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THE CANADIAN THRESHERMAN -AND- FARMER

CANADA'S FARM
MACHINERY MAGAZINE

WINNIPEG CANADA

DECEMBER - 1910

E.H. Heath COMPANY LIMITED Publishers

Chas. H. Heath

Winnipeg, B. C. 1910

John Deere Engine Gang

FOR PERFECT WORK



MORE JOHN DEERE ENGINE GANGS SOLD IN WESTERN CANADA THAN ANY COMPETITIVE MAKE

4, 6, 8, 10, 12 or 14 BOTTOMS



A Six Bottom John Deere Engine Plow. Outfit of Jas. G. Henry, Guernsey, Sas.
 Note Quality of Work.
 A gauge wheel runs between each pair of bottoms making it possible to break bottom. And John Deere Bottoms have never been equalled for perfect work. John Deere engine plows have the bottoms attached to frame in pairs. We have just published a new book which is the best thing ever published on the subject.

JOHN DEERE PL

WINNIPEG REGINA SASI

BOUGHT OF *****

J. Mickleborough
 LIMITED.

"ST. THOMAS' BEST STORE"

M _____

Sold by _____ Am't Rec'd _____ SEE OTHER SIDE

500

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45

DEC 19 1910

the Screw Clevis. only on John Deere Plows.

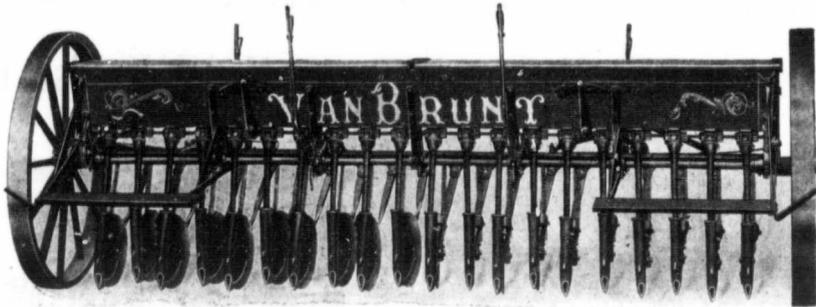


the Plows an Absolute Accurate Adjustment and stubble, or .50.

D. MONTON

Not One Kernel Wasted

Light
Draft
Disc
Drills



New
1910
Boot
Discharge

Faultless work in any condition of soil on which a horse or engine can travel. Misses nowhere. Sticks at nothing.

VAN BRUNT

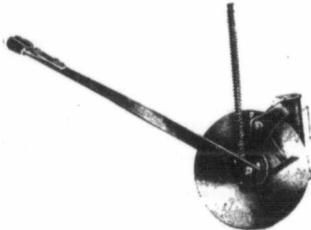
The Only Perfect Grain Planting Machine

The model from which all clumsy copies have been made. Stronger and lighter by 300-400 pounds than imitations.

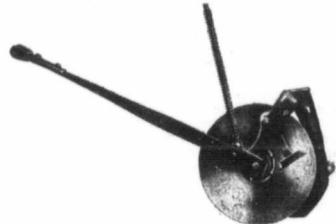
The first successful Single Disc with closed delivery was made by Van Brunt in 1900. Now, in 1910, Van Brunt again revolutionizes the business of seeding by producing the boot and discharge WITHIN instead of outside the circle of the disc. The direct effect of this is that the seed is actually planted at the required depth. Not a single grain is left on top of the soil or so near the surface that the first strong wind or heavy shower exposes it. This cannot happen with the

Van Brunt New Model

In 12, 14, 16, 18, 20, 22 and 24 Single, Double Disc and Shoe Interchangeable



NEW STYLE



OLD STYLE

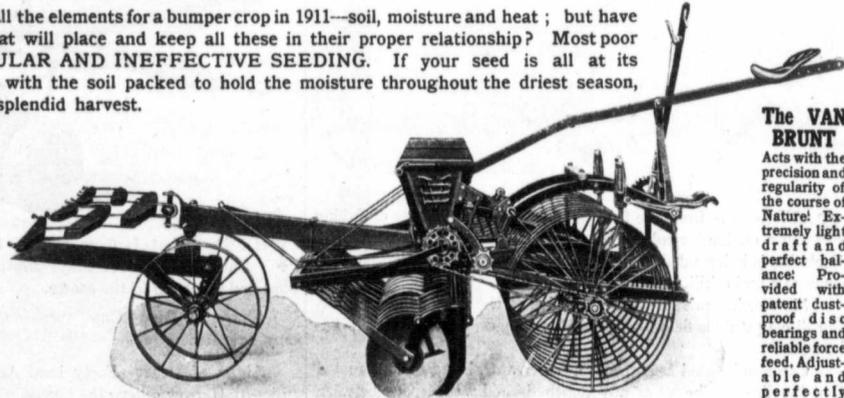
WRITE FOR CATALOGUE

SEED CANNOT FAIL TO GERMINATE IF SOWN WITH A VAN BRUNT PRESS DRILL

With good seed you have all the elements for a bumper crop in 1911—soil, moisture and heat ; but have you the IMPLEMENT that will place and keep all these in their proper relationship? Most poor crops are due to IRREGULAR AND INEFFECTIVE SEEDING. If your seed is all at its proper germinating depth, with the soil packed to hold the moisture throughout the driest season, you cannot fail to reap a splendid harvest.

The Real Purpose of a PRESS DRILL

being to sow the grain at an EVEN DEPTH, the pressure must be uniform at every point. Any inequality or bunching is fatal to the crop. The "VAN BRUNT" will plant every kernel exactly at its proper depth in the seed furrow. It is the only LOW DOWN PRESS DRILL having a perfect balance with an easy adjustment to throw it in or out of gear.



The VAN BRUNT

Acts with the precision and regularity of the course of Nature! Extremely light draft and perfect balance! Provided with patent dust-proof disc bearings and reliable force feed. Adjustable and perfectly controlled pressure.

END VIEW OF SINGLE DISC PRESS DRILL Made in 7 inch Feeds, 14, 16 and 18 sizes, Single and Double Disc and Shoe

A Van Brunt is the Crop's Salvation

JOHN DEERE PLOW COMPANY LIMITED

WINNIPEG

REGINA

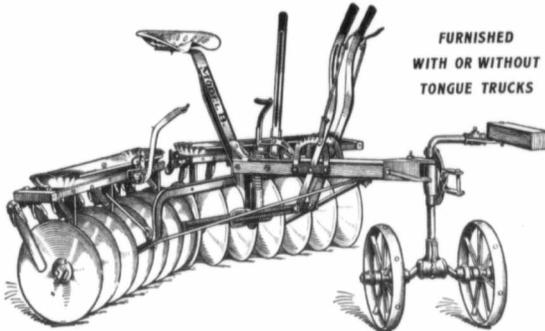
CALGARY

SASKATOON

EDMONTON

DISC HARROWS

Deere Model B Disc Harrow



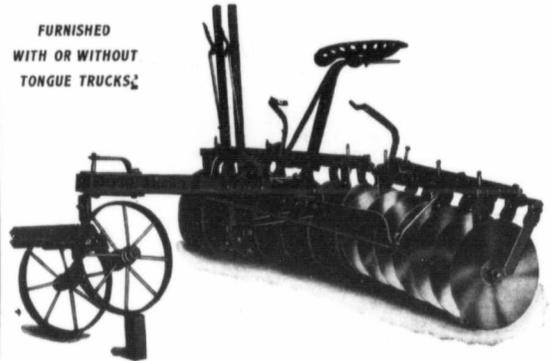
FURNISHED
WITH OR WITHOUT
TONGUE TRUCKS

It is the Only Real Flexible Harrow

PROGRESSIVE Farmers know how much more satisfactory our Model "B" Disc Harrow does its work of pulverizing the soil evenly—without skipping rough places in the "middle"—because our Third Lever with With Spring Pressure Yoke and controlled draw bars enables you to govern your disc. They can't push up in the centre, as with ordinary machines. You pull the lever and it locks automatically with discs working through dead furrows or over ridges always cultivating thoroughly. Special features besides superior malleable iron parts and extra durable construction are: Easy, Double-Spring Seat—High Frame out of dust—Adjustable Disc Scrapers—Lighter Draft, etc.

Write for Catalogue

Deere Model K Disc Harrow



FURNISHED
WITH OR WITHOUT
TONGUE TRUCKS

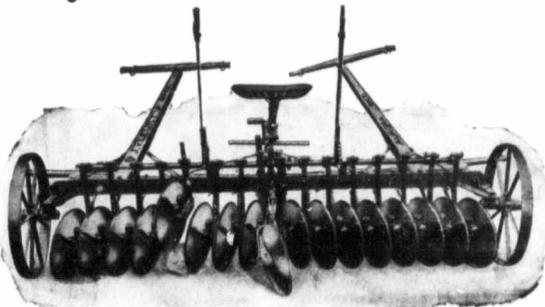
A STRONG substantial two-lever harrow, slightly lighter than Model "B," but having many of its points of superiority. The Frame is made from a single piece of heavy steel. The frame bars, crossbars and braces are all steel, very securely riveted and bolted together.

The Scrapers are of the improved oscillating style, and can be easily removed or replaced. Hard Maple oil-soaked bearings are used on this harrow Disc Blades are made of the very best quality steel, thoroughly polished and sharpened. Double Angling Levers on this harrow ensure a convenient machine for lapping lands and for hillside work.

Write for Catalogue

Both of the above styles of Disc Harrows are excellent tools to pull behind a John Deere Engine Gang

Cyclone Wheel Disc Harrow



537

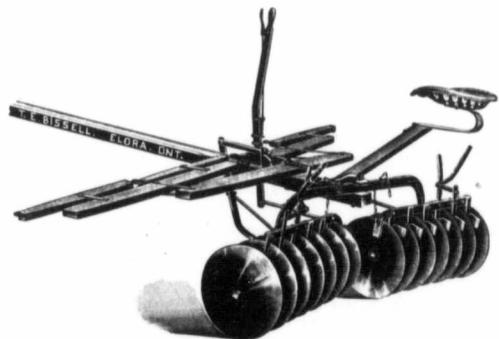
EASY to move from one field to the other. No danger of dulling disc on hard road. Can be backed or turned anywhere. Each disc is independent and equipped with a pressure spring, the same as a grain drill.

More or less pressure can be applied at the will of the operator. For discing stubble fields, summer fallowing, or plowed land, it has no equal.

Can also be used as a weeder or cultivator, being so constructed that the discs can be set at any depth desired; the space between discs being thoroughly worked and much lighter draft than a cultivator.

WRITE FOR CATALOGUE

Genuine Bissell Disc Harrow



THE Disc that farmers want. Some good features are—
Correct Balance—Stays down at its work, does not buckle, bind and hump up in the centre.

Shape of Disc—Cuts, turns and stirs the soil, where others only scrape the ground.

Light of Draft—Forty hard Anti-friction Balls used in every "Bissell" Harrow relieve the horses.

Ease on Horses' Necks—The Hitch is well back, the seat projects at the rear of frame; no weight on necks.

JOHN DEERE PLOW COMPANY LIMITED

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EDMONTON

SASKATOON

The Fleury Pulverizer

Pulverizes and Packs the Soil

How a Pulverizer Helps

A good seed bed is composed of a fine mellow soil well packed to ensure capillary connection with the subsoil.

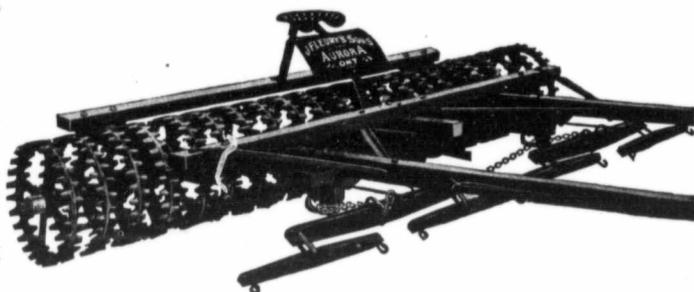
Such a seed bed will produce better crops than a lumpy one of the same chemical composition.

This is why a good pulverizer should be a part of your equipment. Other things being equal it insures better crops.

It is often necessary to plow land when it will break up into large chunks or clods. In such a case, a pulverizer is indispensable for fining the soil.

The fact is, almost any soil is benefited by being pulverized and packed after plowing, regardless of its condition.

Light, loose, soils are kept from drifting by being treated in this way.



The Fleury does the Business

In the first place it is sufficiently heavy for its work there is no necessity for weighting.

The sections are so constructed that they pulverise all lumps and pack the soil so it is in good seed bed condition. At the same time, it helps to produce a surface mulch which holds moisture.

It does the work of both a pulverizer and a land roller.

Also, this pulverizer is sufficiently flexible to accommodate itself to rolling land.

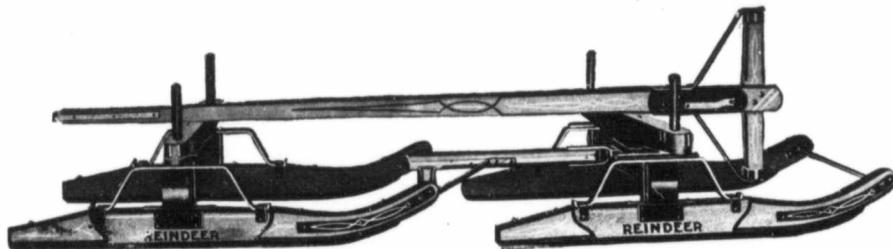
Besides this, it is very durable. It has bushings that take the wear instead of the wheels. The ends of the wheel hubs are chilled, which reduces the end wear on the wheels.

These are a few of the excellent features of the FLEURY PULVERIZERS. Ask us for further information.

Fleury Pulverizers are made in the following sizes :

16 Section, 1 pole. 22 Section, 1 pole. 22 Section, 2 pole. 24 section 2 pole.
22 section, 2 pole, pulley hitch, with double-trees. 24 section, 2 pole, pulley hitch, with double-trees.
22 section with tongue truck

Reindeer Sleighs



No. 28½ REINDEER SLEIGH

Made in all sizes with steel or cast shoes

Bolsters—Are furnished with stakes. Ends of same are ironed, fastened with bolts and rivets to protect ends of bolster from splitting.

Roller Rods—For tongue and reach are full length.

Bolster Plates—Are large and made of steel.

Start Pins—Are $\frac{7}{8}$ in., plates rivetted to each size of runners to prevent Start Pins from splitting runners.

Runners—Front inside end of runners plated so tongue and reach rollers, as well as rod holes, will not wear.

Painting—Orange red, with neat wide lines of black and fine lines of white striping. Well varnished and very much above the ordinary in smoothness of finish and general appearance.

Quality and Workmanship—Made of good straight grained hardwood timber throughout; put together in a smooth, workmanlike manner.

SEE THE NEAREST JOHN DEERE DEALER

JOHN DEERE PLOW CO. LTD.

WINNIPEG

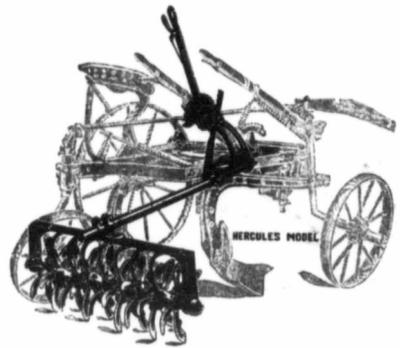
REGINA

CALGARY

EDMONTON

SASKATOON

You Need Never have a Crop Failure



THE MEANS OF SALVATION TO A THIRSTY LAND.

If you treat your land as you treat yourself. You don't needlessly waste tissue if you know it, and you take pains every day of your life to conserve the "vital spark." Same natural laws apply to the soil. It never fails to get sufficient moisture for its work, but in many cases it is robbed of this sustaining power by a loose system of farming. If you will get a

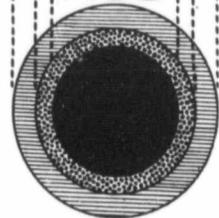
Kramer Rotary Harrow For Plow Attachment

You will have a perfect combination of Harrow, Packer and Pulverizer, making a perfect seed-bed in one operation. It is made of high-grade steel, with lever adjustment and spring compression. No tricky "hitchings" and chains to pull. Dirt proof bearings and extremely light draft. Hercules Model is absolutely guaranteed to handle any heavy soil.

WE WANT TO CALL

your special attention to the extra heavy pipe arm provided on this model. The illustration will show that it is made up of 3 parts. First a 1 1/2-inch tube; second, inserted in this is a 1 1/4-inch tube, and third, inserted in the latter is a 1-inch solid rod. (The measurements given are outside dimensions.) Such a pipe arm will stand any strain to which it may be put through the working of the harrow in any soil, no matter how heavy it may be. This is the strongest thing on the market to-day in the way of a ROTARY HARROW.

1 5/8" TUBING
1 1/4" TUBING
1" SOLID
ROD



We also Manufacture a Special Disc

That works on the principle of the buzz saw, driving itself into the soil and at the same time tearing itself out. This disc will handle the toughest sod, pulverizing it into a perfect seed-bed. It is a wonder and will do its work perfectly. We manufacture five different models, in sizes and design to meet every soil requirement.

Don't forget that the name KRAMER stands for ROTARY HARROW—THE ORIGINAL.

Get to know about the KRAMER from

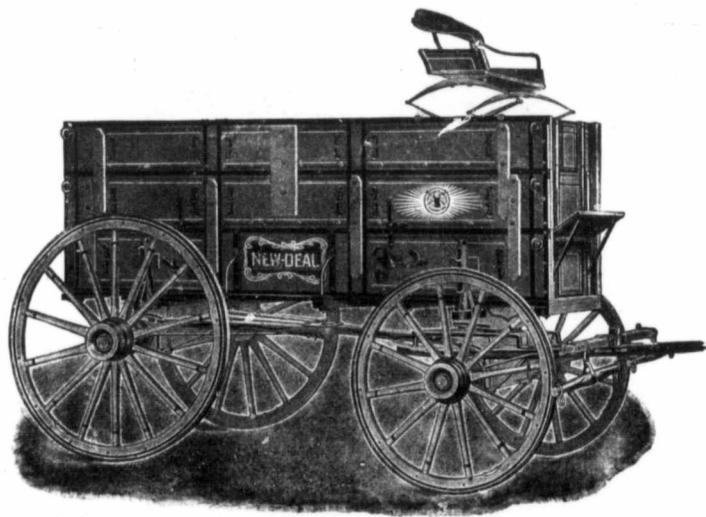
JOHN DEERE PLOW CO. LTD.

WINNIPEG REGINA CALGARY EDMONTON SASKATOON
Selling Agents for The Kramer Co. Paxton, Ill.

NEW DEAL WAGON

New-Deal Wagon

- Is made of air-seasoned lumber.
- Is equipped with double collar skein.
- Skeins are dust-proof, therefore will hold grease longer and run easier than others.
- Skeins are heavier; bell is longer and larger, taking more axle.
- Has riveted grain cleats (not nailed or screwed).
- Bottom of box is reinforced both front and rear.
- Has clipped gear, both front and rear.
- Box is made flax tight



New-Deal Wagon

- Spring seat with 3-leaf springs (not single leaf).
- Steel bolster stake plates on side of box.
- Neckyoke 48 in. long (not 42 in.)
- Has trussed tongue, cannot break or warp.
- Has channel iron reach really indestructible.
- Is extra well painted, striped and finished
- Possesses a great many distinctive features of merit.

JOHN DEERE PLOW CO. LTD.

WINNIPEG REGINA CALGARY EDMONTON SASKATOON

**CANADIAN
PACIFIC**

ANNUAL

**EASTERN
CANADA**

Excursions

LOW ROUND TRIP RATES TO

**Ontario
Quebec and
Maritime
Provinces**

Tickets on sale Dec. 1 to Dec. 31, inclusive, good to return within three months. Tickets issued in connection with Atlantic Steamships will be on sale from Nov. 11 and limited to five months from date of issue. Finest Equipment. Standard First Class and Tourist Sleeping Cars and Dining Cars on all Through Trains. Compartment - Library - Observation Car on "Imperial Limited."

**3 Through Express
Trains Daily 3**

**THE
"TORONTO EXPRESS"**

leaves Winnipeg daily at 22.10k, making connections at Toronto for all points East and West thereof. The "Imperial Limited" leaves Winnipeg daily at 8.25k, and the "Atlantic Express" at 19.00k daily, making connections at Montreal for all points East thereof.

Apply to the nearest C.P.R. Agent for full information

ABOUT OURSELVES

BEING A FEW WORDS MEANT FOR YOU

The other day a gentleman from Western Canada dropped into the offices of The Canadian Thresherman and Farmer to pay his subscription. After he had gotten his receipt he said, "I want to tell you something. I have lived on both sides of the line and I have taken farm publications all my life, but I have yet to find one that appeals to me like The Canadian Thresherman and Farmer. There is something about your publication that I cannot put into words that makes it for me my publication."

It just occurred to us that this would be a good thing to tell our readers and to have them ask themselves what they think of our magazine.

We have spent years and years of time and labor and have put into this publication a great deal of money. We have also put into it the very best that the men who had it in charge had to give. It has been with us a hobby and labor was never thought of when it came to getting up our publication. We have not yet, however, reached the pinnacle. We have only just begun to climb, which means that The Canadian Thresherman and Farmer of a few years hence will be a much bigger and better publication than it is to-day.

We have every confidence in this, due to the fact that our readers are standing by us. As Christmas time comes round each year and we hark back over the three hundred and sixty-five days of the past since the last Christmas, we can see every day branded with the word "Progress." Every day sees an increasing number of subscriptions rolling into our office and every year sees an increase in our advertising receipts and these are the two things that make the backbone of a publication.

As our readers receive this magazine from month to month we often wonder how many stop to think that the particular number that they have received is planned many months ahead, not only in an editorial way, but an advertising way as well. Our advertising representatives are continually scouring the country in order to secure contracts that sometimes extend over a period of three or four years. We are constantly on the lookout for editorial matter that is new, that is up to date, and that will give to our readers an inspiration. New ideas are constantly being sought and the prices that we pay for some of this editorial matter would make a great many of our readers sit up and take notice. These articles may not appeal to every one who subscribes to The Canadian Thresherman and Farmer, but in the family of over twenty thousand such as we now enjoy there is bound to be some to whom the articles that we publish come as boon companions.

For another year we have some big things in store for you. The advertising contracts that we have succeeded in rounding up this fall guarantee to our readers a big number every month during 1911, and full advertising columns mean an increased amount of reading matter. As the advertising contracts came rolling in our editorial staff got a hustle on it in order to secure the necessary reading matter, and while we cannot go into details regarding what we have to offer you can take it from us that The Canadian Thresherman and Farmer in 1911 will be just about the best publication that you have ever seen. New departments will be added, our old departments will be improved and enlarged. More illustrations will be used and yet it is all done for the price of \$1.00 to you.

All this by way of preliminary; take it home to yourself. How about that subscription of yours; has it expired? If so don't you think it is just about time that you renewed? Don't forget to ask yourself the question of how many kernels in twelve pounds of No. 2 Northern Wheat and when you have got the answer fixed in your mind satisfactorily put it down on one of the coupon blanks that appears in every issue, pin a dollar bill, or as much more as you like to it and send it along. There is a beautiful automobile in it for somebody and in addition to that everybody gets a valuable premium. But don't let the matter stop there. Tell your friends and your neighbors about all these good things. You can convey our message to a dozen of your neighbors where it is not possible for us to reach one, scattered as they are over the broad Western prairies. But whatever you do, don't let that subscription expire. We want each and every one of our old friends back with us and at the same time we want each and every one of these old friends to get us one new reader at least and as many more as you can.

To each and every one of our readers we convey at this Holiday Season the old message, expressed most sincerely, A Merry Christmas and a Happy and Prosperous New Year.



**You Can't
Go Wrong**

When You Specify

**LUNKENHEIMER
Oil & Grease Cups**

They are made of the highest grade of materials and are very strong, particularly in the shank, the part subjected to the greatest strain.

"SENTINEL"
Snap Lever
Sight-Feed Glass
Body Oil Cup

Jarring of the machinery to which they are attached will not shake them to pieces, nor will it affect the setting of the feed.

All cups are easily filled and the sight-feeds in the oil cups are large, permitting the dropping oil to be seen from quite a distance, and do not easily become oil splashed.

Lunkenhaimer line of oil and grease cups is a very large and complete one and among them can readily be found a cup particularly adapted to suit any requirements.

Your Local Dealer can furnish them. If not, write US.

WRITE FOR CATALOG

**THE
LUNKENHEIMER
COMPANY**

Largest Manufacturers of High-Grade Engineering Specialties in the world.

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

BRANCHES:
NEW YORK—64-08 Fulton Street
CHICAGO—32 Dearborn St.
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LONDON—35 Great Dover St.



"IDEAL"
Automatic
Grease Cup

**GRAND
TRUNK
RAILWAY
SYSTEM**

**EXCURSIONS
TO
Eastern
Canada**

DAILY DURING DECEMBER
3 MONTHS' LIMIT

VIA
St. Paul or Duluth, Chicago
and Grand Trunk Railway

THE DOUBLE TRACK ROUTE

REDUCED FARES for Steamship Passengers
November 11th to December 31st.

Agency for All Lines and Cook's Tours.

Write for full particulars

A. E. DUFF,
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SELLS LIKE SIXTY
\$65
**GILSON
GASOLINE
ENGINE**

For Pumping, Cream Separators, Corners, Wash Machines, etc. Free Trial. Ask for catalog—all sizes.
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Harmer Implement Co., Winnipeg, Western Jobbers

INVENTIONS

Thoroughly Protected in all Countries

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Specialist in procuring Canadian and Foreign Patents

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BOOKLET AND DRAWING SHEET APPLICATION

: A Merry Xmas to All :



A Cozy Home can soon be Earned by Industry and a Sawyer-Massey Outfit

WHEN A THRESHERMAN looks around for a home, he not only endeavors to get value from a momentary standpoint, but best value from the viewpoint of environment, utility and permanent convenience.

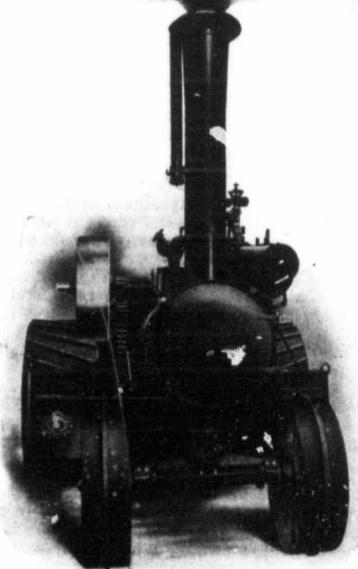
These are the essentials that largely make for future happiness and the welfare of himself and those dependent on him.

Again, the Thresherman should use just as much or even more care in the selection of an Engine and Thresher, because with him, these are the "sinews of war" by which the home is to be sustained and enhanced.

Will it not pay him to go to a reliable House whose warranty practically indemnifies him against loss?

Such a House is the one whose goods will be found to withstand breakages or renewals in the most satisfactory degree and who will consider their Customers' welfare just as carefully as they attend to their own.

SAWYER-MASSEY



HOME - MAKERS

THE SAWYER-MASSEY CO. has now been established three-quarters of a century. Its long establishment and judicious management has caused it to be known everywhere in Canada as a Firm unquestionably reliable and manufacturers of Engines and Threshers of the highest quality.

The quality of its productions, the great size of its factory plant, the yearly increasing amount of its output, and its financial strength and responsibility, demonstrate it to be the largest and best in Canada of its kind.

The Firm's big new line of Combination Threshing and Plowing Engines of both Simple and Compound types, 22 to 32 H.P. and the excellence of their latest "Great West" Separators, ranging from 25-inch cylinder x 42-inch body to 40-inch cylinder x 64-inch body, are well worth looking into by every Thresherman in Canada who would profit by the study and successful efforts of men abreast of the Threshing and plowing science.

We have every facility at our Winnipeg House to post you fully re our North West lines. Write them to-day. You cannot regret it.

The Sawyer-Massey Co., Limited,
Winnipeg, Man.

Pense, 25th Oct. 1910.

Gentlemen,

The Outfit purchased from your Company consisting of a 32 H.P. Traction Compound Engine, a 40 x 60 "Great West" Separator with Fender and High Bagger gave us entire satisfaction and threshed to the entire satisfaction of all the farmers we threshed for. One day on the farm of Wm. Henry, Pense, we threshed 3,137 bushels of wheat and made a first class job. We are more than pleased with the results obtained from our outfit.

Yours truly,
(Signed) DUGDALE & SANDERS.

The Sawyer-Massey Co.,
Winnipeg.

Osage, Sask., June 23rd, 1910.

Dear Sirs,

I wish to say regarding my 24 Sawyer-Massey Steam Traction Engine purchased of you last fall that I am now plowing. It gives entire satisfaction and is probably the easiest steamer on the market to my knowledge. It uses three quarters of a ton of coal or 19 rounds, one mile to the round, and three 10-bbl. tanks of water per day. I am pulling six 14-inch plows in heavy land, at present it is very dry. Also wish to recommend your "Great West" Separator as being a good one suitable for Western Threshing. I have threshed 25 years and this outfit is the best I ever owned or worked on.

Yours truly,
(Signed) WM. AINSWORTH.

YOURS SINCERELY

Sawyer-Massey Company

LIMITED (Established 1836)

The Largest Engine and Thresher Works in Canada.

HAMILTON

WINNIPEG

A MAGAZINE
FOR

THE FARM
AND HOME



THE CANADIAN THRESHERMAN AND FARMER

Vol. XV.

WINNIPEG, CANADA, DECEMBER, 1910.

No. 12.

Jesus called a little child unto him and said, "Whoso shall offend one of these little ones . . . it were better for him that a millstone were banged about his neck, and that he were drowned in the depth of the sea."

The Other Side of the Holidays

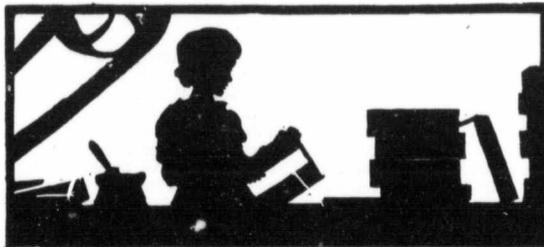
By A. E. ANDERSON. . . .

IN the year 1212 a wild call thrilled over Southern Europe—a call for the children to gather into bands and march away to the far-off Holy Land. The word went over Christendom that only the children could conquer the Saracen and recover the Sepulcher; that only "the pure in heart" could recover the blessed Tomb from the Paynim hordes. The little ones must join the Holy War! And for all who lived through the perilous adventure, there waited a place of honor in the hearts of men; and for all who died in battle, there waited the vacant places in heaven left of old by the fallen angels.

So from cradle and hearth, from hill and field, the children gathered into armies and marched away. Up the Rhine and over the Alps, down the Rhone and over the Pyrenees, they trailed and trooped, weary and wondering, halt and heavy-eyed, hurrying on, ever on, at the mystic call. Thirty thousand from France, under the boy Stephen; twenty thousand from Germany, under the boy Nicholas; fifty thousand strong, the "children's crusade" poured on toward holy Palestine. Hundreds perished of fatigue and homesickness on the stony roads; hundreds more went down at sea; hundreds more were sold into Mohammedan slavery.

The agonies of those little ones have never been recorded; the waste of the hope and joy that went down with them has never been computed. Fifty thousand precious lives were poured out—a flood of bright waters lost in the desert sands.

Let any cause to-day, in whatever mistaken devotion, dare to call a host of little children to such an open field



When machinery annexed box-making to its long list of industries, it drew the helpless children

of death, and how soon the majesty of public opinion and sovereignty of the law would smite the criers and hush the presumptuous pleading. Yet the mysterious and awful mandate of some Power has gone out over our own land summoning our little ones from shelter and play and study, summoning them to a destruction less swift, less picturesque, less heroic, but hardly less fatal, than that medieval destruction. Greed and Gain, grim guardians of the god Mammon, continually cry in the ears of the poor, "Give us your little ones!" And forever do the poor push out their little ones at the imperious ukase, feeding the children to a blind Hunger that is never filled. And the spell of material things is so heavy on

the hearts of all of us that scarce a protest goes up against this betrayal of youth, this sacrifice of the children in factory, store, and shop. At Christmas time the little workers block the way.

"Suffer little children to come unto me, and forbid them not; for of such is the kingdom of Heaven." So spake the Friend of Children, he who cried out terrible words against those "who devour widows' houses," and those "who walk over graves." "Suffer little children to come unto me!" A trustful man from Mars, recalling this sweet old mandate, might think, as he wandered about our streets, that we are a very loving and mindful people. For, on many of the portals of our big business houses he would see the fatherly assurance: "Small boys wanted," "Small girls wanted." This might seem to him like a faithful following of the old invitation of Jesus; he would not know that there are two voices calling to our children—Christ's and Mammon's.

"Small" children are wanted, you will notice, not "young" children; for the inconvenient law declares, in some quarters, that young children shall not be drawn into these devouring doors. "Small" children are called for; and who can deny the factory pasha's right to fix the stature



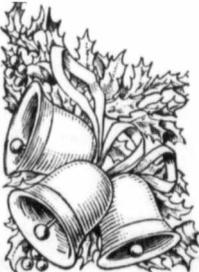
of his workers? Can it be possible that "small" children mean small wages and large profits? And at Christmas time—"the children's time," as we call it in our soft rhetoric—the march of this army of little workers is heaviest; it is then that the feet falter most wearily.

You cannot, in any city, at any season, go upon the streets too early nor too late to miss the tired recruits of this children's army. Between seven and eight in the morning, and between six and seven in the evening, you see them sprinkling the ways of traffic, flying to or from their work. But at Christmas time this army of little conscripts suddenly increases. On the streets; in halls and elevators; in offices, stores, and cellars; in workshops and factories—in almost every industry we have built for luxury or utility, thousands of little feet and hands and brains are there to serve and suffer. It is, however, in the box, the confectionery, and a few other factories that the masses of children throng. It is in these that the hours are longest, the drive hardest, and the pay scantiest. Nowhere else is there a harder fate for the little holiday workers save only among the bundle-packers, the cash-girls, and the delivery-boys in the large retail stores.

A thing so dainty and delicate as confectionery we are slow to associate with drudgery, and weariness. The lucent, glistening piles of the Christmas shops, little delectable mountains flavored with every hiving from Attica to San Diego, and tinted and scented with the cheerful May time—all this ambrosial stuff might seem to have come, like flower and fruit and comb, out of the ever-springing joy of nature. Yet this trade, which employs more people than milling, canning, or meat-packing, is one of the industries in which little children are found to be most efficient and desirable. The candy factory of the cheaper grade is a place swarming with little ones, especially girls. It is a place where children are worked cruelly long hours to fill orders; where the work is murderously monotonous; where health and character are broken down.

Three months before Christmas the smaller confectionery establishments call in troops of little children and begin full work and overtime work, making ready for this brave pomp of the holidays. There must be preparation for the bulging paper sack and the swollen

tarlatan bag of the Christmas tree, for the bottle of strained sticks, and the pudgy "sucker" with its noble lasting quality. Tons upon tons of candy must be prepared for the holiday markets. What irony of civilization is this—one



band of children wasting their bodies and souls to make a little joy for the rest? What sardonic mind conceived this caricature of justice, this burlesque of life?

"Dipping" chocolates, that is, plunging bits of candy into a vat of boiling chocolate, a fraction of an ounce at a time, but totalling one hundred pounds in a day, at a half-cent a pound—this is one of the tasks of candy-making that a small girl can do. For a while it is fun to dip the tidbit, and fish it out, and set it away neatly coated; quite as fine a game as making mud-pies. And the girl may eat as many pieces as she pleases, till comes that sudden and horrid day when she renounces chocolates forever. But the pretty game palls after ten hours of bending in the same position, ten hours of using the same set of muscles in the little arc of motion from the vat to the shelf. The odor, too, grows nauseating. But, worst of all, in the cheaper shops with utensils unprotected by asbestos, the poor little legs under the table, hugged up to the big hot pot, sunken beneath the surface, begin to get burned. "Quick, quick, sister," a visitor at the home of one of these candy-workers heard one of the little home-comers cry. "Quick, sister; it is awful to-night." And her big sister, without further intimation, ran for the vaseline bottle, and there on the little legs were the ever-renewed scars and blisters of her cruel trade.

Another hardship falls on the girls handling caramels. I refer to the continuous passing with the trays from the cooking to the refrigerating rooms, the sudden transition from the ninety degree atmosphere to one of only twenty. Physicians who tend these stooped, hollow-chested children find in this sudden changing of temperatures a fruitful cause of the lung and bronchial troubles that pursue these fated workers.

In five large candy-factories of a big city the regular day's work is from seven-thirty to seven-thirty, with a half-hour for luncheon. But in the "rush" season the time goes on till nine or ten in the evening. For overtime the little ones get from five to seven cents an hour. The work done by the children, if done in a fair temperature and for a brief time, would not be any harder than "Pom, pom, pull away," or "King George's Army." But when the lifting aggregated hundreds of pounds in a day, when the steps multiply into miles and leagues, when time is stolen, not only from play but also from rest and sleep, the problem grows appalling.

The ventilation in some of these cheaper places is abominable. The odors of the different candy flavors and the smells of burnt sugar all mix into a nauseating blend. "Sometimes," says Gussie, a candy-maker who abominates candy, "sometimes the smells are awful. Maple sugar is one. Oh, the barrels of maple sugar in a hot room all day long—it is the limit! Our heads ache and ache. Lots of girls faint with the heat and the smells."

The candy-making of the factories is pieced out with home-work in the tene-

ments—a work that saves the manufacturers rent and storage and over-seers. Hundreds of pounds of candy are given out to the parents and children of the tenements, to be taken home and wrapped bit by bit in paper, or boxed for the stores. Picking nuts from the shells is a chore that can be done by anyone. A child is seldom too sick to work at this. The cough of tuberculosis interrupts only for a moment, and convalescents from diphtheria or scarlet fever are soon able to take the meats from the broken shells. Miss Mary Sherman describes one of the tenement-house factories, one that supplies candy-makers and grocers,



The Christmas Demand Greatly Increases the Call for Boxes

and makes a specialty of the "health foods." She testifies that a dozen young Italian girls were picking out, sorting, and packing nuts at six cents a pound; also stuffing dates and other fruits with nuts. She says: "The workers were, without exception, dirty. Their hands were filthy. One girl whom I watched for a long time separating nuts had ulcers covering the backs of her hands."

When machinery annexed box-making to its long list of industries, it made possible the manifold and swift manufacture of boxes, and drew the helpless children into the trade. The

Christmas demand greatly increases the call for boxes for packing, for perfume, for candy, and for a hundred other uses, frivolous or important. The cheap factories producing these boxes begin in the fall time and over-time, in preparation for the holiday rush. Day-schools in working districts are thinned out at this season in the hurried hegira to the box-factories. Night-schools, the schools for the very poor, are thinner still, for the children are kept working at night. The inspectors, always too few, are simply overwhelmed by the inrush to the holiday work. No child under fourteen is allowed by law to labor in factory or shop in some



Children Working Late at Night at the Making of Artificial Flowers

places. But many parents, pressed by poverty or cupidity, are eager to mint their children into a little miserable money. To do this they must have a certificate; and they seldom halt at the easy oath that brings the "work paper." A child sometimes uses the certificate of an older sister or a friend; or a "wise" mother borrows a neighbor's larger child to impersonate her own before the notary, who frequently is interested only in "raking in" his little fee. The overseer of the factory never questions the certificate; the words of the paper protect them.

Four or five dollars a week is all a girl, with her utmost energy, can earn at box-making. The smallest girls get only two and a half or three dollars. As box-workers are in great demand, and as the work requires no skill and only a day or two of apprenticeship, the children crowd in and are worked under the worst conditions.

I went into a box-factory near noon one day last summer. As the box-making machinery is comparatively light, any old ramshackle building will do for a factory. A structure full of workers fell apart on the Bowery one day and crippled three little girls. The ladder-like stairways of the dingy old building that I visited would give scant hope of safety in case of panic. This factory has a bad record with inspectors. It is a concern devoted exclusively to the manufacture of that most important receptacle, the cigarette-box. I went up narrow, dark stairs, gaumy with paste. Everywhere the open barrels of paste gave out a sickening, sour odor that is always in the nostrils of the workers. The front windows were full of broken panes, panes unattended for years. These openings made no difference in summer; but in winter, as there is but one stove to a floor, even the "good" girls may be forgiven for complaining of the chill and for asking for some way to keep the paste from freezing on their fingers.

Four floors of the factory were used as workrooms. Many workbenches were empty. But work is slack in summer; besides, I had been officially detained below by the suave proprietor, while he inquired my name, my station, and my intentions. The interval of detention was long enough for the warning of a bell and the scurrying of a bevy of underage girls to hide on roofs or in empty cases. Such a scramble frequently occurs at the coming of inspectors. The back windows have been found a safe escape for boys. There were a few sallow, haggard men in the factory; but the workers were chiefly girls, each larger one having a small satellite as a helper. Have you ever seen this box-making? A hyena of a machine, with one shut of the jaws, bites out the parts of many boxes. Another swift machine sets up the box—a machine with a cruel scissoring "feed," which loves to suck in and crush and tear unwary fingers. After the setting up, an automatic winder unrolls paper to cover the box, and a girl gives the human touch that directs its tireless energy. A smaller girl, who is her assistant, turns in the edges—a work the machine is not quite deft enough to do, in this business where "the machines are almost human, and the human beings are almost machines."

It is hot outside. Happier children, released from school, were off to the mountains or the seaside. But these work children were as busy as the wheels about them. The sweat poured off their faces, but they went on creasing, shaping, gluing, and covering boxes; covering them with brilliant yellow and scarlet and emerald, which recalled the far fields of wild grasses, red lilies, and black-eyed susans, where the happier children were romping and

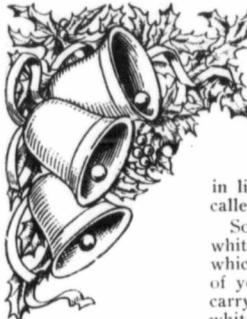
shouting to the sky. But the box-makers, cooped up and silent, bent to their work, shaping and sticking and smoothing at the signal of the machine, while the growing piles of gaudy boxes loomed like mounds of the Toltecs.

It was not long before the workers were eating their luncheons. But as they make boxes by the piece they cannot stop their work for a little incident like eating. And as there are no lavatories nor towels, they cannot waste time washing hands. What was their "refreshing" midsummer luncheon? Each one was nibbling the end of a loaf of stale bread, that was all; no butter, no cheese, no meat, no fruit. A sprightly, spooky little girl of about ten was gliding through the room with a basket full of loaves cut in two, supplying to each young worker this delectable and stimulating morsel.

In the box-factories the children, in the Christmas season, begin their work at seven-thirty, and keep it up till nine at night, Sundays included. From seven-thirty to nine at night! Reader, do you take into your heart how long these hours are for little fingers and little feet? But how are these tired workers kept at the wheels? You will not believe me when I tell you that the factory doors are locked to keep the little wage-slaves at their tasks till the factory pasha is satisfied with his day's profits. Louis Shrednick, who has worked for years in these dungeons, says that, in "rush" seasons, "the children are locked in so they shall not go home till the master's work is done." The secretary of the Hebrew Trades confirms this astounding statement. Here is impressment of American citizens! Here is an outrage that men have thought it worth while to go to war about! What is 1911 going to do about it?

Children forced by necessity to work—this is enough to shame the nation. But now we find them locked in to their dreary tasks! No wonder that the factory master is looking for "small girls." Little girls are "good;" they ask for nothing, they object to nothing. They are timid; so they do not cry out against hard conditions, nor resent the flood of vulgarity washing over their souls. They do not complain when their fingers are caught and crushed in the machines. They know "you ought to keep wide awake and not take your eyes off your work." And these "good" little girls are quick to go to the hospital with their bleeding fingers, anxious not to offend the overseer with blood stains on the boxes. There must be no visible blood stains on the work, although it is sprinkled red to those who look from Above.





These "good" little girls are the profit-monger's ideal; they are "content with the station in life to which God has called them."

Some of these fancy white boxes, my lady, in which you sent out slices of your wedding cake to carry good dreams—those white boxes came, perhaps, from this very factory, with its locked-up, hungry children. That lovely, heart-shaped box wreathed with holly and marked "All Christmas joys be thine!" came, perchance, from just such tired fingers. Your glove-box, madam, and your handkerchief-box, strewn with "pansies for thoughts," or "roses for the flush of youth," were shaped for you no doubt by little wizened girls with aching backs and heavy eyes.

One face follows me still, the gaunt face of a boy crouched like a caryatid, pasting tiny labels on the margins of cigarette-boxes. All day long he stuck little oblongs of paper marked with the runic words: "Cork tips," "Cork tips," "Cork tips." That was his one message to the universe. His pay was twenty-five cents a thousand, and he sat there growing bent and haggard, and spending all his energies to promulgate to humanity this news about cork tips. Other boys of this age were away climbing mountains, swimming rivers, and reading Walter Scott. But this deadly drudgery, this death-in-life, is what a "high stage of civilization" provides for him. If perchance he should rebel, this is the fate provided for the next child waiting in the long line of little lads pushed into these prisons by poverty.

Factory children do not always have the patience of the stones in the walls. Even "good" little girls will sometimes resist. At Christmas, a year or two ago, there was a box-factory down near the Williamsburg Bridge, where two hundred girls struck, because the master, at the height of the season, declared a wage-cut of ten per cent. Thirty-five cents a week would mean only a box of candy to some children; but to these children it meant more pinching on food and clothes, and less medicine for the babies at home. The little strikers appealed to other children not to go to work at the cut-down wages. This appeal the master resented as an interference with his "rights." The strikers stationed watchers on the street. He got the police to interfere, and had fifty-seven small girls arrested. Some were fined, some reprimanded. He called in the power of the nation, and that power hastened to his help. The children were downed.

So the end of it was that the little ones, hungry and cold in midwinter, lost the strike, and the ten per cent cut is still on; and they are still creasing

and shearing and pasting—and eating dry bread.

I went down the narrow stairs, half dark at midday. How dark it must be at night, when the workers descend! I thought of the dangers in these unlighted places, when unprotected girls and coarse men are crowded together on the way out. And I thought of the later dangers of the streets for some of the untaught, unshielded girls, girls deprived of exercise in the open air, their minds dulled in a weary round of automatic work, their souls exposed to brutal jests and vile profanities. What is the cure for this shame, this misery? It is certain that no rose-water remedy can make safe these evil ways.

It would be more pleasing to my pen, at this season and at all seasons, to write smooth words and to say soft things. This sort of writing might gratify our national vanity, but it would not enlighten our national conscience. So I have chosen to speak "not the pleasant, but the true."

"Merry Christmas!" to you, little workers—you, little boy; you, little girl! "Merry Christmas!" to you little moles, down in the black murk of civilization! I wish you well in your frail struggle with the Grim Powers. And "Merry Christmas!" also to you, fortunate children—you, little boy, with your sled and skates; you, little girl, with your doll and dominoes! I would not send one shadow on your hearts. You are yet too young to know the grief of life. You need not know of the cramped little fingers that make toys and joys for you. You need not know that your Christmas delight comes out of thousands of little sorrows. But you will know this by and by; and then you will rise in holy anger and sweep away the system that makes these inhumanities possible.



One Band of Children Wasting Their Bodies to Make a Little Joy for the Rest

What do you know about Christmas?

"ORIGIN OF XMAS."

What is the idea of writing "Christmas" "Xmas?" Has it any significance?

X is an abbreviation for "Christ." It originates from the Greek letter X (Chr) beginning the name "Christos" (the Anointed). The derivation of "Xmas" is plain, of course. It has no significance.

THE FIRST CHRISTMAS.

How long after the birth of Christ did people begin to celebrate His birthday? Was there any celebration of the day during His lifetime?

Tradition says that Christmas was first observed in 98 A.D. and ordered to be held as a solemn feast by Pope Telesphorus in 137 A.D. The first certain traces of its observance are found about 140 A.D. It is not known who first celebrated it, nor where, nor how. There is no record of any commemoration of the day during the life of Christ, as the early Christians looked upon the celebration of birthdays as heathenish, and even the birthday of the Lord Himself was not excepted.

ORIGIN OF THE USE OF MISTLETOE.

Where and how did the use of mistletoe originate?

The mistletoe was connected with the heathen Santurnalia and was adopted into the Christian festivities. It was an object of special veneration by the ancient Druids, but only when it grew upon an oak tree. At the time of the winter solstice the Druids gathered the mistletoe with great ceremony and the people hung sprays of it over their doors as an offer of shelter to the gods of the forest during the cold season. It was first hung in the servants' hall at Christmas in England, but soon invaded the parlor and the drawing-room.



THE ORIGINAL MINCE PIE

Was not the Mince Pie known first as the Christmas pie?

Yes. The mince pie is all that is now left of the traditional immense pie of forced meat and sweet materials formerly made in the form of a cradle, emblematical of the manger in which Jesus was laid. When the large pie first gave place to a number of smaller ones they were made coffin-shaped instead of round, as nowadays, to carry out better the idea of a manger. The idea dates back to the days of the early Christians.

THE ORIGIN OF SANTA CLAUS.

What is the origin of Santa Claus?

The word "Santa Claus" is an English perversion of the Netherlands word "Sinter Klaas," meaning Saint Nicholas, the patron saint of children. The word is also used to designate Saint Nicholas Day, which in the Netherlands is celebrated on December 6. The real Saint Nicholas, it is said, was the Bishop of Myra in Lycia, who died about 326 A.D. His personal history is almost entirely unknown, but numerous legends show him to have been a most generous and kindly man. In some parts of Germany it is still the custom for some one to dress up as a bishop on Saint Nicholas Eve and distribute presents to the children. The custom, however, is practically obsolete, Saint Nicholas having been superseded by Santa Claus.

THE CUSTOM OF GIVING PRESENTS.

How did the custom of giving Christmas presents originate, when and where?

The custom of making presents at Christmas was derived from the Romans, who made gifts to one another during their great winter festival, the Saturnalia. The early Christians made presents to their children on Christmas morning under the pretence that they had been dropped by the Christ-child while passing over the houses at night.

THE PLUM PUDDING'S SIGNIFICANCE.

How did the plum pudding become associated with Christmas?

The plum pudding, originally known as the Christmas pudding, is said to be emblematical of the rich offering made by the Wise Men to the infant Christ in the stable at Bethlehem. Like the mince pie, it dates back to the early Christians. Both were considered a test of orthodoxy, as these esculents were held in abomination by the Jews.

HOW THE HANGING OF THE STOCKING ORIGINATED.

Please tell me how the hanging of the stocking originated.

Many years ago children hung up their stockings on Saint Nicholas Eve (December 6). Young women in convents all over Europe also placed their stockings at the door of the Abbess. This was an adaptation of the custom of young women praying to Saint Nicholas to provide them with good husbands and a marriage dowry. According to tradition, Saint Nicholas once, under cover of night, threw three purses of gold into the house of a poor nobleman who was unable to provide for his three daughters. The money was their dowry and enabled them to marry. Some claim that the shape of the purses of that day, which were much like stockings, gave rise to the custom. Gradually the hanging up of stockings on Saint Nicholas Eve ceased and the custom was incorporated into our Christmas festivities.

SANTA CLAUS'S TRIP DOWN THE CHIMNEY.

How and where did the popular notion originate that Santa Claus comes down the chimney?

In Germany. It was formerly the custom to have some one impersonate Santa Claus and distribute gifts to the children in person. Gradually this custom died out and the presents were left for them, generally at the hearthstone. As the giver was no longer seen by the children some explanation was necessary, and the little ones were told that Santa Claus came down the chimney, left their presents, and departed the same way. Undoubtedly the poem, "Twas the night before Christmas" published in the United States in the early days of the nineteenth century, spread the myth enormously in English speaking countries.

WHERE "MERRY CHRISTMAS" ORIGINATED.

How and where did the phrase "Merry Christmas" originate?

In England. The old Saxon word "merrie" did not mean lively or gay as does our English word, but meant pleasant or agreeable. Hence "Merrie Christmas" in the early English meant a pleasant or agreeable Christmas.

BRINGING THE YULE-LOG.

Why is Christmas called Yuletide? What is the significance of the Yule-log?

Yule, or Yuul, was the name given by the ancient Goths and Saxons to their great festival of the winter solstice, or turning of the year, and the name has survived. The burning of the log was a very old Yuletide custom of the Scandinavians, who, at the festival, kindled huge bon-fires to the god of Thor. Burning the log was practised in Scandinavia, England, Italy, some parts of France, and Servia. The charred ashes were supposed to have magic powers.

THE FIRST CHRISTMAS CARDS.

When and how did Christmas cards originate?

The Christmas card seems to be an outgrowth of the "Christmas pieces" which were popular from about 1800 to 1850. The first real cards appear to have been printed in London in 1846 by a Joseph Cundall, who admits, however, that the idea was not his own, but Sir Henry Cole's. The custom did not become popular until about 1862, since which time it has increased tremendously.

WHY HOLLY IS USED.

Does holly grow all over the world? Why is it used at Christmas?

Holly grows in practically every country in the world, as there are more than one hundred and fifty varieties, so that some flourish in every climate. The custom of using holly at the winter festival is of great antiquity and is believed to have come from the ancient pagan festivals. It was used at Christmas by the early Christians. According to tradition, holly is the bush in which Jehovah appeared to Moses.

SANTA'S FAMOUS REINDEER.

Why are reindeer and furs used in connection with Santa Claus?

The relation is not absolutely clear. In some parts of Germany Santa Claus is called "Pels-nichol" (Nicholas of the Furs), from the fur cap and coat which the impersonator wore, and it seems to have been the custom for many years to associate Santa Claus with the North. The reindeer may have come in as did the myth of the chimney (which is told on this page) or it may be a survival of an old Spitzbergen legend. By this tale, reindeer, bearing certain marks, were believed to come yearly from an

unknown but inhabited continent in the far north. Reindeer, however, do not seem to be associated with Santa Claus in many foreign countries, although the chimney myth exists there. In the Netherlands, for example, Santa Claus rides a white horse. It is interesting to note that in the poem, "Twas the Night Before Christmas," published in 1822, English names are given to six of Santa Claus's eight reindeer.

WHY IS SANTA CLAUS ALWAYS AN OLD MAN?

Why is Santa Claus always represented as an old man?

No one knows. Some writers claim that it dates back to the Priapus of Virgil and Petronius, who held in his capacious bosom all manner of fruits and dainties. It is more probable, however, that the jolly, kindly character of Santa Claus is easier to show as an old man with white hair and beard and ruddy face.

CANDLES ON THE CHRISTMAS TREE.

What do candles on Christmas trees mean?

Lighted candles were a feature of the ancient Jewish Feast of the Dedication or Feast of Lights. This was held about Christmas time, and it is likely that lights were twinkling in every Jewish house in Bethlehem and Nazareth at the very time of the birth of Christ. This custom was probably merged into the Christian celebration of Christmas. Other authorities claim that the candles are a survival of the huge Yule candle used as a sign of the Light that came into the world as prophesied by John the Baptist.

HOW IS CHRISTMAS FIXED?

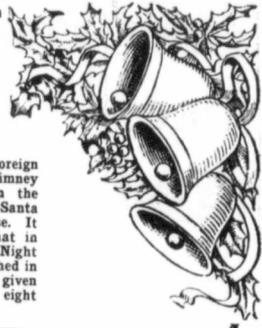
How did December 25 come to be fixed as Christmas Day? When was the real birthday of Jesus?

About 340 A.D. Saint Cyril made careful inquiry as to the date of the birth of Christ and reported December 25 as the correct date. Pope Julius accepted this, and some years later established the festival at Rome on this date. Before the close of the century it was accepted by every nation in Christendom. The actual year is unknown, and it is certain that the month and day can never be recovered. They were absolutely unknown to the early fathers of the church.

THE ORIGIN OF OUR CHRISTMAS.

Is it true that our modern Christmas grew out of a pagan festival?

In form it did; in sentiment, of course, it was directly opposed to paganism. For centuries before the Christian era every country in the world held its chief festival at the winter solstice, or turning point of the year. It is undoubtedly true that pagan forms taken from festivals like the Saturnalia marked the early Christmas celebration. Later, various portions of the Druidical rites were added and then some of the ceremonies of the ancient Germans and Scandinavians. This was because the early Church sought to reconcile heathen converts by adopting the harmless features of their festivals, investing them, where possible, with a Christian significance. In this sense, Christmas is a continuation of the pagan festivals, although, of course, it was the desire of the Christians to supplant the heathen celebration, not to continue it.





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"Everything begins and ends with the soil."



A Merry Xmas and a Happy New Year

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YULETIDE comes to us once again. For three hundred and sixty-five days we have lived and labored, loved and longed; prospered and progressed; sighed and sorrowed; been happy and humorous, downcast and despairing; devoted and dutiful; frivolous and freakish; solemn and sincere; and so on ad infinitum; but through it all, varied as it may have been, the course of human events has run another epoch. Another milestone has been reached and another small portion has been added to that great PLAN, the fulfilment of which is known only to ONE.

Christmas, as we know it today, has lost much of its old time significance. It is no longer the signal of good-cheer that once characterized it. It has been commercialized, and in keeping with other things commercial its real significance is so covered up with the dollar sign that, to a great many, it has come to mean a season of present giving that depletes pocketbooks, leaves sore hearts behind it and kills the joy that should reign supreme.

To the men of fifty or sixty years today who look back upon the Christmas seasons of their boyhoods the time meant real unadulterated joy. Small the stockings may have

been, and these not always overflowing, but there was more real sweetness in a single red striped candy sucker of those days than there is in a whole pound of Cadbury's, Ganong's or Lowney's choicest chocolates today. The ten cent jack-in-the-box or the fifteen cent jumping-jack were wonders that far excelled in good cheer the most costly productions of the toy maker's art of today. And the big red apple at the bottom of that stocking! Wasn't it a wonder? We hoarded it during the forenoon of Christmas day and possibly well into the afternoon but it seldom or never existed beyond the gloaming despite the fact that the crevices had been pretty well filled with turkey and plum pudding. Were we happy? Words cannot express it, yet the whole affair did not cost a farthing in comparison with what we feel we must spend in order to purchase Christmas happiness today. And yet, generally speaking, we are not as happy, nor do we succeed in making our friends feel any more so.

It is no longer a spirit of giving that impels us to remember our friends, but rather a sense of obligation to reciprocate in kind for gifts that may have been imposed upon us in the past.

Christmas day is the children's day. It is the one day in the year when childhood reigns supreme, and not until it is given over entirely to them and the day celebrated in their way and not in the way of the grown-ups will the problem of Christmas giving be solved. Confine the celebration of the day to children: the teaching of the true meaning of the day; the Christmas tree; the games; the

goodies; and, most important of all, confine the presents to children. It is a practical as well as a proverbial truth that the presents the children enjoy most are those of the simplest order. The significant story is told of the child of rich parents who received a heap of the most expensive presents only to glance at them and brush them all aside to play the rest of the day sailing a peanutshell in a dish of water. A child is the simplest and truest thing on the face of the earth and the simplest toy appeals not only in the strongest sense to his nature, but it is the only kind of a toy that he can understand and therefore enjoy.

The intelligent giving of presents to children, the presents that will give them actual pleasure, would do away with the entire present question of excessive Christmas expense; would reduce Christmas shopping not only to a minimum, but also to a basis of absolute pleasurable delight, for, after all, we never grow so old that we do not delight to go into a Christmas toy-shop.

We have in reality taken the day away from the children. The plain truth is, put into the vernacular of the day, that we elders have "butted in" and in doing so have ruthlessly despoiled a day primarily intended for the children. Our part in Christmas Day should be solely to give pleasure to children, and this is possible to all whether we have children of our own or not. No condition in life, whatever it may be, hampers us in such a celebration of the day; the present mode of keeping it hampers thousands of us fearfully.

Therefore let us resolve in this year of 1910 to make Christmas Children's day. Regardless of what our financial status may be let us have a day of simplicity, free from care, filled with the joys of youth. Let us be young once more. Let the sunlight of youth play upon us for at least twenty-four hours. If you have no children of your own do it for the sake of the thousands of little ones that are homeless, whose shrivelled little hearts are crying for love and protection. This world is made of Children and the least we can do is to open the gates of love and joy to them once in a year.

This editorial may seem like a step backward but the season is one for reflection. Each and everyone of us needs at some time during the year to cast off our grown-up shell and become as little children. Living as we do in an age where everything is characterized by the one word "Speed," we need something to make us halt and live over again our childhood lives, even if only for a day. It will keep us young. It will make us better men and women, for it is thus written, "And a little child shall lead them."

SUBSCRIPTION RATES

Postage prepaid, Canada and Great Britain, \$1.00 Per Year.
 Postage prepaid United States and Foreign Countries \$2.00 Per Year.

Failing to receive paper, you should notify the office at once, when mistakes, if any, will be corrected immediately.
 All Subscriptions must be paid for in advance and are positively discontinued at date of expiration unless renewed.

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





Splendid breaking being done by 8-furrow Cockshutt Engine Gang at 1910 Winnipeg Engine Competition.

Choose Between The Original, Simple Practical Cockshutt Construction, and The Complicated, Untried Imitations

Claims cannot down experience. When hundreds of Cockshutt Engine Gang owners—men who have owned and operated other makes of plows—come forward and declare that the principles of Cockshutt construction are the most practical and efficient, surely that is the best reason why you should invest in our plow.

TAKE A FEW POINTS WHEREIN THE COCKSHUTT ENGINE GANG EXCELS

The frame of the Cockshutt Engine Gang is built of very heavy angle steel, making it extra strong and rigid and well able to stand the strain of any engine. Again, almost every farmer admits that one lever to one plow (introduced by Cockshutt's) is best. For instance, should plowing become hard in some places the number of plows can be reduced singly, instead of in pairs, thus ensuring the full consumption of power. In finishing up, the correct number of furrows can be plowed with the Cockshutt Engine Gang. Also, the plows, being independent, automatically adjust themselves to any unevenness in the land. Our shares and bottoms, being much heavier than others, have not the same tendency to jump out of the ground in hard land.

Bear in mind that Cockshutt shares are easily the heaviest of any make in the world—particularly on our Engine Gang.

