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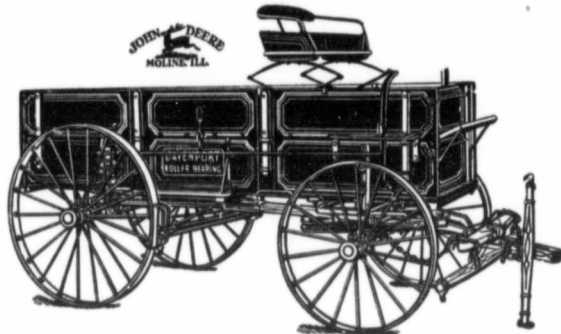
THE
CANADIAN THRESHERMAN & FARMER
 CANADA'S FARM MACHINERY MAGAZINE
 WINNIPEG CANADA
 OCTOBER, 1913




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E.H. Heath COMPANY Limited Publishers
 ELEVENTH YEAR

First Cost the Only Cost



**Steel Wheels.
No Cracked Hubs.**

**No Tires to Reset.
Strong and Durable.**

**Steel Gears.
No Broken Axles.**

**No Breakdowns.
Built Like a Bridge.**

Lasts a Life Time.

This is the greatest advance ever made in wagon building. Two horses can haul the same load that would require three horses to haul with the ordinary wagon. Think how much you would save in one year's operation by being able to do the work of three horses with two and to keep on doing so year after year without having to buy a new wagon or spend the price of a wagon in repairs.

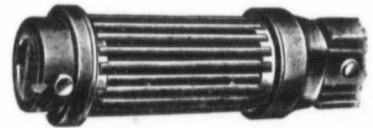
These Roller Bearings are sand, dust and waterproof. Require oiling only occasionally and can be oiled without removing the wheels.

If you are interested in a wagon, get acquainted with the Davenport. **The new Roller Bearing All Steel Wagon.** It will do twice as much work as the ordinary wagon.

Let us tell you all about it. Send a post card.

Davenport Roller Bearing Steel Wagon

All it Costs is the Purchase Price



**Roller Bearings Saves One Horse
30 to 50 per cent. Lighter Draft**

Your Grain will Grade Higher

— IF YOU USE A —

Fosston Automatic Cleaner

In marketing mixed or uncleaned grain, dockage has to be reckoned with, which means that you don't receive anything for a certain portion of your crop. More than that, there is very little demand for mixed grain. Clean grain commands a better price in every market.

Then again it pays to clean your grain just to save the screenings, and feed these to your live stock. The most profitable way to do this is with a

FOSTON AUTOMATIC CLEANER.

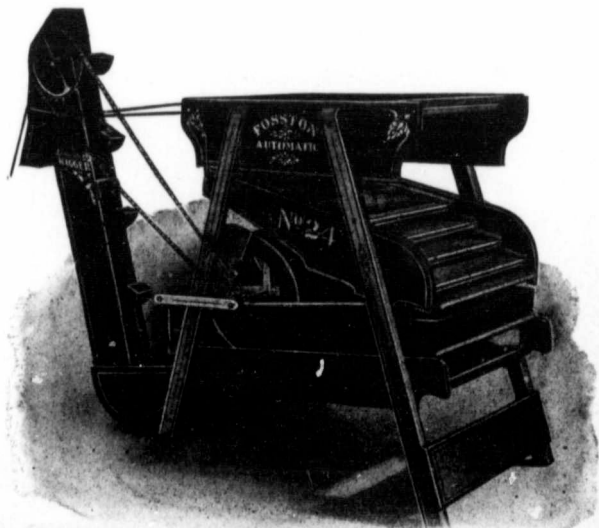
This machine is more than a Fanning Mill. It is a grader as well. Equipped with an Automatic Feed Device, which gives an accurate feed and a force feed at the same time. The operator can regulate the flow of grain without losing time by stopping.

Many new features and improvements in the construction of the mill, screens and the operating parts, stamp the Fosston as the most efficient cleaner on the market. Write us and find out all about it. Get Quality and Service. John Deere Dealers give both.

John Deere Plow Company

LIMITED

Calgary Winnipeg Saskatoon
Regina Lethbridge Edmonton

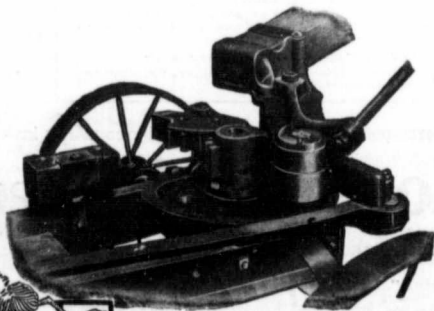




...kneel to tie wires, and has clean place to work.
 Delivery of bales to front keeps them out of dirt and chaff of pitching.

Self Feed

Does away with hand feed and increases capacity. It carries the hay from hopper into pressing chamber. It is positive and automatic in action. Feeder is connected to and operates with press plunger. Team furnishes power for its operation.



The Press Power

Don't waste your work. The same degree of effort with a Dain Self Feed Pull Power Press will accomplish greater results than you will get from any other type of horse power press.

Write and get full particulars. See your nearest John Deere Dealer.

...press, and yet the lightest in draft.

The illustration at the left shows the extreme simplicity of press power. You who have had experience with the intricate parts of other presses, will instantly recognize the advantage of this. No springs, cams, triggers or chains to burden the horses and get out of order.

This simplicity of the Dain Power makes it durable and not easily disabled, so costly delays are done away with.

Light Draft

No heavy pitman for horses to step over, lightens draft, and overcomes a great danger. This also increases capacity, as horses do not have to slup up to step over high obstruction.

Top price bales are always insured by the Dain patent tucker, it automatically folds each charge of hay, making neat, smooth, square-ended bales. Tucker also prevents hay from wedging between plunger and top of bale case and lightens draft.

You cannot find a hay press that will contain near the number of devices for saving labor, increasing capacity, giving greater durability and giving satisfaction, as found on the Dain.

John Deere Plow Company, Winnipeg,

Regina, Saskatoon,
 Calgary, Lethbridge,
 Edmonton



Sawyer-Massey Steam Tractors Lead

The SAWYER-MASSEY Medal Winning Tractors meet every requirement of the largest users of farm power. Our Class "C" Compound Steam Tractor is built in 27 and 32 Horse-power sizes, developing 82 and 100 Horse-power respectively. Also built in 22, 25 and 35 Horse-power Simple, developing 68, 76 and 115 Horse-power.

SAWYER-MASSEY Tractors are built for heavy service, and are designed to give the greatest possible efficiency. In power, strength, accessibility, fuel and water economy, balance, freedom from vibration, and ease of operation, they represent the highest development of the Steam Tractor. They will give satisfactory service under all conditions, and are a profitable investment for every Thresherman or Farmer.

At the Winnipeg Motor Contest they maintained their position as the "Premier Steam Tractors of Canada."

SAWYER-MASSEY "Great West"

the thresher for the large farm. Built in five sizes, ranging from 25-inch cylinder x 42-inch body to 40-inch cylinder x 64-inch body.

SAWYER-MASSEY "Daisy"

is a medium size machine intended for use where great capacity is not necessary. It is built in two sizes: 29-inch cylinder x 44-inch body; 32-inch cylinder x 50-inch body.

SAWYER-MASSEY "Eclipse"

is a highly efficient Thresher for use with small steam or gasoline Engine. It is built in one size, and will turn out 500 to 700 bushels a day. 30-inch cylinder x 36-inch body.

SAWYER-MASSEY "Monitor" Clover Huller

threshes cleanly all kinds of clover, and is fast becoming a necessary part of every Thresherman's outfit.

Write for Catalog and copy of "Sawyer-Massey Chronicle." Correspondence with dealers in foreign countries invited

Sawyer-Massey Company, Limited

Builders of Steam and Gas Tractors, Threshers, and Road Making Machinery
Head Offices and Factories - - HAMILTON, Canada

Branches and Warehouses - - WINNIPEG, Manitoba ; REGINA, Saskatchewan

SAWYER-MASSEY

Just What You Wanted!

If you are among soft mud, wet manure, or working in a creamery, laundry, abattoir, you really need

Our

Lumbersole Boots

Felt Lined, All sizes for men, women, youths and girls.



Same price.

Ask your storekeeper for them. If he doesn't stock them, send here. All ready for going right away.

The Scottish Wholesale Specialty Company
263 Talbot Ave., Elmwood WINNIPEG

Mention this magazine when writing advertisers

A Plowing Record

An Alberta Farmer who operates a large steam plowing outfit recently made a record of

75 Acres of Backsetting 8 Inches Deep

in a ten-hour shift with one engine using Hillcrest Steam Coal. Hundreds of farmers are using Hillcrest coal with great success.

HILLCREST Steam Coal

is the most economical because Hillcrest is the best coal in the Rocky Mountains: it contains less slate, rock, and other foreign substances. It will plow more acres to the ton than any other coal. Try it out on your own farm.

Hillcrest Collieries Limited
Hillcrest - - Alta.

Mention this magazine when writing advertisers.

SALESMEN WANTED!

Do You Want a Good Position Paying From \$1,000 to \$8,000 a Year and Expenses? There are hundreds of such positions now open. No former experience as a salesman required to get one of them. If you want to enter the world's best paying profession our Free Employment Bureau will secure you a position where you can earn good wages while you are learning Practical Salesmanship. Write today for full particulars; list of good openings and testimonials letters from hundreds of our students for whom we have recently secured good positions paying from \$100.00 to \$500.00 a month and expenses. Address nearest office. Dept. 285 National Salesmen's Training Association Chicago New York Kansas City San Francisco Toronto

Mention this magazine when writing advertisers.

About Ourselves

IT has been said that advertising has endowed literature. A careful investigation of the subject will reveal the fact that this is true, although we do not ordinarily associate the one with the other.

You as a reader of this magazine have perhaps sometimes resented what you considered a trespassing upon your rights as a subscriber; but did you ever stop to realize that if it were not for this same advertising there would be no agricultural papers?

The price you pay us for a years subscription does not anywhere near begin to pay for the cost of paper and printing, and the printing cost of a magazine is ordinarily about one half the actual cost of producing a complete issue of a paper. Editors, contributors and a general office staff must be paid. Office rent, telephone, engraving, express, duty etc., etc., must all be taken care of and if subscribers to any magazine were obliged to take care of these costs in their subscription remittance the price would be so high that it would be out of all question for them to pay it.

The real fact of the matter is that the present subscription prices of all agricultural publications are far too low. The farmer is getting his agricultural literature away below cost, this being possible because of the fact that advertising makes up the difference. Therefore don't look upon the advertising that a magazine contains as so much junk that has crowded out some reading matter that you feel rightfully belongs to you.

We do not mean to say that you do not read the advertisements, but we do want to correct any wrong impressions that you may have regarding this most potent present day factor in modern agricultural journalism.

As a matter of fact advertising has built up this Western country. The message of Western Canada has been heralded far and wide through the medium of printer's ink and crowds of immigrants and settlers have come in as a response.

When you go through this issue don't hurry over the advertising pages. Each and every advertisement has been carefully planned by the advertiser with the idea of catching your attention. He has something to tell you and he is willing to spend a considerable amount of money in order to do so. Incidentally he is making it possible for you to get an agricultural magazine, each issue containing from 100 to 120 pages, twelve times during the year for the small sum of one dollar. Don't forget that this same magazine without any advertising would cost you easily \$5.00 per year



Pans Pots Easy for



Many Other Uses and Full Directions on Large Sifter Can - 10c



The Premier Company

The Premier Goods



Photograph of Sawyer Massey 25-45 H.P. Gas Tractor in the actual operation of winning the **GOLD MEDAL** at the 1913 Winnipeg Motor Contest, showing the kind of work necessary to win. This applied not only in plowing but also on the brake tests. This Tractor won the highest number of points of any Internal Combustion Tractor in the Contest.

THAT FALL PLOWING OF YOURS

can be done better with a SAWYER-MASSEY Gas Tractor than with any other. It beats horses. From whatever point you look at it, you will find it will pay to use this tractor.

You want your plowing done at least cost per acre. The SAWYER-MASSEY 25-45 H.P. Gas Tractor plows at a fuel cost of 56.6 cents per acre.

You want plowing done with least bother about watering either horses or engine. The SAWYER-MASSEY 25-45 H.P. Gas Tractor uses only a couple of pails full in a day.

You want furrows straight and even. The SAWYER-MASSEY 25-45 H.P. Gas Tractor turns furrows as neat as it is possible to turn by any means whatever.

You want to travel at a fair rate of speed and get the most work done. The SAWYER-MASSEY 25-45 H.P. Gas Tractor has a speed range of from 2 to 3½ miles per hour and plows more than 21 acres of heavy breaking in a day of ten hours.

You want a horse or engine for plowing that will not shake nor strain itself to pieces. No Gas Engine made has less vibration than the SAWYER-MASSEY 25-45 H.P. Gas Tractor.

These and many other points of SAWYER-MASSEY supremacy were brought out at the recent International Plowing Contest at Winnipeg. The wonderful record made by this Gold Medal Tractor stands ready to prove the quality of its work. Three SAWYER-MASSEY Steam Tractors were also medal winners in this contest. Is this not sufficient argument that you should?

Let a SAWYER-MASSEY Tractor Do Your Work?

We build a full line of gas and steam tractors, threshers, clover-hullers, and road-making machinery. Write for descriptive catalogue, and copy of "Sawyer-Massey Chronicle."

SAWYER-MASSEY COMPANY, LIMITED

Builders of Steam and Gas Tractors, Threshers, and Road Making Machinery
 Head Offices and Factories - - - HAMILTON, Canada

Branches and Warehouses - - - WINNIPEG, Manitoba; REGINA, Saskatchewan

SAWYER-MASSEY



Vol. XVIII.

WINNIPEG, CANADA, OCTOBER, 1913.

No. 10.

WEEDS

ONE half of the gas-engine farmers in Canada are not fit to run a small piggery. They might make a success as hired men to others who have the gumption and the energy to handle their land as it ought to be treated, but they have no right to call themselves "Farmers."

This was the parting shot of a hustling drummer in the pullman smoker of No. 97 where so much gratuitous wisdom finds expression in the intervals between eating and sleeping. It met neither with support nor contradiction but the atmospheric indications were that the drummer had sounded more than half-a-truth.

Any one who travels today through Western Canada with an open mind knows that the oracle who thus spoke could prove his case and his figures if his witnesses were nothing more than the farms running up to the right of way at practically any point of the older railways. Where one goes further back, this evidence is still more appalling.

It isn't a case of farming on a big scale or intensive cultivation in a small way, but of criminal neglect, incapacity or mismanagement whether the "proposition" is a large or a little one. Some big farmers give their smaller neighbors a wholesome lesson in all that works for success. It isn't the size of the farm but the business ability or the obverse that is behind it.

Since the wheat fever first occasioned the grand rush into Western Canada, the fashion set almost wholly in the direction of

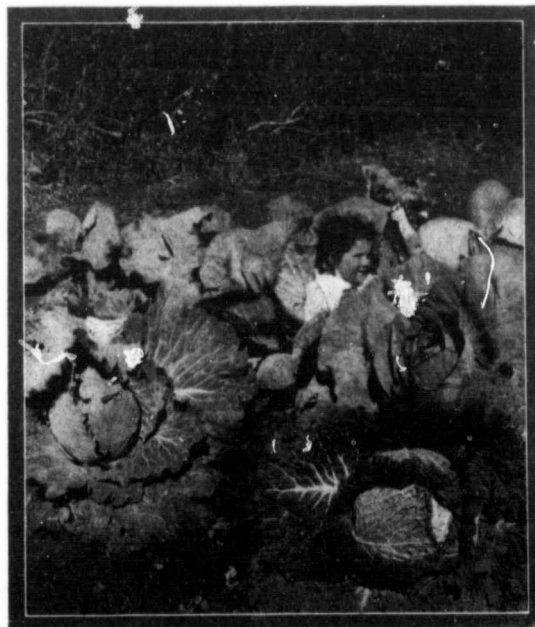
doing big things and the common feeling still obtains that one can't make a really good showing on less than a section. Every succeeding year shows that it is as easy to make a good thing off two thousand acres as it is to take

tween men, between success and failure is energy. The domestic annals of Western Canada can present a record of human energy that is probably unequalled the world over, but along with this is the melancholy fact that its de-

alotgether. Few sights are more depressing than that of a man and his family in the throes of self imposed drudgery that might easily have been avoided. This in almost every case can be attributed to the fashion of farming on a big scale; that is, to have at least a half section or a whole section or more of land whether or not the farmer possesses the experience, capital or the executive capacity.

Some men we can name are directing with perfect success (humanly speaking) the operations on thousands of acres. They have their half dozen internal combustion engines of large capacity with the necessary accompaniment in horses, gang plows, and other implements. They seem to be men with ample leisure, too, for a chat at any time, and a substantial holiday when their vacation season comes around. Their burden sits as lightly on them as that of a village store keeper who calmly reads his paper at the back of the counter and lays it down whenever a customer calls, if only for a dime's worth of tin tacks.

These men have had the necessary experience and the financial means to handle their job. They counted the cost before they bought so much as a wheel barrow. They knew something if not everything about gas engines but they did not buy one till they had or could hire an experienced engineer to handle it. They said: "You can't gull me with the idea that any-hired-man can run this simple type of engine," because they know it can't be done.



JUST NATURE and Clean Cultivation—in "a little farm well tilled."

the very best out of a quarter section or less: it is a question of means, gumption and energy.

Sir Fowell Buxton from a wealth of experience (beginning with his own inherited indolence) said that the great difference be-

tractors have found the most vulnerable points in her armor just where effort has been wanting to sufficiently cover the work that has been taken in hand.

Misdirected energy is almost worse, than the absence of it

Next to the last acre of this man's far-flung prosperity in land comes the homestead of the man who succumbed to that familiar appeal to one's vanity, "if you are prepared to work you are bound to make a success: nothing is easier than to raise crop and cattle on Canadian soil." This man we shall suppose has proved himself a clever plowman, or farm overseer in Great Britain, or in some of the rich agricultural provinces of Southern Europe, but he comes to his new territory of one hundred and sixty acres with scarcely a stick of equipment and his available capital is of the most meagre proportions.

To some heroic souls, however, these are the ideal conditions from which to start on the highway to fortune, but if our immigrant has a wife and children who are to be reasonably provided with home comfort and whose education will not be neglected, it is a crime and worse, it is a tragic blunder to invite a man to the heart breaking drudgery, and his wife and offspring to the isolation which those conditions do impose.

Life in such an environment, where women and young children are concerned is not worth living and it is not the "life" that will build up a strong nation.

There are men who are made for these "tough propositions," but they must be men—men to whom the school of adversity, unremitting toil and self-abnegation for a year or two at least is the natural training ground of their manhood; but men who are led or misled into starting with their young families or even their young wives under the circumstances we refer to, start their new life under an all but impossible handicap.

In such cases the men may be all right and the women all that men could desire as helpmates, but if they have not the modest capital or the equivalent backing from some dependable source, they are doomed for a long period to one of the least desirable modes of existence (short of penury in the slums of a great city) that men and women can be condemned to.

And yet one need not visit very many farm homes in Western Canada before a case is reached, in which the young couple started in under the most discouraging circumstances—discouraging and seemingly impossible to anything but a constitution of restless energy—and they have succeeded without apparently sacrificing that buoyancy of spirit and real enjoyment in life that is so sadly absent in the persons of so many old pioneers. But these cases almost approach the miraculous and one has no right to use them

indiscriminately, as examples of what can be done "without anything to go or come on" when advice is being given to the young stranger who is seeking advice.

One of the Southern papers recently gave its readers an interesting sketch of one of the most remarkable cases of farming successfully under well nigh impossible conditions. This was the case of Mr. Myron L. Briggs who operates, literally **without a leg to stand upon**, a ninety-acre farm in Southern Michigan, and the story certainly provides a world's record.

Briggs, about twelve years ago lost both of his legs in a street car accident in Grand Rapids. For fourteen months he was in a

papers and pitched into real business farming with both hands and head. Result: he has today attained to greater heights in practical farming **without a leg to stand on** than the average farmer who stands upon two good legs.

The optimism of this wonderful man who does all kinds of farm work every day from morning till night, perfectly happy and contented with his lot in life, puts to shame many strong, healthy farmers with good stout legs and feet whose everlasting whine is that they can't make farming pay. Briggs employs very little hired help. With the assistance of a fifteen-year-old lad he does the bulk of the work himself, handling the most impossible

she is found wanting, she goes to the shambles as soon as she becomes dry and fat. As to feed: he is working towards a balanced ration that has the proper proportion of protein, carbohydrates and fat.

The silo, he found, is indispensable in compounding this ration in the most economical manner because the old-fashioned method of cutting, shocking and hand-husking the corn was too wasteful, and the fodder was injured more or less, and did not have the feeding value that good ensilage furnishes the cows. The silo preserves all the digestible nutrients in the matured stalk of corn. "Matured" means where the full grown ears are well glazed. Then, it contains the largest possible percentage of digestible nutrients and there is no waste if it is immediately transferred into an air-tight silo.

Not a Task He Cannot Do

From plowing, harrowing and seeding to haying and harvesting his crop, attending to his animals, harnessing his teams, etc., there is not one real difficulty ever seems to present itself to this wonderful man. Using every common sense modern appliance, he is distinctly an up-to-date farmer and one of the "sights" of his day's labor is to see him in the hay-field. He has a modern hay-loader attached behind the wagon, and despite his apparently helpless condition, he would travel around with a fork and place the load in fine shape with merely his head and shoulders in sight above the hay.

Arriving at the barn, he came down the ladder, helped hitch the team to the hay rope, then climbed the vertical mow ladder high up into the peak of the barn. He mowed away the hay while the boy handled the harpoon fork on the load and sent it up on the hay carrier. And the fine thing about it all is the supremely happy frame of mind in which the man goes about his work. Farming, to him, is the most interesting thing a man can employ himself with, and working at it in this spirit, his success is a matter of course.

While securing and handling his hay by modern methods, he perfectly understands the scientific reasons for cutting and curing it as he does. He cuts the grass when partially matured, and before it has developed woody fibre.

It is quickly cured and hauled in just at the right time when weather conditions permitted, and every judge of good things admits that the hay in the Briggs barn is of prime quality for feeding stock.



There's Wealth in a Weedless Patch.

hospital hovering between life and death many times. Both legs were so badly mangled that they were cut off just below the hip-joints. Being a clean living man of strong physique, he recovered in time and when able to move about with the use of his powerful arms, he of all things chose farming as his vocation because he liked it best of all employments he knew of.

He was advised to go on the streets and sell shoe strings, pencils, etc., but his pride would not permit such a "come down." So he and his loyal wife bought a farm and he began at once to study and practise the latest principles of agriculture. He subscribed for a few leading farm

looking jobs with no less facility than an able bodied man with the full use of his limbs.

His wife is as keenly alive to the value of scientific farming as is her husband and is also a great worker. Mr. Briggs uses a three-horse manure spreader (which he drives himself) with the seat high up in front. He lets not a particle of manure go to waste on his farm, but hauls it out and spreads it on the fields as fast as made.

He has made a special study of dairying and is breeding up and weeding out his cows for the largest possible production of milk and butter-fat. He keeps a record, and each cow is weighed in the balance, so to speak, and if

Briggs is an excellent mechanic and believes in thoroughly lubricating his machinery and keeping all the bearings properly adjusted. This work he does with his own hands, although it seems in-

ditions") that are giving color all the time to the stories we hear of from time to time of the "rotten business of farming."

They start with but the poorest equipment of the brains, ex-

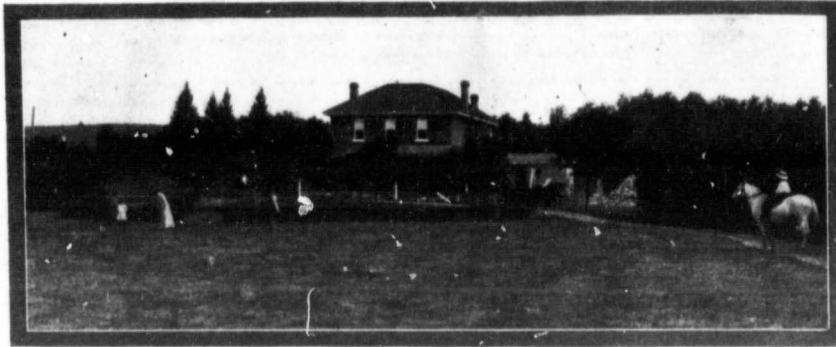
who can go with cash in his hand to the cheapest market.

What one legless man can do, may not any other accomplish who is in possession of all his faculties including the legs?

recent years is the sorriest attempt at "cultivation" that any reader of this magazine has yet seen. (You can see it yet in all its glory or shame if you hurry up before the snow flies.) Several acres of potatoes were supposed to have been planted close up to the farm home, but the growing crop certainly did not show the succulent leafage of the wholesome "spud." The field was held by a perfectly harmonious tenantry of Sow and Canada Thistles, Burdock, Stinkweed, Mustard and Wild Oats, and the man himself was reading his own political organ at three o'clock on a delightful summer's afternoon!

His summer-fallow is even a more striking example of this phase of farming. There is no descriptive genius that can give it ordinary fair play. It cannot be compared to anything. There is nothing like it inside or outside the farm journals and one cannot begin to say what course should be taken, legally or otherwise, with the fellow who claims a clear title to the ownership of that land.

The purpose of this article is to show that there is no royal road to success in farming except to the man who is intensely interested in his vocation; who desires to honor and glorify it as those men are doing whose work in cultivation and home-building is illustrated in a small way in these pages. These men don't advertise and they carry their burden lightly if they have one.



Comfort, Beauty, and lots to spare. A real "Transformation Scene" on the prairie. Home of George Marsden, 4 miles from Brandon, Manitoba.

credible to the looker on. He sits on the binder seat, drives the team and manipulates a half-dozen levers with his big muscular hands. There are two foot levers on this machine that he has lengthened out to reach with his hands in order to dump the bundles from the carrier.

When Briggs cuts his own wheat, he will go over to a neighbor with his binder all alone and cut from twenty or forty acres more. His farm is worth twice what it was when he bought it. He recently finished a fine new house with modern improvements, hauling all the lumber and other material from the city five miles away, doing the loading and unloading himself.

His cows are now producing more milk than any other herd of the same number in his section; and he can tell exactly what his dairy is producing as he uses the Babcock milk-tester to determine the value of each animal. He takes care of them all the time, feeding the herd with a well-balanced ration from his own hands.

This story of every-day life still going on, while unique in its way, is only one of thousands in which success has never been a doubtful prospect although it has been; or is being arrived at through what seems super-super-human difficulties to the average farmer.

The "average farmer" starts so often as the "square man in the round hole." There are men who are rounded off for every occupation in life. Constitutionally they were "made for the job" but there are others whose life's record seems to have been to wreck the finest opportunities that were ever placed within arm's length of a self-helping being and it is men of this stamp (not the "con-

perience, disposition or capital which are positively necessary to the success of any business if it is only running a picture show or green grocery, not to speak of the profession of farming.

This legless man would have succeeded none the less even if his arms had also gone. So long as his head was left to him, with the counsel and help of a loyal and capable wife, Briggs is the sort of man that would win success in anything he chose to conduct because he has the heaven-born common sense to steer him away from anything he knew he could not put his heart into or

Those bushels of farmers' letters that have recently flooded the papers on the "cost of raising a bushel of wheat" may provide some amusement to readers and a sort of comfortable gratification to the writers, but they certainly arrive at nowhere. On a matter of common experience was there ever such want of unanimity or agreement?

There are few working farmers who are in love with their work who have the time or the disposition to write long-winded letters to the newspapers. Just for fun, the writer of this article recently paid a visit to the farm of



A Sight that Swells the Heart. Farm Home of one of Manitoba's Pioneers. Started on little capital, but with an unflinching fund of commonsense and enthusiasm. A Ven Reid's Residence near Brandon.

that the limitations of his brain, experience or capital could not successfully handle.

There is not one word of exaggerated statement in the foregoing. It is a matter of fact record of what one man is doing without fuss, without help of any sort in the way of counsel or legislation in the production or marketing of his crop or live stock. And he can do his buying just as easily, with all the advantages of a man

one of those men who "find a positive recreation" in unloading their burdens to the newspapers, who sing with all their heart: "This world's a wilderness of woe" to a tune of their own in G minor.

He is an old timer and "owns" over two sections of magnificent land not a hundred miles from Winnipeg. What of this has not been plowed at any time or in

It is

"From scenes like these our country's grandeur springs, That make her loved at home, revered abroad."

to men like these the country owes its real progress, its solid success, its undying fame.

☪

It is better not to live than not to love.



Everything Begins and Ends with the Soil

The CANADIAN THRESHERMAN & FARMER CANADA'S LEADING AGRICULTURAL MAGAZINE

PUBLISHED MONTHLY BY

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AUTHORIZED BY THE POSTMASTER GENERAL, OTTAWA, CANADA, FOR TRANSMISSION AS SECOND CLASS MATTER

OCT., 1913

Now and 1914

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

OUR GUARANTEE

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

WHEN THE MOST LAVISH allowance has been made for all that men have done, for the intelligent unremitting work of the brightest brains engaged in agriculture, it must be said that the splendid harvest of 1913 in the Canadian Northwest is after all due to the marvellous weather conditions the country as a whole has experienced almost without a break since seeding time. At the moment of writing (October 1st) the summer is still with us and the weather man presents a cheerful outlook for the next few weeks.

WHAT A CHANCE for a still more wonderful record in 1914 if "the farmer and his boy" will but seize it! None can tell what sort of humor Nature will take on in 1914, and no one has a right to presume on what she may give or withhold; but there is a moral obligation resting on every man who has any business relations with the old lady to win

nothing more certain than that the habit of "taking things easy" when the word is full steam ahead works more mischief in a community and more completely demoralizes the individual than any habit that flesh is heir to do. The leisure hour is intended to be the sweetest hour of all in the twenty-four, but more often than not it is made the bitterest because it has not been earned. In this case it is the time when nothing can be done but sit and bewail the opportunity that might have been used.

WE COULD FILL THIS PAPER with all sorts of suggestions as to "What to do in October"—but that is not the education or information Canadian Threshermen and Farmers are after. They may very properly tell us that they know a "darned sight" more about agricultural work than we do. We will grant that and therefore do not trouble them with pointers or any sort of detail in farming operations; but in the will or the want of it to do the thing we ought to do in these halcyon days before the grip of winter seals the door, we are on a common level.

BOOK-LEARNING is but the lifeless finger-post—as dead to all practical purposes as dead timber can be, short of cremation—if the directions are not followed. We have all the information, theoretical, practical, scientific—all as ready to hand as the wife's cook book on the "hoosier." The thing is—What are we making of it? Will any farmer who reads this admit that he is "strangely ignorant" and would gratefully accept of information on any detail in his own farm work?

LACK OF REAL INTEREST in the work far more than want of knowledge is probably the besetting sin of the men who are not making good, whose "farming" is the joke of the neighborhood. Does anyone know of a farmer who is a real enthusiast at his job who has a word of complaint unless he happens to have a neighbor in the weed business—the neighbor who "summer-fallows" to the end that sow thistles may have a better time of it than getting choked out with wheat or barley? The practice of Agriculture is the finest occupation a man or a woman can indulge in, but it isn't every man or woman who "cares" for farming. One can scarcely comprehend the idea of any actively disposed person having no interest in the business of seeing things grow, but to this extent the race has certainly degenerated.

SELL OUT IF YOU CAN'T and give the man a chance who can or will. The reading public are getting sick of those periodical wails from individuals who seem to be perennially "up against it." If they can produce, they fall down on the marketing end and the marketing end of farming is like the selling end of every business—you've got to go after it. It is there right enough all the time but it must be cultivated. It can't be done at "any old time," but just when it ought to be done. Same with the business of raising crops. There's an eternity of meaning in the word NOW.

her favor by every means that human brain and brawn can make use of—NOW.

PROCRASTINATING IS HER LAST VICE, and there is no weakness on the part of her votaries that she is so little inclined to tolerate, or which she punishes with more unsparring hand. "Unhasting yet unresting," she pursues the even tenor of her way with that calm dignity that every man admires and values more than perhaps any other trait on the part of his neighbor or business associate. The fussy man who is not always on time is nearly if not quite as intolerable a nuisance as the lazy dog who is always behind time.

THESE ARE THE MEN we have most of all to fear as we build our hopes and expectations for the future. Outside of the hail calamity, where there has been a poor show anywhere this year, with all its wealth of natural advantages, it may almost without a single exception be charged to the account of those men who farm at random and take chances that not a single beast, bird or insect takes any day of its life. Whether at work or at rest, they never fail to move to some purpose when the time is at which they must provide for winter quarters or set their house in order when the spring breezes begin to sweep through the corridors.

THE MAN WHO IS PUTTING OFF his fall plowing or any manner of farm work which he ought to do in this great continuance of open weather, deserves to be shot. Probably the most merciful treatment of his case would be to give him a ticket to an institution (which happily is yet unknown in Canada), where he would be clothed and fed at the public charge. Even if he didn't break a barrow-load of "road metal" in twelve months, he would cost the country far less in this way than in being permitted to farm at large.

BEGINNING WITH OURSELVES, every so-called productive unit in this pulsating West stands more in need of the hose-pipe than the hotbed. The best in "life" of any sort is not obtained by coddling; as a matter of fact, there is

Cockshutt Engine Scrub Breaker at Work

**“We
Plow
the
Land”**



**“We
Seed
the
Soil”**

On the Hannah & Gowler Farm, Oakville, Man.

New Features that Save Time and Give Better Results

Note the high brush this Scrub Breaker is going through—and the even furrow it leaves behind.

This is the best Brush Breaker now on the market. Ask the Cockshutt Agent in your district to let you see it. There is more clearance under the beam—a valuable feature when working in heavy brush.

The shares are made thicker and stronger to stand the heavy work. It is heavily constructed throughout and well braced. This Brush Breaker is built to do good work in the heaviest and roughest land.

The furrow wheel is set at an angle allowing more clearance between the wheel and the mould-board for getting away brush. This also obviates any tendency of the plow to climb the furrow.

The Brush Breaker is designed to make work easy. The levers are spring balanced, making easy control of the wheels in entering and leaving the furrow.

In addition to the regular levers there is a third one by which the rear end of the plow can be instantly raised on a shoe for transportation. This

shoe is on a swivel and swings around allowing the plow to freely follow the tractor. When starting the furrow this shoe is quickly thrown up clear of the ground with the lever. A very handy arrangement and a time saver, no heavy lifting or loss of time, simply pull the third spring balanced lever.

This New Cockshutt Engine Brush Breaker is a big improvement over any brush breaker on the market, see the local agent about it, or write us direct for further information.

Standard Engine Gang

The Engine Gang that has proven itself over and over again to be a thorough success under every condition. Over a thousand in use in Western Canada, and every user satisfied and enthusiastic. Cockshutt Engine Gangs while being made strong and well braced are light enough for use with a small oil, or low power steam tractor, and make engine plowing practical for the small farmer.

The Cockshutt Engine Gang is made of independent single plows drawn on pairs of strong, straight, wide spread beams. When working in rough land each plow will cut an even depth of furrow—rising or falling to meet whatever condition is encountered. They do this automatically, independent of the operator, or of the plow next on either side. Any kind of plowing can be done because the beams will carry any style of stubble or breaker bottoms. Made in 3, 5, 6, 8, 10, 12 and 14 bottom sizes.

Don't experiment, use the Engine Gang that has proven a success.

Engine Disc Gang

The Cockshutt Engine Disc Gang is the latest production in Disc Gangs, and combines many features that make light and easy work. The gangs of discs are flexible and to detach a section it is only necessary to remove two draw pins.

Two sets of balls are fitted to each disc bearing. This is a special patented dust-proof bearing and by its use more clearance is provided between the discs. Extra heavy beams pass across under the rigid frame and support the discs. The rear land and furrow wheels are joined and held parallel by a connecting bar.

For transport purposes a small block on the rear wheel bracket can be set to make the wheels follow the direct line of draft. The castor wheel is free to swing around and follow every move of the plow. The frame at this point can be raised or lowered on a double threaded adjusting screw.

The Cockshutt Engine Disc Gang gives perfect service in the field—hitch one to your engine.

Cockshutt Plow Company, Limited

Branches: WINNIPEG, REGINA, CALGARY, SASKATOON

Distributing Points: Red Deer, Lethbridge, Edmonton, Brandon, Portage la Prairie.

TRACTION PLOWING

AS TOLD BY THE MEN WHO DO IT

A Steam User

Your request for our experience in traction farming to hand, and in reply would say, we have a 25 H.P. Reeves Double Simple engine, which we find to be a very good plowing engine and it has proved among the most successful in this part of the country. We use about two and one half tons of lignite coal per day, and six 10 barrel tanks of water per every 20 acres of sod plowed.

When plowing sod, we have five men and two teams with the outfit, but when doing ordinary stubble plowing we get along with three or four men, as the engineer and fireman in this case can attend to the plows.

We have not had any experience in seeding with the engine, as we have always done that part with horses. We find that by using a disc and harrows behind the plows in spring plowing very successful work can be done, as in this way we can get the ground firmed down as soon as it is turned over and is a great aid in preserving the moisture. I also think that where there is a straight field, a drill could be used and seeding done at the same operation. We have not tried this as yet, as the land here has more or less brush and a few pot holes, which in the spring of the year are usually too soft to cross and by going around these places it is a little difficult to do correct sowing.

It costs us for discing, harrowing and plowing, including cost of coal and wages for men and teams, \$1.75 per acre. Hoping this information may be of some use to you, I am,

Yours very truly,

Knute Oberg,
Pleasington, Alberta.



Discs and Seeds with Horses

Our engine is a 20-45 American Abell Universal Farm Tractor, which we consider as one of the best engines that is made for doing all kinds of work in a district such as we have around here, where there are quite a number of sloughs and low places which is detrimental to the larger and heavier engines. Our engine weighs four and a quarter tons which is very light compared with most of the other makes. It is double cylindered which gives it

the advantage over the single cylindered types for going up hills while plowing.

We figure that we use about forty gallons of gasoline for a good day's plowing or threshing. We use very little water per day, as the engine is both water and air cooled which keeps the water from getting very warm unless the engine happens to be loaded rather heavy. For threshing we do not use over three pails per day and for plowing it will use four pails if there is much climbing to do.

We have two men on the outfit when plowing, one to run the engine and one to operate the plows, we never have a team with it at all, any more than when one of the teams are going to work in the morning they take a barrel of gasoline near the engine so that it is always handy when it is needed.



Our estimate cost per acre for plowing is \$2.00 per acre, with gasoline at 30 cents per gallon. To this estimate we have also added the wear and tear of the engine.

In regard to the information of work in seeding, discing and harrowing we do all of these with horses, for with the horses we have we are always able to keep the engine going all the time on the plow.

We do not consider a tractor detrimental to plowed land, provided the land is harrowed afterwards to loosen the soil so that the moisture will not escape so readily.

Yours respectfully,

James W. Clarke,
Kirkella, Man.



Work in Scrub

My brother and I have 800 acres of heavy scrub land. We live in town, and have a car, so we bought a Hart-Parr 45 H.P. engine, and two steel gumbo 24-

inch breakers, a fifteen barrel oil tank, a caboose, and 75 ft. 3/4-in. cable, and started for the woods.

Of course, the man in the car got there first, and had a mile furrow staked out. Our first job was to go down the line and pull any big poplar or elm trees that had been left, and high stumps that were too high for the engine to get over. The rest was second growth poplar and willow up to about 4 or 5 inches in diameter, and after we had about 50 yards wide cleared in this way, we hooked on the plows, and started about 8 to 10 inches deep. The engine laid the small trees down, and they were rolled under. When we got stuck in a stump, we unhooked one plow, and pulled through. Some of them were a foot through. When we hit dead elm or oak stumps, they pulled out generally, throwing the 1,300 pound plow on its back.

In 1911 we disced 100 acres three times for crop, broke 225 acres of this scrub land, and disced it and threshed for 25 days.

In 1912, we plowed 100 acres and disced it, broke 60 acres, disced and levelled it and put in flax. We broke 250 acres for ourselves, and 75 acres for outsiders, and threshed our route again. We did not get our plowing done on account of the big snow storm.

I am well satisfied considering the two wet years that we had, our only expense being for oil, and \$2.50 a trip for filling the tank of oil, as we did all the other work ourselves with the exception of threshing.

As for the engine, I have not lost two hours on account of engine trouble, but I had some breaks on account of running into stumps. I use an Emerson disc plow, twelve discs with harrows behind, and we use a 36-inch Waterloo separator, but would advise a 40-inch one as the engine does not get enough to do to run

steady. I consider an oil engine has all other powers beaten, when men are scarce as is in our case. We can work when we like, and as long as we like, and when I finish in the fall I have nothing to bother me till spring.

Yours truly,

L. E. Scow,
Portage la Prairie, Man.



Tractor Cheaper Than Horses.

We are two brothers in ownership. We did own a 25 H.P. Case steam engine, which we operated for three years, but on account of being so hard up for water, as we had two teams and men to haul water while threshing, and yet had to wait sometimes, we disposed of it, trading in a Hart-Parr 22-40 which we operated during breaking and discing. We did not keep track of the kerosene used, but know that it came cheaper than steam, as two of us could operate it, whilst we had to have five men most of the time to operate the steam engine.

We used six discs 16 x 16 and made from 20 to 22 miles per day. There were two men whilst discing, as there were quite a few wet places, and if the engine got stuck, one man could do practically nothing with it. We double disced, making about 3 acres per hour, or 63 acres per day, and the cost for discing was about \$1.00 per acre.

I do not think traction farming is detrimental to the plowed land. If the land is high and dry, it could not do much damage, although I have been watching it, but it might be harmful on heavy wet gumbo, but I have had no experience with such soil.

As wages for men are getting as high as they are here, which are \$40 to \$45 per month, I think a man can farm a lot cheaper with a tractor than horses, if he has land enough to work a tractor.

For threshing we got a 20-40 Case gasoline engine, and a 32-52 Nichols & Shepard separator. We threshed all fall with a repair bill of only between 90 cents and \$1.00 on both separator and engine, the engine using about 35 gallons of gasoline per twelve hour day, and about 1 to 1 1/2 gallons of water per day.

