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THE CANADIAN THRESHERMAN -AND- FARMER

CANADA'S FARM
MACHINERY MAGAZINE

WINNIPEG CANADA



SEPTEMBER - 1910



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E.H. Heath Co.

E.H. Heath COMPANY Publishers

John Deere Engine Gang Leads Again For Good Work



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

The John Deere Engine Gang again proved its superiority in every way at the Annual Motor Contest held at Winnipeg recently.

Good Work

A noticeable feature of the contest was the "Good Work" done by the John Deere Engine Gang—Every furrow turned over completely—of the same width and depth.

Bottoms in Pairs

It was fully demonstrated that bottoms in pairs did better work than single bottom construction.

In walking over the different plowed fields it was an easy matter to pick out the land plowed with the John Deere Engine Gang. The furrows were all of uniform width and depth which could not be said of the work of some of the other makes of plows. The plowed field will prove the above assertion.

WON'T CLOG The curved beams on the John Deere Engine Gang give great clearance thus permitting them to go through straw, trash, weeds, and scrub, where other gangs will clog and cause trouble. With the John Deere Engine Gang you do not need an extra man to keep the plows clear of trash. This wide clearance also permits of plowing at greater depth.

SCREW CLEVIS In addition to the regular clevis adjustment each beam is fitted with a screw clevis when attached to the frame. The purpose of this little device is to give the plows the fine adjustment often needed, it not being necessary to stop the engine to do this. A turn or two with an ordinary wrench while the outfit is moving throws the beam point of the plow needing adjustment up or down giving it the best position to get the required results. This saves time and is a most important feature.

Light Draft

The spectators freely expressed themselves as to the light draft of the John Deere Engine Gang, one engine pulling 14 bottoms with ease.

Ease in Handling

One lever for two bottoms—One man handled a John Deere Engine Gang—raising the bottoms at the end of the field without slowing up the engine or stopping same, as was the case with some competitive plows at the Motor Contest. It was also noticeable that one of our competitors used three men to raise and lower 12 bottoms and at that made a ragged start and finish, while two men raised and lowered 14 bottoms on the John Deere and started and finished at the alignment furrow made by the Judges for that purpose.

JOHN DEERE PLOW CO. LTD.

Winnipeg

REGINA

SASKATOON

CALGARY

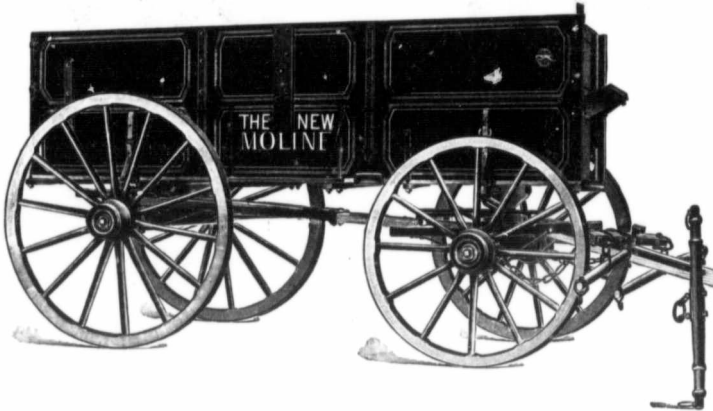
EDMONTON

NEW MOLINE WAGON

WHAT CONSTITUTES A GOOD WAGON

FIRST. The most important requisite for a lasting farm wagon is good **WOOD STOCK.** This is the foundation and must be right if the completed structure is to be enduring.

SECOND. The **IRONING** must be applied on proper principles if it should properly fulfil its purpose to strengthen, brace and prevent undue wear of the wood portions. Must be of best quality and good weight, but not prove an interference with that characteristic of the wood which is so essential to the life of a farm wagon—its elasticity.



WHAT CONSTITUTES A GOOD WAGON

THIRD. The **PROPORTIONMENT** of the component parts must be correct, to the end that each member shall be adequate to withstand the strains put upon it, and that none shall be spared any portion of its proper work at the expense of its fellows.

FOURTH. The **FINISH** must be good, with durable paints and varnishes, also attractive in appearance.

FIFTH, and last, but by no means least,
**A FARM WAGON MUST
BE LIGHT OF DRAFT**

Clad in Iron, Shod with Steel

THE MOLINE WAGON consists of a hardwood foundation, with heavy iron and steel reinforcements. It not only has heavier pattern **woodwork** but the **iron** and **steel** that doubles its durability, is of **extra size, extra weight** and **extra strength.**

—Steel against steel at friction points.

—Iron protecting wood where strain is the greatest.

—Double bracing of gears and grain-tight box. Is it any wonder that farmers call this wagon the **"IRONCLAD"?**

NEW-DEAL WAGON

NEW-DEAL WAGON

Is made of air-seasoned lumber.

Is equipped with double collar skein.

Skein are dust proof, therefore will hold grease longer and run easier than others.

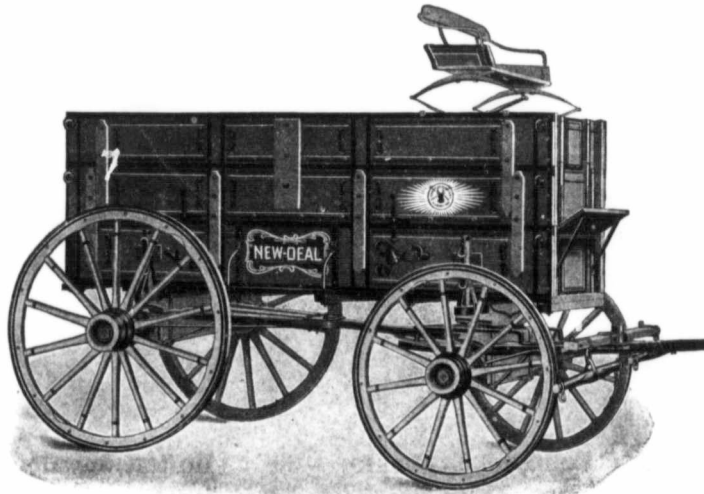
Skein are heavier; bell is longer and larger, taking more axle.

Has riveted grain cleats (not nailed or screwed.)

Bottom of Box is reinforced both front and rear.

Has clipped gear, both front and rear.

Box is made flax tight.



NEW-DEAL WAGON

Spring Seat, with 3-leaf springs (not single leaf.)

Steel-bolster stake plates on side of box.

Neckyoke 48-in. long (not 42-in.)

Has trussed tongue—cannot break or warp.

Has channel-iron reach—really indestructible.

Is extra well painted, striped and finished.

Possesses a great many distinctive features of merit.

A Wagon you can use with Profit.

JOHN DEERE PLOW CO. LTD.

Winnipeg

REGINA

SASKATOON

CALGARY

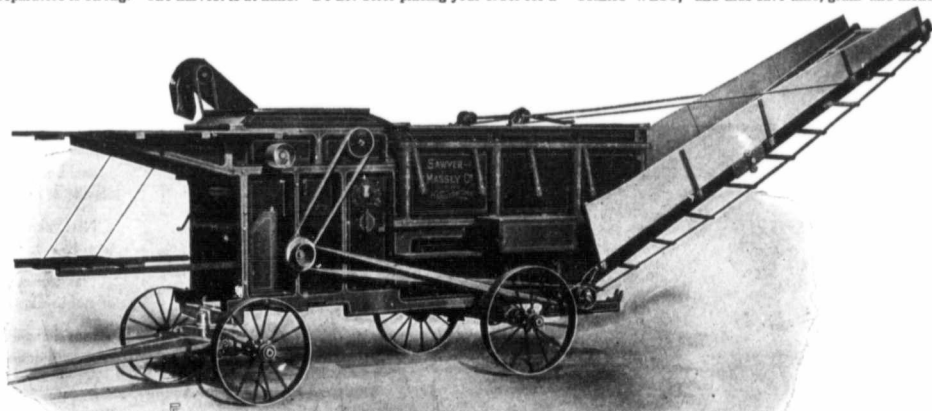
EDMONTON

Grain Savers



The "Great West" Separator [BUILT IN SIX SIZES] 25 x 42, 29 x 50, 32 x 56, 36 x 56, 36 x 60, 40 x 64

Mr. Thresherman: It is now up to you whether you will possess a Separator that is capable of taking care of every bushel of grain. The farmers want such a Separator and realize that the "GREAT WEST" is this identical machine. Send a card to Sawyer-Massey Co., Limited, Winnipeg, and receive our handsome new Catalogue. It will give you the very details you are looking for. It will post you and repay you. The above mentioned sizes, together with the little "ECLIPSE" shown below, will cover the requirement of the North West farmer. The demand for Sawyer-Massey Separators is strong. The harvest is at hand. Do not defer placing your order for a "GREAT WEST," and thus save time, grain and money.



The Little "Eclipse" Separator—30" Cylinder, 36" Body

For the individual Farmer or for Syndicates in the outlying districts where it is difficult to get a Threshing outfit when needed, this little "ECLIPSE" Separator is a treasure. It threshes in first-class style 500 to 700 bushels per day, according to the power used. It can be operated by sweep or tread powers, which are illustrated in our 1910 Catalogue. It is a suitable size for small Gasoline Engines. We can furnish it equipped with Bagger or Single Leg. As a Flax Thresher it is unsurpassed. It is the best small Thresher on the market. Free Catalogue for the asking.

The S.-M. Engines conform to the most exacting Canadian Inspection Regulations

Sawyer Massey Co. Limited.

The Largest Engine and Thresher Manufactory in Canada.

HAMILTON

WINNIPEG



Vol. XV.

WINNIPEG, CANADA, SEPTEMBER, 1910.

No. 9.

Threshing in Western Canada

The following experience letters were submitted to this Magazine for some special prizes that were offered by us some time ago. We received a great many valuable letters, all of which contain a great amount of interesting information to those engaged in the threshing business. We recommend these letters to all of our readers for their careful reading, as we believe no small amount of valuable information can be derived therefrom—Editor.

First Prize Experience.

By W. J. Wells, Saskatoon, Sask.

I have enjoyed reading the letters of different threshers, which have been published in The Canadian Thresherman, and if anything I may say in this letter will help any brother thresherman I will feel repaid.

I own and operate a Port Huron outfit consisting of a 30 h. p. Tandem Com. Traction engine and a 36-60 separator with Port Huron feeder and Fosston Blower and Perfection bagger.

I thresh in the district south of Kinley, Sask., about 40 miles west of Saskatoon. It is a nice level country, nearly free of bog sloughs, so that I have had no trouble hill climbing or getting stuck in the mud.

One of my troubles has been in contending with alkali water. There is no good water in the district excepting what can be gotten from wells and this is small. Last fall we changed water in boiler once or twice a week and washed the boiler thoroughly every Sunday, and then had to bead flues two or three times a week to make them stop leaking.

We had a very good run last fall, threshing 54 days and put through 120,000 bushels of grain. about 80,000 bushels wheat and the balance oats.

It was quite difficult to secure help, both men and teams. My largest day's run was when I put through 500 bushels of wheat and

4,300 oats in one day. I follow the plan of having field pitchers and two spike pitchers and have teamsters assist in throwing into feeder. When nearly through a set I arrange for two field pitchers to come to the machine to assist in cleaning up and piling belt on platform and coupling engine to the separator. This platform is built on to pole of separator, be-

straw to run a mile or so. Rack has sides about 4 feet high. This rack can be taken off at any time quite easily.

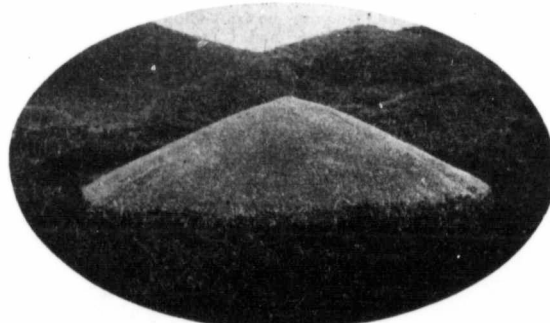
It pays to have things convenient around a threshing rig as time lost means money lost. I had very little stack threshing to do last fall, used 8 stook teams and six field pitchers, one straw wagon and two tanks. I use a

pump water from their tanks to this tender tank by using a V shaped trough to run water down on. I supply each tank man with an iron pot to sink in water and which is then used to place end of hose in in order to avoid sucking up mud from bottom of pond or creek. When about done a set the straw man helps to place rack on back of engine and then fills it with straw and then pulls tender tank out in direction we are to go and when outfit is out he attaches cable from separator rear axle to end of pole of tender and engine then draws tender.

On short moves we run the engine backwards as it saves time of turning. It is well to have small tanks on engine filled with water before starting out, so that no delay occurs for want of water. When taking a long move, say two or three miles, I place engine tender behind engine and then couple separator to engine by cable under tender.

I have a cook car, also sleeping car and tent for stook teamsters. When moves are short I pay tank men to move cars. But where they are long I have the tank men pull cars out to road and we then pull them with engine, behind separator.

In supplying the cook car, I always purchase supplies before starting threshing and store them with a farmer in the centre of district, so that I can easily reach them when needed. I keep a



The Trail of the Thresher.

ing as wide as the machine at back and tapering a little towards the front, and is about 7 feet long. It catches a lot of loose grain, which is easily shovelled off it and makes a handy place to carry drive belt. I have a straw rack to place on back of engine for carrying straw on the move, said rack being about 8 feet wide and 6 feet long, which holds enough

tender tank on regular farm wagon. It is an ordinary tank with sides about 6 inches high to hold oil cans, grease cans, lifting jack, coal oil can, large wrenches, water keg, etc. When set, this tender tank is drawn up on side of engine from which the wind is blowing, so that no straw blows on to it from straw wagon at back of engine. The tank men



horse and buggy to go after these supplies and to go to town for repairs, etc.

I keep a night watch, who sets up tent, cuts wood for cook, fills lanterns with oil, and who gets his supper early and is at engine when shutting down for night. He then sees that no fire is about and when the steam is down cleans out flues and firebox and examines flues for leaks, caulking them if necessary and then filling hard oil cups, cleans up engine, and oils up. He puts belts on separator in the morning, gets steam up in the morning and has everything ready for operation as soon as men get out. We have breakfast about 4.40 a.m. and start work in field at 5.30 a.m., dinner at 11 a.m., lunch at 4 p.m., supper at 8 p.m. The meat is supplied by a local butcher who calls twice a week.

I will relate one or two experiences which I had last fall. One day one of the iron deck hangers broke and instead of losing time of going to the blacksmith to have it repaired we secured a piece of hard wood and bored holes for axles to fit in and placed on deck and it worked all season fine.

One afternoon the crank shaft on the feeder broke and the gang expected to be laid off till it could be welded at the shop or replaced by one from Winnipeg. We got the gang busy, however, taking off the band cutting knives and took out shaft and my engineer rigged a sickle on a long wooden handle and got a man to sit on top of feeder to cut bands and run the feeder carriers without the bandcutting knives at all, and it went first rate. I sent the crank shaft to the shop and had it welded and replaced it at night when the rig was shut down.

Our fire brick arch plates got all pretty badly burnt out towards the last of the season and I sent to Winnipeg for more, but the company was out of them, and it was too late to send East for more of them. So we ran along a couple of more days when one afternoon the bricks gave out completely; so as I had no old flues on hand I drove to town, but could get no flues there either. So I bought a long length of 1½ inch gal. iron pipe and cut this into width of firebox and put in place of bricks, by laying across arch plate supports and it worked O.K. to the end of the season.

I find that it pays to hire the best men possible, particularly a good engineer and separator man. I was particularly fortunate in getting a good engineer, who took a great interest in the business and who lost no time and who was a genius for repairing. A man like this can greatly assist the owner of a rig in his business.

We had considerable trouble last fall in getting the straw through the blower. Whenever it was a little damp the straw seemed to stay in large chunks and fell over hole above fans and lay there until we shoved it down

was only four days we had a full compliment of stook teams. Men and teams were scarce here last season and wages run up to \$3.50 per day. Our separator man was young and inexperienced and instead of using judgment and diplomacy in handling the crew, he jangled and cussed from morning till night with the result that someone was quitting every little while.

I did not blame them much for leaving, for most of them were good men and had a job waiting for them on some neighboring outfit with wages as good or per-

I have this to say about stook threshing. It is a poor proposition to the thresher unless the jobs are close and from 1000 bushels up for small jobs and long runs will eat up nearly all the earnings and men nowadays will not stand docking much time spent on the road.

All the farm journals of the day are advocating better farming and more care as to keeping the land free from foul seeds. The law regarding threshers is strict concerning cleaning the grain and sweeping the separator, etc., at each setting, but does not concern

itself with regard to the half a dozen or more stook teams which drive all over the farm and carry foul seeds from the old land, which is generally more or less dirty, all over the newer land. I claim that six stook teams will distribute more seeds over more acres in one day than the machine will in ten.

Besides if a farmer considers the extra loss by rough handling, extra price of threshing, and the advantage of knowing that when the machine comes you are ready and if a wet spell should come you can go ahead as soon as it is over and not have a big gang around perhaps a day or two waiting for it to dry the shocks, I think he would decide that it pays to stack his grain and have it dry and safe. And when he stacks, if he is interested in keeping his farm as free from weeds as possible he will stack the grain from the old ground, which generally contains more or less weed seeds, by

itself and clean his wagons thoroughly before driving to any other part of the farm, thereby reducing in a great measure the chance of spreading the pest on the new clean land.