COCKSHUTT ENGINE GANG

Having a large number of adjustments, the Cockshutt Engine Gang is adaptable to all conditions. By loosening the bolts in the standard (the holes are slotted) and using the set screw, the "suck" of the plow bottoms can be adjusted to as fine a point as desired. The gauge wheels can be raised or lowered to suit the different heights of the breaker and stubble standards. They can be put back close to the shares in breaking, or forward to make room for swivel rolling colters in stubble.

The Cockshutt Engine Gang is now entering its fifth successful year. We brought out the first successful Engine Gang Plow, which for many years was the only one with independent beams. Our Gang revolutionized traction plowing and made possible the great development in engine plowing which has taken place since that time. Our Engine Gang, being the first one brought out, was made with the simplest possible construction as there was no necessity of avoiding copying the construction of others. Simplicity in a plow is as valuable as in any other machine. Other manufacturers are now attempting to imitate our plow and in order not to appear to be copying too closely they have found it necessary to complicate the construction at the expense of simplicity and perfect working ability. Choose between the original, simple, practical Cockshutt construction, and the complicated, untried imitations. Extensive additions to our factory will ensure the big demand for our Engine Gang next year to be fully met.

WRITE FOR
SPECIAL
BOOK

SEE THE
COCKSHUTT
DEALER

In a book we have prepared on the Engine Gang, you can see some very fine plowing scenes taken from farms all over the West and testimonials that should convince any impartial man which plow is really the best and why more Cockshutt Engine Gangs have been sold in Western Canada than all other makes put together.

WRITE FOR THE BOOK TO-DAY

COCKSHUTT PLOW COMPANY LIMITED WINNIPEG

Brandon

Regina

Saskatoon

Calgary

Edmonton

Flax Growing in Western Canada

By JAMES ADRIAN BYRNE.

To the farmer, whose interest lies in the selection and method of rotating crops that will yield him the most revenue; to the working people, who depend on the production of raw material and on manufacturers for their daily bread; to the business man, who seeks to invest his capital in the legitimate business that will pay best; and to the general reader—this treatment of the flax question in Canada is submitted.

The herb called flax is much older than our civilization. It is not certain that Noah rescued a representative of the flax business in the safety of his ark, but there is positive evidence that the herb was grown and the fibre manufactured into linen by the Egyptians, whose civilization reached a higher state than that of any former race leaving us positive records. For we find that the Egyptian mummies were wrapped in linen.

ly when machinery crept in to handle the various kinds of grain. The pulling could be done on rough ground almost as easily as on smooth, while the use of machinery was hampered by the presence of knolls and stumps.

Until the West opened up to the trend of the farmer, this was the kind of attention given by the Canadian crop-grower to flax. No seed was sown with the sole end in view of reaping profit from the seed. Everywhere in the moist climate of Ontario, Quebec, and the maritime provinces, where flax was grown for sale and not alone for household manufacture, mills were erected to care for it—both seed and straw. The farmer either rented his "new" land to the flax manufacturer for one crop, or put in his own seed, and sold his crop to the mill man at so much a ton, unthreshed. The latter, with his mill equipped with threshing machinery (as well as

These figures show that, so far as the chemist can ascertain, the drain on the land by a crop of flax is not greatly in excess of that caused by one of wheat or oats. Of course, in considering this feature of the matter in connection with the flax crop as a source of revenue, the farmer has to keep in mind the value of the yield in each case. And, as far as his flax crop is concerned, his returns will depend on whether the straw is of such a quality as will make it marketable and on his proximity to market, as well as on the price per bushel he receives for the seed.

In the Western provinces, numerous experiments leave no room for doubt that, except in a few localities, the fibre grown

there is not suitable for manufacture. The same experiments warrant the conclusion that the reason for this is a general lack of humidity in the atmosphere. The best fibre is produced in climates which, like Southern Ontario and parts of Quebec, is moist at times, but without an excess of vapor. In spite of this fact, the Dominion statistics show that all the Western provinces except British Columbia, have increased their flax acreage between 1890 and 1900, while in all the Eastern provinces it has fallen off perceptibly. The table compiled in 1900, showing the number of acres under flax, and the amount of seed produced in the different provinces for the years 1890 and 1900 reads:

Province	1890		1900	
	No. Acres	No. Bu. of Seed	No. Acres	No. Bu. of Seed
Prince Edward Island.....	75	746	28	281
Nova Scotia.....	83	410	58	58
New Brunswick.....	92	459	57	283
Quebec.....	2,878	29,476	1,881	19,309
Ontario.....	6,775	71,339	6,388	67,296
Manitoba.....	6,089	34,588	14,404	81,898
Saskatchewan and Alberta.....	153	1,462	327	3,113
British Columbia.....	91	364	1	4
	16236	138844	23086	172242

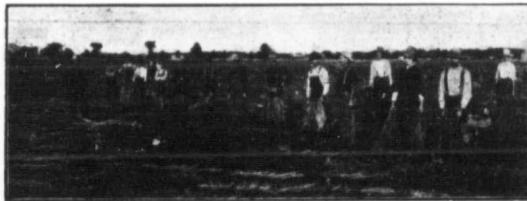


Fig 1

Later still, the Phoenicians, who occupied chiefly the northern slopes of Africa, gave the cultivation of flax a great deal of attention, while the Greeks and Romans of pre-Christian days grew it and manufactured its fibre into linen, each in his own household.

Those are the primitive days of flax. Down the centuries, with the migration and multiplication of races, it has come, never losing its importance as the material from which the most durable of cloths is manufactured.

Canada, like all temperate zones, has given the herb its attention—more or less haphazardly, it is true—since the beginning. The pioneers were early to recognize its adaptability to land conditions in the march through the wilderness. Flax, they found, though its market was never brisk, was an excellent crop to sow on the rough surface left on clearing, especial-

other devices for the further manufacture of the fibre, after retting) removed the seed, which he sold direct to the linseed-oil manufacturer, and put the straw through the various slow processes toward the extraction of the fibre in a state fit for rendering into thread.

Those details will be taken up later on. It is important at this point to note that the farmer of Eastern Canada, through some inexplicable cause, came to believe that the flax crop took the heart out of his soil. He was of the opinion that in his scheme of crop rotation flax could not safely be given a definite place; that the plant food he supplied to the soil in the form of fertilizer was not ample to meet the demands of this herb. Now, while the figures we are about to give may not completely upset this notion, since they do show that flax is a heavy drain on the land, still we think them interesting enough to deserve the farmer's earnest consideration.

Still more recent reports tend to emphasize the increasing importance of his herb among the crops of the West, though, as previously pointed out, the straw is of no value, except through the return to the land in the

form of ashes, after the straw is burnt, of the mineral ingredients extracted from it during the plant growth.

The table given below illustrates recent flax development in the Western provinces.

	No. Acres	No. Bu. Seed	Average Yield
	Flax	Seed	Bu. Lbs.
1905			
Total yield for Northwest provinces.....	45,812	608,242	13 27
Manitoba.....	9,205	110,041	11 95
Saskatchewan.....	35,664	486,578	13 64
Alberta.....	943	11,623	12 32
1906			
Total for Northwest provinces.....	131,819	1,818,780	13 79
Manitoba.....	16,501	227,796	13 80
Saskatchewan.....	108,834	1,504,814	13 82
Alberta.....	6,484	86,170	13 28
1907			
Manitoba.....	25,915	317,347	12 25
Saskatchewan.....	125,029	1,364,716	10 91
(Alberta report not available).....			
1909			
Total for Northwest provinces.....	138,471	2,213,000	15 54
Manitoba.....	22,363	317,000	14 9
Saskatchewan.....	110,308	1,787,000	16 11
Alberta.....	5,800	109,000	18 42
1910			
Total for North west provinces.....	476,877
Manitoba.....	24,577
Saskatchewan.....	438,000
Alberta.....	14,300



Fig 2

TABLE SHOWING PLANT FOOD REMOVED FROM THE SOIL BY AN ACRE OF FLAX, ONE OF WHEAT AND ONE OF OATS

	Nitrogen	Phos. Acid	Potash.
Acre of flax producing 15 bushels of seed and 2000 lbs. of straw, takes from soil.....	46 lbs.	23.86 lbs.	37.28 lbs.
Acre of wheat yielding 25 bushels of grain and 2200 lbs. of straw takes from soil.....	40.53 lbs.	17.64 lbs.	29.11 lbs.
Acre of oats yielding 50 bushels of grain and 2200 lbs. of straw, takes from soil.....	46.03 lbs.	15.22 lbs.	32.88 lbs.

THE NOXON COMPANY LIMITED, INGERSOLL

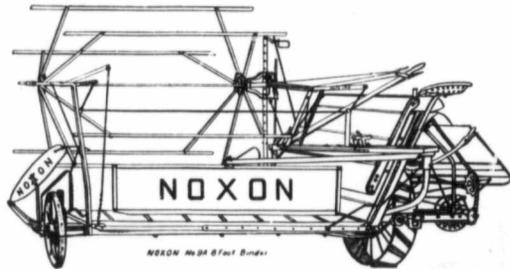
LOOK at the reel on this BINDER. IT IS NEW. It has a positive lateral adjustment on the outer end and can not be dragged forward by down or tangled grain. It is all in the DOUBLE CRANK, which gives the same movement to both ends of the reel and makes the whole reel more rigid and surprisingly easy to operate.

We are using the well-known STARK KNOTTER.

Our all-steel bull wheel is strong enough to stand the hardest usage.

The main frame is light and strong, and well supplied with roller bearings.

Read what some of our customers say about NOXON BINDERS.



NOXON No. 24 8 Foot Binder

THE NOXON CO., LTD., Ingersoll, Ont.

Rocky View, Alta., Aug. 24, 1910.

Gentlemen: I want to inform you that the eight-foot binder I bought from you does better work than any other binder I have ever tried or seen work. I find that this last improvement which was put on the NOXON binder makes it work far easier and more perfectly than it did before the improvement was put on.

We have tried it on very rough ground and it does perfect work; it binds sheaves well and evenly, and where the ground is level, we have cut as low as an inch stubble. The binder gives me perfect satisfaction and I would not trade it off for any other binder I have ever seen in this Western country, and I can recommend it to any person who wants a binder, for it gives better satisfaction than any other I have ever seen.

Sincerely yours,
(Signed) O. WILLISON.

W. J. DOIG, RUSSELL, MAN.

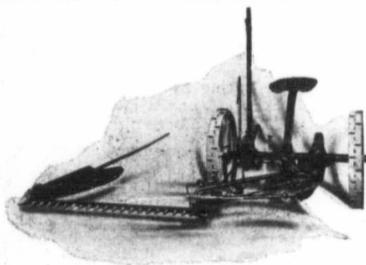
Dealer in Hardware, Furniture, Implements, Etc.

Russell, Man., Aug. 31, 1910

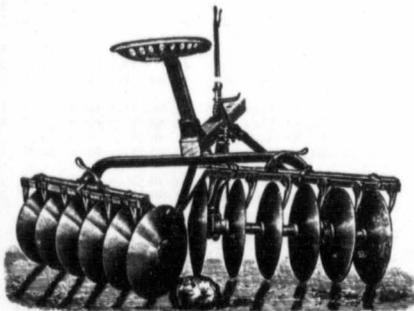
MR. JOHNSTON,

Dear Sir: Re NOXON binders, six, seven and eight foot. I have some of each size in the hands of the farmers and I must say that I am very pleased with the satisfaction which they are giving. They are light draft and the reports from the users are very encouraging. I have seen some of them working and I like their work which was principally in heavy grain and on the green side and sometimes wet and the ground wet as well, making it harder to handle and I must say that the machine handles it very nicely.

Yours respectfully,
(Signed) W. J. DOIG.

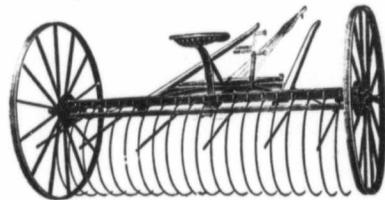


The NOXON all-steel ratchet dump RAKE is made with the teeth very close together, the ten-foot size having thirty-six teeth. The end teeth are short, making the rake capable of handling short wild grass.



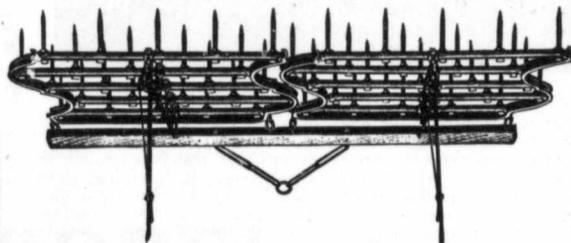
The NOXON spike tooth spring lever DRAG is made entirely of steel. Any number of sections can be used abreast, which greatly adds to the utility of the HARROW.

The NOXON MOWER is especially adapted for Western Canada, being built with a very strong frame and wide tread. It is also geared to the proper speed and the cutter bar is fitted with special shaped guards with raised ledger plates.



The NOXON DISC is making a good name in the West, as it has done in the East.

Its ability to stay in the ground its entire length and the ease with which it does its work makes it a favorite wherever it is used.



Now is the time to make contracts for local agencies.

TUDHOPE-ANDERSON COMPANY, LIMITED

AGENTS FOR WESTERN CANADA

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The natural deduction to make from these facts that, if, in the West, farmers find it profitable to raise flax for the revenue derived from the seed alone, how much more profitable ought the crop to be in the favored sections of the East, where seed and fibre are both marketable? Surely the saving to his soil of the mineral plant foods is not alone responsible for this herb finding favor with Western crop-growers.

This phase of the discussion leads us to inquire why the Eastern provinces of Canada have

idleness between the time when one crop is disposed of, about March, and the middle or latter part of July, when a new one is ready for pulling. Wages are low, the highest point of the scale being little in advance of that paid to ordinary laborers, while a certain degree of skill is required in the machine work to which the fibre is treated during its course through the mill. There is an added disadvantage in the danger to which the machine workmen are subject, and this is not duly represented in the margin of wages they are

manufacturers of the Republic escape. These latter, however, offer but small competition to the Canadian shippers.

The figures below indicate the importance of the establishments in Canada devoted to the dressed flax industry.

Value of land, buildings and plant.....	\$105,750
Working capital.....	115,000
Total wages paid (average annually).....	144,396
Value of product (average annually).....	241,932

So far no account has been taken of the part played in this industry by the linseed oil manufacturers.

Canada has five of these mills. Three are located in Montreal, one in Baden, Ontario, and one in Winnipeg. Their capacity is enormous, and they find in the Dominion a market for their entire output. In fact, they cannot meet the demands of the domestic market, neither can the Canadian supply of flax-seed fill their requirements; so that not only are large quantities of linseed oil imported into the Dominion, but also a considerable amount of flax-seed. After the linseed oil is extracted from the seed, there is left what is known to commerce as "oil-cake," and this is partly disposed of in Canada, while the remainder finds a market in Great Britain.

So far this article has handled the subject of Canada's flax industry from the standpoint of general interest. We now look at the matter with the purpose of

In the West the herb is treated in a manner similar to that of any of the grains. It is sown in the spring, usually during the month of May, and cut at the regular harvest time. The seed is sold to the dealers, and the straw burnt.

In order to determine for the farmer the best time to sow, and the proper amount of seed to use per acre, the Dominion had tests made at its different experimental farms.

A sufficient quantity of seed of the best kind obtainable—grown one year in Canada after importation from Russia—was allotted to each farm. Enough land was selected, in a good condition of tilth and as uniform in character as possible, to provide for eight one-tenth acre plots. Two of these plots were sown early in the season, and two on the same day of each week following, for four sowings. At each sowing the seed was put in at the rate of 40 pounds to the acre in one plot; and 80 pounds to the acre in the other. The results of these experiments, as they relate to the amount of seed produced, are shown in the following table:

These results indicate that a sowing of forty pounds to the acre does not always produce as



Fig 3

been gradually slackening their hold on this industry. When one considers the increase in acreage under the plow, the decline in the importance of flax as a source of revenue is still more marked than appears in the table given second place in this article.

One cause is undoubtedly the farmer's fear (already discussed) of flax draining his land of its vitality; another, and closely related to this, is the fact of a constantly decreasing amount of "new" land, by which is meant in the Eastern provinces land cleared of timber, and hence uneven.

A third cause—and one which concerns the manufacturer as

paid above those who do the rougher work.

In Ontario, where over ninety per cent. of the flax-mills of the Dominion are situated, this sad condition of the flax business has been the subject of much comment. The cured fibre, called tow, is marketed almost exclusively in the New England States where are situated the majority of the linen thread-mills of the continent. In this market the Canadian shippers of flax tow have to compete with those of Russia and other countries, who can deliver their product at the New England mills at a figure much below that possible for the Canadians, on ac-



Fig 4

well as the farmer—is the difficulty of maintaining flax-mill businesses on account of a growing aversion of the working people to engage in this kind of labor.

This last statement may require further treatment. It must be understood that every phase of the work required in connection with this plant is, from the worker's point of view, extremely arduous. From the time that it is pulled, which has always been done by hand, to its last stage of handling in the flax-mill, the man who works at it has a very exhausting occupation. Moreover, there is a period of

count of the lower scale of wages in those countries, and other features of manufacture, all in their favor. It is evident from this that the thread men can dictate prices to the Canadian manufacturers that give the latter a living margin of revenue, and no more; and they do this because the Canadian fibre is of excellent quality as well as because it is to their interest to have their sources of fibre supply as numerous and as widely scattered as possible.

In exporting to the United States, the Canadian tow shippers have to overcome a tariff of \$20 a ton, which the few flax

	Largest Crop			Date of Sowing	Second Largest Crop			Date of Sowing	Average yield of flax seed per acre		Average yield of flax tow per acre	
	Bu	Lb.	Lbs.		Bu	Lb.	Lbs.		Bu	Lb.	Bu	Lb.
Four years at Brandon, Man.	Bu	Lb.	Lbs.		Bu	Lb.	Lbs.		Bu	Lb.	Bu	Lb.
1896.....	17	26	80	June 6	17	8	80	May 16	14	14	16	45
1897.....	14	16	80	June 2	12	48	80	June 9	10	52	12	38
1898.....	28	32	40	May 28	25	00	80	May 28	22	15	19	29
1900.....	7	8	40	May 12	6	44	80	May 12	6	19	6	24
Four years at Indian Head, Sask.												
1896.....	13	12	80	May 23	12	48	80	May 16	12	25	12	13
1897.....	13	30	40	May 25	13	10	80	May 18	10	27	12	23
1898.....	22	00	80	May 28	16	00	80	May 21	11	22	17	10
1899.....	21	10	80	June 9	21	00	80	May 26	18	26	19	21
Three years at Agassiz, B.C.												
1896.....	12	8	80	May 22	12	8	80	May 15	7	28	8	52
1899.....	18	32	40	May 19	17	48	50	May 12	16	4	15	20
1900.....	11	4	80	Apr. 24	9	16	80	May 1	7	28	8	54
Four years at Ottawa, Ont.												
1896.....	17	8	40	May 14	15	15	80	May 14	13	31	12	11
1897.....	10	30	40	May 26	9	26	40	May 19	9	23	7	35
1898.....	13	42	80	Apr. 25	13	12	40	Apr. 25	9	33	12	51
1902.....	12	20	80	Apr. 30	8	40	40	Apr. 30	8	10	7	30
Two years at Nappan, N.S.												
1896.....	34	20	40	June 4	32	40	80	May 21	24	43	25	43
1899.....	21	30	80	May 18	21	30	80	June 1	16	53	19	53

giving particulars regarding the heavy a crop as where eighty actual handling of the flax crop. pounds are used. In the Brand-



Fig 5

POINTS PICKED UP

A New Engine Gang for the West

Massey-Harris Company, Limited, whose announcement appears in this issue, are offering to the critical trade of Western Canada a new engine gang plow, which bids fair to become a favorite. It was only after lengthy experiments, we learn, as also through tests, under Western conditions, that it was decided to place this plow upon the market for the coming season.

Features necessary to improved ploughing and found only on the Massey-Harris, are looked upon by experts, who examined this plow while it was under test recently in Western Canada, as constituting a remarkable advance in power plow manufacture.

Want a Gun

If you are thinking of buying a gun of any kind you should write to the Marlin Firearms Co., 105 Willow St., New Haven, Conn., for a copy of their new 136 page catalog. It describes their full line of repeating rifles and repeating shotguns.

Marlin repeating rifles are made in all popular calibers from .22 to .45-90, inclusive. There are four distinct .22 caliber models (all repeating models) and there are four distinct

there are two different models of .25-20 and .32-20 caliber repeaters, giving you a choice of lever action or trombone (pump) action and in many other ways helping you to select the gun best adapted to your personal requirements. Marlin repeating shotguns are also fully described

in the catalog; there are five distinct models and as both 12 gauge and 16 gauge repeaters are represented, it makes a most interesting list.

The book also contains much other information valuable to all shooters and especially to anyone who contemplates purchasing a new gun. The book will be sent free to any of our readers who will show their interest by sending three stamps for postage to the Marlin Firearms Co.

Rates of Duty Levied on Material That Go Into the Manufacture of Farm Implements

Steel bars and steel beams for plows and drills, \$7.00 per net ton. Steel angles, channels, \$7.00 per net ton.

Disc harrow blades, 20 per cent. ad valorem.

Pig iron, \$2.80 per net ton. Scrap iron, \$2.50 per net ton.

Malleable iron, 20 per cent. ad valorem.

Disc drill plates for disc shoes, 20 per cent. ad valorem.

Grease Cups, 20 per cent. ad valorem.

Bolts and nuts, 25 per cent. ad valorem, and 1/4 of a cent. per lb.

Plow discs, 20 per cent. ad valorem.

Steel springs, 20 per cent. ad valorem.

All factory machinery, including drop hammers, punch and shears, presses, bending machines, 27 1/2 per cent. ad valorem.

The above rates of duty, where they refer to pig-iron and steel, apply to all farm implements excepting binders and mowers. On such machines a rebate of 99 per cent. is allowed.



Hart Universal Thresher Rack Unloading at Machine

A Labor and Time Saver

Every year the farmer has brought to his notice something new in the way of labor-saving machinery. The manufacturer is constantly watching his needs, and while it is not done in a philanthropic spirit entirely—for the manufacturer makes goods only to sell—nevertheless this watchfulness on the part of the manufacturer brings to the farmer a

large variety of new and labor-saving implements.

One of the latest of these that has come to his notice is the dump rack, or, as some manufacturers term it, the thresher rack. We herewith illustrate one made by the Hart Grain Weigher Company, of Peoria, Ill. This rack may be termed a thresher rack, a bundle wagon, or a hay rack, and besides being a rack from which the load can be pulled off



ALWAYS EVERYWHERE ASK FOR

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almost instantly, it can be used for almost any purpose for which a rack is used; the sides can be removed if desired.

This rack may be taken apart in sections, so that it can be removed easily. The rack sets on the wagon gear, as does the ordinary hay rack, the load being distributed evenly over the wheels. No derrick is used for unloading. The load is pulled off by a pull-off gate and a rope. The rack is provided with a pull-off gate, which sets at the front end. Attached to this is a rope which extends about two feet back of the rear of the rack. The bundles, hay or other material, are loaded on top of the pull-off rope, and when it is desired to remove the load the lock-hook on the long pull-off rope is hooked into the ring at end of short rope, and when the rope draws taut the pull-off gate holds the load and the rack is withdrawn from beneath it. The long pull-off rope may be any length desired, and can be fastened to the engine, separator, a stake, tree, or any stationary object. The unloading operation consists simply in pulling the wagon from under the load.

The idea is to save time. A pitcher at the machine can attach the pull-off rope and the load can be taken off without stopping the team, which can immediately return to the field.

These dump racks are used quite largely with wing carriers, and, in connection with such a machine, forms a great labor-saving combination.

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An Error

"In the table headed 'Winnipeg Motor Contest, 1910,' on page 22 of the November issue of the Canadian Thresherman, an error appeared in the figures given for the Case 110 h.-p. plow engine. The column headed 'Acres per day of ten hours' gives 3.99, whereas the correct figure should be 39.9, the mistake being in the location of the decimal point. This engine plowed at the rate of practically forty acres per day of ten hours in plowing the gumbo sod."

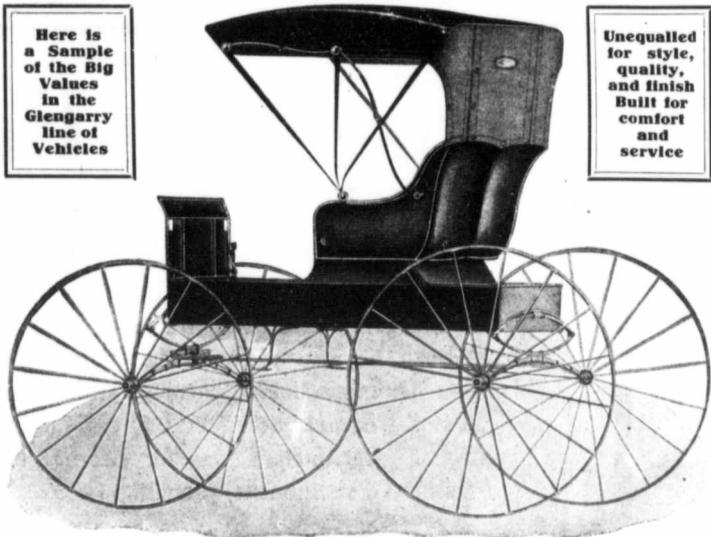
The Buggy from Glengarry

All Glengarry Vehicles are sold on their merits, and are fully guaranteed. They are not a new untried line, but one of the oldest Buggy lines manufactured in this Country and have a well earned reputation for high quality.

Over two hundred different styles. Call on your nearest dealer or write to

Here is a Sample of the Big Values in the Glengarry line of Vehicles

Unequaled for style, quality, and finish Built for comfort and service



No. 223 AUTO SEAT BUGGY

Canadian Moline Plow Co., Winnipeg, Man.

New Manager for Gas Traction Company

Mr. E. J. Gifford, the subject of this sketch, was born near Pavonia, Ohio, June 26th, 1860. He is of English extraction, his parents being born and raised on the border of the city of London, England, they coming to Ohio in 1858. Mr. Gifford spent his early life on the farm, working there during the summer months, and during the winter attending the different district schools of his township. At the age of twenty he entered Baldwin University, where he remained for several terms; but, desiring to perfect himself for teaching, he entered the Ohio Normal University, which he left in his senior year. In 1887, after teaching school for some time, he entered a law office, where he pursued the study of law. In 1890 he went to Toledo, Ohio, to accept a position offered him by Arbuckle-Ryan & Co., a large machinery firm, as sales, credit, and collection manager. He remained with this firm until December, 1900, when, with two others, a new company was formed in Toledo, along the same lines as Arbuckle-Ryan & Co., but, differences arising between the partners in the concern, Mr. Gifford withdrew from them. In August, 1901, Mr. Gifford accepted a position with the J. I. Case Threshing Machine Company, as sales and collection manager in North Dakota. He remained with this firm on sales and col-

lections until February, 1903, when he was transferred to Winnipeg as general collector for Western Canada. He remained with this concern until September, 1906, when he resigned and

entered the employ of the Sawyer-Massey Company. On July 15th, 1907, Mr. Gifford accepted a position as manager for Western Canada for the North-West Thresher Company, and up to the

present time has filled that position most successfully.

Mr. Gifford has recently been appointed manager for the Gas Traction Company, Winnipeg, to which concern he brings a large fund of experience, and the Gas Traction Company are to be congratulated on securing so able a head.

Mr. Gifford is a man who might be considered to have spent the greater part of his life in the machinery business, but who has also employed his spare time to the best advantage along the lines of culture and development. While in the States he was one of the members of the Lincoln Club of Toledo, which wielded a strong influence politically in the state. Mr. Gifford also served a term as member of the Board of Education in the city of Toledo, where over four hundred and fifty teachers were employed, and since that time has taken a keen interest in things educational. Mr. Gifford, however, since coming to Canada has always taken a keen interest in things Canadian, and wherever he has lived has done his utmost towards the community's development.

If we were to make any comments regarding Mr. Gifford in his new position, we would say that he is the man for the place, and we trust that the Gas Traction Company's business in Western Canada under his supervision and direction will reflect credit both upon himself and the company that he represents.



Mr. E. J. Gifford

AMPHIBIA Waterproof Thresher Belting

Is what you need on your thresher next year, if you want all around satisfaction at smaller cost than you have been paying in the past. **"Amphibia" Waterproof Leather Thresher Belting** is made only from the best part of heavy, trimmed Steer Hides, oak-tanned by ourselves in the only satisfactory way for Leather belt-making---the old-fashioned six months' process.

"Amphibia" doesn't come apart when it gets wet. It is **guaranteed** absolutely water-proof.

FREE---Write our office for free booklet---you need it.

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Selling Agents

Manitoba Union of Municipalities

A convention was held at St. Boniface on the 24th Nov. with a record attendance 230 delegates. The results of the work of this union will depend upon the numbers and activity of the delegates who attend conventions, for it is only there that the real work is done.

The ratepayers should see that the men whom they elect to the different municipal councils are each progressive enough to make it certain that the individual municipality sends a representative to these gatherings.

One very important question was the taxing of railway properties not used in the operation of railways. The railways keep

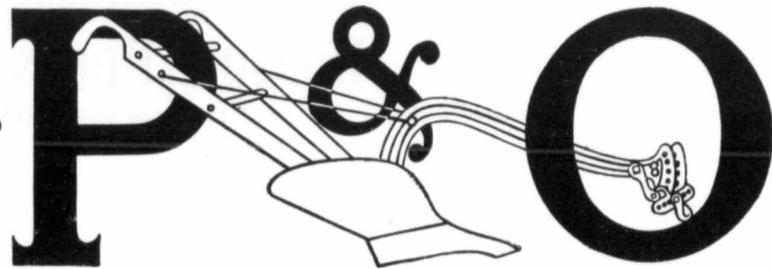
no official whose duty it is to search their list of properties to find upon what they may pay taxes or to notify tax collectors that some rateable property has been overlooked. When one municipality discovers that some omission has been made and applies to the railway company for a contribution that is manifestly right the railway may make blank refusal and threaten lawsuits, appeals, etc. Now, no councillor likes to be held responsible for involving his municipality in costly litigation with a railway that keeps a staff of professionals for the purpose of bluffing all intending litigants out of their boots, and then fighting every claim to the last ditch. With this union such a thing is not

necessary. The union can make a test case if necessary, avoiding almost all the expense. Knowing this the railway companies have a different code of etiquette for the entertainment of the Union of Municipalities from that accorded to a delegation from a single council.

At this convention there was objection taken to the City of Winnipeg inspecting dairies outside the city and collecting fines.

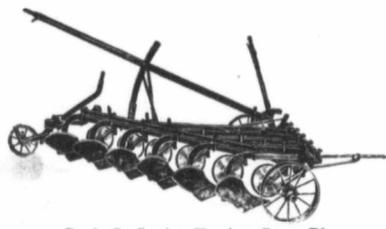
It does seem rather highhanded for the officials of one municipality to be giving orders in another, but there are many things to be considered. One is: who is going to look after the health of the city? The council

elected by the dairymen? Hardly. The dairymen are doing pretty well as it is, and they sell in the city. If at any time they do not like the city regulations let them sell elsewhere. The city simply wants to know that the milk brought to the city is clean and the officials do their best to instruct all who wish to engage in milk production for city consumption. The claim that the officials favor the large producer should certainly be investigated. It certainly is plain to anyone who knew the dairies that supplied the city with milk ten years ago, that nothing, but the action of the city could have induced those dealers to come up to the standard of the present day.



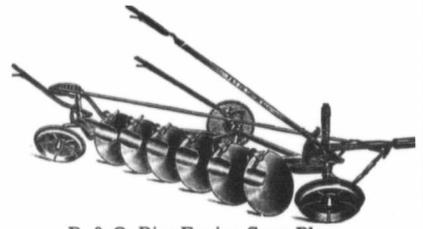
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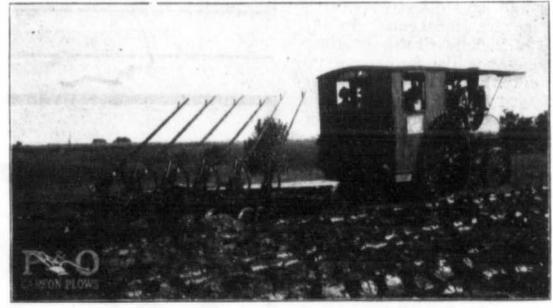
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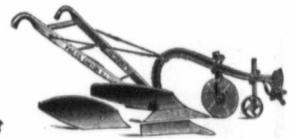


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with Extras.



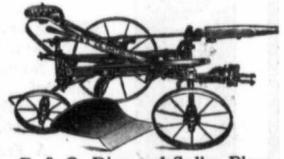
P. & O. Diamond Gang Plow.



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Automatic Control.



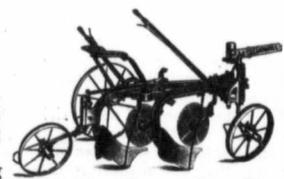
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THE SEED GRAIN FAIRS OF WESTERN CANADA

By W. W. THOMSON, Asst. Man. Director Man. Agri'l Societies.

It is but five years since the first exhibition of seed grain was held in Western Canada, yet no one acquainted with the facts will deny that these fairs are to-day one of the most potent factors working for the improvement of Western agriculture along producing lines. From their earliest inception these competitions have been popular with the farming community and the increasing number of these exhibitions held each year is evidence of the high esteem in which they are held. Early in December of 1905, the Agricultural Society at Carman, Manitoba, held the first seed fair and it was such a pronounced success that other agricultural societies in this and the sister provinces of the west took up the idea and held several fairs that winter. From that time there has been a steady increase in the number of fairs held. In the fall and winter of 1909-10 a total of one hundred and fourteen grain shows were held in Western Canada, Manitoba holding thirty-four; Saskatchewan forty-nine and Alberta thirty-one, and from present indications it is safe to say that the number will be considerably increased this season.

The popularity of the seed grain fairs can be attributed to the fact that they perform a twofold function, being of value to the community from both an educational and commercial standpoint. They emphasize the importance of selecting seed of high quality and suitable variety fully matured and free from damage by frost, fungus or mechanical injury. They draw attention to the introduction and spread of noxious weeds and afford a favorable opportunity for a discussion of the various methods of combating these pests and of producing large yields of high class farm crops. At the same time the seed fair stands as an advertisement for the producer of good seed, bringing his produce to the notice of prospective buyers and enabling him to obtain a price in keeping with the high quality of his produce. The man in search of good seed also finds the seed fair a friend in his need, for then he has an opportunity to see the best seed obtainable and to get the highest value in return for the capital he intends to invest.

The governments of the Prairie Provinces, realizing that this is pre-eminently a grain-growing country, that our market is distant, that transportation is necessarily expensive and that consequently only grain of the highest quality should be produced, have taken up the Seed Fair work and are doing much to assist the local agricultural societies, believing that in this way the people will

become more familiar with the great facts regarding seed grain, an understanding of which is essential to the continued production of high class cereal crops. Each agricultural society holding a seed grain fair receives a grant based on the amount expended as prizes at the seed fair and in addition the judges, either Professors from the Agricultural Colleges, officers of the Dominion Seed Branch or experienced farmers who have made a success of grain growing, are provided free of cost.

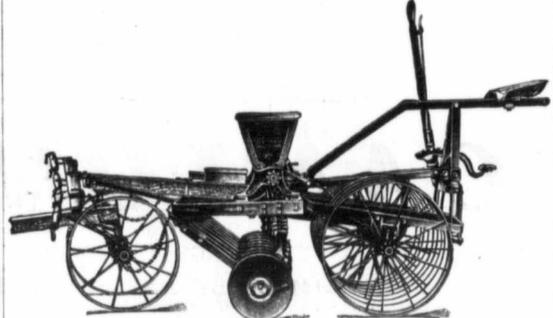
In placing the awards the judges use score cards on which they record their scoring on the various points. These are left with the exhibitor and from them he can learn what are considered to be the essential points in good seed grain and the relative importance attached to each, as well as the particular points in which his exhibit is strong or weak. Noting that his sample is inferior to that of his neighbor in some particular, he will seek to find and remove the cause of the inferiority that he may show again next year and have the satisfaction of beating his opponents. In this way a friendly rivalry is stimulated among the farmers of the community and they will be encouraged to make special efforts to improve their grain. In addition to this, the judges, by using the exhibits as object lessons to illustrate their addresses, are enabled to impart much valuable information at the meetings which are usually held at the close of the fair.

While the score cards used in judging seed grain in the different Provinces are not identical in every detail, they agree on all the essential points. In every case fifty per cent. of the total score is given for purity and fifty per cent for quality of grain and it is only in the relative values attached to the various sub-divisions coming under these heads that any difference is made. A copy of the card used for scoring seed wheat in Manitoba is given on another page.

Noxious weeds have for years been recognized as a serious hindrance to our agricultural development and it is evident, from the importance attached to freedom from weed seed, that those responsible for the preparation of this score card have realized that the use of only clean seed is imperative if any progress is to be made in eradicating these insidious pests. A score of 24 points has been allotted to this division. That such importance should be attached to this phase of the seed question is but reasonable when we consider the rapidity with which weeds are spreading over our newly broken prair-

HOOSIER PRESS DRILLS

Plant at an even depth. Conserve the moisture in the soil. Insure a good crop.



HOOSIER PRESS DRILLS conserve the Moisture in the soil, because they pack the earth over the seed when it is sown. This is why the Northwest farmers are more certain of a good crop. The Hoosier gets the seed in the ground at an even depth and covers it. The Hoosier is Light Draft, has a positive force feed, never skips, never chokes. Has the greatest possible strength and will stand up under the severest strains. Absolutely guaranteed—Send for catalog and go to your local dealer and insist on seeing the Hoosier.

The American Seeding Machine Co., Inc.
King and James Streets, Winnipeg, Man.

Amatite

ROOFING



It has a rough surface of *real mineral matter* on the weather side. It is evident to anyone that it is no more necessary to paint such a surface than it is necessary to paint a stone wall. Stone needs no paint; neither does Amatite. It is strong enough in itself to bear the brunt of rain and wind and sun without a coat of paint.

To paint Amatite would be a waste of time and trouble.

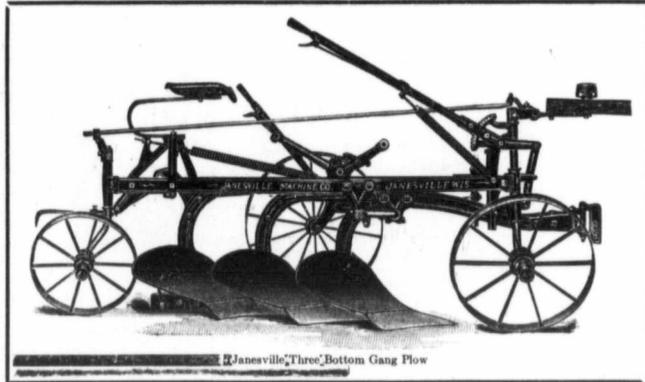
Amatite will last for many years without any care whatever. It is made to be *trouble proof* as well as *weather proof*.

No paint is good enough to make a durable roof; a thick layer of pitch, faced with a real mineral surface, is far better—and that means Amatite.

A Free Sample will be sent on request to nearest office.

The Paterson Manufacturing Company, Limited
MONTREAL, TORONTO, WINNIPEG, VANCOUVER.

Three Bottom Gang Plows



Janesville Three Bottom Gang Plow

Are coming into use along with the demand for larger sized farm tools of all kinds.

The Janesville is one of the most practically built Three Bottom Gangs now in general use. The horses pull the bottoms out of the ground, as well as pull them into it. This is a very important point, especially on a gang plow.

Naturally the first thing inquired about is the draft of a plow of this size, and how much horse power is required to handle it. Our tests all show that in ordinary use five horses can very easily

pull the plow; of course the condition of the soil and the depth you wish to plow have everything to do with the draft. Drop us a line and let us send you our Plow Booklet which tells you all about our plows of all kinds.

CANADIAN SALES AGENTS: AMERICAN SEEDING MACHINE CO., Winnipeg, Man.

Made by THE JANESVILLE MACHINE CO., Janesville, Wis.

ies and the numerous ways in which they reduce the farmer's revenue, using up his plant food and moisture, shading or crowding out his growing crops and increasing the labor and expense of almost every farming operation, as well as reducing the value of his farm and its products.

The second division, freedom from other kinds of grain and from useless impurities, is one of the importance of which is evident to all. The value of even the market classes of grain is considerably reduced if they contain any foreign substance and the folly of using such grain for seed is obvious.

That the seed sown should be all of one variety, is a point worthy of note and the score of 10 points for purity in that respect is by no means an exaggeration of its value. When seed of mixed varieties is used a mixed crop will be produced, one variety will ripen earlier than another and a loss, either from shelling or from premature harvesting, is the inevitable result. The grain, when threshed, will not be uniform and in all probability will grade low on that account, whilst the possibility of disposing of it for seed purposes, particularly to wideawake, intelligent persons, will be very small indeed.

The occurrence of smut in the grain crops of the West presents a serious problem to the farmers and the demand that seed grain should be free from spores of this disease is in the highest interest

MANITOBA AGRICULTURAL COLLEGE

CLASS SECTION

EXHIBITOR'S NUMBER

AMOUNT FOR SALE

EXHIBITOR'S NAME

ADDRESS

AGRICULTURAL SOCIETY

SCORE CARD FOR SEED WHEAT

	Possible Score	Awarded Score
PURITY		
(a) Free from weed seeds	24	
(b) Free from other kinds of grain and from useless impurities	8	
(c) Pure as to variety as near as can be determined	10	
(d) Free from smut	8	
QUALITY OF GRAIN		
(a) Grain sound, well ripened, free from damage, from rust, frost, etc., and apparently of strong vitality	13	
(b) Grains uniformly plump and relatively large for the variety, weighing well per measured bushel	18	
(c) Grain of good milling value, considering the purpose for which it is intended. Hard translucent grains indicate a high percentage of gluten and a capacity for producing a large quantity of strong patent flour suitable for bread-making. Opaque grains of a soft starchy appearance indicate a deficiency in gluten. Such wheats produce a flour more suitable for biscuits and pastry	14	
(d) Color uniformly bright, and clear, not weathered	5	
Total	100	

JUDGE

Score card used in judging seed wheat

of the producer. The affected heads are always shorter and not so well filled as those free from the disease. The number of stool from an infected plant is usually smaller and the grain seldom grows so high or matures as early as the rest of the crop. These, however, appear but minor disadvantages when compared with the loss due to the dark color and poor quality of the flour manufactured from smutted wheat. Whilst it is true that the repeated use of the fanning mill, combined with the formalin or copper sulphate treatments, will do much to eliminate smut if present, yet absolute freedom from this fungus is much to be preferred to any system of eradication and grain free from the disease will always command a much higher price than infected samples.

Under the heading of quality is considered the maturity and vitality of the berries, their color, the uniformity of their size and shape and the milling value of the grain. Those who have made a long continued study of grain growing affirm that only fully ripened grain should be used for seed. Any seed is in reality only a miniature plant incased in a protective covering along with a store of prepared food. In unripened kernels the embryonic plant will not be as well developed as in a ripe kernel and the store of prepared food will not be as large as it should be. Consequently plants produced from

Continued on page 79



The Era of New Machinery

By L. W. ELLIS.

Assistant in Farm Management, U.S. Department of Agriculture.



It would be impossible in a short paper to present a clear conception of the great progress in agriculture and invention during the last half of the nineteenth century. The development—that is, the mechanical evolution—of even one machine affords material for a substantial treatise. It has seemed advisable, then, to try to give some hint of agricultural progress by discussing some of the most striking mechanical achievements commonly found on western farms of the present day. So far as the West is concerned this is as never before the "era of farm machinery," and in finally choosing this subject it is with the feeling of utter inability to do it justice in the short time at my disposal for the arrangement of material.

With respect to the character of implements and machinery on farms there are three fairly distinct periods in American agriculture. The first is the era of hand methods, continuing until well toward the middle of the last century. The second is the period of transition from hand to machine methods, in which changes were most marked after 1850, and previous to 1890. In response to the demand created by the scarcity of labor, and under the encouragement of protective patent laws the creation of new machinery was unparalleled.

Into the third period, the era of farm machinery, the West is well on its way. Machinery has practically superseded hand methods, and though the scarcity of labor and the drift of young people to the cities continue, the total crop production has seen a steady increase owing to the greater efficiency of the farm laborer under the new conditions. The farm methods and implements of 1800 are no more to be compared with those of the present than are the home and business conveniences of former times to the marvels which make life comfortable today. At that time wheat was sown broadcast by hand, after the ground had been plowed with a heavy, clum-

sy, wooden plow, requiring as many as eight oxen to pull it.

The seed not picked up by birds was harrowed in by dragging a bush or a sapling over the land. Sickles cut the grain, and it was bound by hand. It was hauled in a cart and stored in a barn, where, during the succeeding winter it was threshed out either by a flail or by driving animals over it as it lay in heaps. It was finally winnowed by hand.

Corn rows were marked by a shovel plow. The seed was dropped by hand and covered with a hoe, and cultivation was by the hoe, or a rude shovel plow. The stalks were cut and the ears husked out by hand. Shelling was done by scraping the ears against the handle of

and Israelites. As late as 1837 the iron plow was rejected by New Hampshire farmers because it was thought that it would poison the soil, and the present shape of plow was not established until after 1840. Not until 1850, in fact, according to the Twelfth Census report, did that period end in which the only farm implements and machinery other than the wagon, cart, and cotton gin, were those which for want of better designation may be called the implements of hand production.

It has been estimated that in 1800, 97 per cent. of the people of the United States lived on farms. By 1849 the proportion had decreased to 90 per cent. The production of wheat per

scene of unparalleled progress. Swifter and cheaper transportation of products enabled the farmer to reap his profits in the markets of the world, and the nation to maintain its balance of trade. Small wonder then that the genius of the inventor and the skill of the mechanics found such a rich reward for making possible the quick conquest of the prairies!

Notwithstanding a strong competition for labor, resulting in a great rise in wages of farm laborers, the cost of production was generally lessened with the introduction of labor-saving machinery. The time required to produce a unit of crop has been reduced in most cases to a mere fraction of the former figure.

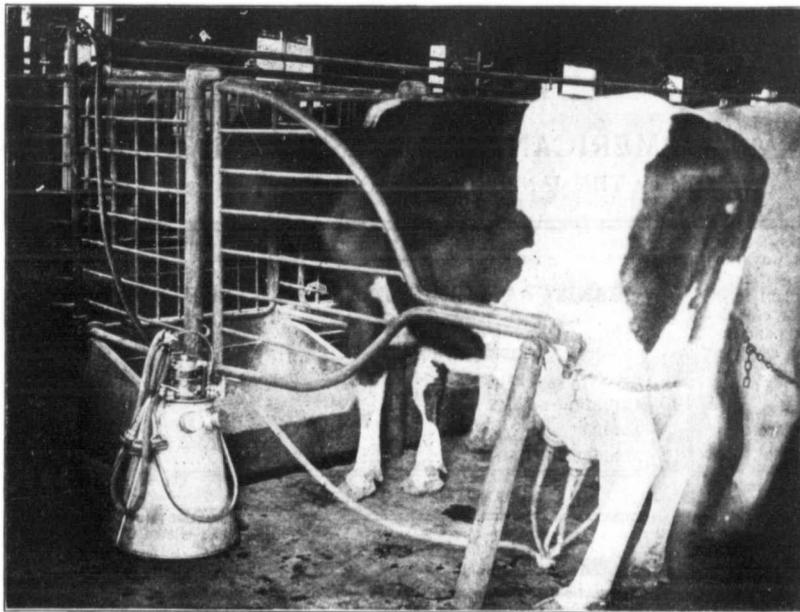
From 1855 to 1894 the human labor consumed in producing a bushel of corn by the best available methods declined from four hours and thirty minutes to forty-one minutes, and for shelling it from one hundred minutes to one minute. In 1830 three hours and three minutes of human labor were required to raise and thresh a bushel of wheat—in 1896, ten minutes. Eleven hours were required to cut and cure a ton of hay in 1860, and but one hour and thirty-nine minutes in 1894.

In spite of the great improvement in farm machinery, and the rise in price of materials, the cost of the machine to the farmer is less than it was several decades ago. At the same time a product has been given, that,

with proper care, will last longer than the machine of the last generation.

The making of agricultural machinery has become an immense industry. The manufactures increased in value from less than seven million dollars in 1850 to over one hundred and twelve millions in 1905. In 1905 over six hundred thousand grain binders, headers, mowers, and horse hay rakes, were made, over a half million cultivators; nearly a half million harrows; and over one and one-quarter million of plows. Up to June 5, 1906, nearly 47,000 patents had been granted on the five principal classes of farm machinery.

In attempting to present an idea of how the machine has



Milking Machine at work.

a frying pan,—a bushel in one hundred minutes.

Hay was cut with a scythe, raked with a wooden hand rake, and stirred with a pitch fork if it was necessary to hasten the curing. It was pitched by hand from ground to cart, and cart to haymow. Baling and shipping were practically unknown. Hand methods prevailed in the dairy, the stable, the cotton fields, the potato patch—in fact in every phase of production.

The introduction of the cotton gin in 1797 revolutionized the cotton industry, but other inventions were slow of adoption. One authority states that until after the revolutionary war the farmers of this country used the same crude tools and primitive methods employed by the Egyptians

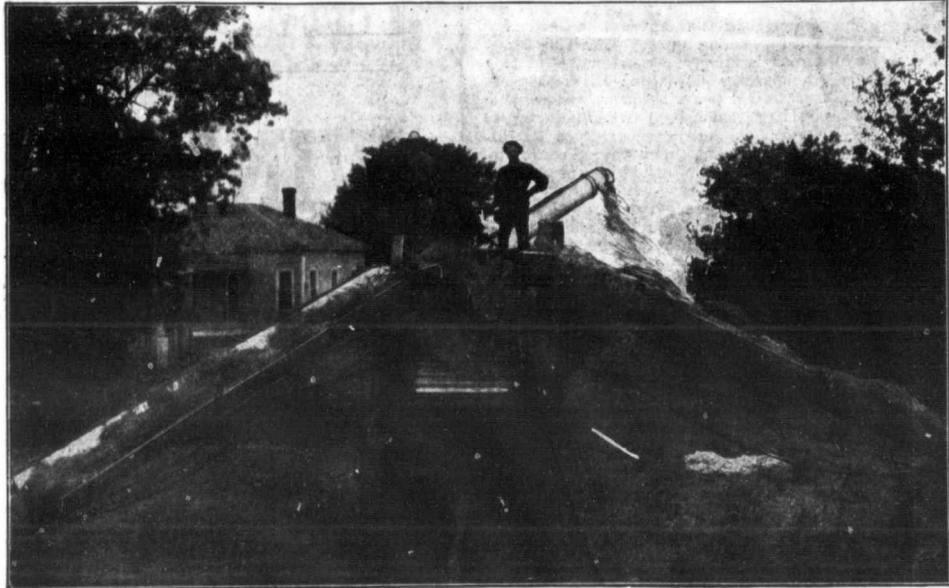
capita had fallen to less than four and one-half bushels, and apparently the limit by hand methods had been reached. Labor was seeking occupation in the cities, and the time was ripe for that change from hand to machine methods which made the latter half of the nineteenth century in the United States the most astounding period in the history of agriculture.

An immense area of fertile soil opened up on such terms as to encourage unprecedented settlement; constantly growing immigration; the increase of consumption by the non-agricultural population of Europe and our own urban population; the decline of farming in New England, and the upheaval in the South, all tended to make the West the

Note: This paper was given December 8, 1909, as an illustrated lecture, before the annual Convention of the American Society of Mechanical Engineers in New York. Mr. Ellis is now with M. Rumely Co., La Porte, Ind., as Traction Plowing Specialist.

HART GRAIN WEIGHER COMPANY

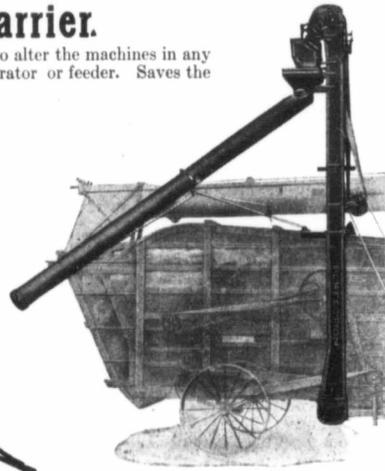
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Hart-Brown Wing Carrier.

Can be used on any separator with any feeder. Not necessary to alter the machines in any way. Does not interfere with the adjustment of either separator or feeder. Saves the labor of from two to six men. Hundreds in operation.



Perfection Dakota Weigher

Hart Weighers put threshing on a business basis and prevents dispute, as they are recognized as being

**Honest and
Reliable**

Ask successful Threshermen and Farmers.

The Hart Universal Thresher Rack

The rack sets on the wagon gear as does an ordinary hay rack. We use no derrick, drums, gears, cranks or other complicated devices for unloading, but a very efficient and simple pull-off gate, to which is attached a pull-off rope. When it is desired to unload the bundles or other material in the rack, the hook on the long pull-off rope, the other end of which is attached to the engine or some stationary object, is hooked into the ring on short rope; and when the rope becomes taut, the gate holds the load while the bottom slips from beneath it and the load drops to the ground. The operation consists simply in pulling the wagon from under the load.

The load can be taken off without stopping the team, and six wagons equipped with our racks will do and have done as much as twelve ordinary racks do, and at the same time dispense with pitchers in the field as the driver may pitch his own load.

Our Machines are Handled by the Leading Thresher Companies Throughout the World Illustrated Catalogs Sent on Request

HART GRAIN WEIGHER CO. PEORIA, ILLINOIS, U.S.A.

displaced the hand it will be necessary to omit discussion of a large number of extremely interesting machines of minor importance. The three great crops of the West with respect to machinery requirements are corn, hay, and wheat. Naturally the greatest interest will be attached to a study of the machinery for these three crops, the combined value of which equals two-thirds the value of all crops raised in the United States.

The use by man of a crooked stick in tilling the soil is said to have been the first step in systematic agriculture, and the application of animal power to the stick, the second. Civilization and the development of the plow have gone hand in hand. Iron was used at an early date for protecting wooden plows. In the course of time the Dutch gave shape to the mold board and added a pair of handles for guiding. The iron share and the chilled mold board were made in England at the beginning of the last century, but in America at that time the plow was generally of wood, plated with strips of iron. By the middle of the century Jethro Wood had given the iron plow its proper shape, and later the introduction of a light, durable, chilled plow gave the art of plowing a remarkable impetus. The tough sod and the difficult soils of the West created a field for the rapid introduction of the steel plow which is so widely used in that section today.

The plow now used in Egypt is an exact counterpart of that used 5,000 years ago. A similar plow is still used in South America. A wooden plow drawn by oxen is used by the Mexican native. The plow with an iron point and wooden mold board, superseded one made wholly of wood. We still have parts of the first steel plow made by John Deere in 1837, the steel being cut from an old circular saw. A steel plow with removable share was the next step. The general purpose steel plow with a rather steep mold board, designed for use in both tame sod and old land in the Middle West is one final stage. The steel used has a soft layer between two very hard surfaces, the plow thus being capable of a high land polish, yet very durable in resisting wear and strains. A sod breaking plow, with long, gently curving mold board for inverting the furrow slice, without pulverising, is another. The same plow sometimes has rods substituted for the steel mold board, a much cheaper construction. The modern walking plow consists essentially of share, mold board, land side, beam, clevis and handles, with the possible addition of a coulter to aid in cutting sod ahead of the shin of the plow and a wheel for gauging the depth. Two acres is a fair day's work for a man, three horses and a general purpose plow.

About 1865 the plow was first successfully carried on wheels,

and called a sulky plow. Later a third wheel was added to counteract the weight of the soil on the moldboard. By substituting rolling for sliding friction the draft is probably slightly reduced, and owing to the rigidity of the carriage the plow is held in position to do better work than is done with the ordinary walking plow. The gang plow is simply a combination of two sulky plows, one driver controlling twice as many horses and accomplishing twice the acreage. The furrow slice turned by the breaking plow is smooth, in sharp contrast with the pulverized furrow left by the general purpose moldboard. Sod left in this condition decomposes more readily, hence is the sooner fit for seeding. There are sections in the United States where for a considerable period of the year the ground is too hard and dry to permit of the use of moldboard plows, and others where hidden stones make the breakage of the latter a serious item of expense. The disc plow has better penetration and tends to roll over obstructions, hence is deservedly popular. Owing to the rotary motion of the disc the soil is pulverized, hence this plow is better adapted for old land than for breaking sod.

Contrasts are somewhat impressive. The darky "plowin' foh cotton, suh," with a slow-moving steer and a 10" plow is accomplishing about an acre per day. Three men, one water team, a steam plowing engine and steam lift plow have a capacity of twenty-five acres per day, which may be increased to forty with all conditions favorable. In the plow there are two gangs of from four to six bottoms which are lifted and dropped by means of steam cylinders under control of the operator. The plowman usually found with traction outfits is thus dispensed with. An engine rated at 30 h.p., nominal, will pull from 8 to 12 plows, depending on the nature and condition of the soil. Of the many types of harrows now available for preparing the seed bed the spike tooth and disc types are probably the most popular. The steel harrow in from one to four or more five foot sections stirs the soil by means of steel teeth projecting from parallel bars. The teeth may be set by means of levers so as to do a greater or less amount of work as desired. In the last few years the harrow cart has come into general use, saving the driver fifteen to twenty miles walk per day. The disc harrow lifts and turns the soil like the disc plow, insuring excellent pulverization.

The intertillage of corn distinguishes it from the hay and cereal crops, and all machines used in its culture shape themselves with reference to the system of cultivation in use. The universal practice has been to plant corn in rows to facilitate cultivation. By planting hills of corn the same distance apart each way it is possible to culti-

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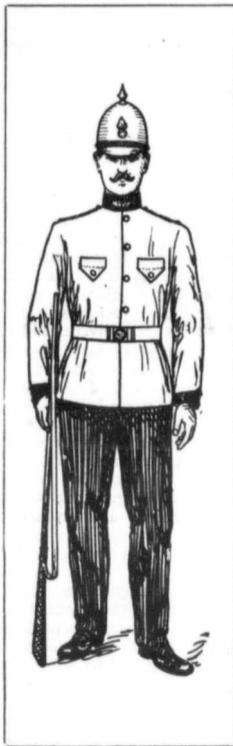
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ATTENTION!

AN ENGINE GANG

Built especially for Western Canada, thoroughly tested and proven perfect under Western Conditions, and having new and exclusive features, is now offered by

MASSEY-HARRIS COMPANY, LIMITED

THIS NEW PLOW is a member of the line to which belonged the plows which were unanimously judged to have done **THE BEST PLOWING** at the 1910 Winnipeg Industrial Exhibition.

We had an opportunity to note wherein other Engine Gang Makers failed; we profited by their experiences and it is now our pleasure to be able to sell you such a plow as will make you feel well satisfied that you did not purchase elsewhere before seeing our **NEW MODEL**.

Call upon our Local Agent or write Winnipeg, Regina, Saskatoon, Calgary or Edmonton Offices for descriptive folder and further information.

vate both ways, with the practical elimination of hand labor.

A wire stretched across the field with buttons at the proper intervals trips the dropping mechanism on the latest two-row hill planter, which may also be used for drilling a continuous row. The shoe opens the furrow and the open wheel gathers the dirt over it. By accumulating the hill one grain at a time, and dropping the kernels close together with an automatic valve, it is possible to obtain the desired number of kernels in from 90 to 95 per cent. of the hills. The hills are compact and in rows convenient for cultivation in both directions. One man and team will plant twelve to fifteen acres per day in better shape than a man with a hoe can plant one.

Cultivation was formerly with the hoe. Now the two-horse cultivator tills completely one row at each trip through the field, and covers from four acres per day at the first cultivation, to six or seven acres at the last, when the plants are larger and less care is required to keep from destroying them. The three-horse cultivator tills two rows of corn at each trip, thereby doubling the effectiveness of a man by using an extra horse.

In cutting and shocking corn by hand a man's capacity is about one and one-half acres per day. The gain in capacity of two men by the use of one horse and a simple form of sled harvester formerly used, more than

equalled the work of a third man, and reduced the cost. The capacity of the present corn shocker is about the same as that of the sled harvester, but the second substitution of a horse in place of a man still further lessens the cost and reduces manual labor to a minimum. The present machine consists essentially of a pair of dividers for separating and lifting the stalks, reciprocating knives for cutting, a revolving table for assembling the shock, and a crane for lifting it to the ground when completed. A shock of one hundred hills can be finished in about five minutes, not over half the time being devoted to the actual work of cutting.

Shocking corn in this way requires considerable labor in subsequent handling, hence the desire for a machine for cutting corn and tying it in bundles. The present form of corn harvester and binder has been developed in the last twenty years. The principal features are a pair of dividers, chains with fingers for carrying the stalk to the rear in an upright position, the knife, and the packing and binding devices. The stalks are cut by a reciprocating knife which is driven by a pitman attached to a weighted fly-wheel. They are compressed to a bundle of given size by an automatic packing device, then tied with twine by a heavily built knoter like that on the modern grain harvester. The bundles are shocked in the field or carried

immediately to the ensilage cutter. Three horses and one man can cut and bind seven to eight acres per day, and two exceptionally good men can shock the bundles as fast as they are made. The whole cost, including overhead expenses, practically equals that of hand cutting and shocking.

Throughout the greater part of the Middle West, however, the vast acreage of corn yields more fodder than can possibly be utilized by the livestock now maintained. Consequently, the greater part of the crop in Illinois and Iowa is husked by hand from the standing stalk. There is usually a dearth of men for hand picking and the corn picker has now come to the farmer's relief. This machine engages the stalk in the same manner as the corn binder, after which the ears are snapped from the stalk by corrugated rollers. They are then conveyed to other rolls which remove the husks, and finally elevated into a wagon driven alongside. Three men, ten horses, two wagons, and the machine have a capacity of about six and one-half acres per day, as compared with five men, five wagons, and the same number of horses in hand picking. Calculating all overhead charges it is doubtful if the machine effects much saving over hand picking, but by eliminating a portion of the human labor it enables the farmer to cover a larger acreage with the same help. In both methods of pick-

ing from the standing stalk only a small percentage of the food value of the fodder is realized by pasturing cattle in the field. The advent of a machine to postpone the day when the whole of the corn plant will be utilized is a doubtful blessing to the nation, though it may enhance the present profits of the individual.