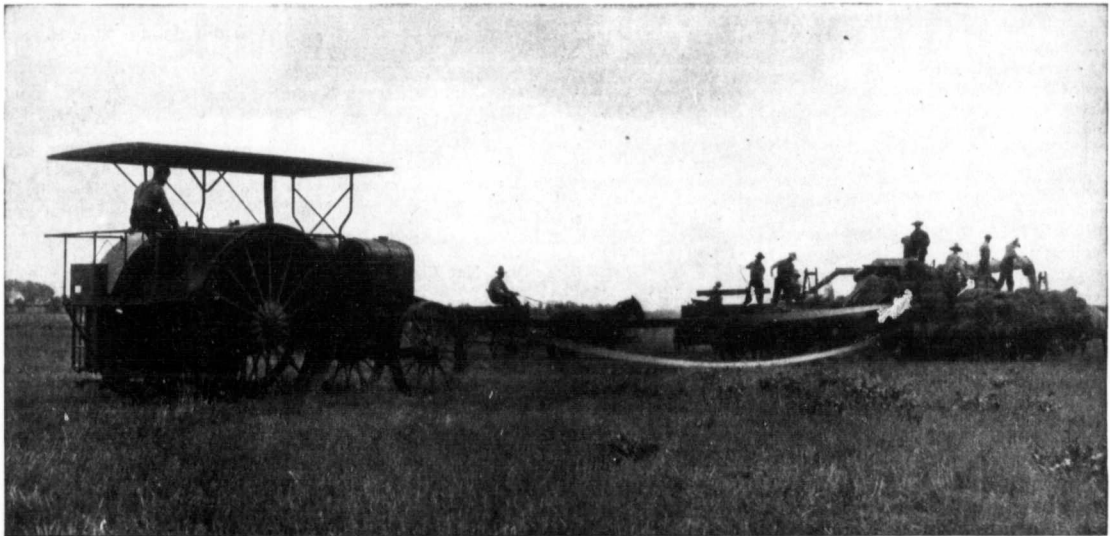
We threshed all fall without more than one hour's trouble with the engine, and that was short



Fifteen-Thirty Tractor Pulling Four Plows

A HUBER TRACTOR adapted to your work. If you want an engine to do the work of two or three teams, get the Fifteen-Thirty. If you have a great deal of heavier work, then buy the Thirty-Sixty. Each in its class of work will give unlimited satisfaction. They are economical in operation, and produce results that will please you. All are equipped with belt pulley for running thresher, or similar work in the belt. All burn kerosene or gasoline with equal facility.

The small tractor has engine of two-cylinder opposed type. The large one has four-cylinder engine. The small one is the lightest on the market for the power developed. It is especially fine for road hauling, having great pulling capacity and endurance. It will run the medium and small size threshers. The large tractor, of course, is intended for the big work; hauling gangs of plows, road machinery, and other difficult traction work; or for operating the largest threshers with attachments. The mammoth drivers, with wide rims, enable it to travel over the plowed ground without damage; and over soft ground without delaying the work. Ask for any detailed information wished regarding either engine; and let us have an opportunity to confer with you regarding your needs in the way of power for the farm or road.



Thirty-Sixty Tractor Threshing

THE HUBER MANUFACTURING COMPANY

Canadian Office: Arlington and Logan, WINNIPEG, MANITOBA

Home Office and Factory: MARION, OHIO, U.S.A.

circuit. It took one hour to find out where it was.

Yours truly,
K. B. L. Jacobsen,
Loreburn, Sask.



Gasoline Very Poor

You ask me for my experience in operating a traction outfit. It is somewhat limited, but am willing to let you have it, if you can make use of it.

I own a Gould Shapely & Murr Ideal tractor of 20-28 B.H.P., which is a nice size for a small farmer to have, to handle a five furrow plow, or a small threshing outfit.

I only have half a section of land, and go in for mixed farming, having my place fenced into forty acre fields or thereabouts, sowing timothy for hay as well as pasture and as a rest and rotation for the land.

I used my engine for breaking part of my land up, and found it a useful asset while my mares were raising foals. The season when I broke most was very dry, and would not have been able to do much with the mares, as it would have been too hard on them while raising their offsprings, consequently I was able to raise five nice colts, which were an advantage.

The engine will usually handle four plows in breaking, as our soil here is not very heavy. I have used it with some success in stubble plowing, but cannot use it at all times to advantage. For instance, last spring, I started up with it to plow as soon as the land was fit after the thaw, and was getting along nicely, when we had a lot of rain that soaked the ground, and made it worse for traction plowing than it was just after the thaw. I had to pick out the driest places and leave the other for the horses.

On my summer-fallow I could not make good headway, as I had double disced it in the spring to get the weeds to grow, and the surface was so loose that it made it hard work for the engine. I think the tractor all right when conditions are favorable.

I usually handle the outfit alone, and find my tractor and the five furrowed Cocksbutt Plow easy to operate by one man.

I have not kept any accurate account as to the cost of fuel, but estimate that it costs me around one dollar per acre when breaking, and about 85 cents in stubble plowing, that is, on a basis of 25 or 26 cents per gallon for gasoline, but lately we have had to pay 29 cents to 30 cents per gallon from the nearest tanks.

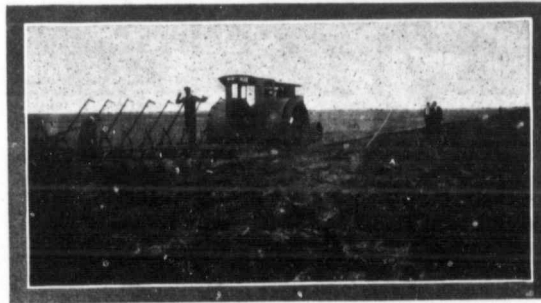
I have found a great deal of difference in the gasoline obtained from the one company, when I

got it in wood barrels, and I think there should be some legislation to enforce the oil companies to give us the gasoline up to a given standard, and at a set price. We can only sell our products by the grade.

I have had my difficulties as most gasoline engine operators have, and find from experience that a man must have a certain liking for engineering to make a success with a gasoline tractor.

I have not noticed anything particularly detrimental to the land by using a tractor, except that where the engine has been used in plowing when very wet, and where the wheels have packed it, it has turned somewhat sour and in places the crop has not done so well.

I also noticed a field that I plowed in 1911, that where I plowed the headlands first, and where I turned the engine the crop grew better and was ahead of the rest of the field by five or six days. This was a crop of barley. I believe the packer is



an implement that every farmer ought to have, but the price—like many other things—is against us. Wishing you every success in your journal, I am,

Yours truly,
Henry Thompson.



Engine Better Than Horses

I have never read your magazine, "The Canadian Thresherman and Farmer" yet, but I received your letter a short time ago and found the fair offer of a year's subscription if I gave you my experience with my tractor. I would also appreciate the speed indicator very much. In regard to your questions re my experience I may say that we bought our engine, which is a 60 B.H.P. Hart-Parr gas engine, last year. It was very wet here last year, therefore we could not work with our engine as we wanted to and often we had to use horses as we had to go through so much water and mud.

We threshed with a Gaar Scott 36-inch separator and I will say that I like the gas engines much better than the steam as they are

not nearly so expensive in maintenance, and I think I know what I say in this matter as we owned and operated a steam outfit for many years. This year the work could be done without me, the operator caring for the whole outfit with only four men pitching in the threshing stacks. We used from 35 to 45 gallons of kerosene at 20 cents, and while the engine has an oil cooling system we used just a little water as a spray in the cylinder.

In plowing we used about 45 gallons in a 20 mile day, that is about 40 cents expense an acre, together with lubricating oil. We have only used our engine for plowing and threshing yet. I like it very well for plowing, just as well or better than with horses. The work is done cheaper and only two men are required. Our plow works very satisfactorily; it is an eight bottom John Deere Plow. For harrowing, packing and seeding I think an engine presses the soil too hard for good grain growing. I have had no

I find that grain sown behind a tractor does not come up regular, the engines pack the ground too hard.

In regard to oil tractors, I have had no personal experience, and may God forbid that I ever shall. They are a gross failure. Why? I am a man that observes things closely. Two of my neighbors have oil tractors. I see them in their work, and talk to them, and they are dissatisfied with them, and say they would not have another. The repairs and oil are too high, and many have lost their farms by tampering with them. I firmly believe that the time is not far distant when they cannot be sold. What is wanted is a dry battery electric machine, something that is simple, and can be operated at small cost.

You wanted to know how much it cost per acre to use tractors to plow, disc, drill and harrow. It costs about \$225 per acre but it all depends on the engine, and if it is an oil tractor it will sure buck on them. I have seen them lay up eight days in seeding, waiting for repairs, and two days after it was repaired it would break down again, so you see it is hard to give a correct account of the cost per acre. Men who depend on horses are the successful men.

Yours truly,
Arnel Williams,
Bowville, Alta.



Far Cheaper Than Horses

I own a Hart-Parr engine 20-45 and plowed 1,000 acres last year in forty days. That averages 25 acres per day and used 35 gallons of gasoline per day at 37c. per gallon, one gallon of gas engine oil at 75c. per gallon and about 15c. worth of gear grease. I have one plowman at \$1.15 per day. My cost per acre for plowing is 60c., 25c. for discing and 30c. for harrowing. It is far cheaper with traction than with horses. I do not wish to be without a traction engine anymore.

Yours truly,
Experienced Farmer,
of Irvine, Alta.



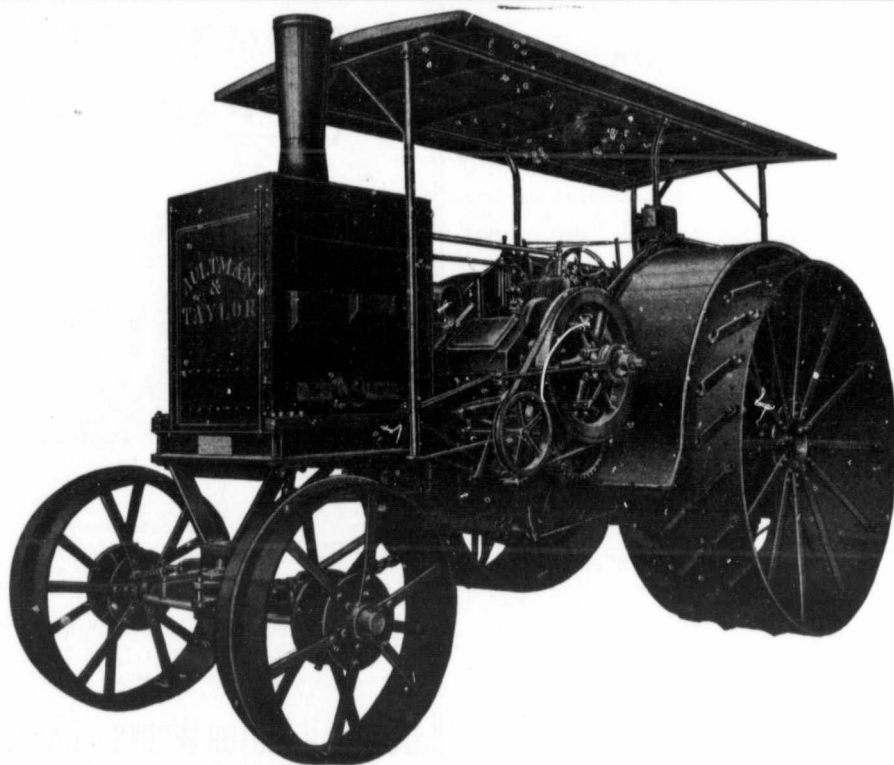
Not on the Thistle

At Belfast a football match was played between Ireland and Scotland. One of the home supporters, who was getting excited, kept shouting out:

"Sit on 'em, Ireland!"

An old Scotsman in the crowd, unable to stand it any longer, cried out:

"Ye might be able to sit on the leek, mon, an' mebbe on the rose; but I tell ye, mon, ye canna sit on the thistle."



Aultman-Taylor 30-60 Gas Tractor Still Holds World's Records

In the 1912 Winnipeg Contest the Aultman-Taylor 30-60 Gas Tractor established a **New World's Economy Record for Developing Brake Horsepower. A World's Economy Record in Plowing** by delivering to the draw bar, more draw bar horsepower hours per unit of fuel than any internal combustion engine of any size ever entered in any official test. It also delivered to the draw bar **A Greater Average Draw Bar Horsepower** than any internal combustion engine of any size ever entered in any official test.

We did not enter the 1913 Winnipeg Contest for the reason that the remarkable achievements of the Aultman-Taylor 30-60 Gas Tractor in the 1912 Contest so clearly and convincingly demonstrated that it has not competition that we deemed it useless to enter the 1913 Contest when we were positive that these records would stand without being anywhere near approached by any engine entered in the 1913 Contest. As you are well aware, the 1913 Contest is over and

We can show you some interesting facts about the actual records established by the Aultman-Taylor 30-60 Gas Tractor at the 1912 Winnipeg contest and the results accomplished by a few tractors at the 1913 Winnipeg contest. If interested, write for this data. They're real facts worth reading.

The results of the 1913 Winnipeg Contest only tend to substantiate our claims stronger than ever that the **Aultman-Taylor 30-60 Gas Tractor** is in a class by itself—that it is far superior in every way to anything yet designed for similar purposes. The **Aultman-Taylor 30-60** has not only demonstrated its superiority in every competitive test in which it has participated, but its performance on thousands of farms throughout America is proof stronger still of its all around supremacy.

Every farm power user and everyone interested in the purchase of a farm tractor should look into the construction and past record of the **Aultman-Taylor 30-60**. Its performance warrants your careful investigation. Go to our nearest branch and look this Tractor of Tractors over, or write us for nearest point where one may be seen at work. Be sure to write for our Big Catalog—it's free.

WRITE FOR CATALOG OF:—Aultman-Taylor Gas Tractors; Steam Traction and Portable Engines; "New Century" Separators; "Matchless" Clover and Alfalfa Hullers; Bean Threshers and Saw Mills.

The Aultman & Taylor Machinery Co.

Lock Box No. 64. MANSFIELD, OHIO

BRANCHES: Minneapolis, Minn., U.S.A.; Calgary, Alta.; Regina, Sask., Canada

Course in Gas Engineering

Conducted by PROF. W. J. GILMORE

Cooling Systems

THE function of the water device for cooling the jacket—or of any other cylinder—is to prevent the heat of the metal from rising to such a degree as to impair the lubrication, and also to prevent pre-ignition of the charge. If the metal is cooled too much a portion of the heat of combustion is wasted by being uselessly conducted away. In a water cooled cylinder the temperature of the water cannot well be allowed to rise above 212 degrees Fahr., but this temperature of the jacket water might conceivably result in cooling the metal too much, particularly if the cylinder bore is small and the walls thin.

Engines having water cooling systems should receive more careful attention perhaps than those having air or oil cooling systems. Water left for any length of time when the engine is not being used, will gradually find its way through the packing at the cylinder head, causing corrosion in the inlet and exhaust valves. When the work for the season has been completed the water should be drawn off and the valves left open. Cylinders may become overheated by the improper flow of water through the cylinder water jacket or through the accumulation of dirt or scales in the water jacket.

The water supply and feed should be very carefully watched in the operation of gasoline engines, as it is very often the seat of annoyance and not infrequently serious trouble. Pure, clear water is about as easily obtained as dirty water.

Fans used for cooling the cylinders are of various designs, most of them having four, five or six blades.

The average speed of revolution is about 1 3/4 times the speed of the engine. Fans consume but little power and serve to discharge the heated air away from the cylinders by replacing it with a constant current of cool air. These fans may be driven from the engine shaft by belt, rear wheels or friction drive. If the engine is water cooled, the system may be either the hopper cooling system or the closed jacket circulatory system. If either of the two methods are used, it will be necessary to drain the cooling systems when the engine is not running, in cold weather, unless an anti-freezing solution is used in the hopper cooler.

Anti Freezing Solutions.—The most widely used preparations, which are easily obtained, are wood alcohol, glycerine and calcium chloride, the first named being more favored, because it has no injurious effect on either the rubber connections, the metal piping or the water jacket of the cylinder, whereas calcium is apt to attach to the metal, and glycerine, in time, dissolves the rubber hose connecting the radiator to the motor.

The wood alcohol solution is usually preferred, because it does no damage to the parts, and has no faults, except that it evaporates. Wood alcohol differs from glycerine in one very essential particular, in that it is the wood alcohol that boils off instead of the water.

It can be used in either small or large quantities, according to the occurrent drops in temperature of the latitudes in which it is employed, and the following will give a good idea of what may be expected of the various proportions of the mixture:

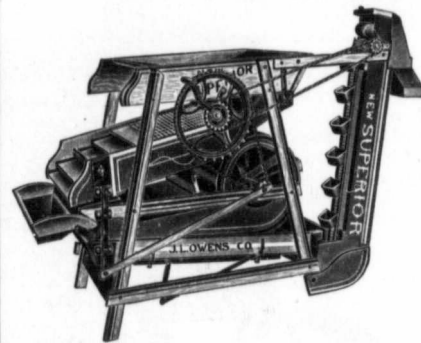
- A 10 per cent solution in water freezes at 18 above zero.
- A 20 per cent solution in water freezes at 5 above zero.
- A 25 per cent solution in water freezes at 2 below zero.
- A 30 per cent solution in water freezes at 9 below zero.
- A 35 per cent solution in water freezes at 15 below zero.
- A 40 per cent solution in water freezes at 24 below zero.

It will be readily seen that a 30 per cent solution will be ample for all occasions. In many cases one filling of the radiator with this solution will last through the winter, but should any loss occur in the radiator equal parts of water and alcohol should be added.

Calcium chloride is a very effective agent, but unless the chemically pure article is used, there is danger of corrosion of the metal with which it comes in contact. Crude calcium chloride retails at about eight or ten cents per pound, but the chemically pure article is worth about 35 cents per pound in small quantities. A solution of 5 pounds of calcium chloride to each gallon of water will not freeze at any temperature above 39 degrees below zero; but the following table will aid in preparing a proper solution for the different temperatures:

- 1 pound for each gallon of water freezes at 27 above zero.
- 2 pounds for each gallon of water freezes at 18 above zero.

KING of WILD OAT SEPARATORS



The OWENS
"NEW
SUPERIOR"
WILD OAT
SEPARATOR

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

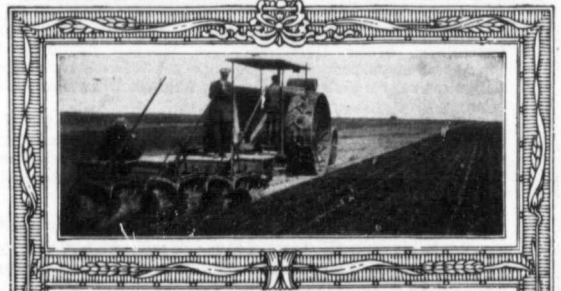
Patented Adjustable Wind Boards are provided so that blast is always under control. Can blow out as much or as little as you like, making it a perfect oat cleaner and grader. The lower shoe is fitted with a cleaning rack that is adjustable, never touching the sieve, but just close enough to knock out any grain that gets stuck when going over the sieve. It is movable, working back and forth about two inches in opposite directions to the shoe. By this improvement the capacity is increased about 25 per cent.

It is strong, well built and bolted—not nailed

Our machine is built to clean any kind of grain and do perfect work. What the "NEW SUPERIOR" cannot do no other can do. Exceptionally easy to operate. Sizes 24, 32, 42 in. wide, with or without bagger. Power attachment to operate with gasoline engine if desired. **Agents Wanted**

CUSHMAN MOTOR WORKS of CANADA Limited
202 Chamber of Commerce, WINNIPEG

"FLOUR CITY" TRACTORS



BIG CLAIMS PROVE NOTHING

Exaggerated statements and misleading advertising availed nothing at the FREMONT DEMONSTRATION

Merit Rests Solely on Performance

40 tractors working side by side in the same field afforded the dealers and farmers present an opportunity to compare construction of the tractors and the class of work done.

The performance of the "FLOUR CITY" in this demonstration was an "eye opener" to those interested in power farming. The "FLOUR CITY" 20 h.p. pulling six and the "FLOUR CITY" 30 h.p. pulling eight 14 inch bottoms in the Fremont gumbo, was a revelation to those present.

It proves our claim for reserve power which was verified in our ability to pull our full quota of bottoms, where others could not. It proved our claim that by reason of peculiar design and construction the "FLOUR CITY" can produce more power with less weight than any tractor on the market. If you are interested, ask someone who was there and get an unbiased opinion. If you are open for business, send for our catalog.

Kinnard Haines Co., 828 44th Ave. N., Minneapolis, Min.



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

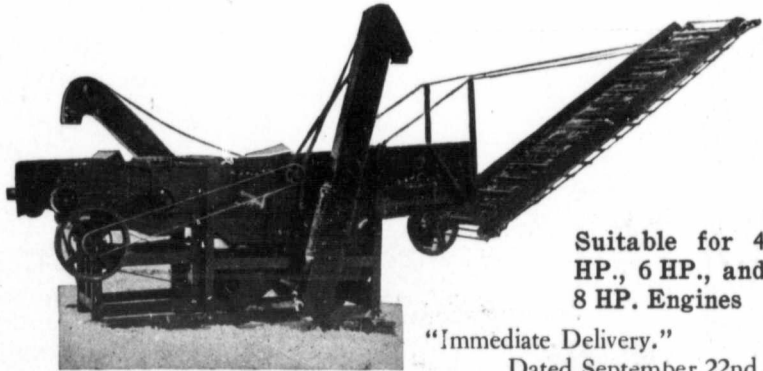
La Compagnie Desjardins Famous Small Threshing Machines
 "THE CALL OF THE WEST" Sold by

A. STANLEY JONES :: North Battleford, Saskatchewan

General Sales Agent for Saskatchewan and Manitoba

Head Offices: "The Industrial Spur East" Phone 223 and 220
 Branch Warehouse: "UNITY"

Prices from \$315.00 to \$352.00 Separator and all belts, carriage paid to any point in SASKATCHEWAN, and most points in Manitoba. Capacity from 400 of wheat to 600 or 700, and of oats from 700 to 1600 and more according to size taken. The \$352.00 outfit will easily thresh 600 of wheat and as much as 1500 of oats if in average grain and fed properly, although only sold to thresh 600 to 800 of grain. If you have any size farm your usual threshing bill will be more than your payment on this machine. La Compagnie Desjardins have made these machines since 1864 and were the original makers of the Champion, but owing to the makers of other machines calling theirs Champions we have called ours by what it proved to be last year—



Suitable for 4 HP., 6 HP., and 8 HP. Engines

"Immediate Delivery."
 Dated September 22nd.

"THE CALL OF THE WEST"

We make every bit of it. Don't buy any other machine or any sort of small outfit till you have had my prices. Outfits on hand at North Battleford. Drop a card RIGHT NOW. Free Fully Illustrated Catalog.

3 pounds for each gallon of water freezes at 1.5 below zero.
 3 1/2 pounds for each gallon of water freezes at 8 below zero.
 4 pounds for each gallon of water freezes at 17 below zero.
 5 pounds for each gallon of water freezes at 39 below zero.

A convenient way to prepare the solution is to first make a saturated solution of the calcium chloride and water, that is, to mix with a quantity of water at 60 degrees Fahrenheit, all the calcium chloride the water will dissolve, and use equal parts of this solution and pure water. If chemically pure calcium chloride is used no trouble will result, but chloride of lime, often sold as pure calcium chloride, should be avoided.

Glycerine is an effective agent, and as it will not crystallize in the water jackets it is preferable in this respect to calcium chloride and it has the further merit of not requiring any renewal during the season, as it does not evaporate. It is, therefore, only necessary to add pure water to replace that which has evaporated. Several solutions of glycerine and water, with regard to degrees of cold in which they may be safely used, follow:

A 10 per cent solution freezes at 28 above zero.
 A 30 per cent solution freezes at 15 above zero.
 A 40 per cent solution freezes at 5 above zero.

A 50 per cent solution freezes at 2 below zero.
 A 55 per cent solution freezes at 10 below zero.

In using a glycerine solution care should be taken to thoroughly cleanse the jackets of any residue of crystals from a calcium solution previously used, as this residue will thicken and cloud the glycerine solutions and render them partially ineffective. Solutions of glycerine will thicken up when subject to low temperature but will not solidify and, unless it does, it will not disrupt the piping of the radiator or the jackets of the cylinders.

Assuming that the wood alcohol is to be preferred on some counts as less liable to choke up constricted passages or attack hose connections, and that outside these evils which are characteristic of a glycerine and water solution, it is a most desirable and substantial mixture; then, it is well to consider the advisability of reducing the quantity of glycerine, and substituting alcohol instead. By the use of both wood alcohol and glycerine, the total proportion of water can be increased, and that is a step in the right direction on two counts, that is, cost and stability. The following combinations of half alcohol and half glycerine and water may be used:

A 10 per cent solution will freeze at 25 above zero.
 A 20 per cent solution will freeze at 15 above zero.
 A 25 per cent solution will freeze at 8 above zero.
 A 30 per cent solution will freeze at 5 below zero.
 A 35 per cent solution will freeze at 15 below zero.

A common solution of salt (sodium chloride) may also be used. It remains fluid down to 0 degrees Fahrenheit. An incrustation, however, occurs as the water evaporates, and it is claimed electrolytic action would follow its use. Common salt is cheap, but radiators are costly, delicate and composite in construction—that is to say, there are a plurality of metals in the makeup of radiators, hence electrolytic action would follow, due to the difference of potential nature to different metals immersed in a saline bath.

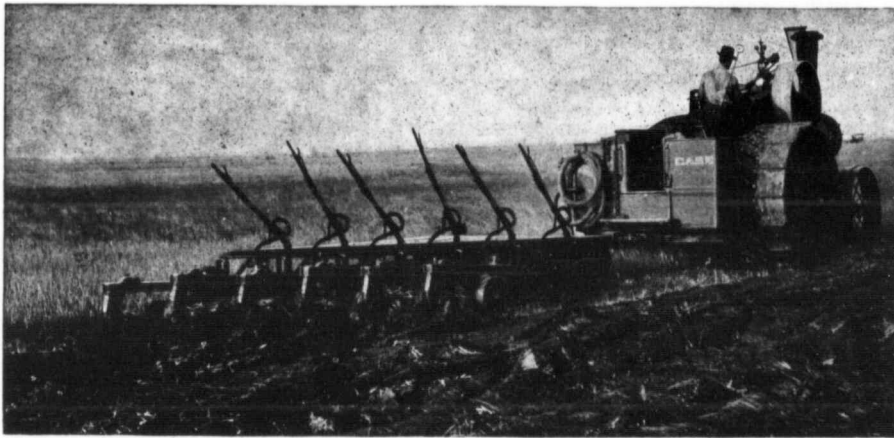
Water cooling for the gas engine seems to be by far the most used. Most engines used for automobiles are of the water cooled type, the cooling being accomplished by a circulation of water from a tank or radiator to the jacketed walls of the cylinder. According to the laws of liquids the heated water will rise to the top while the cooler layers will fall correspondingly. This is known as the gravity system and will be found in use almost anywhere the gas engine is used.

The pump or forced circulation is much used and has advantages over the gravity system as it keeps the water continually moving from the jacket of the cylinder to the supply tank or the radiator, which being employed, a less quantity of water is required to cool the engine cylinder, or radiate the heat units. Efficiency of the gas engine depends much on the temperature that the hand can be held on the jacket, or in other words, below the boiling point. If steam is seen coming from the relief or outlet of the radiator, look for a stoppage in the pipes somewhere, though if the pumps are in the wrong direction the result will often be the same. If the pump is to be tested run the motor for a few minutes and ascertain how long it takes for the water to heat the top of the radiator tubes. It frequently happens that some of the tubes are hot while others are cool, in which case the trouble will usually be found in the pump. The pump is used because it gives a more uniform heat at all times to the engine cylinder and this, of course, adds much to fuel economy. The design of the cylinder should be such that as much of the surface as possible be exposed to the air, the greatest possible amount

NO DULL DAYS

For Users of CASE Farm Machinery

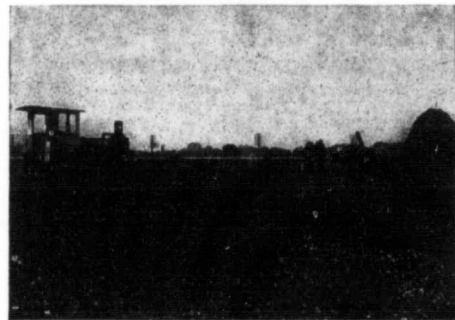
The way to make the most money out of a traction or portable engine is to keep it running every day of the year. There is a Case Time-Saver for every daily work requirement about the farm.



Case-Sattley Tractor Gang Plows **The Last Word in Fall Plowing**

When all is said and done the last word in plowing remains with Case-Sattley Gang Plows. Their performance in the Winnipeg Contest, which won the Gold Medal, and in the Illinois Wheatland Contest, in which the 6-Bottom Plow won the only prize, simply brought to a head the previous experiences of users with Case-Sattley Gangs. It makes no difference whether you have a Steam or Gas Tractor, or what road distance you have to cover—Case-Sattley Gang Plows will keep you busy with the cream of the Fall plowing in the neighborhood. Built with 4, 6, 8 and 10 bottoms, no other plow has met so successfully all the requirements of all sorts of plowing, for in straightness of line, evenness and depth of cut, evenness of furrow and lay of the furrow slice it cannot be equalled. The Spring Hitch is the Case solution to the usual plowing problem of broken shares and twisted beams occasioned by plowing in stony land and the user of a Case-Sattley never has his outfit laid up for repairs at the time when he needs to use it most. Send for our literature which gives complete details of this splendid Gang Plow.

Always a Good Market for Hay Baled **With the Case Baler and Press**



There is always a better price to be had for baled hay. The Case-Belt-Power Hay Press bales four to six tons per hour, according to size, due to the greatly increased capacity afforded by our Automatic Condenser arrangement. If you are looking for a Press which you can run by horse power the Case Horse Power Baler should appeal to you. It has a capacity of one to two tons per hour and, like the Belt-Power Press, suggests taking advantage of this ideal method for economical storing and profitable disposition of this year's yield of hay. We would like to send you the Catalog telling about them.

These are reasonable suggestions which will appeal to every man. Business-efficiency methods are more and more being applied to Farming and it does not take very much figuring to show you that your power outfit represents too big an investment to confine its profit-producing ability to one short period of the year.

J. I. CASE THRESHING MACHINE COMPANY, Inc. 741-751 STATE STREET
RACINE, WIS., U. S. A.

CANADIAN BRANCHES - TORONTO, WINNIPEG, SASKATOON, REGINA & CALGARY

A CASE Profit - Maker

which projects your engine's usefulness out of Fall far into Winter. And the regular characteristics of every piece of Case Machinery—Skill in Design and Honesty in Construction—are present in all.

Making Bad Roads Good with the Case Road Grader



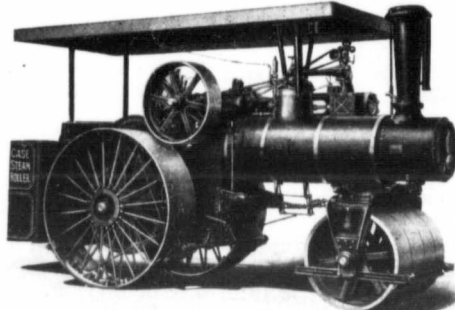
Yourself and every one of your neighbors are one on the question of Good Roads. It does not require a great deal of persuasion to get contracts from your neighbors to improve the roads adjoining their land. Users will tell you that the Case is best equipped for the ups-and-downs encountered in road-building, for a sharp bank or hillside road presents no difficulties whatever to the man behind the steering gear. All tendency to slue is overcome by the extensible rear axle and the patented steering device enables the grader to be pulled in the line which gives best results while the motive power can stay on that part of the road which affords the most solid footing. Its activities are not confined to road building merely, for the Case No. 3 can be used in making irrigation ditches and drainage trenches, accomplishing this unusually tedious labor with little trouble and expense. A Case Road Roller would be an indispensable adjunct to the man intending to go more fully into the work of road improvement. Our Catalog describes this as well as the several types of Graders and will be sent for the asking.

Utilizing Rocks Nearest to Hand With the Case Rock Crusher

It is easy enough to start out with a well-defined intention to devote the proper time to Road Building, but it is a wise man who will see to it that all the machinery used is such as will develop no weakness that will stop all work under way. The Case Rock Crusher utilizes the ordinary field boulder—one of the hardest of rocks—day after day, without the annoyance of costly breakdowns, crushing continually with all the assurance of a thoroughly well done job. The Case Rock Crusher is but one unit of the complete Case Complete Road Building Equipment, which consists of Graders, Scrapers, Drags, Rooters, Plows, Stone Screens and Bins, Sprinklers, Steam Traction Engines and



Giving the Finishing Touch with the Case Road Roller



Proper rolling is an absolute necessity for the finish of any kind of road building, and the Case Ten-Ton Road Roller supplies rolling weight sufficient for even the roughest work. Its patented power steering device enables the operator to accomplish far more work than with a hand-steered roller and the short wheel base allows very short turning. The differential gear, a Case characteristic, forces the same pressure from both rear rolls when turning as when running straight—an absolute necessity for perfect top-finishing. Power can be applied gradually and the front roll is readily turned even when machine is standing still. The Case Road Roller has more than ordinary advantages—it is convertible into a hauling engine and its heavy fly wheel makes it advantageous for all kinds of stationary work. It is compact, simple, and there is the strictest economy in the use of fuel and water. All in all, it is just such a roller as is required for thorough, permanently good Road Building.

the Ten-Ton Road Rollers mentioned elsewhere in this advertisement. Strength, simplicity and greatest economy of use are features of them all and you can get their complete description in the Case Book devoted to Road Machinery.

Taking advantage of these Case-Time and Labor-Saving Suggestions enables you to reap a handsome additional profit on your investment. A postal will bring you a Catalog or Catalogs giving detailed information about any of the Case Profit Makers. **MAY WE SEND YOURS TO YOU?**

J. I. CASE THRESHING MACHINE COMPANY, Inc. 741-791 STATE STREET RACINE, WIS., U. S. A.

CANADIAN BRANCHES, TORONTO, WINNIPEG, SASKATOON, REGINA & CALGARY



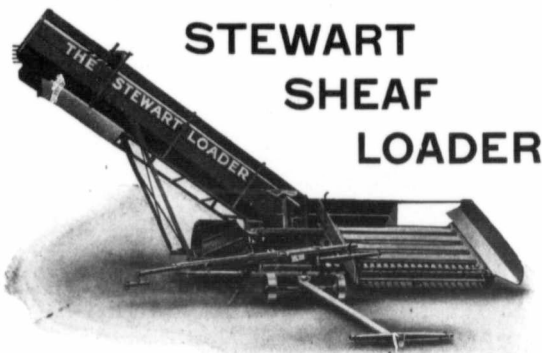
THE MAN

Whose thoughtfulness and inventive genius has made the harvesting of 1913's great crop the least difficult, the quickest and most profitable ingathering on record. This man is DAVID A. STEWART, an Ontario farmer with many years' experience in Western Canada. His crying need in fighting the harvest labor problem forced his hand and has given to the public what had long filled his brain—the

THE MACHINE

That entirely does away with stook pitchers; picks up the stooks, odd sheaves or loose grain from the ground and elevates them into bundle wagon. Does it cleaner than hired hands could ever do it, and in a fraction of the time. One man and four horses will operate the Loader, and from five to seven stook teams (depending on size of the outfit) will keep the separator going at full capacity.

One machine was operated in 1910; fifty in 1911; five hundred more in 1912; approximately one thousand new loaders were placed in the field in 1913, and every economist declares that if they were in general use with the binder there would be no dumping of men on a glutted labor market at the close of harvesting operations. The season's labour scramble would become a thing of the past, because grain growers would have to hire few if any hands they could not employ all the year through.



STEWART SHEAF LOADER

The Stewart Sheaf Loader Co. Ltd.

804 Trust and Loan Building, Winnipeg, Man.

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

Course in Gas Engineering

Continued from page 47

of freedom for the circulation of the water being the object. There are many types of radiators but the honeycomb and the tube with small fins are used to great extent. Motors using the natural water circulation require from 5 to 5½ square feet of radiation to the horse power. Generally speaking, the thickness of the water jacket space around the cylinder is ⅛ of the bore of the cylinder, while many vary from this. If water from the hydrant is forced around the cylinder so as to keep it cool, the heat from the explosion is cooled down so quickly by radiation that the expansive force is materially reduced, and this, of course, reduces the power with the same charge that would give good results with the water at the proper temperature. The object in using water is not to keep the cylinder cold, but simply to cool it sufficiently to prevent the lubricating oil from burning from the heat, for the hotter the cylinder the more power will be developed with the same charge drawn into the cylinder; provid-

ing lubrication of the cylinder is not affected thereby. With the average engine, the consumption of fuel is more economical when under full load and the water temperature correct.

Starting Up on a Cold Morning.

—If the engine is one which has the hopper cooling system, using water only, it is best to pour a pail of warm water into the hopper on a cold morning. This should be allowed to stand a few minutes before starting. It may be necessary to have boiling water if extremely cold. This operation is more difficult if the closed jacket is used. In such a case it will be necessary to make a connection with the overflow water pipe which enters the top of the cylinder.

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

Work of the Saskatchewan Horse Breeders' Association

The following list of enrollments during the first twelve months of the operation of the new Horse Breeders' Act in the Province of Saskatchewan will give some idea as to the success with which part one of this statute is being attended and also will permit of some comparison as to the relative number of stallions of each breed which stand for service in the Province. The enrollment fees are as follows:

Pure bred horses registered in the name of owner in the Canadian National Records	\$2.00
Grades sired by a stallion recorded in the Canadian Nation Live Stock Records	3.00
Cross breeds	4.00
Scrubs	5.00

Stallions enrolled between August 1, 1912, and July 31, 1913, inclusive.

Breeds	Pure	Grade
Clydesdale	953	110
Percheron	315	88
Standard Bred	71	21
Belgian Draft	35	14
Shire	30	20
Hackney	27	1
Thoroughbred	15	1
Suffolk	14	1

Suff-Shire		
German Coach	5	1
French Coach	2	..
Irish Hunter	1	..
Saddle Horse	1	..
Pony (Sæetland)	1	..
Cleveland Bay	1
	1497	258
Cross-breeds, 2; Scrubs, 249; making a grand total of 2006.		



What Did Pa Mean?

"Pop, do you see that fashionably dressed lady going along there?"

"I certainly do, my son."

"She's my Sunday School teacher."

"Your Sunday School teacher?"

"Yes, pop."

"Well, she certainly does look good to me!"

The Natural Death

An English tourist travelling in the north of Scotland, far away from anywhere, exclaimed to one of the natives:

"Why, what do you do when one of you are ill? You can never get a doctor?"

"Na, sir," replied Sandy. "We've just to 'dee a natural death!"

EXPERTS FAIL TO MAKE IMITATION "SELF-LIFT" PLOWS WORK AS ADVERTISED

Fremont Plowing Demonstration Proves the Real Facts about One-Man Plow Outfits

In a recent plowing demonstration at Fremont, Nebraska, there were four other makes of so-called "Self-Lift" Plows in addition to the Avery "Self-Lift."

The question of patent infringements and damages has already been taken up and will be pushed vigorously against all infringers not licensed under the Avery Patents. The following companies have taken out manufacturing licenses—Cockshutt Plow Co., in Canada; Grand Detour Plow Co., Dixon, Ill.; and Holt Manufacturing Co., Stockton, Cal.

But the point we want to make here is as to the actual working of these so-called "Self-Lift" Plows compared with the Avery.

In spite of advertising claims of a "Self-Lift" Plow, three of these four plows discarded their trip ropes before the demonstration was over and operated their lifting devices by hand or foot.

In spite of advertising claims of a "One-Man" Outfit, three of the four used a plowman, making the outfit a two-man affair.

And remember, too, that these plows were being handled by the manufacturers' own experts. Their own experts failed in a public demonstration to make these so-called "Self-Lift" Plows work as advertised.

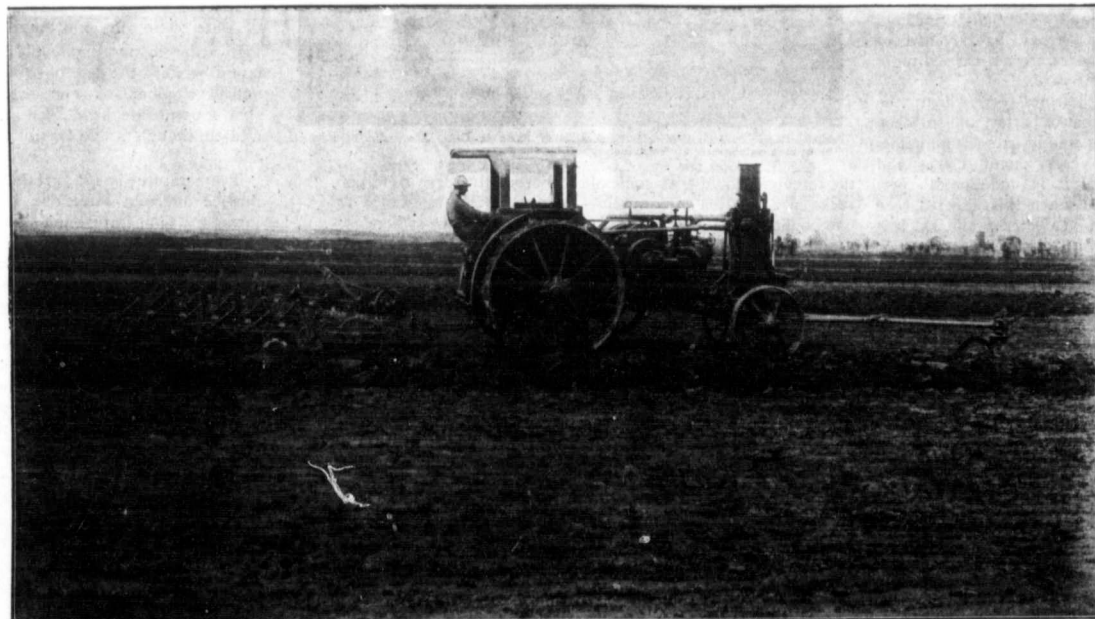
But the Avery "One-Man" Outfits in all three sizes—three, five and ten bottom—were each handled during the entire demonstration by one man, and the lifting device for raising and lowering the plows at the end of each furrow was operated by simply pulling a cord to engage the clutch.