For my part, I use a canvas spread on the bottom of my racks and fastened to the sides and when I finish a field where foul seed exists I drive to the barn and roll up the canvass and empty on some hay or straw. This is a little out of line when it comes to threshing experience, but I believe it concerns the thresher as much as the farmer, as he wants a clean field of grain to thresh and not a pile of weed seeds under his separator at each setting, that would fill a wagon box.

Now, for a little adventure which we had at my place last fall. I had arranged with the fire-



An American-Abell Outfit making No. 1 Hard.

with a fork. I would like to hear the experience of others with different makes of blowers.

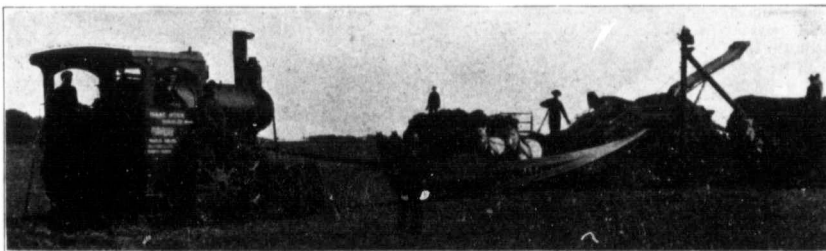
I will say for the benefit of any one thinking of going into the threshing business to consider well before doing so. The cost of the rig is a lot and the cost of running it is high and then you have to run so many risks of breakdowns, etc.

Again hoping to benefit some brother thresherman and wishing them all success and with best wishes to The Canadian Thresherman.

haps better, than we paid. We paid \$3.00 a day and some others paid 25c. to 50c. per day more.

I tried to explain to the separator man that the days of slave driving and abusing men were past and advised him to be more congenial with the boys, but to no avail. So I let him run his end and I ran mine. We held our pitchers a little better in stack threshing, but one day had only one, so all hands pitched in to keep the rig running.

The crops were good around here, but lots of small jobs and long moves cut down our average.



Avery Outfit of Isaac Dyck, Winkler, Man.

Second Prize Experience.

By Ed. Harris, Curlew, Alta.

My season's run commenced on September 20th with a 25 h.p. Sawyer & Massey engine and a 34-inch cylinder Great-West separator which makes a very complete and smooth running combination.

We had very little trouble with our outfit in so far as the machinery was concerned, but lost a good deal of time (which is money to the thresher) through lack of men. We stook threshed for 12 days out of which there

We threshed altogether 73,000 bushels and were out 48 days out of which we lost 1½ days in stook threshing through rain and 3 days through a snowstorm near the finish of the season. Our prices were, for stook threshing wheat 5¼c., barley 4¼c. and oats 4¼c. and for stack threshing one cent per bushel less all round, while for stacked flax we charged 10c. per bushel. Oats pay the best to the thresher and this is also the bulk of the grain grown in this district, as it is newly settled for the greater part of wheat is only in the experimental stage here yet.

man, who is a partner in the company, to look after the engine at times when I was attending to the grain and so forth, and as he was experienced I got one of the pitchers to fire and left for a while.

When I returned he had just climbed up on the boiler to oil up and he looked around when I came and at that instant the set screw in the eccentric disk caught in his overalls at the bottom of the leg. I heard a rip and looked up just as the overalls came off in strips and he fell on his back on the boiler. He dropped on the throttle stem, bending it down and his arm knocked off the drip colts on the side of the throttle valve, from which the steam escaped, which enveloped everything. I sprang up and tried to close the throttle, but it appeared to be jammed. I did not know it was bent until afterwards. Just as he rolled off through the belt his arm caught between the belt and the fly wheel and he was just coming over when I grabbed the reverse and yanked her over. The engine was working hard with a full head of steam and it gave it an awful jerk, but it threw the belt and took him with it 20 feet. He jumped up and looked around more scared than hurt. His cheek was hurt with the edge of the belt and his arm pinched a little where the fly wheel caught him, but that was all, minus the overalls. I ran the rest of the day with the reverse and at night straightened the throttle stem. The fireman come back next day and went on firing, but he said that he would stand in the side step next time he oiled up.

We were pulling to our last job and went down a long hill. It being November and the ground frozen hard, the key worked out of the bolt which coupled separator and tender. We next had a hill to climb and when near the top the bolt came out and away went the separator down the hill. In one side of the road was a cut bank about 5 feet high, on the other a steep hill for several rods. It ran down until the hind wheel was nearly off the grade, then stopped short.

Third Prize Experience.

By Herbert N. Ellis, Edgely, Sask.

It is only recently that the inventor of threshing machines has died. He no doubt was a genius, but the man who can make a threshing machine pay is certainly no slink.

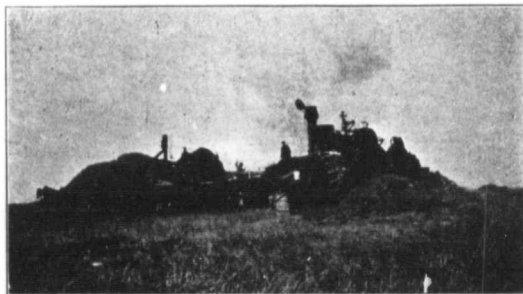
I have only threshed for four seasons, but have gained considerable experience in the matter, owing to having had the misfortune not to be the first couple of years in the same class as the second man I mention.

I do not know if I am correct in doing so, but I intend giving a brief description of my threshing experiences from the beginning. It was in the fall of 1906 that I was wondering what the other fellows in the settlement were going to do with their machines, as I was now in the

threshing business and was going to take everything in front of me, make all my payments and probably retire on my earnings as well.

My outfit consisted of an 18 h.p. portable gasoline engine and a 28-40 separator. I might add that the engine was second hand, but was guaranteed to do all kinds of stunts by the company, who sent an expert down to fire her up and see me safely started on my road to fortune.

The first trouble I had was want of work for the men. I had only three hired then, paying



Gaar-Scott Outfit of Otto Stamm, Windhorst, Sask.

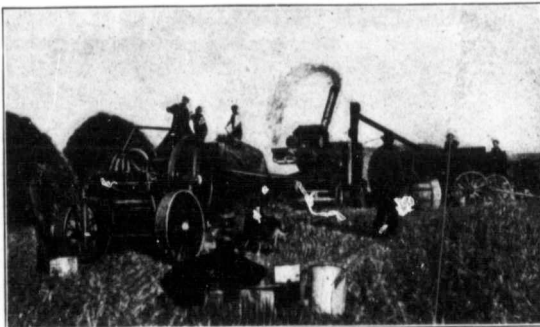
them \$2.50 a day, as men were very hard to get and I was early in starting. I had hired them a day too early, as the expert was not ready as soon as he expected, so I had them on my hands for a day. One man was white and the other two Galicians, who could speak practically no English. The white man helped the expert and myself around the machine and the Galicians groused because there was no work yet. I told them that I would pay them for the day anyway to keep them (I was green then) but they were

for leisure as they had previously been for work.

Having tightened all belts that night I was expecting a record run the next day. We got down for a very early start and the expert who was just giving the engine a run to warm her up, noticed that six of the eight studs holding the engine to the bed were broken. Having set the men to stack, the expert and myself struck for town, only to find that we could not get the tools he required to drill the broken pieces out, so we had to send to Winnipeg for them.

After two days we got started again, but the engine gave little satisfaction and the expert advised me to get a steam engine, but I was unable to get an engine the size I wanted. So I decided to finish my own threshing with the old engine, which was fixed up enough to stand slow feeding from one side. The job took about two weeks which ended my first very expensive season.

I might add that the company from whom I purchased the engine took it back as it did not come up to the guarantee, but I



A Geiser Outfit at work, consisting of a Geiser Sieveless Separator and Geiser Gasoline Engine.

bound to work. They appeared literally gluttons for work and it kept me hustling all day to find jobs for them to do. Even then I expected them to go every minute. At last we were ready to start and set in the field. The expert gave the fly wheel a flick and away we went. Everything behaved very nicely that day.

The next day was not quite so rosy. The belts had stretched a little and slipped, but as evening drew on they started to grip better, and we ran well, too well indeed to suit the Galicians who appeared to be as big a glutton

still had the separator on my hands.

The next year, finding that my spirit had not been entirely broken, only badly bent, I determined to start out again, this time with steam and in spite of my friends' warnings I purchased a 27 h.p. return flue tractor engine, second hand.

After the usual preliminaries, we got started and the first day ran well. The first day generally seems to be a lucky one with me. The next couple of days were passable, then Fortune frowned on me no more.

I had stopped out at noon to tighten one or two belts and I noticed a nut or two which were loose on the feeder. So I got up to tighten them, and in my hurry to get started, as the teams were already drawn up, left a monkey wrench in the feeder.

We had just got started when there was the sound of fireworks in the cylinder. We stopped and I found that the wrench had gone through the cylinder, but had only knocked out one tooth right in the centre. We decided to run with it out, however, until night. We started again, thinking that we had got all the pieces of the wrench out and ran for a minute when there was a sound like a bomb in the blower. We stopped and the sight of the blower was enough to drive a budding thresherman to suicide. The fans and spider were smashed to atoms and the tin on the blower was nearly all torn off.

What had done the damage was the top jaw of the wrench, which was down to the handle. This had unfortunately been overlooked and at that time I had not learnt to always take my blower belt off and run the machine for a few minutes when there is the slightest chance of anything being left in after a break.

Finally after an extra delay caused by the company only sending the fans without the spider in spite of the most minute instructions. We finally got into running order again and the next day made a splendid run.

The following day we were into trouble again. About the middle of the morning large quantities of lumber were seen issuing from the blower and an investigation showed that one of the decks had broken, which necessitated another stop of half a day.

After that Dame Fortune smiled pretty steadily the rest of the season. That ended my second season in the noble ranks of threshermen, and I came to the conclusion that the actual threshing was a snap to collecting, as it was a bad year. One farmer wanted me to take cows in payment and I had some difficulty in convincing him that I was afraid that my men were not agreeable to drawing their wages in milk.

Season No. 3 was rather more encouraging; no record breaking or anything like that, but good steady running right through, which always counts. One thing I found very much impressed upon me this season was the fact that to get good returns one must have the season's threshing concentrated as much as possible, so as to not get too long moves.

Last fall I purchased a new rig, Sawyer-Massey 30 h.p. a 36-60 Great-West separator, which has given good satisfaction, doing very clean threshing. In fact those that I have threshed for have already made a bargain with me for this year, which is certainly the best recommendation a thresherman can have. We had a good season and our threshing was well concentrated. Like the previous season, we broke no re-

cords, except for steady running. We had a couple of mishaps; the first a fork going through and then a knife off the feeder also starting on a voyage to the interior.

There are one or two points that I would like to offer, which I came across during my experience in the threshing field. Don't forget to take off the blower belt after a break for a couple of minutes. Don't neglect to thresh for a man because he grouses a lot. He is probably a buster and will help you all he can and that is worth a lot of grouching. Hire good men, treat them well and they will treat you well. Try and have "Espirt de Corps." It helps and don't think that you can make your fortune in one season's run, even if it does pan out like that on paper. Yours truly, Herbert H. Ellis, Edgeley, Sask.

Fourth Prize Experience

By A. P. Simpson, Wallace, Sask.

Having seen a number of communications in your paper, I beg to submit my own experience in connection with threshing; not that I expect to give your readers anything particularly beneficial, but I believe that a great deal of good can be derived from the "swapping" of honest experience through the medium of the press.

I am a part owner in a gasoline threshing outfit, which consists of a 20 h.p. International portable engine, and a 32 all through Belle City separator, fitted out with Parson's self feeder, and what is supposed to be a blower.

This outfit was bought in 1907 and has handled three crops, and having run this rig myself, for that time, I am able to speak from actual experience.

The separator was recommended to thresh 60 bushels of wheat per hour or 120 bushels of oats; but with considerable alteration we have threshed as high as one hundred and ninety bushels per hour. But this is by no means its average capacity. Our average days' run of ten hours is anywhere between fourteen and eighteen hundred bushels of oats, according to the condition of the crop and the number or length of moves. But this machine could not possibly carry any more on account of the narrow rear. In wheat it will thresh eighty bushels per hour and makes a first-class job. We use two rows of teeth in concave for wheat and one row for oats. This in the average grain will remove anything from the straw.

With regard to the engine, we have every reason to be pleased with it. It is easy to operate and has plenty of power. I don't believe we lost half an hour through the three seasons from any fault of the engine refusing to work.

Our crew consists of three good stook teams, one spike pitcher, one man in the field to help load and myself running both ends. When threshing in a bin our number is but seven. We always

figure on threshing about 250 bushels per man per day.

We have always threshed by measure, 65 bushels to the double wagon box and charge at the rate of 3c. a bushel and 2 3/4c. per cubic foot if threshed into a bin. The farmer supplies the teams.

In the season of 1907 we threshed thirty-one thousand bushels, in 1908 seventeen thousand and in 1909 forty-six thousand bushels, nearly all oats.

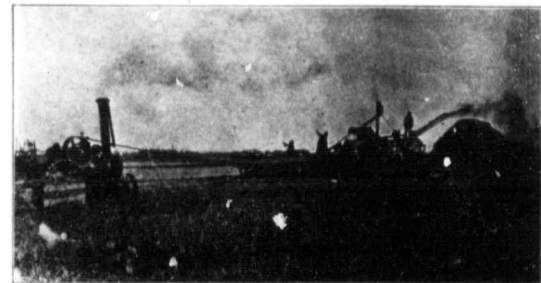
When threshing at home three of us thresh together using our own teams and help. Our arrangements are as follows:—We



A Waterloo Outfit at work near Miami, Man.

all have breakfast and supper at home and dinner together at the place we are threshing. This makes the women's work comparatively easy, as they have one extra for supper and breakfast and only seven for dinner.

Good gasoline costs us at Yorkton 34c. per gallon and engine gasoline costs 31c. per gallon. This is the first year that I have had the opportunity of testing the different grades of fuel and will give you the actual results. Three barrels of engine gasoline, Naptha 137 gallons at 31c., threshed eight thousand two hundred bushels and cost me \$6.85 a day for fuel; while one barrel of 43 gallons, Crown Gasoline at



Rodney J. Parker's F. & M. Outfit at work at Kelwyn, Sask.

34c. threshed four thousand five hundred bushels and cost me \$4.50 per day. One gallon of the best gasoline threshed one hundred bushels while one gallon of engine gasoline only threshed 60 bushels.

Now just a word in regard to expenses.

2 men at \$2.00 per day	\$4.00
Good gasoline 14 gal. at 34c.	4.75
Myself as boss	3.50
Oil	50
		\$12.75

We do all our own crushing and sawing with this engine in

winter and have had no trouble except starting in very cold weather, but a kettle of boiling water poured in the water jacket around the cylinder, with a good spark starts it off alright. Batteries seem to become useless at about thirty below zero. They should be taken in the house after work is finished and kept there till required again.

Trusting that this may prove helpful to others in the same profession, and thanking you for according me space in your valuable paper.

Fifth Prize Experience.

By J. G. Dickie, Hespeler, Ontario.

I noticed in one of your issues that you were giving us threshermen a grand opportunity to communicate our joys and troubles to each other through the valuable columns of your magazine. If it may be excusable, I will just give you a short sketch of all my moving during the summer and then end up by telling about the work done during the threshing season.

I left Ontario last March for my land in the Regina district and on arriving there with my carload of effects, I found that my Hart-Parr gasoline plowing

Only the one light was needed on the gasoline engine as we run the tractor by sound. There is no water in the boiler to take up a fellow's attention. But of course everybody will get into places that will make him scratch his head. Once one of my wives broke inside of the casing and none of us could place the trouble. We were in despair and so went for an expert who was for some time as much lost as any of us, but he stumbled to it at last. Then we took them out and cleaned them well.

Once the governor on our sparker got loose on the little shaft and of course it did not give us the right current and we stuck right there. As soon as it was tightened it worked as good as ever.

I did not go in for a fast slip slop job, but for a good even job and so it was that we plowed only 35 acres per day at an average cost of \$8.00 for fuel. We found that the engine would not start on coal oil, and so we used gasoline until it was warmed up and then gave it the oil. I like the oil the best and it gives a harder explosion with more power. There are several different grades of oil, but to my idea the Blue Flint is the one for me.

We soon turned over three hundred acres and then harrowed and disced same and then sowed flax as soon as the land was ready. Then during the summer we finished breaking our section and went out doing custom plowing for others. This is a good paying business. For breaking we got \$4.00 per acre and for backsetting \$3.00. So you see that was \$120.00 for breaking per day and more for backsetting as we put on more plows for that.

When the threshing season came along we were ready with our Case 32x50 complete with self feeder, high bagger and wind stacker. It took five teams and ten men to run the outfit and we were all well satisfied with the way that our 25 h.p. double cylinder oil-cooled engine did the work.

One forenoon I had trouble with one of my cylinders and thought that I would tell the teamsters and spike pitchers to feed a little easy, as I was going to use only one cylinder, while I got the other one into shape again. You would have been surprised the way that one cylinder handled the separator. I would not have believed that it could have managed it if I had not seen the experiment.