One of the exhausting chores in connection with the harvesting of corn is shoveling it from the wagon into a high granary or crib. The portable grain dump and elevator unloads a wagon in from five to eight minutes. The wagon is driven into position, the front wheels elevated, and the rear end gates removed. The grain then falls into a hopper and is elevated by an endless carrier, power being supplied by the team unhitched from the wagon, or, occasionally, by a gasoline engine.

The storage of ensilage presents a sharp contrast to the waste of feed in husking from the stalk and pasturing. In this method of harvesting, the entire stalk is cut with a corn binder just previous to maturity and immediately chopped into small pieces by a revolving ensilage cutter. The cut material is elevated into the air-tight silo and there packed solid. It is then ready to remain until needed as a substitute for pasture, either in winter or summer. The top portion of the food becomes spoiled by exposure to the air, but the remainder, being herme-

tically sealed, is kept in perfect condition and comes forth as a succulent and palatable food, especially valuable for dairy cattle.

Where corn is shocked in the field it may be fed whole, but the waste by this means is considerable, and it entails considerable labor and inconvenience in handling, especially in winter. The husker and shredder is designed to handle corn which has thus been cured. It husks the ears by means of corrugated rolls and elevates them into the wagon, saving all the corn which may be shelled in the process. The stalks, leaves and husks are torn into shreds, and then blown to the place of storage by powerful fans. There is less to be said in favor of this method than for the ensilage system, but it does provide the farmer with a fair substitute for hay and saves the labor of husking.

Reference has already been made to the hand shelling of corn at the rate of six bushels per day. The power shellers now used have a capacity of from one hundred to eight hundred bushels per day. The cobs are carried to a pile and the shelled corn delivered into sacks or wagons. The fuel value of the cobs pays the cost of shelling.

There are still sections of the country where much of this corn machinery might profitably be introduced. The cost of a typical Southern negro's field equipment for raising corn and cotton is about thirty dollars, as compared with about \$150 for that in an average Iowa corn field, and the expenditure of human labor is about in the opposite ratio.

The retention of practically three-fourths of the corn crop in the neighborhood where grown, and its appearance on the market in the shape of beef, mutton and pork, account for its apparent unimportance in the world's markets. However, last year the corn crop equalled in value the combined wheat, oats, and cotton crops. Had the saving by the most economical machine methods over the former cost of production by hand been applied to every acre of this crop, the total would be greater than the value of any other crop raised last year in the United States. The machines just shown have made possible an enormous annual addition to the country's wealth. However, the absence of the spectacular in corn culture will probably explain the failure of a certain school of magazine writers to extend to the inventors of corn machines such recognition as has been accorded to the men

who have perfected reaping machinery.

The hay crop also excites little comment outside of restricted circles, yet inventors and makers of agricultural machinery have not been slow in devising ways and means of handling the crop's immense bulk. Grass seeding machinery is of little importance and the development has been chiefly in hay making machinery. Hand methods still prevail in some sections, but the mower is now practically the universal means of cutting the hay crop. This is a modification of the early reaping machines with such factors eliminated as are not necessary for cutting the grass. Power is derived from the drive wheels and transmitted through bevel gears, fly-wheel and pitman, to a reciprocating knife. The ordinary swath is five to seven feet in width and the machine has a daily capacity of from eight to twenty acres.

The mower leaves the grass in a rather flat swath, which is further packed by the passage of the team on the next round. After

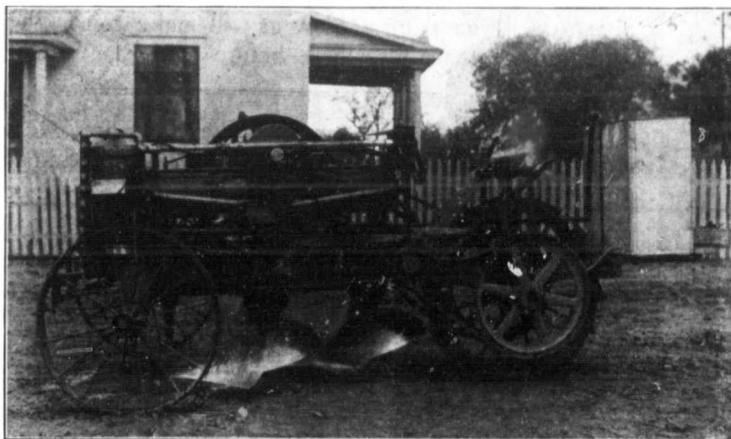
later form the hay is elevated by a pair of revolving cylinders and dropped upon a reversible endless apron moving at right angles to the line of draft. This deposits the hay in a loose continuous windrow. The motion is said to be less violent, and there is consequently less danger of shaking off the leaves of clover and alfalfa, which are of very high feeding value.

Wagons are generally used for hauling the hay any considerable distance to the barn or stack. The labor of pitching is heavy and the building of a high load often impracticable. It is now possible by the use of a side delivery hay rake and a hay loader to avoid the work of pitching. In one type of loader the hay is picked from the windrow by a cylinder, as in the reversible side-delivery rake, and elevated by slats attached to an endless belt. In another type both raking and elevating are done by forks operating much like those of the hay tedder. At the barn a hoisting fork and a traveling carrier, operated by horse power, practically elimin-

ating the mow or stack weighs from four to five pounds. The baling press increases the density to from sixteen to thirty pounds per cubic foot. A two-horse baling press has a capacity of about eighteen tons per day, while power presses are built with a capacity from two to five times as great. The outfits may be used for baling straw or any similar product.

Wheat raising has always been a powerful factor in encouraging the development of agricultural machinery. Other small grain crops use with little or no modification the machinery used in sowing and harvesting wheat, but I think it can safely be said that most grain machinery was first tried out in the wheat field. The drill is the standard seeding machine in the grain belt east of the Rocky Mountains. In the course of a day, with the average six or eight-foot machine, fifteen to twenty acres may be sowed in rows six to eight inches apart, and covered to a uniform depth with soil. The saving in seed by its use is considerable and the yield with accurate and uniform planting is often from ten to fifteen per cent. higher than with broadcast seeding. The grain is placed in a hopper from which it is taken by a force feed device and conducted by flexible spouts to the ground. Most late types now use a single disc to open each seed furrow, a chain or press wheel then covering the seed with dirt.

Our department published some years ago a Bulletin on the evolution of reaping machines in which the author traces the steps from the crudest form of sickle to the present harvester and binder. According to this authority it was not until the latter part of the eighteenth century that any considerable number of inventors began to exert their skill in the effort to produce a practical reaper. Only a few of the many ideas advanced have been retained. The first permanent feature was that of placing the horses at the side of the swath. Two years later, in 1908, a reciprocating knife superseded the revolving cutter. In 1822 the receiving platform and a reel were added, also a seat for the driver. Four years afterward instead of dropping the grain behind the cutter bar, a machine carried it to one side by means of an endless belt. Dividers on the same machine separated the grain to be cut and guided it toward the cutting mechanism. It was not until after 1830 that Hussey and McCormick in America put forth really practical reaping machines. Both combined and improved upon the successful devices already developed.



A Home Made Motor Plow.

a rain, or to assist in curing a heavy crop, it is sometimes advisable to stir the hay and leave it in a loose condition so that sun and air may have free access. The hay tedder, which accomplishes this, belongs to a class of machines which are useful only once in a while and are then indispensable. A revolving crank gives an awkward, kicking motion to the forks, securing the desired object.

In place of the hand rake the standard has come to be the steel self-dump rake. Curved floating fingers gather the hay from the swath. At the will of the operator they are lifted by means of a hook which engages a ratchet in the hub of the wheel, leaving the windrow at a right angle to the line of draft.

In the earlier form of side delivery rake a revolving cylinder with flexible fingers is placed at an angle of forty-five degrees with the line of draft. This rolls the hay to one side in a continuous windrow, but leaves it in a somewhat twisted condition. In a

ate hand labor in elevating the hay and distributing it over the mow floor.

In the West, and particularly where successive crops of alfalfa give a yield of four or five tons of hay per year, the cost of building material is high enough to discourage the idea of putting all hay under cover. The labor of stacking in the fields is economized by the sweep rake and the hay stacker. The rake picks up several hundred pounds of hay and carries it to the stacker. In the overshot stacker the teeth carrying the load are drawn up and over, and the load thrown directly upon the stack, the work being done by a horse or team with suitable rope and pulleys.

For shipment, hay is usually put through the baling press. It is placed loose in the compressing box, through which a plunger operates driving the hay towards one end until a bale of sufficient length is formed. It is then tied with wire. The power for compression is supplied by horses or an engine. A cubic foot of hay

THE

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OF

THE TRACTOR versus THE HORSE

HAS BEEN SETTLED THROUGH THE

IDEAL Gasoline Tractor

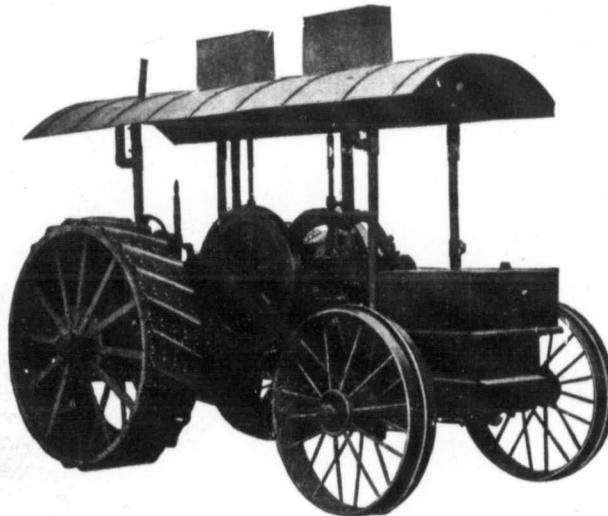
It is no longer a matter over which the farmer need ponder. It is simply to buy an "IDEAL" and get your land plowed on time and at far less cost than it can be done with horses. The "IDEAL" is just the engine you have been looking for. It has more real farm power features than any other gasoline traction engine on the market to-day. We have only room to mention a few.

DOUBLE OPPOSED CYLINDERS—Making a perfectly balanced engine.

WAVE CLEAT DRIVE WHEELS—Acknowledged to be the best in sticky or muddy soils.

AUTOMOBILE STEERING DEVICE—Doing away with steer chains and making steering almost automatic.

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POWER TRANSMITTED THROUGH CONE CLUTCHES—One lever controls all speeds and reverse.

LARGER FUEL CAPACITY—Fuel tank holds sufficient for a day's run.

Built in 28 h.p.—20 nominal and 45 h.p.—30 nominal. Write for our special catalog on gasoline engines. We also manufacture "IDEAL" stationary gasoline engines in sizes from 1½ to 50 h.p.; steel windmills, steel towers, grain grinders, pumps, water works outfits, and "Ideal" concrete mixers.

GOULD, SHAPLEY & MUIR CO. LIMITED

Factory : BRANTFORD, Ont.

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McCormick's machine had the reciprocating knife, divider, reel and platform. A man walked at one side to take off the grain, which was, of course, bound by hand. In 1851 an automatic rake was added, saving one man's labor. The machine then resembled somewhat the modern self-rake reaper, which cuts the grain and rakes it through a quarter circle to the side and rear, leaving it in bunches convenient for binding. Up to this point the grain had not been bound on the machine. In 1858 the Marsh Brothers brought out a harvester which, by means of canvas conveyors, elevated the grain up over the drive wheel into a receiving

box. From there it was taken and bound by hand by two men who rode on the machine. One more important step remained—that of substituting a binding attachment for these two men. The harvester and binder of to-day is practically the Marsh harvester with a mechanism for regulating the size of the sheaves, compressing them, and tying them with twine. It is said to equal the work of forty men with sickles.

In the knotting mechanism of the modern grain binder the twine, held by a steel disc, lies under the bundle as it is formed. The packers, moving alternately, compress the straw. When the bundle reaches a certain size the

pressure on the compressor spring starts the binding mechanism. A needle brings the twine up and over the sheaf to the cord holding disc, completing the circuit. The knotter hook, operated by a cam, turns to the right, making a loop of the twine, the jaws opening at the same time to grasp the two strands. A knife then moves forward to sever the twine. As the discharge arms kick the bundle off the binder deck, the loop of twine is pulled off the knotter hook, the jaws holding to the end long enough to pull them through the loop and draw the knot tight. The ball and roller bearings used to reduce friction on the main axle are

shown, also the cutter bar of a mower which contains the essential features used on all cutting machines to-day. A serrated knife is driven back and forth through slots in the guard fingers, which act as dividers for the sections of the knife.

The bundle carrier accumulates several bundles and delivers them at the will of the operator. By depositing them opposite those dropped on the preceding round it saves a mile of walking to the acre in shocking after a six-foot binder. Now a shocking attachment with one attendant may take the place of the bundle carrier and eliminate all walking,

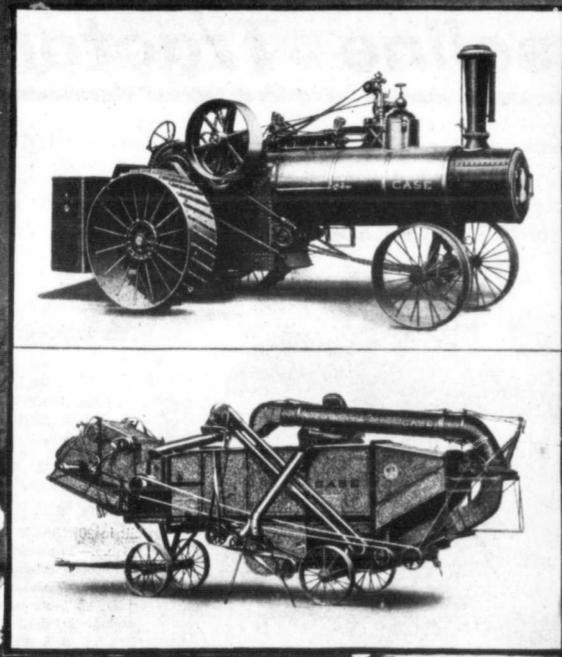
Continued on page 826

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Course in Gas Engineering

Conducted by D. O. BARRETT.

This is a new series of lessons that will continue for two years. These will consist of a number of practical talks on the theory and practice of the gas, gasoline and oil engine. They will be simple, illustrated where necessary, and of such a nature that the gas engine owner may easily adapt them to his daily engine work.

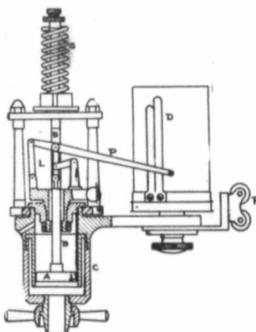
LESSON II.

Power, Rating, Etc.

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

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

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



'A' is the piston which moves freely in the cylinder 'C.' The cylinder is in two parts, a small space being left between the two forming a jacket. The hot gases being around and in the inner barrel keep it at an even temperature, insuring practically the same expansion as that of the piston, preventing it from binding at any time. The piston in this particular make of indicator is not straight along the sides but is in the form of a section of a sphere. This insures a line contact be-

tween the piston and the cylinder and is claimed to reduce the friction between the same. A small groove is turned around the centre of the piston and this becoming filled with oil makes a gas-tight joint and allows perfect freedom of the piston in a vertical direction.

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

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

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

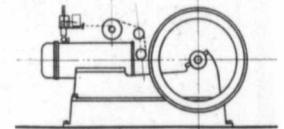
That part of the body carrying the pencil arm and the linkage is allowed to rotate about the rod so that the pencil point may be brought against the paper on the drum at will. The movement against the drum is adjusted by a stop screw so that great friction will not be produced by the pencil point. The drum 'D' rotates back and forth by means of a cord passing around the lower part and connected by means of a reducing motion to the piston of the engine. The reducing motion consists essentially of two pulleys, one large and one small one. A cord passes from the

piston over the large one while the cord from the drum passes over the smaller. This produces the motion of the piston on a smaller scale. The peripheral movement of the drum which is, of course, the length of the indicator card and which corresponds to the length of the stroke of the piston is usually made from three to four inches, depending somewhat on the speed at which the engine is operating. This movement is adjusted by means of the two pulleys in the reducing motion. Inside the drum is a spiral spring which tends to retard the movement of the drum and always returns it to the original position when the cord running to the moving parts of the engine would loosen, due to the return motion of these parts. In the reducing motion is another spring performing the same functions.

In using the indicator it is placed upon the special cock in connection with the combustion chamber of the engine. The drawing shows the position of the indicator and reducing motion on the engine. The cord is run from the indicator drum over the small guide pulleys to the small wheel on the reducing motion. Then from the larger wheel of the reducing motion another cord runs over two other pulleys and runs back into the cylinder of the engine, attaching to some part of the piston usually, a convenient place being to fasten to the set-screws holding the piston pin. One special precaution is necessary in setting up in this manner, and that is, to have the cord running from the piston to the first pulley to be exactly parallel to the movement of the piston. If this is not done the indicator card obtained will not be reliable and will not represent the true conditions in the cylinder. Beyond the first pulley the cord may run in any direction. Special indicator cord must be used for this purpose as the action of the piston toward stretching the cord is quite severe. With all reducing motion several sizes of pulleys may be used so that it is possible to get the correct length of card regardless of the stroke of the engine. The length of card usually obtained is from two and one-half to four inches. On the slow speed engines the longer cards are obtained but when the speed of the engine is increased the inertia of the moving parts is so great that accurate results cannot be obtained and so the length of the card is decreased. There are numerous other ways of connecting the cords and reducing motion, but that given above is one of the simplest. A convenient method of holding the pulleys and reducing motion is on rods

attached to the cylinder bolts or studs.

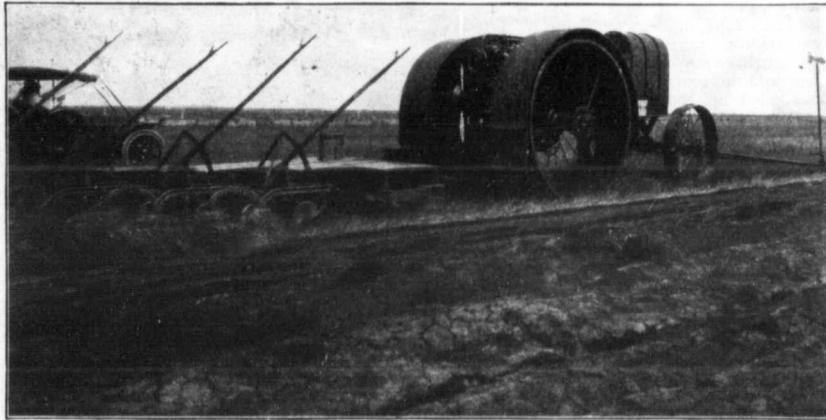
The springs which are used in the indicators are graduated at the factory and each has a definite scale, which value is marked upon it. For instance, a spring is marked '200 G,' this means that in the gas engine indicator in which it is to be used, if 200 pounds pressure per square inch be allowed to act upon the piston the end of the pencil arm would be raised one inch. Now, the piston of this particular indicator has an area of one-half a square inch while the same type of indicator manufactured for steam engine work has an area of one square inch. The ordinary steam engine indicator has a piston with an area of only one-half square inch with an auxiliary piston for gas engine work of one-quarter square inch. However, there are some advantages with the larger piston. If the above mentioned spring were to be used in the steam engine type its scale would be halved or 100 pounds per square inch pressure would then raise the pencil arm one inch, since the area of the piston is twice as great. Sometimes the springs are marked with the two scales, but as they are usually used only in the one indicator this is unnecessary. In using any spring it is very important to be sure and know what the scale is, as otherwise the results would be worthless for some purposes. In order to determine the actual pressure at any time from the indicator card, knowing the scale of the spring it is only necessary to measure the height in inches and fractions thereof and multiply by the scale of the spring. However, to do away with the troublesome multiplication, scales are furnished with each spring. These scales are graduated in the same number of parts per inch as the scale of the spring, except for the larger numbers and then in half the number of parts. The values may thus be read directly.



The method as outlined above has been for the obtaining of the complete indicator card. Where it is desired to obtain merely the compression pressure or the maximum explosion pressure the reducing motion is dispensed with and only the indicator used. To obtain only the compression pressure the ignition switch may be thrown out and the cock on the indicator then opened and the

Continued on page 44

We Want Every Farmer in Western Canada to Know The Gas Traction Engine



If You Know The Gas Traction Engine, If You Know What It Will Do and How It Does Things, You Will Buy The Gas Traction Engine

We can't too often tell the men of Western Canada about our "Golden Rule Guarantee." A man wants a square deal. We are here to give it to you. Could you ask for anything fairer than the following proposition?—You test it thoroughly on your own farm before you pay for our Engine, and we guarantee:

1. The absolute accuracy and labor-saving ability of the self-steering device.
2. The fuel consumed in plowing an acre of ground.
3. The number of breaker and stubble plows the engine will pull.
4. The size of separator it will continuously and steadily drive.
5. The material and workmanship for one year from date of engine's acceptance.

Don't be satisfied with less when you buy. You get a sure, dependable, workable, economical, all-round farm power when you buy a Gas Traction Engine.

Send to-day for a new publication "A book of Gas Traction Engines." So great has been the demand for "The Passing of the Horse" that every copy has been given out. Our new book is even more attractive and interesting.

Tells all about Gas Traction Engines. Magnificently illustrated. It is free. Send for it.

Our New Book is Out.

It is FREE to YOU.

Read What It Tells About The Gas Traction Engine

This book deals with:

- The Gas Traction Engine, Past and Present.
- Gas Traction Plowing and Breaking.
- Steam Traction Plowing and Breaking.
- Gas Traction Threshing.
- Steam Threshing.
- Gas Traction Discing, Drilling and Harrowing.
- Horseless Harvesting.
- Horse Traction.
- The Manufacturing Plant.
- Construction.
- Specifications.
- What Others Say of us.
- What Users Say of the Hannsman Binder Hitch.

The Gas Traction Company, Winnipeg, Man.

Read What Users Say

MAGNUS WILSON, Gladstone, says:—

"Engine has given me entire satisfaction. We pulled an 8-bottom Cockshutt Engine gang plow, and a set of harrows as well. We plow and harrow at the rate of two acres per hour. in heavy gumbo land. I consider your engine the best plowing engine made as it does not injure the land the same as the small - wheeled, heavy engines do."



S. E. HAW, Springstein, says:—

"Last year it plowed 700 acres. This season in summer fallow and fall plowing it has turned over 1000 acres, hauling eight 14-inch plows, and using not more than 1½ gallons per acre."



WM. D. MANSELL, Hanley, Sask., says:—

"We first seeded 1000 acres with it, pulling four seeders and harrows behind. We can plow as high as 25 acres stubble in 14 hours. We have used about 1½ gallons of gasoline per acre plowed."



THOS. JACKSON & SON, Winnipeg, say:—

"The following will give you an idea of the amount of ground covered this season with the Gas Traction:
 350 acres broke and disced four times.
 280 acres stubble plowed and harrowed twice.
 120 acres disced four times."

FREE! Send To-day For "A Book About Gas Traction Engines"

Name _____
 Address _____

Canadian Thresherman and Farmer.

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.)

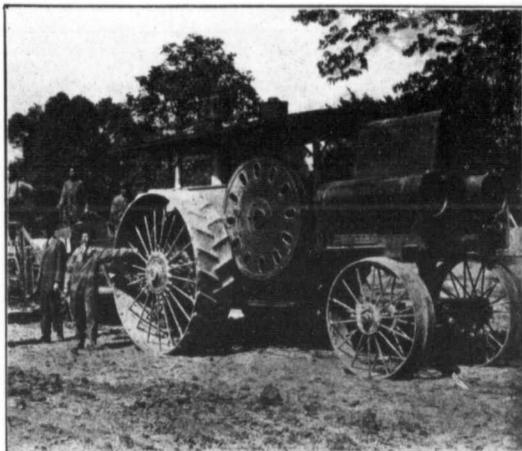
Every year the gas traction engine in so far as the farmer is concerned is assuming more and more importance. Not over three years ago farmers viewed such a machine with more or less distrust and it was only the more venturesome who took it upon themselves to purchase. The number of machines on the market at that time could really be counted on the fingers of one hand, while to-day there are over forty gas tractors either on the market or in the course of construction. In Western Canada alone there will be in operation in 1911 almost one thousand machines of the various sizes and types and when we consider the fact that there are only about six thousand steam engines at work in Western Canada we can form some opinion of the marvelous growth of this business.

The gas tractor was the idea of the inventor. The farmer scarcely thought of applying the internal combustion engine to traction power, but just as soon as a few machines were placed in operation and their possibilities were shown to the farmer, he became more than eager to buy and the only reason that more gas tractors are not at work upon the farms of Western Canada is because of the fact that the manufacturers could not turn them out in sufficient quantity to meet the demand.

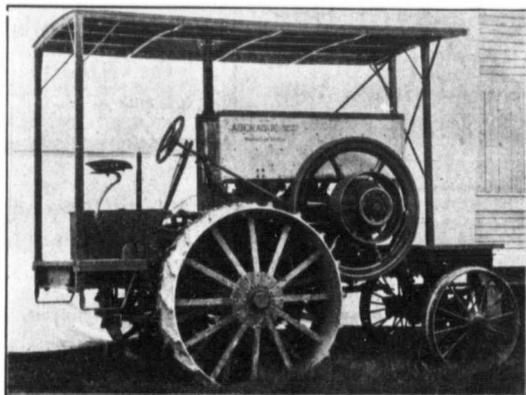
From the above statements it might seem that the gas tractor is a panacea for all of the farm power troubles that the farmer has to contend with, but this is by no means true. The gas tractor has been purchased for two reasons: first, because the possibilities were great, and second because it was a comparatively new thing, and human nature is so constituted that new things are always eagerly snapped up. This large sale of tractors does

not mean by any means that the gas tractor owner has not had his troubles, for he has. Like anything new, the gas tractors, as they have been put out, have not always been perfect and in some cases trouble has piled up enormously. Yet the farmer has had faith enough in the proposition to hold on, lending encouragement to the manufacturer, with the result that each year brings us nearer and nearer to a state of perfection where we will have machines that will cause no more trouble than can reasonably be expected.

In this Western country one of the large problems with which the farmer has to contend is labor. There is land in abundance; in fact less than 8 per cent. of the arable land in Western Canada is under cultivation. The remaining 92 per cent., if properly tilled in an average year, will produce anywhere from eighteen



The Ohio Tractor, manufactured by the Ohio Manufacturing Co., Mariin, Ohio.



The Abenague Gas Tractor, manufactured by the Abenague Machine Works, Westminister Station, Wis.

to thirty bushels of wheat or oats to the acre and with wheat at \$1 per bushel, it is a very tempting thing to the farmer to turn over

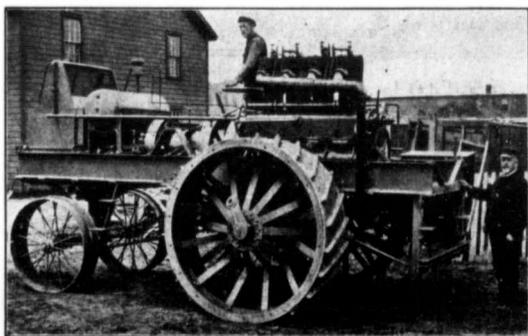
soil. The gas tractor comes to him as a labor saver. On account of the fact that its fuel is so compact and added to this the fact that little or no water is required in its operation the amount of help necessary to run such an engine is reduced to a minimum. For practically all purposes, the average farmer has sufficient help around his own farm to operate the gas tractor. It is furthermore a very flexible power. The light weight of the machine enables it to travel where the steam tractor cannot go. It can be operated on the plowed land without seriously packing the soil and at the same time the weight is not so great but what it can handle itself and not mire it. Thus, for discing, seeding and harrowing, it can be made to work where the

steam tractor cannot handle itself successfully.

The advent of a suitable binder hitch within the past year or two has furthermore enabled the farmer with a large amount of grain to harvest to attach three, four and five binders behind his gas tractor and operate them successfully without any danger from fire. Five years ago the drawing of binders by mechanical power was almost an unthought of thing, let alone being heard of; while in 1910 in Western Canada a great many such outfits went through the season successfully.

When it comes to threshing, the average gas tractor to-day will drive a reasonable sized separator very successfully and a great many farmers use their engines for hauling the crop to market. Some of the engines on the market to-day are oil cooled which permits of their being operated in the winter time quite successfully for such purposes as the sawing of wood, grinding of feed, running of elevators, etc.

It can thus be seen that taking it as a whole the gas tractor is a very flexible farm power and can be applied to a multitude of uses. This flexibility means much to Western Canada. With a large amount of land yet to be tilled and with the increase in the wealth of the country depending upon the rapidity and thoroughness with which that land can be tilled, the gas tractor comes as a very important factor in the country's development. Made in a variety of sizes to suit every farmer from the largest to the smallest, and with a prairie country that is admirably suited to



The Morris Gas Tractor manufactured by George W. Morris, Racine, Wis.

AN UP-TO-DATE PLOWING AND GENERAL FARM ENGINE

THE FLOUR CITY TRACTOR

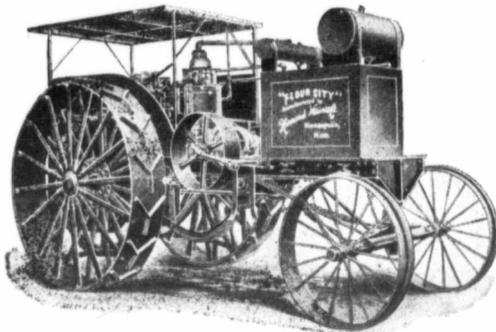
Osage, Sask., Can., July 7, 1910.
Kinnard-Haines Co.,
Minneapolis, Minn.

Gentlemen:—

In reply to your request as to how I like the 30 h.p. "Flour City" engine I purchased from you last March, would say that I am more than pleased with the way it is working. I have had no trouble in the least, except a few adjustments which your expert made for me, and must also thank you for the courteous treatment paid me by him.

At present I am pulling six plows in dry, heavy breaking, and using two gallons of gasoline per acre. My repairs so far have cost me 55 cents. This spring I double disked 50 acres per day at a cost of 10 cents per acre.

Yours truly,
B. A. BUXTON.



Guernsey, Sask., June 9, 1910
Kinnard-Haines Co.,
Minneapolis, Minn.

Gentlemen:—

In reply to your inquiry as to how I am satisfied with the "Flour City" four cylinder engine, which I purchased from your agent, Mr. S. B. Biehn, this spring, I must say that I am perfectly satisfied with it in every way. I have plowed 400 acres with it already and have not had a breakdown of any kind.

Yours truly,
(Signed) JAMES G. HENERY.

The "Flour City" was awarded the highest prize in the two Contests held at Winnipeg in 1908 and 1909 in competition with the leading manufacturers of Gasoline Tractors in two Continents

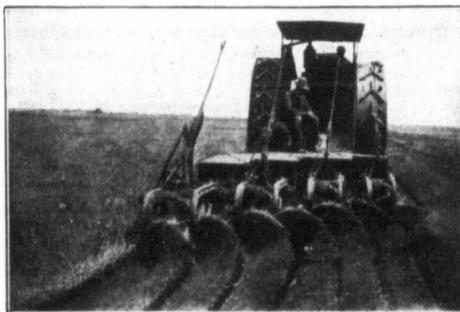
THE "FLOUR CITY" is a four Cylinder, four Cycle engine of the most Modern Design and Construction.

The Winning of the Gold Medal two years in succession puts it in the lead.

It has now passed through its Fourth year of strenuous work in the field, and has demonstrated in the hands of hundreds of farmers that it has made "Made Good" its Gold Medals.

Multiple Cylinder engines admit of light construction.

Large Diameter drive wheels insure greater tractive power.



Thus producing an engine of Maximum power and Minimum weight.

It is 5000 pounds lighter than the average tractor of same horsepower.

Consequently can propel itself at a less expense for fuel.

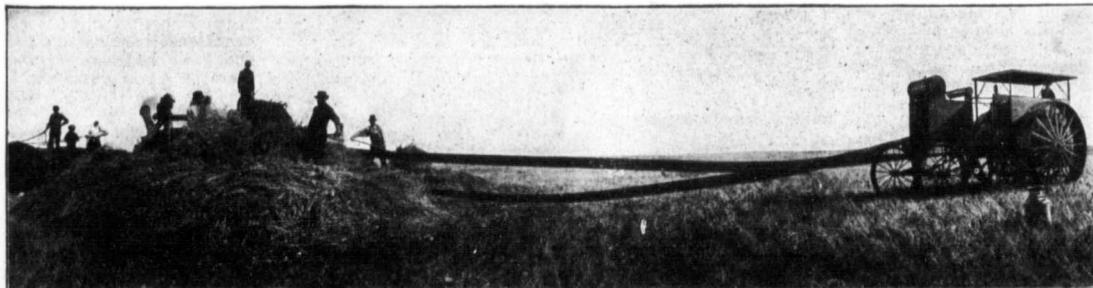
It will not pack the ground so hard when working in the field.

It will pass over low or sloughy places where others dare not venture.

Our 30 H.P. is a popular size for medium farms.

Our 40 H.P. is a more desirable size for farming on a large scale.

If you are going to buy a Tractor for plowing, look up the "Flour City"
It contains more good points than all other tractors combined.



FOR CATALOG AND OTHER INFORMATION WRITE

KINNARD-HAINES CO., 828 44th AVENUE, N.
MINNEAPOLIS, MINN.

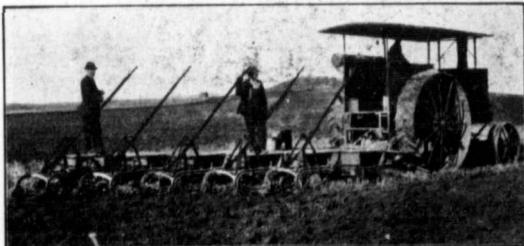
or The Ontario Wind Engine & Pump Co., Dominion Sales Agents, Winnipeg and Toronto

traction cultivation, there is bound to be a very large demand for such machines.

Two or three years ago it was a comparatively easy matter for the farmer to select his gas tractor as there were only two or three machines on the market and the matter of investigation was a very simple one. To-day, however, that has very materially changed and new machines are being constantly put upon the market, so that the farmer in buying a gas tractor faces a rather difficult problem. Machines are made to-day in all sizes and types. We have single cylinder machines, both "Opposed and Twin," three cylinder machines and four cylinder machines and some have even been constructed with six cylinders. There are machines with horizontal engines and there are machines with vertical engines and there are machines with engines set at other angles. We have high wheeled machines and low wheeled machines. We have chain drive machines and gear type machines. We have machines constructed with bevel gears for transmission purposes and others constructed without bevel gears. We have kerosene engines; we have gasoline engines, and we have distillate engines and we have naphtha engines. We have two-cycle engines and four-cycle engines and we believe there is a machine on the market that claims to be of the one-cycle type. We have high speed engines; we have slow speed engines and we have medium speed engines.

Now with all these things before you, unless you are an engineer you can readily see that the selection of a gas tractor is by no means an easy proposition. The farmer who decides to buy a gas tractor and invest anywhere from two to four thousand dollars in it, naturally wants the best that his money will buy. A great many of the engines on the market to-day have not been there sufficiently long for a perfect try-out; consequently the farmer has had very little past experience of such engines to go on.

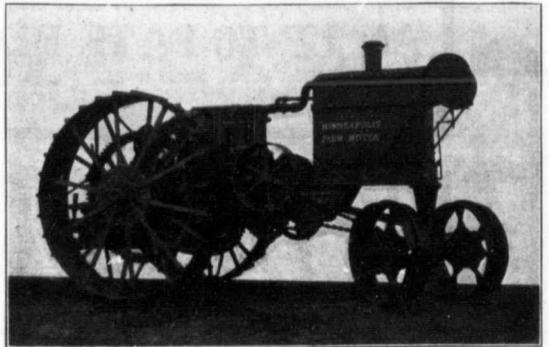
The gas tractor is a new thing, and gas engineering is a subject that the farmer has not had much opportunity to study. There are many little points and difficulties that arise, none of which need cause any trouble to the one who is familiar with the construction of the gas engine. The steam engine has been on the market so long that its theory and construction is pretty well known.



The Aultman-Taylor Gas Tractor, manufactured by the Aultman-Taylor Machine Works, Mansfield, Ohio.

There has also been a prevailing idea among many farmers and among the public at large that the man who purchases a gas traction engine can dispense with the services of an engineer. It is unfortunate that such an opinion has gained prevalence and a great many of the difficulties that have been met with by the man who has purchased a gas engine has been due to a lack of knowledge of his machine.

The Canadian Thresherman and Farmer receives letters every little while from farmers throughout Western Canada who have operated gas engines and who have had more or less trouble. One such letter illustrates our point. The writer of this letter says: "Last fall we bought a — Gas Tractor. We have used it for plowing, breaking and threshing. In the start we had no man



Minneapolis Farm Motor, manufactured by the Minneapolis Threshing Machine Co., Minneapolis, Minn.

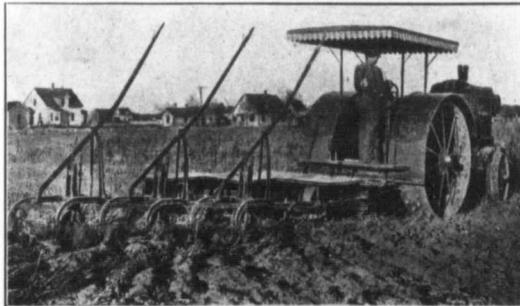
how to operate it. Of course the new gear fits close and would heat some the first few days, but after it got so it was running

pile up an endless amount of trouble for the man to whom it is a stranger. It makes no difference whether it is a Make and Break system or a Jump Spark system of ignition, both have to be watched very carefully. Become thoroughly acquainted with the path of the electrical current and also just what it is supposed to perform and you will find that you can, a great many times, get at the seat of trouble quickly.

Then there is the matter of overloading the engine. Any machine will only do a certain amount of work and the man who buys one and attempts to overload it will pay the penalty and pay it dearly in a broken engine.

As we have stated before it is rather a difficult undertaking for the inexperienced to make a selection of a gas traction engine. Owing to the rapidly increasing number, the competition is so strong that the manufacturers cannot afford to slight their engines in the least and expect to get the business. It is not so difficult to select a tractor for durability as it is to select one that will suit the natural conditions of the country. To sum up in a simple and practical way, it must have the required amount of power and be economical and durable as well as simple in construction. It must, of course, draw a load that will be continuously profitable while at work, without a big expense to the owner as to fuel and repairs. It must by no means be complicated to an extent that the farmer with a reasonable amount of study cannot grasp the technical points and care for his engine as he would the harvester, threshing machine, etc.

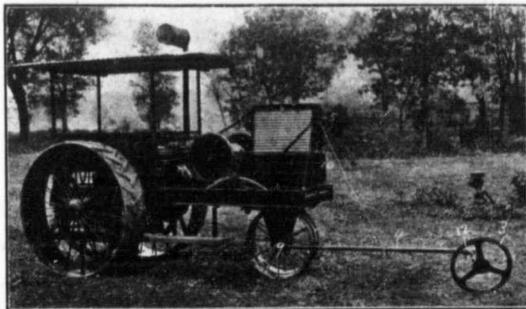
A fundamental point of the farm tractor is the traction wheel and it should be considered first of all. The wheel should be wide enough to support the weight of the engine on soft ground without, however, having a tendency to pack the ground excessively. The height of the wheel should be considered as well as the width. The wheel must be supplied with lugs situated in such a manner that they will grip the soil and not have a tendency to clog. The loose, sandy loam will require a wheel of greater ground surface than will the more compact black soil. There are a number of farm



The Adams-Farnham Gas Tractor, manufactured by the Adams-Farnham Company, Minneapolis, Minn.

that knew anything about operating it and of course had abundance of trouble with it. This summer our engineer took the transmission gear and went to

quite well we had no more trouble. In summing up the whole matter, will say that there may be gas engines that can be run successfully by inexperienced



Golden West Gas Tractor, manufactured by the Muscatine Motor Company, Muscatine, Iowa.

the shops where the engine was made and spent two weeks carefully studying the making and adjusting of the engine. We had it in A I shape this fall and knew

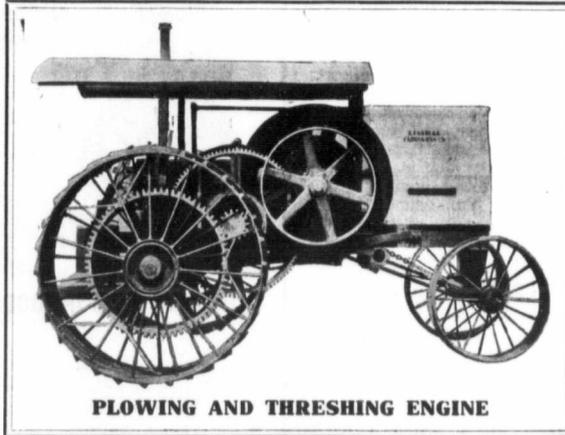
men, but don't bank on it. If I were buying a gas tractor to-day I don't know what make I should choose, but I am sure that if it were at all possible I would spend at least a month at the factory where it is made and become thoroughly acquainted with the engine. I feel that this is the only sure way that trouble may be avoided."

One of the chief sources of trouble with a gas traction engine is the ignition. Ignition depends on electricity and electricity is a thing that is almost foreign to the average farmer. The electrical current is not a difficult thing to handle when once you know it, but it is a very elusive thing and bids fair to

FAIRBANKS-MORSE TRACTOR

We are glad to announce that our Gasoline Tractor is now ready for distribution to those desiring a **Reliable Plowing and Threshing Engine. This is a Tried and Tested Engine** and will uphold the reputation for **Reliability** held by our Portable and Stationary Engines.

MANY
EXCLUSIVE
PATENTED
FEATURES
OF
DESIGN



PLOWING AND THRESHING ENGINE

Slow Engine Speed
Ensuring Long Life and
A Paying Investment
Heavy Frame and
Truck
All Gears
Heavy Cast Steel
Battery and Magneto
Ignition

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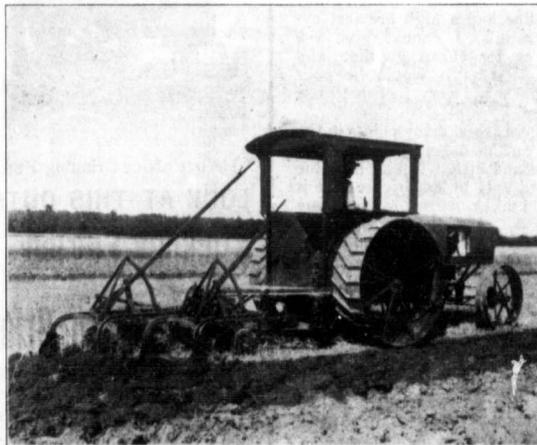
tractors on the market at the present time that will rival the horse as to the distribution of weight and bearing surface.

In reference to size. If the engine is to be employed for plowing alone where the work is abundant, the largest engines have proven most economical, simply because the expense can be compared to the acreage plowed. The smaller engines have the advantage not found in the larger engines—they may be applied to a number of jobs that are entirely profitable to the farmer, such as running the threshing machine, hauling the products to market, seeding, etc.. In fact they are serviceable the year round.

In studying the gas engine the theory on which it runs must be taken more into consideration than in the case of the steam engine. It, of course, derives its power from the burning of the gas, this gas in the main being a mixture of gasoline, kerosene or other fuel oil and air. This mixture is introduced into the combustion chamber of the engine in proper quantities by being first passed through the carburetor or what might be a more simpler term mixture. The piston of the engine acts upon this mixture in such a way as to decrease its volume and in decreasing the volume a large amount of heat is generated. The mixture is compressed to such a state that it is almost explosive and it requires but the touch of the electric

spark or some other flame in order to explode it. It can thus be seen that in order to get the proper combination the end of the compression stroke of the engine and the point at which the electric spark is flashed from the points of the spark plug must be identical. This in the main is all

requires care and at least a reasonable amount of gas engine knowledge in order to operate it successfully. Some of the manufacturing concerns, realizing this, have put in schools of instruction for the sole benefit of their customers and the results have been very satisfactory.



The Universal Gas Tractor, manufactured by the Universal Manufacturing Company, Stillwater, Minn. there is to the gas engine, but the conditions which affect it are so numerous that thorough understanding of the theory must be had in order that the engine operator may cope with these conditions. Don't buy a gas traction engine in the belief that it will run itself, because it won't. It

The gas engine is something that any farmer need not be afraid of in so far as operating it is concerned, but at the same time he should be thoroughly aware of the fact that it requires knowledge and a reasonable amount of skill to operate it successfully.

Canada Cement Company Reduces Prices.

The price of Cement has been lowered. This announcement may come as a surprise to many—for, when Mergers merge, the opposite tendency is usually looked for, but this time the unexpected has happened.

About a year ago most of the largest cement interests joined hands and formed one company, known as The Canada Cement Company, Limited. It was immediately predicted, in many quarters, that prices would be advanced, that on account of the big Merger the consumer would have to pay dear for his cement in future. The promoters of the Company, on the other hand, stoutly contested this theory, pointing out that owing to reduction of expenses and increased efficiency, they hoped to be able to give even cheaper cement than ever before.

The first move on the part of the Cement Company was to regulate the price of its product, and it was an agreeable surprise to everyone when it was learned that in making the adjustment prices were not unduly advanced. That was last year.

On the 1st of November, this year, a circular was sent out by the Canada Cement Company, further reducing the price of its product throughout the entire Dominion on an average of about 10c. per barrel.

This reduction means a whole lot.

Gas Engine Experience Department

UNDER this heading we shall publish regularly the experiences of our readers with gas engines, stationary, portable or traction, as a matter of mutual help. We want you to give us your experience. Tell us your troubles, no matter how small, and we shall be pleased to set you right. We have made arrangements whereby your questions will be referred to a staff of experts, and the answers to your questions can thus be relied upon. What we want principally is your experience with a gasoline engine. It is only in this way that we can build up this department making it mutually valuable to yourself, your neighbor, and to this magazine.

A Good One.

My experience with internal combustion engines is as follows:

First and foremost the gas engine must be designed and built for the purpose for which it is intended, the single cylinder for stationary work, the multiple cylinder for tractive, marine and automobile use. How many purchasers give this a thought before buying their engine?

It is contrary to the teaching of the best gas engineers of the day to take a single cylinder horizontal engine, mount it on traction wheels and gears and expect it to become a gas tractor. It is a tractor, but it is a heavy lunging monster absorbing 50 per cent. of its power to move itself, and totally unable to pick up its load easily and quickly because of the time it takes to complete the 4 cycles of its power stroke.

The single cylinder engine is very well suited for stationary work if it is anchored to a good concrete base so that the back thrust of the drive stroke cannot effect the power because the engine is solid on its base. Put this on wheels and however well you brace the wheels you will get a certain end play or swaying back and forth motion, which makes it just as impossible for the engine to deliver its full belt power as it is for a person to take a hammer, nail and piece of wood and try and drive the nail into the wood while holding it in the hand; but put the wood on a solid base and the nail can be driven, the same as the engine on a solid base will give more power.

Then again the two or four cylinder engine must be a smoother and more even running power. This is obvious, as the impulses are more frequent, giving great power on full load with less weight of engine to carry and hence a better power.

As to the fuel consumption. More fuss is made over this than is necessary. The fuel consumption depends almost wholly on the skill of the engineer and the temperature of the engine, the same as with the steam engine. A man should learn how much fuel to give his engine and should shut off the fuel a little when the engine becomes hot after working half an hour. I can make 500% profit on the cost of my gasoline by watching how the engine runs and when to check the fuel. A few pointers on this subject for those inexperienced are as follows:

1. Gasoline will turn to gas quicker when hot than when cold. Therefore when the water in the cooling jacket is cold on the start feed plenty (but not too much gasoline) and as it heats up gradually feed less and give the engine

more air through the mixer. It is cheaper to burn air than gasoline and you can do this if you try.

2. Remember that it does not matter if the water in the jacket boils, provided you use a high fire test cylinder oil and keep the piston and rings well lubricated. This is most important, and you will find that your fuel bill will be reduced to a minimum if you can keep a high temperature in the cylinder with gasoline well throttled and at the same time keep the piston in a thorough state of lubrication.

3. Remember that heat is power, cold is nil. Therefore, the more heat you can maintain the greater will be the power developed with a corresponding diminution of fuel to give that power, over that amount of fuel required when the engine is cold. Throttle the fuel inch by inch as the temperature of the cylinder rises, and at the same time increase slightly the oil supply to the piston. Below is an example.

Take a 12 h. p. engine. Temperature 60° F. Feed lubricating oil to cylinder 10 drops a minute and feed gasoline about 75% of full feed.

Temperature 120° F.—oil 15 drops a minute, gasoline 50% of full feed.

Temperature 180° F.—Oil 30 drops a minute, gasoline 30% of full feed.

Temperature 200° F.—Up to boiling point, oil 50 to 60 drops a minute, gasoline 20 to 25% of full feed.

These figures are for high grade gasoline and a high fire test cylinder oil. I cannot give the figures for cheap gasoline and cheap oil as it would be poor economy and very foolish to use either.

There are so many points in the care and management of gas engines and little wrinkles of value gained only by experience that it would take a volume to give them all.

Yours truly,
H. P. F. Hedger,
Waseca, Sask.

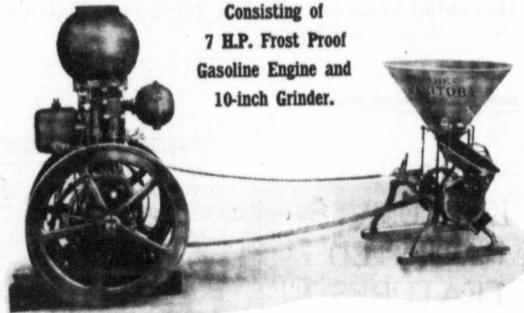
The English Gas Tractor in Canada.

I may say in response to your letter that our Company owns a 24 h. p. (tractive rating) Marshall Oil Tractor, which is of British manufacture.

I have broken over 700 acres with this engine during the past season and am now occupied in discing this breaking at the present time. I have an 8 furrow Cockshutt engine plow, but found that the engine could not handle conveniently more than 6 furrows as the ground was so hard and dry this season. I am pulling two eight foot land packers, four

A *Manitoba* GRINDING OUTFIT

Consisting of
7 H.P. Frost Proof
Gasoline Engine and
10-inch Grinder.



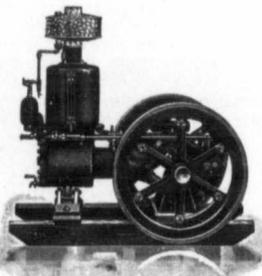
Will earn lots of money for you this winter

Dear Sirs: Ebor, Man., Jan. 17, 1910
The Manitoba Gasoline Engine I purchased from you a year and a half ago, is giving me good satisfaction. It runs smooth, and is easy to operate. My wife can operate it as well as any expert. I can recommend it to any farmer who wants a good all around power. Yours truly,
B. W. SHARRATT.

We Manufacture GASOLINE ENGINES in all sizes, from 2 to 25 H.P., VERTICAL and HORIZONTAL, STATIONARY and PORTABLE, also POWER and PUMPING WINDMILLS, STEEL SAW FRAMES, PUMPS, ETC.

Write for catalog "C," or see our local agent

THE MANITOBA WINDMILL & PUMP CO. LTD.
BOX 301, BRANDON, MAN.



Do You Want

a safe Power for
Farm Purposes?

The Stickney
Portable or Stationary
Gasoline Engines
The Flour City Tractors

What about Grinding Feed for your Stock this Winter?

LOOK AT THIS OUTFIT!

Stickney Engine

AND

Toronto Grinder

They give the best satisfaction
in all cases.

We also have a full line of Well-Making Machinery, Windmills (Power and Pumping), Pumps of all styles, Aylmer Scales.

See our Local Agents or write for Catalogue and Prices.



Ontario Wind Engine & Pump Co. Ltd.

Toronto

WINNIPEG

Calgary

FACING THE POWER PROBLEM

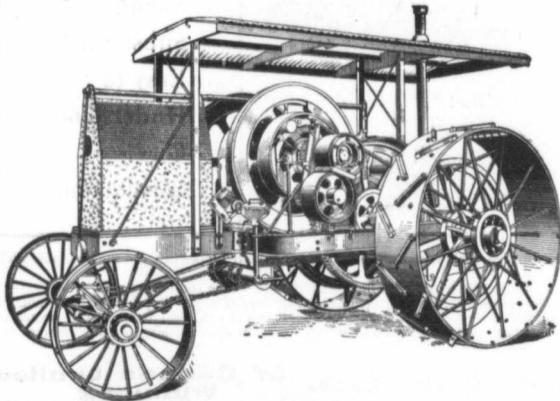
When facing the power problem you can make no better move than to investigate the I H C LINE OF GASOLINE TRACTORS.

The economy, strength, and simplicity of the gasoline tractor make it the most satisfactory power for all traction purposes, such as heavy hauling, road building, etc., and for operating threshers, shellers, huskers and shredders.

MAXIMUM POWER AND MINIMUM FUEL CONSUMPTION

That is what the users of I H C GASOLINE TRACTORS get. In the 1910 Farm Motor Contests these tractors delivered a greater per cent. of the engine's horse power at the drawbar and consumed less fuel for work accomplished than any other gasoline tractors.

You couldn't ask more than this—but you get more when you buy an I H C.



I H C TRACTORS do not require a licensed engineer, nor men and teams to haul coal and water. There is no time lost waiting to get up steam. The weight of these tractors is much less than that of steam outfits of equal horse-power and consequently they can be taken over bridges where it would not be safe to take a steam outfit.

THE IHC LINE

of general purpose engines contains:

I H C Vertical Engines—in 2, 3, 25, and 35-horse power.

Horizontal (portable and stationary) in 4, 6, 8, 10, 12, 15, 20, and 25-horse power.

Famous air-cooled engines—in 1, 2, and 3-horse power.

Pumping, spraying, and sawing outfits.

Gasoline tractors in several styles and sizes.

Write the nearest branch house for catalogue.

Canadian Branch Houses:—Calgary, Alta.; Hamilton, Ont.; London, Ont.; Montreal, P.Q.; Ottawa, Ont.; Regina, Sask.; St. John, N.B.; Winnipeg, Man.; Brandon, Man.; Edmonton, Alta.; Saskatoon, Sask.; Yorkton, Sask.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
(INCORPORATED)

CHICAGO

U S A

eight-foot discs and six of drag harrows at present, thus packing double discing and harrowing about 35 acres per day. I find that the engine handles this load very much more easily than it did the six-furrow plow.

Our engine is equipped with jump spark system of ignition, using a high tension magneto to make the current and dry cells to start on. I may say that the ignition has given very little trouble on the whole and is very satisfactory.

We use from 2½ to 3 gallons per acre breaking, paying 30c. per gallon, and about 1¼ to 1½ gallons per acre discing, using also about 200 gallons of water in the radiator per ten hours and 2½ to 3 gallons at 90c. per gallon of cylinder oil every ten hours. If we get poor cylinder oil, we have to use more of it.

Good clean water was not to be had here in the first part of the summer and although I had a well bored and got plenty of water, I was troubled a good deal with sand coming up with the water. Nearly all the trouble I had with the engine was on account of the water circulating pump wearing out, which was chiefly owing to dirt and sand in the water. Later, however, the water has been much better and the pump has not given much trouble.

The engine on the whole has run well, but I find it has been a very hard year on the gears, owing to the dust. The gears on this engine are steel throughout, but for all that the main pinions are

almost completely worn out now in spite of plenty of lubrication and from what I can see I expect that this will be a constant source of expense in using tractors for cultivating owing to the dust.

In conclusion I may say that I would not advise anyone who has much hilly ground to work, to get a gasoline engine for that purpose, as they have not the reserve power for hill climbing that a steam engine has and there is no economy in running a gasoline engine with a light load so as to enable it to get up the hills. I believe it ought to be loaded fairly well up to its limit all the time to be economical with fuel.

I have not used our engine under the belt at all yet, but I think it will be very satisfactory for threshing as it develops about 70 brake horse power; so I am sure it will be able to handle a large size separator with all attachments.

Yours truly,
Wm. Humphrys,
Mgr. Alberta Pacific Grain
Growing Co.,
Carlstadt, Alta.

Gasoline 26c. Per Gallon.

I own a 10-horse power Stickney gas engine. I have used this engine for one year and have found it ever ready to work. I have as yet paid out nothing for repairs but had to renew batteries which cost \$4.50.

I find in the winter that the battery has to be kept warm;

otherwise there will be a poor spark which makes the engine hard to start.

I crush grain once a week for my neighbors, crushing about 25 bags an hour. In the spring of the year I go around and saw wood, and crush a supply of grain for spring work, charging \$1.20 per hour. It costs me 26 cents per gallon for gasoline, by the barrel, from Winnipeg.

I might say that I have the engine on trucks. I am sorry that I cannot send you a photo of the outfit at present, but sometime in the near future I will send you one. Yours truly,

George Fraser,
Riding Mountain, Man.

Some Good Advice.

I have had a number of experiences with the gasoline engine during the past eighteen years. It was in the year 1892 that I ran an engine for pumping water. It was recommended as a machine which required neither brains or experience to manage it; consequently it acquired a reputation of being unreliable. It was rather a crude attempt on the part of the manufacturer, but we got along fairly well.

Since then I have worked for two gas engine companies and have had some experience in the repairing of different makes, so that I have had some opportunity to find where the average man has his troubles and the more experienced he is, the more he

is likely to have until he acquires the first elementary principles.

I am now farming about one thousand acres of land and we are starting on the second season's threshing with a twenty horse International traction engine, type C and a Belle City separator. I did not get my outfit started last fall until my neighbors had finished their grain, owing to delays in getting the machine, and we were compelled to start and thresh in the most unfavorable weather. I ran the engine when the thermometer registered 9 degrees below zero, when lubricating oils refused to run although thinned with the lighter oils. But the days were short in December and men will not work out in the wind and cold as they will in more pleasant weather. The snow and ice makes moving or lining up a very difficult operation. The engine can only pull itself at a very low speed and any little unevenness in the ground or a pull on the belt will cause the engine to slide over the frozen ground out of line.

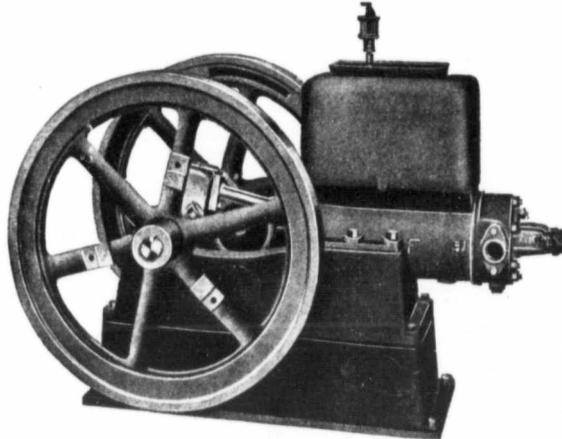
I used calcium chloride in the tank but found that it was better to start without water and supply the warm water to the top of the cylinder until we could fill the tank with warm water. Water is the best for cooling because a person knows that as long as there is water surrounding the cylinder, it is all right if a good lubricating oil is used.

I have never seen the day that was so cold that I could not run

"GOES LIKE SIXTY"

Gilson Gasoline Engine

When you buy a gas engine for farm power purposes, you buy power. You want that power delivered in the required quantity and you also want it economical and reliable. Here is where the Gilson Gasoline Engine "makes good." It is built as a gasoline engine should be. Every part is designed and constructed so as to give the best possible results as a power plant. The Cylinder, the Ignition, the Bearings, the Governor, the Valves, the Lubricating System, the Carburetter, the Engine Frame, etc., etc., all work in harmony to bring about one result - Power. They "Go Like Sixty" and they go all the time.



Style "G" Engine—4, 5, 6, 8, 10, 12, 14, 16, 23 and 27 H.P.

Reliability
Durability
Ease of
Operation
Economy
Simple
Substantial
Easy to
Understand
Give
Satisfaction

The Gilson Style "G" engine is remarkably compact and self-contained. The cooling system is perfect, and with proper care the engine is absolutely frost-proof. Very little water is needed.

Wherever a power, either stationary or portable, and of the above range, is required, Gilson engines will do your work and save you money. For every farm purpose, for water works, irrigation or electric light plants, creameries, sausage factories, sawmills, stone quarries, flour or feed mills, or machine shops, these engines are the best obtainable. They take up only one-third as much room as a steam outfit, cost less in fuel, and require only occasional attention. They need no fireman or engineer, and there is no waste of coal for keeping up steam nights and Sundays. The engine is always ready for work and costs nothing when not working.

Empire Cream Separator Co. of Canada Limited
Winnipeg

the engine and start with little trouble. I hung cans containing coal oil on the intake pipe and under the water pump and set fire to them to heat the pipes. They must be protected from the wind also.

I put a screen on the circulating pump to prevent straws, etc., from being drawn into the pump, and am also careful to strain all gasoline for the same reason.

We had some trouble in getting our clutch to drive belt to hold for a time, because the loose pulley had end play. We filed off the end of the cast shaft and the trouble was ended.

In working our different farm implements we found that the hitch was the most important thing. The centre of draft should be near the centre of the engine.

For this reason, two four-disc engine gangs pull easier than six, and the side draft does not wear out the axles.

Gasoline is sold direct here in barrels lots at 27½c. per gallon and a rebate of \$1.30 when the barrels are returned to Winnipeg. In steel barrels the price is less than 25c. I figure that gasoline and lubricating oil costs from five to six dollars per day.

For wheat and oats I remove the weed screen sent with the machine which is the same mesh as the common door screen and replace it with a screen such as is used for spark arresters on a steam outfit, eight mesh to the inch, which is about the same as is used by the elevators to dock grain. So that all the screenings

fall into a box beneath the machine and, as we are not using all our wagon boxes while threshing, we load one on a home made sleigh and haul to the machine to hold the screenings.

We have a team clear up the grain at a setting after we pull the machine out and save much valuable time.

I have found the gasoline engine a great thing to have as a reserve force when extra teams of horses are kept for seeding and harvesting. We have the engine ready for every emergency and have no expense while not at work.

Yours truly,

W. E. Dancy,
Odessa, Sask.

Could Not Do Without It.