Buyers everywhere are insisting on "One-Man" Outfits with "Self-Lift" Plows. They are insisting on a Light Weight, Simple Tractor with Self-Guide Attachment. The Avery Outfit is the only one that fully meets the demands for a "One-Man" Outfit with "Self-Lift" Plow and a Light-Weight, Simple Tractor with Self-Guide Attachment. Write now for Avery Tractor and Plow Catalog with all the Facts about Avery "One-Man" Outfits. Address:

EVERY COMPANY, 675 Iowa Street, Peoria, Illinois

Canadian Avery Co. Ltd., Winnipeg, Regina, Calgary.

WESTERN CANADIAN DISTRIBUTORS.



The Avery Real "One-Man" Outfit in operation at Fremont Demonstration. Light Weight, Simple Tractor with Self Guide Attachment and "Self-Lift" Plow



Smutty Wheat

BULLETIN No. 73 is possibly one of the very best of the many bulletins issued by the Department of Agriculture at Ottawa, in as much as it deals with "Smut Diseases of Cultivated Plants, their Cause and Control," a subject which is, or should be of deep interest to every farmer in the Canadian West.

In issuing the bulletin the director general of Experimental farms, J. H. Grisdale, puts the losses annually from smut at \$15,000,000 for the Dominion, and this is probably a very conservative estimate. As the prairie provinces are the chief grain producing districts, they bear the heavy end of this loss.

After explaining the smuts of various plants as parasites and describing their method of reproduction, Mr. Gusson takes up the various methods by which smut spores are spread. He is inclined to the opinion that while high winds at threshing time will undoubtedly carry the spores, that this method of distribution has been rather over-estimated. The use of "Spore traps" in Russia and Germany indicate that even from badly infected fields spores are not carried more than 250 yards.

The hairiness of wheat, the rough coat of barley, and the deep crack or line in oats are all sufficient to carry smut spores and much of it is undoubtedly perpetuated when this infected seed is sown. Infected grain which is fed may again infect the next crop through infected manure. A grain bin which has had smutted grain in it is a source of danger until thoroughly disinfected. Bags that have held smutty grain should not be used again until they have been dipped in a solution of formalin or in boiling water.

Threshing Machines

Mr. Gusson is so convinced that threshing machines are one of the main agencies in the spread of smut that he is advocating that provincial authorities pass legislation compelling the thorough cleaning of threshing machines before starting another crop.

Recognizing that time is most important at the threshing season he is careful to point out how quickly and effectively this may be done. He says: After sweeping the machine inside and out

racks and any implements in use can be rapidly sterilized by means of an ordinary knapsack sprayer filled with the same solution. The whole work would not require more than half an hour once the men had grown accustomed to doing it.

Vitality of Spores

Stinking smut of wheat, covered smut of barley, and smut of oats are very long-lived; under certain favorable conditions spores may retain vitality for seven or eight years. In a

Infected Manure

Mr. Gusson says of smutted grain fed to animals: the passage through the body of animals of all kinds of stinking smut spores resulted in the destruction of the germinating power of the great majority. Only those passing through pigs retain their germination to a greater degree. There still exists enough danger from spreading diseases by spores digested by animals and contained in their manure.

Smut and Health of Animals

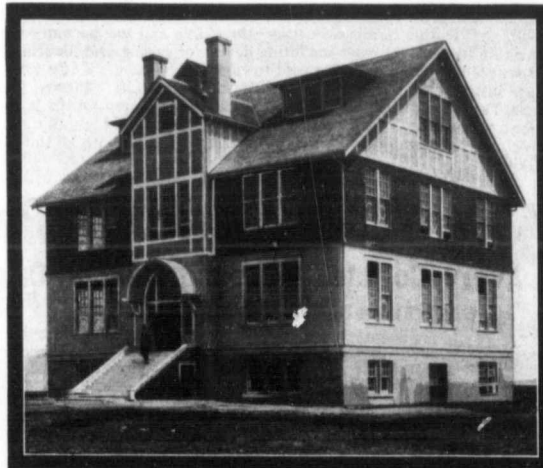
It seems that there is a good deal of difference of opinion as to the extent to which smutted grain is injurious when fed to cattle, but there is a unanimous opinion that smutted grain in any quantity is not good and that under no circumstances should it be fed to pregnant animals.

Animals fed on sheaf oats cut green, on which there was a large percentage of smut, died showing symptoms of gastritis and cerebral excitement. Post mortem examination showed distention of stomach.

Date of Seeding and Smut

In order to investigate the relation between the date of sowing and development of smut, extensive experiments have been carried on, though not so far in Canada.

Temperature has a great influence on smut infection. The lower the temperature the slower the germination of wheat. Wheat sown in experimental pots kept at so low a temperature as 34-36 degrees F., i.e., a few degrees above freezing point, began to germinate, but its progress was very slow. When kept at 77 degrees F. the germination took place after some 20 hours, and the period from germination to the



School of Agriculture on Provincial Demonstration Farm at Olds, Alta. Similar schools have been established at Vermillion and Claresholm.

the foreman should soak some old sacks in a solution of formalin—one pound to one gallon of water—and place them inside the machine after which all openings should be closed or covered to retain the vapor. If made as airtight as possible all spores will be destroyed in five or six hours, or in the time which it frequently requires for the machine to travel from one farm to another.

Outside of the machine, wagon,

thoroughly dry condition they show strong resistance to frost. In loose smut where so-called vegetative reproduction occurs—spores lose vitality in five to six months. The longevity of spores is very important in dealing with the control of these diseases. It proves for one thing that storing infected grain would reduce the germinative power of the seed rather than that of the smut spores.



Probably the finest herd of dairy Shorthorns that ever left England at one time. Purchased by Professor Thomas Shaw for J. J. Hill, St. Paul, Minn.

Better, Faster, Easier Plowing



PLOWING is not as simple as it looks to the untried man who watches at the edge of the field. Your experience has taught you that to turn your soil right is an exacting task. You can easily recall difficulties you have had in the furrow.

You are looking for the best plow for your land. Western Canadian soil conditions require certain types and designs of plows. You are aware of that. So have the Oliver Plow Works been aware of that. To western plowing problems they have given special attention. You will find abundant evidence, among users, that

Oliver Plows—Horse Drawn, or Drawn by I H C Tractors—Mogul or Titan

will give you general good service and least difficulty.

No plow has had more friends on the farms of West Canada, for instance, than the Oliver No. 1 Gang. It was built to do the most plowing in the shortest time. It keeps the horses off the plowed ground. Its wonderful lightness of draft—due largely to an Oliver feature, the center draft principle—the convenience in operation, and other strong points, have made it a favorite plow.

Practically the same design, except for the single bottom, has led to the success of the No. 1 Sulky. And the Oliver tractor gang plows have grown up in Canadian estimation along with Canadian development.

That Oliver-built plows are right and lasting in principle, design, and construction, and have given unusual satisfaction, you can realize from the tremendous growth of the Oliver output. Send a card now for a catalogue and full information to the nearest branch house. It is a simple matter and may lead to added profit and satisfaction.

International Harvester Company of Canada, Limited

WESTERN BRANCH HOUSES

Brandon, Man.; Calgary, Alta.; Edmonton, Alta.; Estevan, Sask.; Lethbridge, Alta.; North Battleford, Sask.; Regina, Sask.; Saskatoon, Sask.; Winnipeg, Man.; Yorkton, Sask.

production of the first leaf which pushes through the protective sheath was considerably shortened by the higher temperature. Smut spores do not start into active life at all before 41 degrees F. is reached, while their germinating maximum is about 77 degrees F.

Bearing in mind these facts, it is easily understood that wheat beginning to germinate at a lower temperature than smut spores, may be just in the most susceptible stage when the latter begin their activities. On the other hand, when considering that under normal circumstances, the young wheat is only for some eight or ten days in a fit condition for the fungus attack, the plant may have outgrown this stage before the fungus succeeded in effecting an attack. This shows how important are temperatures prevailing at the time of germination.

Smut in Soil

The results of tests and experiments seem to prove very conclusively that spores of stinking smut live in the ground all winter in the West and infect the following crop. Spores enclosed in a lump of ice for several months afterwards germinated 100 per cent of living spores. Once the spores are germinated, however, frost kills them.

In the West soil infection is an important matter to remember when threshing smut-infected grain. It would therefore seem advisable to thresh as soon after harvest as possible, thus giving smut spores a chance to germinate before frost sets in thus rendering them in a condition to be killed by the frost when it does come.

Loss from Smut

Carefully compiled figures for two years put the percentage of loss from smut at 6.2. The following table from the bulletin certainly furnishes food for thought.

Kind of grain.	Year.	Total harvest.	Value of crops.			
			\$	p.c.	p.c.	\$
Wheat						
		Bush.				
.....	1910	149,989,600	112,973,000	5 - 7	6	6,778,380
	1911	215,851,000	138,567,000	5	5	6,928,350
Oats						
.....	1910	323,449,000	114,365,000	5 - 9	7	8,005,550
	1911	348,187,000	126,812,000	6 - 9	7½	9,510,000
Barley						
.....	1910	55,147,000	21,400,300	5 - 7	6	1,284,918
	1911	40,641,000	23,004,000	4 - 7	5½	1,265,220
Total loss for two years.....						\$33,772,418
Average total loss for one year.....						16,886,209

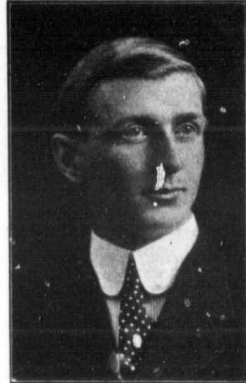
This synopsis deals with the first section of the bulletin and the other sections will be taken up in later issues.

In a year like the present, when the wheat is of such uniformly high grade, the fact that daily there are from 25 to 28 cars rejected for smut is a sufficient in-

dication of the importance of the matter.

Alberta Schools of Agriculture

This month the Province of Alberta is opening three schools of Agriculture, one at Claresholm to cover Southern Alberta and deal with education best suited under dry farming and irrigation conditions; one at Olds which will look after the interests of Central Alberta where the soil is a heavy black loam, and one at Vermilion to deal with Northern conditions.



F. S. Grisdale, B.S.A., recently appointed Professor of Agronomy, Olds College of Agriculture.

Tuition in these schools will be free and the two year course will approximate very closely to the first two years of the regular agricultural college course for Bachelors of the Science of Agriculture. This form of instruction while new in Canada, has been tried in Germany, Denmark and the United States with conspicuous success. It has the great advantage of bringing the educational facilities nearer to the farm.

There will be a principal and at least two professors at each school and during the summer these men will do extension work

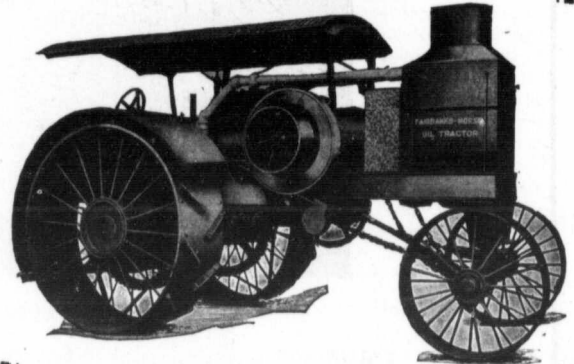
and get very closely in touch with the farm homes. There will be a domestic science course also at these schools.

Among the men who are taking up this work is F. S. Grisdale, B.S.A., a brother of the Director General of Experimental Farms. He is a member of the first grad-

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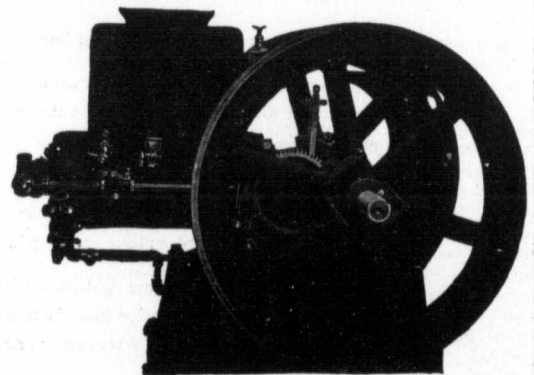


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uating class from Macdonald College, St. Anne's, Quebec, and after graduation, spent over a year on the experimental farm at Lethbridge, having charge of the culture plots and experiments in animal feeding.

He will have charge of the agronomy section at Olds. He comes of Agricultural training, as his father, A. B. Grisdale, of St. Marthe, Quebec, is an agriculturist of note and a successful breeder of Holsteins, and Tamworth and Yorkshire swine. He is young and enthusiastic and is entering the work with boundless faith in its possibilities.

The board under which these schools will be operated is composed of a body of practical agriculturists which it would be hard to surpass in any country. Among them being Dr. J. G. Rutherford former Dominion Veterinary General and Livestock

Commissioner; Bryce Wright, of De Winton; D. W. Warner, of Clover Bar; James Murray, manager of the 65,000 acre farm of the Canadian Wheatlands Limited, at Sufield; J. C. Drewry, of Cowley, and J. H. McArthur, of Milnerston.

The principals of the three schools are W. J. Elliott, B.S.A., Olds; A. E. Howes, B.A. and B.S.A., Vermillion; and W. J. Stephens, B.S.A., Claresholm. All the West will watch with keen interest the work of these schools, for while Saskatchewan and Manitoba have established agricultural colleges, these will very soon have to be extended and it is quite probable that following the example of some of the large agricultural colleges in the United States, they will be conducted along the line of just such agricultural schools.

Causes of Leaky Flues

By PROF. ROBERT MILNE

As the threshing season advances many threshers have more or less trouble with leaky flues. This trouble is very annoying and causes a great deal of worry to the engineer, wastes a lot of water and generally causes a good deal of time to be lost, which is a straight cash loss to the thresher and the farmer.

There are three chief causes for leaky flues, which are: Bad water, careless firing and rough driving. Many districts in the country have only what is called alkali water. This water has a certain amount of salts such as carbonates and sulphates of lime and magnesia in solution. As the water is boiled, some of the salts are precipitated out and gather on the flues and boiler shell, similar to what we find on the inside of some tea kettles on the kitchen range. This corrosion or scale is a very poor conductor of heat and when a coating of one quarter of an inch or more gathers on the boiler plates and flues it keeps the cooling effect of the water away from the plates and as a result the extra hot fire which is necessary to keep up steam in a badly sealed boiler, heats the plates much hotter than they would be if the water were next the plates on the inside. This intense heat which is not uniform, causes unequal expansion and weakens the plates, which results in leaky seams, stays and flues. Mud has the same tendency, but usually only lays in the flat surfaces, such as the crown sheet or in the water legs around the fire box. Frequent

and thorough washing of the boiler removes all mud and loose scale and is a decided help to the boiler.

When the water contains such salts that are not precipitated as solids, when the water is boiled it becomes very concentrated because practically only pure water is taken out in the form of steam and the greater part of all the impurities taken into the boiler remains there until the boiler is emptied. When the water gets very concentrated it tends to eat or dissolve the metal plates, getting better opportunity to work on seams or around stay bolts on flues. Very often a change of water will cause the boiler to leak, the reason being that the new water contains in solution such elements that will dissolve the scale that may have formed in the cracks or corners while using the old water. For these reasons it is a good practice to blow off a glassful of water every day. That is to fill the boiler to the top of the glass, then open the blow-off valve and run the water down to within a couple of inches of the bottom of the glass. This should be done either at noon or night and not while the engine is running. Frequently emptying the boiler and filling with fresh water is a good practice.

It is not practical for the thresher to use chemicals to prevent scaling. All he can do is to get the best water that can be had. It will pay him to draw good water several miles rather than use a bad water. Very often

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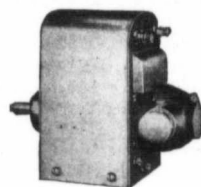
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there is a great difference in water found in ponds only a little distance apart. If everything has been going good and no signs of leaks and the tank man changes his source of supply you find after half a day or so rivets, stays and flues start to leak, you can be pretty sure the new water is the cause. If possible stop using from that pond, and next season avoid it altogether. Always secure the best water possible, and insist that the tank man keep his tank clean, that is, free from straw, mud or grass, and that he use every precaution to get clear water.

Secret boiler compounds should be avoided, as many of them are either nonsensical or fraudulent or contain one or two substances recommended for removing scale, generally soda, which is colored to conceal its presence. These additions as well as giving the compound some strange name are meant simply to deceive the boiler owner and conceal from him the fact that he is buying a colored soda or similar substance for which he is paying an exorbitant price.

Kerosene used in small quantities is recommended for loosening scale and also for preventing it sticking to the boiler. About a quart a week for the twenty horse power threshing engine has given good results. The best plan is to try small quantities and note results and work accordingly. Conditions vary so much that hard and fast rules can not be laid down.

Soda ash is also recommended for keeping boilers clean, the quantity used depends largely on the kind of water used and can only be determined by trying it out from one to three pounds per day for the average threshing engine should be sufficient.

The kerosene and soda ash should be fed daily with the feed water. The soda ash will dissolve in warm water. For badly scaled boilers caustic soda is good for loosening the scale, from five to ten pounds put in the boiler, depending on how badly scaled, can be used. Put the caustic soda in the boiler, then steam it light for a few hours, then let cool down and wash thoroughly.

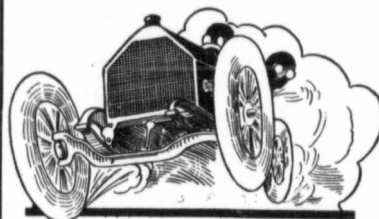
A common and erroneous idea is that if you use boiler compounds, the boiler does not need washing. The compounds or solvents are used to loosen the scale and sediment and make washing easy. Unless good water is used the boiler should be washed every week, using a force pump and a nozzle, making sure that crown sheet, water legs and barrel of boiler are washed free from mud and scales.

Rough driving is another cause of leaky flues. There is a tremen-

dous strain on the boiler of a traction engine on account of its weight. Everything is rigid and when the engine travels over rough roads at a high speed some part is most sure to be strained. The weakest place in a locomotive boiler is where the barrel of the boiler fastens to the fire box and as this is where the flue sheet is, it is reasonable to suppose that the flues might be the first to show the effects of the excessive strain. The engine should not be run at a high speed when moving. If it is kept going at the rated speed there is not much time lost.

Careless firing perhaps causes leaky flues as often as any other reason, especially when straw is used as a fuel. Straw makes a very hot fire which only lasts a very short time, consequently it is necessary to replenish the fire at short intervals. Small quantities and often is the proper system for any kind of firing. Cold air allowed to strike the flues causes a sudden cooling and contraction of parts; this change makes flues leak. Every precaution should be taken to keep cold air from the flues when steam pressure is on the boiler. Sometimes the fireman firing with straw will fire till she starts to pop, then he will stick in his fork for a few minutes till the pressure has dropped ten or fifteen pounds. By this time the fire is out and cold air is streaming through the flues, causing havoc. It sometimes happens while moving that the fireman is unable to get straw enough to keep a steady fire or the engine makes a turn without any fire. Such carelessness is harder on the flues than anything else. If wood or coal is used the temperature of the fire box is lowered when a large supply of fresh fuel is put on at one time. Always add small quantities and keep a steady fire. Never keep the fire door open longer than absolutely necessary and avoid poking and raking the fire unless necessary. The less the better. When the engine is stopped shut the dampers close and make sure there is a good fire before you start up. A damper or lid in the smoke stack when stopped prevents a draught through the flues and if for any reason you want the fire door open when standing, open the big door on the smoke box, this stops the draught when there is no damper in the smoke stack.

When flues start to leak, the quicker they are repaired, the easier it is. If they are taken in time the beading tool is all that is necessary. Use a short-handled hammer and do not strike very heavily, especially if there is water in the boiler. Never head the flues while there is pressure on the boiler, there is too big a risk of



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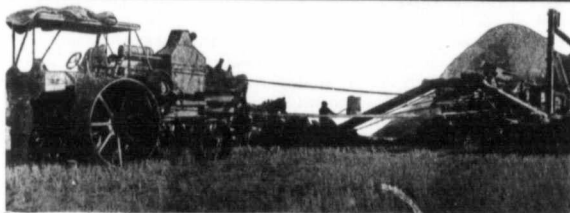
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being scalded. The expander can be used, but in inexperienced hands is very apt to do more harm than good unless used very light. Never drive the expander hard as there is danger of cutting the end off the flue and spoiling the shape of the hole in the flue sheet.

A REAL WEED KILLER

"An idle brain is the devil's workshop," and when the old gentleman finds a vacuum anywhere in Nature—in men's minds or on any fallow spot of brown earth, he comes in with his tool

ing that it was admirably adapted to the job, and when the team had been hitched on to it, this impression became a conviction, and the simplicity and ease of the operation gave the assurance that not a single bit of growing stuff in the soil had been missed.

Later on, the "Thresherman" representative visited the field when the crop was ready to be cut, and the contrast between it and adjoining fields of exactly the same soil was astounding. The surrounding land had been "Cultivated" in the old orthodox fashion, but it looked as if "an enemy" had come along in the night, and substituted the greater part of the seed oats with a bountiful sprinkling of stink-weed and mustard.

There will never be found sufficient force in ordinary language to impress upon the farming public the urgent necessity for getting after the weed plague in a way in which it has never been tackled by any old method. The old-time machines and contrivances have been tried, and found wanting all along the line, and they are now due for the scrap pile.

The "Cyclone" like all real successes, has the element of simplicity in every line of its construction, and while imposing a very light draught upon the horses, its steel knives are strongly made of



G. L. Dodds.

bag and gets to work at a pace and on terms that would break the back of any "Union."

When he enlists the services of any of those members of the "Noxious Weed" family that thrive on every Canadian homestead, such as old man Stink-weed, Mrs. Sow-Thistle, Johnny Cockle Burr or Miss Madge Wild Mustard, Heaven help the man who has got to deal with them, if he cannot summon to his aid something far more effective than the old-time "Cultivator" or the common type of disc and harrow.

An implement from the dry-farming belt has recently been introduced into Western Canada by two well known old timers whose life-long experience in wrestling with the weed pest on their own lands has satisfied them that the "Cyclone Weed Destroyer" is the only tool that will positively guarantee a clean slate. A representative of the "Canadian Thresherman and Farmer" saw it at work on one of the rankest bits of waste on which it could be employed in the spring time of the present year. This was on a neglected farm in the vicinity of Winnipeg, and the intention was to seed the land to oats as soon as the "Cyclone" had gone over it.

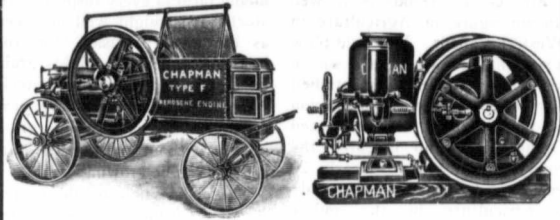
The design and construction of the implement before it was put into the soil gave an intuitive feel-



Henry Detwiler.

high grade material, and the wood work is of the very best seasoned timber. Messrs. Dodds & Detwiler, of Winnipeg, who are handling it, are men of exceptional experience on the Canadian

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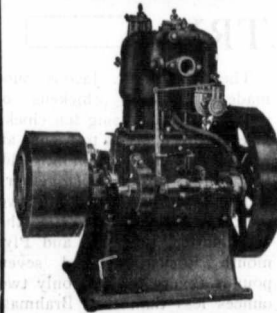
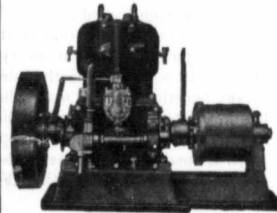
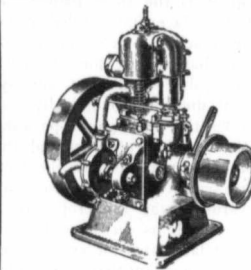
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farm, and they affirm it to be the best weed killer, surface cultivator, dust mulcher and conservator of moisture that has ever been invented.

Mr. G. L. Dodds is a well known figure in Agriculture in Western Canada. He could plow a straight furrow before he was in his teens. In 1876 he studied electric energy and transmission of power under the celebrated Orange Jull who invented the rotary snow plow. Nearly 20 years ago he promoted the study of agriculture in the public schools of Manitoba against no little opposition, but in his disinterested effort in this direction he was loyally and earnestly supported by Professor S. A. Bedford (now Deputy Minister of Agriculture). Out of the efforts of these men at that time developed the Agricultural College and all it means to higher education in Agriculture.

Mr. Detwiler for many years has farmed a section of land near

Melita and retired recently to superintend the manufacture of the "Cyclone" which, needless to say, is being entirely constructed in Winnipeg. Mr. Detwiler's is a model farm in every respect. His stock barns might well be taken as the ideal provision for the housing of beasts, and his grain farming is so clean that the Steele Briggs Seed Company have year after year taken his brome grass seed as without question the purest that can be grown.

The claim made by these men for the "Cyclone" has been fully substantiated by no less an authority than Mr. Campbell of "Dry Farming" fame and by a large body of well known agriculturists in Western Canada. We strongly urge every farmer who desires to pursue the intensive method of handling his heritage of soil to get into touch with this wonderful implement before the next weed crop is due to germinate on his land.

pounds; ten Wyandottes, fifteen pounds; ten Leghorns, fourteen pounds; and ten Plymouth Rocks, fourteen pounds. The third month the ten Brahmas weighed thirty-three pounds; ten Wyandottes, thirty pounds; ten Leghorns, twenty-four pounds; and ten Plymouth Rocks, twenty-five pounds. Of individual chicks, the third month, the heaviest Brahma weighed three and three-quarter pounds; and the heaviest Leghorn, two and a half pounds.

There seems to be a difference of opinion about the size of a breeding pen for good fertility, as will be seen by the following table giving the number of hens for a male:

Breed	Hens	Males
Asiatics	12	20
American	12	20
Mediterranean	15	25
Authority		
Jones	12	20
Bullinton	12	20
Young	15	30
Stevenson	15	30
Curtisa	8	10
Colby		15
Felch	12	15
Coburn		15
Crangle		15

If poultrymen would worry less about ventilation and pay more attention to cleanliness, there would be less losses. Ventilation is needed, and if the houses are built on the scratching-shed order all will be supplied that is required. But if the filth is allowed to accumulate in a hen house, all the ventilation that a scratching-shed house can afford will not prevent the entrance of disease.

For poultry food, pameal will be found nutritious, rice easily digested, linseed meal carthartic, potato starch digestible, barley nutritious but laxative, and oatmeal more nutritious than either wheat or barley. There is fully five and a half per cent of fat in oatmeal. Corn contains from seven to eight per cent yellow fat.

The critical period of the turkey is the first eight weeks of its life. About 48 eggs is the average yearly record of the hen.

"Squab broilers" must not weigh over three-quarters of a pound each; generally a half pound is most acceptable. They bring the best prices when marketed during January and February.

Duck raisers pack 40 dressed ducklings in a barrel for shipment.

It is generally estimated that broilers shrink a half pound each when dressed.

Worth Many Hired Hands

For some time past the newspapers in Western Canada have been teeming with reports regarding the unusual movement of the 1913 grain crop.

It is true that the weather has been ideal to a very great extent, but this is also true with previous years. We have had ideal weather conditions in the past, and yet the crop has not moved in the way that it has in 1913.

There may be a variety of opinions regarding this, but there is a machine to which it is the desire of this publication to give the credit that is due it for the great part it has played in facilitating the harvesting of this year's crop. The only reason that it has not played a bigger part is that there are not more of the machines in use.

We refer to the Stewart Sheaf Loader. There has not been a machine built since the self-binder

was first invented that is as valuable in the handling of a grain crop as is the sheaf loader. It fills the place that is filled by no other machine or combination of "hired hands." It does its work thoroughly. It does it quickly, and it does it economically. It enables the farmer to cope alike with the labor problem and the weather conditions. In the wet, rainy season it will go a long way towards saving the crop. In a season such as we have had in 1913 it facilitates the crop movement to an extent that cannot adequately be appreciated at its full value. It is a machine that is attracting public attention everywhere. It is a machine that deserves boosting by any man who has any interest whatever in the Western Canadian grain crop. Until its use becomes general the country at large is not getting the results that it should.

POULTRY

Overfat is a poor market condition. Fowls should be fed fattening food two weeks before marketing. Fat poultry, if dry picked, will cook better. Plump and neat carcasses advertise themselves. Short-legged fowls generally make the best table poultry. Never pack poultry for shipment until they have been thoroughly chilled. Never pack ailing chickens. Never ship the latter part of the week, except by special order.

The late P. H. Jacobs once made a test with chickens of different breeds, using ten chicks of each breed, so as to secure an average. When one month old, ten young Brahmas (together) weighed seven pounds and two ounces, while ten chicks of the Wyandottes, Leghorns and Plymouth Rocks, weighed seven pounds (every ten), or only two ounces less than the Brahmas. The second month the ten Brahmas weighed seventeen

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OIL-GAS TRACTOR

HAS PROVED ITSELF TO BE

- The Best Kerosene Burner.*
- The Best Threshing Engine.*
- The Strongest Built Plowing Engine.*
- The Easiest Engine to start.*
- The most Accessible in All Its Parts.*

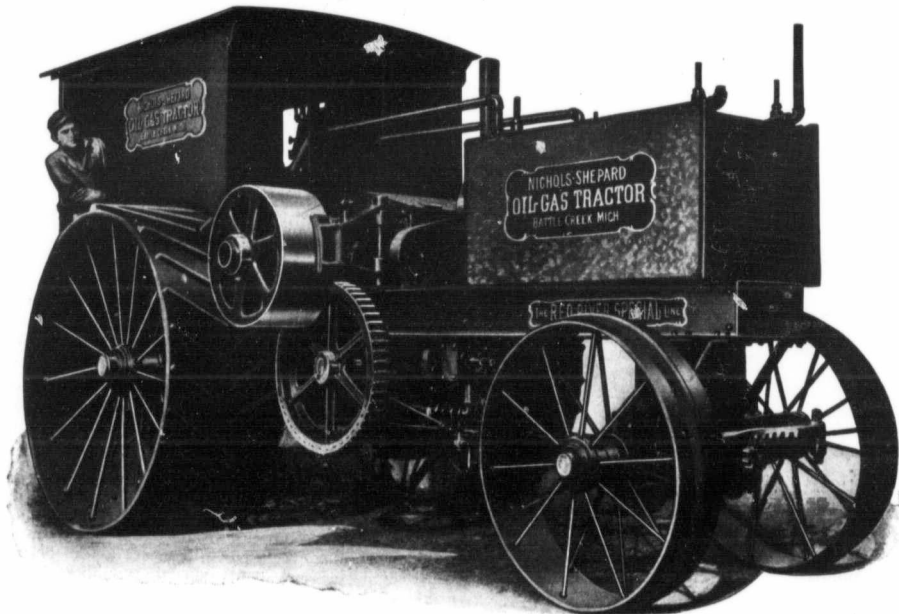
AMONG ALL THE GAS ENGINES BUILT

- It has the Heaviest Gearing and the Largest Shafts.*
- It drives a Separator as Steadily as a Steam Engine.*
- It DOES NOT shake apart.*
- IT IS DEPENDABLE POWER, and may be so equipped as to be Water Cooled or Oil Cooled.*

It has Pickering Governor—Kingston Carburetor,—and is equipped with Battery and Magneto.

It is not a Gold Brick.

It is an INVESTMENT.



Nichols-Shepard Oil-Gas Tractor (Right Side). Built in 22 and 35 Horse sizes.

John Segerborg, Rolla, North Dakota, who bought 35 Horse Engine and 36 x 56 Red River Special separator with all attachments in 1913, says:—

"My machine is the talk of the country; your Tractor is the only one for long service; is as strong and simple as a steam engine; does not run at the dreadful speed of some of the light Tractors. We started the engine just as easily on the coldest morning as we did on any other morning."

John A. Steff, Hingham, Montana, says:—

"The 22 Horse Oil-Gas Tractor is doing good work pulling five 14 inch plows and discs in sod."

E. B. Scott, Olivet, Michigan, has plowed and threshed all season with a 22 horse Oil-Gas Tractor, and says:—

"I would not buy another steam engine. I am satisfied with this engine's performance."

Haven Hubbard, New Carlisle, Indiana, has a 22 horse Oil-Gas Tractor. He says:—

"It has always shown sufficient power to pull 5 gang plows in heavy, black Indiana soil and has given us good service in every respect."

O. C. Boggs, Joplin, Montana, says:—

"The 22 horse Oil-Gas Tractor purchased from you is certainly the best one in this country and all you claim for it. We are pulling six 14 inch gang plows, plowing an average of 15 acres per day of ten hours."

Engberg Brothers, Lothair, Montana, say:—

"The 22 horse Oil-Gas Tractor purchased this Spring is running fine and doing excellent work. We pulled five 14 inch plows with disc behind in tough Montana sod with frequent patches of hard pan."

August Hyer, Syracuse, Nebraska, has a 22 horse Oil-Gas Tractor. In pulling six plows, plowing 6 to 7 inches deep. Says engine is splendid threshing engine.

Send for Special Catalog No. 3

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MICHIGAN

Sole Builders of the Red River Special Line of Red River Special Threshers, Steam Traction Engines, Oil-Gas Tractors, Universal Self Feeders, Stackers, Weighers and Supplies.

Regina, Saskatchewan.

Winnipeg, Manitoba.

PRACTICAL TALKS TO THRESHERMEN

CONDUCTED BY PROFESSOR P. S. ROSE

Talk No. LXXIII

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

WHILE alcohol may always be considered as a possible fuel for internal combustion engines in case petroleum products reach too high a price or become exhausted, it is not worthy of serious consideration at the present time. It sells for too high a price and this is because it costs too much to manufacture. All the talk a few years ago about denatured alcohol was for political effect merely. Besides, there was no intention to encourage the manufacture of denatured alcohol. The rules and regulations governing its manufacture were framed in such a way as to make it practically impossible for any farmer to operate a still. It was one of those sick political moves for which this country has become famous, designed to further some person's candidacy for office or to obscure a more serious issue. At the present price of about thirty cents for alcohol it is much more expensive than gasoline at present prices.

The relative costs of the various fuels for power purposes are set forth in the following table taken from page ten of Farmer's bulletin No. 277:

times by tractors that burn distillate. Last year at Winnipeg, with kerosene at ten cents a gallon, several of the tractors developed a brake horse power for an hour for less than 1.85 cents. With distillate at four cents a gallon they could easily have equalled the record for crude oil shown in the table. As a matter of fact, many of them are equaling that record in daily practice in many parts of the West. In view of these facts, it is evident that it will be many years before alcohol will become a serious competitor of the petroleum fuels. However, it is rather comforting to know that after the petroleum is all exhausted we can still find a suitable fuel for all power purposes and that the gas engine will surely exist as long as crops continue to grow or man inhabit the globe.

Since the petroleum fuels will continue for many years to come as the principal fuel for gas engines, let us examine them a little more closely. As pointed out in the last lesson petroleum, as it comes from the wells, varies greatly in composition in different parts of the country. In some parts it contains very little of the

ing value per pound varies also but not to a very great extent, the range being from about 20,000 to 21,200 heat units. Of course, the heavier oils contain the greater heating value. Kerosene has a value a little below 20,000 and gasoline about 19,000. Distillate, which is the next grade of oil obtained during distillation after kerosene, contains about the same heat value as kerosene only perhaps a trifle higher. It is considerably heavier than gasoline, volume for volume, and so contains much more heat per gallon. It is much like kerosene but of a straw color and not refined. It sells for about three and a half to four cents a gallon at the refineries and at slightly higher prices at a distance therefrom, depending upon the freight rates. It is a very cheap fuel in engines adapted for its use. Generally when used it is found advisable to put in a certain amount of gasoline, especially if the load is at all variable.

In considering the matter of relative heating values of the different fuels the fact must not be lost sight of that all gas engines are heat engines. They operate by turning the heat of the fuel into work. Consequently it follows that the greater the heating value of a fuel the better it ought to be for producing power. This would always be the case provided engines were available that would work efficiently with that particular fuel. But in order to do so they must be designed particularly for the given fuel. A gasoline engine may be very efficient as such and yet make a miserable showing on kerosene. Likewise, an engine that can burn kerosene may not be able to burn crude oil at all. In fact, none of the tractors now on the market can burn crude oil. The best any of them pretend to is to burn distillate and not all of those making such claims are able to live up to them efficiently.

When an engine can burn the heavier fuels efficiently it should produce power on fewer gallons than an equally efficient engine burning a lighter fuel because it does not require such large volume to obtain the same number of heat units.

There is a great deal of interest being shown in kerosene engines as well as in engines that will burn cheaper grades of fuel. Every manufacturer is experimenting for he realizes that the time is right at hand when all farm engines will have to use

kerosene, distillate or crude oil. Gasoline is going up in price so rapidly that it will be prohibitive within a few years. Engines which will burn either distillate or kerosene will meet all demands for many years to come for farm work. For heavy power work crude oil engines of the Diesel or semi-Diesel type will best meet the requirements.

While the use of distillate has been advocated by the tractor people for a number of years and there can be no valid objection to its use, it is rather curious to learn that several of the western states will not allow it to be sold to their people. Their oil inspection laws make no provision for fuel oils aside from gasoline and this must come up to a certain standard. This is the condition in both North Dakota and in South Dakota. The result is that the people of those states are annually losing thousands of dollars because the laws are archaic.

As a matter of fact, there is very little excuse or need for oil inspection laws any more. Years ago when gasoline was a by-product the refiners used as much of the volatile constituents as possible in the kerosene. The result was that considerable was marketed that was not safe and laws had to be passed to protect the public. Since gasoline has come to be the product most in demand the tendency is to take all the volatile constituents possible out of the kerosene and even to lower the grade of gasoline to the limit. In fact, it is a question if we would not be better off without oil inspection entirely, at least this is the view expressed by the National Gas Engine Association at their last meeting in Milwaukee. They passed a resolution which reads as follows: "It is the sense of this convention that the oil inspection laws in Wisconsin and similar laws in the United States are a burden to the consumer and unnecessary."

While it might not be wise to rescind all laws bearing on oil inspection, it is a fact that many of them merely tax the consumer without in any way protecting him. What certainly is needed badly is a revision of the various laws bearing on oil inspection to make them conform to the changed conditions brought about by the adoption of the gas tractor. This is a matter that should be taken up by the legislature next winter.

COST OF ENERGY IN FUELS

Kind of fuel	Cost of fuel	British thermal units (B. T. U.)	Number of B. T. U. for \$1.
Small anthracite	\$2.50 per ton	12,500 per pound	10,000,000
Large anthracite	6.25 per ton	14,000 per pound	4,500,000
Illuminating gas	1.00 per 1,000 cubic feet	550 per cubic foot	550,000
Natural gas	.10 per 1,000 cubic feet	1,000 per cubic foot	10,000,000
Crude oil	.04 per gallon	20,000 per pound	3,650,000
Kerosene	.10 per gallon	20,000 per pound	1,200,000
Gasoline	.30 per gallon	20,000 per pound	400,000
Do.	.10 per gallon	20,000 per pound	1,200,000
Do.	.30 per gallon	20,000 per pound	400,000
Crain alcohol	.30 per gallon	12,000 per pound	270,000
Do.	.40 per gallon	12,000 per pound	200,000

FUEL COST OF POWER

Fuel and type of plant	Fuel required per horsepower per hour	British thermal units required per horsepower hour	Thermal efficiency	Cost of Fuel	Cost of fuel per horsepower per hr.
Anthracite coal:			Per cent		Cents
Large steam plant	2 pounds	25,000	10	\$2.50 per ton	0.25
Do.	2 pounds	25,000	10	6.25 per ton	.57
Small steam plant	7 pounds	100,000	21	2.50 per ton	1.00
Do.	7 pounds	100,000	21	6.25 per ton	2.20
Producer gas plant	14 pounds	14,000	18	2.50 per ton	1.4
Do.	14 pounds	14,000	18	6.25 per ton	.31
Do.	2 pounds	25,000	10	2.50 per ton	.25
Do.	2 pounds	25,000	10	6.25 per ton	.57
Illuminating gas	2.4 cubic feet	12,000	20	1.00 per 1,000 cubic ft.	2.20
Crude oil	1.4 pints	25,000	10	.04 per gallon	.68
Gasoline	1.1 pints	13,400	19	.15 per gallon	1.70
Do.	1.1 pints	13,400	19	.30 per gallon	3.40
Alcohol			a19	.30 per gallon	5.00
Do.			a19	.40 per gallon	6.70

a Efficiency of alcohol is assumed to be the same as that of gasoline for identical conditions of use

An examination of the table will reveal the fact that crude oil is by far the cheapest fuel aside from producer gas available for internal combustion engines. The cost is given as .68 of a cent per brake horse power hour. With fuel at four cents per gallon this is not an unusual performance; in fact, it has been equalled many

times by tractors that burn distillate. Last year at Winnipeg, with kerosene at ten cents a gallon, several of the tractors developed a brake horse power for an hour for less than 1.85 cents. With distillate at four cents a gallon they could easily have equalled the record for crude oil shown in the table. As a matter of fact, many of them are equaling that record in daily practice in many parts of the West. In view of these facts, it is evident that it will be many years before alcohol will become a serious competitor of the petroleum fuels. However, it is rather comforting to know that after the petroleum is all exhausted we can still find a suitable fuel for all power purposes and that the gas engine will surely exist as long as crops continue to grow or man inhabit the globe.

A Good Belt Saves Power Lessens Cost of Threshing

When the Threshing outfit is running at top speed, and time and daylight are valuable, a stop costs money.

The Belt breaking, slipping, or stretching, means an idle gang on full pay while repairs or adjustments are made—a big item.

The Goodyear Thresher Belt will not slip. Its heavy rubber surface grips the pulleys with the close, clinging contact that carries *all* the power. No waste—no leakage of power with this belting. Goodyear Thresher Belting Grips.

It is worth while to think of this when buying your Belts. Goodyear Belting is pliable under any weather condition—does not stiffen with frost, or harden and crack with heat.