Flax threshing pays well at 20c. a bushel and then when you make it known around that you will only thresh for those who will let you plow their stubble, it is still better. I took an engineer and plowman along when threshing and as soon as the belt was off the wheel at night the engine was coupled to the plows and away went my two men for a good night's plowing. The men had their midnight dinner taken out to them and in this way they lost practically no time. When we

outfit (engine and eight plows) had got there before me. When the land was fit to go on and break I lost no time, as I had during the intervening days hauled out about a half car of coal oil for fuel and a few barrels of gasoline to start the tractor with. Then, too, we put up a little shack and a stable.

I had three men besides myself and as soon as the plowing started I put the engineer and plowman to work during the day while the other plowman and myself as engineer slept. We used a headlight at night until it got broken, and then we used a lantern.

finished my own threshing I was surprised on counting things up that I had grown an average of ten bushels to the acre, which I considered fairly good for spring breaking. That made 3,000 bushels for a starter and I held this until after Christmas when I sold it for \$1.55 a bushel.

I believe in telling every man what he is expected to do as soon as he begins with me and leave it to his honor and the man that is in him to carry out his share of the work. Of course there are some fellows who slink and try to get out of helping to set the machine, etc., but I believe that a good story or joke now and again will help the worst of them out of the rut, but if you can't manage him there is his pay in his hand and another man off the next train will likely fill the bill.

Another thing that will help to keep the men in good trim is a lunch in the afternoon, when they are working hard and long hours. You need not stop the machine at all for this. I never did and you will save time if you keep your machine running steadily for then the men don't take advantage of lunch time for a chat, smoke, etc.

To my brother threshermen I would say that a gasoline or oil engine is a great saving to the operator, as with such an outfit one man can handle both engine and separator, if he gets one of his pitchers to give him a hand for 30 or 40 minutes each morning till the machine is running well and oil cans, cups, etc., are all tended to. In this way I dispensed with a separator man, water hauler, fireman and straw buckler, also one water team. This is something for those who intend buying an outfit to think about.

Another thing that I liked about the rig is that there is no danger from fire. All spring, summer and fall I only used three gallons of cheap oil for cooling purposes and this I consider far in advance of the water cooled engine.

I trust that I have not wandered too far from the subject and that if it may ever please you to let my story into your valuable publication that it may help some struggling brother of mine who is in for the best outfit

Sixth Prize Experience.

By E. H. Morden, Gay View.

I am pleased to enclose herewith pictures of our machines while in operation taken at the wind-up of our last year's run. As I own a partnership in this outfit and did a heavy engineering stunt last fall you will naturally suppose that I should have quite an experience to give, but I am sure that mine will have to take second place when compared with some I have read in the Canadian Thresherman.

Our outfit is an International Harvester 15 horse, portable engine and a 32 x 40 Belle City separator with hand feed, blower and high bagger.

As our land is a little rough here we did not think it advisable to purchase a traction for plowing purposes. Consequently, my experience in that line amounts to nothing.

My first tussle with a gasoline engine occurred in a small country mill in Ontario some years ago, when gasoline engines were not perfect nor as well understood as at present.

The first was a Northey 3 h.p. Vertical run with a battery, but we did not seem to get very good

We turned the fly wheel until the piston was as far back in the cylinder as the shaft would allow it to go open feed, air, etc. Then we gave it a quick half turn forward. This operation took in and mixed a charge. Now the wheel was reversed to starting point as far as it could be forced back, which gave compression. This was repeated and when as far back as possible on second compression the movable electrode on ignitor was snapped causing a spark and the engine would start.

for starting it has very little cause to become weakened for a long time and once the spark gets its work in you can be sure of a good strong spark until the fly wheel stops.

Gasoline costs 28c. a gallon in barrels, cylinder oil 90c. a gallon in 5-gallon cans and common machine oil 45c. per gallon in 5-gallon lots. I think, however, that these prices can be lowered somewhat this fall, as we now have a fair estimate of the oil required for a season's work and can buy in large quantities.

One day after having threshed about a week the engine missed an explosion or two, then stopped altogether and there I was with the dead engine to be coaxed back into working humor again.

I first tried the spark on the outside, but it was alright, then the gasoline feed and next the valves. These were perfect. The next move was to take out the ignitor which proved to be the seat of the trouble, I found the point on the stationary electrode had broken off, leaving a rough

surface that would not make a spark and as I had no extra one on hand I filed a new surface on the broken one and cleaned the other with emery paper and set the points to a new bearing. Then replaced the ignitor rod so as to cause the points to come well together again and this worked very well until a new point could be procured.

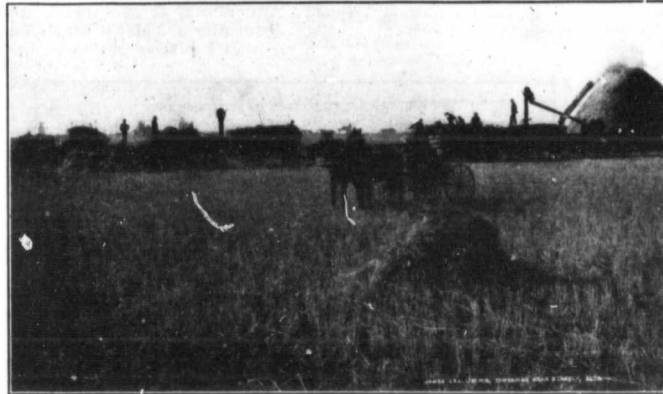
We have no crusher at present but were running an 8 inch plate "Rapid Easy" for a short time in December and judging from the way it handled that we will need either a 10 inch plate or a 12 inch roller crusher to make a paying business of it.

Generally speaking, we found our outfit quite satisfactory and with four stook teams could thresh 600 bushels of wheat or 800 bushels of oats in less than 10 hours and in one instance we were threshing oats at the rate of 100 bushels per hour.

The advantages of having an outfit of this kind are many, as the purchase price and cost of operating is much lower than steam. There is no danger from fire and an inexperienced person can run them with safety.

After having had my threshing done by custom and waiting from three to five weeks after the crop was ready for the machine to come, it looks more like business to me to start the machine just as soon as the grain is fit, to do it just as a person thinks it should be done and aim to put most of the grain in the sack instead of in the straw pile.

I have never handled an engine with more than one cylinder. But if I were buying an engine over 16 h. p. it would be a four-cylinder tractor, as I think it



"Aultman-Taylor" Machinery in Canada, Staveley, Alta.

satisfaction with this and replaced it with a 10 h.p. Northey Horizontal equipped with both battery and hot tube for ignition. This one did very well until more power was required. Then a 20 h.p. Ideal Horizontal (Brantford make) was installed and was furnished with a large six cell wet battery for ignition. This engine had plenty of power to run the large Champion crusher 11 inch plates and at the same time to operate successfully along with it any one of the following machines with which the mill was equip-

This is not generally thought to be a safe way of starting an engine, but if judgment is used and the wheel released the instant the spark is made there is no danger. Of course this mode applies only to the larger kinds as all small engines turn easily by hand and even the larger ones may now be started quite readily in the same manner as the small relief cam or the regular exhaust cam when thrown into position allows a small portion of the compressed charge to escape; thus causing the entire revolution to be made



I.H.C. Stationary Gas Engine being put to good use.

ped: planer, wood lathe, wood saw and large grind stone.

These engines were stationary and water-cooled by gravity method, and were in a good building near a stove, but even then it was sometimes a hard job to get started.

This last engine had a self-starter, but did not seem to work well so was taken off and as the engine was too large to allow one person to give the fly wheel a complete revolution to get compression we used this method.

with very little exertion.

My experience with engines in the East has been a great help to me in operating the one we have at present, although conditions are different with a well housed stationary engine and a portable one that may be working out in so many different temperatures.

Our engine is supplied with a 4-cell dry battery and Motsinger sparker, which in my estimation has everything in the wet battery and hot tube line beat for ignition. As the battery is used only

would develop a stronger and steadier power and would not need such a large fly wheel to keep up the motion and these on large engines represent from 600 to 800 pounds which I think is a trifle too much iron to be whirling at such a rate when less wheel and more cylinders will do the same work.

Seventh Prize Experience.
By John Elles, Altamont, Man.

Regarding my threshing experience. In the first place a man must have some get about him in the fall for there is only about thirty or forty days to make your payment and expenses. A man wants to be able to take hold of either end and run it right; that is to keep it going all day, for a threshing machine does not make any money stopping every hour or so to do some tinkering that should have been done at noon or at night. I do all my fixing at night, such as lacing belts and going over the cylinder and every part of the separator. I do not sit down and go to sleep and let the separator stop just for the want of a little oil or the tightening up of a nut in time to save a break that would probably cause delay for a day or so.

A machine should be oiled at least every hour when it is running; some parts don't need it that often. I make it a practice to take my oil can, cleaner and wrench and go over everything, not throwing a little oil at the machine and expecting it to run, but oiling and examining everything to see that there is nothing getting loose for a "stitch in time saves nine."

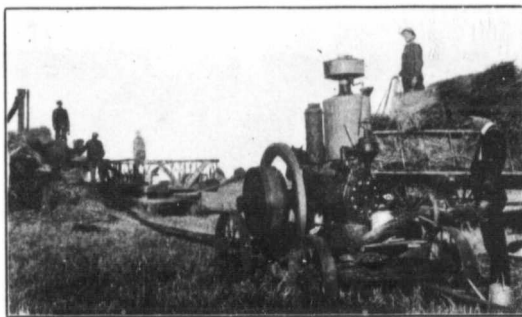
I have tried every way with belts and I find it is better to leave the belts all on at night, because if you pull them off they will be slack when taken off and when you go to put them on in the morning, they will be all shrunken and in about an hour's run or so, some of them will be slack. So I think the best plan is to leave them on and if it looks like rain I throw the cover over them.

I got stuck in a ditch a year ago moving from one place to another, the hind wheels dropping in the ditch, the fire pan and the big tender held the wheels off the ground. I was a little rattled for a bit, but then there was a lot of boys nearby. So I sent a team over for a few and in a short while we were threshing again.

Another time I was moving with my plowing outfit when I got on the middle of a bridge over Tobacco Creek when every stringer broke at once. Our tankman shouted to me to jump, but you know what kind of a humor I was in about that time with the engine hung by the middle bent under the fire pan. I stood on the wheel a little while, then got down and blew the boiler out. I went to Miami and informed the council. They gave me jacks and timber to get the engine out and we were out the next day at noon. The engine

never got a scratch. When you get in a mud hole, keep your head cool. Don't get excited and tear away until you are stuck in good shape.

Threshing is no easy job. We hear sometimes of people going out threshing for fun. If they go out for that you may be sure there won't be much money made. I do not thresh for fun or for my health, but for the money there is in it. I could explain more about running the engine and separator or rigging them up for the fall and keeping them rigged up, but I am afraid it would take up too much space.



A Stikney Portable Gasoline Engine on the power end. Outfit of R. H. Robertson, High River, Alta.

Eighth Prize Experience

By Edward Winchester, Melita, Man.

Last season I ran a Garr-Scott 30 h.p. Compound engine on a 40x60 G.S. Separator. We started work punctually at 6.30 and quit at 7.30 in the evening. At noon we thresh out all the loads and this gives the men an equal noon hour, besides we get in six extra loads every day. This means quite a lot to the thresherman and as the men leave the machine in rotation, so they start work. On the old system which is still more or less adhered to in many districts, the whistle blows at twelve and the two teamsters at the ma-

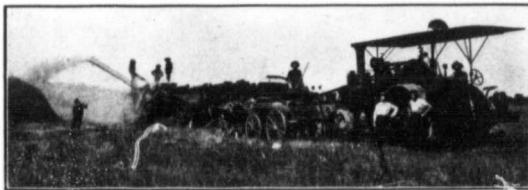
holes and stones on the roads are avoided and the engineer can give more attention to his engine ahead, so we have no breaks, as when moving.

I always keep water tank full for moving as a rule. We fill it again as soon as we are set. It comes in handy for emergencies. I always keep injectors and pumps in good working order, hence there is no delay on account of low water in the boiler. It is very necessary that all fire preventative and fire fighting apparatus be in good working order. Any repairs to the engine are done after the day's work and even if a bearing has to be ad-

justed I always run the engine a few minutes to see that it works alright and does not heat; hence no stopping for a hot box in the morning.

The grease cups should always be filled in the evening when the bearings are warm. This can be done much quicker than in the morning. I always have first-class oils and greases. It pays and when you get a satisfactory brand you will save a lot of trouble and money.

It is also a good plan to wash the boiler at least once a week. This often falls on Sunday, if there does not come a rainy day. I don't approve of blowing off



A Buffalo Pitts outfit doing big things.

chine are often last to dinner and first out. Probably he has half an hour and the last teams one hour and a half. We do not whistle on the grain wagons just to see the horses run, but when we do whistle, which is seldom, the farmer makes all speed. I think the fireman has enough work to do without wasting steam for fun and scaring every horse around the machine.

We keep two sets of belts and if one goes wrong we don't have to stop, but just throw the other on. If sieves have to be changed, this is done when we are moving. The boss always walks or drives.

boilers after working all day and pumping cold water on hot sheets which only serves to cook the scale instead of taking it off. I always allow my boiler to cool before washing and I am not bothered with scale. I do not use any "compound" except pump and water and I note the boiler inspector always remarks on the cleanliness of boiler.

These are a few of my own observations and rules which I strictly adhere to, and if I see another thresher adopting better methods than mine I take them on. With these practices I have been able to run an engine on a

machine that holds the record in the district and one of the biggest records in Manitoba.

Ninth Prize Experience.

By E. A. P., Myrtle, Man.

Our rig consists of a Sawyer-Massey straw burner tractor 25 h.p. and a 44x60 Toronto Combination separator with Hawkeye feeder, Perfection bagger and Maple Bay blower, which makes a very good and light running rig.

We generally start threshing as soon as any grain is fit. Having quite a lot of our own it always makes a good place to start the rig out on. We usually try to get on eight stook teams and four pitchers in the field and a straw team. The man running the straw wagon has considerable time to help the spike pitcher.

I believe the machine should be run systematically, having an even number of teams and men on each side. Every man has his place and his turn to the machine and this gives the foreman an opportunity to spot the slow men if there are any.

We also try to start in good time in the morning (about six or a little after) and then it enables us to quit in good time at night. It is almost useless to try to work after dark and besides the men feel better and will do their work better if they have a good night's rest.

I have threshed quite a number of years and worked under several different foremen, but I haven't found any of them to have any special way of handling their men, excepting one man who made it a rule seemingly to pay his men off with considerable less than what was coming to them. Some would refuse it, while others were compelled to be satisfied. Now I consider this a very unjust way of using men. When a man works a day he is entitled to a full day's pay of whatever he was hired for. We generally succeed in getting a good gang of all the men we want. It is the only way to make it pay, and I say, give the men fair treatment.

We don't make it a business to do fast threshing, as it is not what the farmers are looking for. They like to see a machine run steadily all day and that is what counts in the long run. This enables us to get a good long season, and thereby make more than the fast thresher who only runs sixteen or twenty days.

We have been operating a machine in this vicinity for nine seasons in succession and our runs have been from forty to sixty days.

It also pays to have a machine well equipped and in the best condition possible before starting out, as the field is a poor place to repair, and is always very expensive to the thresher as well. In moving I never make it a practice to travel very fast, as I don't think there is anything accomplished by it but stops and breaks

downs. You will either break something or rack your machine and thereby cause expensive delays. We had one move last fall of eight miles and we only had to stop twice and this was for water. This was our longest move.

I think a thresher should try and have his route planned in order that he will not make so many long moves as they are always an extra expense to himself.

Some take great pride in telling how they got out of mud holes. Last season there were engines around this part stalled in mud holes for a day at a time. Now a good engineer can avoid such loss of time and expense by watching his road and steering shy of such places. It is better to take a little time and consider before you get in a mud hole than after you are in.

Tenth Prize Experience.

By J. R. Long, Mortlach, Sask.

The thresherman meets various difficulties and often some very serious conditions confront him. My first experience with an outfit was acquired last fall when I purchased an American-Abell 26 h.p. engine and a Toronto Combination 36-60 separator.

These I unloaded on October 2nd and despite disadvantageous weather conditions, extra long straw and difficulty in picking up a crew, at that late date in the season, I had a very good run, getting in 18 days in October and 13 in November. I had no difficulty or misfortune with the outfit, both performing admirably, but the labor problem kept me in "continual hot-water."

I started off paying my engineer \$7.00 per day, separator man \$5.00, spike pitchers \$3.00, field pitchers \$3.00 and teams and teamsters \$5.00 per day. Labor was scarce and many outfits were only "half manned," consequently wages were high and it was not long till I was obliged to pay my engineer \$9.00 a day, separator man \$6.00, spikeman \$3.50 and submit to the crew or adopt the other alternative of "pulling in."

There was too much of my neighbors' grain at stake to do the latter and in order to enable them to save their spring and fall labor, my outfit ran some fifteen days in December and January.

We made no record runs at any time, owing to the great length of straw and the dampness by frequent rains, but I am persuaded to believe that the outfit will take as much as four men can feed under proper conditions, and under such conditions there is good money in a threshing outfit.

My charge for threshing last fall was, wheat 8c., oats and barley 6c., the farmer boarding the men, but with wages at their proper or reasonable figure, I hope to be able to cut a little this fall. The farmer cannot hold the machine owner responsible for threshing prices, so long as he demands the big price for his labor

and that of his teams; so long must the thresherman demand the higher price for the work he performs, and when one considers the amount of money a machine represents, what an outlay a careless employee can incur on the owner thereof, the risks he assumes, and responsibilities under which he rests, or rather unrests, it must be conceded that he must have a fair price for the work his machine does.