I own and operate a 7 h. p. Stickney engine. I use this engine for elevating my grain at threshing time, also for elevating it out when I market. I also drive an 8-inch plate feed grinder and buzz saw with this engine.

I find that this size of engine has abundance of power for operating these machines, and it is a pleasure to see it do its work, as it saves many a backache and a lot of heavy lifting at threshing time, besides saving the expense of two men and one team.

This engine has been in operation two years, and has given me no trouble. I have had no repairs and would not think of trying to do without it.

I think the gas engine is an ideal power for the farmer and should be included in every up-to-date farm equipment.

Gasoline costs 25c. per gallon.

Yours truly,

W. H. Smallacombe,
Purvis, Sask.

Gas 30 Per Cent. Ahead of Steam.

We own a 22 h. p. Hart-Parr gasoline and kerosene engine. We have used it mostly for breaking, although we used it threshing for two seasons also. We did better with it this season than previously.

I believe that the gas engine is going to be the farm power in this western country. They are being improved upon all the time. To my mind I think if gas engine manufacturers would aim to build their engines low set and more rigid in construction, gas engine owners would have no trouble with broken parts. We have used both the steam and gas engine and I must say that the gas engine is at least 30 per cent ahead of the steam in plowing and I like it better for threshing too.

We use mostly coal-oil for plowing. The oil we use costs us 19¼c. laid down at Vonda with \$1.30 off for empty barrels, bringing the cost to 16¾c. per gallon and it takes on an average of 4 gallons per acre. I favor an engine that will burn coal-oil every time, as I do not think it is so hard on the bearing surfaces

of the cylinders, etc., and besides gasoline is hard to keep from evaporating in the field.

I am also a believer in the two and four-cylinder types as you get a more steady motion with less jar on your engine. I have not a photo of my engine at work at present.

Yours truly,

W. Elliott,
Vonda, Sask.

Used Kerosene.

I have a 4 h. p. Vertical Fairbanks-Morse oil-cooled engine. I start it with a dry battery and then switch to an Apple Dynamo. I bought it in 1905 and have used it since.

I grind feed with a New Holland Mill No. 1. This is a corn mill. I bought it for grinding corn. I ground about 5000 bushels of ear corn and sawed about 500 cords of wood the first winter. Since then I have had it here and I have ground about 2,500 bushels of small grain each year since. I get 10c. per cwt. for grinding. I paid \$10.00 per two cases of gasoline for three years, 1906, 7 and 8. Then I paid 52c. and now I pay 30c. per gallon. I have a wood saw, 26 inches, and can saw all the wood a crew can get to me. There is no limit except in the ability of the crew.

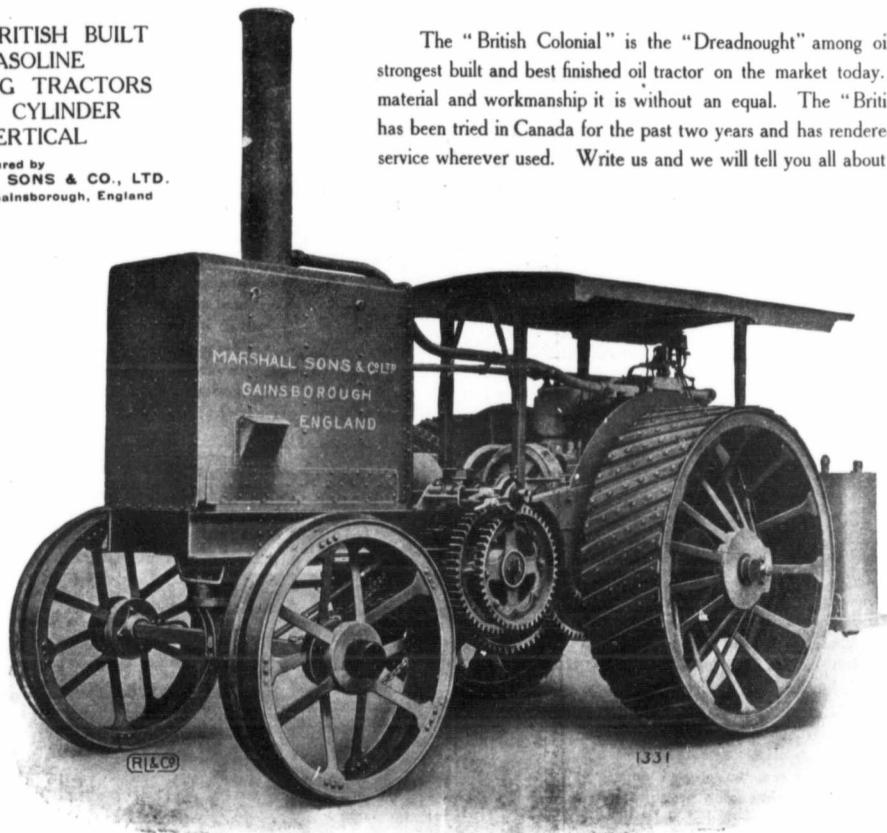
I grind 30 bushels per hour of barley or wheat, or wheat and oats, barley and oats, but cannot get more than 20 bushels of lone oats through as they haven't the weight.

THE "BRITISH COLONIAL" OIL TRACTOR

BEST BRITISH BUILT
GASOLINE
PLOWING TRACTORS
FOUR CYLINDER
VERTICAL

Manufactured by
MARSHALL, SONS & CO., LTD.
Engineers, Gainsborough, England

The "British Colonial" is the "Dreadnought" among oil tractors, the strongest built and best finished oil tractor on the market today. In design, material and workmanship it is without an equal. The "British Colonial" has been tried in Canada for the past two years and has rendered unqualified service wherever used. Write us and we will tell you all about it.



Class D, 70 Brake Horse Power

Sawyer-Massey Co., Ltd.

HAMILTON

Owners and Sole Representatives for Manitoba and Saskatchewan

WINNIPEG

I have not had much experience, excepting that I run it. I simply start and stop it and open the oil cups. I am using the third gallon of gas engine oil and with one exception have never had a hot box. The oil was cold and did not oil it, so I got the crank shaft box hot.

I have the engine in a thin board shed, and sometimes in 50° below zero weather so much frost forms on it as to cause a short circuit at which time it must be scraped off. Frost also forms inside the combustion chamber till it is hard to turn over the first two times. In that case I open the throttle about three turns and give it a big charge of gasoline, then open the exhaust valve and turn three or four turns, then start in the regular way. When the weather is 20° below zero or more I keep the battery in the house till I get ready to start; otherwise they would freeze and would not make a

spark. I generally use five or six of the ordinary telephone batteries, Mesco Dry Cells, and renew them one or two at a time as they are exhausted. I test them with my spark coil.



The First Combined Harvester and Thrasher at Work in Western Canada.

In 1907 it was almost impossible to get gasoline, so I run the engine on kerosene. In order to do so I had to start on gasoline. I had only one supply source, so I took the cylinder head off and

drilled a half-inch hole through it into the exhaust chamber, threaded it and put a sight feed lubricator in it, which I filled with gasoline. I got ready to start as usual, except opening the

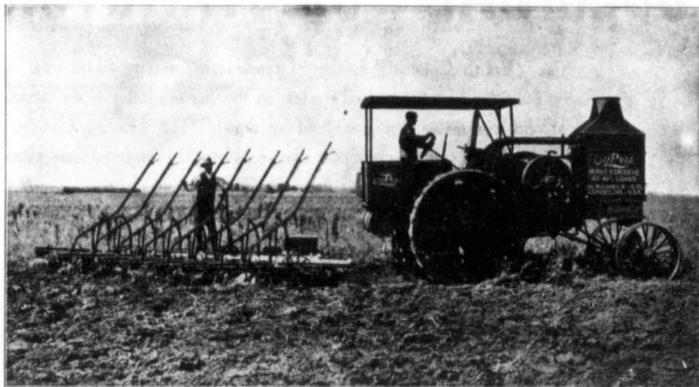
throttle. I opened the sight feed lubricator, so that the gasoline would drip as fast as possible without a stream, then turn and start as usual. As soon as it starts I put the belt on, then, when the gasoline is about four-fifths used out of the lubricator, I partly close it and partly open the throttle until I have it full on the throttle and kerosene. I had no serious trouble in doing this. If the spark is good and compression good, it should fire first time over and continue until shut off unless the load is too little and it misses about two or three times, when it is over-charged with gasoline. In this case the same remedy applies as though it were overfed through the throttle.

I have no photographs of my engine as it is not set in a good position to take a good one while running. I am thinking of using it to put down a deep well. If I do I will take a picture of it and send you one.

Yours respectfully,

Thos. P. Hall,
Bruce, Alta.

One Great Success Brings Forth Another



The Great Success of



Type "B"—25 Tractive, 45 Brake H.P.

which, at the Winnipeg Motor Contest, plowed with the least cost for fuel—9% cheaper than the nearest competitor. Ran on the brake at the least cost per brake horsepower per hour—4% cheaper than any other internal combustion engine in the contest. Ran smoother and with less variation in R.P.M. than any other engine, regardless of class or kind of fuel used. Proved that it was designed for heavy duty and severe service by plowing for six consecutive hours without a single stop except for the judges to put on and take off dynamometer. And also proved that the RUMELY Company in their machinery gives the farmer all that he pays for and a little bit more by delivering 5.8% more drawbar horsepower and 9.3% more brake horsepower than was claimed.

Predicts a Far Greater Success For the



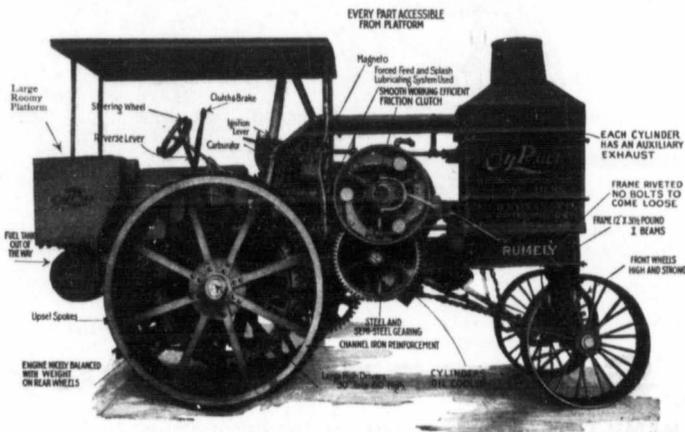
Type "E"—30 Tractive, 60 Brake H.P.

which we are now ready to announce for early spring delivery. The *Oil Pull* type "E" is a four-cycle, internal combustion engine with two cylinders of 10" diameter and 12" stroke. It is equipped with an automatic governor that regulates every explosion to suit the new need; it is oil cooled, has both splash and forced feed lubrication. We build *Oil Pull* "E" strong and rigid. The tractor frame is built of 12"x 3 1/2" pound I-beams riveted together in one solid block. Rear wheels are 80" high, 30" face, 3/8" steel tire with 16 flat steel upset spokes. Wheels are reinforced with 4" channel iron on the outer rim and a steel band on the inner rim. All parts solidly riveted together. All gearing is large and massive, composed of steel and semi-steel. All shafts superior to United States Naval specifications.

Oil Pull "E" compared with animal power for plowing will save a dollar an acre. Turning 20 acres a day, during 1000 days' use, *Oil Pull* means \$20,000 profit to its owner.

Company in their machinery gives the farmer all that he pays for and a little bit more by delivering 5.8% more drawbar horsepower and 9.3% more brake horsepower than was claimed.

To insure delivery place your *Oil Pull* orders early. Our factories are now working night and day to supply orders already in hand



M. RUMELY CO. 19122 ROSE ST., REGINA, SASK. HOME OFFICE AND WORKS LA PORTE, IND., U. S. A.

Experience Necessary

In the fall of 1909 I purchased a 20 h. p. Gieser portable engine and one of the No. 5 Gieser separators with feeder and blower attached. I had absolutely no previous experience with engines of any sort, nor had I ever managed a threshing separator. An expert set the machine to work and stayed one day, after which I took charge. I allowed water to drip from overhead return pipe into air hole in gas tank, causing a loss of one day before the cause of trouble was discovered and the matter remedied. I also allowed some nuts to loosen and an iron passed into the cylinder causing me to lose a day. Otherwise I had no trouble. In stook threshing four men each with team, wagon and big rack, pitching to machine from

one side only will keep the machine going if not far to pull the grain. One man runs the engine and separator. Last year we threshed 600 bushels of wheat on an average of 10 hours and this year 750 bushels in ten hours. It should be noted that this gives 150 bushels per day per man, which is considered very good. We used 20 gallons of gasoline per day and 1 1/2 barrels of water. I can readily understand one having no previous experience having all sorts of trouble with such an outfit, especially one who has no aptitude for machinery. I could not, however, understand a farmer going back to the old method of hiring a large steam threshing outfit, after having one season's experience with an outfit such as mine. Danger from

fire is entirely eliminated. Getting out at 3 o'clock a. m. to work like a trogan getting up steam does not appeal to me. I am sorry I have no photo of our machine. It is still at work, having threshed this season 9,000 bushels of wheat, 3,500 bushels of flax, 2,500 bushels of oats and moved 45 miles by horses in the midst of the season. The selling price of the outfit complete is \$2,400.00 in three payments. To me it solves the threshing problem. Yours truly, John Miller, Indian Head, Sask. Uses Engine for Crushing Your letter to hand asking for my experience with the gasoline engine. I have a 7 h. p. engine

manufactured by the Manitoba Windmill and Pump Company, Ltd., Brandon, Man., and it is a dandy. It is a stationary engine, but I have it mounted on a set of trucks. The platform is five feet wide by 14 feet long. The engine is set on the rear of the platform and the saw on the front and I carry the crusher in the centre when on the road. I go around and do crushing for the farmers and set the crusher in the granary and back the engine up to the granary door. I can crush fifteen bags an hour. I get a lot to do. When sawing wood I lower the truck in the ground to the axle and that makes it handy to get the wood to the saw. I got my engine last January and it has been running since then. I have had no trouble with

THE OHIO GAS TRACTOR

is now on the market for the Canadian Farmer. After several years of experiment and trial, we are prepared to offer you a gas tractor that will meet your farm power wants. For plowing, threshing, hauling or any other work where power, either tractive or belt, is desired you have in the Ohio just the engine you have been looking for. It is built for work and service, at the same time being all that can be desired in an efficient, reliable and economical tractor. We have not space to mention its many good qualities but will name a few. Our catalogue is full of gas traction information. It is yours for the asking.

Patented Friction Driving Gear.

Traction Power taken from both Fly Wheels alike.

Patented Friction Steering Gear.

Improved Cooling System.

Spring Mounted Steel Frame.

Large Tank Capacity.

Comfortable Cab Seat for Operators.

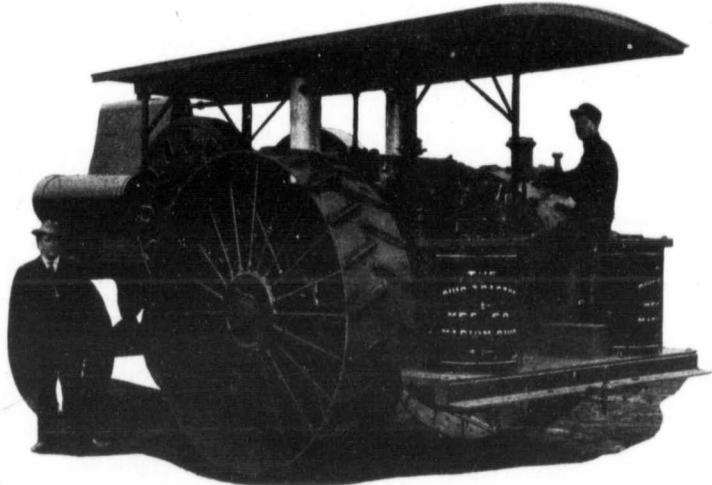
Convenience and Ease of Manipulation.

Made in 20, 30, 45 and 70 B. H. P.

Manufactured by the

Ohio Tractor Mfg. Co.

MARION, OHIO.



FOR

HAMILTON SAWYER-MASSEY CO. Ltd. WINNIPEG

SOLE REPRESENTATIVES FOR CANADA

it whatever. I use a dry battery. I never had anything to do with a gasoline engine until I got this one. It is very easy to start in cold weather. All I have to do is to put a couple of pails of hot water in it and it is ready to start in a few minutes.

I would not be without my engine for a good bit, if only to do my own work. It runs the eight-inch crusher and twenty-six inch saw without any trouble.

Gasoline costs me 28c. per gallon here at Whitewood. I have crushed twenty-five bags of oats in one hour and twenty minutes and sawed thirty loads of wood in nineteen hours. When crushing it takes about a gallon of gasoline per horse power for a day of ten hours. I will say here that it only took 2½ gallons of gasoline to saw 13 loads of wood and good big loads at that.

Yours truly,
John Apperley,
Whitewood, Sask.

Requires Skill and Patience.

In reply to your request for information in regard to my gasoline engine, I beg to state that I have owned and operated an International 20 horse power traction engine for about a year.

In the first place I may say that for the first few years after coming here I was so hard hit with hail, frost and gophers that I came to the conclusion that this

was not a grain growing country and so went in for cattle, for which it was especially adapted and they have done well for me. But during these sixteen years a change has taken place and now, although we are not altogether free from these pests, a good market has developed for grain, and owing to the absence of prairie fires and wet seasons there has been a tremendous growth of willow bush, and owing to continual moving and pasturing there are more weeds and less grass, which render it necessary to break up the land in order to make it productive and profitable.

I tried for some years to get steam or horse power, but failed. So I decided to take the bull by the horns and last fall bought a gasoline engine with threshing outfit and here's where my trouble begins. Having had no previous experience and no knowledge of gasoline engines, I hired a man of experience to run it for me, but soon found that he knew no more than I did. Well, that was lesson No. 1. Then I got a chill and took pneumonia and was laid up for some time, and when I came back to the engine I found everything going wrong.

Frosty weather set in and I had a job to start the engine in the mornings, and often we were turning the wheel round for an hour or two before we could get the engine to start. A friend, however, informed me that it was

a good thing to apply a torch near the spark plug and mixer and pour a pailful or two of hot water in at the pipe above the cylinder to warm up the metal. Another told me to warm a little gasoline, and pour it in at the cup near the mixer. This proved very effectual. So after that my first duty in the morning was to light a fire, boil the water, warm the gasoline and thaw out the lubricating oil, etc. This was a very valuable lesson.

Then, sometimes, after a very cold night, I would find that after going through the usual performance the engine would not start for us; then I learned another wrinkle. A friend asked me if I took in my battery at night. I said it was a dry battery and did not freeze. However, after that I took in my battery. This had very good results.

Then, too, I found when traveling on the road in frosty weather the engine would slip about and skid. So I put diamond shaped corks on the wheels. This was very effectual and prevented the engine from slipping.

This summer I purchased a set of three P. & O. engine gang plows with breaking bottoms, which proved very effectual in turning over the sod.

I found the engine very useful in helping to pull out the light poplar and willow bush. Next year I expect to do a bigger piece of prairie breaking.

Now I am threshing for my neighbors, and thus earn a little

to help me pay for the outfit. I also crush all my own grain for the horses, cattle, pigs, etc.

I have learned that it is necessary to keep the spark plug clean and in good condition, to keep all bearings well oiled with good lubricants and well fitted, to have a good strong battery to start the engine, to use the best of gasoline free from water and dirt or dust. Keep all pipes and taps clean and tight, and don't be in too big a rush, and be sure to let off the water from the pipes and pump in frosty weather. Don't let your tank freeze and burst.

The agents will tell you that there is nothing so easy as a gasoline engine to drive. I have found that it requires a great deal of skill, care and patience.

Yours truly,
Joseph Smith
Bouteyre Ranch,
North Penhold, Alta.

For Cold Weather

We desire to call your attention to the advertisement of Martinus Dysthe appearing in this issue.

This article we have carefully examined and feel that everyone who has any country driving during the winter months, should surely have a Dysthe Face Protector.

Mr. Dysthe will be pleased to send free booklet to anyone interested.

Securing an Engineers' License in the Provinces of Saskatchewan and Alberta

From time to time we are asked by a number of our readers as to just what steps are necessary in order to secure a license for running an engine in either the province of Saskatchewan or Alberta.

Manitoba at the present time does not require a license, but has simply a system of boiler inspection.

In order to make this matter clear to our readers we have secured the necessary memorandum of information regarding the rules and regulations in each of the above mentioned provinces.

Memorandum of Information for Applicants for Engineers' Certificates in the Province of Saskatchewan.

1. Under the provisions of the Steam Boilers Act of the Province of Saskatchewan no person can legally operate a steam boiler or engine without being in possession of a certificate or permit, and any person who does operate without such certificate or permit, whether he be the owner or engineer, shall be liable to a fine up to \$50.00.

2. The classes of certificates authorized by the Act are as follows: Provisional, Third Class, Second Class and First Class. Permits, which are good only for thirty days, are dealt with in paragraph 14 below.

3. A provisional certificate which is good for one year, authorizes its holder to operate boilers and engines up to 40 H. P. capacity and may be obtained in the following ways:

(a) By serving three seasons or twelve months as fireman under a certified engineer and then passing an oral examination before an Inspector of Steam Boilers. Parties who have completed this three seasons' apprenticeship should secure written proof of the same and apply to their nearest boiler inspector for an oral examination.

(b) By producing satisfactory proof of at least three seasons' or a full year's experience as engineer in charge of a boiler and engine or at least three years' apprenticeship in a shop for the manufacture of engines and boilers. It is understood, however, that engineers who are granted Provisional Certificates on this style of application may be called upon at any time to satisfy an Inspector as to their qualifications either by oral or a written examination.

(c) By passing an oral examination before an Inspector of Steam Boilers. To qualify for this oral examination an applicant must be able to show either three seasons' firing experience as stated above or else experience as an engineer which can be accepted as equivalent to this. Diplomas from engineering schools

or agricultural schools cannot be accepted unless with them the applicant can produce proof of the necessary firing or operating experience.

(d) By producing operating certificates granted by some incorporated body authorized to issue such. This embraces such certificates as may be granted by other provinces of the Dominion, or by the Dominion Government, or any portion of the British Empire or the United States, but does not include diplomas like those mentioned above. Frequently certificates are presented which entitle the holder to higher than provisional standing, and in such cases the applicant will be granted a certificate of the grade as nearly as possible equivalent to the one produced, provided he can furnish satisfactory proof of his experience as an engineer. Generally speaking, however, it is preferred to grade an applicant low at first and let him prove his abilities later rather than rate him too high in the beginning, so that except for the highest of foreign certificates nothing higher than a provisional will be granted.

4. A provisional certificate may be renewed if the holder can satisfy the Department of his inability to present himself for examination, and can produce a satisfactory recommendation from the party whose boiler he operated during the term of his first provisional.

5. Final Certificates — Third Class, Second Class and First Class can only be granted on the result of a written examination (except in the case stated above where the applicant produces a foreign certificate of a sufficiently high grade together with satisfactory proofs of his experience).

6. An applicant for a Third Class Certificate must either be the holder of a Provisional Certificate or else he must produce satisfactory proof of an extensive experience as an operator of steam boilers. He must obtain at least 40 per cent. of the marks obtainable on the Third Class examination paper. The holder of this grade of certificate may take full charge of boilers up to 50 H. P., or may act as assistant in the operation of a boiler up to 200 H. P.

7. An applicant for a Second Class Certificate must produce satisfactory proof of at least twelve months' experience as engineer in charge of a stationary boiler of 35 H. P. or over, or as assistant engineer (in charge of a shift) in the operation of a stationary boiler of higher than 50 H. P. capacity. He must obtain at least 50 per cent. of the marks obtainable on the Second Class Examination paper. The holder of this grade of certificate may take full charge of boilers and

engines up to 300 H. P., or may act as assistant in the operation of boilers of any capacity.

8. An applicant for a First Class Certificate must produce satisfactory proof of at least twelve months' service as chief engineer of a boiler of 100 H. P. or over, or as assistant engineer of a boiler of higher than 300 H. P. capacity. He must obtain at least 60 per cent. of the marks obtainable on the First Class Examination paper. The holder of a First Class Certificate may operate boilers of any capacity.

9. Written examination for Third and Second Class Certificates are held from time to time, generally during the winter months, at all the principal points throughout the province. A candidate who desires to write after the examinations in his district are over may take an examination at the Department of Public Works, Regina, provided he can give satisfactory reason for his failure to attend the examination in his own district. As the examination question papers are not allowed out of the custody of our Inspectors a candidate can only take the examination before an Inspector or at the Department.

10. The First Class examination can be written only at the Department of Public Works.

11. Examinations for Provisional Certificates are given at any time by the Inspectors to candidates who have the necessary qualifications as outlined above.

12. The names and addresses of the Inspectors at present on the staff are as follows:

William Waltler, Whitewood; J. R. Morrison, North Battleford; William Mayhew, Whitewood; J. A. Tripp, Yorkton; Thomas Inglis, Regina (1400 Robinson st.); R. N. Blackburn, Estevan; John Merchant, Prince Albert; Joseph McMillan, Saskatoon (523 Avenue E.).

13. The fees for the various grades of examinations and certificates are as follows:

For provisional certificates of first or second issue . . .	\$ 3.00
For provisional certificates after second issue	5.00
For third class examinations or certificates	5.00
For second class examination or certificates	5.00
For first class examinations or certificates	10.00
For thirty day permits	5.00

14. Permits are good only for thirty days and are granted only in cases of necessity where the owner of a boiler is unable to obtain the services of a qualified engineer. A form of application for a thirty day permit will be supplied on request.

15. All applicants for certificates should be able to furnish satisfactory proofs of sobriety and good conduct.

16. All certificates are subject to cancellation for carelessness, inefficiency, intemperance, misconduct or other cause.

17. Forms of application for engineer's certificates and full information on this subject may be obtained from F. J. Robinson, Deputy Minister of Public Works, Regina, Sask.

Memorandum of Information for Applicants for Engineers' Certificates in the Province of Alberta.

Under the provisions of the Steam Boilers Act it is illegal for any person who does not hold a certificate of qualification to be in charge of or to operate a steam boiler or engine connected therewith, and persons acting in contravention of the Act are liable to a penalty of from \$5 to \$50. The Act provides for obtaining a certificate of qualification as engineer in three ways:

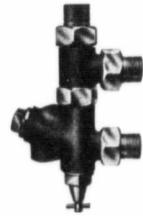
1st. Any person who holds a certificate of qualification as an engineer from any incorporated body authorized to grant such certificates of qualification for operating steam boilers and engines or from the Dominion or any Provincial Government or from any competent authority in any other portion of the British Empire or United States of America shall be entitled, upon making application to the Minister accompanied by such evidence of his qualification as may be required by the Minister and upon payment of a fee of \$5 to obtain a certificate of qualification as an engineer in the class determined by the Minister.

2nd. Those who have had over one year's experience in charge of and operating steam boilers and engines outside of this Province, upon furnishing evidence of the fact and passing an oral examination before an Inspector, can obtain Provisional Certificates, which entitle them to act as engineers to operate steam boilers and engines of any capacity not exceeding 35 horse power for one year, and at the expiration of such certificates, if the holders desire to continue to act as engineers, they have to undergo a written examination for 1st, 2nd or 3rd Class Certificates, as may be determined by the Inspector. The fee for a provisional or final certificate is \$5.

3rd. Persons who have had no experience in operating steam boilers and engines, but who desire to become engineers, can do so by serving as apprentices for one year to an engineer or engineers who are registered as holders of 1st, 2nd or 3rd Class Certificates for the Province, and at the expiration of such time passing an examination before an inspector.

Examinations for final certificates are held from time to time

TIME • MONEY TROUBLE



Are saved many times over if you use a

New Desmond Model "U"

**One Injector That
Fits All Conditions**

The secret of the New Desmond Model "U" lies in the construction.

It is made with a two piece body with the parts connected by a Union Nut.

When loosened, the upper part with suction connection can be turned in any direction desired.

When the connection is made to the boiler, the nut is tightened and the injector is ready for work.

The New Desmond Model "U" will fit any space, can be put in any position, or adapted to any conditions peculiar to your needs.

The New Desmond Model "U" starts low, at from 20 to 25 lbs. It works high, from 175 to 190 lbs., lifts water 25 feet, handles water at 130 degrees, and delivers it to the boiler at almost 212 degrees. It is absolutely automatic. It will not "buck" or "break" under the most severe and continued jars.



**Any Model "U" Fits
Any Old Connection**

This means that the Injector can be connected with either side of the boiler.

It is "flexible" One New Desmond Model "U" Injector will answer your Injector needs in every way, shape and manner.

The piping and valves can be arranged to suit your needs and your convenience; not to fit the Injector.

All tubes screw into the body and cannot fall out, be lost or damaged when the cap is removed. Neither can they get out of alignment.

We rigidly test every Injector and guarantee it fully to work under all conditions.

Now is the time to get busy. Give our New Desmond Model "U" a trial. If your dealer cannot supply you, write us direct.

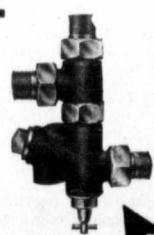
Desmond-Stephan Man'f'g Co.

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at various points throughout the Province by the Inspectors, and persons desiring to undergo an examination should notify the Inspectors or the undersigned so that they may be informed of the next date of examination.

The names and addresses of the Inspectors are:—Joseph Burton, Calgary; W. D. Watson, Red Deer; David Fraser, Strathcona; F. W. Hobson, Edmonton; Nat. Marshall, Lethbridge.

Persons undergoing a written examination are examined as to their knowledge of the construction, care and operation of steam boilers and engines, also a certain list of theoretical and practical questions. Any candidate through lack of education may be allowed to secure the services of a person who will write answers to questions, or interpret only as instructed by the candidate, but such person or interpreter shall not be an engineer.

Candidates writing for a 1st Class Certificate must obtain 70 per cent. of the total number of marks allotted, those writing for 2nd must obtain 60 per cent. and for a 3rd 50 per cent. in order to pass. Those who fail for 1st but make 60 per cent. of marks allotted may be granted a 2nd Class Certificate, and those making only 50 per cent. on 2nd may be granted a 3rd Class Certificate.

Candidates failing to pass may not again write for the same or a higher class certificate until after the expiration of one year.

For the guidance of those who may desire to present themselves for examination for certificates as engineers, the following information is given regarding the subjects of examination.

The questions are, as has already been stated, of both theoretical and practical character and may be divided as follows:

(a) Questions relating to the origin of steam and its uses.

(b) Questions relating to the different kinds and manner of constructing boilers to generate steam, including the strength of material used in making boilers, and the proper proportion in sizes and thickness of materials to be used, together with proper areas of grate, etc.

(c) Questions regarding the different kinds of safety valves or controlling the pressure in steam boilers and other necessary fittings.

(d) Questions regarding the proper methods of raising and maintaining steam boilers and the care necessary to keep them in good order, and when repairs are necessary the method of making such repairs.

(e) Questions regarding the kind, construction and operation of the different appliances used to feed and supply boilers with water during operation.

(f) Questions regarding the different kinds of engines used in developing steam, including their construction and the methods of calculating their power and the

proper methods of caring for the operating of such engines.

The questions are made as clear and concise as possible and every effort has been made to make the questions cover such theoretical and practical knowledge as should be possessed by every engineer charged with the care and operation of steam boilers and engines.

Candidates desiring to qualify for examination can obtain the necessary theoretical information to enable them to answer the questions by studying any recognized text book on the boiler and steam engine, such as Thurston's complete text books; "Practical Points," by John Farnum. "Henry C. Tully's Handbook on Engineering," (sold by Hill Publishing Co., New York, \$3.50), etc., etc.

Forms of application and any additional information may be obtained by addressing the undersigned,

John Stocks,
Deputy Minister.

Flax Growing in Western Canada

Continued from page 18

on tests the average difference in yield in favor of the eighty pounds sowing is 23 pounds per acre while at Indian Head the difference is only two and one half pounds per acre in favor of the heavier sowing. These tests, however, were conducted on land which had been cropped several years. On new breaking the consensus of opinion expressed by experienced farmers is that forty pounds to the acre will produce the best results. The proper time for sowing is generally held to be between the middle and the end of May. The seed selected should be plump, well-developed, of good color, and free from the seeds of weeds.

In the Eastern provinces, where the flax is pulled, and the straw cured for the extraction of the fibre, the business is much more complex than in the West.

The "pulling" season opens between the third week of July, and the first of August and continues during three of four weeks. The manufacturers usually hire "gangs," who are transferred by team to the flax-fields, leased from the farmers for one crop. These gangs in many cases are composed of men, women, and children in their teens, recruited from a variety of sources. Some of those who hire probably have another source of revenue, which, added to that derived during the summer and fall months at the different kinds of employment connected with the flax business, is sufficient for their maintenance. Frequently school boys (and even girls) are attracted to this work as a strenuous and, for them, comparatively lucrative form of employment.

In some cases the farmer attends to his own pulling, but he usually eschews such hard labor, being content with what revenue he can derive from his field of

flax without the hard-earned income from pulling it.

This "pulling" is done when the herb is just turning ripe; it is bound in sheaves about six inches in diameter; and stood in long stooks in the field, where the drying-out process goes on.

After a week or ten days, the crop is ready (provided it is thoroughly dry) for the haul to the mill. Here it is threshed by the mill hands without removing the bands, and tied in big bundles ready for removal to the spreading fields. Those selected for this purpose are usually lying in stubble, as it is important that the flax should be kept slightly off the ground.

Here the gangs have further work to do. Each spreader takes a row, one a few feet behind the other, as they move across the field. The bands are removed and the straw laid evenly over the surface. It is put down with such thickness that one can barely see the ground through it. Thus the "retting" or rotting takes place uniformly. In this work of spreading, the head spreader sets the pace, and the others have to follow, without getting relatively behind in their position.

By the time the spreading has been going on a week or ten days, if in the meantime there have been one or two spells of rainfall, or if the dews have been heavy, the fields spread first will be ready to "turn."

This is a simple operation, consisting of using long poles to turn the flax so that the side which was exposed in spreading will be toward the ground.

When all that is ready to turn has been cared for, the gang goes on with its spreading, only leaving again when it is time to do more turning, on the more recently spread fields.

After the flax is turned, more rain, or its equivalent in moisture, is necessary before the straw has been sufficiently retted that no further exposure to the weather is necessary. At this point, as soon as a dry day comes, the "lifting" operation begins.

In this work great skill is acquired by some of the flax-workers, and care must be taken that the sheaves are neatly made, square on the root end and securely bound. The lifting is commonly done by means of "crooks," usually cut from the crotch of a limb, and forming an angle of about 60 degrees. The bands are double, and made of flax itself.

Thus the curing is effected. Another haul is required that takes the lifted flax to a big stack, preferably in close proximity to the mill. By this time winter is coming on, and the mill hands are engaged for the handling of the straw in the mill, where it has to be "hackled," "scutched," and put up in bales before it is ready for shipment to the thread-mills.

The "hackling" process consists of putting the straw through "brakers," which crack

the dry hard plant so that no section of the woody shell surrounding the pith is left more than an inch or so in length, while the fibre which has clung to the outside is loosened. During hackling, as in all the other operations, the flax is kept in careful order, a handful at a time, and the straws all running in the same direction. This is necessary because by that means alone can the "scutching" be effectively done, and the fibre thereafter prevented from getting in a hopelessly tangled condition.

The scutching knives are four to each machine, each knife about three feet long and with two swordlike edges. Against these the flax, after being hackled, is whipped, a handful at a time. In this way the hard wood is completely separated from the straw, and the fibre, in course threads the length of the straw (minus the root) is left in the hands of the scutcher.

The chaff produced in threshing, and the roots and wood detached during the other machine operations, constitute sufficient fuel for steam to operate the entire flax-mill.

Canadian flax-growers have heretofore not had to contend with a disease of the herb called "flax-wilt," which has attracted considerable attention in the northwestern States. It is said to be due to fungoid growth, and manifests itself by the wilting of the young plants. The disease appears first in a small spot, which constantly increases in size until, if unchecked, it takes in the whole field.

"Flax wilt" occurs most commonly where the herb has been cropped on the same land during several successive years. The fact that Canadians are careful in their scheme of crop-rotation is undoubtedly responsible for the disease not having appeared. It is hoped that this immunity will continue, and that no other obstacles will be placed in the way of the development of the flax industry in the Dominion.

Course in Gas Engineering

Continued from page 30

pencil pressed against the drum when a vertical line will be obtained corresponding to the pressure in the cylinder. By pulling the drum cord several impressions may be taken. In the same manner the maximum pressure is taken.

Since the maximum pressure in the gas engine at the moment of ignition is about 350 pounds per square inch a spring suitable for this pressure must be used. For the compression pressure, this runs only from 50 to 100 pounds and a lighter spring may be used here if care is exercised that no explosion takes place in the cylinder while the cock to the indicator is opened. In any case a zero or initial line representing no pressure must be drawn while the cock is closed by rotating the drum by hand.



PLOWING IS "THE PEAK" LOAD OF AGRICULTURE

NOW, in your own case, whether you plow one acre or one thousand, you probably have thought of the great amount of labor that is required to do it. In plowing one acre, a solitary plowman with horses must walk over eight miles. In plowing a square mile—six hundred and forty acres—he must walk fifty-two hundred miles. The picture above shows the immensity of the plowing question. Shows how a one-plow, one-furrow, one-man and horses outfit is most inefficient in coping with the problem of turning a large field. One man, one furrow and three or four horses are only equal to from two to two and one-half acres a day. But, with a steam-plowing outfit, which, according to its size, is equal to from thirty to fifty horses, two or three men can turn from twenty to thirty-five acres per day. Two or three men can operate a steam-plowing outfit, where, to do the same amount of work with horses, it would require the attention of six times as many men.

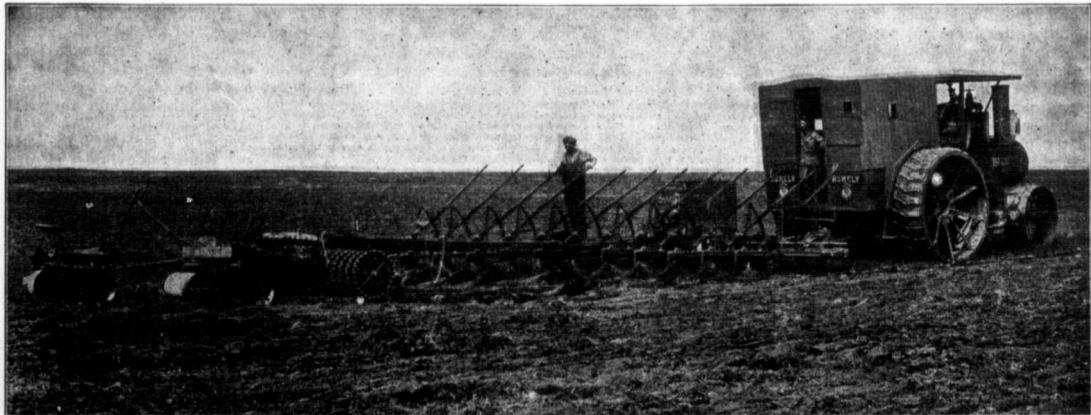
RUMELY STEAM PLOWING ENGINES

are the most efficient, most economical engines found in the steam-plowing class today. They are constructed to withstand any and all conditions and strains met with when plowing. They are rear mounted, rear axle, and countershaft brackets are one solid piece of wing construction. They are double geared—so the engine pushes itself straight ahead from the rear. All gearing is made of steel and semi-steel. Shafting and crankshaft are superior to the United States Naval specifications. Gearing, shafting and crankshaft on all RUMELY Plowing Engines are proof against breakage. We guarantee it.

For Authentic Information. Our Farm and Traction Expert, L. W. Ellis, located at the Home Office, will answer any and all questions pertaining to economical methods of proper equipment for traction plowing. Mr. Ellis was formerly connected with the Government Department of Agriculture.

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HOME OFFICE AND WORKS, LA PORTE, IND., U. S. A.



Conducted by
Professor
P. S. Rose

Practical Talks to Threshermen

Talk No.
XXXX

The Cylinder.

The standard or twelve bar cylinder ranges from twenty to twenty-four inches in diameter measured from tip to tip of the teeth. The large twenty and twenty-one bar cylinders range from thirty-two to thirty-six inches in diameter. The rotational speeds of the cylinders vary from 700 to 900 revolutions per minute in the large sizes to from 1,050 to 1,200 for the small cylinders. This gives a circumferential speed to the teeth of a little more than 6,000 feet per minute, as the following calculations will show. Take for example a twenty-two inch cylinder rated at 1,075 revolutions per minute as given in a certain manufacturer's catalog. The circumference of the circle described by the points of the teeth is $3.1416 \times 22 = 69.1$ inches, which is the distance a tooth will travel in one revolution of the cylinder. $69.1 \times 1,075 = 74,282.5$ inches which divided by 12 to reduce to feet, gives a circumferential speed of 6,190.2 feet per minute. In other words the teeth travel through space at this speed which is about at the rate of one and one-fifth miles per minute. A similar calculation for the thirty-two inch cylinder shows a tooth speed of 6,281 feet per minute, which is very slightly in excess of the speed of the small cylinder. An investigation of a number of different makes of separators show that all have adopted practically the same tooth speed. The correct speed for

the cylinder as well as the speeds of the various racks and other parts of a separator, while of the utmost importance, have been arrived at only after long and patient trials in the field. The men who made the first grain separators had no precedent to follow, no theory upon which to base their judgment. Theirs was a cut and try process from beginning to end.

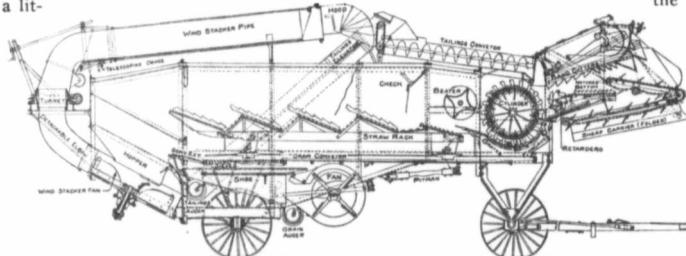
Large vs. Small Cylinders.

There have been many arguments advanced and endless discussion over the relative efficiencies of the large and the small cylinders. For a long time the large cylinder was a good "talking point" as it gave opportunity to advance some very plausible arguments in its favor. The balance wheel effects, large grate area, non-slugging properties, etc., were all put forward as

strong claims. There is, moreover, considerable truth in all of the statements, but it is now acknowledged that there is not the great advantage in the large cylinder that was once claimed for it. The large size and great weight give it a balance wheel effect. That is, when up to speed it has a tendency to remain at that speed. On the other hand when once slowed down its inertia will tend to keep it from speeding up immediately. It is

not back along the racks, where they had been working so long. The idea was to keep all the grain, or at least as much of it as possible, from getting into the straw at all. To accomplish this required a larger grate area and the easiest way to get this appeared to be to build a larger cylinder. This was done and the results appeared to justify the means.

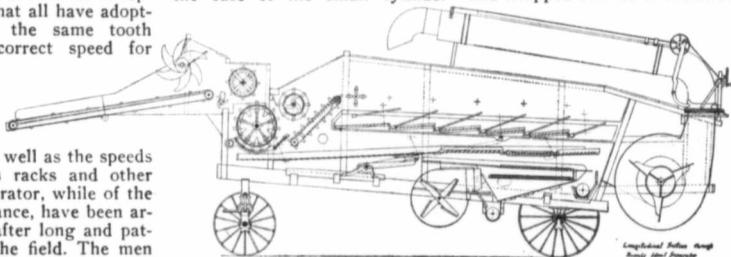
Mr. Seth G. Wright of the Buffalo Pitts Company, showed that



The above represents the Case Separator. This machine is equipped with a large cylinder and a long grate surface. Immediately back of the grate surface is the beater which spreads the straw as it passes from the grate and delivers it to the straw rack in a thin even sheet the full width of the machine. The concave shaped wings of the beater are supposed to prevent the winding of the straw and to deflect the flying grain downward. The fifty-inch rear and all larger sized separators are equipped with twenty bar cylinders, having a diameter of thirty-two inches. The cylinder speed is about 750 revolut ions per minute.

slower to respond to the power of the engine than the small cylinder, and it will slug just as surely as the small cylinder, though probably it will require a somewhat larger bundle of wet straw to do the job. The large cylinder runs slower than the small one, it is true, and its driving pulley is larger, but the distance from the points of the cylinder teeth to the rim of the cylinder pulley is greater than in the case of the small cylinder

it was possible to get as much grate area as needed with a small cylinder, by simply carrying the grate concentric with the cylinder as far around as desired and elevating the beater and keeping it close to the cylinder, allowing only about an eighth of an inch between the beater spikes and the ends of the cylinder teeth. Then as the straw came around the cylinder, it was caught at the ends of the grates by the beater and whipped over on to the straw



The above represents the Rumely Ideal Separator. This machine has a large cylinder with fifteen double bars and a diameter of 27 inches, revolved at the rate of 850 revolutions per minute. Back of the cylinder the straw is picked up by a chain rake that carries it up a steep incline. The steel ribbed bottom of this incline is slotted with wide openings that extend entirely across the machine into which the grain is pulled by the force of gravity as the straw is carried upwards. Above the chain rake there is a wing beater which acts as a flail upon the straw.

and hence the braking effect of the bundles passing through would appear to be greater.

Originally the larger cylinder was brought out in order to obtain a larger grate area. This was found necessary if any improvement was to be made in the saving of grain, for at the time the large cylinder was brought out, inventors had just come to realize that the place to save the grain was at the cylinder where it is loosened from the straw and

racks. At the same time the loosened grain flying upward with the impetus given it by the cylinder would strike the smooth side of the beater drum and be deflected downward upon the grain pan. Mr. Wright found in experimenting at this point that it was possible to deliver the straw as high as he desired, even carrying it completely around to the top of the cylinder by continuing the grates that far, and then placing the beater at a cor-

responding height. He also performed another interesting experiment while studying this problem of saving the grain, and according to his story, it was on account of this experiment that he arrived at the conclusion that the point to work on to save grain was at the cylinder. He fitted glass sides in the separator at the ends of the cylinder and placed a light at one side so that he could look through while the machine was in operation and see the straw going through. What he saw astonished him.

Instead of a thick blanket of straw as he expected, all he saw was a few scattering straws passing through at an enormous speed. This was somewhat in the nature of a revelation to him and set him to work in an attempt to save the grain at a point where the depth of straw was the thinnest, with the results above outlined. A little thought regarding the relative speeds of the different parts of the machine, would, of course, have led to the same results. The speed of the cylinder teeth, and consequently that of the straw, is about one and one-fifth miles per minute, while the speed of the straw on the racks is only a few hundred feet per minute. Consequently the straw blankets at the cylinder must be very much thinner than on the racks. It was the actual sight of this condition, however, that set him to work in the right direction. At the present time all of the different separator builders have by one means or another, arranged their machines to save the greater part of the grain at the cylinder instead of allowing it to pass on into the straw and effecting separation on the racks, as was the practice formerly.

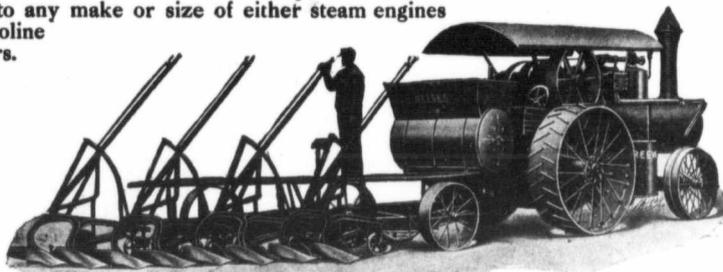
The Cylinder Shaft.

The cylinder shaft made very large and strong for several reasons. The resistance of the straw is considerable and when a wet bundle goes through and "slugs" the machine the twisting strain on the shaft is enormous. Again if some teeth are knocked out while the cylinder is rotating at high speed the lack of balance would deflect a small shaft a considerable amount, but has little effect on a large one. In case of a fire around the stack the shaft is supposed to be strong enough to permit of pulling the separator out of danger with the belt.

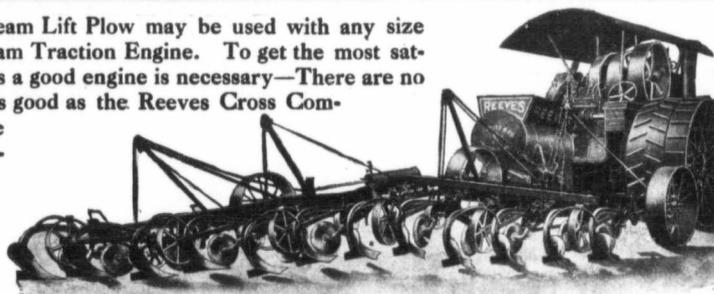
The cylinder shaft boxes are also made strong and heavy and self-aligning, that is, they are pivoted on the center, so there is no possibility of their binding the

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The Reeves Hand Lift Plow is adapted for attachment to any make or size of either steam engines or gasoline tractors.



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Reeves Engine Gang Plows, both hand and steam lift, have flexible frames—permitting the plow frame and the plow bottoms to conform to the irregularities of the surface; the plows are attached to frame in pairs, each plow reinforcing its companion and adding strength. Each pair of plow bottoms are carried on wheels producing light draft. The attachment of the plow to engine is pivotal, permitting the engine to control the direction of the plow—A spring releasing device insures against breakage when plows strike a stone, stump or other obstruction. With the Reeves Plow turns to right or left can be made without lifting plows from ground.

The plow follows the engine—it is not a case of the "tail wags the dog", the engine controls.

The Reeves Plow attached to the engine by its pivotal connection makes an ideal plowing outfit—controlled at will by the engineer. Don't make a mistake—get a Reeves Flexible Frame Engine Gang Plow and be in line for a profitable run of work in fall plowing. The Reeves plow is unlike others—many of which are simply dragged on the ground by chains, like a lifeless log, capable of movement only as it is pulled by the chain or rope attaching it to the engine.

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CANADIAN BRANCH: REGINA, SASKATCHEWAN

The Thresherman's Question Drawer

Answers to Correspondents

S. A. Q. How is boiler horse power determined?

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

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

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

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

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

C. S. Q. How can you tell when a boiler is foaming?

2. What makes a boiler foam?
3. How can you tell where the water level is when the boiler is foaming?

4. What is the best thing to do when the boiler is foaming?

A. The cylinder of your engine will very quickly tell you when your boiler is foaming. The water will get into it and cause a slapping noise. The water will be forced through the stuffing boxes and out of the exhaust pipe.

2. The cause of foaming in boilers is due to some foreign matter in the water. The grease used in building the boiler is the cause of the first foaming. Stagnant water containing decayed vegetation is very bad water for a boiler. Water with mud or other sediment caused by mineral substance in the water will cause foaming. Alkaline water is very

bad and causes foaming very quickly.

3. When the boiler is foaming the water or foam goes to the top of the water gauge and it is impossible to see how much water there is until the foaming is stopped. This is best done by stopping the engine which will have a quieting effect on the water.

4. The best thing to do when the boiler is foaming is to change the water as soon as possible. To help matters for a short while (say the latter part of the day, just before cleaning out), the steam pressure should be kept high, but not allowed to blow off at the safety valve; the water should be kept low and the load on the engine as light as possible.

F. L. Q. Which of the following engines will show the most horse power under belt? A Woolf tandem compound, high pressure cylinder being 6½ inches diameter by 10 inches stroke, and low pressure being 9¾ inches diameter by 10 inches; mean effective pressure 150 lbs., 220 revolutions per minute, and flywheel being 40 inches diameter by 10-inch face, or a double valve tandem compound having the cylinders separated for the stuffing boxes with high pressure cylinder 6½ inches diameter by 10 inches stroke, and the low pressure cylinder being 10 inches diameter by 10 inches stroke, mean effective pressure being 155 lbs., 225 revolutions with a 36-inch flywheel by a 10-inch face.

A. Figuring the case with the same number of total expansions in each engine the latter engine would develop 12 per cent. more power than the former; due to the increase in diameter of low pressure cylinder and also to increase in speed and pressure.

The mean effective pressure given is much higher than is found in traction engine practice.

E. M. Q. What horse power is an engine 7½ x 10, 220 revolutions, 120 lbs. pressure?

2. Is the boiler too small for the engine? It has 32 two-inch by 66-inch flues; diameter of boiler, 26 inches; grates 36 x 21; height above grates, 30 inches; has a water front.

A. In the absence of the mean effective pressure we cannot figure the horse power, as the boiler pressure does not indicate this. We can, however, consider the nominal horse power of the engine based on general practice in this country, as there is no rigid rule for figuring the nominal horse power of a traction engine. Manufacturers differ on this point and we find that the rating of this engine, in the hands of different builders would vary from 11 to 13 h. p.

NOTICE!

When placing orders for Stitched Cotton Duck Belting do not rely on discount, but examine list on which such discount is based.

We understand some makers of Stitched Cotton Duck Belting have advanced their price list. We have no agreement with any makers, and for the present shall adhere to the old list adopted by us January 1st, 1904. This list is lower than the new list, and especially is this true of the wide and heavy belts. In anticipation of an increased demand for belting of this character we have added to our stock sizes, and can now ship on receipt of order any width or any ply from 1 inch 4-ply to 30 inch 10-ply.

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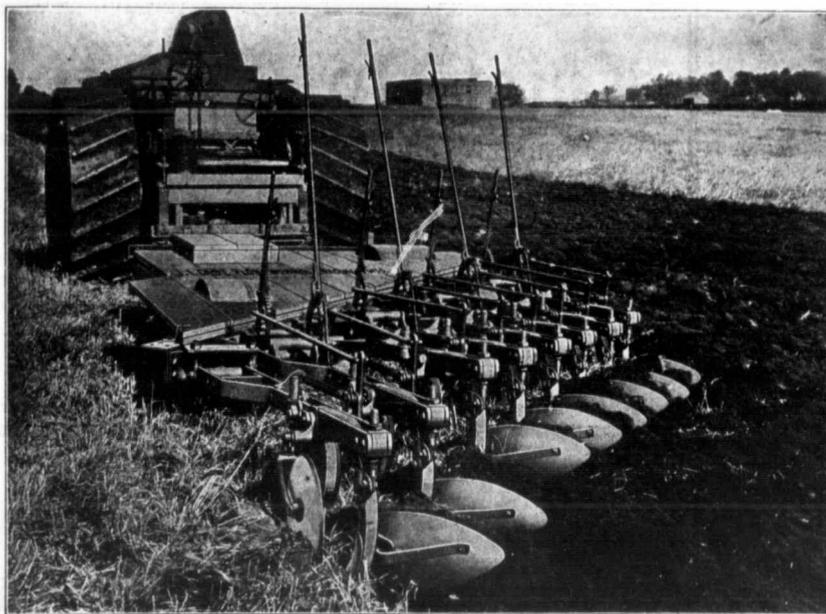
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Dear Sir—

I bought one of your 3 ton jacks in Walla Walla this summer and it gave the best of satisfaction. In fact it is the only satisfactory one I ever have used, have been in the threshing business for the last 16 years, and have used 3 other makes but always had more or less trouble.

*Yours Res.
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Built with 4, 6, 8, 10 12 or 14 plows of 14 inch. cut, either breaker or stubble shape

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Superior at Every Point

Construction the strongest and best.

Will make as short turn as any engine, because front platform wheels caster.

Plows raised and lowered IN PAIRS. Fewer levers to handle, hence one man can operate it easily and quickly, leaving the furrow ends square.

EACH plow independently adjustable for depth, and EACH plow free to rise and fall with the undulations of the ground. Hence, more uniform plowing and a better seed bed.

EACH plow fitted with a gauge wheel and caster colter. Naturally does better work than plows having only one gauge wheel for every two plows.

Write for Circular.

Engines are not run under the same conditions. Speed, pressure, and cut-off, as well as size, have much to do with the power. Some manufacturers count on high speed, late cut-off, and high pressure, so that they can sometimes develop as much power with a small engine as with a larger engine with moderate pressure, early cut-off and slower speed. It can readily be seen that nominal horse power does not indicate the exact amount of power to expect from an engine.

2. Boilers should be considered by the number of square feet of heating surface. In simple traction engine boilers built in this country we find from 10 to 13 square feet of heating surface to the nominal horse power, so that the boiler described in your question should be from 11 to 13 nominal h. p. The power of a boiler depends on the rate of combustion, or in other words, on how much heat is furnished.

M. W. Q. What is the best way to grind globe valves and stop cocks?

A. Use oil and emery or fine sharp sand screened through a piece of good or bolting cloth. In the case of a globe valve, after the valve is taken apart, the valve disc should be fastened to the stem, if it is of the loose type; this can be done by taking the disc off and putting a piece of cardboard between the disc and stem. If it is a regrinding valve, the bonnet or part that has the stuffing box can be put back,

which will guide the stem while grinding. The stem can be revolved by a brace or by hand, taking hold of the hand wheel. If it is not a regrinding valve, screw the bonnet up on the stem, and proceed to grind it by holding it as near central as possible. Always take the valve from the seat before attempting to screw the bonnet off on a valve that is not of the regrinding type, as you will be sure to run it if you do not observe this. A stop cock should be drawn out occasionally while it is being revolved so as to not cut grooves around the plug seat.

G. A. Q. What is the cause of my engine exhausting heavy on one side and the valve stem throwing into the steam chest quick, then pulling out slow and doing the same thing reversed. The eccentrics are keyed to the main shaft and the cams are properly divided so as to divide the travel of the valve even, but it does it by drawing the stem out slow and pushing it back quick. What is the cause and what is the remedy? When I put my single cam on I get an even exhaust and the stem of the valve travels even, but when I put the link on it throws it all off.

A. If your eccentrics are keyed to the shaft you should not have any trouble in getting the balance of the gear properly adjusted. Throw the reverse lever to the end of the quadrant for the forward motion, see that the reach rod is of proper length so that the link block goes to the

end of the link, then adjust the valve so that you have the same amount of lead at each end. Now reverse the engine, throwing the reverse lever to the end of the quadrant and see that you have again the same amount of lead at each end of the valve. The valve should not be moved on the stem in setting for the second motion, but all adjustment should be done by the eccentric rod.

T. M. Q. The flywheel on my engine has a straight face and when it is windy weather it is very hard to keep the belt on the pulley. I would like to know if there is some way to make an oval faced pulley of it without sending it back to the factory? Also do you know how pulley covering is in wet weather? Does it get slippery so a belt will not stick or is it all right?

A. If the flywheel has a straight face a crowning face may be had by covering the wheel with leather. Drill holes in the rim and rivet a leather belt to the face. First put a narrow strip in the centre of the wheel, fixed down on each edge so that when the covering is put on it will make the proper crown. Another way to get the shape is to wrap tightly the face with cord until the desired crown is had; the covering with the leather belting together with the rivets will hold the winding of cord in place.

There is nothing that will make a better driving contact for a belt than a leather covering.

G. B. Q. Is there anything saved in hooking up a valve if the governors are in perfect order?

A. The governor, if in perfect condition, will not answer for hooking up the valve gear. The steam should be cut off early in the stroke and then work on the expansion of the steam the balance of the stroke. The earlier the cut-off the higher the pressure in the cylinder and the greater the expansion. The governor can not help in the economy but simply keep the speed regular.

A. G. Q. Have read a great deal about babbitting wrist boxings and crosshead boxings, and I want to know just how it is done?

A. Brass is better than babbit for the crosshead end of the connecting rod and babbit is better for the crank pin.

A brass box can be filed out to make room for the babbit. There is no use in much room at top and bottom, but for an ordinary size engine there should be about three-sixteenths to one-fourth of an inch room at the ends for babbit. Heat the boxes and with a soldering iron and acid cover the inside surface with solder or tin. Then put the box in place and while it is hot pour the babbit into box, which will unite to the metal of the box.

Too much cannot be said in favor of a filled box of this kind. It will not heat so quickly and will stand more neglect than a brass box.



F. E. KENASTON,
President.

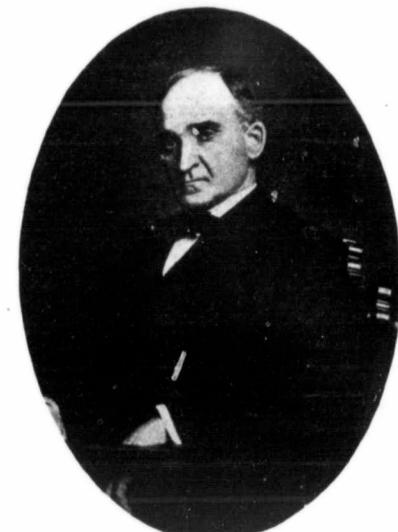
Friendly Greeting from Your Friends

WE the officers, directors, managers and staff of the American-Abell Engine and Thresher Company, Ltd., join in wishing you one and all a Merry 'Xmas and a Happy and Prosperous New Year, and wish to thank our many customers for the assistance they have rendered us in making the American-Abell plowing and threshing machinery the most popular line in Western Canada. We wish at this time to announce that our 1911 line will not only maintain the high standard that it has in the past, but will have added to it many new and valuable improvements. We will not spare money or pains to procure the best material obtainable, and to have master mechanics to manufacture and assemble our goods.

We have learned by experience that it is not only necessary to use the best material, but it is also necessary to have the best mechanical skill to fit and put together the various parts. Our fast increasing trade has compelled us to greatly enlarge our factory, which is the largest in Canada. Our facilities in the West are the very best. Our entire staff is at your service for the asking. Our creed is: *We believe honest goods can be sold to honest people by honest methods.* We believe in our country. We believe in our people. We believe in our goods.—Call on us,—make our office your headquarters when in

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AN ADVERTISEMENT ON STEAM PLOWING

By C. H. STINSON

Western Manager of the American-Abell Engine and Thresher Co. Limited



DO you read advertisements? Some people don't. They think advertisements are fakes. Do you think Manufacturers, Jobbers and Retailers advertise their goods aimlessly without having an object in view? It costs money to advertise and those paying for the advertisement have a great object in view when they advertise. They want to become acquainted with you, they want you to know what they have to sell. They want to convey their ideas to you through the columns of the advertising journal because they cannot meet you personally and tell you what they have to offer for your present and further wants.

