!" came in a growl from the hulking shadow.

All thought of self-destruction was instantly smothered by the instinct of self-preservation, and Scotty's palms sought a perpendicular.

"Dig!" growled the shadow. "I'm down to bed-rock, pardner," chirped Scotty, for whom highwaymen at the moment had no terrors.

"Come across. I seen you make a drag at bank."

"Maybe you did," said Scotty, peering for a good glimpse at the man, "but they got me for all I had before I left."

"I'm from Mizoo." And the highwayman rummaged through Scotty's pockets for confirmation, which was soon obtained.

The gleam from the station lamps for an instant rested on his evil face; and in the ugly welt across the cheek Scotty recognized the gambler whose seat he had taken.

"I'll keep the pog-gun," he said, as he tucked Scotty's six-shooter into his belt. "And as fer you—w'y—"

The sullen swash made verbal abuse superfluous. Scotty splashed about in the three feet of slimy water, and dragged himself to the bank of the arroyo, where he lay, a sputtering, spewing huddle of degradation.

After spending the rest of the night at the livery-stable, he met Sam at the Happy Days saloon, and endeavored with oozing jauntiness to plead the virtues of the claim. But capital is seldom impressed by bedraggled wretchedness. Capital paid for a drink (which Scotty ardently desired), but stubbornly refused to invest four thousand dollars in a fifth interest in a mining enterprise, the whole of which might be obtained by patience and a negligible outlay in cash.

Big Ben



Don't set your mind—set Big Ben

Don't bother your head about getting up. Leave it to Big Ben.

You ought to go to sleep at night with a clear brain—untroubled and free from getting up worries. You men, if you are up to date farmers, work with your brains as well as with your hands. Such a little thing as "deciding to get up at a certain time in the morning" and keeping it on your mind often spoils a needed night's rest and makes a bad "next day." Try Big Ben on your dresser for one week. He makes getting up so easy that the whole day is better.

Big Ben is not the usual alarm. He's a timekeeper; a good, all-purpose clock for every day and all day use and for years of service.

He stands seven inches tall. He wears a coat of triple-nickel plated steel. He rings with one long loud ring for 5 minutes straight, or for 10 minutes at intervals of 20 seconds unless you shut him off.

His big, bold figures and hands are easy to read in the dim morning light, his large strong keys are easy to wind. His price, \$3.00, is easy to pay because his advantages are so easy to see. See them at your dealer.

5,000 Canadian dealers have already adopted him. If you cannot find him at your dealer's, a money order sent to *Wentz, La Salle, Illinois*, will bring him to you day charges prepaid.

\$3.00
At Canadian Dealers.

BIG BEN ALARM CLOCKS
ARE ILLUSTRATED IN THE 1912 CATALOGUE OF
JEWELLERS D.R.DINGWALL WINNIPEG LIMITED
WRITE FOR A COPY OF THIS BOOK



KANT KRACK COATED LINEN Collars

The **KANT KRACK** Coated Linen Collar is an ordinary linen collar, but it is waterproof, coated by a patented process which does not alter its appearance of a linen collar.

You can clean it yourself in a few seconds by rubbing over the surface with a damp cloth or sponge.

Always clean, always ready to wear, always new in appearance, and no laundry bills.

Two features which no other collar possesses
It's flexible lips in the front prevent cracking of the folds. The slit in the back makes it easy to button and relieves all the pressure from the neck.

These Collars are just the thing for the Boys.

Buy one at your dealers to-day, or send, stating size and style with 25c. to **PARSONS & PARSONS' CANADIAN CO., 108 Main St., Hamilton, Ont.**

Mackenzie, Brown, Thom & McMorran
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Warranted to Give Satisfaction.
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A Safe, Speedy and Positive Cure for
Curb, Spint, Sweaty, Cupped Hoof,
Strained Tendons, Founder, Wind
Puffs, and all lameness from Spavin,
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Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc. It is invaluable.
Every bottle of Gaustic Balsam sold is
warranted to give satisfaction. Price \$1.00
per bottle. Sold by druggists, or sent by ex-
press, charges paid, with full directions for
its use. If sent by doctor, please enclose
testimonials, etc. Address
The Lawrence-Williams Co., Toronto, Ont.

The cause looked so hopeless that Scotty did not lay bare his own misery by relating his adventure of the night before. It would have been useless, anyway, for Sam, like the rest of the town, had something more exciting to listen to.

The coming of the circus could not have created more turmoil than the report that Scar-Faced George had been seen in San Marcial the night before. He had been in the Happy Days—had played faro there. This was genuine bravado for you, for there on the fly-specked wall of the saloon, held in place by rusty tacks, hung a tattered, yellow poster, offering a reward of five thousand dollars for Scar-Faced George, dead or alive.

Amid the barn-yard cackle shrilled forth by the presence of this hawk arose numerous surmises as to his purpose in alighting in San Marcial. He was going to shoot up the town. He was going to rob the bank. He was going to hold up the army pay-wagon, for the next day was "dough day" out at the fort.

A throbbing head is a great foe to curiosity. Scotty also had troubles of his own which kept him from being inquisitive. In fact, he resented such interest in the comings and goings of a mere road-agent at a time when his personal woes were sufficient to keep the whole town busy with commiseration.