GOODYEAR BELTS CANNOT STRETCH. Hard long-fibre cotton, impregnated with rubber under tremendous pressure, is "cured" while stretched to safety limit in a special machine, and any "stretch" in service is therefore impossible.

GOODYEAR THRESHER BELTS ARE DURABLE. The finished Belt has a rubber covering which water cannot penetrate. The inner fabric is completely protected from the elements. Water cannot get into the fabric and start rot. The seam cannot open—it is sealed with pure rubber fused onto the outer covering.

Every Belt
Stitched

GOODYEAR Thresher Belting

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on your
new Thresher

GOODYEAR THRESHER BELTS HAVE ENORMOUS STRENGTH.—Layer upon layer of hard cotton fibre, every strand separated and penetrated by rubber, and the whole hydraulically compressed into a solid and inseparable mass—the prodigious strength of pure cotton with the pliability and tenacity of rubber. The splicing is carefully made. It will last the life of the belt.

Threshermen by their repeat orders prove that Goodyear Thresher Belts live up to our claims. Not one was returned last year.

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Send to our nearest branch for a copy.*

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The Thresherman's Question Drawer

ANSWERS TO CORRESPONDENTS

Q. E.K. 1. I have an Advance 22-horse power engine equipped with a Waters governor, but it has never run steadily. Can you tell me what is the trouble with the governor? Do all Water governors set in this way?

2. How do you drain a steam gauge in cold weather?

3. Do you think black oil is a good thing to use in a boiler to prevent scale or would you recommend a compound?

A. 1. Waters governors are generally considered good governors. They have been on the market for years and are used by some of the best engine companies. The one you have is either not properly adjusted or else an accident has occurred to it. We recommend that you take hold of the governor balls and find out, by moving them in and out, if the valve sticks anywhere. It may be that there is a drop of varnish on the valve stem that prevents its free action or it may be slightly bent. Again, the packing may be a little too tight or the belt that runs the governor may be either too loose or else greasy. Go over the whole governor carefully and by working it back and forth endeavor to find if it binds any place.

2. Steam gauges are equipped with syphons that automatically drain the gauge as the steam goes down. All that you have to do is to see that the gauge does not freeze while the engine is cooling off. This you can do quite easily by wrapping a blanket about the gauge and letting it fall down over a part of the boiler so that the heat from the boiler will not be radiated too fast.

3. We do not recommend the use of black oil or any other kind of oil in a steam boiler. The action of oil will prevent the formation of scale to a certain extent, but it forms a bad scale itself that is just as objectionable. Neither do we recommend the use of a boiler compound unless one is found that is particularly adapted to the kind of water in your vicinity. Different kinds of water require different kinds of compounds and no one compound can be found that is suitable to all kinds of feed water. For that reason we do not like to recommend their use, although when the right compound is found it is a great help to the man who has charge of the steam boiler.

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

A. We find on referring to a leading gas engine authority, the following results of a test of the heat distribution in a 500-horse power gas engine: 24.9 per cent of the heat supplied was turned into useful work; 5.58 per cent was used up in friction and pump work; 34.22 per cent was lost to the jacket water and 36.3 per cent went out by way of the exhaust, and by radiation from the entire engine. The figures for heavy gas engines such as this will apply fairly close to small gasoline engines as well, with the exception that a greater percentage of the heat supplied will be used in friction and pump work and more will be lost to the jacket water. The exhaust losses will be about the same. Tests made on a small engine by the writer several years ago bear out this statement. Roughly speaking, we may say that one-third of the heat is lost to the exhaust, one-third to the jacket water and the remainder is divided between useful work, engine friction, radiation, etc. The ordinary small farm gasoline engine will show a heat efficiency of from twelve to fifteen per cent.

Heavily loaded engines of the throttle governed type exhaust harder than engines with a light load because under heavy load a full charge is taken into the cylinder on each suction stroke. Hit and miss governed engines take in a full charge on each charging stroke and consequently their exhaust is always of the same intensity, but they occasionally miss a power stroke due to the action of the governor. A muffler of proper construction will not cause very much back pressure. Recent tests on an automobile muffler showed a slight loss of power at certain speeds and even again a power at other speeds. The opinion of the engineers in charge of the

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And yet these beltings will cost you no more than you are asked to pay for others.

Let us show you how "STAR" and "LUMBER KING" Beltings are made, then you will understand why these beltings must be better.

Listen to the clang and whir of one hundred ponderous machines in our belting plant—each doing its allotted part with infallible accuracy.

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Note how little chance there is for human carelessness or inefficiency to mar the perfect work.

That is scientific belt making—factory pride in its products—reputation jealously guarded.

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For forty years we have been making beltings in this way—always with that unwavering care and determination to produce belts that would be better.

And we learned every lesson that forty years' experience could teach—profited by it and added to it by a close study of Canadian climatic and working conditions.

And now, the oldest, largest and best equipped plant in Canada is ready to make thresher belts for you.

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Belts that will give you More and Better Service than you have ever had before.

Your profits from threshing this season will depend to a great extent upon the belts you use. Why take chances with inferior beltings when you can just as easily get "STAR" or "LUMBER KING?"

Look over our List of Branches and Write the nearest for any information you require.

THEY WILL GIVE YOU EVERY ATTENTION.

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KOAL!

To buy or not to buy
 — and where? —
 that is the question!

THRESHERMEN and Steam Plow Operators can secure their requirements of genuine Youghiogheny Steam Coal direct from the miners as follows:

Youghiogheny Run of Pile \$3.78 f.o.b. Fort William, Port Arthur and Duluth
 Youghiogheny Screened Lump \$4.08 " " "

N.B. Screened Coal cannot be shipped to C.N.R. points as the Canadian Northern Dock Co. will not screen soft coal. We recommend run of pile to all of our customers as best value in relation to price.

Remember our Coal is PITTSBURGH YOUGHIOGHENY the most famous Steam Coal in the world.

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Egg and Stove \$6.75 per ton f.o.b. Fort William, Port Arthur and Duluth
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320 MAIN STREET, WINNIPEG, CANADA.

test was that a properly constructed muffler does not cause a loss of power. Gas engines have been compounded but they were not successful. The friction of the piston and other moving parts in the low pressure cylinder is said to have absorbed practically as much energy as the exhaust gases from the high pressure cylinder contained. We have no record of a successful attempt to apply a rotary steam engine to a threshing engine. Rotary engines of small size have never shown remarkable economy and we see no reason for attempting experiments in this direction. Engines using high pressure super heated steam build after the German locomobile engines hold greater promise in the way of development than any other type yet developed. These engines are of the reciprocating type and are located in the path of the hot gases from the furnace, thus preventing the loss due to the cylinder condensation and abstracting a certain proportion from the free gases.

Q

Q. E.J.D. 1. Can a 20-horse power Russell Compound engine be lined up for babbiting without removing piston, if so, how?

2. The same engine pulls well in the belt but is weak on the road. What might be the reason?

3. Can the valve in the steam chest of a Minneapolis compound

engine be set to do more work on the reverse than on the forward motion or should the valves be set alike on both sides?

A. 1. We do not know of any certain method of lining up an engine without taking out the piston and connecting rod and running a line through the center of the cylinder in accordance with usual custom.

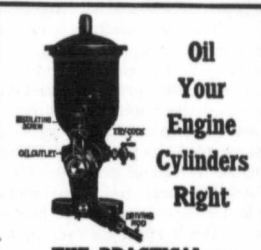
2. The fact that your engine runs well in the belt and does not run well on the road must be due to a foggy setting of the valve. We suggest that you take the steam chest cover off, throw the reverse lever forward, then put the engine first on one dead center then on the other and observe if the lead is the same in both positions. Now reverse the engine and go through the same operation. This will indicate to you whether the valve is set correctly or not. Since you will be unable to observe the lead directly you will find it necessary to use a pair of dividers. Make a small prick punch mark on the stuffing box and mark the valve stem, then, when the engine is in the reverse position, you can tell if the valve returns to the original dead center location. If it does not, it is evident that the setting is not quite right. As we remember, the Giddings valve has a mark on the valve and also on the face of the valve seat, which two marks should coincide when the engine is on dead center.

3. The Minneapolis compound engine uses a Woolf valve and Woolf reverse gear and when the eccentric is set right and the engine is on dead center, the valve will not move when the reverse lever is shifted backward and forward. This condition exists only when you have a valve gear which has constant lead. The Woolf valve is supposed to have the same lead whether the engine is running forward or back, but if you will observe closely when the engine is in the reverse movement you will find that the valve does not open the ports quite as wide as when the engine is running in the belt. It is possible by shifting the valve slightly on its stem to give a little more lead on the reverse motion and consequently a little wider port opening, which will increase the power. All you need to consider in making this adjustment is the high pressure of the valve. If that is set correctly, the low pressure ports must open and close accordingly.

Q

Q. J.T.L. Which do you consider the cheapest power for threshing, gasoline or steam? Which is the cheaper on the road? Will a gas engine last as long as a steam engine?

A. It is impossible to answer such questions as you have asked, for the simple reason that conditions are not the same in all parts of the country. You will



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 Right

THE PRACTICAL FORCE-FEED OIL PUMP

"The Great Cold-Weather Lubricator"
 Will feed the oil regularly and positively, winter and summer—is not affected by heat or cold—pumps heavy oil as well as light—cold oil as well as hot—dirty oil as well as clean.

No matter how cold the weather is, when you start your engine, the pump starts feeding. Keep the oil bowl filled and the pump does the rest.

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The most simple oiling device ever produced. It has no ratchet wheel, pawls, springs, eccentrics or anything of that sort to cause trouble—only two pieces do the pumping and are made adjustable for wear. Entire pump can be taken apart and put together in ten minutes—a monkey wrench the only tool needed.

Guaranteed to furnish plenty of oil for and properly lubricate a traction engine of any make or size, single, double or compound. Write for Catalog and full information

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 WINNIPEG, MAN.

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find certain locations where gasoline power is much cheaper than steam and other places where steam is cheaper. Any general statement we might make would necessarily be wrong. Every problem must be considered in connection with local conditions. Where coal is cheap and water is good, the steam engine is cheaper. In other sections of the country where water is bad and liquid fuel is reasonable in price you will find the tractor more economical. We have no information at hand as to which engine, the gasoline or steam will last longer. In our estimation, there is not much difference.



Q. C.P.D. 1. I have had trouble with the fan belt on my new separator. I have had to set up a stake beside it to keep it from running off the pulley. One of the company's experts was here and he failed to correct the difficulty. What is your advice?

2. What is the best packing for a cross-head pump?

3. What is the best thing with which to cool a cylinder bore and what will keep it from heating?

A. 1. If we were called upon to look over the job we would first find out if the pulleys were in line with each other and then examine the belt itself. We suggest that you do this.

2. The best packing for a cross-head pump is patent ring packing of the right size to fill the space between the packing box and the plunger. If it is not convenient to obtain this packing use braided hemp which has been soaked in oil and graphite.

3. The best treatment for a cylinder box after it has heated is to take it apart and scrape all the dross and rough places, then see if the shaft is perfectly smooth. Put the box together again and use hard oil and graphite. Be careful in running that you do not have to drive belt too tight.



Q. F.L.H. I have a 4-horse power steam engine with a vertical boiler in which I have been using steam one hundred pounds pressure. If I should have iron bands four inches wide and a half inch thick shrunk around the boiler, could I increase the pressure to two hundred pounds and in doing so can I increase the engine to 8-horse power? How much does a jacket increase the efficiency of a boiler in cold weather? Also is super heated steam more powerful than saturated steam? Is it dangerous to run with the governor belt off? How much more power will an engine develop with a heavy fly wheel?

A. Your plan of shrinking iron

bands around your vertical boiler will certainly increase its strength a great deal. We should think possibly enough to enable you to carry double the pressure, provided you do not leave more than four inches between the bands. Carrying higher pressure would slightly increase the power of your boiler and the high pressure steam would increase the engine power, but you must not lose sight of the fact, that, if you double the engine power, you will need about twice the weight of steam you are now using. If your boiler is crowded to supply the engine at the present time, it will not be able to supply the engine when you increase the pressure. We do not ordinarily advise a makeshift such as you suggest. It might work out all right but without looking the situation over personally the writer does not care to be held responsible for advising you to go on with your plan. Whenever you put a band about a boiler you increase the thickness of the metal at that point and it is possible, if other conditions are not right that the plate may become overheated under the band and be thus greatly weakened. Furthermore, in shrinking bands about a boiler it is hardly possible that they are all put on at the same tension and so one band may be obliged to carry a great deal more than its share of the load.

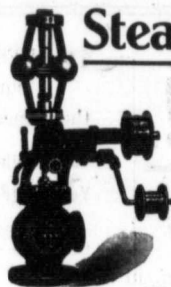
The use of a jacket on a boiler will increase its efficiency a considerable amount, depending largely upon whether the boiler is in an exposed position or sheltered from the wind and weather. The amount of radiation in cold weather where the boiler is subjected to quite a strong wind is enormous in the writer's estimation and may be equal to fully a quarter of the boiler capacity. This cannot all be saved, but the greater part of it can be with proper jacketing.

Super heated steam contains a deal more heat pound for pound than ordinary dry saturated steam, consequently is more powerful. There is less cylinder condensation and consequently less loss in this cylinder through initial condensation. Super heated steam is now used in the best stationary steam plants where an effort is made to obtain high economy of fuel.

We do not advise running with the governor belt off. It is dangerous and in most cases unnecessary. A heavy fly wheel does not increase an engine's power. It merely makes the engine run a little steadier.



Q. W.T.H. I have a 20-horse power boiler which is rusting under the jacket. I intend to tear the jacket off and paint the boiler,



Steam or Gas Tractors

Equipped with

PICKERING
THE GOVERNOR WITHOUT JOINTS

give greatest efficiency

FITTED TO EVERY BUILD OF ENGINE

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

The Pickering Governor Co.

PORTLAND

CONN., U.S.A.

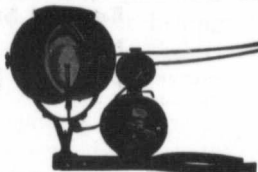


TRADE MARK (REGISTERED)

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SPARK ARRESTER

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



ACETYLENE GAS HEADLIGHT

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

FLUE CUTTER

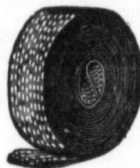
You need this tool to get ready for your Spring Plowing. Is adjustable in length and size. Cuts the flue without burring the end. Try it.

Estate of E. M. POPE, Watertown, S. Dakota, U. S. A.
Send for Catalogue and Price List to

THE MAYTAG COMPANY, LIMITED, Winnipeg, Man

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ENDLESS STITCHED CANVAS BELTS



T 10. Our "Reliable" Belts are the heaviest and most durable offered. They are made on full weight 32-oz. duck. They are filled with pure lined oil, pressed with the new and improved hydraulic machine process, making the belt exceptionally pliable and durable. They are impervious to heat, cold, steam, gas or acid fumes. All belts will stretch some. The "Reliable" will stretch but little. It is made on a special weave of duck of proper width for each size belt, giving a proper salvage and even strain on both edges. You will find our "Reliable" Drive Belts the best and most durable and pliable you ever used.

100 ft., 7 in. x 4-ply.....	\$26.00	120 ft., 8 in. x 4-ply.....	\$36.00
100 ft., 7 in. x 5-ply.....	\$32.00	120 ft., 8 in. x 5-ply.....	\$42.00
100 ft., 8 in. x 4-ply.....	\$30.00	150 ft., 7 in. x 4-ply.....	\$29.50
100 ft., 8 in. x 5-ply.....	\$38.00	150 ft., 7 in. x 5-ply.....	\$45.00
120 ft., 7 in. x 4-ply.....	\$29.50	150 ft., 8 in. x 4-ply.....	\$43.00
120 ft., 7 in. x 5-ply.....	\$37.50	150 ft., 8 in. x 5-ply.....	\$49.50

Catalog of Full Line of Thresher Supplies sent to your address free

C. S. Judson Co., Ltd., 181 Market St. WINNIPEG, Man.

Full Price List on all kinds of Oils sent free on request. WRITE TODAY

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Have you Renewed
Your Subscription ?

Value and Service IN **THRESHING BELTS**

NOTHING rankles a man's feelings so much as time lost and money wasted on belt breakages in the middle of threshing. Few things are so common as common belts. If you would **Save Money** and effect a positive assurance against this curse, get the **Best Quality** and the **Best Value** that is made or can be made. It is **Cheaper** than the lowest priced belt. It is either the



LION BRAND

Rubber Belt

or the

MAPLE LEAF

Endless Thresher Belt



Any Thresher Company can supply you with our belts. In fact the majority use them exclusively. Don't accept a substitute, you will regret it just when you most need belt service. If you have any difficulty in getting our goods, write direct to the

GUTTA PERCHA AND RUBBER LIMITED

WINNIPEG

Not in any Trust or Combine

CALGARY

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but don't know what kind of paint is best adapted for that kind of service.

A. It is generally considered that metal work which is exposed to the heat should be painted with graphite paint. This will stand a higher temperature than any other paint. The next best paint to use is asphaltum paint.

The Dependable Every-Day Folks

Most of us consider ourselves fortunate if, year after year, we can make ends meet, with just a little over in provision for the rainy day. A few do more than this; a very few much more, but a great many do even less; and yet those who cheerfully follow their calling with what industry and skill they can bring to bear, and who find themselves at the end of the year square with the world plus a little something over, have no reason to complain and are fairly entitled to be rated with the successful.

To pay our debts as we go along, to be honest with our neighbors, to lend a hand wherever it is needed, to bear our

share of the duties of citizenship, to join in the welfare work of the community, and to raise up sons and daughters worthy to succeed us when we go hence, is not to live in vain.

The great world is impelled forward and upward by the efforts of the cheerful, dependable, everyday folks, rather than by the genius who flashes meteor-like across the horizon for a moment and leaves us in darkness and bewilderment, or the idle and frivolous joy-riders who pass us on life's highway, leaving us to inhale their dust and the fumes of their gasoline. There is no lasting joy save that which comes from the secret consciousness of worthy work well done; all else is vanity and vexation of spirit.

Cultivation of Trees

When trees are planted in the dry-farm country constant cultivation is absolutely necessary until the tops of the trees grow together sufficiently to choke out all growth of weeds and grass. The rainfall in the prairie districts is so small that every acre must be employed to preserve what little soil moisture there is.

Surface cultivation is the best method of accomplishing this, as it keeps a loose covering of soil, which acts as a mulch, retaining the moisture in this way. The single horse scuffler or cultivator is the best implement for this purpose. The hoe is of little use by itself, except to cut off the larger weeds and for working close around the roots of the trees, as it does not stir the soil sufficiently unless a great deal of time is spent on the work.

The number of times it will be necessary to go through a plantation depends a good deal on the season. After a heavy rain, when the ground is dry enough, the cultivator should be always run through in order to prevent the formation of a crust. After the third season cultivation should no longer be necessary. In any case, cultivation should always cease before the end of August each year so that the trees will not be encouraged to grow too late in the fall, as the early frosts would then be liable to cut back a large portion of the new wood.

Mulching with straw or manure is quite often done, but cannot be recommended unless it is absolutely impossible to find time to cultivate. Clean straw is better than manure as it takes longer to

decay, and weed seeds do not so readily germinate in it.

Owing to the strong reflection from bright straw many recommend hay as being the best for mulching.



Of the Picture Variety

"Here, Tommy," said the busy merchant, handing his office-boy some silver, "run out and get me fifty postcards. Be quick about it!"

The boy went, but did not return.

Time passed; four o'clock came, but the boy did not.

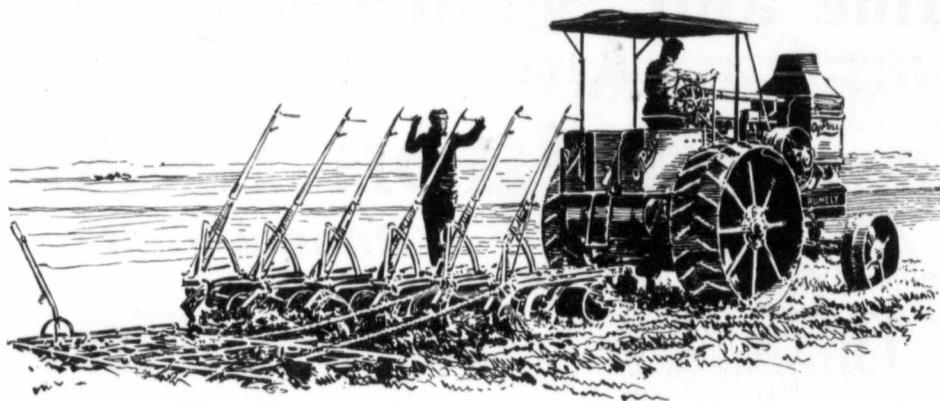
At last, on the stroke of five, the lad entered, with the confident air of one who has done his duty nobly.

"Goodness, Tommy, you've been a long time getting those cards!" exclaimed the merchant—only he didn't say "goodness!"

"Well, sir," explained the lad, "I had to pick 'em out. You wanted pretty ones, didn't you?"



Daughter: "This piano is really my very own, isn't it, pa?" Pa: "Yes, my dear." "And when I marry I can take it with me, can't I?" "Certainly, my child, but don't tell anyone. It might spoil your chances."



Get Ready for Fall Plowing Now

Don't worry through another plowing season depending upon your horses for power—order your tractor outfit **now**. You'll be able to plow deeper. You'll finish your work in shorter time. You'll not have to pay out as much for labor. You'll be able to make a big cut in your winter feeding bill. You'll be winner on the proposition in every way.

Engine Gang Plows

The Rumely Engine Gang Plow will tackle any sort of plowing job—and handle it successfully. One user says: "It runs light, handles easy, and lays the sod nicer than anything I have ever seen." And there are scores of other users who will say the same thing—look up the one nearest you and ask him. Or send for our plow data-book, which shows where the Rumely Engine Gang Plow is best.

If you're looking for a disc plow, you should investigate the Rumely-Sanders. It is an exceptionally light draft plow and will go through heavy, sticky soil—the discs are self-cleaning. The frame is practically unbreakable.

Oil and Gas Tractors

The Oil Pull is an ideal tractor for plowing, because of its close regulation. It's ready with the extra power when you strike a rise in the land—when you run into a soft spot, the engine won't race. The Oil Pull will run your separator in the same way—steady and even under changing loads. Oil Pull is built in three sizes: 15-30, 25-45 and 30-60 h.p.

The 15-30 Gas Pull is a light weight, gasoline-burning tractor. We call it the many-job tractor because of its all-around usefulness.

The 40-80 Tiger Pull is a power giant that is built to do the heaviest work of the biggest farms. Burns gasoline—fuel capacity is 110 gallons, enough for several days' work.

Steam Engines

If you prefer the power of steam, you will find in the Gaar-Scott and Rumely lines an engine of just the size and power for your needs. There are engines in these lines of the single, double and tandem compound types—sizes range from 12 to 36 h.p. in traction and 36 to 110 h.p. in belt work.

These lines of steamers have been on the market for many decades. The care taken in their design and manufacture, and the excellent service these engines have given in the field have established the reputation of the Gaar-Scott and Rumely names. Before you buy **any** engine, read our catalogs, descriptive of these lines—a postal request will bring them.

It's not too late yet to get your Threshing Outfit

Our giant loading cranes are working night and day to load engines, tractors and grain separators for rush shipment. If you want to go out after your share of the profits from threshing, get in touch with us **now**—let us tell you how soon we can deliver your outfit.

**THERE IS A RUMELY DEALER NEAR
YOU—ASK US FOR HIS NAME**



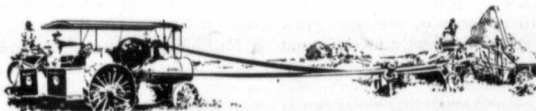
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RUMELY PRODUCTS Co., Inc.

Power-Farming Machinery

La Porte

Ind., U.S.A.



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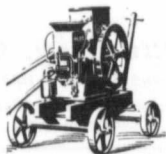
You Can Always Keep Your Engine Busy

There are so many uses for a gasoline or kerosene engine that you can keep one busy practically all of the time. Olds and Falk Engines are built in sizes from 1½ to 65 horsepower—a power plant for every need.

Our line also includes machines to be run by these engines—machines for sawing, pumping, baling, silage-cutting and feed-grinding. Some of these are offered in combination rigs—the engines mounted on the same truck with the machine, making a complete outfit, ready to run.

Engine power is cheaper than horse-power or man-power. It is always ready, never tires, works for just as long stretches as you want it to. Winter and summer, it stays on the job, working steady for the same low wages just the cost for fuel.

Before Buying—Investigate These Two Lines



RUMELY-OLDS ENGINES have behind them more than thirty years of engine-building experience. They are simple to understand, easy to operate, because they are made of the fewest possible number of parts. That also means cutting out of frequent repair bills and results in more power, because in this engine less power is used by friction-producing parts. Olds engine cylinders have breaking plates that make the cylinders frost-proof. Connecting rod and crank shaft are exceptionally strong—all working parts are amply lubricated. These engines burn gasoline—a special mixer is used that gets maximum power from the fuel.

THE FALK KEROSENE ENGINE burns kerosene at all loads, all temperatures and all altitudes, using the same perfect Oil-Fuel System that has made the Oil-Pull famous. This makes its operating cost extremely low—an important factor to consider in buying an engine.

Booklets descriptive of either or both of these engines will be sent upon request, also the name of the Rumely dealer nearest you—write today.

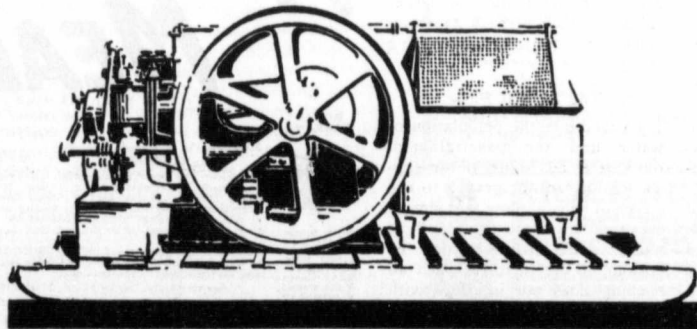


Rumely Products Company, Inc.,

Power-Farming Machinery

La Porte

Ind., U.S.A.



No. 811

CANADIAN BRANCHES

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Toronto
Winnipeg
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Good Farming

By W. E. TAYLOR

GOOD farming demands a strict observance of features, management and science. Two features are involved, namely, stock raising and growing crops.

Stock raising is the sheet anchor in maintaining fertility, and it is also the foundation of a profitable market for the farmer's products. The farmer who ignores stock raising is not a farmer; he is simply a miner and will be held accountable to future generations for robbing the soil of its fertility. The exclusive stock raiser is a party to the crime, for he is feeding products containing fertility which belong to soil that produced them, and the feeder, as a rule, wastes the manure from the stock which should be returned to the soil.

It must also be remembered that stock raising is successful and profitable only when the feeder observes three essential things, namely, breed, care and feed.

Farm management involves rotation and adapting the right crops to soils and conditions.

Tillage, or crop raising, involves four essential steps, namely, the seed bed, fertility, seed selection and cultivation. All of these features and steps are absolutely interdependent and the final production, whether it be stock or crops, will be in keeping with the one step or steps which have been neglected.

Scientific farming is not a complex, abstract proposition, difficult to master. It is simply complying with nature's natural requirements. The requirements of the growing plants are very exacting; their demands being not unlike our own.

Primarily, they require a good home; that is, a good seed bed. That home should be deep and roomy; it should be thoroughly aerated; it should be well supplied with moisture and stocked with an abundance of food. It should also be in such physical condition that capillary attraction is perfect, and in addition it should be well supplied with humus or organic matter.

If these requirements are all provided, the first and important step has been taken toward making a maximum crop.

Room for the Roots

The seed bed should be deep and roomy for the reason that plant roots should never be cramped. They are usually very abundant and the more room they have the greater is their ability to spread, absorb moisture and secure food. A plant root naturally takes the course of least resistance. If the seed bed is shallow and the bottom of the bed is a hard pan or extremely compact soil, the roots are very apt, when they reach that point, to spread outward following the more easily penetrated soils. In the event of a drouth such a seed bed will rapidly dry out and the plant roots will necessarily suffer for moisture and are very apt, if the drouth is of long duration, to perish. If the seed bed is made deep the roots, taking their natural course, will gain strength and stability to penetrate the more compact soils when they are reached, where they are reasonably certain to secure an abundance of moisture in the event of a drouth.

The seed bed should be roomy, deep and in a physical condition to facilitate rapid absorption of moisture. Such a seed bed acts as a surface reservoir not unlike a thick sponge, to receive and hold heavy downpours of rain until the water percolates into the deeper subsoils which serve as a storehouse for water to be used during the growing period.

The Subsoil Plow

To facilitate the percolation of water and the penetration of roots, it is advisable, if the subsoil is not sand or gravel, to use a type of subsoil plow that simply cuts a narrow gash to a depth of ten or more inches below the bottom of the furrow. Such an opening does not interfere with capillary attraction, but does admit air and water. If, however, a type of subsoil plow is used which has a wide duck-bill shovel or point, the hard pan or more compact soil will be broken up, leaving large air spaces which effect-

TWO THINGS ONLY ARE NEEDFUL TO A WORLD'S RECORD IN DAIRY PROFITS. THEY ARE BOTH "MADE IN CANADA"—AT YOUR VERY DOORS. ONE IS THE WONDERFUL FOOD PECULIAR TO WESTERN CANADA; AND THE OTHER IS THE

"MAGNET"
Cream Separator



THE "MAGNET" is as invariable and dependable in its operations as the course of Nature on the crop, because its construction adapts it perfectly to the process of extracting the last obtainable ounce of butter fat from the milk. It is **MADE IN CANADA** by men who have spent a lifetime in dairy mechanics. Its **SQUARE GEAR** precludes all the wobbling experienced in using the old "worm" system still employed on other machines. Its **RIGIDITY** and **ROCK LIKE STEADINESS** is in remarkable contrast to any other cream separator now being used in Western Canada.

Our Slogan is "TO SATISFY"—and we will do it at all costs. We will prove every point we claim for the superiority of the "Magnet" on your farm—at our expense

The Petrie Mfg. Co., Ltd.

Head Office and Factory: HAMILTON, ONT.

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Dr. Thomas' **Electric Oil**
Relieves all Pain in Man or Beast
25 Cent Bottles at all Dealers

Profit Results From Feeding
MOLASSINE MEAL
Made in England

ROYAL WARRANT

DENTONIA PARK FARM, East Toronto, Nov. 13th, 1912

Molassine Co. of Canada Limited Toronto, Ontario.

Dear Sirs—Itake much pleasure in informing you of the good results I have obtained from feeding "MOLASSINE MEAL" to my herd of Milch Cows. It keeps them healthy and adds to the quality and flow of milk. Since using "MOLASSINE MEAL" I find they have increased in weight and their coats are sleek and glossy. I can cheerfully recommend "MOLASSINE MEAL" to Dairymen and if used according to your directions, nothing but results can be obtained.

Yours very truly, (Signed) C. A. MORRISON, City Dairy Farm, Ltd., East Toronto, Ont.

"MOLASSINE MEAL" will produce just as profitable results for you—Try it.

MOLASSINE Co. OF CANADA LIMITED

WESTERN DISTRIBUTORS
The A. McDonald Co., Winnipeg, and all branches
Crown Feed and Produce Co., Calgary, Alta. A. S. Gavin & Company, Vancouver, B. C.

ST. JOHN, N.B. MONTREAL TORONTO

Look for this Trade Mark on every bag
Put up in bags containing 100 lbs. Ask your Dealer or write us direct.

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ually hinder the upward movement of capillary water. I have known land to be made absolutely unproductive for a number of years or until, through a settling process, the air spaces were obliterated, by using such an implement. If the gash is from 3-8 to 1-2 inch in thickness, practically all of the water which does not adhere to the soil particles will readily enter the opening where it will naturally spread out and upward, rotting and mellowing the compact soil.

If anyone doubts the activity and effectiveness of water when so stored, I would suggest the following experiment which is simple but effective. Lay a tight board floor on another floor, leaving a crack in which water is poured. It will be seen that the water will spread outwards and upwards. The top boards will soon show dampness and finally become rotted.

After having carried on extensive experiments, both in dry sections where dry-land methods of tillage are necessary, and in territories where the annual rainfall is abundant but where there are occasional drouths, I am fully convinced that the type of subsoil plow I have mentioned solves the problem of storing water and also solves the problem of making hard pans and compact plow soles permeable to plant roots.

Disc Before Plowing

While we are storing water in the deeper subsoils, we must not lose sight of the fact that such water is absolutely useless unless we make provision to have it utilized. When we turn the furrow slice we naturally turn under lumps, stubble, trash and sometimes coarse manure. We all know that capillary water is stopped if large air spaces exist and we also know that lumps, trash, etc., are the causes of air spaces, hence, in order to obviate what too often has proven to be a calamity in semi-arid sections, the surface should be thoroughly disced before it is plowed. This implement not only pulverizes lumps, but it cuts up and works into the ground trash so that when the plow turns the earth the contact between the bottom of the furrow and the turned portion is compact. If the disc harrow is subsequently used, the entire seed bed is then put in a condition which is ideal both to stimulate the growth of roots and facilitate the movement of capillary water.

I am venturing no guess, nor am I advocating a theory when I say that if the farmer will follow the turning plow with the right type of subsoil plow and will use the disc harrow before and after plowing, he will have taken out an insurance policy against a total loss under the most adverse

rainfall condition and is reasonably sure of a bountiful crop if the rainfall is at all adequate.

If the farmer will follow the turning plow with the right type of subsoil plow and will use the disc harrow before and after plowing he will have taken out an insurance policy against crop failure.

The Surface Blanket

In semi-arid sections the broiling sun and hot winds will soon exhaust the moisture from the soil unless intensive methods are pursued to conserve it. The best means and practically the only feasible method is to form a mulch blanket which very effectually prevents the escape of moisture. This mulch must be renewed from time to time whether rain falls or not. The mulch prevents the escape of moisture through the process of capillary attraction because of the fact that the close proximity of the soil particles has been disturbed. In the event of rain the soil becomes compact and it is necessary to form a new mulch. After a mulch has been formed for a short period even without rain, the particles of soil adjust themselves and capillary attraction will ensue, hence it is very necessary to stir the surface soil from time to time whether it rains or not.

In sections where there is little liability of rain, a fine dust mulch serves best, but where rains are liable to occur, the mulch should be more of a granular nature for the reason that a fine dust will not readily absorb moisture, but a granular one will.

A mulch can be formed on soil where grains are growing by using the corrugated roller or a peg tooth harrow. If the land is very hard, the peg tooth harrow gives the best results. If, however, it is loose, the corrugated roller not only forms a mulch, but packs the loose soil around the rainfall condition and is reasonable roots of the plant. With corn,

Raw Furs

FREE

HALLAM'S TRAPPERS' GUIDE BOOK. 96 pages, illustrated—printed in French and English. Game Laws revised to date, tells you how, when and where to trap, bait and traps to use, and many other valuable facts concerning the Raw Fur Industry, sent absolutely free for the asking.

CAPITAL PAID UP.
\$400,000.00

We will also send you free for the asking, Hallams up-to-the-minute Raw Fur quotations and market report.

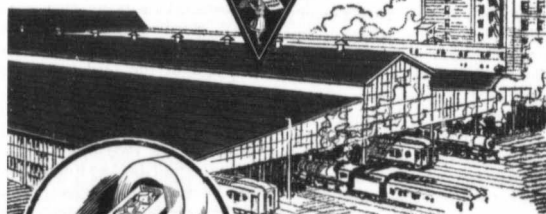
Over 100,000 Trappers and fur collectors all over Canada send us their Raw Furs because they know we pay highest prices and do all we claim—we pay express or mail charges on shipments, don't charge any commission, and send money same day Furs are received. Ask any Trapper who has shipped to us. Furs are fetching higher prices than ever now. We will send you price lists, tags, envelopes, etc. free. 1008

THE LARGEST IN OUR LINE IN CANADA

JOHN HALLAM Limited

Dept. 268
111 Front St. East
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A complete Kit inside each roll

Roofing That Stands the Test

Driving coal-gas and smoke from locomotives within—driving rain, snow and wind from the elements without, test a roof as does no other single use.

For this reason railroads choose their roofing material only after making most rigid tests. Of all roofings, NEPONSET Paroid Roofing stands this two-fold attack the best. That's why the Canadian Pacific and other railroads endorse and choose NEPONSET Paroid Roofing to cover their train sheds.

If it's economy for great Railway Systems in Canada and the United States to use NEPONSET Paroid—isn't it economy for you to use NEPONSET Paroid on your barns, your stables, your ice houses, your farm buildings?

Costs little to buy. Anyone can lay it. Made in Canada.

NEPONSET

Waterproof Building Products

Roofings

NEPONSET Roofings are a fire protection, leakproof and long lived. Anyone can lay them. NEPONSET Paroid Roofing is for green roofs. NEPONSET Paroid Roofing is an ornamental roofing for dwellings. Attractive colors.

Building Papers

If NEPONSET Waterproof Building Papers are built into walls and floors, the building will be warmer, will cost less to heat and will last years longer. Recommended by architects, engineers and building owners everywhere.

Wall Board

NEPONSET Wall Board is a scientific product which takes the place of lath and plaster; comes in sheets 32 inches wide. Remember, it is the only wall board with waterproof surfaces that requires no further decoration. Anyone can put it up.

Are you going to build? Write for more facts about the products in which you are interested. Send for samples, free booklet and name of nearest NEPONSET dealer.

BIRD & SON Est. 1893
[F. W. BIRD & SON] 863 Heintzman Bldg., Hamilton, Ont.
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RIDER AGENTS WANTED

In every town and locality to ride and demonstrate a sample 1913 "HYSLOP SPECIAL" bicycle furnished by us and fitted with coaster brake, roller chain, three-cell spring saddle, extension handlebar and other leading features. Good money can be made selling our bicycles, tires and sundries.

Our large production, together with unexcelled facilities and 25 years' experience in building bicycles, places us in a position to ship high-grade wheels direct from factory to user at LOWEST PRICES.

TEN DAYS' TRIAL We will send a wheel to any address in Canada on approval and allow 10 days' trial. It will not cost you one cent if you do not desire to keep it after that time. We can't afford to make this offer if we were not certain our wheels are the best value for the money on the market.

Write at once for new illustrated catalogue and full particulars of our attractive new offer and special prices.

HYSLOP BROTHERS, LIMITED
SHUTER AND VICTORIA STREETS, TORONTO, ONT.

NOTE—Mention name of paper when answering this advertisement.



oats, cotton, peanuts and other hoed crops, a mulch can be formed with a one-horse harrow or by dragging some rough weight, like a wheel, over the surface.

The character of the soil has much to do with its ability to absorb and retain moisture. For instance, a hundred pounds of clear sand is able to absorb and retain 25 pounds of water, sandy loam 40 pounds, clear loam 50 pounds, rich garden soil 85 pounds and a peaty soil 175 pounds. It is very evident, therefore, that the absorbing ability of soil depends largely upon the amount of humus or organic matter it contains.

Plants secure their food from the soil and atmosphere. Each particle of disintegrated rock, (the substance of the soil is made up of disintegrated rock) contains in varying quantities the following inorganic elements, namely: silica, phosphorus, potash, lime, magnesia, soda, sulphur and iron. The atmosphere contains the other necessary elements, namely, nitrogen, oxygen, hydrogen and carbon. Approximately 97-1.2 per cent of the dry substance of the plant is secured either directly or indirectly from the atmosphere.

The Farmer's Job

The farmer stands between these two great groups of elements, and is the real dynamic force ordained by the creator to make them available. While we may have all of the elements mentioned in abundance, they are absolutely valueless unless the soil contains a sufficient amount of humus, not dead humus but live, active humus.

Today, all over this country, farms are thought to be worn out and many of them are abandoned, when all they require is humus. This takes us right back to the first feature mentioned, namely, stock raising, the source of manure, the foundation of humus. Humus is the home of soil bacteria or soil laboratory workers, humus is the retainer of nitrogen, humus regulates the temperature of the soil, humus renders the soil of good tilth, humus permits of a free circulation of atmospheric oxygen through the soil and humus is indispensable in assisting to absorb and retain moisture.

Soil devoid of humus is as barren as pure St. Peter's sand, and soil deficient in that substance produces grudgingly.

Nitrogen is secured from the atmosphere by planting legumes. Carbon is breathed into the plant through the leaves in the form of carbon dioxide, and the amount absorbed depends upon the condition of the leaves. Oxygen is made available to plant roots by tillage methods and hydrogen is a component part of water.

The amount and availability of all of the elements and substances mentioned is always strictly in keeping with the degree of intensity and thoroughness of the farmer in observing all of the natural requirements of the plant.

How to Prevent Blowing

One of the very serious obstacles to overcome in most dry sections is the blowing of soil. After many experiments, I am convinced that by using the corrugated roller, drifting can be materially lessened. The roller should be run at right angles to the prevailing wind. The pressure of the air current above tends to hold it in the hollow between the ridges, thereby supporting them in a measure. The ability of the ridges to withstand wind is materially increased if the soil is thoroughly mixed with organic matter. This is another reason why yard manure and green crops should be well mixed throughout the seed bed. Hoed and cultivated crops should be seeded to vetch, peas or rye after the last cultivation. If such growths are thoroughly disced into the soil before it is plowed, the benefits will be greater than if they are plowed under without being disced.

Horse Dentistry

By G. S. ALEGANDER, M.D.C.

The necessity of having the teeth of horses attended to by a veterinary dentist is not always recognized, yet many of the apparent ailments of horses may be properly attributed to irregularities of the teeth, which may be readily remedied by the intelligent use of proper instruments. On the other hand, much harm is done by blacksmiths and others who introduce a hoof rasp into the mouth and tear away portions of the molar teeth which are necessary to proper mastication of the food, and at the same time fail to give the relief needed by removing abnormal projections, or loose, split molars, which may be occasioning the trouble.

It should be understood that when a horse chews, the molar teeth grinding from side to side do not cross the entire surface of the teeth above or below. For this reason the outer edge of the upper molars and the inside edge of the lower molars remain unworn, and after six years of age become in many instances so long and sharp that mastication can not be comfortably performed. It also happens that these sharp points frequently lacerate the cheeks or tongue, and so make it a painful act for the horse to chew grain or other food.