I start this Ad by saying it is an advertisement written by me, because I want you to know who I am and what my business is,—not that I want to advertise myself, but because

I want your attention drawn to my particular line of goods; because I think I can tell you more about plowing engines than any other man in the West today; because I have had more experience in steam plowing than any other man in the business, and to bear out my statements I am going to tell you some of my experience. In the Spring of 1891 I lived at Morris, Minnesota, and my brothers and I took a contract to break 320 acres of prairie land for Justin Berkin now postmaster of that place.

We owned at that time three 14 horse power return flue dry bottom boilers Ames traction engines. We conceived the idea at that time we could plow cheaper with steam than we could with horses so we bought three New Deal John Deere plows and with one of the Ames engines we started to break prairie. We could do it, and did do it, but not profitably because our engines were not made to plow with. Our plows were not made to be used with steam engines. I have followed this ever since. Twenty years ago we were the only people ever heard of breaking prairie sod with steam engines in Western Minnesota. Many thought we were crazy. We surely were ahead of the times. At that time a good span of horses were worth about \$200.00, oats was about 15c per bushel, so the work could be done cheaper by horses than by steam.

How does horse power on the farm today compare with

the modern steam plowing outfit? The manufacturers of steam engines have made wonderful improvements in traction engines. They have increased the horse power from 14 to 40 and 50 horse power, they have replaced the cast iron gears with steel and semi-steel gears, so that the modern plowing engine is built with the full knowledge of what it has to do and each part is constructed with the view of making it just as strong and just as light as is possible to do, and yet have the combined strength to do the work, not only better than is possible to do with horses but much cheaper.

The plow manufacturers have not been idle, they too have made many valuable improvements that have helped make steam plowing a success such as it is today. A steam plowing outfit today will break prairie at the rate of from twenty-five to thirty acres per day (this amount applies to the smaller plowing outfits, large engines do more work according to size) at a cost of 85c per acre. This outfit will cost you from \$3500.00 to \$5000.00 or more according to size. To do the same work with horses would require about thirty horses which are worth at least \$6000.00 harnesses would be worth \$750.00, plows would be worth \$160.00, oats and hay to feed horses \$15.00 per day, men to drive and care for horses would cost \$15.00 per

day, board, for men \$3.00 per day. So you can see that it is much cheaper to use steam power than horse power. Of course the horse has his place on the farm, and is as necessary as he ever was, but on the large farms in Western Canada the steam engine is becoming just as much a part of the modern farm equipment as the horse is.

A great many farmers think it is impracticable for them to have a steam engine because they are not engineers themselves, or cannot operate the engine. Let me say right here that the scarcest labor today is common farm labor. Why? Because the bright young men of today are also progressive and are keeping up with the times, and are making their time too valuable to work for common farm wages. They are reading and studying, with the result that it is easier to find and hire an engineer than a common laborer. It is true you have to pay them more money. It is also true that they are worth more money because they can earn you more money by operating your steam engine than they can by driving your team.

A great many of our progressive farmers' sons are attending the Agricultural colleges in the winter months and leave in the Spring, full fledged tractioneers, using the new word just manufactured by the Editors of this Journal.

So the success of steam plowing is a proven fact. There are a great many manufacturers in United States and Canada making plowing engines and I think many of them make a good engine. I also think there are as many different engines as

there are different manufacturers. Now right here is the point that requires your strict attention when selecting a plowing engine. You should not only take into consideration the mechanism of an engine, but you should also consider the facilities of that particular company to care for their trade. A great many people have truthfully condemned steam plowing because the engine they happened to buy was not properly made, or because that particular Company did not have the proper facilities to care for their goods in the field. I have known engines to lay idle for weeks, when they should be earning for their owners handsome returns, all because their particular Company did not have the proper facilities, they did not have the repairs accessible,—they probably had to send a thousand miles for them,—so in order to make money with plowing engines it is well for the purchaser to take into consideration all these points.

We are offering the trade in our 1911 Special Plowing Engines, not only new and original designs, but something that is in a class by itself. Our 32 horse power Cross Compound Rear Mount Plowing Engines have gone through the season of 1910 with records of paying for themselves, and paying for the plows out of the earnings besides paying the owner a handsome profit.

We offer the trade in our 1911 line four sizes in steam plow engines, from 22 to 32 horse power. Simple and Cross Compound, stub axle or rear mount. We have the only plowing engine on the market with a single front wheel. This is a valuable improvement on a plow en-

gine. It not only makes it easy to guide, but it makes it possible to run a perfectly straight furrow with perfect ease to the operator. It does away with the breaking of guide chains and jerking of the front wheels, which is a severe strain on gears. We are the only manufacturers using double cog bull gear.

We do not claim to be the only Company doing business in Canada with the proper facility to care for the trade, but we do claim we have the best facility from the fact we are the largest manufacturers of plowing and threshing machinery in Canada. Our facilities for caring for the trade in the West are very good. We have large stocks of repairs at all our branch houses. We want your trade and in return we promise you fair treatment and a line of goods that are as well built as it is possible to build. We offer you nothing for nothing, but we guarantee you a hundred cents worth of value for every dollar you give us.

We ask you to see our goods before you place your order. We want you to buy our goods. If we can't save you money, we certainly can save you trouble and worry and loss of time.

Time is money and money is what we all want.

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We Represent THE ADVANCE THRESHER CO., BATTLE CREEK, MICH., AND THE MINNEAPOLIS THRESHING MACHINE CO., HOPKINS, MINN.



Why Thoroughbred Poultry Pays the Farmer

By J. R. Cote, Chatham, Ont.

Someone has figured out that the American hen in a year earns enough to buy all the silver and gold dug out of our mines, all the sheep in the country and the wool, and leaves a balance equal to the entire year's crop of rye, barley, buckwheat and potatoes. Or, as a hen enthusiast writes: "She pays the interest on all the farm mortgages, pays the entire provincial and county taxes of the whole Dominion of Canada, and then with balance could give to every man, woman and child in the United States and Canada a year's subscription to The Canadian Thresherman and Farmer, and would still have a balance on hand.

Secretary Wilson says that she is producing one-half billion dollars annually, and she is a formidable competitor of wheat for precedence on the farm.

In spite of all this, chicken raising on a commercial scale often results in failure. The world's supply of poultry and eggs is not obtained from great centralized chicken plants, but from the small farms scattered all over the States and Canada, where chickens are but a minor consideration. They live largely on the waste products of the farm, the refuse of the house and whatever bugs, worms and grass they can forage for, and when the time comes to sell them there is no way of telling what they have cost, the price being purely governed by the law of supply and demand. The proceeds from chickens are usually "pin-money" for the farmer's wife. A commercial poultry plant that has to buy its feed and pay for labor and compete with conditions often finds the balance on the wrong side of the ledger.

To settle the question "whether there is money in chickens" is not the purpose of this article. The mass of literature left by those experts in "hen arithmetic" who have gone before really leaves nothing unsaid. No subject responds more nimbly to the touch of pencil and paper and yields up more bewildering statistics, than paper profits in the poultry business.

The farmer isn't interested in the poultry statistics and calculations anyway, and it is beyond the scope of this article to discuss it. The point of it is simply this: If a farmer replaces his mongrel stock with thoroughbreds he will receive from 25 per

cent. to 100 per cent. more for his poultry and eggs at no increase in their cost of maintenance. If this fact is so, it should interest every man, whether he keeps five chickens or five hundred.

Thoroughbred stock will bring a better price than mongrels when the commission merchant or packer's agent comes around to buy. To verify this beyond all fear of contradiction, and to clear up the situation generally, we asked these questions of half a dozen of the leading packers of the United States and Canada:

1. Do you pay a better price for thoroughbreds than for mongrels?

2. Is this discrimination in price because they weigh more, or because they are more desirable for market purposes?

3. Is it not a fact that thoroughbreds, such as Wyandottes and Barred Plymouth Rocks will weigh more than mongrels?

4. Have you made any efforts to stimulate an interest in the cause of thoroughbred poultry?

5. Of the poultry that you buy, what per cent., roughly speaking, would you say were thoroughbred stock?

6. What approximately is the average price that you pay for chickens during several months in the year?

7. Do you find any difficulty in getting as much poultry as your business demands require?

8. What breed do you particularly recommend for your market?

To question No. 1, every one, without exception, said: "Yes, we do pay better price for thoroughbreds." This is pretty strong evidence in favor of pure bred chickens from men who buy millions of pounds a year and who, practically speaking, supply the civilized world. The reasons given were that the yield of meat is greater, with less bone, they sell more at retail, are more shapely, more uniform, in fact every way more desirable for market purposes.

All the packers agreed that thoroughbreds would weigh more than mongrels on similar feed rations. Some estimated their weight at 75 per cent. more.

It was developed that the packers have made some effort to stimulate an interest in pure bred stock, but not to any great extent. About one quarter of the stock they buy today is thoroughbred (some of them, however, will buy nothing else.) The average price ranges from eight to sixteen cents, and

WHAT IS MAGNET QUALITY IN A CREAM SEPARATOR?

Read what the Dairying Instructor for the Government of Saskatchewan says about it.

Province of Saskatchewan,
Department Agriculture, Dairy Branch,
Government Creamery,
Moosimin, Sask.,
July 20th, 1907

TO WHOM IT MAY CONCERN.

This is to certify that I have tested the **Magnet** Cream Separator for skimming qualities and also for its out-put capacity.

I tested the **Magnet** severely and I must say that it is the best Cream Separator with which I have come in contact.

I strongly recommend it to any prospective buyer and can assure him that he is procuring a first class machine.

(Signed) H. A. SHAW,
Dairying Instructor,
Saskatchewan Government.



MAGNET Quality means double support to the bowl, strong square gear, one piece skimmer, perfect skimming, easy turning, easy cleaning, improved ball-race, strong and rigid frame, absolute safety.

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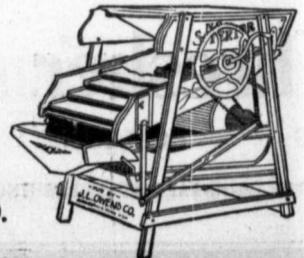
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The Harmer Implement Co.
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the average weight of fowls is four and one half pounds.

There was a difference of opinion as to the best breed. The weight of evidence was in favor of Barred Rocks, but that is probably due to the cause that they are more generally bred on farms. This question of which kind is best, is by no means settled, and of the seventy odd breeds recognized in the "Standard of Perfection," the poultryman's Bible, every one has its own advocates and supporters, or it would cease to exist as a breed.

The reason a farmer should buy thoroughbred stock for his parent stock is simply because superior qualities in poultry can be obtained in no other way.

It is not because the feathers are white, black, barred or buff, or because so and so's grandfather won the blue ribbon at the Guelph Stock show in a class of 58. Chickens are not judged for their market qualities in poultry shows. The real poultry fanciers who are interested in those things compose a very small part of the army of men whose hens produce half a billion dollars every year, and a prize-winning record is no evidence of real money making superiority. If some one would create a strain of mongrels that would be uniform in appearance, lay eggs of uniform color, shape and size, and possess desirable market qualities, it would make very little difference to the farmer whether they were recognized by the "Standard of Perfection" as thoroughbreds or not; but manifestly if a man did produce such a type and could get them to breed true to shape and color for a period of years, they would be called thoroughbreds after a time, just as all breeds have been originally developed from their progenitors—the jungle fowl. Accordingly, the foolish prejudice that many a farmer possesses against thoroughbreds as such, is utterly without reason, because his very mongrels would be thoroughbreds if he could breed enough of them and breed them true to a type or ideal. The summary of the market situation is that, with an average weight for adult fowls, including mongrels, at four and one half pounds, it will pay better to raise stock that will average six to eight pounds, such as Wyandottes or Rocks, particularly as this weight can be obtained without greater cost of feed.

There are ten classes of standard varieties of chickens which can be roughly divided into:

1. The General Purpose Breeds: Wyandottes, Plymouth Rocks, Dominiques, etc.
2. The Meat of Table Breeds: Brahmas, Cochins or the Langshans.
3. The Egg Breeds: Leghorns, Minorcas etc.
4. The Ornamental Breeds: Polish Games, Bantams etc.

Naturally a farmer breeding market stock would select from either the general purpose or meat breeds, but even this is by no means certain. Recently a

strain of White Leghorns has been developed that is a competitor of the true meat types for market honors—some of the hens weigh seven pounds. The thing to do is to find out which breed is best adapted to your market or personal preference and select that.

The question of the superiority of thoroughbreds for egg production is a disputed one. Most experimental tests made with pure-bred stock make all records show in their favor. There is abundant evidence that the 200-egg hen is the result of breeding, not of chance, but which breed makes the best layers is not settled. Almost everyone would say "Leghorn," if asked, but how can that be reconciled with egg-laying contest held in Pennsylvania a few years ago? This contest brought out twenty pens of chickens that produced over 200 eggs per year per hen. The first six were as follows: First prize pen—eight white plymouth rock pullets laid an average of 290 eggs a year each. The second prize pen—eight cross bred Leghorn pullets laid an average of 263 eggs a year per hen. The third prize pen—nine white Plymouth Rock pullets laid an average of 260 eggs per year per hen. Sixth pen—twelve barred rocks laid 256 eggs per hen a year. According to statistics the average mongrel hen on the farm, both in Canada and United States will not average 75 eggs a year.

The farmer who has concluded that thoroughbreds are the thing to raise, and has rushed off to buy a pen of three or four pullets and a cockerel paying anywhere from \$3 to \$5 a piece for them, because the birds have descended from prize winners, often does not realize that this prize winning quality may be of no more value to him than a silk hat to an African savage. The savage might barter away his gold and ivory to get the hat because it appeals to his pride, just as the farmer will buy prize-winning poultry at a fancy price so that he can say that they came from stock that won the blue ribbon at the Toronto Industrial Fair.

When you write to poultrymen about breeding stock, you don't care whether they are bred to win prizes or not; what you want is poultry of good marketable size with hens bred to lay eggs of uniform shape and color, from stock that has no egg production record. Then get the paint brush, and paint across the hen house door: "Not prize-winners, but bread winners."

It must not be inferred that there is any objection to prize winning stock as such. The incentive that fanciers have had in producing something that they could put in a show ring, to prove that they have done their work better than the other fanciers, has put poultry where it is today. Without their work we should probably still be without any definite type or breed. The trouble that a poultry enthusiast



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who has tasted the joy of winning the blue ribbon becomes unreasonable in his hobby. His whole interest is centered on winning more ribbons and every spare moment of his time is devoted to accomplishing that end. The farmer has a real grievance against him, in that he has done all of his crossing and inbreeding of fathers, daughters, uncles and aunts without any regard to practical utility—whether the hens from which he has been breeding were producing 10 eggs a year or 200 made no difference. His whole aim has been to breed out a foul flight feather or two, or create a better comb, or the eyes a better tint at a sacrifice of everything else. The result is that when a farmer goes into the market to buy thoroughbreds, with his money in his pocket ready and willing to pay for the best stock, he not only pays for qualities he does not need, but actually pays a premium for something that has been obtained as a sacrifice of the very qualities which he does need. There are a few men, however, raising thoroughbred stock that is "bred to lay" or to meet certain market demands, and those are the men that should be patronized.

Keep only one breed, one color, and one type. This is very important on a farm where arrangements are not usually found for keeping poultry separate. Very often a complete reorganization of the poultry appliances will be necessary. It is perfectly obvious that however valuable and pure bred your stock may be, it cannot be kept so unless certain things are observed. Not only must you dispose of your mongrel roosters, but you must also keep an eye on your neighbor who may come visiting.

Perhaps the greatest return of all from raising thoroughbreds, one that cannot be measured in money value, lies in the feeling of personal satisfaction that only the lovers of pure bred animals can understand.

The Horse

The hard field work for the season is over and some of our horses are not sorry. A season of rest is welcome to many a stiff joint and galled shoulder. A large proportion of our farm horses will be earning little or nothing for five months, eating their heads off. Those farmers who are in the exclusive raising of wheat are unable to find reasonable work for their large teams especially, and grudge a proper ration for their summer-time friends. The horse is "sent down" for four months—and worse than "hard labor"—in close, if not solitary confinement. In some cases the prison is a dungeon.

Wintering.

There is no phase of farming or stock keeping in which results are more varied than in the wintering of horses. Some horses come out in the spring looking

as despondent and listless as when the fall plowing was done. Five months of a poor ration with no variety has impaired digestion. Dark, damp, foul stables have added their quota of ills, and the confinement, want of exercise and poor food have dissipated all ambition. Such horses, no doubt, could they know what was ahead of them would envy the Christmas beeves and Thanksgiving turkeys rather than go through the winter some endure.

Then there is the horse that is fed too much and too strong feed for an idle season. The few times he gets out he feels very gay—possibly he goes to work in March in high feather and fat; but a day's work does for him. There is another horse to buy.

In all feeding in this country, from the city restaurant and country hotel to the horse stable and chicken coop, the great lack is variety. As this article is not dealing with human feeding, there will be no criticism of the restaurant bill of fare of fifty items, for in that a want of variety can be shown; but dealing with horses only, the sameness in diet from day to day is a quite unnecessary evil.

In the older provinces, it is said, many men have failed on a wager to eat a quail each day for a month. Think of the horse who has hay and nothing else for four months without a break. There is no good cause for such fare for our horses. Variety is a greater necessity in idleness than when at work, for the exercise puts muscles and digestion in good order and a surplus of any food constituent is eliminated from the system more easily. It takes very little work to produce a few bushels of turnips, mangolds, beets, potatoes and carrots for winter use; and the feed in them so produced, is cheaper than hay and oats. Chopped grain, of various kinds in small quantities, may be fed to advantage, always making good, clean, sweet hay and some oats the stand by. Bran and oil cake or flax seed itself make valuable additions any time in the year, but are almost indispensable in an idle winter added to a hay or straw diet for their medicinal effect. A root, after the horse is used to it, if only a couple of pounds a day, will be eaten with great relish. A horse with a pound a day of roots, different kind for five consecutive days, one day bran and one day flax seed, will winter cheaper and better than the hay and oats horse. But it is the horse that has to go through on hay or straw that this root-bran-flax dessert will most benefit in the prevention of ailments due to intestinal derangement.

Light and Ventilation.

Looking at many stables one would suppose that sash and glass were beyond the purse of any but the wealthy. Each year sees improvement, but in general there is a woful lack of light in Western stables. There

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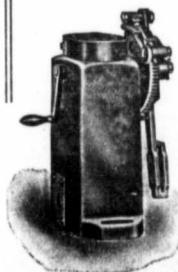
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are some people who have an inbred, or rather "bred in" dread of light in a stable. We can never have too much in winter. All glass would be best. That not being practically, there should be as much as possible. A horse does best out of doors in climates less severe than ours. There is no stint there of air and light.

There are many systems of ventilation which have been expounded and hailed as faultless in this country, but there are none short of forced circulation that is worth the trouble of installing. Far better is a window-space covered with good strong factory cotton in place of glass here and there. Let it go high and low and wide. More or less light comes in and always air, never draughts. In severe weather cold may be a trouble, but if windows are hinged, some may be kept open and the space covered with cotton for the season. When the thermometer dips, shut some of the windows.

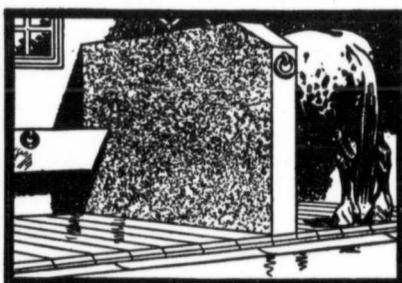
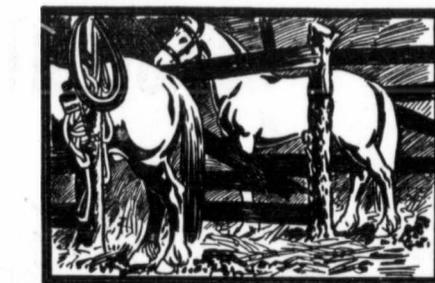
Let the walls and roof of all buildings be as warm as possible. The warmer the roof and walls the more air can be let in without making the place too cold. With walls of one board thickness or of solid stone the air must be very bad if the animals are comfortably warm while it is 30 below zero outside. Without giving the matter thought we are inclined to judge a warm atmosphere inside when it is cold outside as more impure than a cold one. It is quite possible for the warm to be much the best, for an extra warm wall may retain animal heat and admit fresh air at the same time. This last fact is often overlooked by those having lately imbibed an enthusiasm for ventilation. A very common error is that of having small apertures promiscuously in walls or around windows to let in fresh air. This may make a direct and continuous current of air which may strike a horse's eye or flank and cause serious results. Better it is to make an opening in the right place and cover with cotton.

Feet.

The feet of the horse are often neglected because he is not working. Barefoot and in pasture he is pretty safe, but in a stable for all winter with old shoes on, with front feet on dry plank and hind ones in filth, he is running many risks. It is a good plan to remove shoes and every month to file the edges of the hoof smooth, rasp off the outer shell to near the level of the sole of the foot, not touching the frog, and to see that the foot is not harboring dirt. An occasional washing with castile soap and soft water is good, carefully drying and anointing with a mixture of glycerine and water (1 to 4) or neat's-foot oil.

Water.

Good water is a great blessing and the proper watering of horses adds much to the comfort and well being of the animal. It is cruel to drive a horse into a



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temperature of 30 below to take in his day's supply of freezing water. He should have it three times a day at least so that he does not get too much at once, and it should be given in a warm place. A kettle of boiling water will take quite a chill from half a dozen pails of water and perhaps avoid a wretched shiver of half an hour or more.

Cleanliness.

The horse in confinement is as helpless an animal at keeping himself clean as we have yet domesticated, hence he should be well looked after. Clean, dry bedding provided, stables frequently cleaned and sprinkled with an absorbent and daily grooming are potent factors in the successful wintering of our horses. Chopped straw absorbs four times the moisture from the floor that long straw will take up. On careful calculation it will be found that chopping of straw saves labor in the end and material as well. It is better in the manure pile and rots quicker. Most farms waste wood ashes, although they are very valuable to the land. Sprinkled on the damp spots after stable cleaning they absorb odors and moisture and finally go where and in the manner they will do most good.

Grooming an idle horse is often thought quite unnecessary. That is a great mistake. The horse

has a delicate and porous skin and the clogging up of its pores with filth leads to many ills, the sore discomfort of the animal as well as making an abiding place for parasites or fostering skin diseases.

Every horse should be out more or less every day for fresh air and exercise. Unless weather is too bad the longer he is out the better. Shelter of any kind is a great advantage in winter. Protected from the wind and in sunshine a horse may be comfortable out of doors in a temperature twenty degrees lower than he can stand in the blast of a winter's gale.

The Dairy Cow.

From time to time we have a strong plea for the Shorthorn as a dairy cow. If her performance at the pail would demonstrate her filling qualities she would need no pleas. Dairymen would be after her, for they have, in the mass, no breed prejudice and would milk any mammal that would make them profit from Goats to whales.

Chas. McIntyre, of Ohio, a great shorthorn authority, remarks, "A threatening danger is failure to develop the milk-giving qualities of our shorthorn cows and heifers," for "if present meth-

ods for drying up cows and heifers soon after calving that they may get very fat, and the

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use of nurse cows for the raising of calves is continued, we will have a breed devoid of milk. What use there will be for such cattle in Ohio and adjoining states is hard to determine."

This is from a friend of the breed and the writer of this article has no desire to, in any way, detract from the reputation of a noble breed. Yet no good result can be obtained by making a general claim which facts and experience will not substantiate.

There are families of Shorthorns that are great milkers and the whole breed was stronger at the pail sixty or one hundred years ago than it is to-day; but only in rare cases have those old milking strains been preserved from the crosses of the strong beef making type. The exceptions are nearly all in England and the breeders of them have no wide reputation. The general shorthorn man would as soon think of introducing Jersey blood into his herd as that of the milking families. In Canada where could you go for a sire whose three dams showed a high year's record? If you could find such a sire whence would come his patronage?

A wealthy man in England has herd of milking shorthorns, bred for milk, hundreds of them too. There has been no admixture of beef strains for sixty years. Now a beautiful photogravure of a large group of these cows appeared in a United States paper. Were they typical shorthorns as we see shorthorns at our fairs? Not on your life! If they had been black and white they would all have passed, except with the best judges, for Holsteins; shunned by the breeder and feeder except as wet nurses for the young cows that were to go into the ring as dams of the race. The Holstein, as she is imported, has practically nothing behind her in the way of breeding except an ancient line of milkers. Selection on exact or scientific lines is practically neglected in Holland. Individual milk records and testing for butter fat cut no figure in a sire's pedigree. The use of these two systems, the advance register and keen scrutiny of official pedigrees, have made the American Holstein the superior of her European progenitor. Nearly all the high class work of advancing the breed by the above scientific methods has been accomplished in the last thirty years, but there was the unremitting milking of every dam for all she would give for hundreds of years for a foundation to work on. In this the Shorthorn was lacking.

It is quite possible to make the best kind of milkers out of Shorthorns. To do this a breeder and milker might go to these herds in England above mentioned and select a grand few hundred cows of great constitution and feeding capacity; by careful milking and feeding of milk producing food; by butter-fat testing and individual records as basis for selec-

tion; by the selection of sires on these records and by the weeding out of indifferent performers he might in forty or fifty years raise the Shorthorn to a very high place as a milk and butter producer. But in the meantime the breeders of Jerseys, Holsteins, Alderneys, Guernseys and Ayrshires would be working along the same lines, with a half century the start in the application of most approved methods, and a better foundation in specialized capacity of breed.

The breeders of Jerseys, Guernseys, Alderneys and Ayrshires have paid more attention to pedigree and performance than the Dutch ever did and their aim of a rich milk in particular has been rewarded with signal success. This aim originated in the desire to produce butter, in days of elementary facilities for transportation, when butter could be sent to markets at greater distances than milk. The stolid and comparatively illiterate Dutchman was for milk, milk and more milk. Beauty or points cut no figure, but color was to him the one concession to the consideration of appearance. A calf of any other color was destroyed. Hence the unvarying pigment of absolute black and a pure white only in the coats of their cattle.

Beauty has had little consideration in selection in America. Performance is the one recommendation that counts. "Handsome is as handsome does" is the non-committal concession to the charm of the eye from the Holstein breeder and well may he sing of his cow:

"What care I how fair she be,
If she be not kind to me."

Across the English channel, however, all this is changed. No human contestant in a beauty show was ever so criticized as Madam Jersey, her sister from the other Channel Islands or her cousins from Ayr when they reach the ring. The judge of women may not have any ideas, except very confused ones, why he makes a choice and perhaps, not one in a dozen spectators would agree with him; but the official judge and the critical spectator at a cattle show are past masters in the art and know to a nicety just what they want to see and why.

As a result of this common esthetic taste in Great Britain the breeds of cattle conform to individual breed types, very beautiful specimens are common everywhere and downright ugliness puts the possessor beyond the pale.

Compared with common or scrub cows the beauty of some pure bred herds strikes even the uninitiated at once and it will be found that the herdsman's small children are often able critics of bovine comeliness. It is largely due to this widespread love of animated nature, concentrated upon some favorite breed of domestic animals, that has made Britain's live stock sought after the world over.



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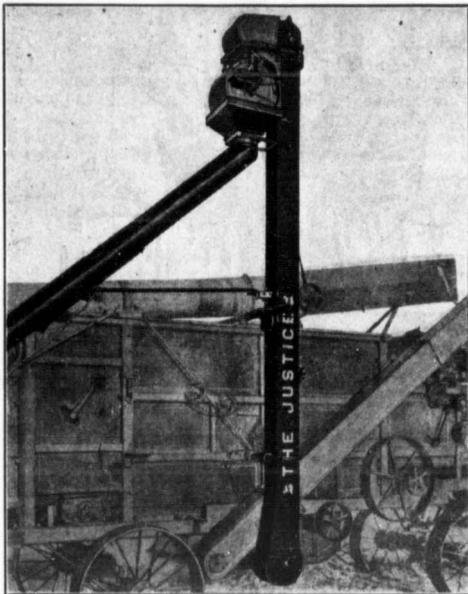
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See the Announcement in this issue of our 1910-11 Wheat Guessing Contest.



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BY THE

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A machine that cannot lie, cheat or steal. A servant whose fidelity is never in doubt. A detective that no species of dishonesty can tamper with. An accountant whose accuracy can never be questioned, whose statements never mislead. The only Government Standard for this purpose having the sanction of the Department, made and sold by us at a price within the reach of every farmer.

Would you forget all your Engine Worries? Then get a "McCullough" Oil Pump

An absolutely perfect appliance—a god-send to every engineer and thresherman. It cannot get out of order and is so simple in every part that a novice can handle it easily and without risk by following the simple instructions accompanying it. Agents wanted in every town.

When placing your order for that 1911 Threshing Outfit be sure and see that it is equipped with a **Whiteford Justice Measure**. Insist on it and you can have it.

Address the

Virden Manufacturing Company Limited BOX 678
Virden, Man.

The milch cow is a nervous animal and naturally timid. This would hardly be suspected when walking amongst a well-fed and well-treated herd. The complacent eyes, the poses of restfulness displayed by cows that have filled their paunches with succulence, and are chewing their cuds in well-earned leisurely retrospection, make a picture of docile contentment. Be assured it was no sparrow's breakfast that produced this mental quietude. But just let a dog she fears come into view of one of these. She is a wild-eyed terror in an instant and for many hours after she does not recover the placidity so disturbed. She may appear to be calm again, but her flow of milk will show serious derangement by decided falling off, compared with her usual yield.

The above refers to the well-treated milker. There are cows that get no chance to demonstrate the effects of fright, because they so seldom pass the time from one milking to another without some such ill-treatment. If such respite occurs, the fear of what may happen renders ease-of-mind impossible, an unfortunate mental condition not unknown in the human family.

To produce the enormous quantity milk a good cow gives food is necessary in proportion. When it is denied her, gnawing hunger attacks her and she gets it where she can and the best she can find. Her depredations

in field and garden rouse the ire of her unthinking owner, or prick the conscience if he be intelligent and well informed. When a man owns a hungry cow that breaks into a grain bin or garden to get more or better food he generally attacks her with the most effective missile or implement he can lay his hands on. When he has inflicted his severe punishment he wonders if that will compel her to desist. The cow wonders why the food is denied her when she only wants it to turn into milk. The man's query shows lack of information and reasoning power; the cow's is unanswerable, except on the score of a mental lack on the man's part unsuspected by the cow.

If you want more heat from your fire you put on fuel. Open your drafts and fill your fire box with quick burning fuel if you want the most possible heat. It is the same with the cow. She wants the right kind of food to get her system in good working order and she must have lots of it and every comfort if she is to do her best.

The cow that is not on hand to be milked at milking time has not been treated properly. Pasture is not sufficient. Especially in late summer in this country it is liable to be short and to make a long journey of the hunt for bare subsistence. Provision should always be made for such seasons and a green crop grown for the purpose. The cow should not be

compelled to walk miles every day for her food. It is a loss to an owner if she travels more than three miles in a day. It is a waste to have large pasture fields; for the cow will go to the very best place every day and in this, will tramp down and ruin as much as she will eat; besides wearing her self out with walking to and fro.

To one who will use his head a little is not this inclination to travel far for a best choice of food sufficient to show that the cow is somewhat of an epicure? Could it be possible an animal of such tendencies could do its best on food that was not to its taste?

For these reasons three pastures of ten acres each will give better results than forty acres in one field.

In looking over the first part of this article I fear intense breed jealousy might think the intention was to knock the Shorthorn or boost the Holstein. The very fact of the Shorthorn being the excellent beef animal it is makes it impossible for it to be a good milker. For the same reason we know what an utter failure as a meat producer the Holstein is rendered by its devotion to the filling of the pail.

There are breeds enough to satisfy the whims of the most fastidious. The special purpose cows are the writer's idea of consistent rendering of greatest service. He would say, if you want to raise beef trust the job to some beef breed as pure as possible.

If you want milk choose the best milking strain you can find of the breed that takes your fancy. For the nondescript commonly dignified by the name of the general purpose cow there is no place in the realm of profitable farming.

Poultry Houses.

One seldom finds in the articles on poultry houses much beyond the usual hints as to light and air which are very general and insufficiently specific to act as an absolute guide in poultry house construction.

With many new ideas in building there are some capable of application in this branch of farm housing. In the long list of new materials produced of late years, many may be successfully used and used in a way to obviate some of the difficulties in making an ideal residence for the birds.

A material which tends to cleanliness is truly worth seeking, whether as a non-absorbent in the fixed parts of a building or as actively absorbent in substances which are in place for the purpose of making dirt less offensive and more easily handled in removal.

Just here it might be remarked that there appears to be a world wide prejudice in the human system against giving the hen a chance to be clean. In her native state she roosted in trees unless

Continued on page 80



Saskatchewan.

By A. Frank Mantle.

It cannot be denied that dairying is not popular in Saskatchewan and is not practised as much as it well might be. Happily, though, it cannot be denied—for there are plenty of figures to prove it—that dairying is on the increase even in our greatest wheat producing province. In 1906 the patrons of the government-operated creameries were not many, while at present the number is very considerable. There are eight government-operated creameries in Saskatchewan. That does not seem to be very many for so vast a province but an important point to remember in connection with them is that the man situated 100 miles away from the nearest creamery is as well placed for becoming a patron of it as is the man on the adjoining section of land. Many factors enter into the question of whether or no dairying should be followed on a farm, but the distance to the nearest creamery is not one of them. This is so because the government will pay all express charges on cream to the nearest government-operated creamery.

Distance from farm to railway station, supply of water, character of help obtainable, suitability of buildings and cattle to the work, and whether or no one likes the work, are all important factors to consider in connection with dairying but not the nearness of a creamery. That, or rather the distance to one, can never in Saskatchewan be urged as a reason for not going into dairying. Yet we question whether this fact is very generally recognized and understood. No matter where a person is located, if they want to do some dairying and ship their cream, they should write to the Superintendent of Dairying at Regina and get particulars.

There are two policies that may be followed in developing the creamery industry. One is to take the cream to the creamery and the other is to take the creamery to the cream. The one adopted and consistently followed by the Saskatchewan government is to take the cream to the creamery. Few creameries and a large make of butter at each means better butter, consequently better prices; one well-salaried manager with several assistants instead of many lower-salaried managers with no assistants; low cost of making butter instead of high, and consequently a larger profit to the patrons. To have a lot of small creameries dotted over the country looks well super-

ficially and makes a good talking point but as in this country such a state of affairs would mean a lot of semi-competent managers, high operating cost, and poorer quality of butter, the real condition of affairs is likely not to be as satisfactory as appearances indicate. In sizing up the dairying industry in a province the points to note are the total make of butter and the cost of making it. A large aggregate make and a small number of creameries will point to a satisfactory state of affairs.

Therefore, while the government is willing to pay express charges on cream to the nearest existing creamery, towns should be very slow to agitate for a local creamery. Of course there will come a time when the supply of cream tributary to a point is sufficiently large to justify the erection of a creamery. This will be when any saving of cost at the distant existing creamery will be more than offset by the express charges on cream shipped thereto. But until that time comes the problem of how to dispose of the cream resulting from dairy operations is best solved by shipping it at the government's expense to a government-operated creamery.

The problem of how to plough the season of pasturage at both ends is one intimately connected with the foregoing. The trouble with so much of our dairying is that it is spasmodic. It only lasts about as long as the school holidays and often runs concurrently. It starts when the pastures are well-grown and stops abruptly when native pastures become bare and brown. The intervening time is all too short for anything very large in the way of profits and cream cheques to come into evidence. What our dairying needs is a longer season of pasture, more succulent feeds to supplement the pasture in spring and fall and to replace it in winter, better cows, and more enthusiastic dairymen.

We may as well make up our minds that nothing much can be done for the improvement of native pastures. These must be replaced with tame ones, and these, in turn, supplemented with other green fodder crops. Without a doubt the best grass for pasture purposes in Saskatchewan is brome. Many dislike brome, but that is because it was not always used wisely and as well understood as it now is. Brome comes green earlier, stays green later, stands more cropping, withstands greater drouth, and yields more grass than any variety that can be grown in Saskatchewan to-day. It has the quality too, and is a good milk-



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you owned
a Waltham"*

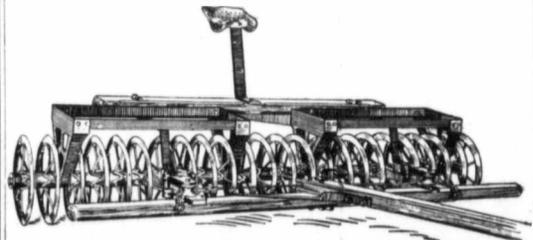
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is the watch of established reputation for accuracy throughout the world. It has had the unqualified endorsement of jewelers, whose knowledge of watch-making is both practical and technical, for nearly three-quarters of a century. The Waltham Colonial Riverside Maximus movement is the newest word in watchmaking. A thing of beauty, and a watch of splendid accuracy. Made as thin as it is safe to make a reliable time-piece. Ask your Jeweler.

WALTHAM WATCH CO., - WALTHAM, MASS., U. S. A.
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GOOD CROP THAT STOPPED GROWING

WHY? —IT DRIED OUT BECAUSE YOU NEGLECTED
TO SECURE THE MOISTURE AT SEEDING TIME



The Fulton Sub-Surface Packer

used in the preparation of the seed-bed gives the assurance of a good crop from the moisture of previous Fall and Winter. It packs the soil on the scientific principle established beyond all doubt by Professor Campbell, conserving the moisture that is already in the soil, and the crop is assured even if the Spring and Summer rains are insufficient. Built in sections—conforms to uneven surfaces. It can be weighted to secure penetration by the wheels to the depth desired in the soil.

No Drying Out if you use this Implement

If your dealer is not handling the "FULTON" write for full details to the

Canadian Moline Plow Co., Winnipeg

Patronize Those Who Patronize This Paper

PROPER TILLAGE

The solution of the higher-cost-of-living problem is to be found in proper tillage. Good seed alone will not insure bumper crops. It is vitally important that the seed bed be so prepared that the seed will germinate properly. The clods must be pulverized and the soil compacted to conserve the moisture which makes the plant food available for the young roots during the critical period in their growth.

To do all this and do it in a way to insure a bumper yield necessitates the use of improved tillage implements. The Deering and McCormick lines include the most approved and most widely used tillage implements to be found on the market. Agriculturists who use these implements are reaping harvests that yield abundant profits and measurably help to keep down the cost of food

stuffs. As population increases it becomes necessary to make the acres yield larger returns—and the surest way to do this is to use Deering and McCormick implements. These lines include: Bumper disk harrows, peg-tooth harrows, smoothing harrows, cultivators, land packers, single and double disk drills, shoe drills, harvesting and haying machines, manure spreaders, gasoline engines, tractors, hay presses, cream separators, and binder twine.

See the nearest I H C local dealer for full information on these implements, or, write direct to the nearest branch house for catalogue and pamphlet, "The Disk Harrow," a book containing information of value to every farmer regardless of his place of residence.

Canadian Branches: International Harvester Company of America, at Brandon, Calgary, Edmonton, Hamilton, London, Montreal, Ottawa, Regina, Saskatoon, St. John, Winnipeg, Yorkton.

International Harvester Company of America

CHICAGO

(INCORPORATED)

U S A



forming food. All that is required in connection with it is that it be kept away from the vicinity of trees, well back from fences, and not be allowed to go to seed.

Every three or four years it tends to become root-bound and requires the somewhat drastic treatment of being plowed thin and rolled or floated. This is an application of the principle of the survival of the fittest. Three plants out of four die but the fourth is a vigorous one. Brome among the grasses reminds us of the Chicago preacher of whom it was said that he could dive deeper, stay down longer, and come up drier (greener) than any other preacher in Chicago.

Brome in its place is a very valuable crop; brome out of its place is a pest of habits similar to sow thistle. The thing to do is not to banish it from the farm but to keep it in its place. Hens in the yard are a source of profit; hens in the garden a source of loss. We do not kill off the hens but fence the garden.

Passing from the consideration of how permanent pastures may be so improved as to afford feed for a longer period in the summer, to the question of how they may be supplemented with other crops suitable to be eaten off, it may be said that fall rye, sown during August or the first half of September affords the best source of early spring pasturage for Saskatchewan. The seed is cheap and may be sown upon a piece of summer fallowed land

which, in turn, may be replowed and sown to roots or corn or barley after the fall rye has served its purpose in the early spring and the permanent pasture has come along. For a temporary feeding ground in the fall nothing excels a bushel of oats sown on part of the summer fallow. The milk cows can be turned into such a field for an hour or two each day and will rapidly fill themselves. Another excellent crop for this purpose is rape which should be sown about June in drills and cultivated. Cattle should not be turned on to the rape exclusively but be given the run of a piece of permanent pasture or prairie sod as well.

The Fodder Problem.

By Prof. S. A. Bedford, of the M.A.C.

The light rainfall of the past season has drawn particular attention to the necessity of an abundant supply of fodder. Native hay meadows have generally dried up and cultivated grasses have proved disappointing.

In nearly all parts of the province of Manitoba native hay meadows will soon be a thing of the past, and even in the other western provinces their productivity will be lessened each year owing to the breaking up of adjoining lands.

Western farmers are everywhere seeking fodder plants that will thrive and give at least fair returns during a dry year. There are at least two plants that will

fulfil this requirement, viz., Fodder Corn and Alfalfa. In spite of the light rainfall of this year, fair crops of fodder corn can be found in all parts of the west. This magnificent plant sends its mass of roots in every direction for food and moisture and appears to thrive even during the hottest days of midsummer.

Alfalfa, once well established, sends its roots into the soil to great depths and is largely independent of rain. In districts where all kinds of grasses failed this year alfalfa has yielded from two to three tons of hay per acre.

In the few instances where farmers have failed with these two plants it has been owing to a lack of experience with them. Corn requires good seed, sown at the proper time, clean culture and proper curing and storage. A field of alfalfa to prove successful must have abundance of good seed, sown on well drained land. The weeds must be kept from going to seed the first year by repeated mowings and all stock prevented from pasturing on it for the first year or two.

Summer-fallowed land usually give the largest crops of fodder corn, but excellent returns are obtained from grain stubble land if properly prepared. The stubble should be plowed as early as possible in spring and harrowed or cultivated every few days to kill the young weeds. About May 24th half a bushel of tested seed per acre should be sown, in rows three feet apart, if the seed

is good a grain every six inches is sufficient. The sowing can be done with the ordinary grain drill by closing up some of the spouts. Two or three inches is about the proper depth to sow, depending somewhat on the dryness of the soil; the drier the soil the deeper it should be sown.

During the growing season the field must be kept free of weeds, otherwise they will absorb moisture needed for the corn.

The crop should be cut by September 1st so as to escape injury from frost, if not more than eight feet high the ordinary grain binder will do the work in a satisfactory manner, but very tall corn should be cut with a corn binder or with a corn knife or sickle. In Ontario farmers are using a very sharp hoe, fastened to an ax handle, for this purpose; they claim that little stubble is left by this method.

After cutting, the corn must be carefully placed in tepee shaped stooks, tied at the top with binder twine; each stook should contain from one-quarter to half a ton of dry fodder. The fodder cannot be stored in stacks or mows because of its tendency to ferment, but must be drawn in from the stooks as required throughout the winter. The yield varies between ten and thirty tons of green corn per acre.

Any well-drained soil will grow alfalfa but it should be quite free of perennial weeds and no ruse crop should be grown with it.

Continued on page 79

AUTOMOBILES FOR THE FARMER

With this issue we begin a series of articles on the automobile as it pertains to the farmer. The increasing number of farmer automobile buyers leads us to believe that the farmer is rapidly taking hold of this means of transportation and accordingly we feel that a series of articles such as we shall give our readers should prove both interesting and profitable. They will be technical only in so far as is necessary in order to familiarize the farmer with the workings of an automobile, while considerable attention will be paid to the commercial side of the auto viewed from the farmer's standpoint. They are written by a gentleman who is thoroughly conversant with the automobile in all its phases, one who is both practical and thoroughly competent to handle the subject. Each issue we shall illustrate one or more cars that are suitable for the farmer's use.—Editor.

Buying the Car

By A. C. Emmett.

The day when the farmer was satisfied to drive a team over poor roads to market has gone by, and with flax over the two dollar mark, wheat close to the one dollar mark all the time, and the sons and daughters of the farmer getting college education, his outlook on life has broadened and he realizes that the world has been making great progress along the lines of mechanical transport. No longer is the automobile a means of locomotion that is apt to give up just at a most critical time, but can be depended on to keep on running its 100 miles a day with only very little attention, if that attention is regularly given. The same amount of time that would be spent in cleaning a buggy, grooming and harnessing the team before commencing a journey, and the feeding and bedding them down at night would keep a car in absolutely apple pie order, with the advantage that it would not suffer if this attention was left over until the morning. In the western part of the state of Kansas every third farmer owns a car and it is probable, that by the time these lines are read, every second man at least will be the owner of a car.

There is no reason why the farmer of Western Canada should be any worse off or less up-to-date than the Kansas farmer, and the proof that the automobile has been found of distinct benefit to these farmers, should lead to the farmers of our own great western country taking up the question and deciding for themselves by actual test whether the car is likely to be of service to them in quicker transport of their light produce and their journeying backwards and forwards to town, or any other point to which their interests make it necessary for them to reach in the quickest possible manner.

A feature that must also appeal to them in the deciding of this question, is the fact that the car does not tire, and when the ordinary day's work is done, the car is still ready to take members of the family out on a visit to the neighbors or even away to any big town within a radius of twenty or thirty miles, and will be again ready to start work the next morning.

Where the horse alone has to be depended on, this would be an impossibility, and it offers a very strong argument in favor of the car.

Once the decision to purchase an automobile has been reached, the important question of the right kind of car to buy, comes up for settlement.

The ultimate end can only be reached by a careful consideration of the merits of the many cars that appear best suited to the individual needs of the purchaser. The price that can be paid is the chief factor in the question, and once this has been settled the choice is immediately narrowed down to cars coming

ranging from \$1,050 to \$1,500, with a wide variation in style, including detachable tonneaus, which convert the car into a light roadster or light delivery rig, suitable for carrying the produce of the farm, such as milk, butter, eggs etc., to the nearest town with the least possible waste of time.

struction book, without which no up-to-date concern hands a car over to the buyer.

Maintenance.

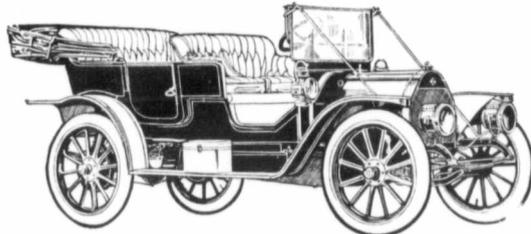
The cost of maintenance is a feature that should also be borne in mind when the prospective buyer is looking over the various models offered for his inspection. Tires enter largely into the cost of upkeep and if the price to be paid for a car comes within the \$1,000 to \$1,200 range, it is better to select a car that is light and yet well built with tires not less than 30x3 1/2 in size, which, if a good standard make, and used on a machine where the springs are good and well placed in relation to the load to be carried, should be good for anywhere from five to ten thousand miles. This will, of course, vary according to the amount of care bestowed upon them by the owner, care taken in filling stone cuts and bruises with one of the many excellent preparations now sold for this purpose, often preserving them for the greater mileage mentioned.

Careful attention to the lubricating system, and the regular filling of the grease cups on the axles, steering gear and other parts, will prevent what may be a heavy repair bill, and numerous cases can be cited where the total expense in this direction has not exceeded \$10 a year.

Are You Going to Buy an Automobile?

During Bonselp week there will be held in Winnipeg Western Canada's first real automobile show. The average farmer may be disposed to regard this event of no consequence to him, but if you will but stop and think a moment we believe that every farmer will agree that such a show holds something of interest to him.

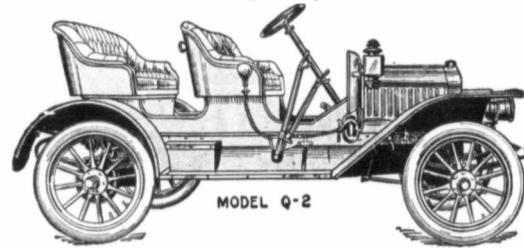
The automobile is bound to become, sooner or later, a common means of conveyance among farmers. Every year sees an increasing number of farmer automobile buyers. This leads us to believe that it is up to the farmer to investigate such a machine thoroughly, and the Auto Show furnishes the opportunity. The spacious warehouses of the Cockshutt Plow Co., Winnipeg, have been secured for the show.



SPECIFICATIONS OF THE REO 30

ENGINE—Vertical, 4 cylinder cast in pairs
4 x 4 1/2 inches.
HORSE POWER—30
IGNITION—Low tension, magneto with auxiliary battery, jump spark.
TRANSMISSION—Selective winging type.
GEAR CHANGES—Three forward and reverse.
WHEELS—34 inches.
WHEEL BASE—108 inches.
SPRINGS—Front, 1 elliptic; rear, 1 elliptic.
DRIVE—Shaft, universal joints, enclosed in oil.
EQUIPMENT—Three oil lamps, two gas lamps, generator, horn, complete tool and tire outfit.

Practically every car now turned out from the factories is equipped with a good magneto for ignition purposes, a supplementary set of four dry cells also being fitted for the initial starting of the engine, the switch being turned over to the magneto side once this has been accomplished.



MODEL Q-2

SPECIFICATIONS OF THE MAXWELL MODEL Q-2

MOTOR—31 x 4 inches.
IGNITION—Dual, Magneto and Battery.
TRANSMISSION—Sliding gear, three speeds and reverse.
WHEEL BASE—93 inches.
WHEELS—Artillery Pattern.
TIRES—30 x 3 1/2 inches.
SPRINGS—1 elliptic front, 1 elliptic rear.
CYLINDERS—4 22 horse power.
COLORS—Light blue, dark blue, cream wheel.
EQUIPMENT—Two oil side lights, one oil tail light, horn with flexible tube, full set of tools, tire, repair kit.

into this class. For the man of moderate means, many excellent machines are offered that will do every bit as good work as the more expensive and luxurious models, but are naturally of not such a degree of excellence in finish, and of the same carrying capacity. A five seated passenger car of either the two or four cylinder type will be obtainable during the 1911 season for sums

The control of the car has also been simplified to a very great extent, so that it is possible for an absolute novice to learn the operation of any car, as far as the driving is concerned, within less than an hour. The economic operation of a car and a general knowledge of the engine and transmission, can of course only be gained by actual experience and a careful study of the in-

AUTOMOBILES FOR THE FARMER

AUTOMOBILES FOR THE FARMER

Or in fact for any one who wants the greatest Automobile value for his money

THE GLIDE SETS AN ABSOLUTELY NEW STANDARD OF AUTOMOBILE VALUE.

To you who are seeking true Automobile satisfaction—who are looking for a permanent car—the Glide line offers a wonderful opportunity. In buying a Glide you pay enough to secure everything that is needed in quality to make an automobile a success. You pay no more, for every dollar of the Glide price covers something that goes into the car to add to its comfort and efficiency.

A car like the Glide will be in satisfactory operation long after most of the sensationally advertised machines of today have been forgotten.



5-Passenger Torpedo
\$2,600
45 H.P. Cars, \$2,450
F.O.B. Winnipeg

Big, roomy, powerful, mechanically correct, sanely priced—the Glide is the type of machine upon which the future success and prestige of the automobile industry lies. It is practically three years ahead of its time.

We want you to see a Glide and ride in it before buying any other machine. After such a test we will be glad to leave the decision to your own judgment.

EMPIRE "20" The NEATEST, CLASSIEST & SMOOTH-EST RUNNING ROADSTER of the Year.

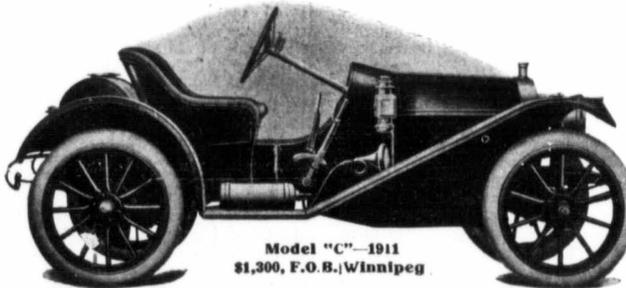
SPECIFICATIONS

MOTOR—Four cylinders cast en-bloc, 3½ x 4 inches. Unit power plant, ignition either by Remy or Eisemann H. T. Magneto.

TRANSMISSION — Unit with rear axle. Selective, sliding gears, three speeds forward and reverse.

TIRES — 32 x 3½ inches, front and rear. Q. D. rims.

SPRINGS — Semi-elliptic front, three-quarter elliptic rear. Exceptionally long and easy.



Model "C"—1911
\$1,300, F.O.B. Winnipeg

SPECIFICATIONS

WHEEL BASE—96 inches.

BODY—Sheet metal, semi-torpedo type, enclosed dash.

COLORS—Body blue with cream running gear. Finish equal to highest priced cars.

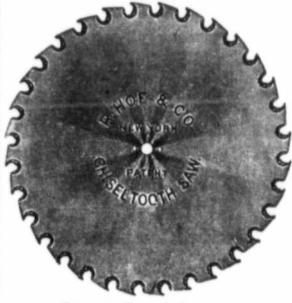
EQUIPMENT — 6½ inch gas lamps, 8 - inch flare, brackets included, oil side and tail lamps, horn, complete kit of tools, tire repair kit, tire pump, irons on rear for extra tire.

The Car You can Afford to Own

Beautifully Illustrated Catalogs describing these cars in detail sent on request

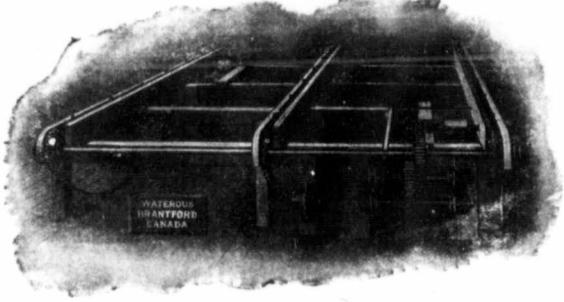
HAUG BROS. & NELLERMOE

Fountain and Henry Streets, Winnipeg, Man.

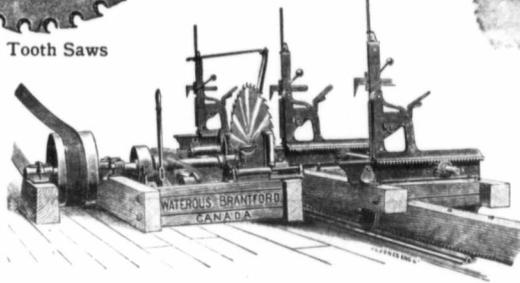


Chisel Tooth Saws

**Engines and Boilers,
Saw Mills, Edgers,
Trimmers, Log Jacks,
Lath Mills, Shingle Mills,
Saw Dust Conveyors,
Planers, Shafting,
Pulleys and Belting.**



We sell the original Hoe & Co. Chisel Tooth Saws



Waterous No. 0 Saw Frame and No. 1A Log Carriage, opening 30 inches from Saw, with Peel Dogs, Spring Receder, Ratchet Set Works, Belt Tightener, Solid or Inserted Tooth Saw and Drive Belt, making complete Portable Saw Mill.

Waterous Engine Works Co.
Limited
WINNIPEG, MAN.

There are few people in the English speaking countries who do not know something of Dr. Samuel Johnson, and those who have read Boswell's "Life," regarded as the best biography in the English language, will feel that they know very much of him. Some, however, will recall him mainly as the ponderous lexicographer, a man "born to grapple with whole libraries." Johnson's was the dictionary which almost certainly figured upon the bookshelves of our grandfathers, a monument of learning and perseverance, which occupied nearly nine years in execution and which has been the basis of more modern compilations. But it is not as the scholar, the poet, the dictionary maker, or even as the man of letters that Johnson mainly interests us. It is his personality and character that bear a charm the years can never sweep away. In September, 1909, at Lichfield, where his father was a bookseller, Johnson's bicentenary was celebrated and Lord Rosebery made one of those happy addresses for which he is so famous. Johnson was born at Lichfield in the reign of Queen Anne, 1709, and he died in 1784 in the reign of George III., shortly before the awful storm of the French Revolution burst upon Europe. Macaulay has well described the period embraced by his life as "the dark night between two sunny days;" it was after the period when the man of letters was patronized, cajoled and rewarded by all political parties, and the recipient of private munificence and before the interest and curiosity of the public were aroused—in short, it was the time of the "Garretter," the Grub street hack, and the earlier portion of Johnson's life was spent amidst all the bitterness of that wretched existence. Few men have commenced a career which was to end in fame under greater disadvantages. He was born in

DOCTOR JOHNSON

By C. S. Stock.

obscurity, dogged by poverty and ill-health, his eyesight affected by scrofula, unhappy in his marriage, and pursued by a constitutional melancholy which he ever regarded as one of the most fearful impediments he had to contend with. He gave early promise of exceptional ability and although his father was far too poor to send him to college yet by generous assistance he was enabled to enter at Pembroke, Oxford; before long, however, extreme poverty compelled him to leave without taking a degree, but poor though he was, his pride of independence never deserted him. Upon one occasion, his shoes being quite worn out, "somebody set a new pair at his door; he threw them away with indignation." His person was ungainly and all his movements awkward from the twitchings of his face to the convulsive jerkings of his limbs. Boswell tells us that on one occasion when Johnson was on a visit, the conversation turning upon a subject in which he was not interested, he retired to a corner of the room, moving his legs about in a peculiar manner. "The old gentleman observing him, went up to him, and in a very courteous manner assured him though it was not a new house the flooring was perfectly safe. The doctor started from his reverie like a person waked out of sleep, but spoke not a word." One of the most characteristic pictures of Johnson's manners is that which we have of him handing a lady visitor to her coach. Madame de Boufflers, a name familiar to readers of Rosseau, being in England, was desirous to see Dr. Johnson and was entertained with his conversation for

some time. Boswell then proceeds to describe the incident as he had it from a friend. "When our visit was over, she and I left him, and were got into Inner Temple Lane, when all at once I heard a noise like thunder. This was occasioned by Johnson, who, it seems, upon a little recollection, had taken it into his head that he ought to have done the honors of his literary residence to a foreign lady of quality, and, eager to show himself a man of gallantry, was hurrying down the staircase in violent agitation. He overtook us before we reached the Temple gate, and brushing in between me and Madame de Boufflers, seized her hand, and conducted her to her coach. His dress was a rusty brown morning-suit, a pair of old shoes by way of slippers, a little shrivelled wig sticking on the top of his head, and the sleeves of his shirt and the knees of his breeches hanging loose. A considerable crowd of people gathered round, and were not a little struck by his singular appearance." His personal appearance was never of the sprucest and he openly admitted that he had no great love for clean linen. His manners were already formed when the distinguished circle of which he became so honored a member closed around him, and they had been formed in the Grub street days. When he went to stay with Boswell in Scotland he would do such things as holding the candles, wick downwards, over the carpet to snuff them, a habit which would hardly endear him to the ladies so that Mrs. Boswell remarked to her husband she had often seen bears led by a man, but never before a man led

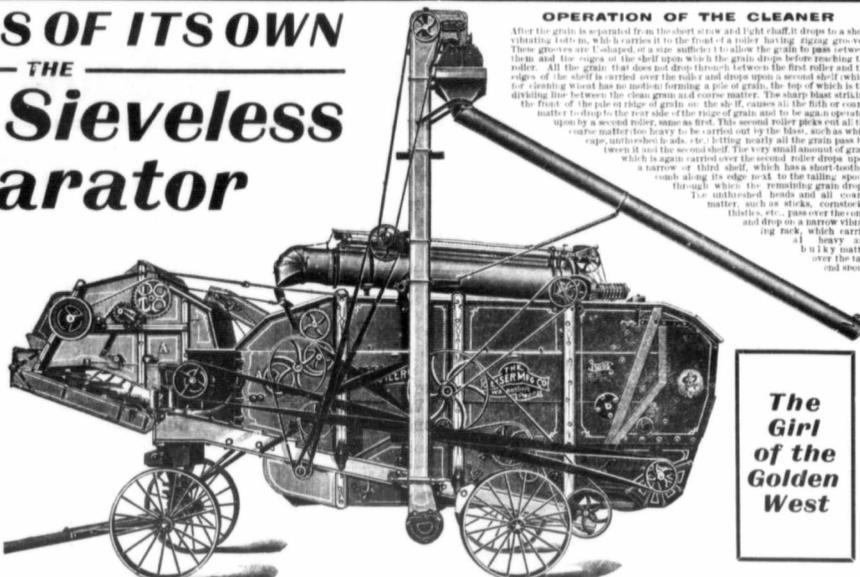
by a bear. He would often burst out at people in a very disconcerting manner. He once called upon a friend at Birmingham and a very stupid maid opened the door. He said to her: "My name is Johnson; tell him I called, will you remember the name?" She answered with rustic simplicity in the Warwickshire dialect "I don't understand you sir." "Blockhead," said he "I'll write." The name of Johnson is forever associated with the great dictionary and we find the plan inscribed to the brilliant and polished Lord Chesterfield. This eminent cultivator of "The Graces" could leave Johnson unnoticed and unassisted in his great task but when the sturdy doctor had completed his work and it was known to be of the first order of excellence, then the noble Lord, expecting dedication to himself, endeavored to regain the sage's regard. This effort was treated with the indignation it deserved and produced the most famous letter Johnson ever wrote. The following passage will give an idea of its nature. "Is not a patron, my Lord, one who looks with unconcern on a man struggling for life in the water, and, when he has reached ground, encumbers him with help? The notice which you have been pleased to take of my labors had it been early had been kind; but it has been delayed till I am indifferent, and cannot enjoy it; till I am solitary and cannot impart it; till I am known and do not want it." That polished Lord is represented as going about among his friends, the letter in his hand pointing out the more remarkable passages, but probably we may be permitted to think this shaft really did go home. A cursory glance at the dictionary will reveal the curious fact that a volume so unentertaining in our own day might then be made a channel for the personal bias of the author. Johnson's definition of 'patron' but too clearly

IN A CLASS OF ITS OWN

THE

Geiser Sieveless Separator

You may have seen many kinds of grain separators. You may have used several makes, but if you have not used a "Geiser Sieveless," you have yet to learn what it means to thresh for both pleasure and profit.