"Nothing to it but to hitch up an' go out an' get the boys," he muttered. "Ought to raise enough on the mules an' wagon to grub-stake a couple of us to do assessment work till we raise enough to go on with the tunnel."

It was a sorry tale to bring to his partners. Jim Dunnell would take it like a stoic, but Slim and Jake never would overlook the empty grub-box, however they viewed his failure with Sam. A tap on his shoulder made him start. He turned and saw Sam.

"You will be eroundt soon," grinned the storekeeper shamelessly. "Ven you come back you will be in to see me aboutt dot mine."

Scotty was too near the low ebb of wretchedness to be beaten down further. The sting of the insinuation acted as a goad.

"I savvy yer lay, all right," he flashed back. "It don't take no powerful pair o' specs to see why you didn't want to buy an interest, an' why you wouldn't let me have a side or two of bacon an' a sack of dried apples on tick. But lemme tell you a thing or two. I reckon you've heerd tell how a buzzard wouldn't eat a dead greaser that had ben feedin' on chile con carne. Don't you be in no hurry to whet yer claws, fer you'll find that



The Howard Watch

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The price of each watch is fixed at the factory and a printed ticket attached—from the 17-jewel (double roller) in a Crescent Extra or Boss Extra gold-filled case at \$40, to the 23-jewel at \$150—and the EDWARD HOWARD model at \$350.

You can buy HOWARD Watches all over Canada. Find the HOWARD jeweler in your town. Not every jeweler can sell you a HOWARD. The jeweler who can is a representative merchant—a good man to know.

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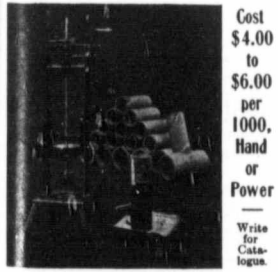
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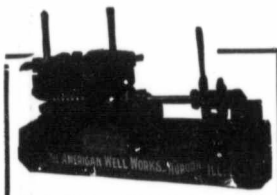
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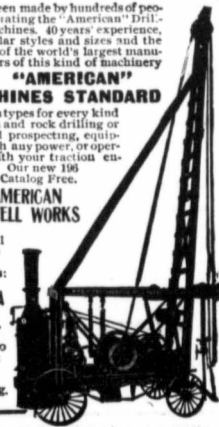
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mine is jest about the hottest corpse you ever stuck yer beak into."

Sam crouched as if dodging a blow, but Scotty stalked past him, and went on to the stable and helped to hitch up the mules. The lenience of the liveryman about the feed-bill caused him to take a more cheerful view of things in general, and he came dangerously near breaking into a whistle, as he hopped over the wheel to his seat.

Just as he rattled across the railroad-tracks he saw a cloud of red dust flying toward him from the other end of the town. In the van rode eight troopers from the fort in command of a lieutenant, the hoofs of their horses sounding a drum-beat on the hard-baked roadway, and their carbines jolting heavily at their saddle-slings. Behind them galloped four mules drawing a lumbering army-wagon, stained by wind and dust, but nevertheless a shop-new counterpart of the service-work vehicle in which Scotty sat.

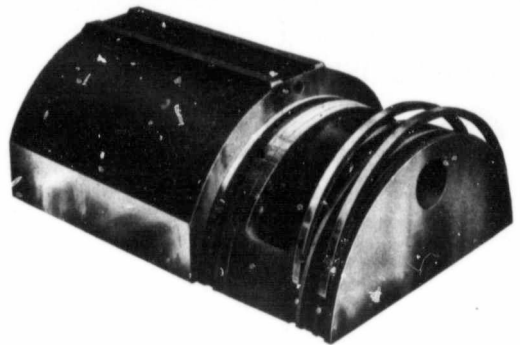
He drew aside to let them pass, and watched them thunder up to the station with the flourish of a battery of field artillery. The west-bound flyer was due in twenty minutes, and all St. Marcial was at the depot to watch the transfer of the boxes containing the soldiers' monthly pay from the express-car to the wagon. A few of the timorous half-expected to see Scar-Faced George step forth and hold up the troopers on the spot.

It was getting toward the hot part of the day, and Scotty let the mules make their own pace. He was in no hurry to get back to his partners, and his brain fairly whirled with suggestions as to the best method of presenting the story of his failure. As the miles dribbled slowly behind his sense of depression deepened. He had made seventeen kinds of a fool of himself. He thought hard things of his behavior. He expressed them in low, grim objurations between clenched teeth. He uttered them loudly in the virile and vivid vernacular of the trans-Missouri. Again he became obsessed by the idea that a final bullet was the best means of ridding the earth of such long-eared misfits as himself. But he didn't even have a gun. It sure was hard luck.

He roused himself to prevent the mules from taking the fork of the road which led to the fort, and put on the brake to check the speed of the wagon down the "hogback" over which the trail ran. Just as he reached the bottom of the hill one of the leaders shied at a clump of mesquit. Scotty brought him about with a sharp jerk.

"Hanzuppl!" The voice and the admonition rang familiarly.

From behind the mesquit stepped a man bearing that deadlier of short-range weapons, "sawed-



Among the many valuable features of the Gould Balance Valve which are always appreciated by the operator, is the ease of handling the engine, saving of the valve gear, saving of wear and tear on engine, and lack of probability of a single cylinder engine stopping on the center.