Personally, I like to see a man paid well for his work, and I like to see an employee give his employer a square deal, but the average thresherman, unless he is with his machine, and watches his help, will not get value for the money he pays out for wages, for



A Flour City Gas Tractor making things hum.

in every crew is a "slink," and this man is always a kicker, and should be treated as a man who puts his hand in another man's pocket for the purpose of taking his money. The one steals money—the other time, which means money and which he also takes.

I would like to see threshermen organize and set a scale for threshing and a scale for wages, and a set of rules that would give both the employee, the farmer and the machine owner justice and fair play and adopt a day that if men or paid by the day, the machine owner gets the advantage thereof in the early part of the season, as the employee gets in the latter part of the season—thereby making it a square and



A Fairbanks Gas Engine on the Power End.

fair play deal all the way through.

I would also like to see a weigher that would work perfectly, so that the farmer when he pays a thresherman for a certain number of bushels would find his delivery at elevators tally accordingly, and further, so that a farmer would not pay a thresherman a cent more than he actually earned.

This is one of the problems I met this season. Some of my neighbors received the weight or number of bushels the machine registered, while others were short from fifty bushels to 550 bushels. This is a most annoying condition and one of the most serious in our business.

For my part I only want pay

for my machine's honest earnings. It is all a farmer wants too, or has a right to pay for, and until we get an absolutely, reliable measure on our machines, let us count the wagon loads, level full, taken from the machines.

A Record of Costs.

By William T. Pittman, Ranfurly, Alta.
My outfit consists of a J. I. Case 20 h.p. Simple Engine and a 32-54 Steel Separator, with modern equipments.

The first thing a man wants is a good crew and then be the boss and get his separator set level both ways, so that it will do first-class work. I find this always pays. I have a cable with my rig

be enough power, so we sent it back. Then an agent came along and made us believe that an 18 h.p. steam that he had would run it fine. So we bought it on the conditions that if it wouldn't do the work he would allow it on a new one. This turned out to be the case after trying it for a day. We shut down and went and got a new one, 22 h.p. Sawyer-Massey and have had satisfaction ever since.

Before we got the new engine home I had an experience that taught me a lesson. We had a Coulee to cross and there had been a heavy rain the day before and when we came to the bottom it was quite wet and the grade was narrow. We put planks down for the drive wheels to run on, but just as we were on the worst place the engine slipped off the grade and if it hadn't been for the wheel resting on an old bridge which was three feet lower than the road, it would have gone over. We were just five hours getting out, so you see it doesn't pay to get in a hurry in places like that with an engine.

To my mind there are just two classes of men that should go in for threshing, and they are: the man that has nothing to lose and the man that can pay for at least half of it the first year. The man that has just a quarter section and goes in the threshing business with no experience, will have a big load on his farm and his machine worn out before he knows it. The wages we have to pay and the way most of the men work, it is hard to make much threshing.

There is one thing I like to do when I pull in and that is to take note of all that is needed for the next year, for if it is left till the next summer, thinking there is lots of time, when you come to start you will find things you have missed. I know a man who lost a week of good threshing last fall fixing at his machine. One hour lost when your wheat is ready and sixteen men and teams and wages is worth more than a week in the fall after you are through.

I hope you will find space in your valuable paper for these few lines.

Threshed, 27,528 bushels in 21 days;

By E. Simon, Oxbow, Sask.

I see by your paper that you want every thresherman in the country to give you an account of his season's run; so I am writing you about my experience. It may possibly be of help to someone.

The past season was an ideal one for threshing. It was so dry that the grain separated easy and the straw burned splendidly.

I run a 21 h.p. Port Huron engine and a 36 x 60 Gaar Scott separator rigged complete with feeder and blower. I run the engine myself and hire the best separator man I can get regardless of wages, and I think it is the cheapest in the end if the life of the machine is worth anything.

and find it a very useful thing. I always run my rig early and late and have to hustle to make payment and make anything besides.

My engine is an easy steamer and just plays with my separator. It is better to have ample power and get uniform motion, which I think is essential for good work in threshing. For fuel I burned straw. My expenses were per day as follows, not figuring interest or depreciation:

4 pitchers at \$2.00 per day . . .	\$8.00
Fireman at \$2.25 per day . . .	2.25
Tankman at \$2.00 per day . . .	2.00
Separatorman at \$4 per day . . .	4.00
Oil-Sundries \$1 per day . . .	1.00

\$17.25

I have plowed some and will say it is very hard on the engine,

and I found that there was no money in it unless the ground was level, with no brush.

Finds Steam the Best.

By Louis Ferris, Holland, Man.

I have been in the threshing business for three years and find that there is quite a lot of pleasure in it, but a good deal more hard work and worry and not much sleep while the busy season lasts.

To start with, I made a mistake. I went in partners on an engine, which I think is a mistake in most cases. Our first rig was a new 32 x 50 Great-West separator and a 25 h.p. Gasoline engine, which proved afterwards not to

We didn't do any fast work this season as the grain wasn't in the straw; some only averaged six bushels to the acre and the highest only fifteen bushels to the acre of wheat and oats about twenty-five bushels. We cleared 140 acres in one day with eight teams and three pitchers. I don't have any spike pitcher as my engine wouldn't stand it if the grain was damp.

We ran twenty days and threshed 27,528 bushels of wheat and oats. There was no mud holes in this district this fall. It was a bad fall for water as the sloughs were nearly all dry and consequently the water was very dirty and the boiler had to be washed out often.

When we would move, the boiler would foam going either up or down hill and for a while I could not find out what was the cause, but one day when cleaning it out I put my hand into the hand hole in steam space as far as I could and I found that all of the braces and stay bolts were heavily coated with slime and soft mud and when the water would reach that it would foam.

Another time, we were moving to a set and we came to a long slough with steep banks and I thought I would go over it. So on we went and going up the hill the engine started to foam, but I got on the level ground all right. However, the steam soon began to go down and the smoke came back out of the straw chute and I had to stop and find out what the cause of the trouble was, which took us a few minutes. We found that the spark arrester had got stopped up with soot and ashes with it foaming and working so hard. We had no accidents or bad breaks. The last few days, however, all of the flues except two or three started to leak badly. We expanded them and made them last to finish the season. I am going to refuel the boiler ready for next season and I don't believe in patching as there is always enough to bother about without leaky flues.

I have no trouble with my men. They know their job and do it very well and are always ready to do as I want them. I do unto them as I wish to be done by and if they are in the vicinity the next season they will always look me up.

Horses eat up Profits.

By G. E. Schopf, Weir Hill, Sask.

In the summer of 1906 a neighbor of mine and I purchased a threshing outfit and we threshed every fall since with very good success. We threshed as many as 50 days in one run and mostly all stock threshing.

In the fall of 1908 we started out on the 10th of September and threshed up to the 28th of November, all stook threshing. There was snow on the ground a long time before we finished and a lot of sheaves were left in the field, mostly untied sheaves. We also had a lot of bad weather late in the fall and for that reason we

were compelled to stay at some farmers as long as ten days before the grain was threshed.

You may have an idea what it takes to feed 24 horses for ten days and it is not the feed only, but the amount of feed that is wasted by such as a threshing gang. Some teamsters are, of course, more careful how they feed their teams than others, but the majority of them are unexperienced and waste a lot. It is surprising how some farm yards look after a threshing crew has pulled out.

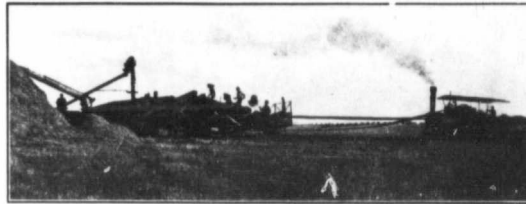
I have noticed one thing in particular since being in the West, and that is that you'll see some farmers waiting two months or more to get their stooks threshed.

and make his payment on his outfit, pay his men and all his repair bills and I personally believe that if there was more stacking done in the west, we could do with a lot less outfits and unexperienced help and a thresher would think it worth while to fix up his outfit to the very best for a long run and fear no expense.

Been at the Game for 20 years.

By D. Menzies, Cloverley, Sask.

To begin with, I have run an outfit of my own in the east for twenty years and I own it yet, but I took up land in this great country last fall and came up to look after it. When the threshing began I took in hand to run



Rumely Making a Clean Sweep in Saskatchewan.

and I cannot understand why it is they don't stack as much as possible, if not all their grain. Nearly every small farmer has one hired man who could help stack, or some two or three farmers could get together and help one another instead of waiting for some never coming thresher.

I think they make a great mistake in not stacking. They could save a great deal by doing it. Every farmer will gather his own grain much nicer than any threshing crew, and besides they could make good wages instead of waiting. It is surprising how much three men can stack in one day and after one day's stacking the plow could be set to work for

a 26 h.p. driving a 32 x 56 separator with feeder and stacker. I had nineteen miles to take the engine home. We left town about three o'clock and got a few miles on the road before sundown. The engine was a rebuilt one and worked rather hard. Just at sundown the valve slipped on the rod and the engine stopped dead. I camped there all night, set the valve in the morning and started off again. I got along all right for a few miles, then the valve slipped again. I again set it, putting a mark on the rod on each side of the valve with the cold chisel, so that there was no danger of that happening again.

When we came to the Guilph



"Casey" at the Bat.

there is nothing like early fall plowing.

After it is all stacked it can stay there if necessary until December without losing the grade on the wheat and if the stacks are well built there is little danger of damage either by rain or snow.

The birds, gophers and mice will also eat up and waste or shell a lot if left too long in the stooks. My idea is to stack right after harvest or as soon after as it is dry enough. It is generally the smaller farmer who has to wait the longest, because most threshers pull for the big jobs first, for there is where they make their money, on account of less moving.

It is hard for a thresher to suit every farmer in his threshing dis-

Valley, we found that the road wound around the hill until it reached the bottom. The hill is over half a mile long with about 400 feet of a fall into the Valley. I was told that most engineers at this point took the fire out to go down. I threw in lots of fresh coal and a few shovel fulls of earth and started down. I made the turns, got down to the bottom, stirred up the fire, started up and got home just as the sun went down.

As long as we threshed in the Valley the flues were all right, but when we climbed the bank on the other side and began to use slew water they began to leak and before the season was over I had to expand them every morning.

But we only lost an hour with them all season. They were leaking so badly that I had to expand them at noon; so when the hands went to dinner, we went at it and pulled out the ashes and the flame sheets and I crawled into it. I had to expand about twenty of them. Then I crawled out a little hotter than when I went in. We were ready for work shortly after two o'clock. We tried potatoes in the boiler, but they came out at the end of the week just as whole as when they went in. We were too far from town or we would have tried soda. On account of the slews being too low the water was rank.

Uses a Gas Engine for Threshing.

By Walter R. Bedford, New Warren, Sask.

I thought I would send you a short note of my experience in threshing. Last season I operated a twenty horse power International traction gasoline engine and a 32 x 44 Belle City separator. This, of course, is a small outfit, but large enough to puzzle an inexperienced operator some times.

I met with a fair amount of success, but had a certain amount of trouble also. I have threshed eight hundred bushels of wheat in a day and oats at the rate of four bushels per minute. This I consider fair, considering the length of the straw last year.

Our crew consisted of three teams and five men in all, three teamsters, a field pitcher and myself. We threshed sixteen thousand bushels and made a very good clean job. I might tell you about a curious experience I had one time, while moving a gasoline traction through the snow this winter.

The engine was all in good running condition and ready for a long move, but we had not gone very far before it began to miss explosions and finally stopped altogether. I had in a new set of batteries, but could not get a spark at all and no amount of cleaning and tightening connections would remedy the difficulty and I was puzzled for a few minutes to know what was the matter. Suddenly I discovered that the fine snow flying from the drive wheels had gradually formed in an ice on the circuit breaker, thus preventing the metals from coming in contact and breaking the circuit. I made a torch and thawed the ice off and tied a cover over it to prevent the snow from reaching it again and finished the journey without any further trouble.

A Small Repair Bill.

By Maurice L. Seymour, Le Bret, Sask.

You have asked me to write you about my last season's run in threshing. First of all, I only hire the best men for both ends of my outfit. I paid my engineer \$6.00 a day and separator man \$5.00, straight time, whether the machine was working or not and fireman \$3.00. Then they take an interest in their work and



BEST FOR STUBBLE AS WELL AS BREAKING

On hundreds of farms in every Western Province our plows have proved themselves ideal for stubble work, being strong, yet light in draft, costing our customers much less for repairs, and the quality of the plowing has had no equal in all Canada. The "suck" of the bottoms can be adjusted to a hair's breadth by using the set screw on the top of each standard. This is very useful and important when the land varies in hardness. Cockshutt Engine Gangs have been purchased by the Dominion Experimental Farms both at Brandon and Lethbridge, where they are doing perfect work in stubble.

More
Cockshutt
Engine Gangs
sold in
Western
Canada this
season than
any other
make

COCKSHUTT ENGINE GANG

Our stubble shares are heavier than those of any other manufacturer. Our stubble standards are so shaped as to form an arch with the straight beams, so that when the land is trashy, there is always good clearance. The gauge wheels, which run directly in front of and protect each bottom, are of large diameter and wide tire and are made solid in the centre to prevent clogging.

These gauge wheels can be raised or lowered to suit the different height of the stubble and breaker standards, or can be transferred forward to make room for swivel rolling colters—adjustments which will be found very advantageous.

Under all varying conditions in stubble plowing, you can depend upon the Cockshutt Engine Gang turning furrows of uniform depth and width, leaving the land level and the straw well covered. If you would like to have more direct evidence about the superiority of the Cockshutt Engine Gang, write us for our new book "Horseless Plowing," showing a large number of splendid illustrations of our plows in use in stubble on different farms throughout the West and some of the most convincing letters written by farmers who have bought ours after having had experience with other makes of Engine Gangs.

More
Cockshutt
Engine Gangs
in use in
Western
Canada than
all other
makes
combined

COCKSHUTT PLOW
COMPANY
LIMITED

WINNIPEG

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REGINA

SASKATOON

CALGARY

EDMONTON

everything was kept in good shape at all times.

I had thirty-two days actual threshing with a few stops for wind and moves. Otherwise, the machine worked ten hours per day.

I own a 25 h.p. J. I. Case and a Case 36 x 58 separator and did splendid work. One place I pulled to we threshed four hundred acres in eight and one-half days. We threshed between 1200 and 1600 bushels of wheat a day and about 4000 bushels of oats.

The only break I had in the two season's work was the upper half of water gauge, which cost me \$1.00. So it pays to get the best men you can procure. This spring my engine was in good shape to go to work plowing. I had to get a pair of blocks, otherwise all was O. K.

If at any time I can write upon anything I would be pleased to hear from you.

A Very Good Run.

By Oscar Sundall, Govan, Sask.

I will endeavor to give you my experience in threshing in 1909 and before starting will say that one must work on a business principal, for threshing is a business of its own and must be run as such. One should know just what it costs him to run in a day and should know just what money has been made for himself each and every day. If every thresherman would do things up in this way there would not be so many failures amongst our threshermen, for when you find that your books aren't balancing right then it is time to change prices on threshing or system of handling the crew. You have made a large investment in your machine and if it does not net you a fair profit, then there is something wrong. An average sized machine, 36 x 60 should make an average of \$50.00 per day for the season outside of all expenses.

You must have a place for each man and see that he attends to his job right to a T and this should be done the very first days you are out, for once you get your men trained you will not have much trouble.

So here we are ready for threshing with everything lined up for the first move, consisting of a 32 h.p. engine, 44 x 66 separator, sleeping caboose and last but not least, the dining car, all lined up. It looks like a freight train, but I find this to be the best way to transport sleeper and dining car as they are always coupled together and kept close to the machine and very little time is lost for meals and time is what counts.

We had a very good season, although short. It was dry and the crops were good, so the man that managed right made some good money. We threshed 28½ days and never lost one minute on account of the machine. We were held up on account of wind for two half days. We threshed in the season 63,744 bushels of grain consisting of 48,000 bushels of wheat, 12,000 of oats and barley and 3,744 of flax.

We charged 9c. a bushel for wheat, 7c. for oats and barley and 20c. for flax. This figures to a total of \$5,908.80 receipts for the season's run, which looks very well, but it does not stop here, for as I said before, we must take expenses out of this. Now ours were heavy, as we had to have a very large crew. We had from ten to fourteen stook teams and each man put on his own load. We kept three spike pitchers so that one could keep it clean under the feeder and would be ready to get on the next load. In this way we lost no time in cleaning up. There is also not so much danger from fire and I find it gives better satisfaction. In this way you know your men are all working, which in having field pitchers, you do not know whether or not they are asleep or at work. Of course we had to have extra teams to make up for shortage of men, and then there was the cook at \$5.00 per day and food for all this gang. All in all it averaged \$100.00 per day for the season's run, making a total of \$2,825.00 expenses. Taking this from the grand total of \$5,908.80 a balance of \$3,083.80 is left. We cleared on an average of \$108.30 per day.

I hope that these few lines will be of some benefit to some readers of the Canadian Thresherman and Farmer. I forgot to state that my outfit is a Reeves complete.

Take Every Precaution Against Fire.

By A Thresher, Mather, Man.

Having been a constant reader of your paper for some time, I noticed many accounts of threshing experience and have at last decided to write too.