OPERATION OF THE CLEANER

After the grain is separated from the short straw and light chaff it drops to a short vibrating table, which carries it to the front of a roller having zigzag grooves. These grooves are L-shaped, of a size sufficient to allow the grain to pass between them and the edges of the shaft upon which the grain drops before reaching the roller. All the grain that does not drop through between the first roller and the edges of the shaft is carried over the roller and drops upon a second shaft which for cleaning wheat has no motion forming a pile of grain, the top of which is the dividing line between the clean grain and coarse matter. The sharp blast striking the front of the pile or edge of grain on the shaft causes all the chaff or coarse matter to drop to the rear side of the edge of grain and to be again operated upon by a second roller, same as first. This second roller picks out all the coarse matter too heavy to be carried out by the blast, such as white caps, unthreshed heads, etc. It lifts nearly all the grain past between it and the second shaft. The very small amount of grain which is again carried over the second roller drops upon a narrow or third shaft, which has a short toothed comb along its edge next to the tailing spout, through which the remaining grain drops. The unthreshed heads and all coarse matter, such as stalks, cornstalks, thistles, etc., pass over the comb and drop on a narrow vibrating rack, which carries all heavy and bulky matter over the tailing spout.

The Girl of the Golden West

REASONS WHY THE "GEISER" IS BEST.

It has an open cylinder and does not dust. The teeth are of best tempered steel and exceptionally durable. The threshing sides are of iron and not affected by wet or dry weather. The cylinder bearings are so constructed as never to heat if properly oiled. All removable parts are fastened by bolts and nuts and are easily taken apart. Straw racks are of hard wood. The working parts are all well balanced and the machine has perfect poise in action. It is compact and its capacity (size considered) is unequalled. The separating device is ample and able to meet all kinds and conditions of grain. The cleaner requires no attention when once properly set, but if necessary, can be adjusted for different grains while in operation. It has no sieves or riddles to wear out. It is the grain plate and roller system of separating and cleaning, unequalled or unapproached by any other process for threshing and cleaning grain.

Burridge, Cooper Co. Ltd. Winnipeg, Canada.

reflects his own experience, and that of "Exciseman" is clearly dictated by political bias. As a conversationalist, Johnson was supreme, and he possessed a most magnificent memory. Lord Rosebery describes him as our greatest known conversationalist. But he would often talk for the sake of talking and in company he always talked for victory. So congenial was this exercise to his mind that he would frequently forget himself and be almost abusive, so that Goldsmith, quoting Cibber, was constrained to say, "If his pistol does not go off, he knocks you down with the butt end." But these were only explosions and he would generally make amends for them. A single example of his vigorous conversation must suffice. It is in relation to Boswell, whom we must not pass over without a few words. Boswell knew greatness when he saw it and may be said to have concentrated his life to his idol. "Boswellism" has passed into the English language as a synonym for the most servile kind of hero-worship. Indeed this and worse is the picture Macaulay gives us. He is, however, too hard upon the luckless Scotchman for he would seem to deny him the common capacity of an average human being. There are indeed very few remarks of his own worth noting but he refers to Johnson's dismal apprehensions about death under rather a fine image. "His mind resembled the vast amphitheatre,

the Coliseum at Rome. In the centre stood his judgment, which like a mighty gladiator, combated those apprehensions that, like the wild beasts of the arena were all around in cells ready to be let out upon him. After a conflict he drives them back into their dens; but not killing them, they were still assailing him." The Doctor's energetic diction is well illustrated by the following part of a conversation which he held a few months before his death with Dr. Wolcott ("Peter Pindar").

"Pray, Doctor, what is your opinion of Mr. Boswell's literary powers?"

W. "Sir, my opinion is that whenever Bozzy expires he will create no vacuum in the region of literature."

W. "What think you, Sir, of his account of Corsica—of his character of Paoli?"

J. "Sir, he hath made a mountain of a wart. But Paoli has virtues. The account is a farago of disgusting egotism and pompous inanity."

W. "I have heard it whispered, Doctor, that should you die before him, Mr. Boswell means to write your life."

J. "He dares not; he would make a scarecrow of me. I give him liberty to fire his blunderbuss in his own face, but not murder me."

If great men really have a disproportionate amount of domestic unhappiness Johnson's marriage was no exception. It was a strange union, Johnson at 27,

"lean and lank, so that his immense structure of bones was hideously striking to the eye, and the scars of the scrofula were deeply visible," and the widow of 48, Mrs. Porter, described by Garrick as 'very fat, with a bosom of more than ordinary protuberance, with swelled cheeks of a florid red, produced by thick painting, and increased by the liberal use of cordials; flaring and fantastic in her dress, and affected both in her speech and her general behavior,' but Garrick was the prince of mimics and therefore liable to much exaggeration. Yet this woman possessed his affection to the last and he never spoke of her but with love and regret. The first time she met him she said, "This is the most sensible man that I ever saw in my life. His playfulness is said to have resembled the gambollings of an elephant and he must have made a singularly unwieldy lover with his large person, gruff voice, and awkward movements."

As a poet Johnson excited Scott's highest admiration, yet the remark of Lord Rosebery 'he seemed to gauge poetry in the spirit of an exciseman' is just. His pieces rhyme too well but they contain lines of lasting value and real beauty. His two great poems are 'London' and 'The Vanity of Human Wishes.' For the first he received but ten guineas; for the last but fifteen, only too just a comment upon the meanness of literary rewards in his day.

In 'London' we find the famous line 'slow rises worth by poverty depress'd.' It was printed in capitals and expressed a truth which only men like Johnson have the misfortune to realize fully, struggling by sheer worth from obscurity and neglect up to fame and honor. In 'The Vanity of Human Wishes' we catch the note of melancholy 'Pour forth they fervours for a healthful mind.' Probably this was the reason why he flung himself with such energy into all forms of social intercourse; he was prominent in the founding of several clubs of which the most famous was the Literary Club, founded 1764, which flourishes to the present day. He well knew how to fight his enemy. Here is his advice to Boswell in a similar case: "That distrust which so often intrudes on your mind is a mode of melancholy, which, if it be the business of a wise man to be happy, it is foolish to indulge; and, if it be a duty to preserve our faculties entire for their proper use, it is criminal." He wrote the last few lines of "The Traveller" for his friend Goldsmith and this amongst them:

'How small of all that human hearts endure,
That part which laws or kings can cause or cure,
Still to ourselves in every place consigned,
Our own felicity we make or find.'
It is known that he attached little importance to the sort of

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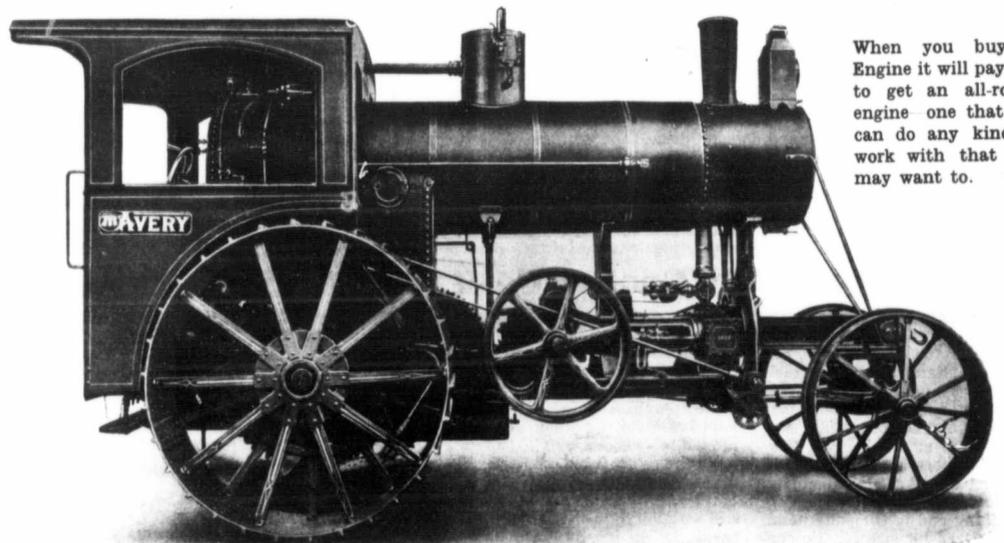
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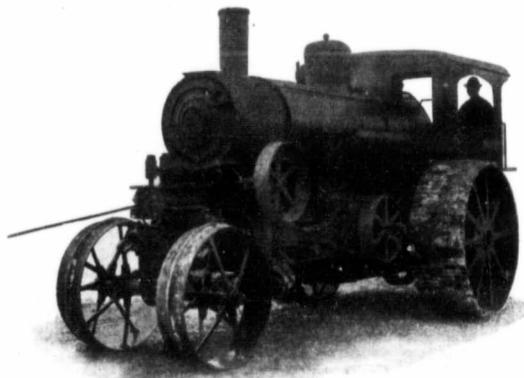
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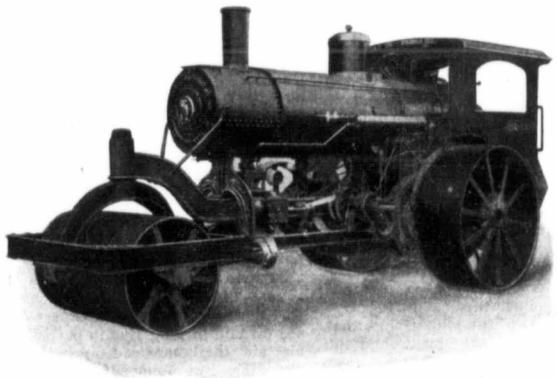
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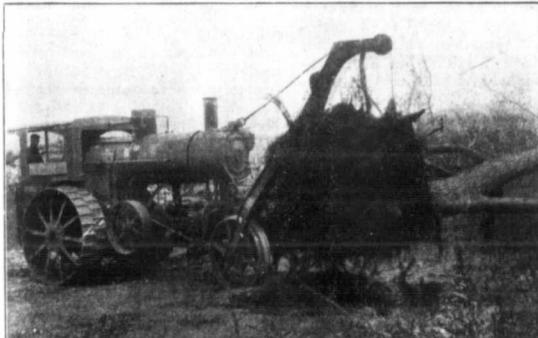
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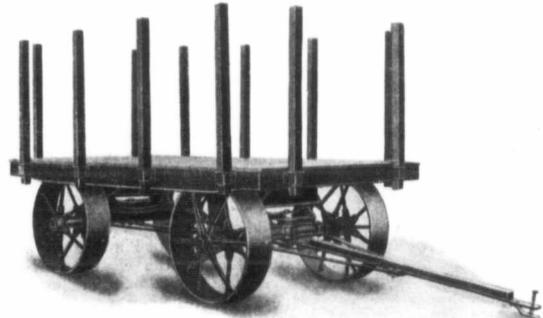
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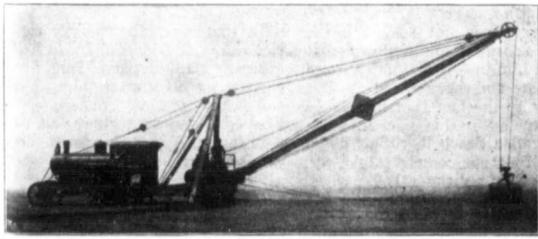
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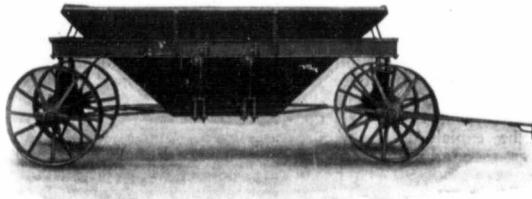


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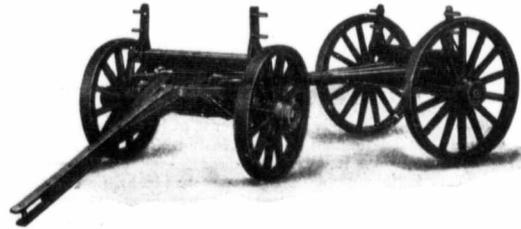


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As a figure in the general sum and substance of things, Hog Eye Forbush would have best served the interests of society by suffering himself to be erased. This opinion, at all events, was shared by his neighbors largely, and by each and every member of the Lazy N BAR H outfit to whose Dutch ovens the man was attached for a season. The round-up, that fall, ran from the head of the river westward; and at the ford they had the luck to pitch old Henderson, their dough-slinger, over the dash and throw his shoulder out of joint. So a new cook was needed, and Hog Eye answered to the job. Before that he had been hanging around the railroad, lying up at night over the bar of the Ten Strike saloon; and where he was from or how he lived was a conundrum he had not seen fit to answer.

Mr. Pinto Sawbell, who was chief horse-wrangler that year for the Lazy N BAR H outfit, brought him to the range; but as Mr. Sawbell afterward remarked, you couldn't blame him for doin' what he was told to do for "thirty-six dolyars of wages a month."



"That would be his pleasure."

"I jes' got a thinkin' of the thirty-six," said Mr. Sawbell, regretfully; "an' I had to do it. But you c'n bet a cuss like that wouldn't last no longer 'round a job o' work than a chunk o' salt in a dogey-pen." Mean? "Oh," remarked Mr. Sawbell, reflectively; "well, I ain't got no great chice o' words. He was jes' lazy an' dirty an' shiftless like, I guess. Excuse me! I'm a frien' o' his, as the sayin' is, an' ain't goin' to tell no talk. But I'd hate to say how many good hones' toes was a-lyin' awake at nights jes' itchin' to fill that jack rabbit's pants' pockets full o' boots. He didn't never get sassy none—no he didn't; why, a little gal c'd a-walked right up to him an' took his hair away, an' him never sayin' a word—no, he didn't git none sassy. But if he'd a had—oh, say—well, what's the use o' talkin'? I ain't got nawthin agin Hog Eye no more'n I got agin a squaw-man; but— Oh, excuse me, I say!"

It was beyond all question of

The Level of Hog Eye Forbush

By MAXIMILIAN FOSTER.

precedent to ask his antecedents, and Hog Eye still said nothing. But many had their opinions. Said Mr. Pinto Sawbell, who was oracular, if nothing else: "I guess one—two—three out o' the box, that the gentleman will be a damned hired man to a punkin-roller—ain't he now?" Which was the way Mr. Sawbell expressed disdain of Hog Eye in particular and the homestead farmer in general. But some days later, Mr. Sawbell switched to a new thought in the matter. "No, gentlemen," said he at eventide, after borrowing a cigarette paper and the filling of it; "no, gentlemen, I'm plum hitched to the wrong cottonwood. I c'n savvy from the walk o' him that Hog Eye will ha' had pork an' beans handed out to him off'n a plate by the hand o' Uncle Sam. Fi'teen dolyars a month work o' wages an' a yaller stripe down his legs, an' all the gals a-lookin' out'n a window an' jes' dyin' o' love for you—hey—what?"

They all looked over their shoulders at Hog Eye lazing about the fire; and Pinto Sawbell, after twirling the cigarette between his thumb and forefinger and licking the seam together, raised a hand in admonition. "Listen!" said he; and whistled the bars of

"I can't get 'em up,
I can't get 'em up,
I can't get 'em up in the
mornin'!"

Hog Eye Forbush straightened up with a jerk, and darted one swift glance at the others. His small, mean face was lighted by an unusual brilliancy as if transformed by a quick and powerful memory. He caught the eyes of the group bent upon him, stared a while with wavering eyes, and turned again to his work. But at odd moments afterward, the man looked cautiously across the fire, and by the way he rattled the pans about was plainly ill at ease.

"O carry me back to ole Virginger," said Mr. Sawbell; "but the gentleman will a' been one o' the pumps and panopies o' war, I bet. Even money an' you takes the toss."

It was not so much the fact, however, that Forbush had seen service and perhaps had left it over-night that stood against him on the range; but rather that the general cast of his meanness was so frequently to the fore. He lied for one thing—not conversationally as a mere idealization of the theme, for that, of course, was to be considered an essential of the art—but lied to the detriment of others. Beside this, he displayed, at unexpected and uncalled for moments, a low and truckling weakness where one should have

looked for a few grains, at least, of manful self-reliance. His voice was a voice of complaint, perpetual and wearing, and it made them all uneasy. "Oh, it ain't no use for nothing," he cried in dissatisfaction; "a feller don't git no show nohows. I jes' guess I'll quit an' go moseyin' back to the railrud an' hunt another job. No, they don't seem no chanct—no chanct at all."

"Ever tried goin' to work?" asked Pinto Sawbell, in sympathy.

It was perhaps as they said that the man was the meanest type of creature one might rustle anywhere between the Lava Beds and the line; and they made him feel it, too. "Only I say, gentlemen," remarked Mr. Sawbell again, "I wouldn't let a squaw-man into my bedding with his boots off—that's which I care for a squaw-man; an' bein' as it is, cuss me if I'd be mean enough to the greasiest, laziest swine of a squaw-man alive afore I'd use him to say Hog Eye was meaner."

These and other remarks were expressed with the heartiness of feeling and with sufficient clearness to carry them to his ears; so when the round-up turned to come in, Hog Eye felt he might resign without fear of becoming missed. He had—as he said—taken his full of the range. "It ain't no use," he whimpered, dolefully: "they ain't no one goin' to give a man a chanct, 'tbout they try to beat him down. I guess I'd better go back to the railrud, an' have a look aroun'."

But it was not so much the open scorn of his fellows that drove him in—he was fairly used to that, and he showed it—but rather to the fact that his wages lay itching in his pocket. "Ta ta!" called Sawbell, riding down from the rope-coral; "love to Uncle Sam an' the gals."

But Hog Eye loped solemnly along; and the next they saw of him, he was wiping the pine-topped bar of the Ten Strike saloon, and asking each new-comer lackadaisically what would be his pleasure.

Such was the type of the man. He was what you might call a round peg in a square hole, and never filling it. At the Ten Strike saloon his stay was brief and unpleasant, terminating abruptly in a sudden temper of the proprietor, who booted him through the doorway. "Oh, that's jus' the way," he explained, miserably; "jus' as soon as a feller gits a start, they won't give him no chanct."

For a minute he existed precariously by helping in the store-keeper's barns, and so he lived out the winter. During this interval he grew dirtier and more unkempt. Spring came; and in

the general housecleaning he was pushed out of his job again and sent hunting bed and board. How he lived, few knew, and the others never cared.

"They ain't much chanct here," he observed sadly to Sheeny Ben, who ran the New York Racquet Store and a speak-easy at the rear; "I guess I will be movin' on soon."

But it happened that day that opportunity was standing close at hand. Fortune was turning toward Hog Eye Forbush, though he knew it not; and the bottle held in his pocket had become fraught with importance to his luck.

He had just couched himself on the edge of the butte, mumbling to himself in anticipation, when a Cheyenne buck, garbed in an agency outfit of army blue, coat and trousers sizes too small, came pricking solemnly across the plain. There, if Hog Eye knew it, was a god of destiny that should show him the portals of ease. Only Hog Eye viewed him differently. "Hullo, Lo—you greasy nigger Injun!" he yelled disdainfully—for he was apt in contempt where danger of reprisals was small; "hello—you! Here's lookin' at you!"



"Pisen," he exclaimed."

In that clear air, the cry carried far, and the Indian looked around. Gaily derisive, Hog Eye waved the bottle at him, but somewhat to his concern the Cheyenne seemed to take this as a promise, and charged his cayuse up the slope. "How," he said, making the peace sign in the utmost sincerity of greeting. "You give Injun drink mebbe so?"

Hog Eye grinned in return. "An' for what, ye greasy buck of a Siwash Cheyenne," he asked politely, but still ready to slip over the edge of the butte at the slightest sign of trouble. "Give you a drink—nawthin'."

But the Indian only grinned again. "Got one dollar!" said he, and fished a coin out of the depths of a mangy elk-foot tobacco pouch. "Holy smoke!" cried Hog Eye, responding; "is it as easy as that? Here, Injun!" He poured out half a cup of the scalding poison, which the Indian wolfed down without a blink. "Got um another dollar—got um two dollar mebbe so."

Hog Eye arose, and took the money. "Two dollars, hey? Then I'm damned if you don't get the whole bottle!"

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Certain words uttered by the shrewd Sheeny Ben came back to the memory of Hog Eye, and he drank no more that day. Here, then, was chance! He turned his steps toward the houses fronting the railroad; and so the keeper of the Racquet Store that day had the pleasure of company. Suffice it to be said that a week later, Hog Eye Forbush appeared on the scene revamped, a trader, if you please, captaining an industry of profits. He drove in, that day, as happy as you please, sitting in a sway-bellied wreck of a buck-board, and behind two dejected, worldly-wise army mules, lately sold at a rummage sale.

"Yes, gentlemen," he remarked ostentatiously to the crowd of loungers loafing on the hitching rail, "I've gone into tradin', an' hopes for yer well wishes. Now anything in the general line, sich as—"

"Oh, hell's bells!" interrupted Ropesey Hawspoke, who was riding range that summer on the western edge of the reservation; "you go tell that to the agent, mebbe. That job o' yours has been offered freely to every dead-broke hobo on this here cattle country, but there ain't none would touch it. What's the tariff on that store goods o' yours? What's it cost a gurgle?"

Thus it was the wickyups and hovels of the reservation, the rufous children of the Great White Father made pleasaunce by day and day; and there was many a sound of revelry by night. In the gut of a nearby coulee lay the sway-bellied buck-board and the dissipated mules, while to and from this base of supplies traded Mr. Forbush, carrying his liquid entertainment among the grateful people of the plains. If any buck or squaw had the price, there was Hog Eye accommodating—a little less than kin and more than kind. It was not often in this world that a man might find his chance—his level; a level chance so easy. But along toward the coming of the snows, the end befell.

At nightfall, Pinto Sawbell, loping in from the calf-camp, where the winter feeding had begun, was aroused from his reveries by a sound of wheels, and there was Hog Eye Forbush, making haste. He swept past at a gallop, laying on the whip, and never even hesitated to pass the time of day.

"Oh, if it ain't Hog Eye—hullo, Hogg!" said Mr. Sawbell, loping alongside; "say—hol' up there and give us a trade."

But Hog Eye, shaking his head savagely, said he hadn't time.

"Oh, me! Oh, my!" exclaimed Pinto, grabbing a nigh-side bridle, and hooting derisively, as it was his wont; "now don't you be in no sich stampede, honey. Gimme a yard an' a half o' gurgles an' a pint o' chaser, an' wrap 'em up nicely so's I c'n take 'em home to the lady." To insure prompt attention, Sawbell dragged the mules to a halt, and rounding his cow-pony across the

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trail, threw a leg nonchalantly across the saddle-horn.

"For God's sakes, Mr. Pinto!" gasped Hog Eye, looking backward wildly along the road; "please to let me go on!" He clucked to the mules and slapped the reins sharply across their haunches; but Pinto sat unmoved while they reared and kicked in the traces.

"Please, don't you ride me down," said Pinto mildly, but with a gleam in his eyes that admitted no mistake; "please to give me my dry goods, an' you can bring up the change. I expect a trader to be obligin'."

With a look of despair, Forbush leaped from the wagon and ran around to the tail. Under his awkward, hurrying fingers, the strap buckle jammed, and he swore at it in savage rage.

"Once agin for the ladies an' little chil'ren," suggested Pinto, whimsically; "ah—there y'are now—dinn't I guess it!" For Hog Eye had drawn a heavy jug out of the wagon-box, and thrust it into his hands. "Sure it ain't for the hair or yer wagon-body?" inquired Pinto, releasing the bridle; and at that Forbush took a flying leap to the seat, swatted the mules and was off at a gallop toward the hills.

Pinto withdrew the jug from his lips and grunted. "Pizen," he exclaimed, spitting out the liquor; "or hoss paint—the taste don't leave ye nawthin' to guess by an' takes away the smell. Hey—"

here you!" But as Pinto afterward explained, Hog Eye had doggone skun away off'n the party, right before the refreshments was served. "Why, bless my Mary Ann—ain't he jes a humpin' hisself!" So replacing the corn cob stopper, Pinto clapped heels to his mare, and put after the swaying wagon.

"Now look at here, Hog Eye," he remarked aggrievedly; "ain't you done forgot suthin'—the bottle—or good-bye—or the change, mebbe." He kept pace beside the buckboard, and gazed upon its driver in mild reproof. "Oh, git away an' lemme go, Mr. Pinto!" implored Hog Eye; "can't ye see they're arter me? Old Billy Thunder Bull—oh, Mr. Pinto; the crazy old medicine buck got drunk an' half killed his squaw, an' fired the wickyup, an' they've traced the lick to me. Oh, what shall I do, Mr. Pinto—they're arter me hard, an' I'm hittin' the trail—Oh, for God's sakes, Mr. Pinto."

Pinto grinned. "Don't seem's if I'm oltin' to yer any," he remarked, and then reining up his mare, let Hog Eye go on.

Three days later, the mules and other effects of Hog Eye were found strewn about the railroad some miles westward along the line; and for a while there was hopeful belief that Hog Eye himself had been strewn some, too. But as a search of the neighboring country failed to discover his remains, it was generally understood that the man had jumped a freight at the water-tank and gone on to pastures new. A spring later this was confirmed. One of the Lazy N BAR H outfit, visiting the country below the Park, was leaning against the bar of the Square Goods House, when he heard a familiar voice singsonging complaint accompanied by the swish of a sweeping broom.

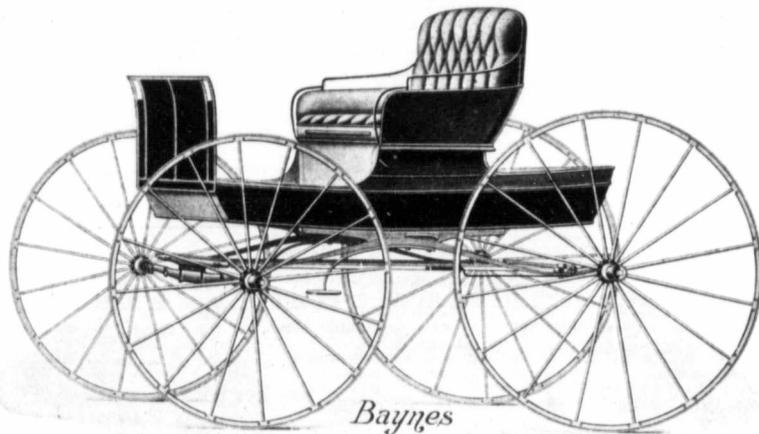
"Oh, no," whimpered the voice, "a feller don't get no sort of a chancet, nohows. Jes' let a feller git his head up onct, an' they all tries to beat him down. Why, I was jes' a doin' fine, an'—"

"Why, Hog Eye," said the cowpuncher, politely; "if it ain't Hog Eye, you ole, sad mem-ry! Come here an' weep on this buzzum!"

But Hog Eye, who would have been glad at any welcome in times gone by, expressed his feelings otherwise. He stood there, red and pale by turns, clasping the broom to his breast, and turning his eyes wildly as if hunting a chance to flee. "My name ain't Hog Eye," he said; "an' I don't know ye, annyhow. Whatcher want?"

But it was the old Hog Eye just the same, only more dirty, unkempt and shiftless.

That summer had dwindled down to the first coming of frost, when the town marshal concluded, in the interests of society, to ask Mr. Forbush to move on. "You see, frien'," he said, kindly enough, "it might not be healthy for you to hang aroun' longer. Some o' them women folks over van has been missin' chicken



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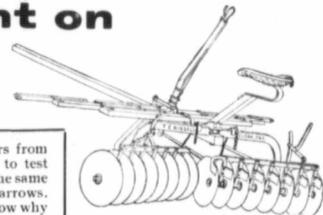
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stock lately, an' they see you roun', too. So's they put two an' two together—sure — that's all right; it may be damned bad arithmetic but it sums up strong. I guess you'd had oughter mosey along, frien', an' they won't be trouble comin'. Now, you git a good start, won't ye?"

Hog Eye shuffled away in dejection. That was the way of it. They wouldn't give him no chance. He was drooling along to himself in this mood, when a voice hailed him, and, looking up, he found himself fronting the emporium of Capt. Jack Spendy, the town's eminent merchant, and there was the gentleman himself standing on the porch.

Continued on page 77



CHRISTMAS IN HEAVEN.

By Howard Saxby.

On Christmas Eve my little boy,
A blond-haired child of seven,
Said: "Papa, tell me if the angels
Keep Christmas up in Heaven?"
The question struck me strangely,
And silently I thought,
As he talked on and said that "If
They didn't—why, they ought!"
I answered: "Yes—of course—my child,"
"Well, papa, tell me how."
"Why, certainly—I will—some day"—
I saw that I was in for it,
So what was I to do.
With folded hands and open mouth
He stood and looked at me;
I couldn't start, and so he came
And sat upon my knee,
And said: "Papa, I've often thought
And strange it seems to me—
When Jesus was a child in Heaven
Who else but God did see
And hear him talk of childish things?"
(Ah, me! what thoughts have boys!)
"And, papa, did he really have,
Like we do, books and toys?"
What could I say: To answer him
My tongue was at a loss;
And so, to fix the matter up
I wisely said, "Of course!"
(A great mistake) He chattered on.
—You'll pity me I'm sure—
When on my arm he laid his head
Remarking, "Tell some more!"

Had "Bluebeard been the subject,
Or "Mother Goose" and such,
I might have talked—but Christmas-tide
With angels seemed too much.
Some children think that fathers
Should know the ways of heaven;
Perhaps they do, but not so well
As little boys of seven.
So I began: "At Christmas time
In Heaven the angels bring
Good tidings, joy to all mankind,
And praise to Christ they sing.
The heavenly gates and golden streets
With heavenly glory shone
As Little Nell and Tiny Tim
Gazed on the Great White Throne.
Poor Jo—no longer illy clad—
"Moved on amidst the throng,
And little Paul and sister Flo
Joined in angelic song.
And Jesus called the children,
And blessed them, every one,
And suffered them to come to Him
As once on earth he'd done."

And next they had some Tableaux,
The Bells of Heaven pealed:
An angel, speaking to a group
Of shepherds in a field.
Some travelers, with eyes uplift,
Were following a star,
And while with fear their minds were
seized,
These sounds were heard afar:—
"To you in David's town this day
"Is borne of David's line,
"A Saviour, who is Christ the Lord;
"And this shall be the sign;
"The Heavenly Babe you here shall find
"To human view displayed,
"All meanly wrapped in swaddling
clothes
"And in a manger laid."

The curtain falls. And next is seen
A child in Temple grand.
A sunn figure raises now
A girl by the hand.
A widowed mother weeps,
And now, amid the strife
Around the City gate, her son
By Christ is raised to life,
He heals the sick, restores their sight,
A cross is brought to view,
And Jesus says, "Forgive them all,
They know not what they do!"

"The Tableaux close—and round the
Throne
(Imagine if you can!)
The angels list while Dickens reads
A loud "The Haunted Man."
Then Thackeray and Walter Scott
Read and recite in turns;
While Moore and Bulwer listen to
An ode from Bobby Burns.
And Tennyson (so newly come,
But quite a welcome guest),
Is happy in the light of God,
Where weary ones find rest,
The Carv sisters sing of Him
Whose blood redemption bought;
Just think, to hear them sing in Heaven
"One sweetly, solemn thought!"
So Christmas goes in angels' land,
And all the hosts above
Are looking down on you, my child,
And whispering, "God is Love."

The boy's asleep! May his young dreams
Be all of Christ and Heaven!
Oh, Father! would I were tonight
A little boy of seven!

ONLY A SERVANT GIRL.

By Pearl Richmond Hamilton.

"There's the last dish of the last
course!" exclaimed Jennie, setting a cut
glass tumbler on the kitchen table.
Straits of the orchestra from the
reception hall breathed throbs of Christ-
mas festivities that brightened the life
of the prosperous family in this particu-
lar house on a fashionable avenue of a
growing city.

Jennie stood for a moment listening to
the melody of a waltz, then after wiping
her eyes with the corner of her
apron, she began to clear the dishes
ready for washing. Just as she seraned
the food from the last plate, a familiar
knock startled her.

"Oh, I don't want to see Charles to-
night—I can't. He must not come any
more. Something aches all through me
when I am with him. I must not en-
courage him. I will not go to the door!"
she said, taking down the dish-pan. The
orchestra stopped for its usual rest, the
voices died down, everything was quiet
for a moment save the rattle of dishes
in the pan.

A knock much louder on the door
reverberated through her as if she her-
self had been pounded by a hammer.
She wiped her hands reluctantly and
opened the door, when a big coarse, in-
dignant man stepped in.

"Pity you couldn't keep me out there
all night!" he raged, walking over to
the table where she stood.

Jennie went to the sink and washed
a cup without looking up.

"See here!" he exclaimed, clutching her
shoulder rudely.

"You can't drop me that easy. I've got
you in my grip and you can't go against
me. I'll follow you every minute you
leave this house and your life won't be
very safe if you oppose me," he growled
and sat down on a chair.

Jennie choked something down and
washed more dishes.

The strains of Christmas music again
filled the house with harmonious sounds.
Jennie thought of her cozy parental
home on a distant prairie. It was mod-
est and plain, but the Christmas day
there was filled with love. She was at
least protected and safe from harm.
Here she had neither love nor protection.
Her mistress said little to her aside
from the haughty commands she admin-
istered every day. So Jennie was all
alone in a strange city, where one is
much more alone than even on a
prairie, for there one is safe in a great
environment, while in a city beasts of
prey, uglier than the wild animals of a

new country, tear into pieces the heart
and soul of many an innocent girl.

Jennie finished washing the dishes
though she wanted the work to last all
night.

"Now get ready for the dance," demand-
ed the man as he gave the house-dog a
wicked kick which sent it yelping to a
distant corner.

"James!" the young girl requested in
a pleading voice. "Please leave me here
tonight. I am tired and heart sick. I
cannot bear the rough company of those
low dances. I cannot go! I must not!
I will not!"

"You will not, eh?" he yelled. "Well,
I'll see about that. You get ready, I
tell you! In ten minutes you leave
this house with me!"

Jennie trembled. Why could she not
call for help? She would. But no!
Her mistress had that very morning
threatened to dismiss her, saying "serv-
ant girls were such a treacherous class,
one could not trust them." And poor
honest little Jennie was classed with
the rest.

It would do no good to ask her for
help. She would not believe her. She
hated domestics.

Jennie had worked night and day pre-
paring for Christmas day and was scold-
ed for not doing more. The cakes were
too rich, the pies were tough, the
turkey was dressed wrong—in fact
though the little country girl had
worked beyond her strength and trem-
bled with tired muscles, there was no
word of encouragement for what she
had done. So what was the use any
way?

There could be no Christmas joy for
her—not one fragment of Christmas
love.

She was alone and it mattered little
what would become of her.

Christmas love and kindness were all
she wanted.

The big villainous man watched her
like a lion waiting for his prey.

Jennie—trembling and tired—put on
her wraps and they went out of the
kitchen door into the crisp air of a
cold night—cold for Jennie outside and
inside, for her very heart was frozen.

"Oh—well," she murmured to herself,
"I'm only one of a thousand servant
girls out in the cold world tonight.
Nobody cares for the soul of a servant
girl."

"Merry Christmas, Miss Bernice!"
The young man ushered in was genuine
in his manner and appearance. His
face shone with an expression that be-
spoke intellectual power and soulful
sincerity.

Miss Bernice blushed as she acknowl-
edged his greeting for this was "the"
young man of her many acquaintances.
He seemed so manly and true. And it
thrill when in her company. At any
rate it was a very happy pair that en-
tered the long drawing-room at the left
of the reception hall.

Bernice's mother greeted the young
man in her usual stately and dignified
way. I think perhaps she was just a
little more cordial in her hand-lake to-
wards this particular young man.

The chandelier, dazzling brilliantly
with a hundred lights, filled the room
with brightness; wreaths of holly dec-
orated the windows as if eager to in-
form the outside world of the Christ-
mas joy within the walls of this magni-
ficent home. Branches of mistletoe
tempted ambitious couples to stand in
the appointed place; American Beauty
roses and red and white carnations in
huge cut glass vases sent out their
usual Christmas fragrance. The rich

mahogany chairs and couches tastefully
arranged about the room, the hangings
of velvet and lace, the masterpieces of
art and mind, the richly colored rugs of
the Orient—all these external furnish-
ings indicated a home, the inmates of
which were people of wealth, culture,
and position. There were music and
harmony and Christmas joy every-
where.

The young man and Bernice attract-
ed all eyes admiringly.

Whispers about the room all added
interest in their behalf.

"She is very fortunate."

"How splendid he is!"

"He is just the one for Bernice."

"He is such a prosperous and brainy
man."

"This country will yet be proud of
him."

The mother is planning for their
marriage.

"He is blessed with unusual natural
ability."

These were some of the whispered
expressions among the guests. And the
blushes of the fair girl indicated a
heart-knowledge of every characteristic
of the young man in question.

"Bernice!" the mother said as she
gently touched her daughter's dainty
gown. "Will you go into the kitchen
and tell Jennie to cut some Christmas
cake?"

Bernice obeyed.

"Mrs. Bellamy, allow me to congratu-
late you upon the nature of your en-
tertainment," complimented the young
man, as Bernice left the room. "Your
decorations are perfect, very suggestive
in every way of the Christmas season,
he observed, his eyes following the trail
of a tinselled cord.

Mrs. Bellamy replied in a tone of
pride: "Thank you, Mr. MacDougall, it
is very good of you to speak of it, but
I always believe in making the Christ-
mas season a happy one in our home,
it only comes once a year and I be-
lieve in celebrating it for everyone."

Mr. MacDougall agreed absently.

Bernice appeared at the door in
flushed excitement. "Why, mother!"
she exclaimed. "Jennie has gone—gone
for good and here is a note she left on
the table."

Mrs. Bellamy took the note from
Bernice's trembling hands and in a
complaining voice sneeringly remarked:
"That is just like those irresponsible
servant girls. They always leave one
at the busiest time."

Then with her chin high in air and
her glasses perched on the bridge of her
nose, she read undisturbed apparently.
With little concern, she threw the note
on the table and rose to greet another
guest.

Mr. MacDougall with intense interest
stared at the opened note.

Familiar penmanship and the signa-
ture "Jennie" arrested his attention.
One start and he hurried to the side of
Mrs. Bellamy. "Who—who is this serv-
ant?" he stammered in excitement.

"Oh, she is just Jennie—that is all I
know about her," returned the hostess.

"Do you mean to tell me that all
you know of a girl under your roof is
that her name is 'Jennie'?" queried the
young man anxiously?

"Yes, that is all," coldly replied the
mother of Bernice. "You see," she con-
tinued. "One never knows her domestic
help; they are really nothing in a way;
they have no feeling."

"No feeling, no feeling," he muttered,
fumbling a rose unconsciously. "Do you
mean to tell me that you have no re-
sponsibility for the homeless girl in your
kitchen?" he demanded, looking very
earnestly into the face of Mrs. Bellamy.

"None whatever. Half of them are not human."

MacDougall shut his teeth. His dark face flushed red at the thought. Mrs. Bellamy appeared to him in the light of a human monster. "Responsible, responsible," he repeated.

"Are you not responsible for her protection, for her life, Mrs. Bellamy?" he impatiently demanded.

"No, only for her wages am I responsible," she replied very self-composed. Then the young man firmly threw aside all ceremony and immediately took a stand before all the guests.

"Ladies and gentlemen," he began in a voice that commanded fixed attention—"This is Christmas night. We are celebrating the birth of a Christ of love—a Christ who gave His life for humanity, let it ever so humble. His message through all of the ages has been Love—love for the unfortunate—for the servant in the house as well as the daughter in the home. I have searched long and eagerly for a sister who left the parental home because of a perverted ambition. Every Christmas my heart is saddened for her among strangers. Never in all this time have I had a clue that could lead me to her; but here, in this gorgeous display of Christmas cheer, a note—a signature tells me that my sister has been a servant here in this home. She was starved for Christmas love and kindness and has gone out—out into the dreary darkness of lost humanity. A look of love, an arm of protection, a word of kindness—all of which belong to the true Christmas spirit—would have saved her."

Mr. MacDougall, moved to the very depth of discouraged despair started for the door, feelingly exclaiming as he did so, "What is Christmas? Why do you celebrate it? How will you account for the manner of your gifts? A few sweet, loving words coming from the heart and going to the heart would brighten many a poor girl's life and comfort many a poor soul. This human love of ours is surely one of God's best gifts to us; and He must mean that we shall use it for the help and comfort of others with whom He links our lives. In thousands of kitchens tonight girls are starving for a word of kindness and a look of love and an arm of protection. I am going out from under this roof to seek the sister of my boyhood—the sister who might have been saved by a little Christmas love and kindness. Good night," and a second member of a certain family left a lighted home that night from a different door.

For the sun breaks upon them the first in the morning

And the birds they love dearly to come day by day
And pick up the crumbs which their little hands scatter,
When, bounding with life, they run out to play.

Does any one know of any such dwelling?

It needs must be small, for our means are not large,
Where the landlord, God bless him! for the sake of the children,
Will throw in the rent at a nominal charge.

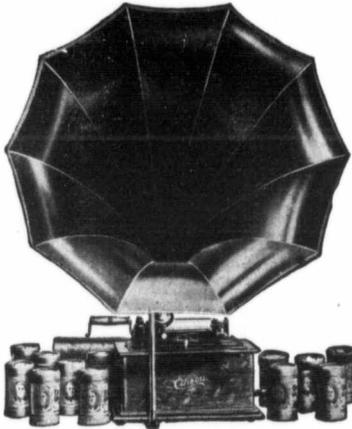
Training Little Hands.

Children, unless naturally lazy, will show the same interest in work as in

play, if especially trained to their duties; but nearly every child will do many things well and with a spirit of willingness if the mother begins with them early enough. The child who has not learned to love work before the age of seven years will never, very likely, enjoy doing tasks, unless temperamentally so inclined. The sooner the facility for doing things, and the accompanying sense of responsibility for the doing, is taught them, the more firmly fixed will be a love of work and thoroughness become a part of their character. The little child, just getting well on to its feet, is forever asking, "What can we do, mamma?" And the hurried mother more often than not will say, "O, run and play." She finds it easier to do the work than to train the unskilled hands; but very soon, the hands must be trained

and not having acquired the facility, with its consequent love of work, the child has other interests, and is not likely to love the unaccustomed labor. Mothers alone can adapt the task to the mental, moral and physical ability of her baby, and this she must do, for the child's own good as well as her own.

Reforms are made as much by sentiment as law. Create a sentiment in the home that will take the children anywhere on earth with credit to you and to themselves; allow them to desire nothing, as far as you can educate desire, that their own merit will not show them how to properly use; teach them to respect worth in all places and people. Then, if ever, by other men's consent, they have authority and the money of others to spend, they will make no secret plots for graft, no dishonorable alliances



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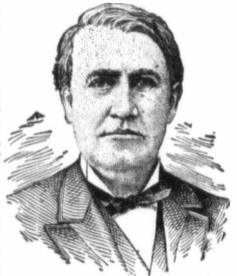
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MY REASON I don't want you to buy it—I don't ask you to buy anything. But I do feel that if I can send you this great phonograph and convince you of its merits, of its absolute superiority, you will be glad to invite your neighbors and friends to your house to let them hear the free concert. Then, perhaps, one or more of your friends will be glad to buy one of these great outfits No. 10. You can tell your friends that they can get an Edison Phonograph outfit complete with records for only \$3.00 a month—\$3.00 a month—the easiest possible payment and, at the same time, a rock-bottom price. Perhaps you, yourself, would want a phonograph, and if you ever intend to get a phonograph, now is the chance to get the brand new and most wonderful and if ever made, and on a most wonderfully liberal offer. But if neither you nor your friends are glad to send it on the free loan offer anyway. I will take it as a favor if you will send me your name and address so I can send you the catalog to see if you can decide whether you want the free loan. There are no strings on this offer, absolutely none. It is a free loan, that is all. I ask not for one cent of your money. I only say if any of your people want to buy a phonograph, they may get one for \$3 a month, if they want it.



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MOTHER'S CORNER

A House Without Children.

"To let, part of a house where there are no children to a neat American family without children. Apply at—street."—Advertisement in the Boston Journal.]

A house without children—did you ever observe it?

Is a desolate mansion o'ershadowed by gloom; Its lone, silent chambers re-echo your footsteps, And shadowy specters flit off through your room.

There dyspepsia is rampant, the blues they assail you,

And troubles crowd thickly of like a sea and kin;

There the chaise of the doctor is oft seen standing,

And erape on the knocker tells of sorrow within.

A house without children! pray don't advertise it;

Keep the street and the number a secret, my friend;

Let the clock tick in silence the few fleeting moments

You have yet in your lonely apartments to spend.

I wonder if any one knows of a dwelling

Where the neighbors would like to hear voices of glee?

I could bring them, I'm sure, in our Mabel and Annie,

Delightful companions, if they'll notify me.

with rogues, neither sell their votes, nor betray those who trust in them. They will carry the blessed home-made atmosphere of truth and kindness with them, and with hearts free from guile, and minds unselfish, they will lift the nation higher and make it better.

The Influence of a Health-Home.

From The Mothers' Magazine.

Mrs. Ella F. Young, superintendent of the public schools of Chicago, has coined the expression "a health-home" in this manner:

"In a long experience with public school work and children who enter into it I have come to quickly recognize the force and power of those children who come from the health-home. I call the health-home one in which the care of the body works harmoniously with the care of the soul.

"Children from such homes have even temperaments, sunny dispositions. Generosity—not extravagance—is a part of their natures, and they are helpers in anything to which they turn their hands. The ambitions of their spirits are matched by strength of body, and we find them to be the most well balanced of all pupils.

"I have had frequent occasion to investigate the cause for the superior natures of such children, and have almost invariably found that it was due to a home discipline which compelled them, not through force, but through gentle education, to think of the welfare of their bodies. They were taught not to be ashamed of their bodies, but to be proud of every ounce of strength and energy which they added to them. The main principle of the health-home is educating the child to a knowledge that a sound body and a sound mind are partners."

Home—the hidden places where hearts are at rest, the quiet, restful spots where there is perfect understanding, where spirit responds to spirit harmoniously, where Love is queen.—Selected.

RECIPES

Prince of Wales Cake.—One cup sugar, one-half cup butter, one-half cup sour milk, one-half cup raisins, two cups flour, one tablespoon molasses, one teaspoon soda, pinch of cloves and nutmeg, yolks of three eggs.

Filling.—One-half cup sugar, one-half cup water. Let come to a boil and add one heaping tablespoon cornstarch mixed with an egg and a little water.

Apple Cake.—One and one-half cups of apple sauce cooked very fine, 1 cup sugar, one-half cup butter, three tablespoons molasses, one cup seeded raisins, two cups flour, one teaspoonful cinnamon, cloves and allspice, 2 full teaspoonsful soda dissolved in 2 of water.

Scripture Cake Recipe.—To find the ingredients look in the Bible for chapter and verse as indicated in the recipes: Four and one-half cups of 1 Kings 4:22; one and one-half cups of Judges 5:25; last clause; 2 cups of Jeremiah 4:29; 2 cups of 1 Samuel 30:12; 2 cups of Nahum 3:12; 1 cup of Numbers 17:18; ½ cup of Judges 4:19; last clause of verse; cup of Jeremiah 17:11; 2 tablespoons of Samuel 4:25; 2 teaspoonsful of baking powder; 1 pinch of Leviticus 2:13; season with 2 Chronicles 9:9. Follow Solomon's prescription for making a good boy. Proverbs 23:14.

Walnut Cake.—Four eggs, 3 cupsful of flour, ½ cupful of butter, 3 teaspoonsful of baking powder, ½ cupful of milk and 2 cupsful of sugar. Proceed in the usual manner to make the cake, and just before putting the two layers in the oven sprinkle 1 small cupful of chopped nut meats on each. Bake slowly, and ice with a boiled icing.

Apple Filling.—Grate 2 large apples, add the grated rind and juice of 1 lemon and 1 cupful of sugar. Place over hot water and cook for 5 minutes after it begins to boil. Beat the whites of 2 eggs to a stiff froth, pour over them the hot apple mixture slowly, beating all the time. Beat until partly cool; spread between layers and on top.

Salt Rising Bread.—Boil, at night, 1 teacup new milk and pour over 2 table-spoonfuls corn meal. Let stand in a warm place over night. In the morning add a teaspoonful of salt and a table-spoonful of sugar, a teacupful of tepid water and beat in flour enough for a stiff batter. When light, sift 1 quart of flour for each loaf of bread needed, add lard and salt, then knead, mold and put in pans. Let stand in warm place till light, when bake in moderate oven.

Pumpkin Custard.—For pumpkin custard pare a ripe pumpkin and cut it into cubes. Steam with a little salt until tender. The pumpkin should be very dry. Press through a sieve, add a generous lump of butter, and set aside to get cold overnight, if possible. Add a pint of milk, 3 eggs beaten up with a cup of powdered sugar, some cinnamon, and the juice and grated rind of a lemon. Bake in small custard cups for one hour in a moderate oven. Serve cold with whipped cream.

Nut Filling.—Boil 2 cupfuls of sugar and 1 cupful of water, without stirring, until a little dropped into cold water will form a soft ball when gathered between the fingers. Beat the whites of 2 eggs until stiff. Four hot syrup over them in a fine stream, beating all the time; continue beating until cold. Add a teaspoonful of vanilla extract. Spread between layers and on top. Each layer is sprinkled with blanched almonds or shelled walnuts, cut small. Decorate the top with whole nut meats.

PANCAKES.

How to Cook the Cakes in Good Old English Style.

English cooks, who are supposed to have the hereditary secret for making these pancakes, declare that it is much easier to fry them in a small pan than in a large one, and that the batter should be prepared two hours before it is required for use.

The number of eggs used depends on the number of people to be served. Two table-spoonfuls of flour and a quarter pint of milk should be allowed to each egg. Make the batter quite smooth and about as thick as a custard.

There is quite an art in turning pancakes. They should be fried exactly five minutes, after the frying pan is hot. Sugar the pancakes lightly with a dredger, and then fold them. Sometimes a little chopped apple or a few spoonfuls of currants are dropped in the batter, but the true old English pancakes know not these additions. Serve with a dish of red raspberry jam.

Cake to Imitate Playing-Cards.—To make these cakes, use a recipe for a good fine-grained cake. Bake in shallow pans, so that when cut the pieces will be very thin. Cut in the shape of cards, frost with white frosting, and use candied cherries to show the spots on the cards. Hearts and diamonds may be cut from the cherries with a knife, or use the cherries whole to imitate the ace, the three or six spot, as desired. A cookie instead of a cake mixture can be used. These cakes are very nice for refreshment at a card-party.

Rolled Jelly Cake.—Three eggs, the yolks beaten with one cup of sugar; two table-spoonfuls of sweet milk. Beat the whites to a froth, then thoroughly with yolks and sugar; mix one heaping teaspoonful of baking powder with one cup of flour; add to the other ingredients; flavor with lemon and bake immediately in moderately hot oven. While hot remove from pan and lay on cloth wet with cold water; spread with jelly and roll quickly; sprinkle with powdered sugar.

Mince Meat.—Three bowls of meat chopped, 5 bowls of apples, 2 bowls of raisins, 1 bowl of cider, 1 bowl of molasses, 1 bowl of vinegar, 1 bowl of butter (may be left out), 5 bowls of sugar, 2 table-spoonfuls each of cinnamon, cloves and nutmeg, 1 of pepper and 1 of salt.

Fruit-Cake.—Two and one-half cups granulated sugar, three and one-half cups flour, three table-spoonfuls baking-powder, sifted several times with the

flour, one-half pound butter, two pounds seeded raisins, two pounds currants, one-half a pound citron, one-half a nutmeg, grated, one teaspoonful each, clove, cinnamon, allspice, and ginger, seven eggs, white and yolk beaten separately, and one and one-fourth cups sweet milk. Mix, adding the beaten white of the eggs last. Bake two hours in a moderate oven. This makes a large cake.

Light Fruit Pudding.—Work one half-cupful of butter until creamy, add two table-spoonfuls of sugar, two eggs well beaten, one cupful of milk and two cupfuls of flour mixed and sifted with three table-spoonfuls of baking-powder; then add three fourths of a cupful of raisins seeded and cut in pieces, one-fourth of a cupful of citron thinly sliced and cut in narrow strips; fruit to be dredged with one fourth of a cupful of flour. Turn into a buttered mold, tie down cover and steam one and one-half hours. This recipe is given in consideration of the children.

Checker Board Cake.—Make in separate batters. For the dark one take one-half cup of butter, one cup of brown sugar, two and one-half cups of flour, one teaspoon of baking powder, yolks of four eggs, one-half cup of milk, and one level teaspoon each of cinnamon, cloves, and allspice. For the light one-half cup of butter, one cup of sugar, two and one-half cups of flour, one teaspoon of baking powder, the whites of four eggs, one-half cup of milk, and one teaspoon of lemon. Bake in layer cake pans. In the first pan put in the center the dark batter, and white around it. In the second pan put the white batter in the center with the dark on the outside, and the next one like the first. Frost with any desired frosting, and pie up alternately, the light center and dark. When it is cut put a small glass on top in the center of the cake and cut down through clear around. Then cut from the center out and the pieces will all be the same size and like a checkerboard.

THE DELIGHTFUL SCOTCH SCONES.

Griddle Scones.—One pound flour, a quarter teaspoonful of salt, one table-spoonful of butter; one table-spoonful of baking soda, one teaspoonful of cream of tartar, one teaspoonful of sugar. Rub the butter finely into the flour; add the other ingredients, then make quickly into a soft dough with buttermilk. Divide into four pieces, make each piece smooth and round; roll out, divide each piece into four small scones, and bake slowly on a hot griddle. They ought not to be handled much or they will be tough.

Oven Scones.

Rub two ounces of butter finely into one pound of flour, add one ounce of sugar, a quarter of a teaspoonful of salt, one teaspoonful of carbonate of soda, two teaspoonfuls of cream of tartar. Beat up one egg, put half of it into a cup, then with one half of it and some sweet milk make the other ingredients into a soft dough. Knead it a little on a floured baking board, divide it into five pieces, make them smooth and roll out, not too thinly; cut them into four small cakes. Lay them on a greased baking tin, brush them over with the egg, and bake them in a hot oven for ten minutes. Two ounces of sultana raisins may be added. The dough should always be lightly handled.

Potato Scones (No. 1).

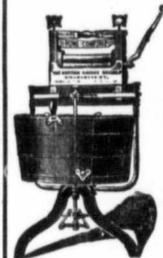
These may be made with potatoes left over from a dinner, but they are much nicer prepared with potatoes freshly boiled. Put potatoes, mashed on a baking board, and add as much flour as potatoes will take in. Then form in little rounds, pat lightly out with the hand; add a little flour; bake on a griddle. When cool roll up in a towel till wanted. These will not keep more than a day, and can be used at once.

Potato Scones (No. 2).

Six or eight potatoes, flour, salt and a little sugar. Peel and boil the potatoes, with salt in the water; steam and mash. Take out a large table-spoonful on the bake-board, and add to it half a teaspoonful of sugar and

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one tablespoonful of flour. Knead this until it feels firm; it will take up nearly all the flour; then sprinkle some flour on the board, roll it round and quite thin. Cut in quarters, prick all over with a fork, and put the scones on a hot griddle for about five minutes. Serve hot.

Potato Scones (No. 3).

One pound of cold potatoes, one ounce of butter, one or two tablespoonfuls of milk, about quarter pound of flour and a pinch of salt. Peel and wash the

potatoes, warm the milk and melt the butter in it. Mix the potatoes, milk and butter, add the salt, and work in as much flour as the paste will take up. Roll it out very thinly; cut in rounds. Place them on a hot floured griddle and cook for about three minutes on each side.

Ginger Cookies.

For these cookies, cream together a cupful of brown sugar and a cupful of butter. Add a teaspoonful of ginger and cinnamon and one cupful of New

Orleans molasses; stir two tablespoonfuls of soda into half a cupful of sour milk; use flour enough to roll out; cut and into the centre of each cookie press a large raisin.

A Substitute for Maple Syrup.

Is made as follows: Take twelve nice clean corn cobs, boil in two gallons of water until there is only one gallon of water left. Drain off the water and strain, then add to each pint of water one pound of brown sugar and boil until it is a syrup. You cannot tell this

syrup from the true syrup. (I have tasted syrup made after the above recipe and it does taste like maple syrup.—P. R. H.).

Tomato Catsup.

Wash one peck ripe tomatoes and cut in quarters. Cook in a porcelain-lined preserving kettle four hours; then rub through a sieve. Add to pulp one quart cider vinegar, three cups sugar, one-fourth cup salt, one tablespoon black pepper, one teaspoon each ground ginger and cloves, and one-eighth tea-

spoon cayenne. Return to kettle and cook until thick enough to bottle. It may take three or four hours. Watch carefully and stir occasionally to prevent burning.

Pickled Cauliflower.

Choose the whitest and firmest cauliflowers. Divide the flower into small pieces, and lay these in a brine of salt and water (strong enough for an egg to float on the surface) for a week or ten days. Take them out of the brine and put them into a saucepan of water. Boil them for ten or fifteen minutes, drain, and lay them on coarse cloths in the sun until all the moisture has evaporated. Put them into jars, and pour over them, cold, a pickle of vinegar, in which mace, long pepper and all-spice have been simmered. Tie the jar down close, and add vinegar from time to time as it becomes absorbed.

Collared Beef.

For this choose seven pounds of fine, tender beef. This will be found in the thin end of the flank of the beef. Roll it and skewer it, then lay it in a dish and rub with a mixture of two ounces of coarse sugar, six ounces of salt, one ounce of saltpetre. Let it remain in this pickle for a week, turning it and rubbing it every day. Remove it from this and take away the bone and all the gristle and coarse skin which will be on the inside of the roll. When this is done, sprinkle it thickly with a handful of parsley minced, one dessert-spoonful of minced sage, a bunch of savory herbs, one-half teaspoonful of ground allspice, and salt and pepper to taste. This should be well rubbed over the meat, wasting not a particle of it. Then roll the meat up firmly and put it in a floured cloth, binding it with broad tape. Put it in a kettle and cover with boiling water. Put it on the back of the range and let simmer gently for six hours. When it is taken out of the pot, put it under a weight and let it remain until cold. Then take away the cloth and slice. This is an exceptionally good dish for breakfast, or can be used where any cold meat would be desirable.

EXPERIENCE EXTRACTS

To Save on Children's Hose.

Where there are several small children the question of keeping them in neat stockings is a task. Here are some ideas that have been a great help to me: If you have large stockings worn at the heel and toe, lay each out smooth, then take one of the desired size for a pattern. Lay it on the large one, with the front edges even, and the turn in the heels together. This will cut the small one without using the worn parts. Stitch the stocking up on the machine, taking the small seam. Stretch it as you sew, so the stitches will not break when stretched. This makes a good stocking with the seam up the back of the leg, and is quickly done.

When the knee of a stocking gets thin and the foot is yet good, cut the foot off and sew on again, with the worn place at the back of the leg; the stocking will then last almost like new.—D. H. H.

Fireless Cooker.

A fireless cooker may be easily and cheaply made at home, thus: Procure from your grocer a wooden candy bucket or a box. Pack bottom and sides tightly, several inches deep with excelsior. In this, place the covered utensil containing the food to be cooked, then pack well with more excelsior until bucket or box is full and as air-tight as possible. Cover with its wooden lid and weight down. The food must first, as in all fireless cookers, be brought to the boiling point, or, if a roast, be thoroughly heated through before placing in the cooker. Breakfast food cooked over night in this manner is excellent.—E. P. L.

Old Broomsticks.

Old broomsticks may be used as poles on which to hang clothes in the closets. An oblong block of wood is screwed into each end of the broomstick after it has been cut to the required length to fit into the closet between the two walls. A piece of board is nailed on each wall

at the desired height, the blocks of wood on the end of the broom handle are nailed to these boards and the pole is then ready for a row of coat-hangers to be placed upon it.—Mrs. W. J. B.

Coloring Lace Curtains

If you wish to make your old white curtains an ecru shade, boil them in coffee. A friend of mine colored her old curtains beautifully in this way.

IDEAS FOR CHRISTMAS.

A Post Card Christmas.

By Alice M. Ashton. From The Woman's Home Companion.

A girl who appreciates the real value of picture post-cards, both decorative and educational, determined to have a "post-card Christmas," and with that end in view began getting together a collection of the most attractive ones she could find.

For her young friends she made calendars, using scenes of her home town for those who lived at a distance. For each, four cards were chosen having the picture the long way of the card; these were placed in a vertical row upon a table, a half inch slit cut in each corner about half an inch from the edge, and the four laced together like a panel with ribbon which was brought together in a bow a couple of inches above the top card; a space of about an inch was left between the cards, and a calendar was suspended at the bottom. These make pretty gifts which are easily sent through the mails. For those who had never seen her home town she sent scenes thereof. For her home friends were scenes from her college town and some gathered on a summer flitting amid beautiful places. Others touched upon pet hobbies, as the "kitty calendar" for the girl who raved about cats, and some very funny hunting scenes for the young man who considered himself a great sportsman.

For her brother's study she framed appropriate cards in panel effect with excellent results. In the same way she framed some charming scenes for her mother's room.

For a younger sister and some cousins attending the graded school she made most instructive albums by devoting each page to some place of interest illustrated by the cards; as she took the trouble to get really fine cards for them, these books proved very beneficial to the children.

The many friends to whom she could not send a gift each received a loving message on an appropriate card.

But her thought for the shut-ins was really her best, as it brought with it the most joy. It consisted in a calendar, for each of which she chose twelve especially beautiful cards. On the back of each card was pasted a calendar for one month, and above this was written a motto appropriate for that month. The January card was sent at Christmas, and each succeeding card so that it was received on the first day of the month; in this way the invalids had a continuous reminder of her thoughtfulness and affection.

Pin and Tie Holder.

A nice present for a gentleman is made out of a hoop covered with ribbon. At the top is fashioned a cushion for the tie pins and the lower part of the hoop is left open so that ties may be hung through it.

Over Sleeves.

Fold a gentleman's large-size fancy bordered handkerchief three-corner wise. Now fold again so as to make three-cornered. Fold one point over to meet straight edge and cut along the short line made in this way. Make a hem along short line and use the corner pieces that have been cut off for turned-back cuffs, sewed on the straight cuff edge.

Clothes Hanger.

Cover the hook of ordinary coat hanger with narrow ribbon. Pad the main part of hanger with cotton, between which sprinkle satchet powder. Cover with shirred ribbon.



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The Level of Hog Eye Forbush.

Continued from page 71

"Say, you there!" cried Capt. Jack, vociferously, "come over here."