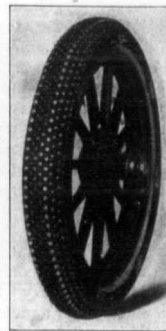


Obey that impulse! The fine joy of automobile ownership may now be yours. Ford prices are down within the easy reach of the untold thousands who have waited for the coming of the right car at the right price.

Six hundred dollars is the new price of the Ford runabout; the touring car is six fifty; the town car nine hundred—all f. o. b. Walkerville, Ont., complete with equipment. Get catalog and particulars from Ford Motor Car Company of Canada, Limited.

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

The Value of an Automobile depends on the Reliability of the Tires



ANY good make of tire is reasonably reliable until something punctures or injures it sufficiently to cause a blowout. By equipping the tires with Woodworth Treads they are absolutely protected from such punctures or injuries. Besides this, the treads provide an anti-skid that is always in place, thus insuring you against skidding accidents and preventing the necessity of getting out in mud or rain to put on chains. Besides this, Woodworth Treads, by protecting the tires from wear and injuries, prolong their life enough to pay more than double the cost of the treads.

Woodworth Treads fit all makes of pneumatic tires. Anyone can put them on without taking the tires off the rims.

If you wish to feel that your tires are safe on any roads, if you wish to be protected from skidding accidents and reduce your tire expense, get a set of Woodworth Treads.

Woodworth Treads are sold by JOHN MILLEN & SON, LTD., and the RUSSETT MOTOR CAR CO., at all their branches.

Send for free booklet to the

Leather Tire Goods Company

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Course

Insure success by a business training. Get it in the best Business College—the College that has made the greatest success of its business. This is the Success Business College, with schools at Winnipeg, Regina, Moose Jaw, Weyburn, Calgary, Lethbridge, and Vancouver. We use 309 typewriters. Send to the nearest school for free prospectus, beautifully illustrated. Don't put it off.

F. G. GARBUTT,
PRINCIPAL

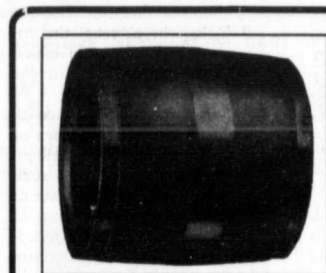
Where such conditions exist, the veterinary dentist skilfully rasps away the projections only, and is careful not to interfere with the rough corrugated surfaces of the molars, by means of which the grinding process is conducted. He has also a pair of close cutters with which he can snip off the longer points, and open cutters for the purpose of cutting off the large projections which are strong and difficult to cut.

Where a tooth has become diseased and dropped out or broken off level with the gums, the opposing tooth of the upper or lower jaw, having nothing against which to grind, grows long and often projects into the cavity. These have to be cut off level and for this the open cutters are required. Where such long teeth exist in the mouth of a horse, he can neither chew grain nor hay, and the latter food, after being formed into a "quid" or ball, is dropped out of the mouth. It is remarkable how quickly a horse is able to eat after the above operations have been performed and how soon the flesh which has been lost is regained.

Where a molar tooth has been split by accidental chewing down upon a stone taken into the mouth with the food, one part usually becomes loosened and sticks toward either the cheek or tongue, and in either case interferes with mastication. This loose portion of the tooth has to be extracted, and for this work a special pair of forceps is required, and termed a "splinter forceps." Where a tooth has become diseased, the horse cannot masticate properly, and if it be in the upper jaw a discharge is seen from the nostril and a foul odor accompanies the discharge, which is especially noticeable when the mouth is opened, as in putting the bit into place. The bad odor is characteristic of both diseased bone and decomposed saliva and feed.

Many a good horse suffering from a discharge of this nature has been condemned and shot for glanders by ignorant or careless quacks, and numbers of horses are also doped with nostrums of all sorts for the cure of "catarrh" or "nasal gleet," when an examination of the mouth would disclose the diseased molar tooth as the true cause. It is a very difficult matter to extract a molar tooth from the upper jaw, and impossible in a young horse, as the roots are very long.

Trephining is resorted to in such cases. An instrument called a trephine cuts a circular, disc-like piece of bone from the skull at the cheek above the roots of the tooth to be extracted. The roots are thus exposed, and a punch is introduced through the orifice and struck several blows with a mallet, which forces the tooth



Why Delay? The Rockwood Paper Cylinder Pulley

has proven itself superior to logged pulleys—and many times over. It pulls better and wears better. It increases output and saves the drive belt. It is not an added expense, but pays for itself and earns you money besides. We want you to be convinced, and will send you a pulley guaranteed satisfactory in every respect, or money back after 10 days' trial. Isn't that fair? The season is late. Fill in this Order Blank now and get prompt shipment.

THE ROCKWOOD MFG. CO.,
1927 English Ave., Indianapolis, Indiana.

Ship me one Rockwood Paper Cylinder Pulley of the size given below, for which I enclose check for \$5.00, balance to be paid C. O. D.

Pulley diameter..... Face width..... Bore.....
Machine made by..... Year bought..... Size.....
Ship by Express to: Town..... Province.....
Freight.....
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This label, on every bag, identifies Canada Portland Cement.

MAKE certain of complete success in your concrete work by always using CANADA Portland CEMENT

We are supplying Canadian farmers with the highest quality of Portland Cement it is possible for human skill to make. We have reduced the price of Canada Portland Cement until it is within your reach for practically every purpose. It is the only building material that is not increasing in cost.

Be sure to ask for *Canada* Cement, in bags.

Canada Cement Company Limited, Montreal

If you have not received a free copy of "What the farmer can do with Concrete," write our Information Department and get one. It's a complete practical concrete encyclopedia.

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down into the mouth. The hole is afterward plugged from above by a pledget of oakum, and the cavity syringed out daily with a mild antiseptic solution. It readily heals and the animal is as good

as ever. It is easier to extract a tooth from the lower jaw, but care has to be taken either in extracting a tooth or trephining the lower jaw, not to break the bone. Need of dentistry is to be sus-

pected when a horse fails to get good out of generous feeding, when he passes oats whole, cuds or quids his hay, has a foul odor from the mouth, or a hidebound condition and lack of thrift.

The Value of Sub-Soil Packing

By PROFESSOR THOMAS SHAW

THE question of subsoil packing has been given much attention during recent years where the rainfall is light in a normal season. In those areas some have claimed that good results will always follow from packing the land with a subsoil packer, after it has been turned over with the plow. That there is a place for subsoil packing is undoubtedly true, but to say that all land should be thus packed after the plow is certainly not true. To discuss the place for packing will be the aim in this paper.

Subsoil packing is in a sense a misnomer. It does not relate to the packing or the pressing of the soil below the furrow slice, but simply to compressing or firming the soil, chiefly in the lower area of the land that has been plowed. It is done by the use of various implements, but more commonly sub-surface packers consist of wheels that revolve on an axle to which they are firmly attached when in use. The wheels are usually 18 to 24 inches in diameter and the rims are V-shaped. When in use they compress the soil laterally and downward, chiefly the latter, but they leave it lying loosely on the top.

The sub-surface packer may be used with advantage on land newly broken from the prairie, on light land that lies loosely when plowed, the plowing having been done in the spring, and on land in dry areas in which a considerable quantity of trash has been buried. In these instances the roller will not so well answer the purpose, as it firms the land above rather than below.

When prairie land is broken in dry areas with the plows most commonly in use, it lies loosely. It is not all turned flat. If left in that condition it will rapidly lose moisture. If a sub-surface packer is run over it, the sods will be pressed down firmly. The disc, however, may do this in some instances quite as effectively as the packer, providing the discs are not set at much of an angle. The disc has the further advantage of loosening the soil so that it is more readily distributed by the harrow when the latter follows the disc as it should in all instances.

In areas with a short supply of moisture even in a normal season, and in which much of the land is plowed in the spring, the sub-sur-

face packer may do much good. By firming the land below, it lessens evaporation where the surface is kept in a proper condition. Should the spring, however, be unusually wet, such packing would not be needed, as the abundant moisture in the soil would pack it sufficiently.

When much trash is buried as stubble and weeds, or even when a green crop is plowed under, the packer may be used with advantage, especially if the mass so buried is considerable. To leave the ground unpacked may lead to a drying out of the soil to the extent of greatly injuring the crop that has been sown. It will also tend to prevent decay in the buried mass. In the case of stubble, the plan is good which would mix the mass with earth by the aid of the disc before plow-

ing the land. In this way decay would be facilitated. But should the rainfall be considerable at the season of plowing, the necessity for packing would be so far reduced.

Subsoil packing is seldom necessary under any conditions of tillage, on soils that are naturally heavy, on lands that are plowed in the autumn, on areas that are to be devoted to cultivated crops, and on lands where the normal rainfall is ample. Some soils, even in dry areas, are naturally so heavy that they are too firm, as a rule, rather than lacking in firmness. Some of these soils when plowed in the autumn and left unpacked become so firm that in the spring the labor of preparing the seed-bed is very considerable. To sub-surface pack such lands would be folly.

Usually when the lands are plowed in in the fall and harrowed when plowed, they will be sufficiently packed by spring even in dry areas. To this, however, there may be some exceptions, but the exceptions are not

many. Where the rainfall is 18 to 20 inches in a year, the instances are rare indeed in which autumn plowed land will be benefited by packing.

Land that is to be devoted to the growing of corn, potatoes or other cultivated crops, seldom needs packing. To pack such land would usually be a waste of labor. The constant working of the areas with the constant treading on it usually makes it too firm below rather than lacking in firmness.

In areas with a plentiful rainfall, the sub-surface packing has virtually no place. The soil will settle sufficiently on itself. In fact the danger is rather that it will settle too much rather than too little.

Successful Power Plowing

By RAMOND OLNEY

SUCCESSFUL plowing with tractor outfits depends very largely on the method followed in laying out the field and the manner of plowing it. The

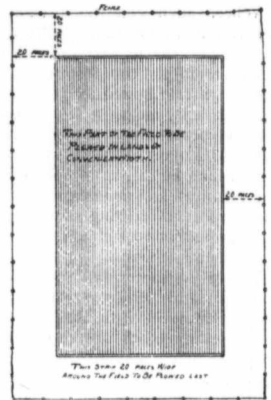
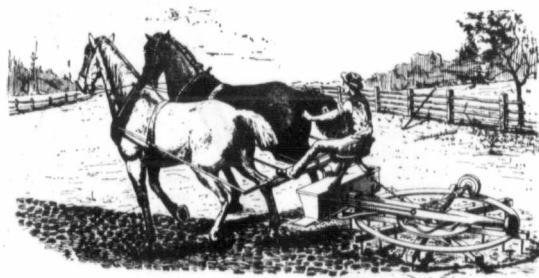


Fig. 1
How to lay out and plow a field with a tractor. This is the easiest and most practical method which can be used.

furrow should be left till last, after the portion inside has been plowed off in lands.

That part of the field inside the mark should be plowed in convenient lands by a combination of backfurfrowing and dead furrowing. The lands should not be too wide, as considerable time will be lost in traveling around the ends.

The best method is to divide this portion up into a series of lands of ten to twelve rounds each by setting guide stakes. The operator should be careful to drive straight furrows in striking off these lands so he will come out even when finishing.

After the lands have been plowed off, the strip at the outside is plowed by starting in next to the plowed land at the corner, where it is desired to finish up, and plowing around and around the field. It should be so planned that on the last round, if in a fenced field, the gang will be taking its full width. In this way the operator will be able to plow closer to the fence.

Plowing the Headlands

In plowing the outside strip, it is best to follow the plan shown in Figure 2. Start at one corner by dropping in the plows nearest the plowed land in such a way that the furrow ends will be on a diagonal. In coming out at a corner do the same thing, only

Continued on page 49

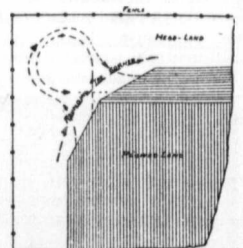


Fig. 2
How to finish plowing a field with a tractor. This shows the method of rounding the corners when plowing off the headlands. On the first two rounds it is necessary to make a complete circle at each corner as shown

best and the easiest way in the greater majority of cases is to follow the method as shown by Figures 1 and 2.

Whether the field is square, rectangular or irregular in shape, large or small, the first thing to do is to set guide stakes at each corner, of equal distance from the adjacent sides of the field, about eighteen to twenty paces (fifty to sixty feet). This should be measured as accurately as possible, as it makes it more convenient when finishing up the field.

Then with the single right hand plow of the engine gang set to cut a shallow furrow, plow in as straight a line as possible between each stake and around the entire field. The strip outside this furrow provides ample space in which to turn the outfit at the ends of the lands. The plowman should pull out the plows and drop them in on this furrow which serves as a mark. By doing this a more even job can be accomplished.

The part outside of this guide

Here is something NEW for the LAST WEST, and it is MADE IN WINNIPEG

The "D & D" Cyclone Weed Destroyer

And God said to Adam, "Cursed is the ground for thy sake, thorns and thistles shall it bring forth to thee. By the sweat of thy face shalt thou eat bread." A blessing in disguise, for God new that when men are idle they are likely to get into trouble

The next great war in Canada will be for the protection of our lives and our lands. The titles to some of the farms are now uncertain through the invader, the Russian (thistle) that has already crossed the boundary in Saskatchewan. The Canada thistle is getting a strong hold in our land west of the Great Lakes; the stink weed is now destroying our beef and butter; and the Mustard and Yellow Peril (the Sow thistle) from California will have possession of our prairies unless the farmers will individually declare war and put the best modern plow to work, with sharp shears, because the plow is the basis of all cultivation. (But watch well the hired man that he be not a traitor in not plowing deep enough in order to keep his team looking well.)

Both in season and out of season, and especially in dry weather, kill, slay, bury or cremate all trash on the face of the land.



"THE YELLOW PERIL"
One of the Colonies of Sow Thistle in the City of Winnipeg, with the Y.M.C.A. Building in the background. Verily this generation is "long" in prayers and good clothes and "short" in good works and weeding

The farmer who will do his plowing well and use the "D & D" CYCLONE weed destroyer up to the time of seeding on his fallow or fall plowing can grow just as good a crop as that grown on the Reformatory farm or any of the Experimental Farms and with a good deal less power and cultivation than is generally put on the Summerfallow with the old style harrow and cultivator.

But the weed-killing must be done while weeds are young and tender; never permit the weeds to take moisture from the ground. Under the best cultivation and pruning in walnut orchards, suckers will start from the point where the branch was cut off, sometimes 7 to 9 feet long, and if not removed soon after the sucker starts the crop suffers. The sucker takes the moisture and the nut crop weighs light; same with the grain. If trash is cultivated it robs the grain.

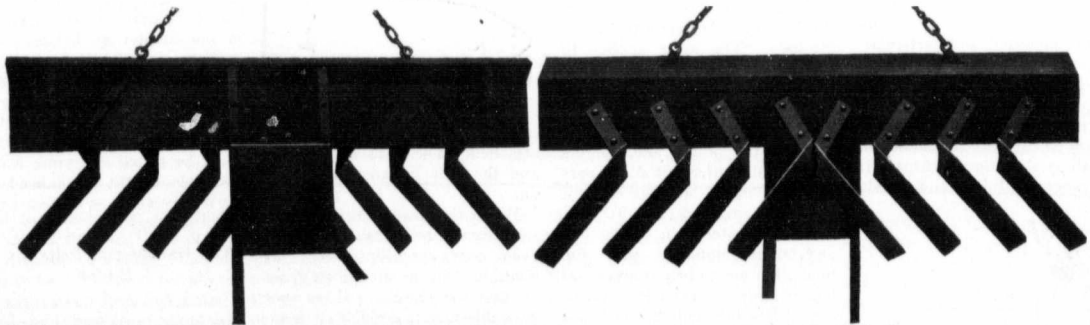
Abraham may have invented the plow and he was all right in his day. Dry and clean farming had not been considered, but it has been left to Dodds and Detwiler to bring out the Cyclone weed destroyer and surface cultivator that will increase the crop yield from a third to a half.

This machine is a mortgage lifter with proper use. It only lifts the soil three inches over the back of the blades and doesn't turn it over. (Dust mulch is the password to good crops.) The farmer can grow brome grass, which seed is now worth \$600 a load, on the land that he is now growing couch grass; barley where he is growing wild oats, and feed hogs that are worth \$750 a load; oats that makes the finest food for both man and horse where there is nothing but mustard and sow thistle; flax on new breaking with a yield of five bushels per acre more than if the disk or harrow is used, and longer straw, so that the fibre can be made into binding-twine. This machine makes it possible to clean up all the fertile waste places about the farm and grow alfalfa for the poultry. The farmer will be into mixed and clean farming before he can comprehend the change.

He may have to walk after the cyclone the first season because most of the old land is full of trash, but the second season he will be able to stand most of the time on the platform, and the third year he can put on a seat and ride in comfort. The fifth year he can have his mortgage paid off, a new house built of Estevan brick that will last for 1000 years in our climate, and sitting under his own vine and Carolina poplar tree, none daring to make him afraid. But he must cut out the Stampede and the fake agricultural shows that some societies put up and attend to cutting out the sow thistle. Stay with the summerfallow and the big yields of the new land will come back to you. Spring steel is cash, good lumber is cash, skilled labor is cash, wheat and farm produce are always sold for cash, and Cyclones are C.O.D. or marked cheque. Two good horses will work an 8 foot, three horses a 10 foot, and four horses a 12 foot. But if you want to push your work you can put on an additional team on any of the lengths. The Cyclone is built for business and is willing to work. Price \$5 per foot.

Plow the land well, fence it in and use the Cyclone up to the time of seeding, and all the other farm operations will take care of themselves.

Farmers are looking for a different Cultivator, here it is. The best weed killer, surface cultivator, dust mulcher and conservator of moisture that has ever been invented. If you don't believe us, write to Mr. Campbell of DRY-FARMING SYSTEM FAME



This is a Dry-farming Implement, and a weed-killer; it leaves the soil in a smooth and well-worked condition, and conserves the moisture in the fallow for the next crop

The under or business side

A new commandment we give unto you:— Thou shalt not harbor noxious weeds on your place so that your neighbor's land will become polluted

Dodds & Detwiler c.o. The Leland Hotel, Winnipeg

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CARE OF HUNTING TROPHIES FOR SHIPMENT

By FRANK TOSE

The author of this article, specially written for The Canadian Thresherman and Farmer, is a practical taxidermist of wide experience. As official taxidermist he accompanied the hunting party of Baron Von Gutmann about four years ago on an extended expedition along the Alaskan Coast to Nome, thence through Behring Straits, taking in a wide sweep of the Siberian Coast above the Arctic Circle. The trip was remarkably successful and prolific in abnormal specimens of Walrus, Sea Lions, Caribou, Bear, Mountain Sheep, Deer, etc.



Fig. 1

- I

HERE are few departments of natural science that afford greater scope for executive skill, and the "un-labored" disposal of those delicate points in nature's handiwork that distinguish between a picture and an abortion, than that of the taxidermist's art.

Many beautiful specimens, however, of fish, fowl, animal and insect life—of those magnificent hunting trophies of which Canadian sportsmen are so justly proud—which are spoiled through sheer ignorance of common facts or careless handling on the part of the tyro before they reach the hands of the artist whose business is to preserve them amid the scene and circumstance of their natural environment.

The knowledge of how to care for these specimens in the field and keep them in prime condition until they reach the hands of the taxidermist is the purpose of the following observations.

The most popular way of saving a trophy of the hunt is by having the head mounted, and particularly, those animals carrying horns or antlers. Take a deer head, for example. Presuming that you have just shot a deer, do not in the excitement of the moment spoil all by slashing the throat. It will generally bleed sufficiently

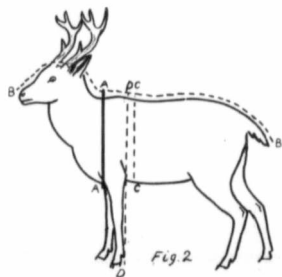


Fig. 2

if opened as soon as it is dead and allowed to bleed from the inside.

The viscera must, of course, be removed at once to keep the flesh good for food, and an ordinary deer is probably better carried back to camp and the skinning done there. But this cannot be done with such large animals as the moose, wapiti, etc. A cut must be made as indicated by the black line A.A. in Fig. 2 to separate the skin of the head and neck from that of the remainder of the body.

Note how it commences at a point on the shoulder and continues to another directly between the fore legs. A cut is now made



Fig. 3

down the centre of the back of the neck, commencing at the point B. Fig. 1, and 2 more cuts to the center of the base of horns B.C.C. Now loosen the hide on either side of the neck and sever the ears on the inside. Proceed with the point of the knife to loosen the hide around the horns, always cutting upward to the butt of the horns, and being careful that the skin comes away clean. The eyes will next be arrived at, and great care must be exercised here so that the eyelids are not cut. Directly in front of the eye in most heads is a wax duct. This must be dug out with great care from the cavity of bone in which it sets.

You next reach the mouth when about an inch of the inner skin of the lips must be left attached to the hide. The same applies to the nostrils. The skin of the head is now entirely detached and the skull severed where it joins the neck.

With the knife and fingers separate the outer skin of the ears from the inner cartilage until it is entirely inverted (Fig. 3). The inner and outer skin of the lips and nostrils must be split, the inner skin not to be cut away but left attached. Next take a quantity of fine salt and rub well into the flesh side of the hide and roll up with the hair outside. Repeat this the next day and roll again with the hair inside this time, and tie with string. Keeping the hair inside prevents it becoming worn in transportation or cut with the string.

The skull must now be attended to. First cut away as much of the flesh as possible and remove the eyes, brain, etc., then boil (not too much) or the skull will fall to pieces. Next remove the remainder of the flesh (while hot) by scraping with the knife. If you have more than one specimen, the skull and hide must be marked by duplicate tags (wood or lead), not paper.

Of course, if you are handy to the taxidermist, or in a country where the head will freeze, it is only necessary to skin out the neck and sever the skull, leaving the skinning of the head, as most taxidermists prefer to do this themselves when possible.

Skinning an Animal for Making Into a Rug

We will take for example, a black bear (Fig. 4). The first cut is made from a point three inches behind the chin in a direct line to the tip of the tail—A.A. Another from a point between the fore-legs B. across to the first joint C., down the back of the leg and round the pad or sole of the foot. This pad is not needed in a rug, so may be cut away. The other fore-leg is treated in a like manner.

Another cut must be made from the root of the tail down the back of the hind leg and the pad treated as before (E.E.). Now proceed with the skinning, taking care to leave as little fat on the skin as possible. Care must be taken to sever the toes at the last joint. I have seen many hides spoiled by leaving part of the toes



Fig. 5

attached. The flesh decomposes and the hair loosens and comes out.

When the head is reached, the same care must be taken with the eyes, nose, ears, lips, etc., as mentioned in the directions given on skinning heads. It is not desirable to salt a hide that is intended for a rug. It may, however, be done when circumstances forbid it being preserved otherwise. A better plan is to stretch it by nailing it to the wall of the cabin, or if you are staying in a tent, by lacing it between two convenient trees through small

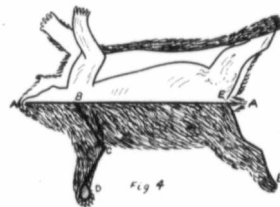


Fig. 4

slits made about half-inch from the edge of the hide.

It is better to make these slits as small and few as possible especially near the head. Care must be taken to remove as much of the fat as possible and dry in the shade. If this is not attended to it will become what is known as "grease burnt" and will probably fall to pieces in the tanning. If it is desired to have the head mounted on the rug, showing the teeth, etc., it is necessary to save the skull, cleaning the same way as the deer head.

Skinning an Animal for Mounting Entire

If you wish to have a specimen mounted entire, it will greatly help the taxidermist and give better results if you take the following measurements: Depth of body behind fore leg (Fig. 2) dotted line C.C. Total length end of nose to tip of tail B.B. Total height from hoof to top of shoulder D.D. It is also a good plan to save the bones of one hind and one fore-leg when possible. Skin as mentioned in the remarks on rugs (Fig. 4), with the exception that in case of deer or any horned animal, you must commence at the point B. between the fore-legs and not at the chin. The neck and head are skinned as in the chapter on heads.

Bears, cougars, wolves, etc., are skinned the same as for rugs, but the pads of the feet must be left attached. In fact, no part of the hide must be cut away. The hide must be salted the same way as the hide of the deer head, but must never be stretched as advised for rugs.

The Handling of Pelts for the Market

Much money is lost to trappers, especially beginners, by careless handling of pelts. No preserva-



Fig. 6

Get a Tractor That Fits Your Farm

You cannot always change the size of your farm therefore we have solved the problem for you by building a tractor that will suit a farm of any size.

Twin City

Tractors

Are Built in the following sizes:

Twin City "60"

Cylinders 7½ in. x 9 in.

The most powerful Tractor in the World.

Twin City "40"

Four Cylinders, 7½ in. x 9 in.

The Original Twin City Tractor. The machine that has carried the Name of Twin City Tractors all over this Country, South America and Europe.

Twin City "25"

Four Cylinders, 6 in. x 8 in.

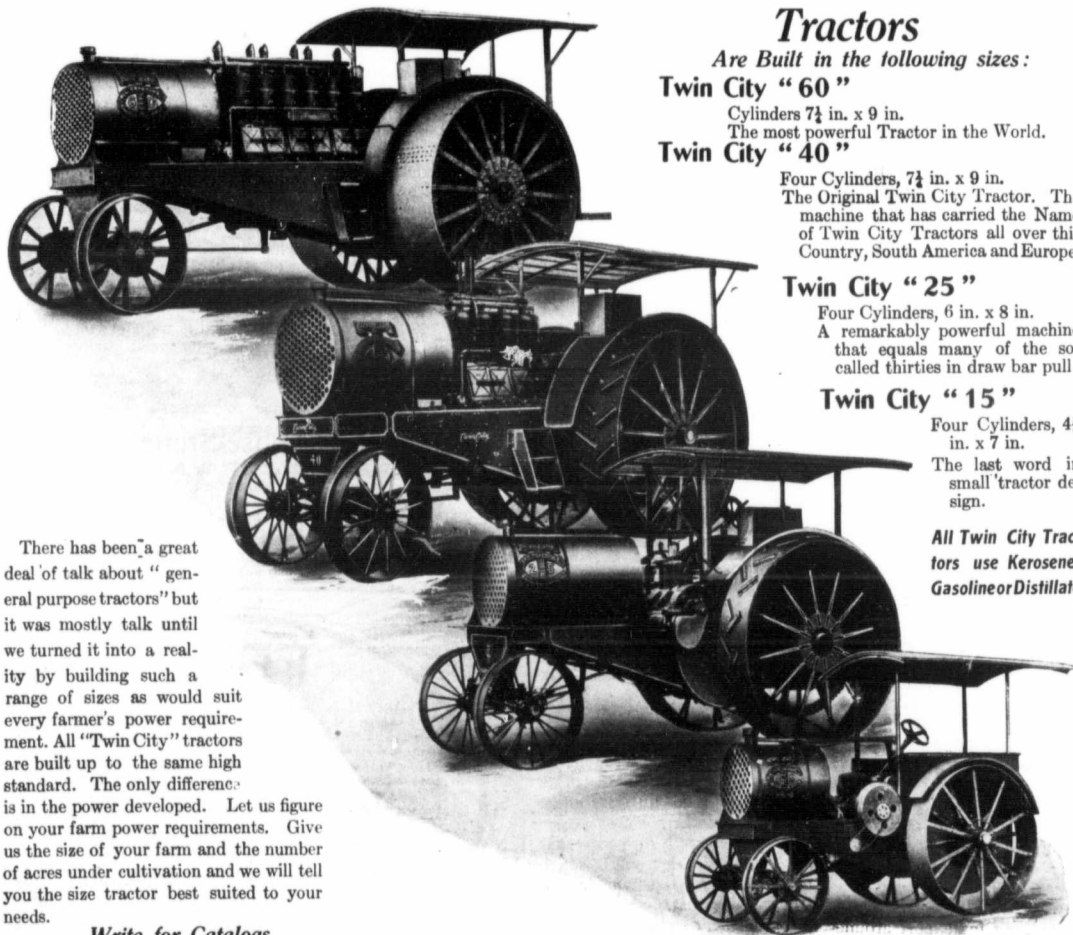
A remarkably powerful machine that equals many of the so-called thirties in draw bar pull.

Twin City "15"

Four Cylinders, 4½ in. x 7 in.

The last word in small tractor design.

All Twin City Tractors use Kerosene, Gasoline or Distillate



There has been a great deal of talk about "general purpose tractors" but it was mostly talk until we turned it into a reality by building such a range of sizes as would suit every farmer's power requirement. All "Twin City" tractors are built up to the same high standard. The only difference is in the power developed. Let us figure on your farm power requirements. Give us the size of your farm and the number of acres under cultivation and we will tell you the size tractor best suited to your needs.

Write for Catalogs.

MINNEAPOLIS STEEL & MACHINERY CO. OF CANADA, Ltd.

REGINA - SASK.

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tive of any kind must be used. Alum causes shrinkage and interferes with the dressing. Salted hides cannot be packed for shipment with other furs, salt being affected by climatic conditions. In damp situations, they would probably make the whole shipment mouldy and so lessen its value.

Large animals such as bear, cougar, wolves, etc., are skinned as directed for rugs (Fig. 4). They may, however, be opened to

the end of the chin and must be dried by stretching in the shade. Be careful in removing the surplus flesh and fat not to overdo the process by scraping too much, or you may loosen the hair by damaging the cells or roots.

Animals the size of a lynx and smaller must be "cased." This is done by making a cut down the back of the hind legs and pulling the skin over the head. The tail must be skinned out. Fig. 5 shows a muskrat stretched, fur

inside, over a shingle cut to the shape as shown.

Fig. 6 shows a stretcher for lynx, fox, mink, etc. It is made in three pieces to facilitate its removal after the pelt has contracted in drying. Beaver must be skinned and stretched flat. The tails and feet of beaver and muskrat must be cut away as, devoid of fur, they are useless.

Birds

The following hints as to the care of birds should prove useful:

First examine for shot holes and stop the bleeding by plugging with cotton batten. Or, if none is procurable, a little fine moss or small piece of rag will do. Next plug the mouth and nostrils in a similar manner and hang by the feet, not by tying a string round the neck as is often done. Keep in a cool place. Smaller birds are best kept by placing them head first in a cone of paper and closing the ends so as not to damage the tail feathers.



Looking back over the first month of the new crop, the remarkable high grade, the gratifying yields, and the tremendous quantities already marketed, bring home to people of all classes in Western Canada that this is the greatest crop ever harvested. Aided by plenty of harvest help, and favored by magnificent weather, the Western farmer has harvested and to a large extent threshed and saved at this date, the finest and best paying crop ever reaped so far, compensating him for the disappointments of last year. The wheat inspections to and including this date, are prodigious, viz., 24,547,500, of which 89 per cent has been contract grade. Years may elapse again before such another record is reached.

The month opened with a fair demand for new crop, but little having been sold ahead for export, the demand did not continue, and wheat sagged heavily under the weight of great offerings. In the last four days of the month, the demand has been good, much cash grain being required to fill September contracts. It is scarcely likely that the demand will be so keen the first few days of October. Last year cash wheat sold down to around 80 cents, but the United States had a huge crop of hard Spring wheat: this year we must note that American soft winter wheat is now selling for export around 85c. to 86c. The superiority in grade and milling qualities of our new crop wheat is becoming known, and now that our market is relatively lower than either Minneapolis or Chicago, prices should not decline much more and farmers should not press sales if prices should drop to the 80 cent level. It is generally felt that those who can hold should keep their grain at home, for with the bulk of the crop out early, our wheat should sell much higher next spring, unless the Argentine crop is very large.

Russia has a mixed crop of variable quality, and is not a heavy shipper yet. Lower Europe has a rather poorer crop than last year, likewise France. The heavy grain movement in the U.S.A. is past while fall plowing

is in progress. The flour demand everywhere has been fair to good. Mill stuffs are in better demand because of a decrease in the corn yield and the high prices of corn and oats.

Altogether the wheat market seems low enough, and only the continued tremendous marketings of the sixty days before the close of navigation may depress our wheat, but likely the decline will be overdone. There seems nothing to be gained by farmers holding grain in terminals during the next three months, and those who now hold grain there, will probably do best to sell on bulges.

The premiums have been smaller than usual, but just now two and three Northern are in brisk demand because of their scarcity. The percentage of these grades will steadily increase and spreads widen in consequence.

Coarse Grains

This year there are not the millions of low grade wheat to feed. Our oat crop is smaller, but better saved. The readjustment of the U.S. tariff soon to become effective, has brought an improved demand for both barley and oats, but the ultimate effect upon both markets can as yet be only conjectured. Assuredly, our fine oats and barley will be much more in demand as their intrinsic value becomes known. It is probable that a considerable movement to the United States of America will result and higher prices be obtained for the choicest samples of oats or barley. These grains will be shipped for export to the United States of America, and not in bond. Until the new market centres are more established, farmers would do well to keep their coarse grains at home.

There is a considerable number of cars of Rejected mixed grain coming ahead (wheat and barley mixed). It is a great pity to ship this excellent mixture now, as it does not bring near its true value, and could be fed on the farm, to much better advantage.

Flax has had a heavy speculative decline when not much was offering. It seems too low, and with a much smaller crop than

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AND
United States TARIFF BILL

As exclusive grain commission merchants, our interests and those of grain shippers are common. Our aim is to serve shippers in such a manner that they will feel we are entitled to further patronage.

The United States tariff bill lowers the duty on all grains materially and the Canadian farmer should benefit by this.

We operate our own offices in Minneapolis and Duluth as well as in Winnipeg, and are in a most excellent position to force the buyers in the Winnipeg market to bid against the outside markets for the benefit of the shipper.

We will guarantee highest market price for all kinds of grain and prompt returns.

Give us a trial shipment and we will leave it to you to judge as to what we deserve for the future.

As to our financial responsibility we refer you to the Royal Bank of Canada, any commercial agencies, or this paper.

Yours for Service,

Benson-Newhouse-Stabeck Co. Ltd.

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Daily Market Letter and Sample Grain Bags. Send us your name and address and we will put you on our mailing list —its free. Let us keep you posted on market prices for grain. Personal attention given to selling and grading of all cars. Our Car Tracing and Claim Departments work in our Clients interests. We have every facility for prompt service and we get best results for shippers. Send 1 day for a supply of sample bags and deal with a firm whose business has been built up by satisfied customers.

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GRAIN COMMISSION MERCHANTS, WINNIPEG

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

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Patronize Those Who Patronize This Magazine

Better Results Than You Expected

AS you had in your yield, so may you have in the marketing and selling of your grain if you employ the services of an aggressive Firm of Commission Merchants and Track Buyers. Our long experience in handling grain of all grades will insure you best results. The phenomenal growth of our business indicates that confidence and goodwill have resulted from our efforts to serve our patrons well and get them good results.

Now on coarse grains especially we can make you interesting bids when loading, or if you consign, we shall sell your grain to best advantage. A new market in the U.S.A. will likely be opened up shortly, and it looks like better prices for these grains. Good premiums for special shipment will be obtained this year on oats and barley.

Phone or wire us for bids on track grain. A liberal advance made on receipt of shipping bill, if so requested.

FOR BEST RESULTS GET OUR BIDS

BLACKBURN & MILLS

(A. M. BLACKBURN)

(D. K. MILLS)

531 Grain Exchange, Winnipeg, Man.

Telephone Main 46; Main 3570

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last year, the market should not decline further, but do better, especially after midwinter. The oil demand is good, many large crushers considering flax cheap at present prices.

Milk Production in Canada

A very comprehensive bulletin under the above title has just been issued from the press and form No. 72 of the regular series of bulletins of the Experimental Farms.

Its author, J. H. Grisdale, Director of Dominion Experimental Farms, has made milk production a subject of special study and experiment for many years and has embodied in this bulletin the most valuable of the information obtained.

As suggested by the subtitle, (Crop Rotations, Dairy Barns, Breeding Dairy Cattle, Feeding, Care and Management of Milk Cows) the subject of Milk Production is not as simple as might appear at first glance. A maximum output of milk is dependent upon many factors and the author's endeavor has been to treat of these as fully, clearly and simply as possible, so that the

bulletin may be of value to the general farming community both in aiding them to make a start along correct lines and also as a work of reference on those dairying problems which occur from time to time.

The subject of Milk Production is treated under the following heads:

- (1). The farm chosen, the rotations followed and the crops grown.
- (2). The breed of cattle selected and the breeding methods followed.
- (3). Stables and care and management of the herd.
- (4). Milking and care of milk.
- (5). Feeding methods and rations.

Under No. 1, are discussed questions, of prime importance, which arise before the would-be dairyman takes up the problems of dairying proper. The location and area of a farm best suited to his purpose, the nature of its soil, the most suitable crops to grow and rotations to follow are treated of. Suitable rotations are given for all parts of Canada and a diagram is given showing arrangement of fields under a three and four-year rotation. The diagram also shows a good ar-

Donald Morrison & Co.

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725° Grain Exchange,

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

References, Bank of Toronto, Northern Crown Bank and Commercial Agencies.

management of the farm buildings, runs and paddocks.

(2). The breed of cattle chosen will be readily admitted to be an essential factor to success. The author is convinced, however, from his experience, that there is no "best" breed and says: "Generally speaking, the best breed is the breed the man likes best." Several breeds are mentioned which would be likely to prove suitable where the milk is shipped to a cheese factory or to a city, and others given where butter is to be manufactured. The character of the farm and the abundance of forage will also affect the breed chosen.

A brief account of the various breeds known to Canadian farmers follows.

Under Feeding Methods and Rations, the whole subject of feeding the milk cow is taken up, what, when and how to feed being fully discussed. Following this is a section entitled "The Philosophy of Feeding" in which the question is gone into in more detail and in a more scientific way, although so treated as to be readily understood by all. Various "Feeding Standards" that is, the amounts of protein, carbohydrates and fats required for maximum production and the amount of each in various feeds are given along with instructions on the making up of rations from feeds on hand which will conform to these standards.

Many farmers in all parts of Canada were communicated with

as to their feeding methods. The replies of a large number are included in the bulletin and also the author gives some rations which he suggests as being suitable for different parts of the Dominion.

In "Some Notes on Feeds" those most commonly used by dairy farmers are taken up as to their palatability, economy and quality.

Stable hygiene and the treatment of some of the more common troubles to which dairy cattle are subject is dealt with in Part 6. A list of remedies likely

to be required is given and also brief notes on some diseases.

The results of 20 years' experimental work with dairy cattle at the Central Farm follows. These will be found to illustrate and justify the conclusions drawn in former sections.

The publication is profusely illustrated with diagrams and plates and is provided with a very complete index.

It is now being issued to the Experimental Farms mailing list. Those not on this list, who desire a copy, may obtain it by addressing the Publications Branch, Department of Agriculture, Ottawa.

Good Roads in Western Canada

By A. C. EMMETT

ONE of the most surprising Roads Movement through-features of the Good out Canada is the manner in which it has gradually taken hold, not only of the good roads enthusiasts, but also of the various local municipalities which have charge of the construction of highways. At the present moment there is a movement on foot, both in the eastern and western divisions of the Dominion, which contemplates the building of a great transcontinental highway covering the entire length of the country from the Atlantic to the Pacific Oceans. Only three years ago this would have seemed like an imaginative vision, the outcrop of some optimistic view on the part of the man who wanted good roads more than anything else in the world. That the movement would have assumed the gigantic proportions that it has reached today would never have been credited by even the most enthusiastic member of the various good roads organizations throughout Canada and at the present moment it seems entirely probable that steps will be taken by the Government to link up the various interests dealing with the building of such a highway across Canada, and the Government will itself undertake the work, or at least the supervision of it. There is practically only one stretch of country that has not at least some trail by which it can be crossed and this is the stretch lying between Winnipeg on the West and Kenora on the East. There are no insurmountable difficulties in the way of filling in the highway across this stretch, although it will be granted that it may be a matter of somewhat expensive construc-

tion owing to the nature of the country to be traversed.

The completion of the proposed Canadian highway would mean more to the development of Canada than the construction of even the best transcontinental railroad. The railroad is necessarily confined to its own line of metals and is dependent entirely upon the highway as a feeder on which to bring in the produce of the farm and factory and it would, therefore, be entirely to the interests of the railways themselves to boost this Good Roads Movement in every possible manner. The farmers of Western Canada have many times raised an outcry in regard to the high freight rates on wheat from the wheat growing centres to the elevators at the head of the lakes. It is probably not known to them, for they have never taken the trouble to investigate the matter, but it is an actual fact that the transportation of the grain, from the farm to the railroad, costs more, owing to the bad condition of the roads, than it does to haul the wheat from the far border of Saskatchewan to Port Arthur. If they would boost all the time for good roads they could easily save at least half of the transportation expenses and provide a fund out of the saving alone, sufficient to pay the interest and create a sinking fund large enough to expend a sum of over \$50,000,000 for the construction of good roads, the cost of which could be spread over a period of twenty-five years. They would not only be benefiting themselves, but would be benefiting posterity, and a proportion of the expense would be borne by the future generations, who are properly entitled to bear their proportion of the expense.



"PERFECT!"
AS NATURE IS PERFECT"

is the testimony of every one who has seen and tested my work in the preservation and mounting of hunting trophies and natural history specimens of any sort: Game Heads or the entire animal, whether it is Moose, Deer, Caribou, Bear, Mountain Lion, etc., and Birds of every description. One patron (a keen naturalist of world wide experience) says: "I have never seen more artistic or more realistic setting."

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Saskatchewan Sheep and Swine Sale

There will be held at the Exhibition Grounds, Regina
On Wednesday, October 29th, 1913

Commencing at 1.30 p.m.

AN AUCTION SALE

of
Pure Bred and Grade Sheep and Pure Bred Swine

This Sale will be held under the auspices of the Saskatchewan Sheep and Swine Breeders' Associations. Assisted freight and express rate on contributed and purchased animals. Grade Ewes will be supplied at cost.