Our outfit consists of a 20 h.p. Gaar-Scott return flue engine and a 36 x 56 separator, generally six bundle teams, four pitchers, tank man, fireman, engineer and separator man. The number of grain teams depends upon the distance the grain had to be carried.

I think the key to success with threshing is to get started early and then keep going steadily. It will win in the end, although the man that rushes and tears about makes the biggest show, but examine their straw piles and will generally find poor work.

Some machines the same size as this one have four men pitching into the separator all the time and they wonder why the grain goes in to the straw stack and if the straw is damp they are continually plugging the separator from end to end. Heavy feeding may be all right on very big outfits, but a small machine cannot handle the straw as fast as four men can feed it, unless the men are taking things easy.

As to moving. An engine should always have a good large water tank. I think it is better on the engine than fixed on the tender. A good tender can be made from a pair of old drill wheels with the main axle left in a straw rack, which can be built on this with a few scantlings and boards. The centre scantling should have a hook which fastens

to the foot board of the engine. This tender can be easily pulled around by the fireman when coupling to the separator, or to be run under the blower to be filled ready for moving.

Moving costs money when you are keeping twenty men from work and as little time as possible should be lost. A lot of time is saved by moving at meal time if possible. It pays to haul bundles a little further and keep threshing till dinner time than it does to move for an hour's threshing.

An extra man is always handy to have when starting up in the first of the season as you will always find that you have a man or two that is not worth their board, and the time to get rid of them is right at the start. A poor man always causes trouble in a threshing crew and when the boss and the men don't pull together things will not work very smoothly. A gang of men are a hard outfit to handle at the first and requires a good man to handle them and one that does not lose his temper.

One great risk the owner of a machine has to run is fire, and every precaution should be taken, a chain or cable should always be fastened to the tongue of the separator and a hook on the front of the engine so that the machine can be pulled out at a moment's notice. Sheaves and loose stuff that falls under the feeder should also be picked up as they might cause trouble if the machine had to be moved in a hurry. The engine should be fitted with a good spark arrester and if any of the wires burn out, they should be immediately renewed as a very small hole lets out a very big spark, which might cause trouble, especially if threshing with a fair wind.

All belts should be gone over at least once a day to see that the laces are in good order. A broken lace will generally cause half an hour's stop. A good plan is to have two sets of belts and when one breaks it is but a moment's work to slip on another.

Shun the Holes.

By J. G. Slater, Pleasant Forks, Sask.

I have been out here four years. The first fall I got a job as waterman, the second fall as stook teamster, third fall I bought a second-hand outfit and the fourth fall, which was last fall, I bought a new Case Steel separator and run it with our 20 h.p. Case engine. My elder son handles the engine, the 2nd one the tank, the 3rd one the separator and the 4th one runs the straw fork and looks after steam. I engage four men to pitch and pay them the highest wage going. When I engage them I tell each the time I expect them to start work and finish, namely 6.30 a.m. start and 7 p.m. finish. If a job is finished by 5 o'clock I pay them for a full day, and expect them to work until 8 or 8.30 to finish a job. I never have any trouble with my men. I have not had a man leave until the outfit was home.

If we are in a hurry, I take a fork and go and help them to get the loads on quicker. As soon as the outfit is home I try to get them a job on the farm. If anything occurs that we cannot run for either break down or weather, by so doing my men are only too willing to help us out any time. Treat your men as men irrespective of creed or nationality. If I found I had a shirker I would give him one chance and if he failed then give him his time and shut him off the job.

As regards mud holes. Shun them. That is the best way out of them. We have a cable and if the engine looks like going down the best way is unhitch; let a couple of men get the cable which we always drag behind the separator. Hook it on the draw bar, let the engine go over, hitch to the separator and you have it at the end of your cable. This means that you are out of your difficulty before you start to pull on the separator. The same applies to a steep incline. Get over with half a load and you can fetch the other half with your cable. Don't trust to chains.

Now a word about the outfit in general. I see that everything is all ready before I go out. I start up at home and have it well looked over, seeing that all boxing is properly lined up, see to the flues, pulleys, etc. I say, clean your outfit every move you make from one farm to another. This keeps you in the good books of the men you thresh for and don't pull out until you have thoroughly cleaned out your boiler and separator, inside and out.

If possible, I would advise anyone to run their outfit personally, listen for any knocks, see that all repairs are done as speedily as possible.

Our average run last fall was 2,500 bushels per day for a month, which is not too bad for new beginners.

Sand Hard to Negotiate.

By Owen F. Radway, Mentor, Minn.

In reading your paper I noticed that you asked for the experience of threshermen and I avail myself of the opportunity of writing. Although I do not own a threshing rig of my own, I have run different machines for a number of years.

Two years ago I ran the separator for William Brant Stacey, Minn. It was an Aultman-Taylor, hand feed, and Sattley attached stacked. It was a small machine, only 28 x 40 inches and 16 h. p. engine. A large machine is not needed in that country as it is in the potato belt of Minnesota and is sand for 200 feet deep for all I know to the contrary.

We had a good run considering the quality of the grain. We had a very dry year and all the crops were light. The largest day's work we did was in our second week's run. We made a move of one-half mile the first thing in the morning and threshed two big rye stacks and two small stacks of oats before dinner, finishing this

Continued on page 18

HERE'S WHERE YOU CAN SAVE TIME



When the "few minutes" required each day to oil a separator are *all* added together, a Thresherman will discover that his daily oiling consumes a lot of valuable time—time that means profits lost—time that you would like to save, now, wouldn't you?

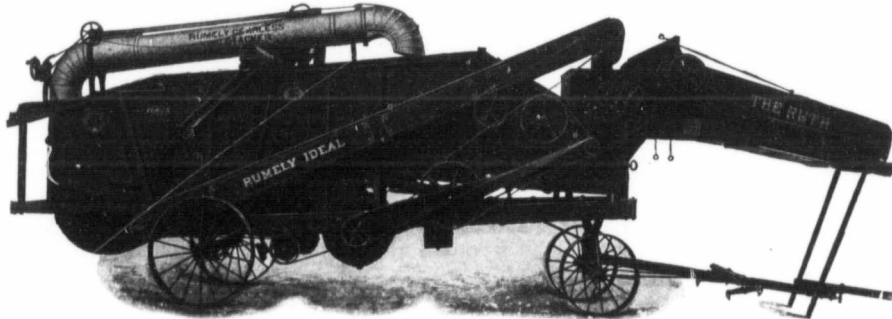
One cause for this is that many separators are constructed with bearings in such out-of-the-way places that it is hard to get at them; some are even placed on the inside where oiling or adjusting can't possibly be done without stopping the machine.

Now, in constructing the RUMELY Ideal Separator, we gave this question of *accessibility* a great deal of thought and study and designed our separator so that

"The separator is easy to keep up in good running order from the fact that the working parts are all where the separator man can see them—he does not have to go inside of machine to oil or to adjust anything as there is nothing inside to look after."
KROEKER & PAULS, Inman, Kan.

All Bearings Are on the Outside

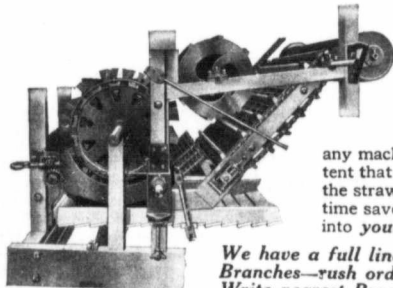
Likewise every part that requires daily adjusting—all are placed on the outside so that one can make most adjustments and oil the majority of bearings while the machine is *actually under full motion*.



Aside from embodying accessibility to the fullest degree possible, there are other advantages for the Thresherman in the construction of the RUMELY Ideal Separator that insure more profits, greater success and better satisfaction for the customer.

There's the smooth working, automatic Feeder, Gearless Wind Stacker, six sets of Agitating Fingers over an extra long Straw Rack, Screening Section in the Grain Pan, the Shoe Construction and the

Traveling Chain Rake Construction



just back of the cylinder. This construction at the cylinder in the RUMELY Ideal Separator provides for a straw travel of nearly 7½ feet from the time the straw touches the first cylinder tooth until it reaches a point *three feet from the cylinder*.

This Chain Rake is the greatest separating device found in any machine. It increases the capacity of the machine to such an extent that *19 out of every 20 kernels* are in the Grain Pan before the straw even reaches the Straw Rack. It is a profit maker and time saver for the Thresherman. It's the part that will put dollars into *your pocket*.

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Please send me your catalog and particulars regarding Rumely outfits that you can ship immediately.

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Are you a thresherman?

What make engine do you own?

How old..... What make separator?

How old?..... Will buy

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The Eye Tooth and What Came of It

BY L. L. KLINEFELTER.



OF ALL the days of the year there is none that comes back more distinctly to an old man than the old-fashioned "Butchering Day." I think I hear a hundred grey-headed readers say, "I believe that's so, but I hadn't thought of it before." This may be due to the fact, for it is a fact, that the very name of "Butchering Day," with its attendant suggestion of slaughter, has a forbidding effect which has caused gentle minds like yours and mine, beloved, to avoid the thought of it.

However, when we come to think it all over, we find it difficult to see just why the slaughter of a thousand men on the field of battle should not stir the poet to write an epic, while the slaughter of a dozen pigs produced literary nausea.

It can hardly be the mere fact of slaughter, since both are slaughtered. We have been told so often that to kill an enemy in battle is a glorious thing to do, that we forget the killing and think only of the glory. On the other hand, we have been taught, also, that "the merciful man is



"The old-time plan of washing out their mouths with soap"

merciful to his beast," and we do not look upon the infliction of pain with pleasurable emotions. Perhaps, if we saw the thousand men who fall in battle, writhing in their death agonies, we might be less charmed by the epic of the past.

It may be that we are able to glory in the death of the thousand because we do not see them die, and are shocked by the death of the pig which takes place before our eyes. Who can tell?

Religious teaching has much to do with this too. The Doukhobor of western Canada will not eat meat, because he holds life too sacred. He will refuse pie if lard has been used in the crust, but convince him that it was shortened with Cottolene, and pie "goes" with the Doukhobor.

The Jew eschews pork, but chews beef like the rest of us.

In a Jewish quarter of New York a teacher in the public schools adopted the old-time plan of punishing pupils who used bad language by washing out their mouths with soap. The parents arose in rebellion, because lard is used in soap-making and it was

sin for any form of pork to enter the mouth. But the school-m'am, wise above her generation, proved that she had used soap made of cotton-seed oil, and peace reigned once more in the Ghetto.

The Hindoo believes in the transmigration of the soul and refuses to eat meat for fear he may devour a deceased relative.

The Sepoy rebellion, one of



"In biting the cartridge he might be biting his grandfather's nose"

England's hardest wars broke out because the Sepoy soldier was required to bite off the end of cartridges greased with tallow.

And who can blame the Sepoy for rebelling? How could he know that in biting off the tallow-soaked paper of the cartridge he might not be biting off his grandfather's nose!

The discussion of Butchering Day is leading us far afield, isn't it?



Victims of the Eye-Tooth.

It branches out into literature, history, religion and science.

I nearly forgot the science, but I just happened to think of our eye-teeth.

And what have our eye-teeth to do with Butchering Day, you ask. A great deal. Perhaps they furnish us with our only rational excuse for the destruction of life which it implies.

The eye-tooth is the remnant of the fang and proves our kinship with the beast that prey.

The fang is the hall-mark of the carnivore—the flesh-eater.



The Fang is the "Hall-mark" of the Carnivore.

Man, having an eye-tooth, is a carnivorous animal, and Nature meant that he should eat meat.

But eating meat presupposes killing, and thus science comes to our relief and hallows Butchering Day by her august assent!

Were the Doukhobor scientific he would eat the lard-permeated pie crust without a qualm of conscience. Were the Jew as familiar with zoology as with the Talmud he would recognize the presence of lard in the soap in the anatomy of his offspring as a perfectly legitimate element in the development of moral utterance, while the scientific Sepoy would merely thrust his tongue against his eye-tooth and content his soul with the knowledge that to bite off his grandfather's nose was a perfectly natural act and not forbidden by the doctrine of transmigration. If his grandfather had entered into a bullock, should he not expect to be bitten?

I have been trying to think

tory, science or much of anything else, for that matter.

At ten one does not insist that science should hallow Butchering Day, for it is itself a holiday (and what is that after all but a hallowed day?)

Yes, my fellow-greybeards, you remember how you got up early that frosty morning and saw from down in the meadow the fire heating water in two big copper kettles and the big slanting hoghead partly buried in the ground.

You shivered while you dressed yourself, of course, and at any other time you have cried out against the hardship of your early rising. But, as you shivered, you watched the ghostly figures of the men as they flickered in the firelight through the palings of the garden fence.

In your haste you got your trousers on wrong side in front and that took valuable time. Boys wore trousers fifty years ago (or perhaps they were pants, but not knee pants.)



"You got your trousers on wrong"

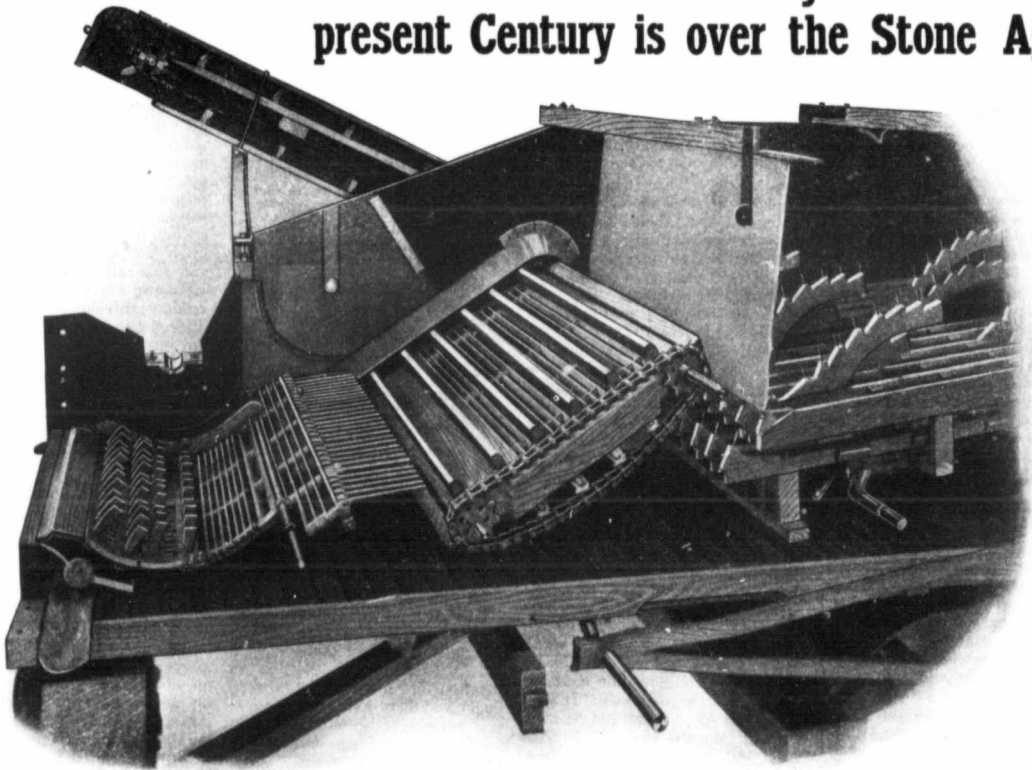
You were pulling on the last boot (boys wore boots, if they had 'em fifty years ago) when a rifle-shot rang clear in the morning starlight and you knew you would be too late for the opening of the matinee.

And so you were, for you arrived just as four or five men were dragging a three-hundred-pound hog over the frosty sward to the barrel. But you were in time to hear the mighty splash as the great porker went head first into the scalding vat. You saw the boss butcher take him by the hind feet and wallow him about a few times until his practised hand told him to pull him out, tilt him over and souse the latter end into the barrel. Another wallowing or two and all hands grappled with the slippery ears and nose and forefeet, and drew the subject out upon the scraping-table, made of the old family sled by removing the box.

Talk about "hairpulling." There was where they had it, and in a few minutes, with many a grunt and "heave-oh," the white carcass hung on the gibbet, head

.. THE .. New Century Separator

Is as far advanced over any other as the present Century is over the Stone Age



It is generally conceded that both at the INTAKE and DELIVERY ENDS of a threshing machine the straw and grain are handled on the SAME PRINCIPLE BY ALL MAKES.

SUPERIOR SEPARATION MUST THEREFORE BE OBTAINED BETWEEN THE POINTS OF INTAKE AND DELIVERY. With an OPEN GRATE SURFACE, 5 FEET 9 INCHES LONG, in a 27 x 42 N. C., over which the straw must move, we get a SEPARATION OF 95 PER CENT. BEFORE IT REACHES THE STRAW RACK.

The CYLINDER will knock out the grain AS WELL AS ANY CYLINDER OF ANY SIZE OR MAKE.

The Beater, placed in such a position that it ABSOLUTELY PREVENTS BACK LASHING, beats the grain and straw down upon ADJUSTABLE FINGERS, and from there the straw is carried over an ENDLESS OPEN RADDLE for delivery to the straw rack.

The GRAIN PAN extends from the extreme front of the separator and declines towards the shoe, giving an easy, steady natural delivery of the grain to the riddles, which are extremely long and raked their full length by a blast which is at all times sufficient and under absolute control.