Hog Eye looked around dubiously; no other was in sight. It was indeed, himself that the Captain called. "Say—you want a job, frien'—what's-your-name?"

"Mr. Jasper I'm called," answered Hog Eye. "A job—well, that jes' depends."

Captain Jack grinned, and beckoned him inside. Hog Eye had often seen and envied this personage, but it was his first chance to meet him at short range. He shuffled after the Captain down the counter's length of the general store, and leaned up against a pork barrel, while the Captain swung his legs from a packing-case.

"Look a' here!" he exclaimed, suddenly; "can you saw wood?"

Hog Eye's bubble burst—and his heart, too—almost. The air of expectancy shining upon his face resolved itself into a sudden dejection, and he tugged weakly at his ragged beard. "No," he said, regretfully; "my strength is that poorly I've had to give up vilent labor—but ef there was a job 'a' sawepin', now?"

The other laughed. "Oh, hell, frien'—saw wood an' say nawthin', I mean."

Hog Eye nodded quickly, and drew up some more spunks of hope in his heart. Maybe Captain Jack had in mind to grubstake him with an outfit like his other and send him out to the Bannocks in the hills.

He openly suggested the hope. No, said Captain Jack, he didn't want him to go liquor running among the bucks and squaws. What could it be, then?

"Horse-teeth!" answered the redoubtable merchant, with a knowing grin and a dig at Hog's ribs. "Hoss-teeth, an' it's easy!"

"Hoss-teeth—why—" stammered Hog Eye, weakly, thinking it a joke. But the other was in earnest—deadly earnest.

"Hoss-teeth," he repeated, craftily; "hoss-teeth as comes from hosses with horns—savvey? Hosses in bands—round the Park, like."

"Hosses with horns?" echoed Hog Eye; and then a gleam of intelligence struck into his heavy mind; "why, do you mean elks?"

"I ain't a-sayin' nawthin'," replied Captain Jack, but with a wink that conveyed a world of meaning. "But what I want is hoss-teeth like what I want—savvey?"

Hog Eye understood what he wanted, but not why he wanted; and so the Captain set forth to explain. He had a letter from the East, he said, asking for all he could get. They were popular back there for ornaments, watch-charms and the like. For each and every one of these produced, he would give Mr. Hog Eye Forbush twenty-five cents.

Hog Eye thought a moment.

YOU SHOULD KNOW

THE UNEQUALLED EXCELLENCE OF

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LAKE OF THE WOODS MILLING COMPANY LIMITED.

"But that's only fifty cents a' elk, Captin'," he protested.

"Ain't they plenty o' elks," the Captain retorted, "an the skin an' meat's your own."

And so the bargain was struck. "Yer see," explained the Captain, as they sat over a bottle in the store, "I counn't trust none them others 'roun' here. Them folks at the Hole's kicked up a muss at killin' their damned elks, an' they're settin' the wardens on to hones' folks who was tryin' to make a livin'. No, I counn't trust none o' the reglars 'roun' here, so I just had to come to you."

"That's right," assented Hog Eye, flattered into a sense of equality; "they don't give a feller no chanet!"

At the first touch of cold the herds began moving. They slipped down from the heights of the summer feeding-ground, band by band, and sought the lower pastures of the foothills. Dawn and night-fall heard the bugling challenges of the herd-bulls ringing clear from every hillside, and band by band their numbers

grew. In every park, the cows and calves grazed on the lush herbage, or walked aside from the arena of their battling lords. A great multitude had come together there, but a multitude that, year by year, was growing less. Their ranges, once reaching into limitless distances, now were cramped and driven in by the coming of the destroyer, man. At first, they had met this peril strongly—for then man killed only for his needs. But destruction grew apace—there came the butchery of wantonness. At every stage of the trail was death waiting, and a brutal, blind and heartless beginning of the end.

But to the man, Forbush, there were no regrets. He had come up into the foot-hills, and pitched camp beside a stream. Outside, the bright stars gleamed in the depths of the frosty sky and a great silence and peace wrapped the wilderness about him. He heard the tinkling of the brook beside his cabin, and on a nearby hillside the stones came rolling down, stirred by the feet of a

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passing herd. Then his eyes gleamed—he remembered the bargain he had struck.

At dawn he crept forth. He trailed along the slope of the hill, making in the direction of the night's passing band. As he crept onward with shaking limbs, his bleary eyes searched the neighboring slopes, hunting for the quarry that had gone before. But while he looked one way and another, sharper eyes had seen him; and with a crash and rending of dry timber, the herd was up and gone. They had seen and scented him; and he sat down weakly, startled at the sudden burst of sound amid the silences, and cursed with many fowl-mouthed oaths. That night he returned to his cabin, discouragement settling deeply in his heart. But for the fact that snow had closed the passes, he would have fled away beyond, taking the outfit with him, and letting his master go whistle. But at dawn he was up and away once more, resolved to make another try of it, though the luck was not encouraging. That afternoon, as he sat languidly on a hillside, staring moodily across the vast arrays of hills, a wapiti yearling stepped from a neighboring thicket, and innocently fed along. He sank back trembling, and clutched eagerly at his gun. The chance! With trembling fingers he cocked the hammer; and then for a moment stilling the wild beating of his heart, drew the trigger. Whoop! he screamed. The stricken thing was down. He ran in gleefully, brandishing his gun; and as the dying beast arose on its forelegs, dragging the shattered haunches behind it in a convulsive effort to flee, he poured bullet after bullet into its striving form. There it lay, then, quite dead, though quivering, and the slayer shot at it again. When it moved no more he stood his gun against a tree, and felt in his pockets for his knife. It was not there; he had left it at the shack. So for awhile he stood looking ruefully at the dead creature he had slain; and prying open its jaws, felt the teeth that represented the enterprise he had set out upon. After all this trouble he could not abandon them. So he hunted about till he found a stone, and laying the creature's head upon a fallen tree, tried to break off its jaw at the joints. But he failed in this, too, and realizing he could do nothing more, gave it up. He told himself he would return later on and save the hide and meat, too.

Luck, after this, turned his way. That night came a snow. It began at darkness and at dawn still fell, unabating. The grim and silent hills faded behind its curtains; the world shut in, and for three days more it snowed. But at dawn of the fourth day when he awoke from the dreams that troubled his drunken slumbers, the snow had ceased. Putting his shoulder to the door, he shoved it open and started forth.

There across the valley before his door stood a band of the creatures he was hired to destroy. One moment he stared at them idly, uncomprehending. The calm and the peacefulness of that world before him was still reflected in his eyes. He looked again, rubbing his reddened eyelids. Broadside stood the band, their necks arched, motionless, carved figures lithe and beautiful. At their feet, the wind had whipped the snow away; they stood there looking, revealed in all their wild grandeur—agile, splendid and complete. But of this the destroyer took no heed. He snatched up a gun and a hasty bullet went screaming across the interval. In the stillness, the hills roared back, hill to hill, the drowning echoes reverberating in their repeated uproar and each a crying terror. The band sprang forward. He sent another bullet speeding after, and turned them with the whining lead. As they floundered down the bank, the snow engulfed them. It clogged their way, and frantic they heaved deeper and deeper into the drifts, the younger and weaker falling hopelessly to the rear. He saw this, then, the destroyer, and dropping the gun, snatched up his snow-shoes from their place beside the door. With flying fingers he strung the things together, snatched up his gun again, and was away in swift pursuit. A wild flurry seized the clustering band. They broke like sheep, plunging deeper into the drowning drifts. He was among them now; and in his eyes gleamed the light of exultation—the bloodlust of wanton killing—the crying, murderous evilness of a beast unrestrained. Again the hills roared with the echoes; and at each crash a stricken creature fell. None escaped. The reddened snow lay dotted with heaving shapes; the maimed things writhed about or lay still in the rigor of the end. One by one, they gave way to the destroyer; and when the last great bull lay still—the last cow dead with the young and quivering unborn within her—then the work was ended. He stood up, and wiped his sweating brow. Exultation played upon his face. Here at last was success.

Hog Eye Forbush had found the level he sought.

Strictly Obeying Orders.

A young couple agreed to get married at a small town in Manitoba, and take their honeymoon in Winnipeg. Arriving there, they decided to put up at a hotel where they employ colored men. Calling one aside, the bridegroom explained that he did not want it known they were newly married, and tipped him to see that all labels were removed from the baggage. All went well for a while, but after two days, whenever the lady went out of her room, every one rushed to their doors and gazed after her. She informed her husband, who taxed the colored porter with his breach of faith. But that worthy replied, "Indeed, sah, boss, I never told 'em yo' were newly married. Why, indeed, boss, I told 'em yo' were not married at all!"

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Seed Grain Fairs in Western Canada

Continued from page 21

such seeds will be weaker and less able to withstand adverse conditions than if grown from mature seed. For this reason the judges will always favor large plump seed and thin, wrinkled, green-tinted berries will detract from the score of the exhibit.

The color serves as a basis on which to estimate the age of the exhibit and also the amount of adverse weather conditions to which it has been exposed. Repeated experiments show that the longer a sample of grain is kept the lower will be its germination percentage. It is also a well established fact that as the grain grows older it loses its bright metallic lustre and assumes a dull, lifeless color. By bearing in mind the co-relation between these points, the judges are able to arrive at a definite conclusion regarding the value of the exhibit for seed purposes.

Some may wonder that more emphasis is not placed on the milling quality of the wheat, as the ultimate object of growing this cereal is the production of flour and the price paid for the grain will depend on its ability to produce a large amount of flour of good appearance. This is, no doubt, an important point and one which must not be overlooked when selecting seed. It is not, however, the most important point, for we must determine, not only the quality of the grain which is likely to be produced, but also the ability of the seed to develop into a large, vigorous plant, under conditions which will often be unfavorable, and it is for this reason that such emphasis is placed on size and maturity of the grains. In judging the milling value, the color and texture of the interior of the kernel are taken as a guide, it having been found that hard, translucent grains usually have a higher protein content and make large quantities of strong flour suitable for bread making, whilst softer and lighter colored grains yield flour more suited for pastry. Keeping in mind the fact that the chief use of wheat is the manufacture of bread, and the fundamental law of nature "that like will produce like," the judges seek to emphasize the desirability of using only the harder, finer textured grain for seed.

From the foregoing it will be seen that the Seed Grain Fairs are fulfilling a useful purpose and are doing much to place grain-growing on a scientific and permanent basis. Through these fairs the farming community as a whole has been brought to see that both the yield and the quality of all farm crops can be greatly improved by the use of high class seed. Attention has been drawn to the folly of using weed-infested seed at any time and particularly on newly broken land. And, incidentally, a demand for high class seed grain has been established. It might be expected that in such a grain-growing

country as this there would be an abundance of first-class seed, but it is a regrettable fact that such is not the case and there is now no line of work in which the careful farmer will get larger or quicker returns than in the production of seed grain.

The Fodder Problem.

Continued from page 61

When summer-fallow has not been available the following plan has proved successful with me: Plow grain stubble as early as possible in spring, harrow at once to start weed seeds, repeat the harrowing every few days until about May 20th or June 1st, then sow 22 pounds of seed per acre and harrow well. If about forty-four pounds of chopped grain is mixed with the alfalfa seed the combined mixture can be sown with the ordinary grain drill; care must be taken that it is not sown deeper than two inches.

At first a large amount of weeds and volunteer grain will come up and very little clover. This should be cut when about a foot high and the cuttings allowed to remain as a mulch. This mowing should be repeated frequently during the first summer so as to keep down weeds and encourage the clover to branch out freely; it should not be pastured the first summer as this weakens it.

This clover should always be cut as soon as the first blossom appears, otherwise the hay will prove woody and unpalatable.

A few hours after being cut the clover should be bunched and cured thoroughly without being again spread out; this plan prevents the leaves from being broken up and the best part of the fodder lost. When stacked, keep the top well covered with long prairie grass, as clover will not shed the rain and will soon spoil. Remember that well cured alfalfa is worth as much per pound as wheat bran and can be grown on any well-drained land whether light or heavy.

New Hart-Parr Branches

The Hart-Parr Co., Charles City, Iowa, have recently established a branch house of their own at Peoria, Ill., which will look after their interests in Illinois and Western Indiana. They have rented half of the building, corner of Water and Walnut Streets, only one block from the Union Depot. This branch is in charge of J. E. Burnett, formerly sales-manager for M. M. Baker & Co.

They have also established a branch office opposite the Union Depot, Des Moines, Iowa, in charge of Sam. E. Bennett. This office will look after their interests in southern Iowa and northern Missouri.

Another branch has been established at Saskatoon, Sask., in charge of R. J. McConnell. This branch will look after their interests in Northern Saskatchewan.



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because it gives the best light of all lamps. The Rayo gives a white, soft, mellow, diffused light—easy on the eye because it cannot flicker. You can use your eyes as long as you wish under the Rayo light without strain.

The Rayo Lamp is low-priced, and even though you pay \$5, \$10 or \$20 for other lamps, you may get more expensive decorations but you cannot get a better light than the low-priced Rayo gives. A strong, durable shade-holder holds the shade on firm and true. This season's new burner adds strength and appearance.

Once a Rayo User, Always One.

Dealers Everywhere. If not at yours, write for descriptive circular to the nearest agency of the
The Imperial Oil Company
Limited.



SHIP YOUR GRAIN THROUGH US
WE WILL LOOK AFTER YOUR GRADES

References any Bank or Commercial Agency.

THE CANADIAN ELEVATOR CO., LTD.
WINNIPEG, MAN.



THE Girls' Cozy Corner

OLD SANTA CLAUS

Old Santa Claus sat alone in his den,
With his leg crossed over his knee;
But he sat and mused the whole day long
For a funny old fellow is he.

His queer little cap was tumbled and torn,
And his wig it was all awry;
But he sat and mused the whole day long,
While the hours went flying by.

He had been as busy as busy could be,
In filling his pack with toys;
He had gathered his nuts and baked his pies,
To give to the girls and boys.

There were dolls for the girls, and whips
for the boys,
With wheelbarrows, horses and drays;
And bureaus and trunks for dolly's new
clothes;

All these in his pack he displays.
Of candy, too, both twisted and striped,
He had furnished a plentiful store;
While raisins and figs, and prunes and
grapes,

Hung up, on a peg, by the door.
"I am almost ready," quoth he, quoth he,
"And Christmas is almost here;
But, one thing more—I must write a book,
And give to each one, this year."

So he clapped his specs on his little round
nose,
And seizing the stump of his pen,
He wrote more lines in one little hour,
Than you ever could write in ten.

He told them stories all pretty and new,
And wrote them all out in rhyme;
Then packed them away, with his box of
toys,
To distribute one at a time.

And Christmas eve, when all were in bed,
Right down the chimney he flew;
And stretching the stocking-leg out at the
top,
He clapped in a book for you.

THE MAKE-BELIEVE CHRISTMAS DOLL

(By P. R. H.)

Once upon a time, in the land of toys
where Santa Claus buys his presents for
girls and boys, a dear little, poor little
girl in rags and old clothes stood and
admired a very beautiful doll. The doll
had golden hair and blue eyes and red
cheeks and it could bend its joints just
like real little girls.

Now this poor child wanted the beautiful
doll very very much and she stood
right by its side and looked and longed
for some time.

Very soon a fine lady in velvet and furs
came into the store leading by the hand
a tiny girl dressed in a warm red coat and
a white hood.

"How much is this doll?" she asked
picking up the box in which the beautiful
doll was fastened.

At this question the poor little girl
choked back a sob.

Santa Claus never came to her house.
"Five dollars," replied the man taking
the doll out of the box and standing it
against the counter. "Will you send it

to 62 Chestnut Ave. this evening?" re-
quested the lady in the velvet dress.

"Thank you" answered the clerk tak-
ing the money and writing down the
address.

The lady and child left the store and
stepped into the magnificent sleigh that
waited for her.

The jingle of bells filled the air with
Christmas cheer but the poor little girl
felt none of it. Still she stood by the
doll.

The clerk went to the back of the store.
An idea came to the little girl where-
upon she immediately stepped into the
box and drew the cover after her. At
the bottom of the box the boards were
separated so she had plenty of air for
breathing.

Presently the clerk came and took the
box to the back of the store, tied a stout
string around it and pasted the address
near the end.

In a little while a delivery man left the
box at the door of the very rich child.
The poor little girl, whose name was
Ann, made up her mind she would act and
move just like a doll. She really wanted
to see the rich child's home and she did
want to be warm for a little while.

Now the rich child, whose name was
Maud, was in the nursery eating her
lunch and when nurse brought the box in
she was delighted. Nurse opened the
box and took out the little girl doll and
of course put it in a chair near the little
Maud girl.

Maud took the doll's arm and moved it
back and forth and satisfied herself that
the doll was really jointed.

Now every time Maud turned her head
the doll would take a mouth full of food
from the plate, for Ann was very hungry.

Of course as soon as Maud turned, the
doll was perfectly stiff and doll-like.

In the meantime another clerk dis-
covered the beautiful doll in the store
and asked if Mrs. —'s doll had been
sent.

Both were perplexed. Finally the first
clerk said he really had not opened the
box and he must have sent the empty box.

So the real doll was boxed and sent by
a special messenger to the home of the
rich child.

Now when Nurse brought in the box,
the doll-girl in the chair knew that she
could make-believe no longer, so she sat
right up and confessed.

She told with tears in her eyes how she
was starved and cold and never had any
Christmas and that was why she got in
the doll box and pretended she was a doll.

It was fortunate for her that the rich
child did not see the doll when her mother
bought it.

It was fortunate, too, that Maud's
mother had not been in the nursery.

But Maud felt sorry for poor little Ann
and she told her mother and they went
to Ann's home and filled it with warmth
and comfort and food, clothing and toys.

So Ann was after all happy on Christ-
mas day for she had the beautiful doll
from Maud.

THE Canadian Boy's Camp

OUR BOYS AND GIRLS

Ho, For Santa Claus!

(By Elizabeth Flint Wade.)

Old Santa Claus chuckled one sharp,
frosty day.

Said he, "It is time to pack up presents
gay,

And to shine all the bells on my jolly
red sleigh,
For my reindeer and I must be up and
away."

Sing ho, for the chimneys and house-
tops!

He drove up a housetop, nor minded
how tall.

Down the chimney he went with his
presents for all,
From the big, grown-up folks to the
dear children small.

Said he, "I am sure they'll be glad of
my call."

Sing ho, for the shouts and the laughter!

By the fireplace, in rows, all the stockings
were there.

To reach them, old Santa Claus stood
on a chair,

And filled them with presents that
showed thoughtful care,

"Not one of those stockings," laughed
he, "can they wear!"

Sing ho, for the toys and the candies!

The children were dreaming of Peth-
lehem's star.

Old Santa Claus made not so much as
a jar

To spoil their sweet dream or its beauty
to mar,

And they thought on the hills, they
heard music afar.

Sing ho, for the bells in the steeples!

At last came the morn of the dear Christ-
mas day.

Old Santa, his reindeer, and jolly red
sleigh

Had gone to his home in the north,
far away,

But at night in the glow of the Christmas
tree gay.

The children sang, "Ho for old Santa!"

THE CHRISTMAS FOREST

By Frederick Hall

Edouard Mallard sat in the doorway
of his snug little cabin, looking out upon,
but not seeing, the enticing beauty of
hills and forests, which in the clear, cool
air of the September morning, lay shimmer-
ing before his eyes. Ordinarily
Edouard saw things plainly enough, but
there is nothing like trouble and perplex-
ity to blind the eyes, and so it was with
a sudden start that, a moment later,
he observed, standing right before him, a
youth whose appearance did not at all
belong to that part of the country.

"Parlez-vous francais?" inquired the
youth, with hesitation.

"Oui monsieur, certainement," Edouard
replied.

"Hm," mused the youth. Then, with
a sudden desperate determination, "Say,
do you speak English?"

"Sure," and Edouard smiled, for the
expression upon the boy's face was
really very funny.

"You do?" came in a tone of indescrib-
able relief. "Well, I'm mighty glad,
because what I just told you is about all
the French I know. My name's Dick
Hawtin, and I'm from Mr. Merton's
house boat, down on the river. Phil
Merton invited me to take this trip,
and we saw the smoke from your chim-
ney and I told them I'd come up here
and see if I could get some eggs."

"For breakfast?" smiled Edouard, for
the light-heartedness of his caller was
wonderfully contagious.

"Oh, no, we had breakfast hours ago.
I don't know when they'll use them, but

Mrs. Merton and the girls said they
wanted eggs and I told them I'd forage."

"I think we have some," and Edouard
led the way around the cabin to where
Josephine, his wife, was busy on the
kitchen porch while Etene and Jacques
were feeding the very fowls for whose
eggs Dick had come.

It was the boys who found the eggs
too, and brought them in a birchen bas-
ket of Indian make. Dick paid for
them, in Canadian money, of course, and
then, his eyes not being blinded by per-
plexity or trouble, he looked about him
and, with a long-drawn breath, ex-
claimed:

"I tell you, this is great!"

"What?" inquired Edouard.

"The whole country—the hills, on and
on till they're like a blue ocean, and the
game and the newness and the wild-
ness; the green of it all, and the smell of
it all, the trees!"

"All second growth," interrupted
Edouard, "not like the great forests,
and—no good."

"It's good enough for me, I call it
great."

"Nice? Yes, to visit for a few weeks."
This boyish Yankee had made Edouard
forget his troubles for a little while, but
now they were all surging back. "I, too,
would like it so; but for a home"—he
shrugged his shoulders.

"What do you mean?" asked Dick.

Then, quite without having intended
it, and prompted only by the kindly look
in the boy's face, Edouard began telling
the whole story:

"When I a young man, I work, al-
ways, all winter, in the lumber camps
and I make good money, and I save.

Then I take up this place and Josephine
and I, we marry. And the place—
pretty? Yes, like a picture. But the
land new and hard to break; and I no
farmer, I lumberman; and the neighbors
far away; and when come good crops,
then price low; and when come high
price, then crops poor; and always the
place to sell far, far away. And game?
Yes, some, but not like you think; and
not when we need him most; and the
saved money go spent, spent, little, little,
till all gone; and last year I say: 'Joseph-
phine, I go again to lumber camp. I
make there good pay, and I bring back.'

And I go and I make good pay but when
in the spring I come back, I find that
Josephine have hard, hard winter. The
little boys they sick, they near to die
the doctor say, and Josephine she care
for them, and cook, and cry."

He was walking back and forth now, and his
face was working convulsively. "All
winter long that way; and now, this
coming winter, what I do?"

"Crops are going to be bad this year?"
inquired Dick sympathetically.

Edouard shrugged his shoulders.

"Who knows?" he said. "We live, I
think; but poor, always poor. Then
some day when I old man, and the boys
too old to go school and learn, then come
the railroad, much neighbors, much place
to sell crops, smart men, tell us what
this land best for—all too late."

He spread out his hands with the ges-
ture of one showing the utter hopelessness
of the situation. Dick turned and
again studied the hills and forests, this
time no longer with the admiring eyes
of a summer tourist, but with strictly
commercial eyes, the eyes of the young
man who expected in a few years to
go into his father's office and work his
way straight into a position of respect-
ability and trust.

"What's the matter with these trees?"
he exclaimed, pointing to the forest of

little pines, four to twelve feet high, which to the rear of the cabin stretched away almost as far as eye could reach. "They're good for something."

"In thirty years, yes," answered Edouard.

"No, not in thirty years. Right now, I'd be a rich man if I had them in Chicago, at the right time of the year. There isn't one that wouldn't bring a quarter, and from that all the way up to a dollar."

"You mean?"

"I mean, of course, at Christmas time. You have a regular forest of Christmas trees in this back yard of yours."

"And people buy those?" asked Edouard incredulously.

"Indeed they would. Every town of any size would take a car load."

"Why they not use their own?"

The boy laughed. "Because they all were used, years and years ago. It's just the way you say it will be here. The railroads came, and lots and lots of people; the ground is all in crops."

"The railroads! Yes. But here. How I send off those trees?"

Dick's enthusiasm suffered a sudden check.

"I—well, I don't know," he confessed. "But, say, Mr. Merton told me the railroad would come through here this fall, and trains be running by November."

Edouard laughed.

"Five, eight, ten year, I hear that. Every year, 'This summer the railroad come.' First three, four year, I believe. Now—"

And he scornfully puffed out his cheeks.

"Well, of course, I don't know, myself, for sure. But Mr. Merton is a stockholder in the railroad, he's one of the directors of the Manitou Lumber Company, and—"

"You say"—his interest was evidently deeply stirred—"that Mr. Merton, he part own the Manitou Lumber Company?" said Edouard.

"Sure, he's one of their big men, and besides that—"

"I work for that company, six year," exclaimed Edouard.

"Well, say," a sudden inspiration flashed upon Dick; "you just come with me and see him at the house boat. It isn't more than half a mile, and you tell him

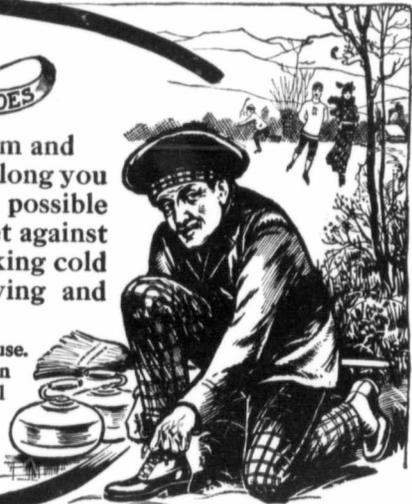


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Elmira
FELT SHOES

keep the feet warm and comfortable, no matter how long you are out. They are the only possible means of protecting the feet against cold. They prevent you taking cold—and make walking—driving and curling an extra pleasure.

Elmira Felt Slippers are fine for the house. See that the trademark, as shown above, appears on the sole. All genuine Elmira goods have the above trademark.

Sold all over the West by best dealers. 53



all about it. He'll give you advice that's good for something."

Edouard cast a deprecating look at his rough clothing.

"Oh, they're all right," the boy protested. "The Mertons are just such plain folks as we are."

The man hesitated; then, "I tell you," he exclaimed, "you tell him, first, then I come."

"All right," and Dick turned toward the river. "I'll tell him that you'll be down in about fifteen minutes."

"I bring the eggs," said Edouard.

"I declare," laughed the boy, "I nearly forgot for what I had come."

And, catching up the basket, he disappeared with it among the trees.

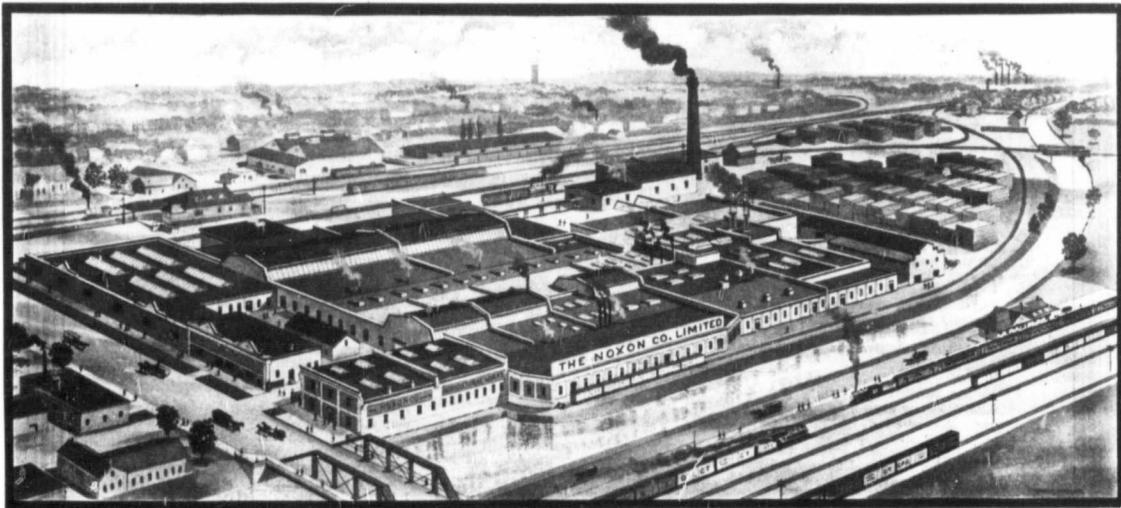
he worked for your people five or six years," so in part it ran, "but now he has been unfortunate, children sick, crops bad and he's discouraged and doesn't know what to do. I showed him these oceans of little Christmas trees, but when he stumped me by asking how he could get them to market, I told him to come down and talk to you. You don't mind, do you?"

"I'll be glad to see him. Fact is," and Mr. Merton smiled again, "business has come to be so much a habit, I can't help mixing it even with vacations. And," the smile grew broader, "one reason I came this way was to look up the crop of Christmas trees. They're getting scarce these days."

So it happened that the morning which had been one of the gloomiest that ever clouded Edouard Mallard's soul, ended

with nothing in all the sky save the cloud's silver linings, for Mr. Merton fully convinced him that this time the railroad was really coming, and before their interview was over, an agreement had been made providing for the shipment of a number of car loads of trees. Most of these were cut by neighbors, whom Edouard was authorized to hire, but many of them Edouard himself cut, with the proud assistance of Jacques and Rene.

Later, in hundreds of homes, those trees were decked with candles and laden with gifts, and happy children danced and clapped their hands about them. How little did they know of the part in their happiness contributed by Dick Hawtin, in his cheerful half-hour's talk, that September morning, away up North in the Christmas forest.



The above picture of the plant of the NOXON COMPANY, LIMITED, of INGERSOLL, Ontario, is no doubt a familiar scene to a number of our Western people who have come from Ontario. To those, however, who have never seen this institution an idea of the size of same will be obtained from the above cut.

The Noxon Co., Ltd., have been in business since the year 1853, known in the earlier years as the Noxon Bros. Mfg. Co. and later as the Noxon Co., Ltd. The Company have been doing a very large export business for the past few years, in fact, the export trade has engaged practically their entire output. Now, having increased the premises to a considerable extent by additions and new buildings, the company are in a position to devote part of their facilities to manufacturing machines for Western Canada and have already commenced doing business in Manitoba, Saskatchewan and Alberta, particularly in binders, mowers, rakes, cultivators and disc and drag harrows. Mr. W. F. Johnston, late of the Massey-Harris Co., is the designer and constructor of the machines which are giving splendid satisfaction in practically all countries of the world. Mr. Johnston has had a wide experience both in foreign countries and in Canada and the NOXON machines are a standing tribute to his mechanical genius. Mr. C. W. Riley, the President of the Company, is one of Canada's largest Cheese Exporters, also supplying a large amount of dairy produce to the Western markets. The Noxon Co., Ltd., have to date retained their independence and no doubt the dealers and farmers in the Canadian West will appreciate this fact, and be pleased to see an independent harvesting line in the market.

The plant of the Company is situated in the Town of Ingersoll between the Grand Trunk Railroad on the one side and the Canadian Pacific on the other side, both railroads serving the plant with sidings, making the railroad accommodation as good as any plant in Canada. The Thames River which flows along the north side of the plant furnishes the water used on the premises both for steam and fire protection and the Town being almost divided equally by the river makes the premises extremely convenient for the employees. The well known firm of TUDHOPE-ANDERSON COMPANY, who for some years past have been doing a large business in buggies, waggons, plows, etc., have taken the agency for NOXON machines for Western Canada, so they are now able to supply their agents with a complete line. THE TUDHOPE-ANDERSON COMPANY thoroughly cover the West with their large and efficient organization and have large warehouses at Winnipeg, Regina, Calgary and Saskatoon, where a full line of NOXON machines and repairs will be held for prompt delivery.

THE FUNNY WORLD

The matter on this page lays no claim whatever to originality. The one idea is to amuse, to provoke a smile. If it fulfills this mission we shall feel amply repaid for the time and labor expended in its preparation. Have you read or heard something that has made you laugh? Has it chased dull care away for a time? Then pass it along for publication in our Funny World. Such contributions will be greatly appreciated.

For a week had the strenuous Irish American been at work on the well single handed, and at last the foreman had promised him another hand to help him. He sat down at the bottom of the pit he had made to digest the news and to indulge in a needed rest and a smoke.

The foreman's bull-dog at that precise moment took it into his head to look over the edge of the pit, and Pat, glancing up, saw him. Slowly removing his pipe from his mouth, he rose and gathered up his tools.

"O've worked with Germans, an' Hungarians, an' O've worked wid Italians an' wid Nays-gurs," he said firmly, "but, when a man wid a face loike that comes down here to work beside me, Oi gets up."

A man went into a hotel and left his umbrella in the stand, with a card bearing this inscription attached to it:

"This umbrella belongs to a man who can deal a blow of 250 pounds weight. I will be back in ten minutes."

On returning to seek his property, he found in its place a card thus inscribed: "This card was left by a man who can run twelve miles an hour. I shall not return."

A German went into a restaurant, and as he took his seat an Irish waiter came up and bowed politely.

"Wie gehts," said the German, also bowing politely.

"Wheat Cakes!" shouted the waiter, mistaking the salutation for an order.

"Nein, nein!" said the German.

"Nine!" said the waiter. You'll be lucky if you get three.

"Now, Nora," said the departing physician to the Irish girl, who was nursing a bad case of fever, "if the patient sees snakes again, give him a dose of this medicine. I shall be in again at six."

The hour for his return arrived. The physician once more visited the sick patient, and found him raving. He had been so, said the nurse, for hours.

"And did you give him the medicine?" inquired the puzzled doctor.

Nora shook her head.

"But didn't I tell you to give it to him if he saw snakes again?" demanded the physician.

"But he didn't say he saw snakes this toime, doctor," replied the nurse, confidently. "He said he saw red-white-and-blue turkeys, wid straw hats on!"

Irishman (to shopman)—"I want somethin' for mournin' wear, but I don't know exactly what the coostom is. What do they be wearin' now for mournin'?"

Shopman—"It depends a little on how near the relative is for whom you wish to show this mark of respect. For a very near relative you should have a black suit, a black band on your hat, and black gloves. For someone not so near and dear, you may have a broad band of black on your left arm, or a somewhat narrower one for somebody more distant."

Irishman—"Och, is that it? Well, then, gimme a shoe-string. It's me woife's mother!"

Old Walker got on a car about eleven the other night, and after giving the conductor explicit directions to wake him when the car reached 60th Street, seated himself in the corner and was soon sound asleep. When he had ridden about half a mile beyond his intended destination, a sudden lurch of the car awakened him.

Rubbing his eyes he looked out of the window, and seeing where he was, angrily accosted the conductor thus:

"I say, why didn't you wake me up as I told you? Here am I ever so far beyond the street."

"I did try, sir," responded the conductor, "but all I could get from you was, 'All right, Mary, get the children their breakfast and I'll be down in a minute.'"

"What's your name?" asked the magistrate.

Mr. Sissins (who, unfortunately, stuttered a trifle) began to reply:

"Sis—sss—sss—sss."

"Stop that noise, and tell me your name," said the magistrate impatiently.

"Sis—sss—sss—sss."

"That will do," said the magistrate severely. "Officer, what is this man charged with?"

The policeman, who was an Irishman, immediately responded.

"I think, yer honor, he's charged with soda water."

McGuggs—"Phwat's Tim Phelan lukin so cocky over? Oi'll break the face av him!"

McNuggets—"Shure, an' it's th' proud day fer Tim. He's just got a lether sayin' thot his cousin's bin hanged fer killin' an' robbin' an' Englishman."

Six miles from anywhere, and six minutes from lighting-up time, with half a gale blowing, and a bad puncture, with no lamp, and no "solution," Wheeler was feeling decidedly blue.

Manfully he set to pumping. But as fast as the air went in it came out again. In desperation, Wheeler whipped off the tire, bent on doing great things with a pocket-handkerchief.

A yokel sauntered up, and for some minutes watched operations.

"Nasty storm a-comin' on," said he.

"Yes," growled Wheeler.

"Bin threatenin' all day," pursued the yokel.

"Quite so," snapped the cyclist.

"H'm," continued the spectator. "Got a puncture?"

Wheeler rounded on him with a sweet smile.

"Oh, no," he replied. "Not at all! Merely changing the air, don't you know, so that it won't get stale!"

A letter was once received at the post office in New Orleans directed to the biggest fool in that city.

The postmaster was absent, and on his return one of the young clerks in-

formed him of the receipt of the letter.

"And what became of it?" inquired the postmaster.

"Why," replied the clerk. "I didn't know who the biggest fool in New Orleans was, so I opened it myself."

"And what did you find in it?" inquired the postmaster.

"Find?" replied the clerk. "Why nothing but the words, 'Thou art the man.'"

There was a family reunion and the conversation had turned on the story of the surgeon who, having operated on a man, sewed up the wound leaving a sponge inside; and it was noted that one of the company suddenly turned ghastly pale.

"What's the matter?" they cried.

"Why, I was operated on for appendicitis the other week, and I remember now that just after it my doctor was complaining of having lost his umbrella!"

Mrs. Murphy—"Phwat are yez going to name the darlint'?"

Mrs. O'Brien—"Solomon Isaac Jacob Aaron O'Brien. An' if he don't get rich with that name he can starve to death, begorra!"

The butter was stronger than usual that morning. Ago had increased its powers.

The Silent Man stuck his knife in it, and threw the pale mass against the wall, where it clung tenaciously and glowered at the boarders. The landlady entered the room.

"Who threw that butter against the wall?" she demanded.

The boarders said nothing, the Silent Man, who always paid in advance, being particularly quiet.

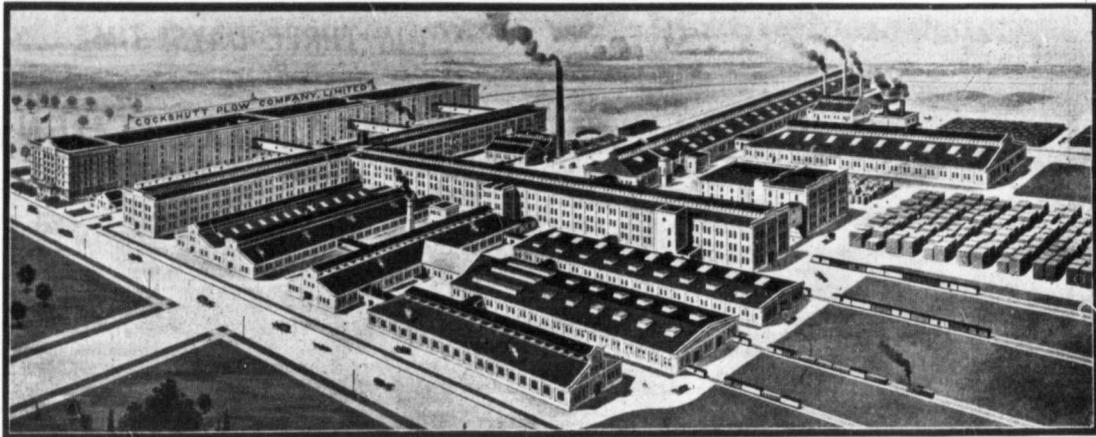
"Why don't you answer!" she demanded.

All eyes were turned on the Silent Man, as he cleared his throat and spoke.

"Madam," he said, "the butter is able to speak for itself."

A Dutchman, addressing his dog Snyder, said, "Snyder, zy don't you work some dime? You vas only a dog, but I vish I vas you. Ven you go mit your bed in you shust turn round tree dimes and lay down; ven I go mit de bed in I haf to lock up de blace, and wind up de clock, and put de cat out, and ondress myself, and my frou vakes up and scolds, den de baby she vakes up and cries and I have to valk her mid de house round; den maybe ven I gets myself to bed in it is dime to ged up again. Ven you ged up you shust stretch your neck a little and you vas up. I haf to light de vire, put on de kittle, scrap some mit my vife already and get myself breakfast. You play round all day and has olenty fun. I haf to work all day and hav benty druble. Den ven you die you was dead. Ven I die I haf to go to de bad blace already yet."

LARGEST PLOW FACTORY IN BRITISH EMPIRE
 Showing large extensions made in 1910



Factory Cockshutt Plow Company, Limited, Brantford, Ont.

The above illustration presents a most excellent bird's-eye view of what is undoubtedly one of the finest and most extensive plow factories in the world. This cut is made from the photograph of the extended plant and buildings as they exist to-day, and is in every way a perfect representation of the place where Cockshutt plows and implements are made.

The development of the Cockshutt Plow Company has been a most remarkable one. A few years ago the Cockshutt Plow Company was regarded as one of the implement concerns in Western Canada, but as by no means the largest. To-day, however, when we speak of this concern we speak of it as being one of the largest concerns handling implements for the Western Canadian farmer.

There is only one way that such a growth can be brought about, and that is by a large and consistent demand on the part of the user for a company's goods. This demand in the case of Cockshutt implements has been so large that it has been a serious problem to the company themselves to keep pace with it.

During the past six months the company has been perfecting many well-laid plans for the construction of new buildings, and very large extensions have been made in every department of the plant, the determination of the company being to keep pace with the enormous demands for their implements in Western Canada, their engine gang plows in the United States, and their increasing foreign trade in many parts of the world.

This illustration of the factory as it now stands is not an ex-

aggerated picture for effect or one showing contemplated extensions or enlargements, but gives a very accurate idea of the plant as it stands to-day. The company's future plans embrace further buildings and extensions for next year, and this policy will be continued from year to year as the business of the company increases. There will be no lack of energy or enterprise in the endeavour to keep pace with their ever-growing trade, and the modern farming conditions that prevail over Western Canada can to a considerable extent be attributed to the ingenuity and skill displayed in the mechanical departments of the company's business. The Cockshutt Plow Company were among the very first to put out a successful engine gang plow, and engine gang plows have revolutionized agriculture in Western Canada. They have not only made ten stalks of wheat grow where one would not have grown before, but they have made a hundred stalks of wheat grow where one would not even have thought of growing. The engine gang plow has made it possible for Western Canada to increase the arable land under cultivation in three years from 3 per cent. to about 8 per cent. Under the old horse plow and sulky plow regime it would have taken ten or fifteen years to accomplish what has been accomplished in the last three.

The factory site occupies about forty acres of ground. The buildings are splendidly laid out, so that everything is worked from the unloading of the different lines of materials from the several railway sidings at the extreme eastern end of the shops to the

completed implements that pass from the paint shops to the extensive six storey warehouse immediately behind the general offices stretching out about five hundred feet in length, with convenient loading tracks alongside for handling shipments in car-load lots. Several miles of railway tracks interplaced so as to cross and re-cross between the buildings, all to give the very best of facilities for receiving materials and for the shipping out of completed machines.

Special and particular attention has been given for the facilities and equipment provided for the improvement and pattern department, as this department is properly considered of first importance in the development of the business, and may be regarded as the corner-stone in the foundation of the big manufacturing plant. This department is located in a large four-story fire-proof building, located in the centre group of buildings, but detached from the others so as to insure safety from fire. In addition to this, the entire works is equipped with the very latest fire appliances, and is covered throughout with an automatic sprinkler system.

A complete new share department, which has more than doubled the facilities of the share plant has also been added this year, and is now in full operation, so that this will amply keep pace with the enormous and increasing demand for Cockshutt Plow Shares.

Among the additions which have been built this year are the following:—

Warehouse—Four-story building, 140 by 60 feet.

Experimental Department—Four-story building, 65 by 64 feet.

Machine Shop and Erecting Room—Three-storey building, 106 by 60 feet.

Casting Storage and Paint Shop—Three-storey building, 105 by 60 feet.

Pattern Storage—Three-storey building, 50 by 40 feet.

Foundry—215 by 70 feet.

Engine Gang Structural Shop—192 by 50 feet.

Blacksmith Shop—154 by 70 feet.

Iron Storage Building—128 by 100 feet.

Share Shop—100 by 32 feet.

Transformer Station.

Cupola House—52 by 32 feet.

The above involved an expenditure of between three and four hundred thousand dollars, exclusive of the building sites, and in themselves form a very creditable factory.

The blacksmith shops, grinding room, and foundry have been nearly doubled in capacity in the extensions made to these buildings during the past few months.

The entire works present an impressive sight, strongly demonstrating the great growth in the company's business and the rapid development that has taken place in Canada's industries in the past few years.

Besides the above factory extensions, new warehouses have been arranged for at Brandon, Saskatoon, and Calgary. These additions are made necessary by the rapid increase in the Cockshutt Plow Company's business, and that they may be in the best of shape to take care of the 1911 trade.

The Era of Farm Machinery
Continued from page 27

while a less successful automatic shocker dispenses with all human labor except for driving the team. A machine somewhat similar to the hay loader now takes an entire shock of grain and elevates it to the wagon.

In sections of the West where the lack of livestock makes straw of little commercial value, and where dry weather may reasonably be expected between the harvesting and threshing of the crop, the machine known as the header is in common use. The heads of the grain, with as little straw as possible, are cut and elevated into the barge driven along side. The headed grain is stacked in the field and threshing is done without handling the bulk of the straw. In case of unfavorable weather the damage to the grain is enormous. The great advantage of the machine lies in its capacity as compared with the ordinary binder.

In place of the flail and winnowing sheet the grain separator has been developed until very complete and economical separation is secured. With the substitution of steam for horsepower for driving it, there came into use numerous labor-saving attachments, such as the self-feeder, band cutter, straw stacker, recleaner, and the devices for elevating and weighing the grain into wagons. The small horsepower threshers had a capacity of from three hundred to six hundred bushels of oats per day. The great steam outfits thresh from one to two thousand bushels of wheat or double that of oats in the same time. A complete outfit costs from three thousand to four thousand dollars, exclusive of teams and wagons, and was formerly used only thirty or forty days per year. With the advent of steam plowing, engines were made suitable for both kinds of work and the overhead cost of

threshing considerably reduced. Smaller outfits driven by gasoline engines have recently come into quite common use.

In the extreme West there has been developed the combined harvester, which seems to represent the greatest possible saving of human labor. This machine, drawn by from twenty to forty horses, under control of a single driver, cuts, threshes, recleans, and delivers into sacks the grain from forty to fifty acres per day. Two men are required for sewing the sacks. The straw, including all weed seeds, is scattered over the ground as the team proceeds. Four or five of these machines may often be seen in a single wheat field in the Palouse country in the State of Washington. On level land the horses may be replaced by the steam engine, which furnishes power sufficient to cut a swath up to forty feet in width and to cover from seventy-five to one hundred and twenty-five acres per day. These outfits, though representing the shortest possible time from standing to marketable grain, retard the passing of exploitive methods of farming by making it possible to obtain some sort of yield on immense acreages with the least possible expenditure of labor and money. One of these outfits with a crew of from three to seven men may handle as much as six or seven thousand acres in a single season. They have also reduced the time of seeding to a minimum. In the tule lands in the San Joaquin Valley, engines with extremely wide wheels are necessary on account of the soft ground, but one outfit may plow, seed and harrow from seventy-five to one hundred acres per day. Thus the entire crop is handled in two operations.

From exploitive methods and machinery it is a relief to turn for brief consideration of a few of the machines contributing to better rather than greater farming. We

DRINK-HABIT CURED
IN THREE DAYS' TIME

BY

THE NEAL TREATMENT

"Don't Allow Drink to Get The Better of You"

THE nervous drinker, the business man, farmer, rancher who allows drink to handicap his best efforts, also the man regarded as a hopeless wreck from drink, can, in three days' time be restored to the same physical and mental condition he was in before he began to drink. What is it worth to the man who drinks to be free from that irresistible and uncontrollable desire, appetite, craving and jawing for drink?

The treatment and the method of its administration are pronounced by those who have investigated to be not only ethical and professional but entirely satisfactory, and its success in all cases has been demonstrated and proved to the satisfaction of all concerned.

A cordial invitation is extended to all men and women to investigate the Neal Cure to the end that they may co-operate in this grand work for the reclamation of dear ones and others. Do your duty by calling, phoning or writing to any of the Neal Institutes today for full particulars and our Guarantee Bond to Cure in Three Days. Hundreds of business men, including Lawyers, Clergy, Bankers and Physicians, have testified to the wonderful work of this treatment.

THE NEAL INSTITUTE COMPANY

Branches at

WINNIPEG BRANDON CALGARY REGINA

Write the Institute nearest you

See the Announcement in this issue of our 1910-11 Wheat Guessing Contest.

find on dairy farms systems of management best calculated to yield a revenue without depleting the soil fertility, and machinery has greatly aided farm dairying. The Babcock milk tester made

Prove It

To your Wife that you appreciate her efforts. She needs labor saving appliances to make her work less burdensome. Equip her kitchen with a Perfect Range, the IDEAL HOUSEHOLD and a WINGOLD KITCHEN CABINET. The money saved in buying direct at Wholesale Prices will pay for the Cabinet. Thousands of homes are happier through the installation of these Labor Saving necessities. Encourage your helpmate. Order to-day, or send for a Wingold Catalog, it tells how a perfect Range is made, and why we furnish a better article at half retailers' prices. Your copy is FREE for the asking.



Wingold Kitchen Cabinet \$17.50

The Acme of Perfection in kitchen cabinet construction. Larger and more conveniently arranged, made of better material, and better in every way than most cabinets sold at \$25 to \$35.

From the large divided four bin to the smallest spice drawer, its everything to be desired for convenience and labor saving. Not a thing small or pokey about a Wingold Cabinet. Has plenty of room for crockery, cutlery, stock of groceries and cooking utensils. Thousands of unnecessary steps saved every day. Twice as much accomplished with half the effort, everything within easy reach. Large china closet, small and large cupboards, two cutlery drawers, sugar, salt and flower bins, and cutting board, made of white maple, natural finish. Base 32 inches high, 48 inches wide, 26 inches deep. Height of cabinet 84 inches. Shipping weight 200 lbs. Order from this ad, or write for our Furniture Catalog, showing a large line of up-to-date furniture at lowest prices ever named.

THE IDEAL HOUSEHOLD Blue Polished Steel Range

The handsomest and best Steel Range ever produced. It excels in beauty of design, construction and convenient arrangement. It is the most economical fuel consuming stove made. It has all of the most practical features known in stove manufacture. Sold direct at Wholesale Prices. Retailers ask \$85 for the ordinary kind, we guarantee to deliver a better stove at about half their price. The Time Tried and Fire Tested Ideal Household stands to-day without an equal.

Buy a No. 9-20, with oven 20x20x13, six 9 inch lids, an enameled copper reservoir, capacity 9 1/2 gal. Large Blue Polished steel High Closet with polished nickel-trimmed Genuine Wellsville Blue Steel body, duplex grates, double shaker bars burns wood or coal. Takes 24 in. wood. Complete with oven thermometer as illustrated. Shipping weight 550 lbs. \$46.75. Write to-day for a

Wingold Catalogue Free it names the lowest prices on Stoves, Furniture, Hardware, Harness, Crockery and Household Goods of all kinds.



\$46.75
Buys this \$85 Steel Range

Just as Illustrated

Wingold Stove Co. Limited 181-83-86 BANNATYNE AVE., EAST Winnipeg

possibility the determination of the percentage of butter fat in milk and established a uniform standard for the exchange value of milk and cream. The loss in butter from one cow's milk in the course of a year by former methods of skimming is about forty pounds for water dilution, twenty-six pounds for shallow pan separation, and ten pounds for the deep setting system. The hand cream separator cuts the loss of fat in skim milk to a minimum. The separating device consists of a bowl moving at the rate of several thousand revolutions per minute and usually of devices inside the bowl for separating the milk into thin layers. The milk and solid impurities, being heavier, seek the outside of the bowl and the cream the inside, separate outlets being provided. Besides saving an enormous figure in butter fat, the hand separator saves nine-tenths of the cost of hauling milk to the creamery and furnishes the farmer with a vastly superior quality of skim milk for feeding purposes. The vacuum milking machine has yet to be considered universally successful. There is no question of its ability to do a thorough job of milking, but it causes extra labor in other directions. Whilst contributing to the cleanliness of milk, it has been found to have an injurious effect on the yield of some cows.

Perhaps no invention of recent years has done more for the conservation of soil fertility than the manure spreader. It was at one time considered cheaper to move the barn than to haul away the manure. Even at a late date manure was regarded as inconvenient and disposed of with the least possible effort. The spreader saves only the labor of unloading, but it scatters the manure much better than could be done by hand. The returns from a given amount spread by machine are often double those of a like amount spread by hand. A belt, either endless or returning, carries the manure back to a revolving drum, which tears and scatters it in a light or heavy layer as desired. Manure loaders, more or less successful, are now eliminating hand labor in loading. By making it easy for the farmer to save and apply this valuable by-product, manufacturers have contributed to the maintenance of high crop averages where these machines are used.

The ideal farm power plant shows the extent to which the small gasoline engine may be used to lighten farm labor. It furnishes power for pumping water, sawing wood, shelling corn, grinding feed, churning, and running the cream separator and washing machine. Connected with a dynamo it furnishes electric current for light or power.

It seems unnecessary to go further in showing the marvelous extent to which human labor has been eliminated on the farm. The laborer has been relieved of drudgery and given time to study his

Continued on page 88

SOME HOLIDAY SPECIALS

WELL WORTH CONSIDERING

We Prepay Everything and Refund your Money if Not Satisfied



J142—Lady's Stole, Russian Sable dyed Squirrel. This has a military collar, trimmed with head and tail. The front is trimmed with four tails and natural paws. Satin lining. Price**\$16.95**

J143—Lady's Muff, latest New York Barrel Shape. This is Russian dyed. Squirrel to match Stole J142. Lined with Shirred Silk. Price.....**\$18.00**



Lady's Handsome Net Waist
White and Ecru only
No. 1958
Price **\$2.95**
Equal to any \$4.00 Waist before the public.

No. 1958—The illustration of the beautiful waist shown above gives an excellent idea of the design, but it cannot convey to your mind the splendid quality of net used. A handsome medallion of lace forms the yoke, and embroidered down the front in five rows. Five rows of tucks down each side of back. The sleeves are made with eight tucks and finished with a six-inch cuff of fine tucks and Venise lace. Lined with fine quality China silk. The waist buttons invisibly at back. All sizes, price.....**\$2.95**

CARD GAMES FOR THE WINTER MONTHS



- All Postpaid.
- 4300—Uncle Josh's Trip.....15c.
 - 4210—Game of Authors.....15c.
 - 4210B—Old Maid.....15c.
 - 4210C—Peter Coddle.....15c.
 - 380—Game of Snap.....16c.
 - 380B—Magic Spelling.....16c.
 - 380C—Country Storekeeper.....16c.
 - 4311—Game of Nations.....20c.
 - 4312—Game of Messenger Boy.....20c.
 - 368—Game of Wild Animals.....33c.
 - 383—Doctor Fusby.....33c.
 - 367 1/2—Game of Lost Heir.....33c.
 - 4550E—House that Jack Built.....40c.
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All these Games are put up in Handsome Boxes.



Our Big Lot No. 4

This will be a genuine surprise package. Every article a suitable gift. It would cost at least \$2.00 retail. Our special price is \$1.00 postpaid.

- 6 Xmas Postals.....30c.
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- 1 Box Xmas Stationery, in Holly Box.....25c.
- 1 Game Donkey Party.....25c.

Our price **\$1.00**, postpaid.

LOT No. 1

4 Handsome Colored Booklets. Garland Series. Suitable for Xmas Gifts. **50c.** postpaid.

LOT No. 2

6 Handsome Colored Booklets. Flower Series. Dainty Xmas Presents. **75c.** postpaid.

LOT No. 3

12 Xmas Postals, 12 Xmas Cards, 3 Xmas Booklets. Price **68c.** postpaid.

We have a regular Xmas Bulletin which we shall be glad to mail if you drop us a postal.

MONTGOMERY, ROSS & CO., BOX 110 MONTREAL

International Live Stock Exposition

BY A. J. McMILLAN

Saturday, Nov. 26th, 1910, proved a busy day in Chicago with the closing of the International Horse Show and the opening of the International Live Stock Exposition. This day was set apart for the Students' Judging Contest, where nine agricultural colleges were represented by five students each, and the event in general was one of surprises, and many new records were established. For the first time, a team was sent from Man. Agricultural College, and while they did not succeed in bringing home the coveted \$1,200 trophy, they made a standing of which Manitoba and the West are justly proud.

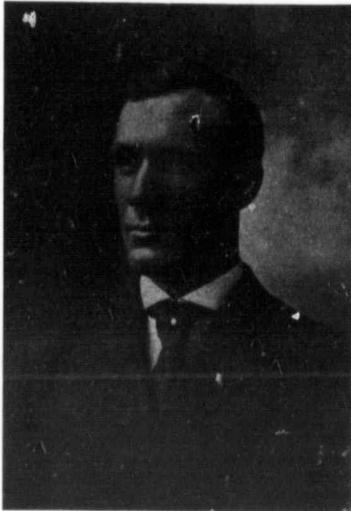


A. J. McMillan

Judgment was passed by the students upon three classes each of horses, cattle, sheep and hogs, and when the decision of the committees was given the following results were announced. The University of Missouri was first with a total of 5379 points out of a possible 6,000; Nebraska University, 5219; Iowa State College, 5126; Texas Agricultural College, 5114; Manitoba Agr. College, 4992; Ohio State University, 4951; Ontario Agr. College, 4883; Kansas Agr. College 4735; Kentucky State University, 4720. In individual standing Missouri had the four highest men, Texas



E. W. Jones



Prof. W. H. Peters

fifth, Iowa sixth and a Manitoba student, A. J. McMillan, won seventh place, being the highest standing of any Canadian student in the contest. The Manitoba team consisted of J. C. Smith, of Cartwright, Man., F. W. Crawford, Chater, Man., A. J. McMillan, Griswold, Man., A. E. Blackstock, of Paynton, Sask., and E. W. Jones, of Carman, Man., and as a team won 3rd highest standing in cattle, 4th in horses, 8th in hogs and 9th in sheep. Considering that the types are considered so differently on the other side of the line



J. Cochrane Smith

the Manitoba boys made a creditable showing, as well as proving a stronger team than our older, eastern college at Guelph.

Judging of fat steers began early on Monday morning, and before the first ribbons were placed the pavilion was comfortably seated with spectators to witness the keen contest. In the 2-year old pure bred steer class, the blue ribbon went to Purity—a smooth white steer exhibited by the Kansas State Agr. College, while in the senior yearlings Roan James, shown by Jas. Leask, of Greenbank, Ont., was

an easy winner. This beautiful type steer was a brother of the Grand Champion steer of 1908, and all the Shorthorn enthusiasts felt confident that the same place was due this steer for 1910. He was the only Canadian fat steer in the show, and was a great credit to the Dominion.

Among the pure-bred fat calves, Barmpton, shown by the Kansas State Agr. College, won first place. These three steers met for champion pure-bred steer and Judge Carden soon found Roan James, the yearling, to be the winner in this class.

The Aberdeen Angus then competed for championship honors of the breed which was



F. W. Crawford

found in Bob Scott, a yearling steer shown by Mart. L. McCloy, of Washington. The Hereford champion was the yearling Herbert, exhibited by S. L. Brock, Lake Geneva, Wis. The above champions again met for champion pure-bred fat steer, which was again won by Roan James. The keenest competition was evidenced among the grades and crossbreds, where the different colleges fought for premier honors. Among the 2-year olds Missouri Agr. College was 1st and after a close contest won 1st for senior yearling steer, while Iowa land-

Continued on page 81



A. Blackstock



1911 KNOCKS AT YOUR DOOR

and when you open it there stands a thresher salesman. He is there for the purpose of selling you a threshing outfit, the separator end of which shall be equipped complete with band cutter and self-feeder and swinging stacker. You, of course, will ask regarding that self-feeder, for from what you have heard and seen it must be either a RUTH or a WHITE WINGS. There is a possibility that he will attempt to steer you up against something else of the "just as good" kind but don't you let him bunco you. If you have seen feeders work you know and if you haven't you just take it straight from the real "feeder men of Western Canada" that there is no feeder made by any other company that can handle the business end of the separator like a RUTH or a WHITE WINGS.

He may insist, but just ask him to produce a guarantee like that which goes with every RUTH feeder. You'll see him "backwater" like a man in a boat on

the edge of Niagara Falls. You'll have him on the run in a minute.

Don't let him try to make you believe that only his feeder will work on his separator, for our feeders are made to fit any size or make of thresher. The proper attachment goes with every feeder.

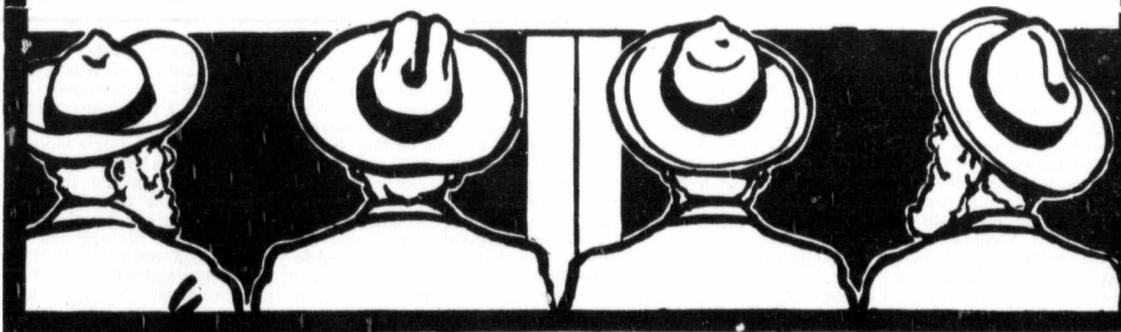
Insist on having a feeder made by us, either a WHITE WINGS or a RUTH WHITE WINGS, the latter being simply a wing attachment on a regular Ruth feeder.

If you can't get what you want from the thresher salesman, write us direct and we'll take a pleasure in seeing that your wants are supplied.

Get a RUTH or a WHITE WINGS in 1911 if you want a real feeder and not an imitation that isn't even an ornament.

PARSONS HAWKEYE MFG. CO.

WINNIPEG, CANADA.



Continued from page 82D

ed 1st in the calf class and also 1st in the junior yearling. These met for champion grade or cross bred and the Iowa calf, Shamrock II, won out, which left the grand championship honors between this beautiful Angus calf and the Canadian pure-bred steer, Roan James.