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HEAD OFFICE: WAWANESA, MAN.

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All metals welded satisfactory.

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P. E. MYERS & SONS,
Acton, Ont.

off” shotgun. He scorned the pretense of masking, and Scotty nearly leaped from his seat as he saw the purple seam over the bulging cheek-bone.

“Keep yer dew-claws nailed to the roof of that wagon if you don’t want to git loaded with buckshot,” ordered the bandit.

“I’m doing the best I can, pardner,” protested Scotty, who was showing obedience to the limit of his arms. “Seems like we’ve met before. Yer voice is familiar, but I can’t call yer name.”

“We can talk about that later. All you got to do is to keep yer mouth shut an’ yer hands in the air.” The bandit advanced to the side of the wagon with the cocked gun ranged at Scotty’s chest. “Wharabouts is the dust?”

“I don’t ketch yer lay,” faltered Scotty.

“You’ll ketch it right in the stummick—both bars—if you don’t talk up some. Tell me whar the money is.”

“I didn’t get it,” blurted Scotty, the blank look on his face clearing. “I couldn’t make no deal with Sam. The blame’ polecat went back on me. But who told you-----”

“Who’s talking about Sam” bellowed the road-agent. “I mean Uncle Sam. I’m after the dough fer his little boys in blue. You thought you could fool me by not sendin’ a guard along, but if you don’t fork it over in the next-----”

The bandit’s jaw hung as if it had been stricken with paralysis. The muzzle of the gun dropped limply. Scotty followed his eyes, and looked back for an instant. In that glimpse he beheld eight troopers coming over the brow of the hill, followed by the army pay-wagon. Then it all raced through his bewildered brain--Scar-Faced George--five thousand dollars, dead or alive--four thousand dollars to develop the claims. “It beats hell out o’ suicide,” was his thought.

But before he was conscious of having formulated it, he had launched himself against Scar-Faced George, crushing him to the earth. The gun was discharged, but it merely shattered a spoke in the front wheel. When the troopers galloped up they saw a tangle of legs, squirming bodies, and flying fists. The man on top gave a tug at the belt of his antagonist, jerked out a six-shooter, and dealt a thumping blow on the head. Then things were less exciting.

“Gents,” began Scotty, with a stertorous chirp, “allow me to introduce Scar-Faced George. But before you shake hands I advise you to tie both o’ his’n with the halter on that ‘nigh’ wheeler. Hees made a leetle mistake to-day, an’ he’s liable to feel sore when he comes to. Besides, that reward will come in mighty handy jest now.”

What Do You Ask of a Roof?

WHEN you were a boy there was one universal test for a roof:—“will it give protection against storm?” Shingles gave that protection, they were cheap—good shingle timber was plentiful and everyone was satisfied.

But times have changed. Roofing today must not only keep off the rain and snow, but should offer protection against fire as well. Farmers everywhere are quitting the shingle habit and turning naturally to

NEPONSET PAROID ROOFING

which gives better service than old-time shingles and costs no more than the poor shingles now offered. NEPONSET Paroid is used by the great railways because of the protection it gives against fire. Put it on all your farm buildings if you want to be free from worry over roof-leaks and repair bills, as well as from risk of fire from sparks. NEPONSET Paroid is guaranteed.

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barley malt and hops only.
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The golden setting in which
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the sunshine of prosperity be-
comes too dazzling; a harbor
where the human bark finds shel-
ter in the time of adversity.

Home is the blossom of which
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Home is a person's estate ob-
tained without injustice, kept
without disquietude; a place
where time is spent without re-
pentance, and which is ruled by
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A hive in which, like the indus-
trious bee, youth garners the
sweets and memories of life for
age to meditate and feed upon.

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man after business hours.

Home is the coziest, kindest,
sweetest place in all the world,
the scene of our purest earthly
joys and deepest sorrows.

The place where the great are
sometimes small, and the small
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The father's kingdom, the chil-
dren's paradise, the mother's
world.

The jewel casket containing
the most precious of all jewels—
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Where you are treated best
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The centre of affections, around
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A popular but paradoxical in-
stitution, in which woman works
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A working model of heaven,
with real angels in the form of
mothers and wives.

The Key to Happiness

There is one way of attaining
what we may term, if not utter,
at least mortal, happiness. It is
this—a sincere and unrelaxing
activity for the happiness of others.

In that one maxim is concentrated
whatever is noble in morality, sub-
lime in religion, or unanswerable
in truth. In that pursuit we have
all scope for whatever is excellent
in our hearts, and none for the
petty passions to which our nature
is heir. Thus engaged, whatever
be our errors, there will be no-
bility, not weakness, in our re-
morse; whatever our failures, vir-
tue, not selfishness, in our regrets;
and in success vanity itself will be-
come holy and triumph eternal.

Know Thyself.

In the commission of evil fear
no man so much as thine own self.
Another is but one witness against
thee; thou art a thousand. An-
other thou mayest avoid, but thy-
self thou canst not. Wickedness
is its own punishment.