The rotary movement of the shakers, having a 5 in. THROW AND STRIKING THE STRAW TWICE AT EVERY REVOLUTION, MOVES THE STRAW 10 IN. WHERE ANY VIBRATING MOVEMENT MOVES 5 IN., THUS CARRYING THE STRAW IN JUST ONE-HALF AS THICK A BED, and allowing JUST ONE-HALF THE OPPORTUNITY FOR GRAIN TO LODGE IN IT, while the RISERS keep constantly LOOSENING and SHIFTING the POSITION of the STRAW.

Compare the PRINCIPLE of the Separator mentioned above with any other, then confirm your judgment by asking ANY OWNER of a NEW CENTURY.

There are over 500 of them in Canada.

If interested, write to the nearest Agency of the
INTERNATIONAL HARVESTER CO., or

J. TAIT HUNTER, CALGARY, ALTA.

downward, like a malefactor in the days of old.

A few deft strokes of a long, sharp knife and the entire department of the interior rolls out into the bushel basket.

No, not all. Only the "interls," The lights and other divisions of the interior department require special manipulation, during which the boss butcher holds the back of the long-bladed knife between his teeth and an absent look comes into his eyes, as he gropes for various important items in the budget.

But present number one is disposed of and there is another rifle-crack and number two follows over the same route to the gallows.

By a little after sunrise the ghastly disemboweled forms of half a dozen gambrel-supported victims of the eye-tooth swing in the crisp air and all hands go in to breakfast on buckwheat cakes and maple syrup.

Carnage and waiting for the second table combine to give you an appetite.

After breakfast the work of cutting up begins, and the boss butcher is the biggest "cut-up" in the bunch.

On the long oak benches are laid the long fat sides of the late deceased and with deft strokes here and there the boss butcher carves out oval hams and square shoulders which disappear in the pork-barrel in the cellar.

You don't go to school to-day because you convinced mother that you needed to do a lot of things (which you never do). But you inflate miniature balloons and have a good time. Perhaps you carry straw to put under the beef when it is dressed behind the barn, but that is about all you do, except to stand around and watch the boss butcher slice off the long white ribbons of fat meat for the big kettles which have been brought around to the front of the house where a more convenient fire-place has been laid off.

And when the boss butcher tosses a kidney into the boiling water you wait until it is "done" and fish it out with the long-handled iron fork. Given a dash of salt, a stewed kidney and a boy, and you may see why Nature never quite obliterates the fang. 'Tis then the primeval eye-tooth declares its first intent.

Nowadays in Edmonton and Winnipeg,—where every day is Butchering Day out in the stock-yards, where the pigs are chased into the great beyond by car-load lots,—butchering is a business, an industry, a factory process. On the farm of your boyhood and mine it was an art, and the part that came after supper—the sausage-making part—was a fine art, fit to rank with music and sculpture and painting. If you don't agree with this, it just shows you never tasted country sausage with a lot of gravy to put over the pancakes, on a cold morning.

All day long the women have been cleaning the casings. These good ladies had reputations as artists in cleanliness, and they

could tell to a degree how hot the water might be without injury to the delicate fabric which later served to hold the appetizing sausages whose long festoons would next day hang from darkened beams in the smoke-house, while the pungent fumes of rich hickory smoke permeated them for a day and left a flavor envied by the gods.

But all good things must come to an end, and bed-time will come, even on Butchering Day. You go to bed about eleven and your last thought is a sort of wonder how they could have got through it all without your help.

And for weeks to come your dinner-pail at school holds choice tidbits and left-overs from Butchering Day.

Threshing in Western Canada.

Continued from page 14

man's job. Then we move 80 rods to another man's job, four stacks of oats; then moved $\frac{3}{4}$ of a mile to another place and threshed two small stacks of oats. In all 1350 bushels of grain, quitting at 7.30 at night. The only time we were in a mud hole was in our third week's run.

Sand is a very bad thing to travel over with a traction engine any time. My job on the engine when moving was to handle the steering wheel. Well it was an old engine and the chain was wired together in one place. The first morning when I went to work for the man I said to him, "Well, the best thing you can do this morning is to take that chain off and go home and put a link in that place, or we may get into a bad fix some day."

He said, "Oh, I guess that will not break."

Well, everything went all right till the third day when this wire broke. As luck would have it, we were on a good road. It was wired together again and he said "I will take the chain home Saturday night and fix it." But when Saturday night came he did not attend to it.

One day we were going across a big marshy slough and on a narrow grade. When about half way across, this wire broke. I yelled "reverse" just as quick as a wink, and he reversed, but not quick enough. One side in front slipped off the grade sideways.

Well, we were in a pretty fix the way things looked, and the engineer was pretty well scared. He had never run anything but a stationary engine before. However, we were close to timber and hurried with the axe to get a pry. We cut down a birch and cut a pry about 20 feet long and pried the engine up with this and blocked the wheel up. Then we wired the chain together again, backed up a little and went on our way. The engineer said to me "I will fix that chain before another day goes by" and he did.

Hoping this may be of benefit to you, and that it may teach some a lesson never to put off till tomorrow what you can do to-day, I will close.

An Excellent Letter.

By Henry Bewner, Moyerton, Alta.

In the first place, I don't own a threshing outfit, but I have worked on other men's outfits for twelve years and therefore can say that I've had a little experience at threshing.

When I started in the business as a boy of twelve, self-feeders, blowers and high baggers were comparatively unknown because those who had courage enough to invest in them dispensed with them after the first week. The blower especially was looked on as a perfect grain waster and most farmers did not want a machine that was fitted with one. I remember at one time seeing a machine agent place a ten dollar bill on the sieve of a separator in an effort to persuade a bunch of farmers that the blower couldn't or didn't draw the grain over.

The high bagger was taken in a better fashion because as a rule the thresher gave a little extra weight, or threshed by the bag, calling it two bushels and this of course satisfied his customers.

With self-feeders the farmers had nothing to do. The thresher, however, saved two men's wages and looked on the feeder as a good investment. At the start, however, the feeders were not a very dependable rig. They would clog, throw the belts and they stopped the machine, so that they were generally discarded after a few days use.

Nowadays you hardly see a machine in a progressive community that is not fitted with all these conveniences, besides being drawn from place to place by the engine that supplies the power to drive it.

I started out to speak of threshing from the men's standpoint and I'm afraid I got side-tracked. When I started at the job as band-cutter, I started at a very dusty and dirty job. In fact there was no choice of work for anyone on the outfit, as far as dust and dirt was concerned. Even the tankman was in it except when away for water.

Besides the dust we had other serious things to contend with, among which was the habit among farmers of setting the grain stacks too close to their buildings and always so that there was only one possible way of setting the machine. There was very little shock threshing done and grain was generally stacked so as to be handy for hauling to granaries.

Of course when a man goes out to thresh he expects long hours and hard work, but even the high wages that are paid now seem small when it gets so dark that a lantern is necessary to enable one to find the stooks. You hardly ever find a machine at work before daylight in the morning, but they always work after dark at night.

Now I think that if the owners of machines would put in more of their surplus profit earning hours in the morning and less at night, there would be less dissatisfac-

tion among their employees and more Eastern harvesters go home with the intention of trying the West again next fall.

Another thing that would put threshing on a more satisfactory basis would be to work on the ten-hour a day principal. Every other business has a standard day and why not threshing? I do not mean that the crew should be in the field ten hours; that would not be fair for the machine owner. What I mean is that the time occupied in moving should be kept track of and deducted from the total number of hours in the field. Then the crew should be paid extra for any time they put in over the ten hours and should have a corresponding amount deducted when they do not put in a full day. This would do away with the injustice of docking a quarter of a day when there is one two-hour move made and then about fourteen hours work done besides. It would also save the thresherman a few dollars when he had to make six or seven one-hour moves and still call it a day's work.

Taking everything into consideration threshing is getting a little better every season and I do not think that I am looking too far ahead when I say that we will see the time when it will be just as nice a job as any part of the grain raising industry.

With the introduction of gasoline engines all chances of disastrous fires are removed and a great deal of danger averted. A shorter belt can be used thus doing away with the necessity of shutting down on windy days and losing a great deal of time other ways.

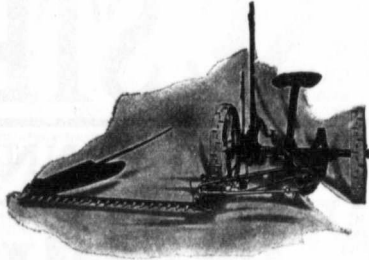
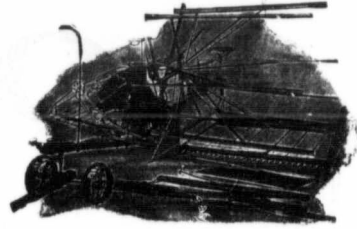
Dustproof Finish on Iron.

The so-called "Coslettizing" process for producing a rust-proof finish on iron is referred to in a recent issue of the Brass World. This process consists in boiling the iron or steel article to be treated in a solution of one gallon of water, four ounces of phosphoric acid and one ounce of iron filings. By this means a black coating is produced on the iron or steel which protects it from atmospheric and other corrosive influences. This formula gives good results when care is used, but when carelessly handled a certain amount of undissolved iron filings may be left on the surface of the article being treated. As far as the protection of the coating against corrosion is concerned, it is stated that a piece of steel treated by the process and immersed in salt water for nearly a year has resisted its attacks so that it is practically free from corrosion, while a similar piece untreated has become badly rusted.

Live, as it were, on trust. All that is in you, all that you are, is only loaned to you. Make use of it according to the will of Him who lends it; but never regard it for a moment as your own.—Penelon.

DOES A GOOD BINDER INTEREST YOU?

Read a few facts about the NOXON No. 9a
 A simple efficient knotter that will tie all day every day
 An elevator that will elevate the heaviest crops without choking
 A reel of many adjustments for crops in all conditions
 A light but rigid main frame fitted with roller bearings
 A whole binder that point for point cannot be beaten



The NOXON No. 3 MOWER is another interesting machine
 IT will interest you. Look it over
 A one piece steel pitman that gives no trouble
 A perfectly aligned cutter bar that cuts where others fail
 An automatic attachment that throws the bar out of gear when folded
 Every machine is thoroughly run off and tested before leaving
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FARM LIFE IN JAPAN

The farmers of our glorious West, with single fields that stretch away far beyond the range of vision, would doubtless smile in contempt at the tiny, curiously-shaped plots of ground that a Japanese farmer calls his fields. Many of the rice fields in Japan average scarcely more than thirty-five feet square and are bounded by levees of such irregular shape that they look as if made by a lot of hogs in a mad frolic. But however small her fields and however crude her methods, little Japan sustains 45,000,000 people largely by the product of 7,000,000 acres of rice.

Rice production in all oriental countries is conducted upon the same general plan, but the methods differ so materially from those employed elsewhere that they should be carefully noted. The lands are divided by levees into small fields. These are of no regular form, and generally the inclosing levees are gracefully curved to represent some ideal of beauty in the mind of the planter. In the small valleys among the mountains these curved embankments were doubtless necessary to conform to the mountain and thus to inclose a larger area, but as the improvements encroached upon the lowlands curves continued to be used. The levees vary in width from one foot for field divisions and paths to four feet wide for main embankment roads. This system of levees and fields has precluded the use of domestic animals in the preparation of the soil and harvesting of the rice. The Japanese are fully aware of the disadvantages of having such small and irregular fields, and have made strenuous efforts to relieve the situation.

Under modern conditions the horse and the ox could be used in tillage, but there are no paths which such animals can traverse to these minute fields; and, if there were, the tracts are too small for the use of the plow or harrow, because there is not room to turn, much less to follow the angular boundary lines. If a farmer owns several tracts it is seldom that they are adjacent, and hence he is helpless to institute reform. Many progressive Japanese farmers have tried to institute reforms, but under the old law changes in land boundaries required the unanimous consent of the owners, which it was practically impossible to secure. This was precisely the situation of the lands belonging to the yeomanry of England until about the commencement of the nineteenth century. Three years since a law was passed by the Japanese Parliament that if two-thirds of the owners of a tract of land agreed to reform the boundaries the minority must concur. Still the farmers of Japan were conservative, and only two or three provinces have made any considerable progress.

The fields of the Japanese farmers are generally well drained and thoroughly tilled, mostly with the spade or mattock. Both of these implements differ from those used in the United States. The mattock has a blade about sixteen inches long and five inches wide, with a handle four or five feet long. The implement weighs seven or eight pounds. With a quick, powerful blow the blade is driven into the soil about fourteen inches; then, using the handle as a lever, the soil is disintegrated and partially inverted.

The spade is a wooden blade about two feet long with an ordinary handle; the lower end of the blade is cased with steel, and upon the back of the upper end is a block the width of the spade. The spade is thrust into the soil by the foot at an angle of about 30 degrees, and, using the block for a fulcrum, the soil is rolled to one side, as in plowing, but it is more thoroughly disintegrated. All the trash, straw, or grass upon the field is turned under, together with such an amount of lime, ashes, fish manure, or human excreta as the farmer may be able to secure. Where a winter crop is raised the manure is generally applied in the fall. If the rice field remains fallow during the winter the manure is applied at the time of spring working in March and April, according to conditions.

The seed bed is prepared as early as convenient in the spring, about April 1, thoroughly manured, and is given the care of a bed in the garden. It is spaded eight inches deep and worked until the manure is thoroughly incorporated and all clods pulverized, after which it is surrounded by a low ridge and water is admitted to fill the soil until the spaded earth becomes consistent mud. The seed, which had been previously selected for purity, size of grain, and flinty character, is then soaked in pure water till well sprouted, which usually requires two days, and is then sown on the bed broadcast as thickly as admissible for strong plants. Prior to sowing the bed is covered with water to the depth of two and one-half inches. In five or six days the rice is well started. It is then left dry in the daytime and is flooded at night. Covering with water at night keeps it warm, and allowing the bed to become dry in the daytime admits air and prevents sun scalding, which frequently occurs when the

rice is young and the covering of water is shallow.

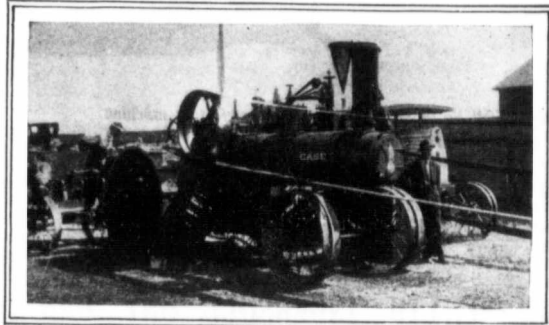
Early in June, when the rice is eight or ten inches high, it is pulled up, tied in bundles of six to ten plants, and transplanted into fields, which have been prepared and flooded to the depth of one and one-half to two inches.

The rice plants are set in rows about one foot apart and at a distance of ten to twelve inches in the row, on the richest lands, making nine bunches to the yard. On poor lands double that number might be set. They are so set that the soil covers the root. Thereafter the flow of water is not continuous. After a few days it is drawn off, and if the farmer is able to make the investment an application of rape-seed, oil cake or fish scraps is made to the surface. As soon as the fertilizer has had time to become incorporated with the soil, water is again applied and withdrawn to allow the crop to be hoed. Every weed is cut out, and in some cases the roots are slightly pruned. Each field is given the minute attention of a garden. When the growing period is well advanced the water is allowed to remain permanently upon the field, care being taken to renew it by gentle inflow and escape, till a slight change in color indicates that the period of ripening is approaching. It is then withdrawn. While the slight change of color is given as the guide, the time when the milk in the seed has become dough is more correct, for the Japanese cut their rice when the straw is scarcely turned. Both the straw and the rice are better when the harvest occurs before the grain is dead ripe.

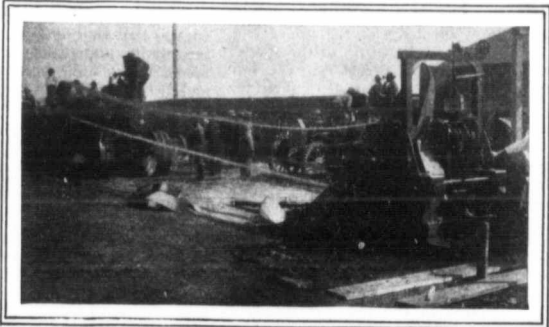
The grain is cut close to the earth, with a small sickle-like knife set in a handle. Four hills or bunches are bound together with two straws, making a bundle three or four inches in diameter.

Continued on page 56

NOT "GAS" BUT FACTS



This 36 H. P. CASE Engine was the only entry in Class No. 1. This little engine developed SIXTY HORSE POWER in the Maximum Brake Test—eleven per cent more than the strongest gasoline engine, although it WEIGHS LESS. This engine developed twenty-two per cent more power than one engine, in Class C, which weighed FIFTY-THREE per cent more.



This CASE 75 H. P. Engine, entered in Class No. 2, was disqualified for developing OVER NINETY HORSE POWER in the Maximum Brake Test. Except for this it would have been entitled to FIRST PLACE IN ITS CLASS. In the Economy Brake Test it used only 3.58 pounds of coal per horse-power-hour, whereas its nearest competitor used sixteen per cent more.



This CASE 110 H. P. Engine entered in Class No. 3, WON THE GOLD MEDAL FOR THE SECOND TIME AGAINST ALL COMPETITORS. It won the HIGHEST NUMBER OF POINTS OF ANY ENGINE in any class. It used only 3.04 pounds of coal per horse-power-hour in the Brake test, whereas its nearest competitor in this class used nineteen per cent more.