Judge Carden fully demonstrated his partiality to the black breed in this class, of which he had been accused during the whole show, as the smoothness and handling of the Canadian steer was most difficult for any judge to overlook in spite of any private opinions which he might hold. The 10-month old calf, however, won the coveted prize. In the carload lots the Angus and Hereford breeds made the closest competition, but the champion lot was a splendid bunch of yearling Angus exhibited by E. P. Hall, of Illinois. Judging of the breeding classes began on Tuesday morning and in the short-horn bull classes the following were awarded the blue ribbon:—Aged.—White Star, owned by F. W. Harding, Waukesha, Wis.; 2 yr. old—Ringmaster, owned by White & Smith, St. Cloud, Minn.; Sen. Yearling—Roan Sultan, owned by Thos. Johnson & Son, Columbus, Ohio; Jun. Yearling—True Cumberland, by C. A. Saunders, Manilla, Iowa; Sen. Calf—Royal Cumberland, by C. A. Saunders, Manilla, Iowa; Jun. Calf—Earl of Avondale, by Carpenter & Ross, Mansfield, Ohio. The champion ribbon was awarded to Ringmaster with White Star reserve, and this fine 2-year old was commented upon as one of the finest types ever exhibited at the International.

The Shorthorn female classes brought out an unusually large number of beautiful animals, and on the aged class the famous cow, Mina Princess, owned by Geo. J. Sayer, of McHenry, Ill., previously owned by Sir William Van Horne of East Selkirk, whose show ring record in Canada has never been equalled, was forced to second place by Princess Marshall, owned by Rosenberger & Edwards, Tiffin, Ohio. The Emmert heifer Susan Cumberland, also owned by Sayer, won out in the 2-yr. olds and later duplicated her honors as grand champion female, which she won at the Kansas Inter-state fair a few weeks ago. Thos. Johnson & Son, of Columbus, Ohio, won the herd championship with a ring that has been the comment of the majority since the opening of the show. The Aberdeen Angus breeding classes proved of great interest to Canadians, as the high-class herd of J. D. McGregor, of Brandon, Man., showed in such excellent form, and for their first appearance did great honor to the West. Mr. McGregor's honors were as follows:—Second on aged bull Leroy 3rd, of Meadow Brook, first going to Magnificent, owned by J. Bowman, of Guelph, Ont.; 3rd on senior bull calf Pride Lad of Homer; 2nd on aged cow

Violet 3rd of Congash; 3rd on two-year-old heifer Our Pretty Rose; and 1st prize on junior yearling heifer Edith Erica in a class of thirty beautiful animals. The champion herd ribbon, which most spectators had slated for Manitoba, fell to the famous herd of Maquoketa, Iowa, second to McHenry, Denison, Iowa, and third to McGregor, of Brandon.

Mr. Battles contemplates bringing his herd to the Winnipeg Industrial this following season, where we hope Mr. McGregor will meet him with a stronger force, and prove the victor.

The other breeds brought out equally good specimens, but the number in each class was considerably less, and the competition was between the older breeders from across the line, no Canadians exhibiting.

While Percherons are supposed to be the American horse, the interest about the Clydesdale ring was just as keen as we find it in Canada, and the Scotch accent equally in evidence. Graham Brothers, of Claremont, Ont., were the only Canadian exhibitors, and did great honor to their native land in carrying off the grand championship on their aged stallion Mikado. Besides this they won 1st on mare one year and under with Village Princess, a McQueen filly in a class of eighteen; second for mares two years and under three on another McQueen colt; 1st for aged mares on Pearl of Fairfield. In four-year-old mares they won 4th place, but came out strong in the stallion classes, winning 1st for one year and under two on Royal Ruby, and 2nd on Scottish Signet, the former being first in his class at Toronto and Winnipeg, and the latter second at Winnipeg Industrial in 1910.

In stallions two years and under three the class was an exceptionally strong one, but Graham Brothers again landed the blue ribbon with Baron Ivy. Mikado then won in the aged class, and, later, the championship. McLay Brothers, of Janesville, and Alexander Galbraith & Son were the other principal prize winners in Clydesdales, and are well known to western Canadians.

The Percheron classes proved of wonder to those who previously had not appreciated the popularity of this breed among the Americans, as each class brought out from 50 to 80 animals, each worthy of a prize. The judges found ample work in selecting the winners in each class at the close of four to six hours' deliberation, and in no instance were more than two classes placed in one day. The Belgian classes were well filled, but the exhibit was of less uniform merit than in the other classes.

All the different breeds of hogs were well represented, and the ribbons closely contested. For the fat hog breeds the Duroc



Rifles Shoot Well, Work Well and Wear Well

The rough, hard usage that hunting rifles often receive requires them to be constructed on sound mechanical principles and of the best materials. All Winchester rifles are so made. Nothing is left undone that will make them shoot well, work well, look well and wear well.

Winchester Guns and Ammunition—The Red W Brand—are made for all kinds of Hunting. WINCHESTER REPEATING ARMS CO., NEW HAVEN, CONN.

AND STILL THEY COME

Dearville, Ill., July 21, 1910. Baker Valve Company, Minneapolis, Minn.

Dear Sirs, The valves I purchased of your agent, Chas. E. Kent, have been found very satisfactory both in increasing power of ignition and removing entire load of valve gear. E. F. JENKINS.

Kankakee, Ill., Aug. 4, 1910. Baker Valve Company, Minneapolis, Minn.

Dear Sirs, Your Mr. Kent sold us one of your valves for our Atlas 10 H.P. engine. The valve has been working for about a month and it is saving us from 20 to 25 per cent. of coal. We are very well satisfied with the valve, and would recommend it to anyone working a slide valve engine. Yours truly, WEST SIDE QUARRIES CO.

Otto Lundhoff, Town Clerk of Danigren, Carter County, Minn. Carter, Minn., Nov. 4, 1910. Baker Valve Company, Minneapolis, Minn.

Gentlemen, My valve gives good results. It does all you claim for it, and I value what I put in, as it did not get out of order in any way, and works like a top. Wishing success to you, I am, O. LUNDHOFF.

How do you like them? What we have done for others, we can do for you. Send us your order to-day.

BAKER VALVE CO.
404 8th Ave. South, Minneapolis, Minnesota
DIST. OFFICE: WASHINGTON, OREGON, IDAHO AND CALIFORNIA, 14 MAYNARD BLDG., SEATTLE, WASH.

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HIDES AND FURS

OF ALL KINDS
AT HIGHEST MARKET PRICES. SHIPMENTS SOLICITED
Write for our Fall Circular containing full list of prices.

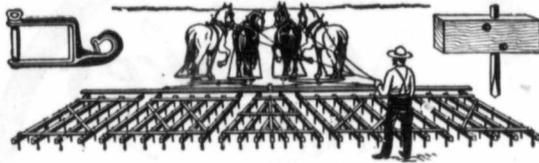
PIONEER HIDES & FUR CO. Successors to LIGHTCAP HIDE & FUR CO.
172 to 176 KING ST., WINNIPEG P.O. BOX 1092

Don't Fail to Renew Your Subscription Before it is Too Late.

Jersey appeared most numerous and possibly the most popular type. The extreme smoothness of covering, together with a very high condition, was the outstanding feature of the fat hog classes. Some excellent pens and individuals were shown among the breeds of sheep. Campbell, of Woodville, Ont., won his usual honors, and did credit to the Shropshire breed in Canada. McKerrow, of Pewaukee, Wis., was his closest competitor, and the prizes were

almost equally divided between them. Harding, of Waukesha, Wis., made a clean sweep in Cotswolds with a new importation of Scottish prize-winners. When all prizes were awarded, Canada is seen gradually coming to the front in the live-stock world, and the time is not far hence when her progressive population will see her step into the place which the great Republic now holds, and which to all appearance is now at her climax. May the time soon come.

WATSON'S WOOD HARROWS



WATSON'S STEEL BOSS HARROWS

Are the perfection of design and strength. The tooth bars are made of angle steel and the braces of channel steel. The teeth are fastened by a simple device and cannot become loose. This harrow when knocked down occupies very little space and weighs a little less than the wood harrow. Four-horse size supplied with 149 teeth, covers 24 feet.

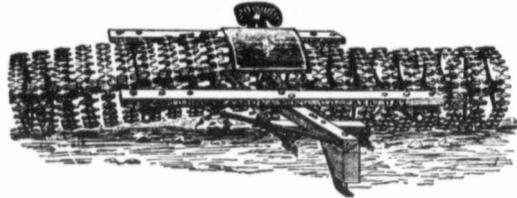
WATSON'S ALL-STEEL CHANNEL HARROWS IN ALL SIZES

WE ALSO HAVE A LINE OF HARROW CARTS, WITH 24, 28 AND 36 INCH WHEELS

WATSON'S BOSS WOOD HARROWS

Made of seasoned hardwood—Two Rivets at every Tooth. Malleable draw clevis—correct in design and well finished. They are better than and different to others, that is why there are more of them sold in Western Canada than all other makes combined.

Watson's Flexible Pulverizer and Compressor



Made in two sizes: With 16 wheels, for 3 horses (weight 2100 lbs.) width 10 ft. 6 in. as follows: " 22 " " 4 " (" 2800 ") " 14 ft. 6 in.
24 in. Wheels; Removable Boxing on all wheels and Centre Castings.

The 22-wheel size is supplied with two poles and pulley hitch.

Write direct to us if you cannot purchase from your local dealer

REASONS WHY YOU SHOULD USE IT

1. It compresses the soil around the seed.
2. It tends to conserve the moisture in the soil by checking evaporation.
3. It leaves the surface rough, holds the dust and prevents blowing of the soil.
4. It does not leave the soil in ridges and hollows for the rain to run off.
5. It does not press the clods in to the ground, but crushes them.
6. It is impossible to clog if the ground is in condition to work with any implement.
7. Being flexible, it will conform to ground level or dead furrow, leaving nothing untouched.

WRITE FOR PARTICULARS

John Watson Mfg. Co.
LIMITED

WINNIPEG

Doctor Johnson

Continued from page 65

government men lived under, yet here he seems rather to be thinking that happiness in the last resort comes from within:

"Vain, very vain, my weary search to find

That bliss which only centres in the mind."

The stern and dogged worker who spent many days without knowing whether he should have sufficient for the succeeding ones had no sympathy for the finer ills of humanity. "A valetudinarian," said he, "at last becomes a perfect hog;" yet in the things that touched him nearly he was undoubtedly a sensitive man—

"Of all the griefs that harass the distressed,

Sure the most bitter is a scornful jest!

Fate never wounds more deep the generous heart,

Than when a blockhead's insult points the dart."

The range and amount of his literary work was enormous, from reporting the debates of Parliament to writing epitaphs in Latin; a language which he also spoke fluently; yet these labors failed to secure him a competence even in middle age and his only reward was a pension of £300 per annum, conferred by the Crown when he was fifty-three, and honorary degrees from Oxford and Dublin. He was indeed a scholar but no mere pedant or bookworm would ever have penned these lines:

"Deign on the passing world to turn thine eyes,
And pause awhile from letters to be wise."

An exterior rough and ugly, but surely with a kind of Socratic ugliness far from unpleasant to behold, contained a heart of gold. We could press with affection the hands that lifted the fainting out-cast from the gutter, carried her to his own home and set her in a new way of living, that opened in bounty to the poor and wretched, who could find no other asylum. His patience with misfortune must have been a fine thing, for his house was filled with doddering old men and peevish old women, whose principal occupation was to quarrel with one another. As an author he is little read, for even his "Lives of the Poets" are neglected but he lives on in Boswell's pages and we may say with Lord Rosebery "Of all the men we have never seen, Johnson is the man whom we know best." This short sketch must now draw to a close, and we inevitably ask what it is that still commands our attention and regard? His prejudices, his violent High Toryism, his bigoted churchmanship, his vapourings about the monarchy, his vapourings about the colonies, his luckless pamphlet "Taxation no tyranny: an answer to the Resolutions and Address of the American Congress," (1775), his ignorant contempt for Scotchmen and foreigners, all sink into the relative insignificance of the transitory.

There are many things that a man of his day could have viewed other than he viewed them. But Johnson, the benevolent, Johnson, the stalwart, with nothing of meanness about him, still does, and we may safely say always will delight humanity. His religion was very deep; it contained much of superstition and bigotry but beneath it all was a true piety which expressed itself in effective action. There is a remarkable incident which Boswell tells us of: "Once, indeed," said Johnson, "I was disobedient; I refused to attend my father to Uttoxeter market. Pride was the source of that refusal, and the remembrance of it was painful. A few years ago I desired to atone for this fault. I went to Uttoxeter in very bad weather, and stood for a considerable time bareheaded in the rain, on the spot where my father's stall used to stand. In contrition I stood, and I hope the penance was expiatory." This will be very differently interpreted by different minds, but to those who think they understand something of the man, it will be a very clear expression of deep emotion. The doctor was emphatically a Londoner and he so loved city life that he could hardly, even in imagination, picture the joys of the country. The visitor may still sit in his favorite seat in the church of St. Clement Danes in the gallery and near one of the fine windows which has been erected to his memory, depicting him surrounded by his famous

friends, Burke, Reynolds, Goldsmith and others; he may also admire the statue recently unveiled outside the church or make a pilgrimage to the house in Gough Square and the quaint old panelled room with the sanded floor in "The Cheshire Cheese," Fleet St., and enjoy the privilege of sitting in the Doctor's favorite corner. As Lord Rosebery puts it, he was John Bull himself, John Bullishly social, very fond of his dinner, and no mean performer with his fists; for we read how he was attacked in the street by four men, to whom he would not yield, but kept them all at bay till the watch came up, and carried both him and them to the round-house. But we must leave this fascinating personality, and without regret, for he lives to us always in the pages of Boswell.

Mr. C. M. Petrie, Managing Director of the Petrie Mfg. Coy. Limited, of Calgary, Alta., was in the city for a few days this month. Mr. Petrie states that the conditions in Alberta, taking them as a whole, are very favorable indeed, and the crop generally has been far better than was anticipated some months ago.

The "MAGNET CREAM SEPARATOR" which this Company make, is meeting with the same success in Alberta, as it is in other parts of Canada, which shows the Dairymen in that Province are appreciating this well-known superior Separator.

CANADIAN NORTHERN RY.
DECEMBER EXCURSIONS
 TO
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CHOICE OF ROUTES
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 For full particulars apply to
Canadian Northern Railway
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 Corner of Portage Avenue and Main Street

STAY INSIDE WHILE YOU ARE OUTSIDE



With a Dysthe Face Protector you can look into the snow storm as through a window.
 Travelers and all who have country driving during the winter months should have one of these Protectors. Read below what a Doctor from Clanswilliam says:
To My Mind there is Nothing can Take its Place in a Blizzard.
 Clanswilliam, Man., June 22, '13.
 Martinus Dysthe, Esq., Winnipeg.
 Dear Sir:—Replying to your favor of 22nd inst., may say: that I can gladly recommend your face protector.
 To my mind there is nothing can take its place in a blizzard and I often used it also on a clear day when there was a cold wind to face.
 They are well worth the money.
 Sincerely yours, L. E. MYLKS, M.D.
 Agents wanted Everywhere. Write for free Booklet.
MARTINIUS DYSTHE
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Send only 10 cents
 For this beautiful 18 inch tray cloth on Fine Art Lines your choice of Wallachian, Eyelet, Mt. Melick, Violet or Holly design, and we will include **FREE OF CHARGE** one year's subscription to "Art Needlework" Magazine.
 The tray cloth regularly sells for 25 cents, and one year's subscription to our embroidery Magazine would ordinarily cost you 20 cents, thus making a total cash value of 45 cents.
 The above Bargain Offer will be sent to any address upon receipt of ten cents and the names and addresses of five lady friends. Send us your order to-day.
AVAGLOWE & CO., Inc.,
 207-E Addison Ave., Chicago, Ill.

Poultry Houses
 Continued from page 59
 her obligations of a family nature took her elsewhere; and a roost in a tree is a nice clean place—not overrun with vermin and plenty of fresh air without drafts. However, the nights were not cold and combs and toes were not frozen where the fowls first to be domesticated came from.

In the last sixty words above are a few facts that have always been of great importance to the grower of poultry in northern countries and for all time will be constant food for thought. To give the fowls as near their natural surroundings as possible would seem to be an undoubted good move. If that was all there was in it, any numbskull could do that. There is much more than that, however. To make money out of fowls, to keep them for one's own supply of poultry-meat and eggs or even for the mere pleasure of seeing them and petting them, one finds a set of conditions quite different from those surrounding the fowl in its wild state. Where to alter without detriment and what to substitute for what is unattainable or impossible constitute the greater part of successful poultry keeping that needs head-work and resourcefulness.

It frequently happens that one is brought up with a very rude jolt when trying to force fowls to accommodate themselves to quarters they were bought to occupy. It is cheaper to make your quarters to suit the needs of the fowls. They will dispense with many luxuries and reward you well for all you do for them, if your energies have been well directed.

It is necessary to have a poultry house because this country is too cold for fowls to live out of doors as the original fowls did in India. Shut up too close birds will smother. With insufficient fresh air various ills attack them. Admitting air is liable to cool the house too much or, if injudiciously done, will create a draft. Drafts cause a large number of ailments. Openings for light and air tend to lower the temperature, so very often, of light and air fowls go short. Sunlight is a great invigorator and germ destroyer. There is no such thing as too much glass. One of the most successful poultry houses in this country was a disused greenhouse. The many panes of glass missing were supplanted with cotton which did not reduce the light much and gave a fine system of ventilation without draft.

Given a certain number of fowls and a certain dimension of house, to retain the proper temperature and give the most liberal supply of fresh air, the walls must be as warm as possible. For this reason double windows are very desirable. Three windows of a given size with double sash and glass will chill the house in zero weather less than one single

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 MANUFACTURERS OF Boilers and Engines, Elevator and Milling Machinery. Iron and Brass Castings
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FARM LAND AND CITY PROPERTY FOR SALE

We own and control the sale of some 5,000 acres of improved and unimproved farms in the vicinity of Elm Creek, situated south west of Winnipeg some 45 miles and in the famous Red River Valley, also lands in the New Drainage District, North of Gladstone.

In Saskatchewan we are the owners of some 15,000 acres of select farm land in the Eagle Lake district, north of Kindersley, which is a divisional point on the C. N. R. The G. T. P. Biggar to Calgary Branch is under construction and passes just to the North of our lands. These lands are without stone or scrub and are a steam plow proposition. For full details of price and other particulars apply to the Red River Loan & Land Co.



The above cut shows a scene on a large farm of 1,260 acres owned by a customer of the Red River Loan and Land Co. Our improved Elm Creek Lands are in this immediate vicinity. This year 100 acres is sown in Fall Wheat, drilled in between the rows of corn, cut high to hold the snow.

RED RIVER LOAN AND LAND COMPANY

913 UNION BANK BUILDING, WINNIPEG, MAN.

THOMAS GUINAN, President

E. C. COMPLIN, Manager

window. As walls and openings (windows and doors) are made more cold-resistant, so may the fresh air openings be enlarged without forcing the temperature too low. The greater the number and size of the windows on the south side of the poultry house the better, and the tighter and warmer the walls the better. Some window openings should be filled with cotton instead of with glass ready for substitution in some when an extra cold dip arrives.

With cement floors much dirt and vermin are avoided. Rafters and studs of wood with metal lath for walls, inside and outside, and for roof and ceiling, all hollows filled with sawdust, straw or some cheap light filler, will make a house inhospitable for vermin, warm and tight as well as being very hard to burn. Such a house would not cost more than all lumber, it would need no painting and it would practically last forever. Some of the new cements, such as Kellastone, being more elastic than Portland cement, would not be so liable to crack and Kellastone has the advantage of adhering to brick, wood or iron tenaciously.

Such material has been wasted, inconvenience caused and cold houses resulted by making the houses too long and narrow. Compare two houses, one 100 ft. by 7 ft. outside and another house 50 ft. by 24 ft. They would each

take about the same material to build, each would take about the same to heat, but the latter would house and give floor space for double the number of fowls and make them more comfortable. Other advantages of the shorter and wider house are that the work about caring for the fowls would be easier, vermin would be easier to combat and drafts less bothersome.

At the Maine experiment station and at several of the most successful of the large poultry plants in the northern states, where the winter season more nearly approaches the severity of ours, the wider house has proved a decided improvement.

What the Country Boys Have Done

In 1870 an awkward, overgrown boy from the country appeared at Toronto University to attend lectures. His fellow students, noticing his uncouth appearance and the marks of the farm which still clung to him, promptly christened him "Cowheels." This country boy recently succeeded in winning the Newfoundland Fisheries Dispute from the United States before The Hague Tribunal. His name is Hon. A. B. Aylesworth, Minister of Justice for Canada.

Another country boy who arrived in Toronto about the same time found employment in a wholesale house. He had the

privilege of walking a mile and a half each morning, working for twelve hours and then walking the same distance back at night—all for the munificent salary of two dollars a week. This boy's salary did not remain at two dollars very long, for his employers soon discovered the stuff of which he was made and rapidly advanced him. In course of time he became head of one of the largest stores in Canada. Then began under his direction the development of a mail order business, which eventually covered the Dominion from the Atlantic to the Pacific, from the Great Lakes to Hudson's Bay.

This country boy was H. H. Fudger, now president of the Robert Simpson Company. During the past year one of Mr. Fudger's dearest ambitions has been realized—that of serving every resident of the Dominion on exactly equal terms. His house was the first to inaugurate the policy of shipping goods free of delivery charges to any destination in Canada.

This enterprise of Mr. Fudger's is a veritable boon to any Canadian living outside the large cities; it enables him to make his purchases at city prices and receive the goods delivered free, no matter where he lives. The new system has just been put into operation and is well worth a trial. Any of our readers can get a free copy of the Simpson Mail Order catalogue by writing for it.

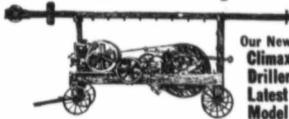
Sawyer-Massey Co. to Handle Gasoline Tractors

On other pages of this issue will be found the advertisements of the Ohio Tractor and of The British Colonial Tractor. In each case the advertisement bears the name of Sawyer-Massey Company, Limited. This concern is well known to our readers as one of the oldest thresher companies doing business in Canada. Sawyer-Massey steam engines and separators are to be found in every portion of Canada where grain is raised.

This concern, however, realizing the importance of the gas tractor as a means of farm power have placed themselves in a position where they can supply to those of their customers who want gas tractors, good reliable machines.

This does not mean by any means that they are shifting from steam engines to gas engines. As a matter of fact during the past year they have doubled their steam engine factory and are now working both night and day shift in order to keep up with the demand. It does mean, however, that if a Sawyer-Massey customer wants a gas engine instead of a steam engine they are in a position to supply it, giving as reliable a warranty on their gas engines as has always been furnished by them on their own goods.

You Can Make \$50 to \$75 a Day!



Our New Climax Driller Latest Model

Many owners of Waterloo Outfits are doing better than that.

E. A. Price of Buffalo, Minn., reports \$717 in 75 hours—over \$9.50 an hour. You can see Mr. Price's letter at our offices.

A \$400 Waterloo Well Driller is earning one of our customers from \$50 to \$75 per day. We will send you his name when you write.

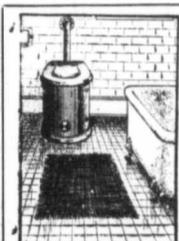
There's a big and growing demand for drilled wells everywhere—all around you. With a Waterloo outfit you can drill wells whether you have had any experience with machinery or not.

We Will Help You Start Business

Show you how to get all the work you can do—how to handle your advertising—how to manage your Waterloo Outfit. Write today. We will explain everything and send you our big 128-page free illustrated catalog. Printed in colors.

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BOOKLET AND DRAWING SHEET ON APPLICATION

The Era of Farm Machinery

Continued from page 82b

work. His hours of service have been made shorter and his mental faculties stimulated. He has been made a more efficient worker, a broader man, and a better citizen. An extract from resolutions passed at a recent convention of the National Association of Agricultural Implement and Vehicle Manufacturers, states the case effectively. It is as follows:

"The greatest good comes from the conservation of human life. Next come the conservation of human effort. We, as implement and vehicle manufacturers, in the development of labor-saving machines and tools, have a right to claim to be in the foremost rank of conservators."

The claim is most assuredly just. There remains practically no phase of human effort on the farm which the inventor and manufacturer have not touched upon in the endeavor to relieve the burden of toil.

Now the most active field seems to be the emancipation of the horse. While the field machines have been most wonderfully developed during the last sixty years, the power has remained the same for centuries. Only in the last ten years, and with the opening up of vast tracts of level territory in the West, have mechanical prime movers come into extensive use as substitutes for the horse. Great changes in the design and construction of early traction engines have been made in order to adapt them to this work.

From a small beginning steam engines have become important factors in agriculture where conditions are favorable. However, in many sections of the west, fuel, good water, and competent labor are scarce, hence expensive. Steam engines are economical only for large enterprises, while small farms in that section have constantly grown more numerous. In order to meet these conditions the internal combustion tractor was put out about six years ago. Since that time it has been developed into a practical machine and is being introduced at a rapid rate. In one of the first of these the engine has two cylinders capable of producing forty-five brake horse power. Oil is used for cooling, and either gasoline, kerosene, or distillate for fuel. The labor of from two to four men and as many horses is dispensed with in plowing, as compared with a steam outfit. The task of providing water has been practically eliminated, as only a small amount is used in the cylinders. The handling of fuel is greatly simplified, and, being in smaller units than the most economical steam engines, the motor is adapted for use on farms of a half section or more.

The small single cylinder gasoline tractor does the work of from twelve to fifteen horses in the field and of from twenty to twenty-five in stationary work.

A four-cylinder farm truck will handle two or three plows and

ESTABLISHED 1865

UNION BANK OF CANADA

HEAD OFFICE, QUEBEC

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**CENTRAL BUSINESS COLLEGE
W. H. SHAW, Prin., TORONTO**



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Stop That Limp

Change that limping, useless horse into a sound, healthy horse, willing and eager to do a good day's work. Don't let a Spavin, Curb, Splint, Sprain, Ringbone or any other Lameness keep your horse in the stable. Cure it with

Kendall's Spavin Cure

It cures without leaving a scar, blemish or white hairs—because it does not blister.

Fort Kalla, B.C., June 14th 1909
 "Have been using your Linctment for years and find it all that you represent. Have not been without it for 10 years."
 GEORGE GORDON.

\$1. a bottle—6 for \$5. Excellent for household use. Sold by all dealers. Ask for free book "A Treatise On The Horse" or write us for copy. 55

DR. B. J. KENDALL CO. Ensbury Falls, Vt.

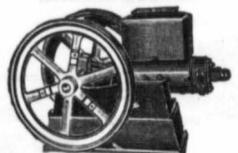
Cheap Power!

Do you know that a horse costs three to six times more than a Gilson "Goes Like Sixty" Engine of like power?

That a Gilson Engine of same cost as a horse will do four to eight times as much work?

That the feed of a horse costs six to ten times more than a Gilson Engine doing like work? (Of course the idle horse keeps eating, but the idle engine costs nothing. Surely you want to know lots about the

GILSON "Goes Like Sixty" ENGINE



The money-making, money-saving helper on the farm. The up-to-date, standard engine with a reputation for quality. Write for catalogue to-day. Full particulars.

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 General Agents
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RAW FURS AND RAW HIDES

Ship us your Hides and Furs and secure full market value. We want

SKUNK, MINK, RED FOX
 WEASEL, LYNX, MUSKRAT

In fact every kind of Fur. We pay 74c. per lb. for frozen hides. Drop us a card and get our price list.

Northwest Hide and Fur Co.
 278 Rupert St., WINNIPEG

an equal load of harrows or other implements. It will drive a small thresher or similar machine, and on the road has a speed of from one and a half to fifteen miles per hour, hence it is a remarkably versatile power. In another tractor a four-cylinder vertical engine furnishes power for driving the peculiar "caterpillar" wheel. It virtually moves forward over a steel track which it lays for itself. As yet only a few have been introduced. As high as eighty per cent. truck efficiency is claimed to be a result of the use of this type of driver.

For general farm work the internal combustion tractor may be said to be rapidly supplanting the steam engine, which, however, has a great field of usefulness in sections where it is desired to bring large areas rapidly under cultivation. In older sections in order to compete successfully with the horse, tractors must bring the cost of operation close to that with horses and at the same time be capable of a great variety of work. The internal combustion tractor meets these conditions better than the steam engine, and is being introduced at a rate estimated anywhere from two thousand to five thousand per year. The consumption of gasoline has been greatly increased by the rapid development of the automobile and the gasoline engine. One has only to note the reversal in the course of ten or fifteen years in the relative price of gasoline and kerosene to predict the early rise of gasoline to a price prohibitive except for a very few purposes. It seems only a question of time until gasoline must be used extensively for power production, alcohol as a factor being apparently a remote possibility. A tractor has been developed solely for the use of kerosene and the low grade products of crude oil. It has a horizontal, twin cylinder, water or oil cooled engine, developing fifty brake horse power. Distinctive features claimed are the carburettor, which is absolutely automatic, and the regulation, which is within 2 per cent. from no load to full load. It is said to develop as much power as a gasoline engine of the same specifications. It is too early to judge of its success, but if it should prove efficient it will do much to solve a fuel problem which is rapidly becoming acute.

There is an immense field for the tractor on the farm. Plowing is stated to be the world's greatest single item of power consumption. In the United States alone more than two and a half billion horsepower hours are required annually for this operation, and at least one-third of this is expended in states where traction plowing is already popular. Numerous other farm operations consume a vast amount of power annually. In 1907 nearly twenty-four million horses and mules were found on farms in the United States. It is safe to say that at least half of these were

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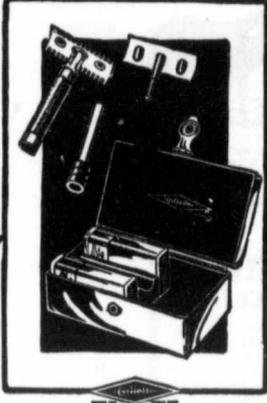
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kept for power purposes and a large proportion of the remainder for maintaining the supply. The investment per actual horse-power is greatly reduced by the substitution of mechanical for animal power, and the cost of operation compares favorably with that of horses. The horse, however, remains the best prime mover for all-round purposes, and will probably never be entirely displaced by a machine. The comparative merits of animal and mechanical power will in the end probably be resolved into a question as to which source of power will require the least acreage for the production of fuel, owing to the rapidly growing area required to supply food for the human race.

Last but not least, the auto-mobile is rapidly finding a place in the business management of the farm. It takes from the shoulders of the heavy draft horse the necessity for long, exhausting trips to town on light errands. It dispenses with the one or more horses often kept simply for occasional use on the road, and leaves to the general purpose draft horse only that work to which he is well adapted, namely, the drawing of implements over the field and the hauling of heavy loads to market.

In general machinery has reduced the cost of producing farm products. It has improved the quality of products by condensing crop operations within the period when the most favorable conditions prevail. By increasing the acre effectiveness of a man it has reduced the labor necessary to produce the nation's food supply, leaving it free to assist in development along other lines. At the same time it has thrown upon the cities the burden of providing work for an ever-increasing army of non-producers. It has increased the qualifications demanded of the farm laborer so the unskilled city laborer will not do on the farm. It has increased the investment necessary for the proper organization of a farm, this and the higher price of land making it more difficult for a person of small capital to engage in farming. As a nation we have occupied nearly all of our naturally productive area and are confronted with the prospect of providing food for an increasing population with a constant acreage. In the past machinery has encouraged extensive rather than intensive farming. Henceforth the reverse should be true. If he who makes two blades of grass grow where one grew before is a public benefactor, then none the less a public servant is he who puts into the farmer's hands the machinery for making such a course attractive. On the other hand, if he is a public curse who reduces the fertility of the soil so that but one ear of corn grows where two grew before, at least a small part of the blame should fall upon the shoulders of the manufacturer who furnishes the means for pursuing such a course and reaping a profit.



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Practical Talks to Threshermen

Continued from page 46

shaft through the twisting of the separator frame. The length of the bearing is generally made about three and one-half to four times the diameter of the shaft. This ratio of diameter of shaft to length of bearing was worked out for general machinery many years ago by the Wm. Sellers Company of Philadelphia and it is a good safe rule to follow. It is a rule that is adopted by some of the largest machinery builders in the country and I mention the fact here because many of our readers are experimenting with new machines and it may come in useful.

Lubrication of Cylinder Boxes.

The lubrication of the cylinder boxes is a matter of the utmost importance. In some machines ring or chain oilers are used, thus following the practice of the builders of dynamos, fans and other high speed machinery. This system of oiling consists of a reservoir in the pedestal below the shaft, filled with oil, into which a ring or chain dips and which rests on and revolves with the shaft. The ring or chain, coming up through the oil, carries a certain amount of the oil up and spreads it on the shaft. This is a very good method of lubrication and has been proven quite successful. Another plan is to use a grease cup and hard oil. This also works well, but it requires a little more attention than the chain oiler for the reason that, as usually constructed, the compression cups are hand operated.

One of the greatest difficulties encountered in lubrication is due to running the drive belt too tight. This squeezes all the oil out from between the journal and the bearing and is the cause of many hot boxes.

In setting up a new separator the cylinder boxes, blower boxes, and all other boxes which are liable to get filled with dust or grit during a long railroad journey, should be taken apart and cleaned thoroughly. This precaution only takes a few hours' time and is sure to pay in the cool running of the boxes and the assurance one feels that everything is right.

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A Story With a Moral.

Back in '94 a farmer bought a farm wagon in Winnipeg for \$60. It was a good farm vehicle, and the farmer was of the kind who took care of his property. The other day he came back to the same Winnipeg dealer and said he wanted to buy another wagon just like the one he got in '94. "It was a good one," he said. "That's the reason I want another. How much are you going to charge me?" The dealer reflected a moment and then asked: "I think you paid \$60 for that wagon, didn't you?" "That's right," said the farmer.

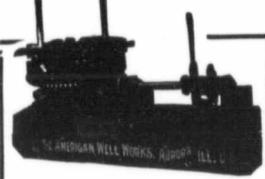
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"It will cost you \$70 now," said the dealer.

Distinctly surprised the farmer began to object and then demanded the reason.

"Well," said the dealer, "the material, like lumber and iron and steel, has advanced in price and it costs me more now to buy them. The tariff probably has something to do with it, too."

At the mention of the word "tariff" the farmer went straight up in the air. He began to expound against the theory of the whole thing.

The dealer let him run along a while and then asked again: "Say, when you bought that wagon from me in '94, I think you paid for it in corn, if I remember rightly, didn't you?"

"I did," said the farmer, "but what has that to do with it?" "You had to give me 600 bushels of corn for that wagon, didn't you?" asked the dealer again.

"I did," said the farmer, after recalling in his own mind that corn was only selling at 10 cents a bushel in those days.

"Tell you what you do," said the dealer, "you bring me in 600 bushels of corn tomorrow, and I'll give you this wagon—"

"Well, say, hold on—" began the farmer.

The dealer interrupted him in turn. "But that isn't all," he said. "In addition to the wagon I'll let you and your wife go over in the warehouse and pick out a surrey. Then you go and pick out the best self-binder in the shop. And—"

"Here, wait a minute —" started the farmer.

"I'm not through yet," said the dealer. "When your wife comes in I'll let her go into the hardware department and pick out the best range we have. And just for good measure, suppose you tell your wife that she can also pick out enough kitchen utensils to entirely refurnish your kitchen. Now, I'll give you that—all of that for 600 bushels of corn. In '94 the same amount of corn got you just the wagon. That's a fair proposition, isn't it?"

The farmer was stunned. "I'll just work this out in figures and show you what you are getting," continued the dealer.

"We'll put the wagon down at \$70; the self-binder at \$125, and that'll get you a beauty; the surrey at \$125; the kitchen range at \$80, and that certainly ought to be a peach; and the kitchen utensils at \$20, and that ought to buy a few. Add that together and you have \$420. Multiply 600 bushels of corn at 70 cents a bushel and you have \$420."

The farmer dug up his \$70 for the wagon without saying another word and motioned to the dealer to join him at the cigar stand for a "smoke."—From The Kansas City Journal.

Johnnie (to new visitor)—"So you are my grandma, are you?" Grandmother—"Yes, Johnnie! I'm your grandma on your father's side." Johnnie—"Well, you're on the wrong side, you'll find that out!"

That Cold Room



on the side of the house where winter blasts strike hardest always has a lower temperature than the rest of the house. There are times when it is necessary to raise the temperature quickly or to keep the temperature up for a long period. That can't be done by the regular method of heating without great trouble and overheating the rest of the house. The only reliable method of heating such a room alone by other means is to use a

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It is not a farm paper, but a paper for the farmer, containing good articles on poultry, and giving some bright interesting stories.

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Farmers' Week at Manitoba Agricultural College

Arrangements are already being made for the Short Course and Farmers' Convention to be held at the Manitoba Agricultural College during the week commencing Monday, February 15th, 1911, and, as in previous years, the annual meetings of the various associations interested in agricultural advancement are being held in conjunction with the Convention.

The Short Course, consisting of lectures and demonstrations in Animal Husbandry, Field Husbandry, Agricultural Engineering, and Veterinary Science, will begin on Monday, February 13th, and will continue for one week. The Annual Convention of the Agricultural Societies of the Province, which will occupy two days, will be opened on the afternoon of Tuesday, Feb. 14th, the final session being held on the evening of the 15th. The Annual Meeting of the Manitoba Dairymen's Association will be held on Feb. 15th and 16th, and the Manitoba Horticultural and Forestry Association will hold their meeting on Feb. 16th and 17th.

The Household Science Staff are arranging to hold Special Sessions on Feb. 15th and 16th, for the discussion of questions of particular interest to women, and the Provincial Seed Grain Fair will also be held during this week. A number of well-known speakers have promised to attend, and the programme throughout will be maintained at the same high level of interest which characterized the proceedings of last February.

As in other years the gathering is being held during the time of the annual Bonspiel, so that parties wishing to attend the Convention may take advantage of the reduced railway rates which are always offered at that time.

Better Shot.

Indignant Citizen: "Say! your boy threw a stone at me just now and barely missed me."

Mr. Grogan: "Yez say he missed ye?"

I. C.: "That's what I understood myself to remark."

Mr. G.: "It was not my b'y."

Sawyer Massey to Double Capacity.

Sawyer-Massey Co., of Hamilton, are pushing to completion the large additions to their factory and many car loads of additional tools and machinery are being unloaded at their works ready for installation. The present shops which are now running full blast will be doubled in capacity. They report having had a most excellent season's business and will be ready for a much larger one for 1911.

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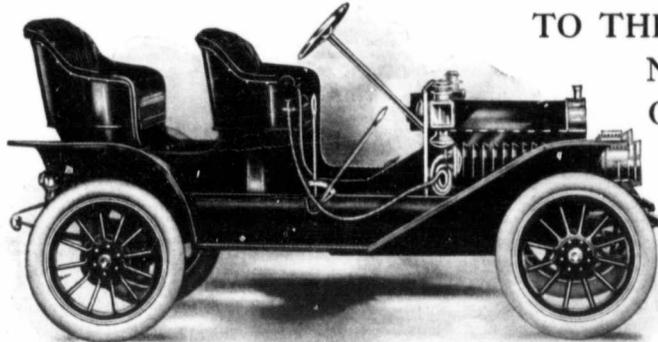
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THIS AUTOMOBILE FREE



TO THE FIRST PERSON GUESSING NEAREST TO THE NUMBER OF KERNELS IN 12 LBS. NO. 2 NORTHERN WHEAT.

Commencing November 1st, 1910, and ending June 30th, 1911, The Canadian Thresherman and Farmer will carry on a Wheat Guessing Contest open to everyone in Canada except residents of Winnipeg, and are giving away to the first person who guesses nearest to the number of kernels in 12 lbs. of No. 2 Northern Wheat, this \$1,200.00 McLaughlin-Buick Automobile, all complete with oil tail lamp, oil side lamps, two gas head lights, generator, horn, repair outfit, jack and pump. This is the Model "9" Four-passenger "Tourabout" McLaughlin-Buick Automobile with detachable rear seat. Automobile will be awarded to winner F. O. B. Winnipeg, and whoever is the lucky winner of this automobile will be the possessor of an exceptionally powerful, speedy and comfortable machine. All that you have to do to secure estimates is to send in either new or renewal subscriptions for THE CANADIAN THRESHERMAN AND FARMER.

READ THIS CAREFULLY

This is the third year that we have put on a Wheat Guessing Contest, and the same general rules that have governed our former contests apply to the contest this year.

The wheat is a fair clean sample of No. 2 Northern procured from the Dominion Government Grain Inspector's office, Winnipeg. The wheat and bottle were taken to the Dominion Weights and Measures' Office, and exactly 12 pounds of the wheat weighed out and poured into the bottle, which was immediately sealed up in the presence of two witnesses. The bottle was then photographed and deposited with the National Trust Co., and will remain in their vaults until the contest closes June 30th, 1911, when it will be taken out and counted by a board of three judges, none of whom are in any way connected with The Canadian Thresherman & Farmer.

Everyone who sends in a year's subscription for The Canadian Thresherman & Farmer, either new or renewal, is entitled to estimates as explained below. These estimates may be credited in whatever way desired, and you may send in as many estimates as you wish. Remember every additional estimate increases your chance to win the Automobile. Guess early and increase your chance of winning, for it is the first one that guesses nearest to the number of kernels, that wins the Auto. Each subscription includes premiums as explained on opposite page in addition to estimates.

The subscription price of The Canadian Thresherman & Farmer in Canada and Great Britain is \$1.00 a year. In United States and foreign countries \$1.50 a year. All subscriptions are positively discontinued when they expire, unless renewed.

OUR 1908 CONTEST

In the winter of 1908 we put on a Wheat Guessing Contest as to the number of kernels in 15 pounds No. 1 Northern Wheat. When the contest closed it was found that there were 257,885 kernels, and the man who won the first prize was Mr. Giesler of Brant, Alberta.

OUR 1909 CONTEST

Last year we put on a Wheat Guessing Contest as to the number of kernels in 8 lbs. 8 and 7-16 ozs. No. 2 Northern Wheat, and it was found there were 143,272 kernels. The first prize went to Mr. John Edwards, Hand Hills via Gleichen, Alberta. A full account of this contest appeared in the July issue of The Canadian Thresherman and Farmer.

With the above facts to work from you should be able to form an estimate as to the number of kernels in the bottle this year. Or better still get some No. 2 Northern wheat and count it out and form your estimate from that.

GUESSES WILL BE ACCEPTED THUS:

- 1 year's subscription and \$ 1 gives you 3 estimates.
- 2 years' subscription and \$ 2 gives you 7 estimates.
- 3 years' subscription and \$ 3 gives you 11 estimates.
- 4 years' subscription and \$ 4 gives you 15 estimates.
- 5 years' subscription and \$ 5 gives you 19 estimates.
- 6 years' subscription and \$ 6 gives you 23 estimates.
- 7 years' subscription and \$ 7 gives you 27 estimates.
- 8 years' subscription and \$ 8 gives you 31 estimates.
- 9 years' subscription and \$ 9 gives you 35 estimates.
- 10 years' subscription and \$10 gives you 40 estimates.

OR BETTER STILL, GET YOUR NEIGHBORS

to club with you, the subscriptions to cover one year. These subscriptions and estimates must be received in one envelope, so that we may credit them properly.

- 5 persons sending \$5.00 get 25 estimates and each have 1 year's subscription.
- 6 persons sending \$6.00 get 30 estimates and each have 1 year's subscription.
- 7 persons sending \$7.00 get 35 estimates and each have 1 year's subscription.
- 8 persons sending \$8.00 get 40 estimates and each have 1 year's subscription.
- 9 persons sending \$9.00 get 45 estimates and each have 1 year's subscription.
- 10 persons sending \$10.00 get 50 estimates and each have 1 year's subscription.
- 15 persons sending \$15.00 get 100 estimates and each have year's subscription.
- 20 persons sending \$20.00 get 150 estimates and each have 1 year's subscription.

Extra subscription blanks, sample copies, etc., sent free on request.



Address: E. H. HEATH CO. Ltd., WINNIPEG, CANADA

E. H. HEATH CO. Limited, Winnipeg

Please find enclosed \$_____ for _____ years' subscription for The

Canadian Thresherman and Farmer and _____ to be sent to _____ Premium

Name _____

Address _____

My estimates as to the number of kernels in 12 lbs. No. 2 Northern Wheat are:

E. H. HEATH CO. Limited, Winnipeg

Please find enclosed \$_____ for _____ year's subscription for The

Canadian Thresherman and Farmer and _____ to be sent to _____ Premium

Name _____

Address _____

My estimates as to the number of kernels in 12 lbs. No. 2 Northern Wheat are:

FARMERS AND THRESHERMEN Of Western Canada

**This is Your Publication
We cannot exist without you**

You know this if you will stop to think, and so do we, and we will give you just as good a publication as you will allow us to give.

The Success of any Publication depends very largely upon the size of volume, for "In numbers there is strength." The more subscribers a magazine has, the larger its advertising clientele; the more profits for the Publisher, which results in a bigger and better paper. If we make more money we can afford to spend more on our magazine.

You as a reader of The Canadian Thresherman and Farmer have possibly never realized that you have more than an ordinary interest in this publication. This is not so true of all publications as it is of ours, for no one ever receives our publication without having first paid for it, and when your subscription expires you are notified, and unless renewed the magazine is positively stopped.

In order therefore to increase our circulation, and thereby give you a better and larger magazine, we must have the co-operation of our subscribers themselves. WILL YOU CO-OPERATE with us by renewing your subscription when it expires, and if possible secure us some new subscribers?

NOW IS THE TIME TO HELP US. For your assistance along this line we give you your choice of a number of valuable premiums, many of which cost us nearly the price of a year's subscription; in addition we give you estimates on our wheat guessing contest which gives you a chance to win an Automobile; and we will give you a larger and better magazine every year.

ONE DOLLAR pays for TWELVE MONTHS' SUBSCRIPTION for The Canadian Thresherman and Farmer either new or renewal, **INCLUDES THREE ESTIMATES** on our wheat guessing contest, **AND A PREMIUM** as explained on this and opposite page.

Our Wheat Guessing Contest

is open to everyone in Canada except residents of Winnipeg. Everyone who sends in a year's subscription, either new or renewal for The Canadian Thresherman and Farmer is entitled to estimates, as explained in table on opposite page. And in addition to the estimates and in addition to the subscription for The Canadian Thresherman and Farmer, you have the choice of a number of premiums shown on this page.

Subscription price in Canada and Great Britain is \$1.00 a year. In the United States and Foreign countries \$1.50 a year.

All these premiums are given for sending in either new or renewal subscriptions for The Canadian Thresherman and Farmer. In addition to these premiums, each subscriber estimates on our wheat guessing contest as shown in table on opposite page. These premiums are sent immediately on receipt of subscriptions.

"I X L" SHEFFIELD RAZOR



Wostenholm's I X L Sheffield Steel Razor 4 inch blade, hollow ground, rounded point, a fine shaver and holds its edge well.

Sent postpaid for three-year subscriptions
 " " " two-one " " and 25c.
 " " " one-two " " and 50c.
 " " " one-one " " and 50c.

YOUR CHOICE

of any of the following list of books sent postpaid for one year subscription.

These books are printed in large clear type, and put out in a neat, plain cloth binding.

Any one of these books sent postpaid for one-year subscription

Pilgrim's Progress, by Bunyan Shirley, by C. Bronte Tales, Poems and Sketches, by

Hypatia, by Kingsley Essays, by Huxley Handicraft, by Samuel Lover

Voyages of Discovery, by Cook. Midshipman Easy, by Marryat

Herods and Hero Worship and Essays on Goethe, by Carlyle

Masterman Ready, by Marryat Our Village, by Mitford

Origins of Species, by Darwin Three Midshipmen by Kingston

Gulliver's Travels, by Swift The Tailor, by Sir Walter

Scott Harold, by Bulwer Lytton Plays, by Sheridan

Ravenhoe, by Henry Kingsley Vanity Fair, by Thackeray

Peter the Whaler, by Kingston Wonder Book and Tanglewood

Tales, by Hawthorne Charles O'Malley, by Charles

Lever Historical Essays and Laus of

Ancient Rome, by Macaulay Wuthering Heights, by Bronte

Guy Ramaning, by Scott Hard Cash, by Charles Reade

Whitefriars, by Emma Robinson Poems, by Whitman

Legends, by Procter Two Years Ago, by Kingsley

Heart of Midlothian, by Scott Recesses Towers, by Truoppe

Peter Simple, by Marryat Treasure Island and Kidnapped

by R. L. Stevenson Adam Bede, by George Eliot

East Lynne, by Mrs. H. Wood Essays of Elia, by Charles Lamb

Tale of Two Cities, by Charles Dickens

Iranion, by Sir Walter Scott Poems, 1830-1865, by Lord

Tennyson Westward Ho! by Chas. King-

slay Sesame and Lilies, Unto this

Last, and the Political Economy of Art, by John Ruskin

The Scarlet Letter, by Nathaniel Hawthorne

The Cloister and the Hearth, by Charles Reade

Christmas Books, by Chas. Dickens

Tom Brown's School Days, by Hughes

King Solomon's Mines, by H. Rider Haggard

Poems, 1833-1865 (Selected), by R. Browning

Tower of London, by Alasworth Sense and Sensibility, by Jane Austen

Bible in Spain, by Borrow Last of the Mohicans, by Cooper

Opium Eater, by De Quincey Shakespeare's Complete Works

in 4 volumes Barnaby Rudge, by Dickens

Last of the Barons, by Lytton Fairy Tales (Selected), by An-

dersen Vicar of Wakefield, by Gold-

smith The Deerslayer, by Cooper

Pride and Prejudice, by Austen Poems (Selected), by Burns

Three Musketeers, by Dumas The Channings, by Mrs. H.

Wood Ingoldby Legends, by Barham

Oliver Twist, by Dickens The Little Minister, by J. M.

Farrar Fairy Tales (Selected), by Grimm

Meditations, by Marcus Aurelius Uncle Tom's Cabin, by Stowe

Selborne, by White Two Paths and Other Essays, by Ruskin

The Pathfinder, by Cooper Tales from Shakespeare, by Lamb

The Woman in White, by Wil-

kie Collins Sartor Resartus and Essays on

Burns and Scott, by Carlyle It's Never Too Late to Mend,

by Reade Tales of Mystery and Imagination,

by Poe Life of Nelson, by Southey

Life of Christ, by Farrar Faust, by Goethe and the Eng-

lish Humorists of the Eighteenth Century, by Thackeray

The Seven Leagues of Architecture, by Ruskin

Emma, by Austen The Imitation of Christ, &c., by A. Kempis

Hereward the Wake, by C. Kingsley

Table Talk, by Hallitt Twenty Thousand Leagues under

the Sea, by Verne Homer's Iliad, by Pope

A Journal of the Plague Year, by Defoe

The Professor at the Breakfast Table, by Holmes

Secret of Clerical Life, by Elliot Mrs. Beeton's Cookery Book

All these premiums are given for sending in either new or renewal subscriptions for The Canadian Thresherman and Farmer. In addition to these premiums, each subscriber estimates on our wheat guessing contest as shown in table on opposite page. These premiums are sent immediately on receipt of subscriptions.

PHOENIX MUFFLER

Made of Mercerized Silk, Elastic Knit to fit neck and shoulders, finished straight edge, raised ribbed pattern, Patent clasp fastener at throat. Furnished in all principal colors.



Sent postpaid for two-one year subscriptions. Sent postpaid for one-two year subscription. Sent postpaid for one-one year subscription and 15c.

SHAVING BRUSH

Black handle, Bristles set in rubber. A splendid soft brush. Sent postpaid for one-one year subscription.



ODD JOBS

A useful practical tool, combining marking, mortise and depth gauge, Try T and mitre square, inner square, scratch awl, beam compass, spirit level and plumb.



Sent postpaid for three-one year subscriptions. Sent postpaid for two-two year subscriptions.

Sent postpaid for two-one year subscriptions and 25c. Sent postpaid for one-two year subscriptions and 35c. Sent postpaid for one-one year subscription and 50c.

METAL SPRING TAPE

A 36 inch metal tape in a neat nickel case. Vest pocket size. Fitted on good strong spring. Tape rolls itself up by simply pressing button in center of case.



Sent postpaid for two-one year subscriptions. Sent postpaid for one-two year subscriptions. Sent postpaid for one-one year subscription and 25c.

POCKET TOOL KIT

A whole tool chest in one. When closed looks like an ordinary awl with plain handle and nickelled shank, but inside the handle are ten tools including gimlet, screw driver, chisel, gouges, tack puller, etc.



Sent postpaid for two-one year subscriptions, or sent postpaid for one-two year subscription, or sent postpaid for one-one year subscription and 15c.

AWL YOU WANT

A handy sewing awl for mending harness, boots, shoes, etc., and doing all kinds of leather work. A most convenient and useful tool.



SELF-PULLING CORK SCREW

Every household has use for a cork screw and here is a dandy. Will start the toughest cork and draw it out clean without crumbling the cork.

Sent postpaid for one-one year subscription.



STEEL DEED BOX

For keeping Mortgages, Deeds, Letters, Valuable Papers, etc. Made of this steel—not tin. Fitted with tray inside and English lock. Size 5 1/2 inches wide, 3 1/2 inches high and 4 1/2 inches deep.

Sent postpaid for four-one year subscriptions.

Sent postpaid for two-two years' subscriptions.
 " " " two-one " " and 25c.
 " " " one-one " " and 75c.

HOME REPAIRING OUTFIT



Complete, Compact and Convenient. For repairing boots, shoes, pots, pans, kettles, harness, etc. One of the most useful, mending and repairing outfits ever put out. It consists of four levers: one stand, one hammer, three awls, one knife, cement, bristles, thread, wax, four packages nails, lead plates, needles, harness and saw clamp, rivets, punch, soldering iron, resin and directions. Everything complete, packed in box.

Shipping weight about fifteen pounds. Not sent prepaid. If desired will be sent for enclosure to any Winnipeg concern. When ordering be sure and give shipping instructions.

Given for six-one year subscriptions.
 " " " four-two " " and 75c.
 " " " two-four " " and \$1.00
 " " " three-one " " and \$1.00
 " " " one-two " " and \$1.25
 " " " one-one " " and \$1.25

See opposite page for Subscription Blanks

HART-PARR ANNOUNCEMENT

FOR 1911

THE year just closing has been a prosperous one with us. The demand for our tractors has been greater than ever before and has taxed our building facilities. In order to meet the growing demand we have spent many thousands of dollars in the erection of new buildings, and the enlargement of others, to enable us to build in larger numbers than ever before.

LOWER COSTS

Quantity production means lower costs. With our tractors developed and improved to the highest state of perfection, we now have the largest and finest plant in the world for their production. Many acres of concrete steel buildings, ample light and heat, great electric cranes and scores of smaller ones, our own private tracks, switch yards, turn-tables and switch engines, electric transmission, hundreds of electric motors, telephone systems, and the application of hydraulic power, compressed air, gas and oil fires, open-heart steel-making, and all the latest and best foundry processes and machinery—all give us the best general conditions for manufacture, and the best general efficiencies.

To the manufacture of every part of our tractors has been applied special machinery, fixtures and tools, each designed and constructed, and developed and perfected to make its particular part with accuracy and rapidity.

More important than splendid work and good tools, we have developed and run throughout our work of manufacture and business conduct, carefully devised and long tested SYSTEM. From the time the order for the raw material is decided upon the last nail in the last block to secure the tractor to the car as it leaves our works, written instructions guide every workman, thus putting into his hands the result of all the skill and experience of years of tractor building, to control and guide the work to its completion. Elaborate testing and chemical laboratories control the quality of material. Rigid inspections and tests, and measurements to a thousandth of an inch of every piece of work, with prompt rejection of all work not up to standard, insures the highest quality of workmanship. Grounds, buildings, machinery, tools, processes and systems form one great, perfect, smooth-working machine for the production of our tractors.

To create, build and develop these great works to this high state of perfection, has been an enormous task. Only the increasing rate of orders from all those countries where we are best known give us the courage to build so well. And the most recent results show production of tractors of quality, and low cost not thought possible a short time ago.

Our sales organization has also been expanded and perfected, and the expense of marketing our product reduced; and this enables us to still further reduce the selling price. And still we can do it with greater efficiency. We have established several new branches of our own, in order to bring our personal organization as close to the customer as possible. This means better service to him at lower cost.

LOWER PRICES

We have always based prices directly on costs. Great production, high quality and moderate profit make for the greatest permanent prosperity of a manufacturing concern. We accordingly offer to our customers lower prices in accordance with lower costs. No other concern can offer you a tractor of equal value at so low a price, because we can build cheaper, and our profits are moderate; we pay agents for service only; we make every part of our machine; we sell thousands where others sell hundreds; we deal directly with our customers. We do not allow two or three intermediate profits. Compare our specifications, sizes, weights and speeds with any other tractor. Consider the great reputation back of them, and you will realize the truth of what we are telling you.

We announce the price for 1911, F. O. B. Portage la Prairie, Man.

**45 BREAK (22 TRACTIVE) HORSE POWER TRACTOR
\$2,800.00**

A liberal discount for all cash on delivery.

We further announce, that from this time forward our policy will be—

One Price to Everyone, and That the Lowest

This is the policy of the "Square Deal." One man's money is just as good as another's. Consequently there should be no favoritism shown in the matter of prices.

If you haven't a copy of our splendid Catalogue, write for it to-day.

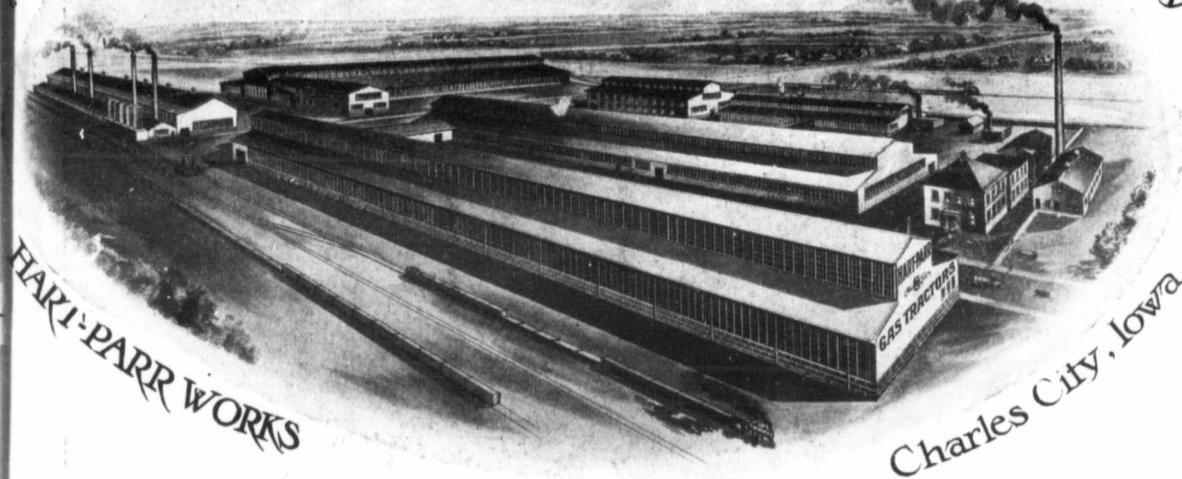
HART-PARR CO., 30 Main

Alberta Agents: THE CHAPIN CO., CALGARY, Alta.

What Stands Behind the HART-PARR Tractor

The Worlds Largest

Gas Tractor Factory



HART-PARR WORKS

Charles City, Iowa

Just as pedigree counts in a farm horse so it is as regards what is behind a gas tractor. On every hand we find the designer and inventor at work building gas tractors for farm power purposes until the country is flooded with machines that have yet to go through the grief of trial and experiment. They are gas tractors in name only and the farmer who buys one gets a "bunch of trouble" thrown in. With the Hart-Parr, however, it is different, for behind it stand years of successful service and behind this are two most necessary things, viz.—A Factory and an Organization.

THE FACTORY

The above cut represents the latest view of the Hart-Parr Works, Charles City, Iowa, beyond question the largest gas tractor works in the world. The buildings are all fire-proof in construction, being made entirely of concrete and steel, even the roofs being of reinforced concrete. The machine shop is 85 x 523 feet; the erecting shop is 100 x 600 feet; the grey iron foundry 60 x 143 feet; a power and testing building 65 x 150 feet; a heating plant 65 x 150 feet; the store building 70 x 151 feet, two stories high; a pattern shop 30 x 50 feet, besides an office building 32 x 60 feet, two stories high. Next year a new grey iron foundry will be erected. The whole is equipped with the most modern tools and appliances, and at the present time nearly seven hundred men are employed, and the annual capacity is twelve hundred "Modern Farm Horse Tractors," which now go to every part of the world. Such is the great concern which eleven years ago went begging for capital in the city of Madison, Wisconsin, and sought more friendly quarters in an enterprising little Iowa town, which it has built to a great city. The annual product reaches way over a million dollars.

THE ORGANIZATION

Organization is absolutely necessary in the conduct of any business and in the case of the gas tractor it is doubly so. Such machines are used wherever there are farms, which means that they are scattered all over the agricultural sections. In order to maintain an efficient service and look after these machines properly, it is necessary that a company, selling such machines, maintain numerous branches at central points so that each and every tractor that is put out can be carefully looked after. That is why The Hart-Parr Co. have not only sold engines everywhere but they have established branches or sales agencies at practically every large point where Gas Tractors are used. Get out your map and look up the following places:

Aberdeen, S. D.
Grand Forks, N. D.
Lincoln, Nebr.
Portage la Prairie, Man.
Wichita, Kansas.
Calgary, Alta.
Saskatoon, Sask.
Minneapolis, Minn.
Wimbledon and Fargo, N. D.

Madison, S. D.
Peoria, Ill.
Palo Alto, Calif.
Bozeman, Mont.
Buenos Aires, Argentina.
Manila, P. I.
Des Moines, Iowa.
Denver, Colo.
Salt Lake City, Utah

For the benefit of our Canadian customers we might state that a full stock of repairs is also kept at Regina, Sask., and Lethbridge, Alta. At all of the above places an efficient staff is maintained at all times and a full and complete stock of repairs is kept on hand. Does the above mean anything to you as the owner of a Hart-Parr Tractor? It means two things. First, that you are assured of the finest machine that can be turned out of the largest gas tractor factory in the world and second, that Hart-Parr service follows Hart-Parr engines everywhere. Think it over and consider the security there is in the protection we give you.

St., Portage La Prairie, Man.

SASKATOON, SASK.

Santa Likes CASE Rigs



Say, Bill, since Dad Threshed with that CASE Rig Santa's been mighty good to us.



J.

CO.