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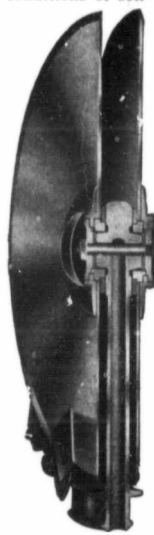
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because it is the poultry fence that never
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Peerless poultry fencing is made of the best
steel fence wire—tough, elastic and springy—
and will not snap or break under sudden shocks
or quick atmospheric changes. Our method of
galvanizing positively prevents rust and will
not flake, peel or chip off. This feature
alone adds many years to the life of a fence.
The joints are securely held with the "Peer-
less Lock" which will withstand all sudden
shocks and strains yet is so constructed that
Peerless Poultry Fence can be erected on the
most hilly and uneven ground without buckling,
snapping or kinking.

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Poultry fencing rigid and upstanding thereby
preventing sagging and racking about half
as many posts as other fences.

We build our poultry fences stronger than
seems necessary in order to keep marauding
animals out and close enough to keep the
smallest fowls in. Many of our customers are
using this style as a general purpose fence with
entire satisfaction.

Peerless Poultry Fence when once put up is
always up and will look better, wear better and
serve you better than any other fence built.

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We also manufacture a complete line of
general fencing, farm gates, walk gates and
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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 Land Agency or Sub-Agency for the district. Entry by proxy may be made in a proxy on certain conditions, by father, mother, son, daughter, brother or sister of the land being homesteaded.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm or at least 50 acres solely owned and occupied by him or by his father, mother, son, daughter, brother or sister.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price \$3.00 per acre. Duties—Must reside six months in each of six years from date of homestead entry (including the time required to earn homestead patent) and cultivate fifty acres extra.

A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may enter for a purchased homestead in certain districts. Price \$3.00 per acre. Duties—Must reside six months in each of three years, cultivate fifty acres and erect a house worth \$300.00.

W. W. CORY

Deputy of the Minister of the Interior
N.B.—Unauthorized publication of this advertisement will not be paid for.

A Whiff of Irish

Lucky.

A census-taker, while on her rounds called at a house occupied by an Irish family. One of the questions she asked was, "How many males have you in this family?"

The answer came without hesitation: "Three a day, mum."

A Strong Line.

Judge—With what instrument or article did your wife inflict those wounds on your face and head?"

Micky—Wid a motty, yer honor.

Judge—A what?

Micky—A motty—wan av thim frames wid "God Bless Our Home" in it.

"I'm the Cat."

Pat and Mike were sleeping at a farmhouse. Mike got hungry in the night and slipped out of the room without awakening Pat.

"Whar have you been, Mike?" Pat demanded as Mike re-entered the room.

"Sure an' Oi was afther bein' down to the pantry to git a bite to ate, Patsy, boy," Mike whispered cautiously as he climbed into bed again.

"Sure, Moike, an' it's meself will be afther doin' the same," Pat declared, as he rolled quietly out of bed.

"Good luck to yez, Patsy, boy," Mike whispered, "but yez wants to keep a sharp look out for the old man when yez passes trough his room. It's meself that stumbled over a chair on me way back, an' when he yelled out, rale sharp loike, "Who's that?" i jest stood still in me tracks, and sez 'Me-ow, me-ow, an' he sez, sez he, 'Ef it ain't that durn old cat agin!' an' then he turned over on his side an' went to slape like a bebbly, an' Oi slipped out quiet loike."

"Sure, an' that was aisy done, Mike," Pat whispered back. "Sure an' it's meself will be afther doin' the same."

And five minutes later when Pat stumbled over a pair of shoes in the farmer's room, and a stentorian voice roared out, "Who's there?" Pat felt perfectly safe from detection, as he answered in a rich Irish brogue:

"Loily still, soir, loily still. Oi'm the cat."

Cardinal Gibbons is kindness itself in his dealings with the clergy under his charge; but at times he takes a quiet fling at young ones whom he thinks will be benefited by kindly humor. At a dinner recently, where a young orator was the recipient of congratulations for a masterly effort, his Eminence told this story:

"A well-known divine was delivering a eulogy over a fireman killed at his post. Waxing poetic, the preacher said, 'The soldier hath fought his last fight, the sailor hath gone on his last voyage, the fireman hath gone to his last fire!'"

A passer-by was amazed at seeing an Irishman poking a dollar bill through a crack in a board walk.

"What under the sun are you doing that for?" he asked.

"Why, y' see, sir," replied the Irishman without looking up from his work, "a minute ago Oi dropped a nickel through this crack, an' now Oi'm puttin' a dollar through so's to make it wort' me while to pull up th' walk an' get th' nickel."

Mistress: Poor darling little pussy! I'm afraid she will never recover. Do you know, Bridget, I think the kindest thing would be to have her shot, and put her out of her misery.

Bridget: Deed, ma'am, I wouldn't do that, sure, she might get better, after all, an' then y'd be sorry y'd had her killed.

Stranger: Does Mr. Moss live in this street?

Native: Yes!

Stranger: Well, in which house?

Native: I can't tell you exactly from here but it's either in the first or second house that you can't see.

"Thirty Years in the Threshing Field I Have Had a Chance To Try Them All but GANDY is BEST"

Read what this GANDY user says:

"There are a number of canvas belts sold here, but I don't know the makers. I use and have been using for years THE GANDY BELT, and know it is O. K. With thirty years' experience in the threshing field I have had a chance to try them all, but for main belts GANDY is best."

The Gandy Thresher Belt For Main Drives

As this thresherman with thirty years' experience says, THE GANDY THRESHER BELT is the best for main drives.