For further information write the

SECRETARY, Live Stock Associations, Department of Agriculture, REGINA

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Arrange That Xmas Trip Now

VERY LOW RETURN FARE

Tickets on sale daily - Nov. 7th to Dec. 31st

BY
CANADIAN NORTHERN RAILWAY
TO
ATLANTIC PORTS

In connection with Tickets to
The Old Country and The Continent

Book early to get best reservation and avoid disappointment



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Remember to Renew Your Subscription

Cement Construction.

Cement is coming into use more extensively every day for the purposes of highway construction. Lengthy tests which have been made have proven that concrete properly laid is capable of standing the heaviest wear and tear and will outlast by many years other types of pavement. The cost of construction is necessarily somewhat lower than when the asphalt or bitulithic type of pavement is used and this fact alone will materially advance the Good Roads Movement in the outlying municipalities. Cement roads, which were laid in Wayne County, Michigan, some considerable time ago now form the mecca for municipal officers and road builders from all parts of the American Continent. They are particularly well laid and have been down long enough to allow of an opinion being formed as to their lasting qualities.

It is claimed by those in charge of the Wayne County roads that the cost of maintenance per year does not exceed \$5.00 a mile and the surface is quite smooth and dustless. This type of road will form the subject of one of the papers which will be read at the American Roads Congress which will be held at Detroit during the week of September 29th. At this congress representatives from all parts of the United States and Canada will be gathered together and they will have the opportunity of inspecting one of the most comprehensive exhibits of road machinery and models of different types of road material, both in the rough and in the finished stages, which has ever been gathered together under one roof. Canada will be efficiently represented at this congress by one of the Public Ministers, and representatives will also attend from most of the principal cities both in Eastern and Western Canada.



Successful Power Plowing

Continued from page 42

start by raising the plows farthest away from the plowed land. The turn can be made by making a circle at the corners. This should be done on the first one or two rounds. After this the operator can make an easy gradual turn and no land will be left unplowed or plowed twice.

By properly following the method as outlined above, the engine will at no time travel on the plowed ground. When the last round at the outer edge is plowed, the field is finished. And if the proper care has been exercised in doing the work, the result will be a smooth, even job, which cannot

be equalled by horse plowing or any other method.

Other Methods of Plowing

There are two other methods which are frequently used for plowing a field. The first is to begin at the outside and work toward the center by plowing around the field. It is known as the dead-furrow method. The plows are not lifted in turning. The disadvantage of this is that a small crescent-shaped strip is left unplowed on each corner of every round.

The second is the backfurrow method. In this one the start is made at the center and the field

is plowed by backfurrowing to the outside without raising the plows. The disadvantage of doing this is that the plows cut a narrower furrow when turning a corner than when driving straight and consequently there is a large triangular-shaped piece left at each corner of the field, which must be plowed with horses.

Either of these two methods is unsatisfactory if a good, thorough job of plowing is desired.

The case of disc plowing is different, however, than plowing with moldboards. The method shown in Figures 1 and 2 would not be at all satisfactory. A field

should be plowed with discs in such a way that it will not be necessary to lift the plows. The best method to use is the backfurrow method described above—starting at the center and plowing toward the outside.



The Lawyer's Share

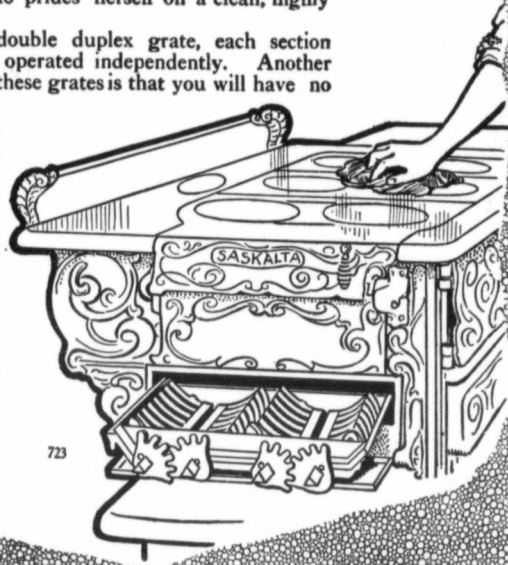
"Father," asked the little son, "what is a lawyer?"

"A lawyer? Well, my son, a lawyer is a man who gets two men to strip for a fight and then runs off with their clothes."

The cooking top is burnished by a special process making the surface perfectly smooth—easily kept clean without blacking. This point appeals strongly to the woman who prides herself on a clean, highly polished range.

The cut shows a double duplex grate, each section of which can be operated independently. Another good point about these grates is that you will have no dead ends in your fire. This feature is exclusive to the Sask-alta and patented.

If the Sask-alta had no other leading features, these are sufficiently important to investigate when purchasing your new range.

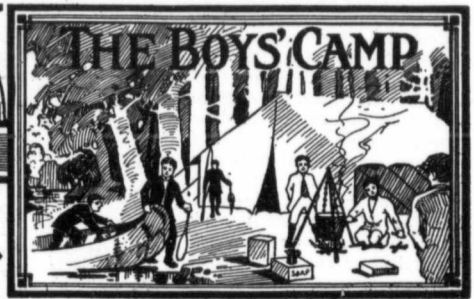


McClary's Sask-alta Range

Sask-alta Ranges are sold everywhere by good dealers who back up our guarantee on this splendid range—**McClary's**

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Toronto
Montreal
Winnipeg
Vancouver
St. John
Hamilton
Calgary
Saskatoon
Edmonton

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Girls' Cozy Corner

The Sand Men of Cuddledowntown

Cuddledowntown is near Cradleville,
Where the sand men pitch their tents ;
In Drowsyland,
You understand,
In the State of Innocence :
'Tis right by the source of the River of
Life
Which the Grandma Storks watch
over.
While Honey-bug bees,
Neath Funny-big trees,
Croon Lullabys in sweet clover.
'Tis a wondrous village, this Cuddledown-
town,
For its people are all sleepers,
And never a one,
From dark till dawn,
Has ever a use for peepers.
They harness gold butterflies to Sunbeams
Play horse with them, a-screaming,
While never a mite,
Throughout the night,
E'er dreams that he's a-dreaming.

In Cuddledowntown there are Choo-choo cars

In all the beautiful streets ;
And round bald heads
And curly heads
Are the engineers one meets :
From Piggybacktown to Pettykeville
The cars run, hissing, screeching,
While wonderful toys,
For girls and boys,
Can always be had by reaching.

Oh, Cuddledowntown is a Village of Dreams

Where little tired legs find rest ;
'Tis in God's hand—
'Tis Holy Land—
Not far from mother's breast.
And many a weary, grown-up man.
With sad soul, heavy, aching,
Could he lie down
In this sweet town,
Might keep his heart from breaking.
Joe Kerr, in "Collier's Weekly."

Prize Letter

St. Louis, Sask., July 3, 1913.

Dear Cousin Doris : This is my first letter I have written to your club, but I read them every month and I like them very much.

We have been taking this paper for a long time, but I never got enough courage to write before.

We live on a farm thirty-five miles from Prince Albert.

I like to live in the country better than in the city.

I have three sisters and one brother. I like going to school very much ; we have about a mile and a half to go to school.
I like fancy work very much. How many members like fancy work ?
I have a nice big garden and it's coming up fine, but there was a lot of weeds in it. I had to weed it. And I have a big tent up in the woods, where I live when the weather is nice. I have flower gardens around it.
I am interested in cooking and doing house work.

I would like to correspond with any of the members of my own age. I am fourteen years old, and five feet three inches tall. Fair complexion, light brown hair, dark brown eyes.
I hope my letter will escape the W.P.B. I will close, hoping to win a prize, and wishing the club every success. I remain, very sincerely yours,
Agnes McDougall.

Parry, Sask., August 25, 1913.

Dear Cousin Doris : I have written a letter in this cozy corner nearly two months ago, and I saw it in print, so I thought I would come in again and tell you girls how I am getting along.
I am just getting on fine, and I hope you girls are the same.

We had an awful storm about three or four weeks ago. The storm came at night. We were nearly through washing the dishes when the storm came. There was lightning all the time.

Our house shook while it was storming, and it was raining just so fast. The storm did not hurt us, but it blew some windows out of some of our neighbors' houses. It hurt lots of other things.

We have a new threshing machine. It is a case outfit. We are going to thresh our own grain and a few other places. It is 45 horse power. My youngest brother is going to run it.

Well, I think I must close for this time and make room for some other girls.

I will close with a riddle or two. Why do the girls like to look at the moon ? Answer : Because it is a man's face. What goes up and down and never touches sky or ground ? Answer : A pump. Well goodbye. Your cousin,
Helga Malm.

Clareholm, Alberta, August 1, 1913.

Dear Cousin Doris : May I come in again to a cool, shady corner this warm month ?

When I wrote before it was a little cooler than at present. I do not think you could get a better name for the club than it already has. The hills are beautiful at present ; grass is slightly turning from a moss green to a golden yellow.

The girls are ahead of the boys now, but we will have to hustle if we want to stay there. I will send a recipe for cookies : 1 cup sugar, 1 cup lard, 1 cup buttermilk, 1 tablespoon ginger, 1 tablespoon soda, flour enough to roll.

I will close with some riddles. How long can a goose stand on one leg ? Answer : Try it and see. How is an old maid like a spoiled lemon ? Answer : Because she is not worth squeezing. Why is an old maid like a dried-up apple ? Answer : Because she is hard to rear.

Hoping to get a prize. Wishing the club success. I remain, your cousin,
Lucy M. Hart.

WHAT BOB SAW THE SQUIRREL DO

By Elizabeth Gale

"Bob, look !"
Bob looked up through the branches of the big chestnut tree. Patches of bright blue sky smiled at him through the leaves, but he knew Daddy did not mean that, so he looked again and there on the crooked limb just over their heads he saw two round, bright eyes watching them.
"It is a squirrel !" he cried.
"It is a boy !" the squirrel seemed to say as, with a sharp little squeak, he scampered off to the top of the tree.

"Let us sit very quietly," said Daddy, "and perhaps he will come back again."
And, sure enough, in a few minutes back came Mr. Squirrel sliding softly down the branches. His cheeks were bulging now and his face looked round and fat, for he carried two big chestnuts in his mouth.
"Hush," whispered Daddy, "don't move and we will see what he does with them."

Down the tree trunk the gray squirrel climbed slowly, not because he was afraid of falling, but because he was watching Bob and his father very closely every step he took. He was not quite sure that he could trust them. But he soon decided that he could and off he whisked to a little old stump near by, and in the soft earth beside it he quickly dug a hole with his tiny front paws, dropped his two chestnuts into it and covered them over. Then up the tree he scampered again and came back with two more nuts.
"Is he planting his garden ?" asked Bob.

"No," Daddy whispered back. "He is putting away his food for the winter when there will be no nuts to gather. His storehouse up in the tree is probably full, so he is hiding some extra ones here."
"When he is hungry will he dig them up and eat them ?"

"Yes," Daddy answered, "he may, but often he does not need these extra nuts, or, sometimes he forgets about them and they stay in the ground until they begin to grow. And in this way, you see, Mr. Squirrel helps to plant the forests."

Now the little fellow had covered up his second lot of nuts and turned to look at Bob and his father. He sat up on his haunches, curved his bushy gray tail over his head and began to chatter to them in his sharp little voice.

"Don't you people run off with my winter supplies," he seemed to say.
"But we wouldn't think of doing such a thing, would we ?" cried Bob. "And, oh ! let us come back next year and see if he has eaten his nuts or if there are some new little chestnut trees growing up where he planted them."

So Daddy marked the spot where the nuts were hidden, and next year he and Bob came back to pay another visit to Mr. Squirrel and see what had become of the chestnuts, and there, beside the stump in the very place where they were buried, they found two tiny chestnut trees sprouted. Mr. Squirrel had added two more trees to the forest.

Canadian Boys' Camp

A Place for You

There's a niche for you in the world, my boy,
A corner for you to fill ;
And it waits to-day,
Along life's way,
For the boy with a frank, "I will !"
So lad, be true,
The world wants you
In the corner that you may fill.

There's a niche for you in the world, my girl,
A corner for you to fill ;
For the girl that is kind,
With a pure sweet mind,
A place that is waiting still.
So lass, be true,
The world wants you
In the corner that you may fill.

The world has places for you, dears,
Has corners for you to fill,
And a work to do
Which no one but you
In God's great plan can fill.
So, dears, be true,
The world wants you
And your places are waiting still.
— "Temperance Banner."

How to Get On

"What is the secret of success ?" asked the sphinx.
"Push," said the bell-button.
"Take pains," said the window.
"Never be led," said the pencil.
"Be up to date," said the calendar.
"Always keep cool," said the ice.
"Do business on the tick," said the clock.
"Never lose your head," said the barrel.
"Do a driving business," said the hammer.



Funny Friends. Cat Nursing Fox Cubs.

"Make light of everything," said the fire.
"Make much of small things," said the microscope.
"Never do anything off-hand," said the glove.
"Spend much time in reflection," said the mirror.
"Do the work you are suited for," said the chimney.
"Be bright and sharp in all your dealings," said the knife.
"Find a good thing and stick to it," said the blue.
"Trust to your stars for success," said the night.
"Strive to make a good impression," said the seal.— "Presbyterian Examiner."

THE BEGINNING OF BOOTS AND SHOES

The making of leather from skins of animals is an industry of ever-increasing importance. In a well-equipped laboratory in a tannery, chemists test the solutions used in tanning. In addition to the skins of animals killed for food, large quantities of dried and salted skins come from abroad. They are first of all put into pits of water containing chemicals to make them soft. After coming from the waterpits, where they have been soaked, sometimes for days, the skins are put into a revolving drum, which contains chemicals, and here they are still further softened. It is necessary to remove the hair from the skins before they can be tanned, and to do this they are laid out on the ground, and covered with a mixture of lime, and then folded up and placed in pits for a time. After the hair has been

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loosened by immersion in lime-pits, the skins are laid on boards, and the hairs and outer skins are scraped off with knives. This work needs skill. A man can unhair about 250 skins a day. The hair that is scraped off goat skins is collected and passed through a machine, which dries it. It is then sent to the factories to be made into cloth for cheap clothes. Good goat hair realises a good price through several processes of cleaning before being tanned. One machine takes all dirt out of the skin and removes any hairs that remain. After cleansing, the skins are ready for tanning, in which processes vary. Chrome tanning produces the strongest leathers. Skins are taken out of a drum of acid and then they are put into a second tanning bath. Most of the men wear gloves in this process. This is for protection, as the acid causes serious wounds.

After being tanned, each skin is made of the same thickness; a machine shaves off all inequalities. It has to be worked carefully or skins would be damaged. The machine shaves nearly 1,000 skins a day. Other processes follow, and the skins are then oiled. This helps make them waterproof. They are next placed in ovens. In many of the processes no satisfactory machine has yet been invented. The skins having been dried, are dumped again by being packed in wet sawdust. Boys pack away several thousand skins a day in the sawdust baths. The next process is to pass the skins through a staking machine. The skins go through the machine twice, and, as a result, are rendered soft and pliable, and have the stretch taken out.

The leather is dyed, and before it can be glazed it must have one or more coats of seasoning mixture put on to make it take the glaze; girls do this as they do this work better than men.

There is a machine that rolls a glass cylinder over the leather very rapidly, giving "the first shine on a pair of boots."

The finished skins are sorted according to their substance or weight. This work demands skill and knowledge of

leather, and every man who attempts it must be a thorough expert at his trade. The skins are sorted according to colour, and as the shades vary the work of sorting is one that needs a skilled eye, and has to be done by the aid of a north light—that is, before a window that faces north.

Before being passed to the warehouse for sale, the skins must be measured, as they are sold at so much per foot. This is done by a machine which measures 2,000 a day.

THE MAKING OF A PIANO

It has taken hundreds of years and scores of inventors to give us the piano. It is difficult work, but is so cleverly done that it seems simple. The wood must be carefully chosen and seasoned, so that it will not crack or warp. It is then cut into proper sizes by steam saws. After the wood has been sawed, men put together the beams that form the back of the piano. This part has to be very strong, for it bears the weight of the frame to which the strings are fastened, and the strings themselves. Only wood which will last a great many years can be used. If the frame to which the strings are attached were fitted flat to the wood, we should get a very deadened sound, so a soundboard is needed, upon which the frame can rest clear of the rest of the wood. The soundboard has to be shaped and fitted for the fixing of the iron frame and strings. Then an iron frame is prepared. It is like an iron harp, and the strings, or wires, are joined on to it by metal pins, which can be twisted with a key. Iron is used because it cannot be pulled out of shape to let the piano get out of tune. The frame is scerwed down to the soundboard, and the wires are fitted to the metal pegs.

After the iron frame with its wires has been fixed to the soundboard, the first part of the tuning has to be done. The men see that each wire is fastened to its proper peg; then by plucking at the wires they make each wire sound its note. If the note is too low it has to be tightened; if too high it has to be made looser.

This having been partly finished, the frame is set up on its end—if an upright piano; the back case is built round the works, and the young piano begins to look like a real one. The most complicated part of the piano has now to be put in. This is called the action—the keys, the levers to which they are attached, and the little hammers that strike the wires and produce the notes. Levers and springs and hammers wonderfully made are set to work when we touch the keys of a piano.

Every hammer has to be perfectly adjusted. The tone and strength of the notes depend on this. Each hammer must strike its wire so that there shall be no need for the player to thump the keys, and it must drop back instantly in its place, in order not to block the note. No matter how quickly the fingers move, and no matter how often a note is struck, the little hammer always gets back in its place ready to do more work. After the frame has been put together, the case built up, the action made perfect, the expert tuner tests every note and puts it into perfect time. The metal pin is screwed to the right to tighten a wire whose note is too flat, or to the left to loosen a wire whose note is too sharp.

Any child can learn to play the piano; but some of the cleverest men in the world have been at work for over 300 years to give us the beautiful instrument—the piano.

Stavely, Alta., May 31, 1913.

Dear Cousin Doris: This is my first letter to the Boys' Camp.

My father takes the "Thresherman and Farmer."

I am ten years old. I have a sheep and a horse; it is three years old. My father has about thirty-six horses.

I go to school, and am in the third book. Our school had a picnic on the 24th of May. We had races of all sorts. Our teacher gave prizes for the one that beat the race.

I beat one race and got a knife. I will close, hoping to see my letter in print, from Gideon Lyall.

TO THE DISCOURAGED

"There will always be stars through the window bars—
If we look to see them shine."

"If happiness has not her seat and center in the breast,
We may be wise, or rich, or great,
But never can be blest."
Robert Burns.

"Whatever happens to anybody, it may be turned to beautiful results."—Walt Whitman.

"Think not of your own vexations,
Be gentle and warm and true;
'Keep sweet' as long as there's grief and wrong,
And life will be sweet to you."

"This is the lesson of the Spring,
That all things change, that all things grow,
That out of Death's most frozen woe,
Come life, and joy, and blossoming."

"Whichever way the wind doth blow,
Some heart is glad to have it so;
Then blow it east or blow it west,
The wind that blows—that wind is best."

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Womans' Department

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Prayer

I do not undertake to say
That literal answers come from Heaven,
But I know this—that when I pray,
A comfort, a support is given
That helps me rise o'er earthly things
As larks soar up on airy wings.

In vain the wise philosopher
Points out to me my fabric's flaws,
In vain the scientist's ever
That "all things are controlled by laws."
My life has taught me day by day
That it availeth much to pray.

I do not stop to reason out
The why and how, I do not care,
Since I know this, that when I doubt,
Life seems a blackness of despair,
The world a tomb; and when I trust,
Sweet blossoms spring up in the dust.

Since I know in the darkest hour,
If I lift up my soul in prayer,
Some sympathetic, loving Power
Sends hope and comfort to me there.
Since balm is sent to ease my pain,
What need I to argue or explain?

Prayer has a sweet, refining grace
It educates the soul and heart.
It lends a lustre to the face,
And by its elevating art
It gives the mind an inner sight
That brings it near the Infinite.

From our gross selves it helps us rise
To something which we yet may be.
And so I ask not to be wise,
If thus my faith is lost to me.
Faith, that with angel's voice and touch
Says, "Pray, for prayer availeth much."
—Ella Wheeler Wilcox.

MIKE THE FAITHFUL—AND MARY

By Pearl Richmond Hamilton

Continued from page 56 September

At the center of the supper table that evening, Mary, who was welcomed as one of the family, sat between the two children—opposite the hired man, who had met her at the station. Two or three times she felt him stare at her and the warm blood flushed her cheeks to crimson. Mary was the center of attraction in the family circle—the children each looked at her shyly from the corners of their eyes as they hurried through their meal and then went over to the couch in the corner to curl up while the others finished eating.

After supper Mary nervously gathered the dishes for washing, embarrassed as she felt each one watching her movements. The house wife kindly told her where to put this dish and that dish and Mary felt as if she were genuinely good to be with.

After the evening work was finished, Mary was shown to her room which was neat and home-like and quite inviting to the stranger girl. A home-made dresser covered with pretty blue and white cretonne stood in the corner, over which hung a mirror in a painted white frame. Near the bed a book case made from a dry goods box, enamelled white, offered a fitting place for Mary's treasures and photographs. The wash stand which was a keg covered with cretonne was really very pretty. The entire furnishings were so dainty and unusual that Mary was delighted. The blue and white scheme though inexpensive proved the artistic taste of the home-maker. Even the rough centre boards were painted and

varnished a dark blue and the home-made rug in the center was made of blue and white rags. The home-maker was really an artist in making so much from so little. Mary first tried to lock the door but was horrified to find the door had no lock. She could hear very distinctly the hired men in the next room. "You're sure gone on the new girl, Sam, it's plain the rest of us have no chance," exclaimed one coarse voice. "Why didn't you ask the boss to go to the station?" queried Sam. "You're too slow, the early bird catches the worm."

Then there was a low conversation parts of which reached Mary's ears, but not enough for her to catch the drift of the conversation. Mary moved her trunk against the door and proceeded to unpack. At the top were the pictures of her father and mother. She kissed each as she placed them on the book-case. These had been taken for Mary just before she had left her home—they were on post cards but to Mary they were likenesses of all that was precious to her innocent girlish heart—for Mary loved her parents.



The Maternal Instinct—A Story without Words

One by one she placed her treasures about the room—two or three books, a box of writing paper, a comb and brush, and a tiny paste board box containing three fancy pins and a bracelet. A feeling of pride thrilled her as she shook the wrinkles out of two new dresses and hung them on the hooks back of a clean curtain. When Mary finished unpacking she sat down for a moment and looked steadily at the door wondering how she might protect her room from possible intruders.

She moved the trunk up as close as she could and placed a chair on top so she might be warned at any rate. A lock would have meant so much to the nervous girl.

The next morning was Sunday and Mary went down to the kitchen early. As no one was up she opened the door and the cool fresh Manitoba air infused her with that ambitious determination for accomplishment that is common to the Western Canadian. In all the world there is no air quite so invigorating as that of Western Canada. The lazy person is not at home—ambition and success are the keystones to Canadian character. Mary walked out to the garden near the house where nasturtiums, sweet peas, and pansies welcomed her in a riot of color and fresh loveliness. Beauty—beauty—everywhere thought the girl as she breathed in the fine essence of the Country atmosphere.

Birds in the trees filled the morning with song; the steady buzzing thump, thump of the milk in the tin pail as it fell in measured streams to the milker's tune; the cluck, cluck of a scolding hen with her naughty little family; the swift whir of the gobbler's wings as he haughtily displayed his position as king of the yard, the natural born snob of fowldom; the grunt, grunt of a mother pig as she tried to keep her wayward black and white youngsters out of the milk in the trough; all these sounds so familiar to the country ear created a new world in the life of the interested newcomer.

Over the wooden gate, two horses lovingly stroked each others necks in true horse language; three little calves jumped and frolicked over the dewy grass in the pastures as if they were playing tag; a line of white ducks slowly waddled down a path to the stream for a morning dip just as another line came up from the water picking with their clean pink bills their glistening white feathers; these sights so common to farm life filled Mary with strange new concern.

Presently the farmer came down the

when she felt that she needed protection! On one particular Sunday evening the entire family went to church leaving her alone in the house with a hired man who had formerly worked for the family but who had just come to spend the evening as the family were ready to start.

Mary hinted that she did not like to remain alone but the farmer's wife said she was foolish to imagine any harm coming to her.

The visitor made no attempt to leave, Mary felt she could not go to her room, the nearest neighbor was three miles away so Mary felt compelled to entertain him.

He was different from Sam. If only Sam were there. Minutes seemed like hours and the three hours were as long as so many days. Every leaf breathed a message of fear. The sun set and darkness followed quickly, a distant howl of a wolf disturbed the fearful silence. The stranger moved his chair closer to the kitchen table. A certain expression of black villainy shadowed his face.

Alone on the prairie, away from protection—only the howl of the hungry wolf to break the awful silence, all this filled the girl with terror.

Just as the visitor reached for her hand, the door opened and Sam entered. "Oh, I'm so glad to see you," gasped Mary, as she dropped back in her chair. "I'm so glad—I'm so glad!"

Her face was pale and Sam noticed her tremble and shake from the reaction of fear.

"Never mind, little girl, don't be frightened, I'll look after you now."

Sam gave one stony stare at the stranger, meanwhile the muscles about his mouth tightened as he stood bending with both hands on the table.

The stranger reading the words "fight" in Sam's face, rose, put on his cap and stamped out of the kitchen. Sam and Mary were left alone. The next morning when at work Mary appealed to her mistress:

"I do not like to be left alone with the hired men. They say strange things and make me feel so helpless."

"Have no fear, child, there's no danger, some men are more emotional than others and do not mean any harm," explained the woman as she placed a loaf in the pan ready to place on the table for rising.

"These men are lonely, there are few girls here, and they mean only kindness," she continued as she kneaded another loaf.

Mary watched her in silence. There was no use to urge the question further.

The weeks passed on more pleasantly than ever. There was more time on the farm for leisure as the approaching signs of winter came. The brown leaves crackled under the feet, heavy clouds prophesied the first snow storm and the big pile of wood near the back door bespoke that all preparations had been made for the long winter months.

Around the table inside a happy group gaily joked with one another about the coming wedding.

Mary's new dresses and new winter coat had just been taken from the box brought that day from the station.

"Mother knows what I like!" she exclaimed as she tried on her new hat. The fresh complexion was enhanced by the shape and shade of the new hat.

Every one in the room looked admiringly at Mary in her excitement over the wedding clothes.

Throughout the house the odor of cakes and sweets freshly made gave a scent of the coming event, for Sam and Mary were to be married the next day and they had planned to spend their honeymoon at Mary's home.

"Seems to me you're rather nervous, Sam, on the eve of your marriage!" teased the other fellow at his right as he leaned back against the wall, using the two back legs of the chair for supporting a two hundred pound weight. "Sam you do look pale and trembly," urged the woman of the house.

"I never thought an event like this would disturb you so," she continued taking a dark cake from the oven.

Then they all began the usual process of teasing that a bride-groom-to-be has to swallow from his associates.

Suddenly a rap at the door startled the merry group, and as the house wife opened the door two excited children rushed in and ran straight to Sam.

"Daddy, daddy—we're so glad to see you at last!" one exclaimed as he put his arm around his father's neck.

The other child stood back for a moment conscious of the strangers. A little woman in a serge suit typical of the old country style placed her grip covered with hotel and railroad labels, on a chair. She too, embraced Sam in the presence of all.

Indeed, why should she not? She was Sam's wife.

For a moment it was as if cyclonic lightning had struck every one.

Then Sam, in cowardly confusion, turned to introduce his wife and children to all, even to Mary—but Mary had disappeared. She had gone to her room.

A few days later Mary mailed a letter to a woman in the city to meet her on the next Saturday. Though the woman was a stranger Mary knew her by reputation to be a genuine friend to girls in distress.

Her ride to the country station was quiet and sad for the farmer had little to say. This time Sam did not take her as he had on all of her previous rides.

Tired and broken-hearted she said nothing to the woman who stood just inside of the door in the city station.

The new-found friend placed her arm about her, took her grip and walked towards the platform at the side of a street car track.

"Two transfers to the — Hospital," she requested as she handed the conductor the tickets. That night Mary again took from her trunk the pictures of her father and mother and placed them on the dresser, but she reached for them immediately and kissing each passionately she returned them to the trunk.

"They must never know, they must never know!" she repeated in dazed despair.

In a distant farm house Sam with his wife and children started their new home. Sam is only one of many married men who come to this country, leaving their families in the States or in the old land, while they make enough to bring them to their new home-land and in the meantime—they wreck the lives of girls like Mary—daughter of Mike — the faithful.

A SUFFRAGE TEA

Two enterprising suffragists who had a cottage at Matlock this season, undertook to "spread the light" by means of a "Suffrage Tea." They invited all the women at the Beach with their visitors, and more than fifty assembled, on the wide veranda, which was ablaze of yellow asters, California poppies, and nasturtiums. The tea table which was on the south verandah was covered with yellow crepe paper, with lace doilies, and decorated with yellow sun-flowers and ferns.

One of the hostesses introduced the subject by saying that there was no subject more misunderstood than Woman Suffrage. It was not a conspiracy to deprive men of any right or privilege—it was not a movement to supplant men in the economic world, neither do we believe all men to be bad and all women good; nor do we believe that granting votes to women will remedy all existing evils. But we do believe that the time has come for a re-adjustment of some of our laws, and an amending of some of our laws. Women are no longer sheltered or protected, or represented by our laws; and a sense of fair play demands this re-adjustment.

Then she invited all the ladies present to express their views on the subject; to give a reason for women voting, or why they should not vote. The women wrote their reasons, and when the time

Advertisement for Purity Flour. Features a central image of a flour sack with the Western Canada Flour Mills Company logo and the text 'PURITY FLOUR'. The background is a repeating pattern of 'more bread and better bread'. Large diagonal text reads 'PURITY FLOUR'. At the bottom, it says 'Your final choice' and 'WESTERN CANADA FLOUR MILLS CO. LTD. MILLS - WINNIPEG, GODERICH, BRANDON.'

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had expired, the papers were read. It was found that not one reason was given on the negative side of the question. But about forty excellent papers on the affirmative were submitted. Three of the ladies acted as judges, and four prizes were given to the best papers. The prizes were two suffrage pins, and two copies of Jane Adams and Judge Ben Lindsey's famous addresses on this subject.

Among the answers to the question "Shall women vote?" were these:

"The foundation of democracy is government of the people, for the people, by the people. If it is true that women are people, why should they be excluded?" "The only way to prove that women should not vote is to show that they are not human beings!" "If a human is counted worthy to train a family of children, it is not too much

to credit her with intelligence enough to help to make the laws to control the country that she and they live in."

"Women have to pay taxes, and obey the laws, she has all the burdens of citizenship, so she should have the privileges."

"The work has gone out of the home and women have had to follow it. Why should so many thousands of women have to work under conditions that they have no part in making?"

"Women spend their life for their family, enduring the pain of the world, the endless lot of caring for little children, and yet cannot protect their children from the evils, which men legislate on them. No man or body of men have a right to decide that my boys are to be exposed to the liquor traffic. One boy in every fifth family becomes a drunkard. It may be mine, but I should have the right to strike my blow against it and not only

for my own boy, but for every mother's boy."

"Women have made a good use of the ballot everywhere that it has been given them, they have put the bar out of every small town in California. They have raised the age of consent to 18 years, in every state where they have the ballot."

"Our laws relating to women have a trace of barbarism. Now it is considered a more serious offence to steal \$5 than to steal a woman's virtue. Flesh and blood is cheap, when it belongs to a woman, and always will be until women are politically equal with men."

"Laws are made from the man's standpoint, and give him the advantage everytime. Children have only one parent—the father, an illegitimate child has only one parent—the mother. If the child is desired by both parents—the father gets it. If neither of them want it,

the poor mother has to take it! This is man's chivalry to the weaker sex!"

"The father is the heir to the child's property. If an illegitimate child dies leaving property, it goes to the state. And still people will tell us that women's interests are represented!"

"How can one man with one vote represent his wife, his mother, his daughters, and his two maiden aunts! One man can't represent another man, how can he represent a woman?"

"I believe in woman suffrage, because every agency for evil is against it, every liquor man, every bar-tender, every race-track gambler; every white slaver, every man whose business thrives on the sins, the weakness, the credulity of humanity hates the very name of woman suffrage, and declares woman's place is the home. Let her stay in it. Sometimes these agencies ruin her home, so that she can no longer stay in it. Hearing liquor people declare 'woman's place to be the home' has converted me to woman's suffrage. Women must have every weapon whereby she can defend her home. Women must stand by and help each other, against the evils which threaten her home."

"In New Zealand where women have voted for 19 years, they have the smallest rate of infant mortality in the world. When women got the vote it was 133 in every thousand, they reduced it in 5 years to 26. Women do not forget the babies, when they get the vote. The old cry of neglected homes does not come from the countries where women vote. It usually comes from ignorant people who haven't anything else to stay. Voting is a short process—it does not take as long as going to church."

"It is a mean man who would deny a woman any weapon whereby they can defend the children they have brought into the world."

"Some good people do not believe in woman suffrage. All bad people are against it!"

"If women have done so well with only an indirect influence how much better she would do with direct and indirect influence both!"

"Power brings respect; the women who vote are respected. Many a woman finds that when her boys get out in the world, they despise their mother's teaching, for when they find that their mother has no legal right to back up her opinions, they naturally believe her unreliable. It is the tendency of our civilization to disparage women—it is a man's world—where men dominate, and women are not going to always submit. God intended women and men to be equal—and the highest good of both men and women demand it."

The hostesses of this tea were Mrs. Nellie L. McClung and Mrs. Percy Anderson.

Mothers' Corner

THE MOTHER'S KISS

Love breathed a secret to her listening heart,
And said "Be silent." Though she guarded it,
And dwelt as one within a world apart,
Yet sun and star seemed by that secret lit.
And where she passed, each whispering wind ablow,
And every little blossom in the sod,
Called joyously to her, "We know, we know,
For are we not the intimates of God?"
Life grew so radiant, and so opulent,
That when her fragile body and her brain
By mortal throes of agony were rent,
She felt a curious rapture in her pain.
Then, after anguish, came the supreme bliss—
They brought the little baby for her kiss!"
—Ella Wheeler Wilcox.

DOMESTIC BLISS

Sequestered in their calm domestic bower,
They sat together. He in manhood's prime,
And she a matron in her fullest flower.
The mantel clock gave forth a warning chime.
She put her work aside; his bright cigar
Grew pale, and crumbled in an ashen heat.

The lights went out, save one remaining star
That watched beside the children in their sleep.
She hummed a little song and nestled near
As side by side they went to their repose.
His arm about her waist, he whispered "Dear,"
And pressed his lips upon her mouth's full rose—
The sacred sweetness of their wedded life
Breathed in that kiss of husband and wife.—Ella Wheeler Wilcox.

NURSES

This month I had the pleasure of a call from Miss McKenzie, one of the board of the Victorian order of nurses. She is travelling through the West studying conditions favorable to the location of hospitals that would send out nurses to isolated places. Mrs. Beatty, formerly from Miami, has this work very much at heart and it is to be hoped that something along this line may be done for our suffering women who many times must pass into the Great Beyond for lack of medical attention. The motherless little children left behind should touch the heart of our people until an immediate move shall be made to save the mothers of our land.

In an insane hospital not so far away are more than twenty mothers sent there because they had no medical attention during confinement. It is difficult to get statistics. There is more than one insane asylum in Western Canada. It seems to me that here is an immediate work for women's organizations. Let us protect the motherhood of our land. Arouse public sympathy, say the governmental officials. If that is what is needed let us work unceasingly for this cause. Our women in the home economic societies are thoroughly in sympathy and want something done. They are only waiting for a definite plan. May we have plans formulated and sent to this department for discussion? What would be the best method to pursue? I shall be pleased to give space to all the discussion sent in on this subject. We all recognize the need—let us reason and plan for definite action to be taken. I wish every home economics society and home makers' club would discuss this in their next meeting and send us an account of their arguments and decisions.

BOOKLET

The booklet, Helps for Expectant Mothers, will be sent free to any wife who requests it. Address all letters to this department to Pearl Richmond Hamilton, 983 Grosvenor Ave., Winnipeg.

"The basic thoughts in child-helping are character-building and good citizenship."

THE MATERNITY OUTFIT

Besides the clothes for the baby, there are numerous things that should be gotten in readiness in anticipation of the expected event. Some supply houses now make maternity packages which include the things that will be needed at labor and the days following. However, the majority of women find it necessary to plan their own supplies. It is well to gather all the necessary articles together some weeks before the requisite time. To have them all together in one drawer or box so that they can be found when needed is the best plan. Sometimes they are necessary an entire month before the expected time so it is well to be prepared for emergencies.

In the box should be placed about four clean sheets, six towels, an extra night-gown for the mother, two wash cloths, a bar of castile or other pure soap, a rubber sheet, sanitary pads or gauze and cotton, abdominal binders, a bottle of antiseptic, besides all the articles given in the list as required for the baby.

A rubber sheet about a yard square should be provided. Table oilcloth will do, but it is not as soft and is more liable to form in wrinkles and crack than is rubber sheeting. The latter can be procured from fifty cents to a dollar a yard. It is used to protect the bed at the time of labor. Later it can be used on the baby's bed.

Two dozen sanitary pads should be provided. These may be made of any clean white cloth, but a convenient way is to

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LIVERPOOL	GLASGOW	HAVRE-LONDON
Tunisian Oct. 14	Pretorian Oct. 18	Corinthian Oct. 12
Victorian Oct. 21	Gramplan Oct. 23	Sicilian Oct. 19
Coriscan Oct. 28	Scandinavian Nov. 1	Ionian Oct. 26
Virginian Nov. 4	Hesperian Nov. 6	Pomeranian Nov. 2
Tunisian Nov. 11	Pretorian Nov. 15	Scotian Nov. 9
Victorian Nov. 18	Gramplan Nov. 20	Corinthian Nov. 16
Coriscan Nov. 25		Sicilian Nov. 23

CHRISTMAS SAILINGS

HALIFAX-LIVERPOOL	PORTLAND-GLASGOW
Virginian Dec. 6	Scandinavian Dec. 4
Victorian Dec. 20	Ionian Dec. 13

ST. JOHN-LIVERPOOL	BOSTON GLASGOW
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This is THE Farm Power Magazine of Western Canada. That's why you will find in IT the advertisements of RELIABLE Manufacturers who make the best Farm Power Machinery.

buy a five-yard package of sterile gauze and a pound of absorbent cotton. A piece of cotton of the desired size wrapped in one thickness of gauze. These pads are convenient as they may be burned after use. There will be enough of the cotton left to be used in cleansing the baby's eyes and for other purposes.

Two abdominal binders for the mother will be needed. A yard and a half of muslin, torn in two lengthwise, makes very satisfactory binders. It is not even necessary to hem these. It is a good plan to have an extra piece of muslin on hand that may be used for breast binders if necessary. These are not needed in all cases, but in others are quite indispensable. A card of large safety pins should be with the binders.

Some good antiseptic, as a two ounce bottle of lysol, should be provided. This is used to make an antiseptic solution for an external douche for the mother.

Five cents worth of boric acid crystals will be needed to make a solution for cleansing the baby's eyes and mouth and the mother's nipples. Small pieces of the absorbent cotton or gauze may be used for this. Each piece should be destroyed after use. The same piece never should be used to cleanse both of the baby's eyes.

A four-ounce bottle of olive oil (about twenty-five cents worth) will be needed for the baby's first baths. A box of good talcum powder brings added comfort to the baby.

In an anticipation of an emergency, as the birth of the baby before the arrival of the doctor, a pair of scissors, a piece of silk tape and a small bottle of alcohol should be handy. After birth, the cord should be tied in two places, the first one about an inch and a half from the body and the next one a couple of inches further away. It is necessary that the cord be tied tightly to prevent bleeding after it is cut. The cord is severed between the two ligatures.

The cut end of the cord then should be wiped with a piece of cotton dipped in alcohol. Alcohol not only is an antiseptic but it is astringent and helps to cause the cord to dry quickly. The navel should be covered with a piece of sterile gauze. In the absence of this, a piece of freshly scorched linen may be used.

Every home should be supplied with a bedpan and a fountain syringe. These are quite necessary in nearly all cases of illness and are required especially during the period following confinement.

BOWLEGS

For the small boy afflicted with bowlegs, treatment may be made a joy. A velopede large enough so that the boy will have to stretch to reach the pedals often will do a great deal of good. When the boy is riding the weight is removed from the legs, but at the same time the muscles are being exercised. In a number of cases, no other treatment is necessary.

Will you kindly give me a remedy for my little fourteen months old girl's bowlegs. She commenced to walk six months ago. She is very fat.—Mrs. E. C.

So often when babies are allowed to walk too early bowlegs result. Especially when the child is heavy, walking should be postponed if possible. The child should be kept off her feet as much as possible for a time. Night and morning the legs should be massaged and the bones gently bent back in position. It may be necessary to apply some sort of brace for a time.

CONSTIPATION IN BOY OF TWO

My boy two and a half years of age is troubled with constipation. I give him oatmeal twice a day, as he likes it better than anything else. How many hours should a child of this age sleep?—Mrs. M. L. H.

Have a regular time for going to the toilet, use brown sugar on the cereal and massage the abdomen night and morning with olive oil. The child should sleep about ten hours at night with a short nap during the middle of the day.

A Help for Busy Mothers

The mother who is her own housemaid, as well as her children's nurse, often finds it almost impossible to go to baby as soon as he awakens, and when fretful with teething, he is apt to get in a bad humor if left too long. I have found it a good plan to suspend some of his playthings in front of him, where they will catch his eye upon awaking, and amuse him long enough for me to hush whatever

work is at hand. For this purpose, two yards of garter elastic is serviceable. Sew a loop in each end to slip over opposite corners of the bed posts, over chair posts on either side of crib, or in any way to bring it to the right height, then loop or pin the playthings to the elastic. With his rubber ring hung within reach he will grasp it and set a rattle ringing or a bright ball or rubber doll dancing, that are hung out of reach. In the country, where trees are plentiful, if a branch filled with green leaves be thus suspended, baby seems never to tire of pulling the elastic and watching and listening to the resultant dancing and rustling of the leaves; but great care should be taken to place the bough so far out of reach that no leaves can find their way to the little hands.—B.

Home Economics

Kindly address all communications to this department to Pearl Richmond Hamilton, 283 Grosvenor Ave., Winnipeg.