STUDY THE FIGURES AND LEARN WHY CASE STEAM ENGINES

AT 1910 WINNIPEG MOTOR CONTEST
WON HIGHEST POINTS

IN ALL CLASSES
THE FOLLOWING ARE ACTUAL RESULTS THAT SHOULD INTEREST YOU

ENTRY No.	COAL USED PER HORSE POWER HOUR IN 2 HOUR BRAKE TEST	NUMBER OF ACRES PLOWED	ACRES PLOWED PER HOUR	DRAW-BAR HORSE-POWER DELIVERED	COAL USED PER DRAW-BAR HORSE-POWER HOUR	WATER USED PER ACRE GALLONS	COAL USED PER ACRE POUNDS	TOTAL POINTS ALLOWED BY JUDGES (POSSIBLE 400)
ENTRY No. 15	4.16	6.06	2.14	34.74	9.12	136.7	147.2	269.3
CASE 75 H.P. No. 14	3.58	20.17	2.93	47.34	7.47	92.6	120.6	297.0
ENTRY No. 15	3.62	12.16	3.63	65.36	8.34	107.6	149.6	291.9
ENTRY No. 17	4.06	24.07	3.79	56.08	8.17	93.22	120.8	280.8
CASE 110 H.P. No. 16	3.04	33.08	3.99	74.92	5.29	82.01	99.2	356.1

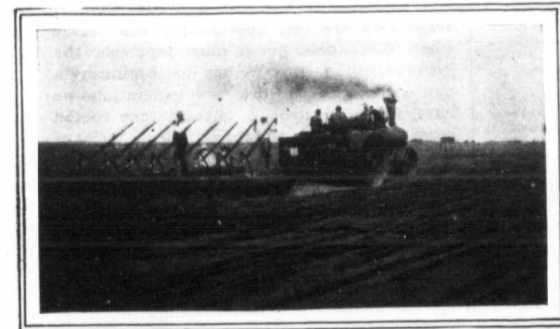
THE ABOVE FIGURES SHOW CONCLUSIVELY THAT
CASE ENGINES ARE UNAPPROACHABLE IN
- ECONOMY -

IN THE USE OF FUEL AND WATER
CASE ENGINES ARE PLOWING MORE ACRES AND BUILT TO PULL
THE MORE SEVERE THE TESTS. THE MORE EVIDENT THIS BECOMES
YOU ARE INTERESTED IN LEAST EXPENSIVE PLOWING—SEND FOR CATALOG N°67 AT ONCE
AGENCIES EVERYWHERE

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



This little engine (36 H. P.) showed remarkable power in pulling plows. Four plows were considered a fair load and were used in the contest, but the test showed that it would easily have pulled more. Afterwards, in an unofficial test on the same ground, it pulled EIGHT FOURTEEN-INCH BOTTOMS with ease. Cut shows engine taking water on the move during the contest.



The Case 75 H. P. Engine plowing used LESS WATER and LESS COAL per acre than any other in ANY CLASS except the Case 110 H. P. Engine. This engine plowed THIRTY-SEVEN PER CENT MORE ACRES per hour than its nearest competitor, and moreover said competitor used twenty-two per cent more fuel per acre.



The Case 110 H. P. Engine always has been a WINNER for plowing or any kind of severe work. This Engine plowed ten per cent more acres per hour than its NEAREST COMPETITOR, WHICH USED FIFTY-ONE PER CENT MORE FUEL PER ACRE. Cut shows Engine taking water on the move. Stops are unnecessary.



The Canadian Thresherman and Farmer

CANADA'S FARM MACHINERY MAGAZINE

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E. W. HAMILTON
SECRETARY

F. C. BRAY
TREASURER

"Everything begins and ends with the soil."



A Golden Stream to the Tune of Something Like \$1.00 per is the Order of Things in Western Canada at Present

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."

OUR readers will doubtless look in this issue for a somewhat more detailed report of the Winnipeg Motor contest than what appeared in our August number. It was our intention to go into more detail than what the lateness of the figures permitted but upon second thought we decided that we would leave the figures to speak for themselves. They tell the full and complete story in so far as the judges revealed the results, and if those interested will get them out during the long winter evenings much engineering meat will be found therein.

This subject of farm power is getting to be a vital one especially in a country like Canada West. We are fast approaching that stage where mechanical power must supercede the horse on the farm. We are just beginning a new epoch of agriculture. For generations we have depended upon a faithful four footed beast that drew his power from the products of the field. He has performed his work well but his limitations were marked and the farmer who would plow deep in order that he might reap well realized that his source of farm power was weak and consequently has received with open arms the traction engine that furnished

an abundance of power which never tired. Stored up within the bowels of this old earth there is power inexhaustible that needs but the harnessing to make it effective. There is iron in abundance to furnish the framework for this new animal and there is oil and coal without measure to put energy into this same iron for power purposes. In just how far the motor contest reveals the possibilities of the farm motor to the farmer is a question. One thing is sure it helps and in doing this, if nothing more, is entitled to a place in traction engineering circles. One thing is certain that the motor contests that have been held in the past have done more to create an interest in the farm motor than any other one thing.

For the past few weeks the papers of Western Canada have been full of accounts of traction engines going through bridges and while no loss of life is reported many narrow escapes from death have been reported. It is the same old story that is told every year. The municipalities will not provide suitable bridges for the thresherman to pass over. Each locality will boast of its productivity and of the beautiful grain that its soil will produce yet never a thought is taken of the fact that in order to make this same grain of any value it must be threshed and in order to thresh it engines and separators must be moved from place to place. Little or no thought or consideration is given the thresherman who invests from \$3000.00 to \$5000.00 in a threshing outfit without which the crops in his community would be worthless.

We build highways, as distinct and apart from trails, in order that our teams and wagons may travel over them in the carrying on of our daily business. We deem them absolute necessities in any community. The threshing outfit is just as necessary as a team and wagon and while it is true that the traction engine uses the highway only a few days in the year it is imperative from the

standpoint of municipal economics that roads and bridges be made possible for the threshing, outfit.

There is yet another side to this bridge proposition. Suppose that a thresherman in the course of his work is obliged to cross a bridge that breaks down precipitating the engineer to a most horrible death. Is anyone to blame? Is there no responsibility whatsoever to be placed upon the municipality? Or is it simply a case of saying to the thresherman "play the game and take your own chances?" There is a decided laxity and indifference regarding this bridge proposition that needs a stringent remedy not only in a few places but practically everywhere.

* * * * *

We have always been inclined to speak of anyone that runs an engine an engineer. It is a broad term and may mean a whole lot of things. It may mean more than running an engine; it may mean the running of a straight line across the prairies; it may mean the installation of an electric power plant; it may mean any one of a hundred other things, for we have chemical engineers, bridge engineers, agricultural engineers, mechanical engineers, electrical engineers, civil engineers, building engineers, construction engineers, consulting engineers, etc., etc., etc.

In the August issue of 'The Canadian Thresherman and Farmer there appeared an article by L. W. Ellis on "The Draft of Farm Implements" and in that article Mr. Ellis used the word "tractioneer" It struck us that this was the most apt term that we had ever seen, as applied to one who runs a traction engine. It sort of classifies his work and makes it a branch of the big field of engineering. If you want to use the terms gas and steam in connection with it and speak of the gas "tractioneer" or the steam "tractioneer" you have the proposition more clearly defined. We are going to steal this term and use it in our future work.

We are having prepared buttons, small and neat for both gas "tractioneers" and steam "tractioneers," and any one who will send us a two cent stamp to cover the cost of mailing, will receive one of these buttons. They are not the large and flashy kind, but are small and neat and will fit nicely in the lapel of your coat.

No certificate of proficiency of any kind will be required to wear one of these buttons and we will leave it to the fellows who are entitled to wear them to see that the other fellow doesn't.

* * * * *

Don't forget that it is just as important to get the pay for the work you do as it is to do the work, and that the best time to collect your money is when the work is done. Every thresherman has a fair proportion of cash customers on his list and the matter of collection for the work is therefore an easy one in such case. But there are a good many others who for some reason are obliged to ask for credit. They want time in which to pay and it is with these that the collection should begin when the work is finished.

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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.

The man who asks for time should have no good reason for stating the exact date upon which he can pay, and it should not be too far ahead either. Then he should be just as willing to promise to pay on that date. He might write his O.K. on the face of the thresherman's duplicate bill. "O.K. will pay," and then write in the date of payment agreed upon, signing the date of the O.K. This, while not as collectable as a straight note is still an acknowledgment of the account and an agreement to pay the same on a specified date and many customers would be more willing to O.K. the account and make a date for payment than they would be to give a note for the amount. As a matter of fact, it would be better to give doubtful payers the go-by. If every thresherman does this there will be fewer doubtful payers.

Then having secured a definite promise to pay up when the promise matures, don't trust to your debtor to bring the money to you. In seven cases out of ten he will find it convenient to forget it and when payment of such an account has been allowed to lapse all the work of collection will have to be done over again.

Take example of the company from whom you buy your machinery. When the money became due you had ample notice thereof and that's business.

Another thing, in making a settlement, don't get into the habit of "throwing off" the odd cents or half dollars of the account. It is a vertical cut in prices and practiced with every customer, it figures up at too large a figure to be good naturedly given away. It is as much yours as is any part of the bill and the earnings are small enough at the best without giving away even a small part of them just to be a good fellow.

There is yet another thing. Don't get into the habit of making your collections in dribbles. This thing of taking \$3.00 or \$5.00 or any small sum on account is bad practice. The probability is that you will be more than likely to spend it before you get a chance to put it in the bank and the first thing you know you will have quite a bunch of your collections made and still you won't have any money to show for it. Better arrange to do your collecting as much as possible in a lump sum, if necessary taking two or three days at a time and going after the collections hard. You will find that you will return home at night with quite a sum of money which you can salt away in the bank against such a time as it is necessary to meet your obligations.

It would not be a bad proposition to send out statements of the various accounts to the different farmers for whom you have threshed sometime before you expect to call upon them. It is generally not wise to name the exact date as there are some farmers who will find it convenient to be away at that time, but make your time of calling approximate and by giving sufficient notice to the farmer there will be no excuse for his not having the money on hand, or at least he will have a very good excuse why he has not got it on hand.

The thresherman who has a good run has considerable money coming to him at the end of the season and it is up to him to see that he gets every dollar of it. A few rules of business applied by the thresherman will get the money that is due him just as well as the threshing machine companies get it from the threshermen themselves.

Western Canada Lands Another One.

Since our last issue there has appeared among the publications in Western Canada a new one known as "Modern Power."

This publication proclaims as its mission the conservation and exploitation of every source of power on the farm. It has for its support directly Mr. W. L. Williams as manager and Mr. Victor C. Parker as editor, both of whom were formerly with Gas Power Age.

Just what there is in store for this publication in the future, time alone will tell. From a business standpoint little can be said, for while the magazine itself looked

good viewed from the standpoint of advertising, we understand that practically all of this advertising was given away.

It is a curious thing to note how the various farm publications in Western Canada are attempting to follow in the foot-steps of The Canadian Thresherman and Farmer. Few publishers in this western country realized that there was such a thing as farm power until this magazine started the ball rolling, and we presume that the number of imitators will be legion. At least three have sprung into existence during the past year and some of the older publications here are branching out along similar lines.

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The Thresherman's Question Drawer

Answers to Correspondents

Continued from page 41 last issue

pressure of the cylinders make so much difference in the quantity of oil pumped? I would be grateful for any help you can give me in this matter.

A. The plunger of your pump must leak. Leaky check valves would also cause this trouble, but as you changed the delivery pipes and also the check valves, the trouble seems to be in the plungers. Tight fitting plungers in the pump may help you, as the oil is solid enough to not be influenced so much by the difference in the pressure of the two cylinders. A better plan would be to have a separate pump for each cylinder. Then you could run each one the required speed to deliver the quantity of oil desired.

P. S. Q. My engines make a squeaking noise; it is either in the cylinder or in the guides. I can't tell which. The front of the upper guide is a little rough. The engine has run two seasons. The men in charge of it the first season said the night lubricator wouldn't work. There was plenty of oil went through the cylinder, but depended on the oilers on the steam chest. He would fill it and in fifteen minutes it would be gone, and the engine would run about half an hour without oil.

A. The best way to lubricate a cylinder is to have the oil fed by drops continuously. If the engine continues to squeak after being oiled, this would indicate that the cylinder is out of line with the guides or that the crosshead is not properly adjusted; causing the piston to be forced out of center. Sometimes a squeak comes from the valve or valve rod.

G. E. Q. What do you think are the best pulling engines made, the ones with driving wheels set entirely behind the boiler, or in the middle of the fire box? I think the one best with the axle bolted in the middle of the fire-box. I think you want the drivers where they can have weight enough to hold them to the ground, and not so they will fly around like the flywheel. Am I not right?

A. Sometimes an engine with the axle in the middle of the fire-box is the best puller, and at other times the engine with the axle at the rear end of the boiler is the best puller. It all depends on the condition of the road, the length of the boiler, and where the engine and tanks are mounted on the boiler. A short boiler with the axle in the center of the fire-box will usually raise up in front when pulling a very heavy load, and a long boiler with the axle at the rear end of the boiler will slip

its drivers when pulling a very heavy load. This is the tendency of these two types of engines, but there are some of both classes which do very well, and it would be difficult to say which one is best.

R. Y. Q. My engine seems to have plenty of power, but the steam goes down in a couple of hours after steady work. The boiler is supplied by two injectors, three-fourths-inch pipe connections, with no pony pump. Would it be of any advantage to reduce the pipe connection to one-half inch? The safety valve is set to pop off at 95 lbs.

A. It would not be any help to you to reduce the injector connections to one-half-inch. If the three-fourths-inch injector delivers the water too fast, you can reduce the capacity of it by partly closing the suction valve. The injector can be throttled so that it can be working continuously. To reduce it to its minimum delivery, turn on the suction and steam valves full, and after it is at work shut off the suction valve until the injector "breaks," or runs at the overflow; then give it a little more water at the suction valve so that it will again deliver the water to the boiler. After the engine is running and you see that the water is getting low in the boiler, open the suction valve a little more and after working with it a short time you will be able to set the injector at the start, so that it will keep up the water without starting and stopping it so often.

G. M. Q. I am running a 30 h. p. stationary engine with 40 h. p. internally fired boiler, to pump water for irrigation purposes. My object is this: I would like to use the steam from the exhaust pipe to warm the water before I feed it to the boiler and, by doing so, save fuel. The water is good, coming from an artesian well. I pump it from a hole made in the ground outside of the buildings about six feet on the right of the engine. The exhaust pipe is on the left of the engine. I feed with an injector or a small double acting pump with brass valves. So I would like to get your advice on the following: Can I let the exhaust pipe discharge the steam in the water?

A. An injector will not handle very hot water, or water over 100 degrees F., especially if it has to lift it a few feet, and after the water gets very hot a pump will not lift it. The chances are you will have trouble all around by heating the water. Your best plan will be to get an exhaust feed water heater. The principle of such a heater is usually to force the cold wa-



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ter through the heater and after it comes out of the heater and ready to go into the boiler, it will be much hotter than it would be if it were heated before it were pumped. However, there are heaters that heat the water by exhaust steam before it is pumped into the boiler, but this heater must always be higher than the pump so that the water can run into the pump, as the pump will not lift hot water very well.

H. A. Q. I would like to know something about the nature and care of injectors. Mine is showing very little wear, and I cleaned it perfectly bright, but it would not work, connections all tight. I soaked it two days in concentrated lye water, and it works all right. Some said to use muriatic acid. Will either one injure it?

A. The failure of an injector is most often caused by a defective suction hose. It not only leaks but the lining gets loose and closes the hole and prevents the flow of water. You may have the injector thoroughly cleaned but the jets get cut out by sandy water. In this case the best thing to do is to send to the injector factory for a new jet. There are also valves that may become leaky which may cause trouble.

T. B. Q. Please explain to me how to fire a straw burning firebox boiler, and why the flues get to leaking so easily when straw is used for fuel?

A. There is nothing which will worry a man so much as trying to fire a boiler with straw, when he does not understand the art, but a free steamer in the hands of an expert fireman is an easy job. One can make a great deal of extra work for himself by stirring the fire too much, thus making an extra amount of clinkers on the grates and stopping up the tubes at the tube sheet. A poor fireman who keeps lifting the fire and stirring it with the firing fork will have to clean off the tube sheet as often as six times an hour; while a good fireman will not clean the tube sheet any oftener than once in two or three hours.

One of the important points (as in firing with wood or coal), is to keep the grates well covered, that is, not leave any dead space for cold air to rush into the firebox. If the firebox is wide, one can be sure that the grate is always covered by placing a fork full on one side, the next one on the other side and then one in the middle, and if this is kept up there is no danger of leaving any bare placed on the grates. Too many firemen push all the straw to the center and poor results are sure to follow.

We have warned you against stirring the fire; yet there is some stirring needed. After the grates are well covered with

ashes or clinkers (which will be noticed by the feel of the work while the straw not burning so freely), the fork can be put under the fire with the points of the tines turned downward, and the ashes or clinkers can be pushed through the grates without disturbing the fire very much. This will allow the air to get to the fire again and make it burn freely, which will be noticed when the next straw is placed in the firebox.