THE GANDY BELT is always of a strictly uniform quality, and it is guaranteed absolutely as to material and workmanship. Thirty-two years of success in the threshing field has established it as the standard.

Look for the three identifying marks, which enable you to recognize THE GANDY THRESHER BELT at a glance, and protect you against inferior belts made to look like the GANDY.

1st.—The Green Edge

2nd.—The Trade Mark consisting of a coil of belt and a bale of cotton laid across it

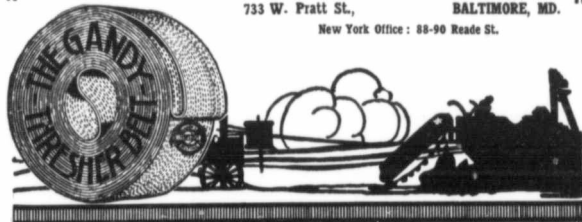
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THEY ARE ESTIMATED TO LAST AT LEAST TWENTY YEARS

They are barked, pointed and wire bound at top to prevent splitting when driven. They are flatted on two sides to a minimum thickness of three inches.

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Cherokee Mfg. Co., Dept. A, Cherokee, Iowa.

Stories of the Cull'd People

Optimistic.

A story was recently told of a colored servant who left a comfortable home and kind mistress for the uncertain felicities of matrimony. A few weeks later her former master meeting her on the street inquired how she was getting along, and if her husband were doing well by her.

"Oh yes, indeed, sir!" she replied with a beaming face; "why he's got me already three places to wash!"

How He Knew.

In a Kansas City court recently a negro on the witness-stand was being questioned about a sick horse.

"What was the matter with the horse?" asked the lawyer.

"He was ailin'," replied the witness.

"Yes, I know," said the questioner, "but what was the matter?"

"He wah jes ailin'."

"But what was wrong? With what disease was he suffering?"

"Jes ailin'," persisted the negro.

The lawyer was quiet a moment. Then he had a bright idea. He would try to get at the horse's symptoms.

"Well how do you know he was ailin'?" he asked.

"Cause he died," replied the witness.—

Plain English.

A darky preacher in Mississippi, in a sermon, dwelt upon the advantages of plain speech.

"Why, breddren," exclaimed the dusky divine, bringing his hand down upon the pulpit with great vigor "dere's no need of all dese heah long words an' high-soundin' terms dat we uses 'most ebery day. Not by a jugful, my breddren! Look at St. Paul! Dem words of his was full of de meat of knowledge an' help. Did he make use of any high-falutin' talk? No, my breddren! St. Paul he speaks in plain, simple English!"

A Nice Distinction.

Aunt Rhody was very proud of the achievements of her daughter, who attended the public school, and one day confided to her mistress that Rosanna had learned to write, and had actually written a letter to Vicksburg. The lady was so interested that, about a month later, she inquired again concerning Rosanna's progress. Aunt Rhody beamed.

"Lawsee, Mis' Polly! Rosanna is 'way erhaired er what she was las' mont'. She kin write er letter ter New York now."

He Knew.

A well-known Congressman, from Virginia, leaving his house one morning, forgot a letter that he had meant to mail. That afternoon something called it to his mind, and as it was of considerable importance he immediately hurried home. The letter was nowhere to be found. He summoned his faithful old darky servant.

"Zeke," he asked, "did you see any-thing of a letter of mine around the house?"

"Yessuh. Yo lef' it on yo' table."

"Then where is it now?"

"Ah mailed it, suh."

"Mailed it! Why, Zeke, there wasn't any name or address on the envelope!"

"Jus' so, suh. Jus' so. Ah thought it mus' be in answer to one of dem 'onymous letters yo've been gettin' lately."

Absent-Minded.

"Yellow Abe" was on trial for stealing a barrel of flour.

"You admit you took the flour" questioned the judge, sternly.

"Yer, honor, I makes dat allowance, sort ob," responded the prisoner with dignity.

"And what excuse had you for such conduct?"

"Nuthin', yer honor, 'cept dis; I wuz walkin' homelike, when I glimpses de bar' in front ob de store. Dat bar' 'll make good kindlin' fer Mandy, I sez like, an' I up wid it an' toted home. Dat's all. Why, yer honor, I thought it wuz empty all de time."

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Threshermen and Steam Plow Operators, the season will soon be open. How about that boiler? Do the flues need tending to? If so, let me tell you the merits of the Morris Improved Boiling Tool. I guarantee three times the service out of your flues without the service of a practical man, than can be obtained by the use of any other tools, or money refunded. Send card for particulars.

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ENGINEER MACHINIST—Wants position in Manitoba for threshing season. Can do own repair and capable of keeping engine in first class shape. State wages, wire or write J. T. H. c/o Canadian Thresherman and Farmer, Winnipeg.

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- 25 H.P. White tractors thoroughly rebuilt and in good shape, each... \$1000.00
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 - 36x50 Great West Separator, all attachments... \$200.00
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- Write us re new goods—We have the best.

GAS ENGINEER wants position on Hart-Parr Rumely Oil Pull. Thoroughly experienced. Not independent throttle puller! J. E. Nugent, Newbury, Sask.

STEAM ENGINEER wants position plowing on 1912, Saskatchewan License. Strictly temperate. References. State make and size engine's. Chas. L. Simpson, Box 334, Regina.