This department goes to press very early this month, hence the reports are not in yet. We should like to see reports early for next month's Thresherman. Will the H. E. S. members read the message on Nurses in The Mothers' Corner?

Any suggestions for this department will be appreciated.—P. R. H.

DELORAINÉ

The Delorainé Home Economics Society had a delightful change for their August meeting. In place of their usual business meeting they were invited by Mrs. Wm. Renton of Hazelkeld to a picnic in the lovely grove at her home.

The weather was perfect, and about sixty ladies accepted Mrs. Renton's kind invitation, all meeting at the home of our president (Mrs. Thornton), where autos were waiting to convey the ladies to the picnic grounds about 10 miles out of town. Needless to say, all enjoyed the ride as well as the picnic.

About 5.30 a very dainty lunch was served and this was one part of the programme that all took part in, no one having left their appetites at home. Before de-



Mr. Edison's Pet and Hobby

He realizes the wonderful value of his phonograph as a cementer of home ties and as a maker of happy homes. And for this reason he worked for years striving to produce the most perfect phonograph. At last he has produced this new model, and his friends have induced him to take the first vacation he has had in over a quarter of a century. Just think of it: over twenty-five years of unremitting work on many inventions—then his pet and hobby perfected—then a vacation.

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offer on the first lot of the new style Edison Phonographs; these new Phonographs to be shipped FREE on this special offer NOW.

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parting a few snapshots were taken after which a hearty vote of thanks was tendered Mrs. Renton, to which Mrs. Renton replied, then all joined in singing "She's a jolly good fellow," and Auld Lang-Syne, which ended one of the happiest gatherings our society has had.—Mrs. Will Peery.

BENITO

The August meeting of the Home Economic Society was held on the 21st inst, at the home of the secretary, with a good attendance. After the usual business the president asked for suggestions as to how we might raise money. The question of the bazaar was raised and finally decided upon, then followed the question of object for work, but although many suggestions were made, the decision was left over for next meeting. The secretary read a letter from Mrs. Dayton, our provincial president, in which she stated that she might visit our society in October. We will accord her a most hearty welcome. Mrs. S. J. Harris was in charge of the programme and read an excellent paper on preserving fruits. Mrs. A. C. Dykeman led the discussion, and many practical and useful hints were given by several members. Mrs. E. Martin gave us her method of preparing pickles, she entered very fully into every detail and was very much appreciated, an open discussion followed. After a few minutes spent in social chat, tea was served by the refreshment committee.

May we have the paper on preserving fruit by Mrs. Harris, for publication in this department? I am sure it would help our readers.—P. R. H.

RECIPES

Grape Conserve

Five pounds of grapes, removing seeds and skins, five oranges, one lemon, two pounds raisins, seeded, one pound chopped walnut meats, five pounds of sugar. Boil until thick; put in glasses or small jars.

Winter Relish

Three quarts of green tomatoes, three large heads of cabbage, one quart of onions, three green peppers. Chop fine and soak in weak brine over night; drain and add three quarts of vinegar, four cupsful of sugar, one large tablespoonful of brown mustard seed, one ounce of celery seed and one-half ounce of tumeric powder. Bring to a boil, then add one cupful of flour moistened with a little cold water. Can at once. If not cooked too long, this has a crisp, fresh flavor that is very pleasing for winter and early spring use.

Ham Patties

Two cupfuls of cold cooked ham minced fine; stir into four cups of bread crumbs moistened in milk. To this add a large lump of butter and any seasonings liked. Pour the batter into gem pans, filling about two-thirds full. Break an egg over each, sprinkle with bread crumbs and bake until brown.

Rules for Making and Baking Cake

Have the oven ready to receive the cake as soon as it is mixed. The oven can wait for a few moments for the cake; the cake can never wait for the oven. The coarseness of a cake is frequently due to its standing for a moment before going into the oven, or the oven not being at the right temperature when the cake goes in. Cakes without butter require a quick oven.

Cakes with butter require a moderate oven. Cookies or small cakes require a moderately quick oven.

Cakes containing molasses require careful watching in a moderate oven, as they scorch easily.

If your cake browns as soon as you put it into the oven, the oven is too hot; cool it as quickly as possible by lifting the lid of the stove, or stand in the oven a quart pudding pan filled with cold water.

Never move a cake in the oven until the center is thoroughly "set." If you jar it it will become heavy in the center and near the bottom. This is due to the breaking of the cells.

To try a cake without a thermometer put your ear down near the pan; if the cake ticks loudly put it back, as it is not done. If the ticking is faint or absent it is done. Take it from the oven, but do not handle it while hot.

It is always well to line cake pans with greased paper, to prevent burning the bottom.

Mother's Cake—Two cupfuls of molasses, small cup of lard, one egg, a pinch of salt, one teaspoon of allspice and one of cinnamon, one cup of coffee, a teaspoon of saleratus, put in enough flour so it will just keep from dropping off spoon.

Quick Cake—One cup soft butter, one and one-third brown sugar, two eggs, one-half cup milk or water, one and three-fourth cups flour, three teaspoons baking powder, one-half teaspoon cinnamon, one-half teaspoon nutmeg, one-fourth teaspoon allspice, one-half cup raisins or one-half pound stoned and chopped dates. Put ingredients in a bowl, beat all together for three minutes. Bake thirty-five to forty minutes.—P. R.

The Finest Strawberry Shortcake—Sift together twice, two cups flour, two teaspoons baking powder, two teaspoons sugar and one-half teaspoon salt. Be exact in all measures. Work in four tablespoons butter with tips of fingers and gradually add three-quarters cup of milk. Pat smoothly into a large oblong baking pan. Crush slightly a quart of strawberries, sweeten to taste, and let stand until ready to serve. Butter the shortcake, spread the berries over, and cover with thick sweetened cream, whipped if preferred.—P. R.

Pork Cake—Boil one pound finely chopped pork in one cup hot water two minutes. Add two cups sugar, one cup molasses, two teaspoons cinnamon, one teaspoon each of cloves, nutmeg and allspice and two cups raisins. Dissolve two teaspoons soda in one-quarter cup sour milk, add and stir in flour until thick enough to drop from spoon. Bake one hour.—Mrs. J. W.

Plain Cake—Cream three-quarter cup sugar with butter size of an egg. Add one cup buttermilk and sift in one teaspoon each of soda and baking powder with two cups flour. Flavor to suit taste, beat well and bake slowly one hour.

Brown Cake—Cream one cup sugar and one-quarter cup butter, add one cup buttermilk and two cups flour in which has been mixed one teaspoon each of cinnamon and soda and one-half teaspoon cloves.—Mrs. H. S. M.

Cheep Cake—To one cup molasses add four tablespoons pork fat, one teaspoon ginger, one teaspoon soda dissolved in one cup boiling water, and flour to thicken to a stiff batter.—Mrs. H. S. M.

Bread Cake—Into one cup light bread dough beat one-half cup butter, one cup sugar, one-half teaspoon cinnamon, and a little nutmeg. Let rise and then bake. If liked, add one-half cup chopped and seeded raisins, or currants.—S. E. Wilcox.

Marble Cake—Light part—One cup sugar, one-half cup butter, one-half cup sweet milk, whites of three eggs, two cups flour, two teaspoons baking powder, flavoring.

Dark part—One-half cup brown sugar, one-quarter cup butter, one-quarter cup sweet milk, yolks of three eggs, one-half cup molasses, one-half teaspoon each cinnamon, cloves, allspice and nutmeg, one-half cup raisins, two cups flour, two teaspoons baking powder. This recipe never fails. The dark part makes a fine fruit cake by adding fruit. The light part is nice frosted with cocoanut.—Clara S.

Molasses Cake—One cup molasses, one teaspoon salt, three cups flour, one teaspoon soda dissolved in hot water, two tablespoons melted butter.—Mrs. W. L. J.

Spice Cake—One cup sugar, one-half cup butter, one cup sour milk, two cups flour, one cup chopped raisins, one teaspoon soda, one teaspoon cinnamon, one and one-half cups chopped suet, one teaspoon nutmeg. Grated chocolate instead of spices makes it very nice.—C. S.

Egless Frosting—Boil one and one-half cups granulated sugar in one-half cup milk without stirring for five or six minutes, or until it hairs. Take off and beat to a cream. For a small cake take one-half the above.—C. S.

Layer Cake—One cup sugar, one-quarter cup butter, three-quarter cup rich, sweet milk, two cups flour, two and one-half teaspoons baking powder. Flavor with vanilla and bake in three layers. Frosting—One cup sugar, five tablespoons

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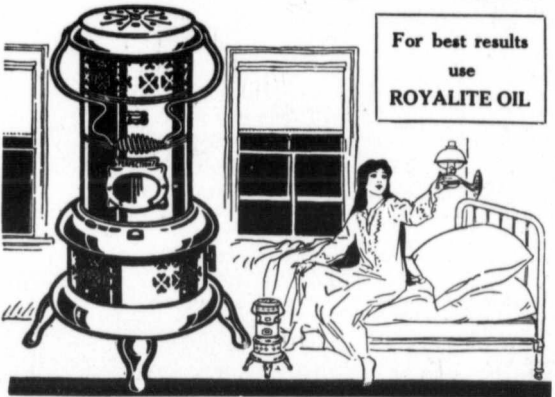
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THE IDEAL will last years after the cheap light weight stove has gone to the scrap heap. No better range made than the IDEAL HOUSEHOLD. Send in your order today. Burns wood or any kind of coal. Takes wood 24 inches long. No. 9-20 has oven 20x20x13 inches; six 9-inch lids, copper reservoir enclosed, shipping weight, 350 pounds. Complete with high closet and oven thermometer \$49.75.

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

milk, one-half cake sweet chocolate. Boil six or seven minutes, then take from fire and add one-half teaspoon vanilla.—Mrs. E. S.

Layer or Plain Loaf Cake—Sift three tablespoons flour and one level teaspoon baking powder together into a pan ready for use. Put one tablespoon soft butter and two tablespoons white sugar into a mixing bowl and stir with a tablespoon until smooth and creamy. Then add two tablespoons sweet milk, stir again, add two tablespoons of the sifted flour, mix well, stir in one well beaten egg and one-half teaspoon vanilla, then the rest of the flour, and turn into three well greased pans. Three or five pound lard pail covers make nice jelly tins. Bake in a quick oven and turn out, bottom side up upon a clean cloth, and spread with whatever filling preferred.

Three Good Fillings—Beat the white of one egg until stiff, then add slowly two tablespoons each of sugar and grated coconut and spread between the layers and on the top. For a chocolate filling place the small bowl or cup in a kettle of boiling water and in it put one-half square of chocolate, one and one-half tablespoons sugar and stir until melted then add one tablespoon milk and a few drops of vanilla. Boil five minutes, stirring well. Spread between the layers. For a cream filling stir together one teaspoon flour, one tablespoon sugar and one-half well beaten egg. Add four tablespoons milk and a few drops of vanilla. Place in a pan of boiling water and stir until thick. Spread between the layers and glaze the top with half the well beaten egg and sprinkle with sugar.

Foundation of Home Life

"Home life," stated president McLean in a recently delivered lecture, "is founded upon industry, intelligence, honesty and affection—chiefly affection." A growing boy had many guardian angels and seemed to keep them all busy, but his greatest safeguard was the knowledge of his mother's love and faith. Parents were creditors in affection and children debtors and so the work of love passed from hand to hand—the light that illuminated the world. At the home altars" said the speaker, "all men may worship, for belief in the home all the millions of men may cherish."

To illustrate his point Dr. MacLean read a very beautiful original allegory of the golden thread, "the thread of truth to the best in oneself, an insight into all man is and all that is of value in human experience, a single shining thread that leads back to a mother's hand and onward, mayhap, to the very knees of God."

WOMEN POLICE USED OVER SEA
Norway and Sweden Find "Police Sisters" Valuable—England May Follow Suit

The advisability of establishing women police in Great Britain to help fight the white slave traffic was discussed at a sitting of the International Congress for the Suppression of the White Slave Traffic.

Miss Elisesem of Norway said that her country already had women police and was well satisfied with their work. Miss Leather of Canada said that women police had for some time existed in Ottawa and other cities of Canada. A woman delegate from Sweden said that in her country women police had been found of immense value. They are called "police sisters."

Police Commissioner Bullock of Scotland Yard believed it essential that the police should be assisted by women in white slave traffic work, but doubted if such assistance would be better for being actually official rather than voluntary.—From The Woman's Journal.

Weary William: "You condemn us tramps, but there's one thing we must get credit for."

Mrs. Stingey: "What's that?"

Weary William: "You don't hear us indulgin' in labor disputes."

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Any of these patterns supplied by the Pattern Department of the E. H. Heath Co., for 10c., or stamps. Please order by number and state the month in which pattern appeared.

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With Three-Quarter or Long Sleeves.
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With High or Natural Waist Line.
7959 Two-Piece Skirt, 22 to 32 waist.
With Train in Pointed or Round Outline, or in Round Length, with High or Natural Waist Line.

The above patterns will be mailed to any address by the Fashion Department of this paper, on receipt of ten cents for each.

No Wonder

A couple of visitors from a rural district were in the Strangers' Gallery in the House of Commons trying to recognize their member on the floor,

"I can't distinguish him," said one, after a hopeless visual observation.

"Of course not," was the honest reply. "He can't even distinguish himself."

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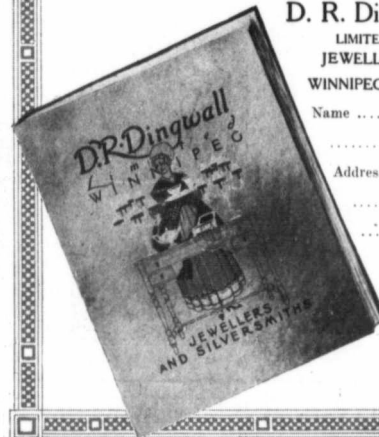
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His latest achievement is an entirely new departure in his wonderful gramophone invention, in which the sound horn, which has always been an imposing if not inconveniently cumbersome accessory of the instrument is entirely done away with. The new hornless machine becomes one of the most attractive drawing room cabinet ornaments, while the fidelity of reproduction, purity and mellowness of tone is



MR. EDISON IN HIS LABORATORY

a marvellous improvement on anything that has preceded it.

And the price brings it within the reach of most people who have a chord of music in their souls. The Doherty Piano Company, of Winnipeg, are featuring this wonderful instrument and are now offering it on terms described on another page which cannot fail to make it the most popular and inexpensive musical luxury which can be introduced into the farm or city home. At this writing, Mr. Edison is reported seriously ill at his home at Orange, New Jersey. It is to be earnestly hoped that the wizard's illness may be short and that he may live many years to continue those splendid services to the whole of mankind, which have made his name one of the most beloved in every corner of the globe.

A NOVELTY IN MYSTERY STORIES
THE SECRET OF LONESOME COVE
 By
SAMUEL HOPKINS ADAMS
 AUTHOR OF 'AVERAGE JONES ETC'
 Copyright, 1912, The Bobbs-Merrill Company.

(Continued from page 68, September issue)

"Well, no. I thought not, then, or I shouldn't have been so free and easy with her. For one thing, she was painted badly, and the perspiration, running down her forehead, had made her a sight. Yet, I don't know: her voice was that of a cultivated person. Her manner was awkward and her dress weird for that time of day, and, for all that, she carried herself like a person accustomed to some degree of consideration. That I felt quite plainly. I felt, too, something uncanny about her. Her eyes alone would have produced that impression. They were peculiarly restless and brilliant."

"Insane?" questioned Kent.

"Not wholly sane, certainly; but it might have been drugs. That suggested itself to me."

"A possibility. Proceed."

"She asked what point of the headland gave the best view.

'Anywhere from the first rise on is good,' I said. 'It depends on what you wish to see.'—'My ship coming in,' said she.—'It will be a far view, then,' I told her. 'This is a coast of guardian reefs.'—'What difference?' she said, and then gave me another surprise; for she quoted:

"'And though thy soul sail leagues and leagues beyond— Still, leagues beyond those leagues, there is more sea.'"

"That's interesting," remarked Kent. "Casual female wayfarers aren't given to quoting 'The House of Life.'"

"Nor casual ships to visiting this part of the coast. However, there was no ship. I looked for myself, when I was trying to find the woman later. What are you smiling at?"

"Nothing. I'm sorry I interrupted."

"She walked away from me a few paces, but turned and came back at once."

"'I follow my star,' she said, pointing to a planet that shone low over the sea. 'Therein lies the only true happiness; to dare and to follow.'"

"It's a practise which has got many people into trouble and some into jail,' I remarked.

"Do not be flippant," she replied in her deep tones. 'Perhaps under that star you move on dim paths to an unknown glory.'"

"See here," I broke out, 'you're making me uncomfortable. If you've got something to tell, please tell it, kindly omitting the melodrama.'"

"Remember this meeting," she said in a tone of solemn command; 'for it may mark an epoch in your life. Some day in the future I may send for you and recall today to your mind by what I have just said. In that day you will know the hidden things that are clear only to the chosen minds. Perhaps you will be the last person but one to see me as I now am.'"

Kent pulled nervously at the lobe of his ear. "Is it possible that she foresaw her death?" he murmured.

"It would look so, in the light of what has happened, wouldn't it? Yet there was an uncanny air of joyousness about her, too."

"I don't like it," announced Kent. "I do not like it!"

By which he meant that he did not understand it. What Chester

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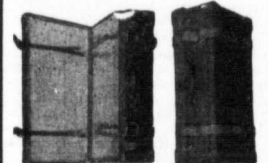
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Kent does not understand, Chester Kent resents.

"Love affairs, perhaps," suggested the artist. "A woman in love will take any risk of death. However," he added, rubbing his bruised head reminiscently, "she had a very practical bent, for a romantic person. After the mysterious prophecy she started on. I called to her to come back or I would follow and make her explain herself."

"As to what?"

"Everything: her being there, her actions, her—her apparel, the jewelry, you know, and all that."

"You've said nothing about jewelry."

"Haven't I? Well, when she turned—"

"Just a moment. Was it the jewelry that you were going to speak of when you first accosted her?"

"Yes, it was. Some of it was very valuable, I judge. Wasn't it found on the body?"

"No."

"Not? Robbery, then, probably. Well, she came back at a stride. Her eyes were alive with anger. There came a torrent of words from her; strong words, too. Nothing of the well-bred woman left there. I insisted on knowing who she was, and she burst out on me with laughter that was, somehow, more insulting than her speech. But when I told her that I'd find out about her if I had to follow her into the sea, she stopped laughing fast enough. Before I could guard myself she had caught up a rock from the road and let me have it. I went over like a tenpin. When I got up, she was well along toward the cliffs, and I never did find her trail in that maze of copses and thickets."

"Show me your relative positions when she attacked you."

The artist placed Kent, and moved off five paces. "About like that," he said.

"Did she throw overhand or underhand?"

"It was so quick I hardly know. But I should say a short overhand snap. It came hard enough!"

"I do not like it at all," said Kent again.

He wandered disconsolately and with half-closed eyes about the room, until he blundered into collision with a cot-lounge in the corner, spread with cushions. These he heaped up, threw his coat over them, stretched himself out with his feet propped high on the mound just erected, and closed his eyes.

"Sleepy?" inquired Sedgwick.

"Busy," retorted his guest.

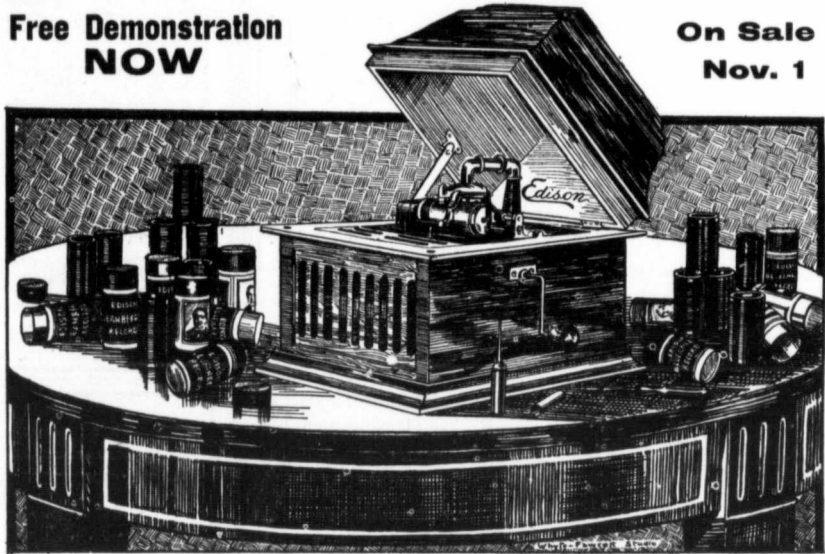
"Like some more pillows?"

"No; I'd like ten minutes of silence." The speaker opened

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one eye. "At the end of that time perhaps you'll think better of it." "Of what?"

"Of concealing an essentially important part of your experience, which has to do, I think, with the jewelry."

At the end of the ten minutes, when Kent opened both eyes, his friend forestalled him with another query.

"You say that no jewels were found on the body. Was there any other mark of identification?"

"If there was, the sheriff got away with it before I saw it."

"How can you be sure, then, that the dead woman was my visitor?"

"Dennett mentioned a necklace. On the crushed flesh of the dead woman's neck there is the plain impress of a jewel setting. Now, come, Sedgwick! If I'm to help you in this, you must help me. Had you ever seen that necklace before?"

"Yes," was the reply, given with obvious reluctance.

"Where?" "On the neck of the girl of my picture."

Kent's fingers went to his ear, pulling at the lobe until that unoffending pendant stretched like rubber. "You're sure?" he asked.

"There couldn't be any mistake. The stones were matched rose-topazes; you mightn't find another like it in the whole country."

Kent whistled, soft and long. "I'm afraid, my boy," he said at length, "I'm very much afraid that you'll have to tell me the whole story of the romance of the pictured face; and this time without reservation."

"That's what I've been guarding against," retorted the other. "It isn't a thing that I can tell, man to man. Don't you understand? Or," he added savagely, "do you misunderstand?"

"No, I don't misunderstand," answered Kent very gently. "I know there are things that can't be spoken, not because they are shameful, but because they are sacred. Yet I've got to know about her. Here! I have it. When I'm gone, sit down and write it out for me, simply and fully, and send it to my hotel as soon as it is done. You can do that, can't you?"

"Yes, I can do that," decided Sedgwick, after some consideration.

"Good! Then give me some dinner. And let's forget this grisly thing for a time, and talk of the old days. Whatever became of Harkness, of our class, do you know?"

Between them that evening was no further mention of the strange body in Lonesome Cove.

CHAPTER III

My Lady of Mystery

Dear Kent: Here goes! I met her first on June 22, at three o'clock in the afternoon. Some wonderful cloud effects after a hard rain had brought me out into the open. I had pitched my easel in the hollow, on the Martindale Road, so as to get that clump of pine against the sky. There I sat working away with a will, when I heard the drumming of hoofs, and a horse with a girl in the saddle came whizzing round the turn almost upon me. Just then the rain had made a puddle of thick, sticky mud, the mud-pie variety. As the horse went by at full gallop, a fine, fat, mud pie rose, soared through the air, and landed in the middle of my painting. I fairly yelped.

To get it all off was hopeless. However, I went at it, and was cursing over the job when I heard the hoofs coming back, and the rider pulled up close to me.

"I heard you cry out," said a voice, very full and low. "Did I hurt you?" I hope not.

"No," I said without looking up. "Small thanks to you that you didn't!"

My tone silenced her for a moment. Somehow, though, I got the feeling that she was amused more than abashed at my resentment. And her voice was suspiciously meek when she presently spoke again.

"You're an artist, aren't you?" "No," I said, busily scrapping away at my copperplate. "I'm an archeologist, engaged in exhuming an ancient ruin from a square mile of mud."

She laughed; but in a moment became grave again. "I'm so sorry!" she said. "I know I shouldn't come plunging around turns in that reckless way. May I—I should like to—buy your picture?"

"You may not," I replied. "That isn't quite fair, is it?" she asked. "If I have done damage, I should be allowed to repair it."

"Repair?" said I. "How do you propose to do it? I suppose that you think a picture that can be bought for a hundred-dollar bill can be painted with a hundred-dollar bill."

"No; I'm not altogether a Philistine," she said, and I looked up at her for the first time. Her face— (Elision and Comment by Kent: I know her face from the sketches. Why could he not have described the horse? However, there's one point clear: she is a woman of means.)

She said, "I don't wonder your cross. And I'm truly sorry. Is it quite ruined?"

At that I recovered some decency of manner. "Forgive a

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hermit," I said, "who doesn't see enough people to keep him civilized. The daub doesn't matter."

She leaned over from the saddle to examine the picture. "Oh, but it isn't a daub!" she protested. "I—I know a little about pictures. It's very interesting and curious. But why do you paint it on copper?"

I explained.

"Oh!" she said. "I should so like to see your prints!"

"Nothing easier," said I. "My shack is just over the hill."

"And there is a Mrs.—" her eyes suggested that I fill the blank.

"Sedgwick?" I finished. "No. There is no one but my aged and highly respectable Chinaman to play propriety. But in the case of a studio, les convenances are not so rigid but that one may look at pictures unchaperoned."

"I'm afraid it wouldn't do," she answered, smiling. "No, I'll have to wait until—" A shadow passed over her face. "I'm afraid I'll have to give it up."

Chance settled that point then and there. As she finished, she was in my arms. The girth had loosened, and the saddle had turned with her. I had barely time to twist her foot from the stirrup when the brute of a horse bolted. As it was, her ankle got a bit of a wrench. She turned quite white, and cried out a little. In a moment she was herself again.

"King Cole has been acting badly all day," she said. "I shall have a time catching him." She limped forward a few steps.

"Here, that won't do!" said I. "Let me."

"You couldn't get near him—though, perhaps, if you had some salt—"

"I can get some at my place," said I, gathering up my things. "Your horse is headed that way. You'd better come along and rest there while Ching Lung and I round up your mount."

(Comment by C. K.: Here follows more talk, showing how young people imperceptibly and unconsciously cement an acquaintance; but not one word upon the vital point of how far the horse seemed to have come, whether he was ridden out, or fresh, etc.)

At the burrow I called Ching, and we set out with a supply of salt. King Cole (Comment by C. K.: Probably a dead-black horse) was coy for a time, before he succumbed to temptation. On my return I found my visitor in the studio. She had said that she knew a little about pictures. She knew more than a little, a good deal, in fact, and talked most intelligently about them. I don't say this simply because she tried,


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before she went, to buy some of mine. When I declined to sell she seemed put out.

"But surely these prints of yours aren't the work of an amateur," she said. "You sell?"

"Oh, yes, I sell—when I can. But I don't sell without a good bit of bargaining; particularly when I suspect my purchaser of wishing to make amends by a purchase."

"It isn't that at all," she said earnestly. "I want the pictures for themselves."

"Call this a preliminary then, and come back when you have more time."

She shook her head, and there was a shadow over the brightness of her face. "I'm afraid not," she said. "But I have enjoyed talking again with some one who knows and loves the best in art. After

all," she added with a note of determination, almost of defiance, "there is no reason why I shouldn't sometime."

"Then I may look for you again?" I asked.

She nodded as she moved out across the porch. "If you promise to sell me any print I may choose. Good-by. And thank you so much, Mr. Sedgwick!"

She held out her hand. It was a hand for a sculptor to model, as beautiful and full of character as her face. (Comment by C. K.: Bosh!) Afterward I remembered that never again in our friendship did I see it unglued. (Comment by C. K.: "Bosh" retracted. Some observation in that!)

"Au revoir, then," I said; "but you have the advantage of me, you see. I don't know what to call you at all."

She hesitated; then, with a little soft quiver of her eyelids, which I afterward learned to identify as an evidence of amusement, said, "Daw is a nice name, don't you think?" (Comment by C. K.: False name, of course; but highly probable first name is Marjorie.) "By the way, what time is it?"

"Quarter to five, Miss Daw."

She smiled at the name. "King Cole will have to do his best, if I am to be back for dinner. Good-by." (Comment by C. K.: Good! The place where she is staying is a good way off, assuming a seven-thirty dinner-hour; say twelve to fifteen miles.)

That was the first of many visits, of days that grew in radiance for me. It isn't necessary for me to tell you, Kent, how in our talks I came to divine

in her a spirit as wistful and pure as her face. You do not want a love story from me; yet that is what it was for me almost from the first. Not openly, though. There was that about her which held me at arms' length: the mystery of her, her quickly-given trust in me, a certain strained look that came into her face, like the startled attention of a wild thing poised for flight, whenever I touched upon the personal note. Not that I ever questioned her. That was the understanding between us: that I should leave to her her incognita without effort to penetrate it.

While I talked, I sketched her and studied her. Young as she seemed, she had been much about the world, knew her Europe, had met and talked with men of many pursuits, and had taken from all sources tribute for her mind and color for her imagination. She had read widely, too, and had an individual habit of thought. Combined with all her cosmopolitanism was a quaint and profound purity of standards. I remember her saying once—it was one of her rare flashes of self-revelation—"I am an anomaly and an anachronism, a Puritan in modern society." After her first visit she did not ride on her horse; but came across lots and through the side hedge, swinging down the hillside yonder with her light dipping stride that always recalled to me the swoop of a swallow, her gloved hands usually holding a slender stick.

All those sketches that you saw were but studies for a more serious attempt to catch and fix her personality. (Comment by C. K.: Couldn't he have given me in two words her height and approximate weight?) I did it in pastel, and, if I missed something of her tender and changeful coloring, I at least caught the ineffable wistfulness of her expression, the look of one hoping against hope for an unconfessed happiness. Probably I had put more of myself into it than I had meant. A man is likely to when he paints with his heart as well as his brain and hand. When it was done I made a little frame for it, and lettered on the frame this line:

"And her eyes dreamed against a distant goal."

It was the next day that she read the line. I saw the color die from her face and flood back again.

"Why did you set that line there?" she breathed, her eyes fixed on me with a strange expression. (Comment by C. K.: Rossetti again. The dead woman of the beach quoted "The House of Life," also.)

"Why not?" I asked. "It seems to express something in you which I have tried to embody in the picture. Don't you like it?"

She repeated the line softly, making pure music of it. "I love it," she said.

At that, I spoke as it is given to a man to speak to one woman in the world when he has found her. She listened, with her eyes on the pictured face. But when I said to her, "You, who have all my heart, and whose name, even I have not—is there no word for me," she rose, and threw out her hands in a gesture that sent a chill through me.

"Oh, no! No!" she cried vehemently. "Nothing—except good-by. Oh, why did you speak?"

I stood and watched her go. At the end of the garden walk she stooped and picked a rose with her gloved fingers and as she disappeared in the thicket at the top of the hill I thought she half turned to look. That was five interminable days ago. I have not seen her since. I feel it is her will that I shall never see her again. And I must! You understand, Kent, you must find her!

I forgot to tell you that when I was sketching her I asked if she could bring something pink to wear, preferably coral. She came the next time with a string of the most beautiful rose-topazes I have ever seen, set in a most curious old gold design. It was that necklace and none other that the woman with the bundle wore, half concealed, when she came here.

Today—it is yesterday really, since I am finishing this at three a. m.—the messenger boy brought me a telegram. It was from my love. It had been sent from Boston, and it read:

"Destroy the picture, for my sake. It tells too much of both of us."

The message was unsigned. I have destroyed the picture. Help me! F. S.

CHAPTER IV,

An Inquiry

"Am I running a Strangers' Rest here?" Francis Sedgwick asked of himself when he emerged upon his porch the morning after Kent's visit.

The occasion of this query was a man stretched flat on the lawn, with his feet propped up comfortably against the stone wall. In this recumbent posture he was achieving the somewhat delicate feat of smoking a long, thin clay pipe. Except for this plebeian touch he was of the most unimpeachable elegance. His white serge suit was freshly pressed. His lavender silk hose, descending without a wrinkle under his buckskin shoes, accorded with a lavender silk tie and lavender striped shirt. A soft white hat covered his eyes against the sun glare. To put a

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point to this foppishness, a narrow silken ribbon, also pure white, depending from his lapel buttonhole, suggested an eyeglass in his pocket.

Sedgwick, who had risen late, having returned to his house at daybreak after delivering his manuscript at Kent's hotel, regarded this sartorial marvel with a doubt as to whether it might not be a figment of latent dreams. Making a detour across the grass, he attained to a side view of the interloper's face. It repaid the trouble. It was a remarkable face, both in contour and in coloring. From chin to cheek, the skin was white, with a tint of blue showing beneath; but the central parts of the face were bronzed. The jaw was long, lean and bony. The cheek-bones were high; the mouth was large, fine-cut, and firm; the nose, solid, set like a rock.

At the sound of a footstep, the man pushed his hat forward, revealing a knobby forehead and half-closed eyes in which there was a touch of somberness, of brooding. The artist remembered having seen that type of physiognomy on the Venetian coins of the sixteenth century, the likenesses in bronze, of men who were of iron and gold,—scholars, rulers, and poets. The eyes of the still face opened wide, and fixed themselves on Sedgwick, and the expression of melancholy vanished.

"Good morning," said the artist, and then all but recoiled from the voice that replied, so harsh and raucous it was.

"You rise late," it said.

"I hear your opinion on it," retorted Sedgwick, a bit nettled. "Am I to infer that you have been waiting for me?"

"You wouldn't go far wrong."

"And what can I do for you—before you leave?" said Sedgwick significantly.

"Take a little walk with me presently," said the man in another voice, brushing the hat clear of his face.

"Kent!" exclaimed the artist.

"Well, you appear surprised. What kind of artist are you, not to recognize a man simply because he shaves his beard and affects a false voice?"

"But you're so completely changed. And why this disguise?"

"Disguise?" returned the other, astonished in his turn. "I'm not in disguise."

"Your clothes. They're—well, except for being offensive, I'd call them foppish."

"Not at all!" protested the other warmly. "Just because I'm a scientific man, is it to be assumed that I ought to be a frump? I'm fond of good clothes; I can afford good clothes; I wear

good clothes. It's a hobby of mine; but I deny that it is a weakness."

"Of course not," assented the other, somewhat amused. "By the way, though, your socks and tie don't match."

"They do, absolutely," replied the other with asperity.

"Perhaps in fact; but not in effect. In matching smooth silk with ribbed silk, you should get the latter one shade lighter."

"Is that so?" said Kent with interest. "You've told me some-

thing I never knew. I'll remember that. Now I'll trouble you to tell me some more things."

"While taking that walk you spoke of?"

"That comes later. I've read your story."

"Already?"

"Already! Do you know it's ten o'clock? However, it's a good story."

"Thank you."

"As a story. As information, it leaves out most of the important points."

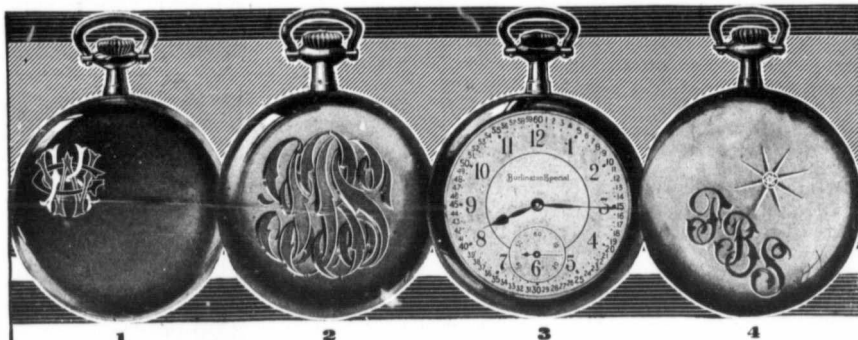
"Thank you again."

"You're welcome. Color, size, and trappings of the horse?"

"I didn't notice particularly. Black, I think; yes, certainly, black. Rather a large horse. That's all I can tell you."

"Humph! Color, size, and trappings of the rider?"

"Reddish brown hair with a gloss like a butter-fly's wing," said the artist with enthusiasm; "deep hazel eyes; clear sun-browned skin; tall—I should say quite tall—but so—so feminine



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Learn the inside facts about watch prices, and the many superior points of the Burlington over double-priced products. Also illustrations of all the newest up-to-date ideas in exquisite watches, and our letter to you sending the rock-bottom price—direct. Just send the coupon, or a letter or a postal.

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Dept. 7707 289 Carlton Street Winnipeg, Man.

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Please send me (without obligations, prepaid), your free book on watches showing all the latest designs, with full explanation of your cash, or \$2.50 a month offer on the Burlington Watch.

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Implements
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Save Money**

The Implement manufacturers are growing rich replacing machines that are worn out by exposure when not in use.

A Machine Shed covered with

Corrugated Iron

Will cost but very little and save you money. Let us know how many machines you want to house and we will give you a price for the material to cover a building of the proper size.

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Winnipeg Ceiling & Roofing Co. Ltd.
P.O. Box 2186 G. Winnipeg, Man.

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The "Eclipse"

Our convenient payment system brings all the best music in the world within the reach of all. The best singers, the best bands and the best artists in all the musical world are heard on

Columbia Grafonolas

The "Eclipse" embodies all the latest improvements and is the final word in the reproduction of the human voice. Think it over—years of entertainment for \$46. For this amount you can secure this machine, complete, with 24 selections of your own choice.

We guarantee satisfaction

WINNIPEG PIANO CO.
295 Portage Av.

BELOW MANITOBA HALL

Mention this magazine when writing advertisers.

that you wouldn't realize her tallness. She was dressed in a light brown riding costume, with a toque hat, very simple, tan gauntlets, and tan boots; that is, the first time I saw her. The next time—"

"Hold on! A dressmaker's catalogue is no good to me. I couldn't remember it at all. Was she in riding clothes on any of her later visits?"

"No."

"Any scars or marks?"

"Certainly not!"

"That's a pity; although you seem to think otherwise. Age?"

"We—ell, twenty, perhaps."

"Add five. Say twenty-five."

"What for?" demanded Sedgwick indignantly.

"I'm allowing for the discount of romance. Did you notice her boots?"

"Not particularly; except that she was always spick and span from head to foot."

"Humph! Was it pretty warm the last week she called on you?"

"Piping!"

"Did she show it?"

"Never a bit. Always looked fresh as a flower."

"Then, although she came far, she didn't walk far to get here. There's a road back of the hill yonder, and a little copse in an open field where a motor car has stood. I should say that she had driven herself there and come across the hill to you."

"Could we track the car?" asked Sedgwick eagerly.

"No farther than the main road. What is the latest she ever left here, when she arrived afoot?"

"Once she stayed till half past six. I begged her to stay and dine; but she drew into herself at the mere suggestion."

"Half past six. Allowing for a half past seven dinner, and time to dress for it, she would have perhaps twelve to fifteen miles to go in the car. That figures out with the saddle ride, too. Now, we have, as your visitor, a woman of rather inadequate description eked out by some excellent sketches—young, passably good-looking (don't lose your temper, Sedgwick); passably good-looking, at least; with command of some wealth; athletic, a traveler, well informed. The name she gave is obviously not her own; not even, I judge, her maiden name."

Sedgwick turned very white. "Do you mean that she is a married woman?" he demanded.

"How could you have failed to see it?" returned the other gently. "But what is there to prove it?"

"Proof? None. Indications, plenty. Her visits, in the first place. A young girl of breeding and social experience would hardly have come to your studio. A married woman might, who respected herself with full con-

GILLETT'S LYE

The Standard Lye of Canada. Has many imitations but no equal

CLEANS AND DISINFECTS

100% PURE

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Winter Fragrance and Spring Loveliness

TULIPS, HYACINTHS, NARCISSI, CHINESE SACRED LILY, SCILLA SIBERICA, LILIES, Etc.

These Bulbs are for Fall and Early Winter planting—they cannot be obtained in the Spring.

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Have your name added to our mailing list for Spring Catalogue of Tested Seeds.

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

CHALLENGE

THE ACME OF COMFORT is assured to every wearer of "CHALLENGE" Collars and Cuffs

They have the same dull finish, texture and fit as the best linen collar, and won't wilt or crack. "Challenge" Collars can be cleaned with a rub from a wet cloth. Always smart—always dressy.

If your dealer doesn't sell "Challenge" Brand, send us 25c for collar or 50c for pair of cuffs. You'll be delighted. New style book sent free on request.

THE ARLINGTON COLLAR CO. OF CANADA LTD.
64-66 Fraser Ave., Toronto, Can.

WATERPROOF

GOLLARS

2 IN 1

SHOE POLISH

10 CTS

Gives a Quick, Brilliant Polish That Lasts

Easier to Use Better for the Shoes

No Turpentine

REGISTERED TRADE MARK

JOSEPH RODGERS & SONS, Limited
SHEFFIELD, ENG.

Avoid imitations of our CUTLERY by Seeing that This EXACT MARK is on Each Blade.

SOLE AGENTS FOR CANADA

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GRANTED 1862

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AGENTS WANTED
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Shipments made from Galt, Ont. and Winnipeg, Man.

Address to Head Office

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Dealers Increase Your Sales!
Take a Look at the

Strite Governor Pulley
It's the original and the only thing for driving cream separators with gasoline engines. Once tried, always used. TRY ONE. More in use than all others combined. Cost no more than imitation. Also, ask about our Scotch plow pulley.

STRITE GOVERNOR PULLEY CO., 310 S. 3RD ST., MINNEAPOLIS
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WANTED

MEN TO LEARN A TRADE

We teach Automobile and Gas Tractor Operating and Repairing, Showcard and Sign Writing, Brick-laying, Plumbing and Electric Wiring. We also operate the largest Barber College in Canada. Write for information to

THE OMAR SCHOOL OF TRADES AND ARTS
483 Main Street, Winnipeg
Opposite City Hall

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You Can't Cut Out A BOG SPAVIN, PUFF OR THOROUGHPIN,
but



ABSORBINE
TRADE MARK. REG. U.S. PAT. OFF.

will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. \$2.00 per bottle, delivered. Will tell you more if you write. **Book 4 K free.** ABSORBINE, JR., the antiseptic liniment for manking, reduces Varicose Veins, Ruptured Muscles or Ligaments, Enlarged Glands, Gout, Wens, Cysts. Always pain quickly. Price \$1.00 and \$2.00 a bottle, at druggists or delivered. Manufactured only by W. F. YOUNG, F.D.F., 112 Lyman Bldg., Montreal, Can.

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THE Double Track Route
TO

Detroit, London, Hamilton, Toronto, Montreal and New York via Niagara Falls

Smooth road-bed, polite employees, unexcelled dining-car service, and latest standard equipment

AGENTS, COOK'S TOURS AND ALL STEAMSHIP LINES

Rates, reservations and all particulars at Ticket Office

Phone Main 7098 260 Portage WWINNIPEG

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We Will Pay You \$120.00

to distribute religious literature in your community. Sixty day work. Experience not required. Man or woman. Opportunity for promotion. Spare time may be used.

International Bible Press, 182 Spadina Ave., Toronto
Mention this magazine when writing advertisers

fidence, and knew, with the same confidence, that you would respect her. And, my dear boy," added Kent, with his quiet winning smile, "you are a man to inspire confidence. Otherwise, I myself might have suspected you of having a hand in the death of the woman on the beach."

"Never mind the woman on the beach. This other matter is more than life or death. Is that flimsy supposition all you have to go on?"

"No. Her travel. Her wide acquaintance with men and events. Her obvious poise."

"All might be found in a very exceptional girl, such as she is. Why shouldn't she tell me, if she were married?"

"Oh, don't expect me to dissect feminine psychology. There I'm quite beyond my depth. But you'll note she doesn't seem to have told you any slightest thing about herself. She's let concealment, like a worm in the bud, prey on your damask cheek."

"Confound your misquotations! It's true, though. But there might be many reasons."

"Doubtless. Only, my imagination doesn't seem to run to them. And reverting to tangible fact, as clenching evidence, there are her gloves, which she always wore."

"What about her gloves?"
"You never saw her left hand, did you?"

"Oh, I see. You mean the wedding-ring. Well, I suppose," continued Sedgwick, with a tinge of contempt in his voice, "she could have taken off her ring as easily as her gloves."

There was no answering contempt in Chester Kent's voice as he replied, "But a ring, constantly worn and then removed, leaves an unmistakable mark. Perhaps she gave you greater credit for powers of observation than you deserve. I'm afraid, Frank, that she is a married woman; and I'm sure, from reading between your lines, that she is a good woman. What the connection between her and the corpse on the beach may be, is the problem. My immediate business is to discover who the dead woman is."

"And mine," said Sedgwick hoarsely, "to discover the living."

"We'll at least start together," replied Kent. "Come!"

Capacity for silence, that gift of the restful gods, was possessed by both men. Intent, each upon his own thoughts, they strode up the hillside and descended into a byway where stood a light runabout, empty. Throwing on the switch, Kent motioned his companion to get in. Twenty minutes of curving and dodging along the rocky roads brought them to the turnpike, in sight of the town of Annalaka. Not until then did Kent offer a word.

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

It's a Sure Thing



if it's something pertaining to sport, you will find it here. Lovers of HUNTING, either BIG GAME or WILD FOWL, will find us well equipped with everything the sport requires.

GUNS
All the well known makes and at the best prices obtainable anywhere.

RIFLES
We carry everything from the cheapest Hamilton 22 calibre to the largest High Power and Highest Priced Remington.

AMMUNITION
All the best and well known brands: WINCHESTER, DOMINION, U.M.C., ELEY'S, PETERS.

OUR SLOGAN
Sporting Goods that are fit for Sport.

Send us your name and address for our New Sporting Goods Catalog to be issued shortly.
Address Dept. B.
P. J. CANTWELL & Co., Ltd.
346 Portage Avenue :: Winnipeg, Man.
Phone M 921

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This is **THE** Farm and Home Magazine of Western Canada. That's why you will find in **IT** the advertisements of manufacturers who make **RELIABLE** things for the Farm and Home.

Well Drilling Machines

Over 70 sizes and styles, for drilling either deep or shallow wells in any kind of soil on wheels or on tracks. With pumps, strong, simple, durable. Any mechanic can operate them. Send for catalog.

WILLIAMS BROS.
ITHACA, N. Y.

Mention this magazine when writing advertisers.

Imperial Bank

OF CANADA
Established 1878

Capital Authorized	\$10,000,000
Capital Paid Up	6,925,000
Reserve and Undivided Profits	1,100,000
Total Assets	72,000,000

BRANCHES IN WESTERN CANADA

Province of Manitoba

Brandon Portage la Prairie Winnipeg

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Roshera Fort Qu'Appelle Prince Albert
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SAVINGS DEPARTMENTS AT ALL BRANCHES

Interest allowed at Current Rates
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Winnipeg Branch
H. G. LESLIE, Manager.

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MYERS FLEXIBLE DOOR HANGERS

Store Leaders, Etc. **HAY TOOLS**

of all kinds. Write for Catalogue and Price.

Mention this magazine when writing advertisers.

THE ORIGINAL PECH Boring Machine

THE OLD RELIABLE

Easiest to operate Bores Faster Most Durable

Improved Up-to-date Drilling Machines

DESCRIPTIVE CATALOGUE, FREE

Cherokee Mfg. Co., Dept. A. Cherokee, Iowa.

Mention this magazine when writing advertisers.

WELL DRILLING

GUS PECH FOUNDRY AND MANUFACTURING COMPANY

Manufacturers of the Celebrated **MONITOR WELL AUGERS AND DRILLS**

Write for prices and Illustrated Catalogue.

LE MARR, IOWA U.S.A.
Branch House: REGINA, SASK.

Mention this magazine when writing advertisers.

won't be questioned about that. By the way, you have never kept among your artistic properties anything in the way of handcuffs, have you?"

"No."
"I didn't suppose you had. Those manacles are a sticker. I don't—absolutely do not like those manacles. And on one wrist only! Perhaps that is the very fact, though—Well, we shall know more when we're older; two hours older, say. Whether we shall know all that Mr. Sheriff Len Schlager knows, is another question. I don't like Mr. Schlager, either, for that matter."

"Dennett has seen me," said Sedgwick in a low voice.

Indeed, the narrator's voice had abruptly ceased, and he stood with the dropped jaw of stupefaction. One after another of his auditors turned and stared at the two men in the motor-car.

"Stay where you are," said Kent, and stepped out to mingle with the crowd.

No one recognized, at first, the immaculate flannel-clad elegant as the bearded scientist whose strange actions had amused the crowd on the beach. A heavy solemn man addressed him:

"Friend of his?" he asked, nodding toward the artist.

"Yes."
"He'll need 'em. Going to give evidence?"

"The inquest is set for eleven o'clock," he said.

"All right," said Sedgwick with equal taciturnity.

They turned a corner, and ran into the fringe of a crowd hovering about the town hall. Halting his machine in a bit of shade, Kent surveyed the gathering. At one point it thickened about a man who was talking eagerly, the vocal center of a small circle of silence.

"Elder Dennett," said Kent, "back from Cadystown. You'll have to face the music now."

"I'm ready."
"You're ready for attack. Are you ready for surprises?"

"No one is ever ready for surprise, or it wouldn't be surprise, would it?"

"True enough. One word of warning; don't lose your head or your temper if the suspicion raised against you by Dennett is strengthened by me."

"By you!"
"Unfortunately. My concern is to get to the bottom of this matter. There is something the sheriff knows that I don't know. Probably it is the identity of the body. To force him into the open, it may be necessary for me to argument the case against you."

"Ought I to be ready for arrest?"

UNION BANK OF CANADA

Established 1868



Head Office Winnipeg

Paid-up Capital \$5,000,000
Reserve and Undivided Profits 3,375,000
Total Assets, over 70,000,000
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London, England, Branch No. 51 Threadneedle Street, E.C.

This Bank, having over 300 branches in Canada, extending from the Atlantic to the Pacific Coast, offers excellent facilities for the transaction of every description of banking business. It has correspondents in all cities of importance throughout Canada, the United States, the Continent of Europe, and the British Colonies. Collections made in all parts of the Dominion, and returns promptly remitted at lowest rates of exchange.

Head Office, Winnipeg.

SPECIAL ATTENTION GIVEN TO FARMERS' BUSINESS
Grain Drafts Negotiated. Interest Allowed on Deposits.

Branches and Agencies West of Great Lakes:
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Alberta—Airdrie, Aikie, Barons, Bashaw, Bassano, Bellevue, Big Lake, Blairmore, Bowden, Bow Island, Brooks, Calgary, Carbon, Cardston, Carlstadt, Carstairs, Claresholm, Cochrane, Consort, Cowley, Didsbury, Edmonton, Fort Saskatchewan, Grande Prairie, Grassy Lake, High River, Hillcrest, Invermay, Irvine, Laocomb, Lacombe, Lethbridge, Macleod, Medicine Hat, Okotoks, Passburg, Pincher Creek, Seven Persons, Strathmore, Swallow, Three Hills, Wainwright.

British Columbia—Enderby, Hazelton, Nanaimo, New Hazelton, Prince Rupert, Telkwa, Vancouver, Vernon, Victoria.
Winnipeg Branch, D. M. NEEVE, Manager. F. K. WILSON, Asst.-Manager.
F. J. BOULTON, Manager Portage Ave. Branch, corner Garry (adjoining Post Office).

CAEW

"B A T"

PLUG TOBACCO

THE ROCK CITY TOBACCO CO. LIMITED - QUEBEC.

Be Sure of Your Separator Oil

STANDARD

Hand Separator Oil

Standard Hand Separator Oil is the perfect lubricant for cream separators. Reduces friction and jarring to a minimum, so that greatest cream yield is insured.

Never gums, rusts or corrodes. Lengthens the life of the separator.

One gallon cans. All dealers.

THE IMPERIAL OIL CO., Limited

Main Office: WINNIPEG
Regina, Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge, Vancouver.

(To be continued in November issue)

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



SYNOPSIS OF CANADIAN NORTH-WEST LAND REGULATIONS.

Any person who is the sole head of a family or any male over 18 years old, may homestead a quarter-section of available Dominion land in Manitoba, Saskatchewan or Alberta. The applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the district. Entry by proxy may be made at any agency, on certain conditions, by father, mother, son, daughter, brother or sister of intending homesteader.

Duties—Six month's residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres solely owned and occupied by him or by his father, mother, son, daughter, brother or sister.

In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price \$3.00 per acre. Duties—Must reside six months in each of six years from date of homestead entry (including the time required to earn homestead patent) and cultivate fifty acres extra.

A homesteader who has exhausted his homestead right and cannot obtain a pre-emption may enter for a purchased homestead in certain districts. Price \$3.00 per acre. Duties—Must reside six months in each of three years, cultivate fifty acres and erect a house worth \$300.00.

W. W. COREY,

Deputy of the Minister of the Interior

N.B.—Unauthorized publication of this advertisement will not be paid for.

Mention this magazine when writing advertisers

Enough to Make a Cat Laugh



The Pace that Kills

It was a case of Canada versus the United States, the latter being the home team, and an easy favorite.

"Horses!" remarked the Yankee. "I guess you can't tell me much about horses. Why, I once had a mare that whacked our best express on a thirty-mile run!"

The company looked interested, but the Canadian gentleman was in no way abashed.

"That's nothing!" he said. "I was out on my ranch one day, twenty miles from home, when a frightful storm came up."

"Waal?" chimed in the American.

"So I turned the pony's head for home," continued the Canadian, "and, do you know, he raced the storm for the last ten miles!"

"Yes?" remarked the quiet member of the company.

"Well, I didn't get a drop of the rain, but my dog, ten yards behind, had to swim home!"

Too Appropriate

Hamlet Fitzshakespeare, the author, producer, and principal actor in the thrilling drama, "When Fierce Assassins Sniffed His Gold; or, The Vengeance of the Plumber," met a friend in the Strand the other evening.

"Hallo, Fitz!" exclaimed the latter. "I hear that you sacked the whole of your orchestra last night."

"Yes, silly asses!" declaimed the great tragedian. "They went and spoiled the best scene in the whole play."

"Goodness me., whatever for?"

"Well, I told the leader to pick out appropriate music for each scene, and you know that thrilling passage where the judge condemns me to death?"

"Yes, yes!"

"When the judge put on the black cap, the pack of idiots at once struck up: 'Where Did You Get that Hat?'"

1877-1913

Thirty-six years' experience in brewing

Drewry's Redwood Lager

tells the story of its popularity

TRY IT

Mention this magazine when writing advertisers.

CHEW

MAPLE SUGAR TOBACCO

MILD, SWEET, MELLOW AND JUICY

Manufactured by

ROCK CITY TOBACCO CO.

Quebec

Winnipeg

Mention this magazine when writing advertisers

Big Ben



Presenting two ways to get up early

Big Ben will get you up on the installment plan, a little at a time, by ringing every other half minute for ten minutes, so you'll wake up gradually. Or he'll do the whole job all at once, with one long, straight, five-minute ring.

You can set him to do it as you choose, and shut him off short in the middle of his call either way.

That makes him *two good clocks in one*, to suit everybody's taste in early rising.

He plays no pranks. He won't go off before it's time and rob you of your full measure of sleep. He won't go off behind time and rob you of your work time. It's Big Ben's business to run on time, to ring on time and to stay on time.

Big Ben attends to his own business

and helps you attend to yours by getting you and the farm hands out early.

Then he sticks around the house and keeps time all day for the women folks so they can have your meals on time.

There never was a clock that fitted in better with the farm work.

He's triple-nickel plated and so handsome you'll want to keep him in the parlor instead of a bedroom.

Stands seven inches tall from the top of his head to the tips of his toes; has big, easy-winding keys, large hands, and big figures that you can read at a distance on dark mornings, and is built of good implement steel so he'll last for years. He's doing this kind of work in 3,000,000 American homes today.

Twenty thousand jewelers sell him—one in your neighborhood, probably. If yours doesn't, just send a money order for \$3.00 addressed to *Wendell, La Salle, Illinois, U. S. A.* and he'll come to the front door, duty charges prepaid.

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

Family Group Photos a Specialty

AT

STEELE & CO., LTD.

MAIN ST. AND BANNATYNE AVE.

WINNIPEG

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



REMINGTON UMC

REPEATING RIFLES Pump Action

Solid Breech Hammerless-Safe

THOUSANDS of sportsmen have first chosen a Remington for its looks—its balance—its speed suggestion—and have been delighted to find that they had an arm that was a little faster—a little more accurate than any rifle they ever owned.

22 Repeating Rifles—easy take-downs, straight line feed. 25, 30, 32 Remington high power rifles.

An interesting booklet simply explaining many of the more technical points of modern rifle construction is yours for the asking. Your name and address on a postcard brings it by return mail. Remington Arms-Union Metallic Cartridge Co., Windsor, Ontario

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

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam IT HAS NO EQUAL

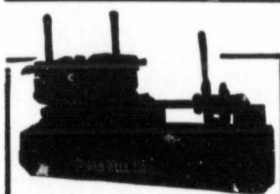
For the Human Body... Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints.

REMOVED THE SORENESS-STRENGTHENS MUSCLES... THE LAWRENCE-WILLIAMS COMPANY, Toronto, Can.

Mention this magazine when writing advertisers

PATENTS TRADE MARKS AND DESIGNS... FREDERSTONHAUGH & CO. Portage Avenue, WINNIPEG.

Mention this magazine when writing advertisers



\$1500 to \$5000 Per Year

have been made by hundreds of people operating the "American" Drilling Machines...

MACHINES STANDARD Made in types for every kind of earth and rock drilling...

THE AMERICAN WELL WORKS

General Office and Works: AURORA, ILL., U.S.A. Chicago Office: First Nat. Bk. Bldg.

Mention this magazine when writing advertisers.

ERZINGER'S No. 2 CUT PLUG Leads them all. It's the Best Dollar Tobacco sold anywhere. JOHN ERZINGER

Mention this magazine when writing advertisers

An Unfair Arrangement

The manager of the taxi-cab company sat in his office interviewing with rare tact and judgment a sweet lady complainant. "Yes," said the lady, "something broke, and we were delayed forty-five minutes whilst the driver tinkered with the machinery."

Her manner was very sweet and impressive, and the manager slowly abstracted the official cheque-book from its drawer in his desk.

"Madam," he remarked, "it certainly seems like a case of over-charging. The driver should only have charged you after the time for repairs had been deducted. By the way madam, what is your claim—precisely?"

"The man made me late for a bargain sale," the lady replied. "The sale opened at ten, but when I finally got there a blouse that was marked half a guinea was sold. I shall have to pay two guineas for another similar blouse, and I ask for the difference, please."

But at that time the manager had put away his cheque book.

Too Young or Too Old

From a youthful point of view. "What kind of a looking gentleman is your sister's beau, Master Tommy; is he young?"

"I should say so," replied Master Tommy; "why, he hasn't got any hair yet."

"I beg your pardon, sir, but you are the author of this play, are you not?" asked the lady.

"I cannot deny it, madam—I am," answered the man in the stalls.

"Well, sir," the lady continued, "before the curtain went up I took the liberty of cutting off a little lock of your hair. Do you mind now, if I return it to you?"

A Slight Error

Two tourists were travelling in Spain, but they could not speak the native language, and found considerable difficulty in making known their wants.

Eventually they came to a wayside inn, and decided that they would partake of roast beef with the usual trimmings.

"How shall we manage it?" asked one.

"Oh, we'll draw a picture of a bull!" replied the other.

The waiter was handed the drawing, and left them, apparently to execute their order.

Then he came back, but he had no steaming plate of roast beef and Yorkshire. Instead, he calmly handed them two tickets for a bull fight!

Mackenzie, Brown, Thom & McMorran Mackenzie, Brown, MacDonald & Bastedo Barristers, Solicitors, &c.

Regina, Saskatchewan, Canada... Norman MacKenzie, K.C. Hon. George W. Brown Douglas J. Thom T. Sydney McMorran Hector Y. MacDonald Frank L. Bastedo

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

The Occidental Fire Insurance Co.

Head Office: WAWANESA, MAN. A. NAISMITH, President R. M. MATHESON, Vice-President A. F. KEMPTON, Sec. and Mgr. C. D. KERR, Treasurer

Subscribed Capital \$500,000.00 Security to Policy-holders 640,817.89

Full Deposit with Dominion Government Agents wanted in unrepresented districts

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Alex. Naismith, Pres. S.H. Henderson, Vice-Pres. C. D. Kerr, Treasurer

The WAWANESA MUTUAL INSURANCE COMPANY

HEAD OFFICE: WAWANESA, MAN. A. F. KEMPTON, Secretary-Manager

Amount of Insurance in force Dec. 31st, 1912 \$54,606,660.00 Assets over Liabilities 887,557.67

THE NUMBER OF FARMERS INSURED, 31st. Dec. 1912, 23,261 The Largest Farmers Mutual Fire Insurance Company in Canada. Agents wanted in unrepresented districts

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

INSURANCE—INSURANCE

FRED W. PACE F. J. HARRISON F. GRANT MILLAR PACE, HARRISON & MILLAR

General Agents: NATIONAL FIRE INSURANCE COMPANY of Hartford, Conn. Assets Exceed \$12,000,000.00 GENERAL FIRE ASSURANCE COMPANY of Paris, France. Assets Exceed 7,500,000.00

Adjustment and payment of losses arranged from our office. Liberal contracts to live agents. WRITE FOR AGENCY.

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

National Trust Company, Ltd.

TORONTO, WINNIPEG, EDMONTON, MONTREAL, REGINA, SASKATOON Capital and Reserve, \$2,900,000.00

The strain and worry of managing Estates will all be borne for you by this Company. A PRIVATE Executor may die or become incapable of acting before the completion of the Trust. A Trust Company is PERMANENT and will survive the longest Trusts.

This Company's financial strength and expert staff ensure responsible and capable administration.

We act as Trustee, Executor, Administrator, Guardian, Liquidator, Assignee, Financial Agent SAFE DEPOSIT VAULTS SAVINGS DEPARTMENT MONEY TO LEND D. H. COOPER, Manager, Winnipeg Branch, 323-325 Main Street. C. Y. STAINER, Secretary.

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

Marlin Big Game REPEATING RIFLES. Armed with a Marlin you can go after moose, bear, deer, with nerve and confidence, for Marlins are always dependable. Made in all popular big game calibers—guns of splendid accuracy, range and power.

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



Conducted for the benefit of Dealers, Threshermen and Farmers who have anything to sell or exchange. Three cents a word for each insertion.

FRUIT LANDS—Write for particulars of Florida land. Where you can raise three and four crops each year.

FOR SALE—Several first class farms, improved and unimproved. One improved close to Winnipeg.

FOR SALE—A number of pedigreed Tamworth pigs, four weeks old. They are perfect specimens.

FOR SALE—45 H.P. Mogul gasoline traction engine, on easy terms, or would exchange for clear title land.

POSITION WANTED—Spring till winter driving gasoline engine, Rumely preferred.

WANTED—Position as Engineer on a steam traction outfit. Fully experienced.

SALESMEN WANTED—The threshermen or engineers to sell oils, greases, belta, packing, lacing, paints, etc.

SALESMEN—are drawing two to six hundred dollars per month. Traveling with their own teams.

FOR SALE—45 B.H.P. 2-cylinder gasoline engine and 5-furrow gang plow.

FOR SALE—A Cuddy steering device for a 20 H.P. International gasoline engine.

WANTED—Live salesmen in every good town and district in Western Canada to sell our Hardy Tested Nursery Stock.

FOR SALE—Cook of the North engine, 22 H.P. This engine is in perfect order and nearly new.

FARMS WANTED. We have direct buyers. Don't pay commissions. Write describing property, naming lowest price.

WANTED—Strictly high class gas tractor salesman for Minnesota, Nebraska, North and South Dakota, Montana and Western Canada.

STEAM PLOWMEN—Look! Good section of 41 steam plow land on C.N.R., Sedatoun-Regina line in Twp. 23, R. 26, 28, 29.

FOR SALE

We have on hand at present a very full line of Rebuilt and Second-hand Engines and Separators which we are offering at attractive prices.

We also have a thoroughly Rebuilt 25 H.P. Saw Mill Engine. Can hardly be distinguished from new goods.

SAWYER-MASSEY COMPANY LIMITED Winnipeg, Man.

FOR SALE—Owing to ill-health I will sell Hart-Parr Engine, six-horse-power, with Cookshut Right Furrow Flow, with six bottoms, and Aultman Taylor Twelve Barrel Oil Tank.

BUYERS, ATTENTION! THE GEORGE WHITE & SONS COMPANY, LIMITED, BRANDON, MAN.

- ENGINES 2-25 H.P. White tractions thoroughly rebuilt and good shape. Each \$ 160.00 Second Hand 1-16 H.P. American Advance traction 3 700.00 1-16 H.P. Minneapolis traction 3 600.00 1-20 H.P. Brandon Cornell. Portable 44000.00 1-20 H.P. White traction 3 41200.00 SEPARATORS—Second Hand —Aultman & Taylor, 28x50, all attachments 3 400.00 1-40x52 Waterloo separator, with extra attachments 3 400.00 1-36x50 Goddison separator, all attachments 3 300.00 1-36x50 American separator, all attachments 3 325.00 1-36x50 Frisbie separator, all attachments 3 300.00 1-32x56 Great West separator, all attachments 3 200.00 1-32x56 Great West separator, all attachments 3 200.00 2-White Challenge separators, thoroughly rebuilt, all attachments. Each 900.00 Write us re new goods—We have the best.

HOW TO START YOUR GAS ENGINE in the winter with the first flip. No hot water, (leave time.) Formula 50c. P.S. For your information—This Formula is a liquid, it kills explosive, will evaporate in coldest weather. I use it myself at all times in cold weather. J. W. BARRON, 2112 Louse, Brandon

BARGAINS

- 1-32 H.P. Port Huron engine, rebuilt and in first class shape. 1-American-Abell 20 H.P. engine, rebuilt. With 11 connections. 1-32x54 Avery Separator complete, just rebuilt. 1-36x50 Avery Separator to be rebuilt complete. 2-Avery 30 H.P. double undermounted engine. 1-30 H.P. Northwest engine, not rebuilt, cheap. 1-J. I. Case steel, 42x50 separator complete with all attachments. 1-42x70 Avery engine, will be rebuilt in time for next fall's work.

HAUG BROS. & NELLEMMOR Co. Ltd. WINNIPEG.

GASOLINE TRACTOR FOR SALE—I have a first class 30 H.P. Gasoline Tractor for sale. This tractor is manufactured by Kinhard-Haines, Minneapolis, whose Gas Tractors have carried more Diplomas and first class prizes at Agricultural Fairs than any other Tractor sold in Western Canada.

FOR SALE

- 15 Horse Case Simple Portable Engine 30540 18 Horse Case Simple Portable Engine 15833 18 Horse Compound Portable Engine 13426 18 Horse Simple Traction Waterloo 323 16 Horse Portable Sawyer-Massey 8299 20 Horse Portable Sawyer-Massey 14129 20 Horse Compound Traction Engine, Case 7936 20 Horse Simple Traction Engine, Case 17721 20 Horse Simple Traction Engine, Case 16912 32 Horse Simple Traction Engine, Case 19019 J. I. CASE, THRESHING MACHINE COMPANY, Winnipeg, Canada.

FOR SALE—One 65 horse power Marshall gasoline tractor, thoroughly overhauled and in first-class condition. G.S.C., Box 3079, Winnipeg.

FOR SALE—Gas Traction engine, 25 horse power. In good condition, all ready to run. A map, as I am going out of business. A. D. Danison, Dabinda, Sask.

WANTED—Positions as engineers on Rumely Oil Tank and Hart-Parr gasoline engines, by two parties. Address R. J. Sharp, Cotton Wood, Sask.

FOR SALE—One 30-in. Bell City separator, both with wind stacker and high bagger, in good shape. Would exchange for farm stock, motor car, straw cutter, hay press, etc. C. D. Grant, Ituna, Sask.

BRED FOR EGGS AND MEAT—Bellevue Strain of White and Columbian Wyandottes, S. C. White Leghorns and Light Brahmas. Stock for sale. Over 20 years in business. Michael K. Boyer, Box 22, Hammonont, Atlantic Coast, New Jersey.

SKUNK FARMING.—More profitable than raising hogs, sheep, cattle or poultry. Requires less space and only small capital to start. Send for free information. Laymon Fur Farming Co., Box 11, Spencer, Ind.

WANTED—Good engine for plowing. Have first class quarter section to exchange half mile from prosperous town. P.O. Box 189, Estevan, Sask.

POSITION WANTED AS FIREMAN—Steam plow, three seasons firing threshing engine. A very preferred. Good knowledge of gasoline engines. Write Box 3079, Canadian T. & F., Winnipeg, Man.

FOREMAN wishes to take care of big farm, first class work guaranteed. Address: Dilly Brown, Wilcox, Sask.

WANTED—Position on a gasoline or kerosene engine, must be 30 or 40 horse power, also steady run. Seven years experience. Can do repair and refuel tanks. Apply stating wages, address and make of engine to: J. R. Hishop, Pelly, Sask.

WANTED NOW—For Western Trade—Ref liable men only, to sell our well-known lines of fruit and ornamental trees, shrubs, seed potatoes, etc. Outfit free. Exclusive territory, pay weekly whole or part time engagements. Special terms for winter months. Pelham Nursery Co., Toronto.

FOR SALE—One Pair White Wing Feeders, Six Dump Sacks. Eight Breaker bottoms for Cockshut Engine Gang. All nearly new but will sell cheap for cash. Arthur Trofford, Dymore, Sask.

EXPERIENCED ENGINEER wishes position for coming season on steam plowing outfit, strictly temperate and reliable, can furnish references, apply stating wages. D. McDonald, Red Jacket, Sask.

FOR SALE—One 32 horse J. I. Case engine as good as new, one 44 inch Nichols & Shepard separator, one ten bottom John Deere plow and one set of breaker bottoms. Will sell cheap, all together or separate. S. Latrace, Tessier, Sask.

FOR SALE—30 H.P. Double, single, under-mounted 42-70. Caboose, 2 water tanks, pump and pump hose (new) \$2,000. Cash. R. A. Brodie, Pierson, Man.

FOR SALE—One 26 H.P. American Abell tractor for season of 1913. Has had several years experience. Will take portable steam engine 15 or 20 H.P. in part payment. Apply Box 10, Luder, Man.

FOR SALE

- Thoroughly Rebuilt Threshing Machinery. 1-110 H.S.Tr. J. I. Case Engine. 1-25 H.S.Tr. J. I. Case Engine. 1-20 H.S.Tr. J. I. Case Engine. 1-15 H.S.Tr. J. I. Case Engine. 2-15 H.P. Portable J. I. Case Engines. 1-30 H.S. J. I. Case Steel Separator. 1-30 x 58 J. I. Case Steel Separator. 1-32 x 54 J. I. Case Steel Separator. 1-23 x 50 J. I. Case Steel Separator. J. I. CASE T. M. Co., Regina, Sask.

TWO EXPERIENCED ENGINEERS desire positions on gas tractors for the coming season. Understand thoroughly maintenance and repairing of engine. Write F. E. Watson, Elkhorn, Man.

WANTED POSITION on either steam or gas tractor for season of 1913. Have had several years experience. Can do own repairing. Strictly temperate. Address E. C. Winchester, Melita, Man.

FOR SALE—Big "Dutchman" Engine Gang—six new breaker bottoms, with extra spares and standards. A bargain for cash. W. S. Manly, Cut Knife, Sask.

FOR SALE—Ottom 30 H.P. undermounted Avery Engine, all ten-bottom John Deere plow. Or will trade for land, livestock, or gasoline Engine. For particulars: address P. O. Box 1830 Lethbridge, Alta.

WANTED—Position as engineer for steam or gasoline engine for plowing, etc.—Season 1913. R. J. C., Box 3079, Winnipeg.

FOR SALE—Intersections 20 H.P. gasoline tractor with 4-bottom P. & O. Breaking Plow. Also Aultman Taylor New Century Separator, size 27x52 in first-class condition. Has done one season's work. Price and terms reasonable. Apply E. T. Hargreaves, Enfield, Sask.

REDUCED PRICES OF EGGS.

For the months of June, July and August only, we will sell White Wyandotte, Columbian Wyandotte, and S.C. White Leghorn Eggs at \$1.25 per 15; \$3 for 56; \$6 for 100. For Light Brahmas Eggs, \$2 for 15; \$3 for 30. Address: Michael K. Boyer, Box 22, Hammonont, Atlantic Co., New Jersey

ENGINEER—wants position on steam plowing outfit for spring and summer, fully experienced. Write care of J. Christie, Elkhorn, Man.

OIL FULL Rumely 30-60 H. P. Tractor with 12-inch extension on wheels. Frontlight head light with 6-16-inch bottom Emerson engine gang, both sod and stubble bottoms, and Rumely Oil Tank for sale near Morris, Man. Price, \$2,800.00. One year old. Address R. C. McC., Co. Box 3079, Winnipeg.

FOR SALE—Three sections P. & O Engine Dies Plows, two sizes, one four—Samuel Meek Blackwood, Sask.

OXY-ACETYLENE WELDING—Save your cracked or broken castings from the scrap heap. We weld cylinders, crank shafts, gears, levers, etc., retain original form and strength at a small cost. Metal added to worn out parts. All metals welded satisfactorily. The Manitoba Welding & Mig. Co., 62 1/2 Princess Street, Winnipeg.

FOR SALE—30 H.P. Rumley Steam Plowing Engine, entirely rebuilt and repainted by the Rumley Company. Good as new. Located in Canada. Will pay freight to your town. Address, R. A. Caswell, Cherokee, Iowa.

WANTED—To hear from owner who has good farm for sale. Send description and price. Northwestern Business Agency, Minneapolis, Minn.

PREMOIST FLAX—Grown on fallow, from Garton's warranted pure seed. Row half bushel per acre. \$2.00 bushel, cleaned, bagged free; 1.00 Moosomin. Cash with order. Sample free. A. Gruggen, Moosomin, Sask.

GASOLINE ENGINE expert desires position running motor tractor. Ten years experience, can do all repairing, good recommendations, married, no children, age twenty-eight, steady and sober. Joseph Elgie, 50 Fifth Ave. St. Thomas, Ont

FOR SALE—International 20 H.P. gasoline-traction tractor, 1913 model. Only slightly used, cheap for cash. C. Brumwell Victoria Square, Ontario.

HUB WELDING CO. OXY-ACETYLENE process, aluminum, cast iron and all metals welded, welds guaranteed. 252 Sherbrook street (rear), Ph. Sher. 4553.

WANTED—Position as steam engineer for plowing season of 1913. Experienced engineer. Graduate of Health school. Can give references. Apply stating wages. B. W. Sheer, Box No. 22, Cranall, Man.

WANTED by two brothers, positions as engineers on Rumely OilTank, OilTr. plow or any make of engine. Fully experienced. Address Bea Bergeson, Swift Current, Sask.

WANTED—Season's position for first class H. C. gas engine. Also has some experience on Rumely engines. Good separator men and hustlers. State wages to H. L. Box 3194, Winnipeg.

H. P. CASE OUTFIT in first class condition. Might consider clear land equal value. Lock Box 78, Hector, Minn.

FOR SALE—3 new 32-inch Hawkeye self feeders, in crates, \$1.25 each. Apply Mgr. L. J. B. at 1000

FOR SALE—One Stewart Sheaf Loader, good as new, run ten days. For sale cheap. R. A. Brodie, Pierson, Man.

FIREMAN—wishes position. Experience with plowing, threshing, and stationary engines, also gasoline engines. Have provisional certificate for Saskatchewan. H. O. Loveday, Kochs Siding, Nelson, B. C.

LICENSED ENGINEER—wants position on traction engine. Graduate of Highland Park College of traction engineering. Understand both steam and gas tractors and can furnish reference. State wages in first letter. Address, G. A. R., c/o Mr. Haig, Devils Lake, Route 1, North Dakota.

WANTED—to exchange a Hart-Parr 22 x 45 Kerosene tractor engine for steam engine, land or farm machinery and stock. Box 36, Sovereign, Sask.

In Answering Advertisements in this Magazine be sure and mention where you saw the advt. Remember we guarantee the reliability of all our advertisers.

Mention this magazine when writing advertisers.

WESTERN CANADIAN IMPLEMENT DIRECTORY

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2-BEATTY BROS., Brandon.
3-BELL ROBT. ENGINE & THRESHER CO., Winnipeg.
4-BRANDON PUMP & WIND MILL WORKS, Brandon.
5-BRITISH CANADIAN AGRI. TRACTORS, Saskatoon.
7-BURRIDGE-COOPER CO., Winnipeg.
71-Canadian Armstrong Quam Co., Saskatoon.
71a-Canadian Corrugated Pipe Co. Portage la Prairie
71b-CANADIAN CUSHMAN CO., Winnipeg.
8-CANADIAN FAIRBANKS-MORSE CO., Limited, Winnipeg, Regina, Saskatoon, Calgary, Vancouver, Victoria, Montreal, St. John, Ottawa, Toronto.
Makers of Fairbanks Horse Oil Tractors, 15-30, 20-40, and 30-60 H.P. Oil Engines, Portable and Stationary, 1 to 500 H.P. for all purposes. Marine Engines, 2 and 4 Cycle, 3 1/2 to 100 H.P. Binder Engines, adapted to all makes of Binders. Hand and Power Pumps for every purpose. Truck and Platform Scales specially designed for Farm use. Electric Lighting Plants suitable for Country Residences.
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12-CANADIAN STOVER CO., Brandon.
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19-DOMINION SPECIALTY CO., Winnipeg.
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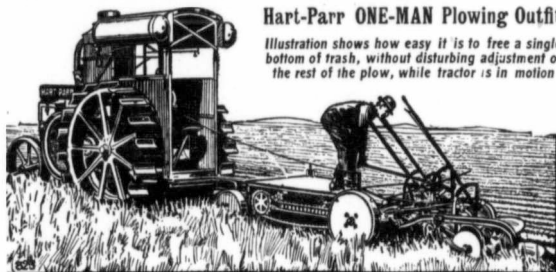
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Use A Hart-Parr For Profit

THE dirty disagreeable chores created by the horse take a lot of time. After a hard day in the field there are the horse chores to do—unharnessing, feeding, bedding, etc. Next morning, it's feed, clean and hitch up. Few farmers relish this.

It's different with a Hart-Parr Oil Tractor. When the day's work is over, merely stop the engine. Next morning, simply start it again—the work of only a few minutes in either case. There are mighty few owners



Hart-Parr ONE-MAN Plowing Outfit

Illustration shows how easy it is to free a single bottom of trash, without disturbing adjustment of the rest of the plow, while tractor is in motion

who don't get a lot of genuine pleasure and profit operating a Hart-Parr Oil Tractor. And compared to horses, it delivers more power and better power at less expense. So why stick to inefficient horses when a

HART-PARR -OIL TRACTOR-

will do all the heavy farm work quicker, better and cheaper.

Right now, the outfit shown in the illustration is creating a big stir. It's the light Hart-Parr Oil Tractor with the big pull and the wonderfully simple Hart-Parr "Self Lift" Plow—the Outfit that is doing big things on 100 to 300 acre farms.

Time and again, this outfit has practically sold itself at Fairs where we have exhibited. Shrewd farmers are at once impressed with its great simplicity, marvellous strength, light weight and correctness of design.

The tractor has the power of 12 sturdy horses, only it is much steadier and absolutely tireless. An especially designed carburetor enables it to burn cheapest kerosene at all loads and under all conditions. The drive wheels have wonderful wave form lugs which afford 31 per cent greater surface contact than any other lugs. Drivers can be equipped with "Hold Fast" extension lugs, the lugs with a bull dog grip in softest soil. One man operates and cares for the tractor, no matter what it is doing—plowing, harrowing, discing, seeding, harvesting, threshing, road grading, silo filling, hauling, etc.

Hart-Parr "Self Lift" Plow is one-third lighter and has one-third less parts than any other. You operate it right from the engine platform. A slight pull on the rope attached to the clutch lever causes each bottom to lift straight out of the ground, in order. Another pull on the rope and the bottoms drop into the ground again. No back breaking labor. The trip mechanism does all the work. And you save the plowman's wages and board.

Read and study the unexcelled features of both tractor and plow, enumerated in this announcement. Learn why this outfit is a big money maker on small farms of 100 to 300 acres.

Write today for special circulars fully describing both equipments, and get our fine catalog and literature on lower farming costs. We build an outfit for every farm large or small. We have a power outfit exactly suited to your requirements.

SUPERIOR and ORIGINAL FEATURES OF DESIGN

FOUND ONLY IN THE SMALL, LIGHT HART-PARR
OIL TRACTOR AND "SELF-LIFT" PLOW

TRACTOR. Lightest weight, yet great strength. Only 300 parts—others have 800 to 1,500. Main frame is a strong, one-piece casting. Drive wheels with wonderful wave form lugs, are solid steel castings—not built up or pieced. Driver lugs give 31 per cent greater surface contact than any other. Can be equipped with Hart-Parr "Hold Fast" extension lugs, the lugs with a bull dog grip in soft soil. Especially designed carburetor operates efficiently on CHEAPEST KEROSENE.

PLOW. 33 1-3 per cent lighter than any other and has one-third less parts. Combined automatic and hand lift. To raise or lower bottoms, merely pull a rope attached to clutch lever. Any one bottom may be raised with hand lift attachment without disturbing adjustment of rest of plow. Spring beam coupler enables plows to skid around or over obstructions and prevents breakage. You can't afford to overlook these money-saving features in a tractor and plow. Investigate our line before purchasing any kind of an outfit.

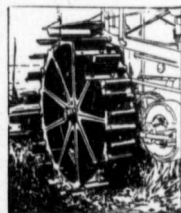


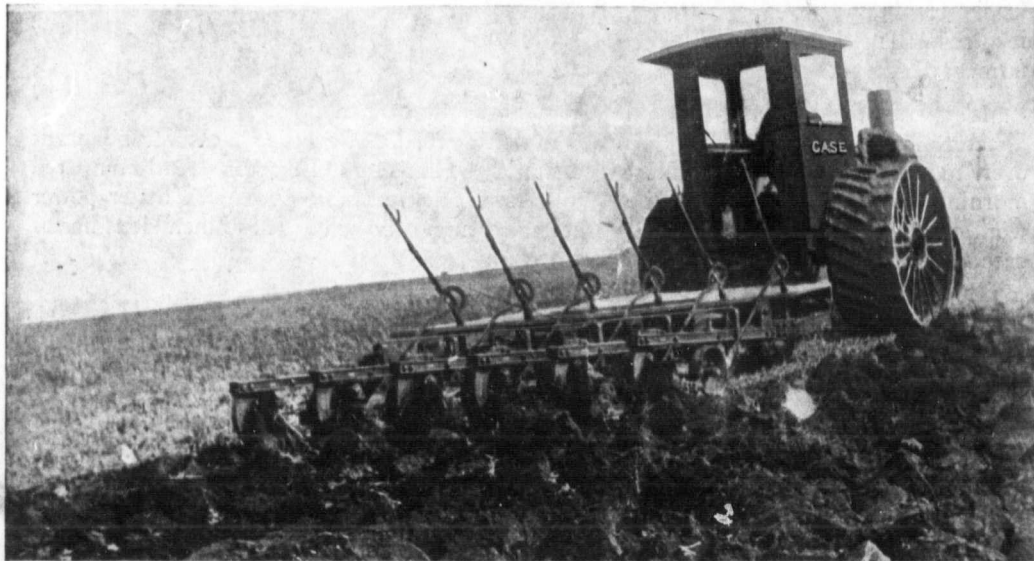
Illustration shows how Hart-Parr "Hold-Fast" Lugs grip the ground and pull out straight away without tearing up the soil.

Hart-Parr Company

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Case 20-40 Gas Tractor, with our 6-bottom Automatic Lift Tractor Gang Plow won the ONLY prize of the Illinois Wheatland Contest.

Both these were Gold Medal Winners at Winnipeg. Yet that did not influence or determine the judges decision. Experienced plowmen all, they simply wished to determine, *by a plowman's standard*, which outfit among all competing would do the *best* plowing. And the Case combination met all expectations.

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The judges in the Illinois Wheatland contest were not concerned with the perfection of design and construction which made this record possible. Nor did they figure the cost of operation. They were concerned with effect only. Yet the causes would have meant added victory for Case. They vitally concern you, as means to an end. Our catalog tells about them in detail.

Information as to the why and wherefore of anything is interesting and you need this information to enable you to buy intelligently and economically.

A Case Prize Winner is no more efficient than any machine of its type taken from stock. The winners were Stock machines. Remember that.

J. I. Case Threshing Machine Company, (Inc.)
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