FOR SALE—Two portable steam engines, 12 and 16 H.P., also two separators, 30 Bell City and Sawyer-Massey, all in good shape, \$150 each. Not to be sold. G. Grant, Ituna, Sask.

LICENSED ENGINEER MACHINIST (not a little puller) would like a plowing or threshing job this season. State wages. Apply Box 17, care of The Canadian Thresherman and Farmer, Winnipeg.

15 H. P. FAIRBANKS-MORSE Gasoline-engine. Works for 12 days. Suitable for plowing. Also 38-50 Goodson Separator in. Feeder, Hagger and Blower. Price for all including 8 barrel gasoline Tank \$300. Terms suit. Wm. Patterson, Wawanesa, Man.

FOR SALE—One 26 H. P. S. M. Traction engine, in first class shape. Box 76. Tuxford, Sask.

ENGINEER WANTED to operate 30 H. P. Rumely Oil Pull. Must understand repair work. Apply, state wages wanted. H. W. Palas, Springfield, Sask.

CHOPPING OUTFIT FOR SALE. A 15 H. P. Stationary International Gasoline Engine in best shape chopper, elevators, belting, pulleys & plates. Apply Box 137, Carross, Alta.

FOR SALE—40 H. P. Flour City engine and plow John Deere gang. Price and terms on application to Lock box 127, Elbow, Sask.

EXPERIENCED ENGINEER wishes job on steam plowing outfit for coming season and will run during threshing season. Apply stating wages, to D. McDonald, Red Jacket, Sask.

WANTED Position on steam plowing outfit for the season of 1912 as engineer and obliging truly, R. H. Hargest, McLean, Sask.

WANTED Position by licensed steam engineer for spring work. Year experience in steam traction engineering. Can furnish references. Apply J. Jacobson, Kelliker, Sask.

HOW TO START YOUR GAS ENGINE in the oldest weather first clip. No hot water, (save formula 40c). For your information, this formula is a real, very high explosive, will vaporize in coldest weather. I use it myself at all times in bold belief. J. W. BARON 3112 Louise, Brandon.

WANTED—Position as engineer on steam tractor, plowing or plowing, sober, industrious and reliable, fifteen years experience on traction engines. Emergency repairing performed, satisfactorily guaranteed, references furnished. G. T. O. Hill Sheyenne, North Dakota.

THRESHERMAN wants position on Steam Plowing or Threshing engine, preferably in Sask. In replying state make and probable length of run. Mr. Melike, Blanche P. O., Que.

WANTED—Position as engineer on Hart-Parr desirable experience, state wages. Apply J. H. Kent, Caron, Sask.

FOR SALE OR EXCHANGE FOR AUTOMOBILE OR HORSES
One 14 H. P. John Abell Simple Traction Engine McDonald and McCredie, Glen Ewen, Sask.

FOR SALE—One J. I. Case, 20 H.P. Traction Engine, only used a short time in good shape; one 32-54 J. I. Case steel separator in good shape, will sell outfit for \$1800.00. Will take stock in part payment or will trade it on a gasoline traction. Apply Box 10, Lander, Man.

BE AN ENGINEER—The Heath School of Traction Engineering (by correspondence) offers you a thoroughly practical course in Traction and Stationary Steam Engineering for spare time home study. Send for prospectus and full information to E. H. Heath Co., Limited, Winnipeg.

FOR SALE—One Gould Balance valve for 22 or 25 H. P. Gas-Scott engine. J. Reynolds, Yellow Grass, Sask.

FOR SALE—30 H. P. Flour City gasoline traction engine, price \$2400.00, plowed 400 acres. As good as new. For terms, etc., write to Glennie & Rodger, Macdonald, Man.

FOR SALE—Hawkeye Band Cutter and Self Feeder used one season, 53 inch. First fifty dollars takes it. G. W. Vincent, Cor. Arlington and Ellice, Winnipeg.

WANTED—Engine gang six or eight bottoms must be in good repair. Box 70, Morse, Sask.

FOR SALE—Case 25 H. P. engine, fitted with contractor's tank and coal bunkers. Engine was refitted this fall and a new cylinder and steam chest put on. Is in 1st class running order. Also case separator, 44 x 66, in good repair. \$1600 buys this outfit, or will sell separate. This is a bargain. Apply J. T. Taylor, 775 Corydon Ave., Winnipeg

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FOR SALE—Lots in 34 and 35 St. James, close to several large manufacturing industries. Price \$250.00 each. Easy terms. Box 3079, Winnipeg.

FOR SALE—We have a few lots left in Transcona Gateway, the best buying in the district. Prices \$6.00 to \$10.00 per foot. Hurry if interested. Box 3079 Winnipeg.

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WANTED—Position as engineer on a steam traction outfit. Fully experienced. Can furnish references. Address J. E. Peach, Clava, Man.

WANTED—Gasoline Tractor engineer for "Flour City 40." Must have had traction experience. References required. Good pay. Also want woman cook for cottage; also man for garden and dairy. W. H. Pawson, Jr., Coaldale, Alta.

ENGINEER WANTS POSITION on plowing outfit, in Sask. or Alberta. Had 4 years experience. Can do own repairing. Graduate of the Heath School of Engineering. State wages. Chas. B. McMan, Summerberry, Sask.

TWENTY HORSE GAS ENGINE, Separator, five furrow plow, stubble and breaker bottoms, twenty-five shares. First class running order. Three thousand takes lot. Apply, "Thresherman" Care Can. Thresherman and Farmer, Winnipeg.

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FOR SALE OR TRADE FOR GOOD LAND—One 25 H.P. Double Cylinder Steam Engine with 10 Bottom Cockshutt Plow. All in first class shape. Elise Gjerston, Warren, Man.

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WANTED—Position as Engineer on steam traction outfit for threshing, or would take both ends. Can do own repairing. Nine years experience. Best of references and certificate for Sask. Am strictly temperate. Address E. F. Sharpe, Maple View Ont.

WANTED—Gasoline Tractor, Separator, and Plows, one or all. Write giving Make, Size, Age, Price and terms to Box 81, Daysland, Alta.

FOR SALE—Threshing machine, also engine gang plow. For particulars apply to W. L. Barker, Box 1714, Calgary.

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FOR SALE—Massey-Harris warehouse in good town near Saskatoon. Agency guaranteed to first-class man. Apply care of Canadian Thresherman and Farmer.

WANTED TO BUY Steam Traction Engine about 20 H. P. Address W. W. Kennedy, Magyar, Sask.

GAS ENGINEER desires position with reliable outfit April to November; operating engine. Box 171, Lumsden, Sask.

ENGINEER WANTS POSITION on ploughing outfit, for threshing season. Holds 1st class certificate, four seasons' experience. Strictly temperate. Apply to R. McGhie, Caron, Sask.

WANTED—Position on plowing engine for summer as fireman. Am holder of diploma from Heath School of Engineering. By correspondence, and could run engine if necessary. Would prefer to work in Saskatchewan. Apply stating wages to H. E. McMahon, Box 11, Kinley, Sask.

FOR SALE—Avery 1911 model 30 h.p. Alberta special under-mounted engine, equipped for ploughing. Cockshutt engine gang 8 bottom. Both run 8 days. Also 36 x 50 Avery separator, with feeder and blower. All 3 for \$5,900.00 cash. No trade considered. Davy C. Purfurst, St. Paul, Minnesota.

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EXPERIENCED Licensed Engineer and Traction Plowman wants position for the coming season. Eight years practical experience in steam traction work. Will consider position in Man., Sask., or Alta. Charles Rondeau, Saint Leon, Man.

WANTED—By holder of second class certificate position as engineer; have also good knowledge of gasoline engines. Address care of Box 148 Oxbow, Sask.

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SECOND-HAND AND REBUILT MACHINERY.

- Two 25 H. P. Simple J. I. Case engines.
- One 15 H. P. Simple J. I. Case engine.
- One 20 H. P. Compound J. I. Case engine.
- One 20 H. P. Compound J. I. Case engine.
- One 32x54 Wood Case separator.
- One 25 H. P. steel Case separator, with wind stacker, self feeder and weigher.

J. I. CASE THRESHING MACHINE CO., Calgary, Alberta.

FOR SALE
We have on hand at present a very full line of Rebuilt and Second-hand Engines and Separators which we are offering at attractive prices. Write us fully what you are thinking of buying, when we will be pleased to tell you what we have and quote prices. All our rebuilt goods are sold under same guarantee as new ones and of course are carefully repaired and look exactly like new. If you write us at once we are sure to have the size you almost want.

We also have a thoroughly Rebuilt Saw Mill Outfit consisting of 25 H. P. Saw Mill Engine and Portable Saw Mill with carriage and track complete. Can hardly be distinguished from new goods. Will be sold at a bargain.

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- 1—30 H. P. Northwest engine, not rebuilt, cheap.
- 1—30 H. P. steel 42x60 separator complete with all attachments.
- 1—42x70 Avery separator, will be rebuilt in time for 1912.

If you are interested in second hand goods, please write and let us know what you want as we will be pleased to tell you what we have and quote prices. We can fix you out with almost anything you want, either in new or second hand goods.

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QUARTER SECTION, 6 MILES NORTH from Grays, Man., \$15 per acre. 20 per cent cash, balance 4 years, at 6 per cent.

160 ACRES CLOSE TO PARKMAN, SASK 40 acres broken, \$16 per acre, \$1160 cash.

ONE HUNDRED AND SIXTY ACRES Prairie near Manson, Man., \$15 per acre; ¼ cash, 1, 2 and 3 years.

TWO HUNDRED AND FORTY ACRES, improved, first class land, near Woodlands, Man. \$25 per acre; ¼ cash.

240 ACRES IMPROVED NEAR CULROSS Man. A splendid little farm, over 200 acres under cultivation \$32.00 per acre easy terms.

THREE HUNDRED AND TWENTY ACRES prairie, adjoining the village of Frances, Sask. This is a fine parcel of land, selling at \$20 per acre if taken before the end of Feb., \$1,000 cash balance to suit at 6 per cent. A great snap.

THREE HUNDRED AND TWENTY ACRES prairie close to Castor, Alta., at a snap price of \$18 per acre, it sold quickly.

SIX HUNDRED AND FORTY ACRES prairie, near Woodlands, Man., \$15 per acre, Terms. It's a snap.

SIX HUNDRED AND FORTY ACRES prairie close to Makaroff, Man., \$20 per acre; ¼ cash. A first class snap.

SIX HUNDRED AND FORTY ACRES prairie, near Makaroff, Man. \$15 per acre. Terms. Sure a snap.

EIGHT HUNDRED ACRES, WITH COMPLETE equipment stock and implements. Close to Crandall, Man., \$30 per acre; 20 per cent cash, balance arranged to suit purchaser.

NINE HUNDRED AND SIXTY ACRES improved farm, within a nice driving distance of Brandon, Man. A beauty spot and one of the best cared for and finest places as regards four wheels, buildings, etc. in the province. This place is worth \$45 an acre, but for quick sale and on account of the terms will take \$36 per acre. Just the place for a homesteader.

NINE HUNDRED AND SIXTY ACRES improved farm, 30 minutes drive from Yorkton, Sask. The greater part of it is under cultivation and there are two sets of farm buildings, besides other convenient facilities. Which we can better tell you about. \$45.000, 20 per cent, cash.

SIXTEEN HUNDRED ACRE IMPROVED farm in southwestern Manitoba, all under cultivation and ready for crop. This is a beautiful farm, with fair buildings and on the railroad, having a siding and elevator on the premises. Will sell, with or without stock and implements, which is sufficient and complete in every respect. Without stock, etc., \$32.50 per acre, \$14,000 cash; with stock, etc., \$37.50, \$18,000 cash, balance to be arranged mutually. If you investigate this you will agree with us that it's a great bargain. Free information.
OLESEN & ARMSTRONG, 81 MERCHANTS BANK. Phone Main 484.

FOR SALE—A BARGAIN—Hawkeye Self-Feeder, 36 inches. Run only one season. In good condition. 355 Burnell Street, Winnipeg.

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THRESHER BELL BARGAINS—A limited number of brand new endless belts, fully guaranteed, 8 inch 5-ply rubber \$4.00, 8 inch 5-ply rubber \$4.50. Other sizes and types. These prices limited to present stock but we always have large stocks of saws, saw mills and supplies. Write us for prices on new and second-hand. Harris Machinery Company, Minneapolis, Minn.

BOILER TUBES—Save half on tubes to reline your boiler. Second-hand clean perfect guaranteed tubes cut to lengths order. Write us for prices Harris Machinery Company, Minneapolis, Minn.

SECOND-HAND—We have a big stock of boilers, engines, saw mills, iron working and wood working machinery, belting, saws, shafting, pulleys in fact everything in machinery. Do not fail to write us when you need anything second-hand or new, large or small. Harris Machinery Company, Minneapolis, Minn.

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30 H.P. Bell Traction Engine.
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15 H.P. Case Portable Engine.
38 x 60 Imperial Separator, Stacker and Ruth Feeder.
32 x 50 Imperial Separator, Stacker and Ruth Feeder.
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8 H.P. Gasoline Engine.
10 H.P. Stationary Gasoline Engine.
1 Parsons Hawkeye 36 inch Self Feeder.
3 Perfection Weighers and Loaders.
1 Dauntless Shingle Machine and Edger.
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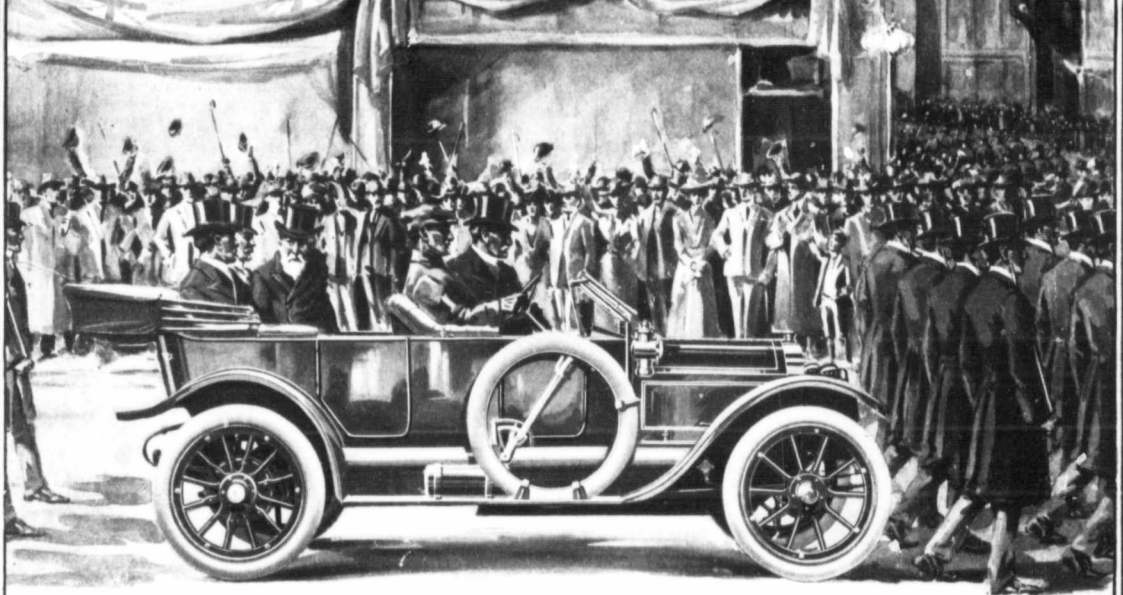
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