The draught door, or ash pan door is made large enough to pull the ashes out, which should be done from time to time, but the ash or draught door should not be kept wide open. An inch opening is generally sufficient to admit air for easy steaming, and whenever firing is stopped the draught door should be shut down. At first glance this may seem to be of little account, but straw for fuel makes a very uneven heat. While the average heat is sufficient to keep up the steam, yet at times the heat is much greater than when burning wood or coal. Thus the flue sheet and flues are heated to a very high temperature at times, and if, while the engine is yet running, the exhaust is allowed to draw much cold air through the firebox and into the tubes, we can then see where the trouble comes from. There is nothing which will make the tubes leak so quickly as getting them real hot and then allowing cold air to strike them while in a heated condition. The beads of the tubes are exposed, and being so much thinner than the tube sheet, they will contract sooner than the tube sheet and thus become loosened. After this occurs a number of times the tubes will become so loose that they will rattle in the tube sheet when the boiler cools down.

An imperfect fire chute door will also cause this trouble. It sometimes happens that the door in the chute will stick, and while firing does no harm, especially when the chute is kept full of straw, but when firing is stopped, the straw will burn out of the chute and the door refusing to drop, cold air will rush in and the tubes will be sure to be damaged.

In burning straw the ash door should be kept closed as far as possible, only allowing it to open far enough to burn the straw. And it is surprising to see how little a space is sufficient to admit the required amount of air.

Mean Spirited.

A new-made widow called at the office of an insurance company for the money due on her husband's policy. The manager said: "I am truly sorry, madam, to hear of your loss." "That's always the way with you men," she said. "You are always sorry when a poor woman gets a chance to make a little money." —Tit-Bits.

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The Importance of Farm Machinery on the Farm

THE age of machinery found its birth in the development of spinning and weaving in about 1760 and these no doubt are the foundation of the industrial arts, but not until 1850 was there any marked improvement in farm appliances. Previous to this time the farmers used practically the same crude tools and primitive methods as were employed by the Egyptians and Israelites. The tillage of the soil requires some sort of a tool to aid in its manipulation, consequently they devised tools of various kinds such as hoes, crude plows, sickles, scythes and flails. These were all hand tools or implements of hand production. The farmer was then in every sense of the term "the man with the hoe" and he invariably became prematurely old and bent.

The invention of machines for productive purposes has had a marked influence upon the labor of man, both economically and ethically and to explain "the importance of the farm machine on the farm." Farm machinery which is often termed labor saving machinery, might more properly be called labor assisting machinery, as they are agents for economizing in human labor and improving on it. They multiply a man's capabilities, give him dominion and in many instances they also enable him to produce a better crop or a finer market product.

Men of sound mind admit the permanent and good effect of the application of machinery to industrial development. These permanent and good effects, however, have not prevented temporary displacement of labor as far as certain particular laborers were concerned. However, through invention, more men are called into remunerative employment than would have been employed had no such invention been made, thus resulting in "expansion of labor." This expansion of labor was decidedly noticeable in the older countries while in our country this expansion might be attributed largely to the development of new territory. In addition to increase in labor there has been a great increase in wages for farm laborers. Previous to the introduction of machinery laborers received on an average only ten dollars per month while at the present time the wages are from thirty to forty dollars per month. Thus we see that irrespective of the introduction of labor saving machinery there has been both an increase in laborers required and also in the wage earning power of the laborer. Farm machinery affects the farmer principally from a financial point of view. In 1800 it was estimated that 90 per cent. of the population was upon the farm and the output of grain per capita was estimated at about five bushels, while in 1900 the

farm population had decreased to about 40 per cent. while the output of grain had increased to nearly ten bushels per capita. This resolves itself into the fact that by the use of machines the same amount of product is obtained by one-half the amount of labor. This is the essential feature of machinery, especially in an extensive farming area like ours, where labor is scarce. Money that was formerly put into labor is now put into machines and by their use the farmer of to-day is able to put his product on the market with less expense than formerly, and it has been estimated that the cost of producing grain has been reduced fully one half, while the cost of producing hay has been reduced even to one-fifth what it formerly was under the hand labor method. Not only has it meant a reduction in the cost of production but it has also meant an improvement in the quality of the product. By the use of seeding machines the seed is sown in a few days, thus giving the crop time to mature before early frosts. Then by the aid of harvesting machines this crop can be rapidly harvested thus avoiding loss due to the inclemency of the weather conditions. The quality of threshed grain is improved by the use of threshing machines and fanning mills which give us a pure, clean grain, free from chaff, dirt, ice, snow and mud in which the former hand methods failed. By the use of tillage machinery the soil is more deeply and thoroughly mixed which results in a more extensive and rapid preparation of plant food in the soil, the roots penetrate it more rapidly, and its power to hold moisture and plant food is increased and weeds are more easily eradicated. The use of up-to-date tillage machines prevent soil waste and soil depletion to the greatest extent, in addition to giving crop returns.

A great deal might be said as to the importance of tillage machinery, as it is of prime importance to have the soil thoroughly prepared in order to produce a crop. In fact, tillage machines are essential before a crop can be produced and on this ground many men argue that tillage machines are of greater importance than any other farm machine. They claim that there was no need for better harvesting machines until the plow had been improved sufficiently to make cultivation thorough and rapid. But this is not essentially so, for we know that the mould board was nearly as complete in 1874 as it is to-day and even with this improvement in the plow, agriculture did not make any rapid strides until after 1870, when the self-binder was introduced which was at once a great impetus to grain growing.

Wheat must be harvested in a

few days after it ripens or it will go down and scatter and the farmer's seed and labor and use of land for a year will be lost; hence the wheat crop under the regime of the sickle and cradle was limited to a few acres that the farmer could reap by hand. There was no great demand for threshing machines, as the farmer could store his small crop in his barn in the sheaf and flail or tramp it out on the barn floor at his leisure in the winter. There was no practical economy in grain drills as a man could sow broadcast by hand in a day as much as he could reap in an entire harvest season. The introduction of the binder marked a revolution on the farm. With a machine to harvest the grain rapidly and to increase thereby the acreage which each farmer could grow, there was economy in the use of other machinery and a demand was thus created for modern implements.

The introduction of so many labor saving machines necessitates a good working knowledge of the different kinds, and to this end a knowledge of the principles of mechanics. The farm hand has to be of a higher class; being able to repair and keep in order the various machines, and in consequence he commands higher pay. It certainly requires some mechanical ability to successfully manage present day farm machines and equally important is the possession of sufficient business ability to know to what extent a machine will be a paying proposition. Machinery has been a blessing to many farmers and a curse to others. Many persons buy more machinery than is necessary; a few buy less than is needed. Diversified farming may easily be over-done, for in order to grow successfully a large variety of crops a great assortment of different machines are required. With the exception of wagons, buggies, and powers, the large part of farm machinery is idle eleven months of the year. To this must be added an expense for shed room, insurance and interest on investment, while machinery in other lines of business is kept running night and day twelve months in the year.

It is important to know when a machine is really profitable. There are some machines that a farmer cannot afford to buy under certain conditions. One cannot look to the manufacturers for guidance in this matter. They are interested primarily in the selling of the machines and just when a machine ceases to be profitable is not easy to determine. The answer can be approximated, however, by determining the cost of the machine, the cost of labor by hand, the cost of hiring another machine to do the work and the feasibility of the

various plans for performing the work. When, for example, is it profitable to buy a grain binder? The initial cost of a six-foot binder is one hundred and fifty dollars. The interest on this sum for one year at 6 per cent. is nine dollars. The average life of a grain binder depends upon the amount of cutting done and the care it receives. With good care it should cut two thousand acres before it is worn out. Very few accomplish this much but we may assume that the binder lasts ten years. This makes the cost for wear per year, fifteen dollars and the total cost of the machine twenty four dollars per year, not including breakage and shelter. It is now to be determined how much grain a man must cut to make it pay to buy a binder rather than hire his neighbor to do his work. To hire cutting done it costs on an average of seventy-five cents per acre or thirty dollars to cut forty acres. It requires two days and a half to cut the grain, and if he does it himself he will have to add at least five dollars per day for man and team, making twelve dollars and a half in addition to the twenty-four for the use of the machine or six and a half dollars more than it would have cost him to hire it cut. Unless a man who has only forty acres to cut is figuring on doing work for others with his machine, it would hardly pay him to buy a binder. He would, however, have the satisfaction of knowing that his grain could be cut at the right time and not be subject to loss from neglect after it was ripe, thereby reducing the risk. The question is also modified by the ease or difficulty of obtaining labor. For anything above forty acres it would no doubt pay a farmer to own his own binder. As few farmers in the West have less than forty acres this calculation is of no practical use but it will show how it is possible to come to some conclusion as to when a machine will pay and when it will not. It is of special importance to consider these points before investing in the more expensive farm implements such as, farm motors, and threshing machines, as a machine is only important in so far as it is profitable or of sufficient ethical value to warrant its possession.

The ethical influence of farm machinery upon the farmers has probably been greater than that of other machinery on any other class of workman. Previous to the introduction of our up-to-date implements, the farmer had to work long and hard. His whole time was spent in the field so that he had no time to read and study discussions relating to his own work, much less the topics of the day, treated in the news papers, consequently his intellect-

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ual attainments were not of the highest order. The operations on the farm involved so much work that the young people were taken from school long before they should have been and for this reason their education was so meagre that they were not in a position to use their spare time to any appreciable advantage. On account of lack of intelligence due to inadequate education they did not manage the affairs of the farm so as to realize the most economic production and for the same reason he had to employ deputies and lawyers to do his business who took advantage of his illiteracy and misappropriated his money. For the same reason he was compelled to take whatever price he might be offered for his marketable products.

The introduction of farm machinery has had its ethical influence on the women of the farm. Previous to the advent of our present day implements the women very often had to help with the farm work in the busy season which meant an injury to her health and the neglect of her household duties, while to-day even her own most arduous tasks are lightened by the use of the cream separator, churn, butter-worker, washing machine and wringer all operated by some power, as an electric motor or gasoline engine. With these changes she has more time to devote to the social side of life which will

result in ethical improvement and an advance in the standard of living.

The handling of machinery is an education in itself. Take a boy who has received a fair public school education and in addition by applying himself to the handling of machinery has by the time he is fourteen accomplished the operation and figured out the mechanism of the parts of all the various machines, has received as much education or brain development as the boy who has mastered the first three books of euclid and worked algebra up to the end of quadratics. Thus we see that machinery is developing the intellectual side of the farming population and for this reason it has changed the position of the farmer from that of a slave and drudge to that of a man of education and intelligence who has a standing among the highest in the land. The ethical standing of a people is affected by their wealth and intelligence and it is because of its influence in this direction that farm machinery is so important.

Tempering Plow Points.

In sharpening a point I find that some steel is much harder than others, and the softer a piece of steel hammers, the higher it can be heated to temper. A good, soft piece of plow steel

can be heated a grey-red heat, then plunged into the water and allowed to remain until cool. The harder the point hammers, the lower the heat must be, in order to obtain the desired color of temper. I take care not to draw my points too thinly on the edge, in order to have a good body of steel to hold the temper. Then, the color of the heat in the fire—when it makes a sky-blue by plunging the steel it gives excellent satisfaction. I have been hammering plow points for twenty years, and I learned it by using the plow myself. When I tried to temper it by drawing it and dipping, cooling a little and dipping again, my points would wear in notches, but when I learned how to plunge temper, the edge wore off evenly and my plows lasted twice as long.

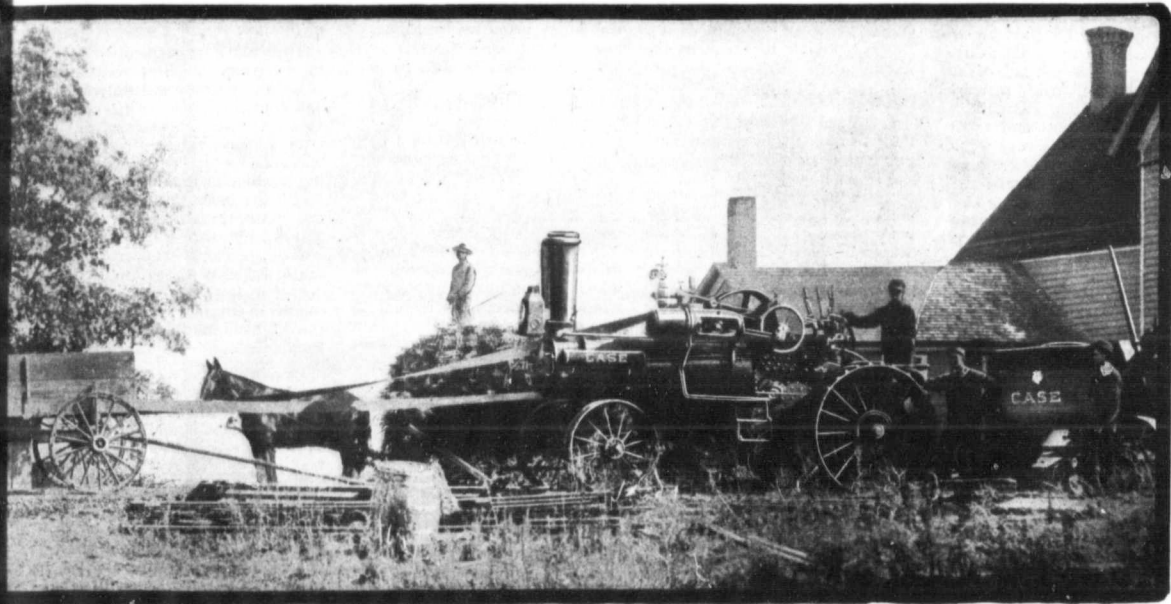
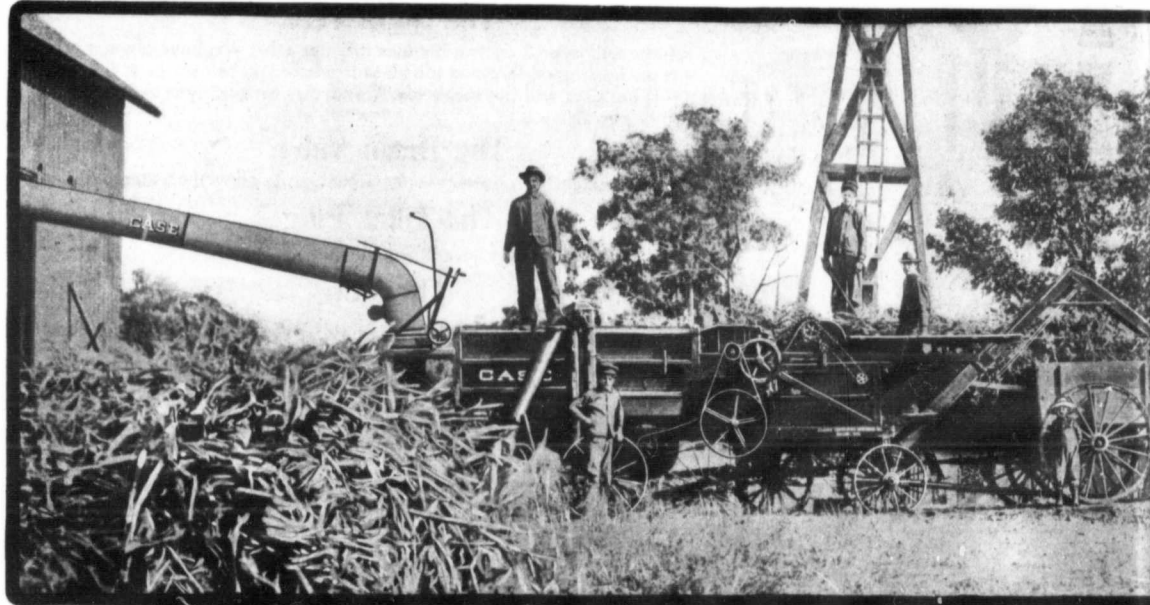
American Motor Terms.

The difference between American and English motor terms is amusingly shown in the following article from an English weekly:

American phraseology is always a source of delight to those who can get pleasure from a clash of words. We have from that remarkable country of phrase and fiction a considerable number of terms in general use

in Europe now, but there are still many that are not known on this side of the Atlantic. How many understand that a "close-coupled suburban" means a short open touring car; that a "skippy" engine is one that is misfiring; or that if a shower of rain comes up, and you are asked to put up the "mohair top" it means to draw the hood over an open car? But all can appreciate the experience of an engine "bucking while I was cranking her." That is more apt than most of the foregoing. In the United States they have "demountable," not detachable, rims, "extra shoes" instead of spare outer-tire covers, and a "four about with an option" instead of a two-seated touring car with a collapsible third seat in the rear. Similarly an automatic air valve on the inlet pipe becomes "an automatic air-gate in the intake tube," which shows a sense of alliteration that we lack in this country. They call a test run a "try out," a reliability trial an "endurance contest," a live-axle machine a "shaft-drive car," petrol "gasoline," the silences, "the muffler," a branch pipe a "manifold," and a motor delivery van a "commercial power wagon." Of course, the caricaturists have words of their own not yet endorsed even by the American motorists, as, for example, the styling of a racing car a "whiz wagon."

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Practical Talks to Threshermen

Conducted by PROFESSOR P. S. ROSE

TALK No. XXXVI.

As indicated in the last lesson the Andrew Meikli threshing machine marked a new epoch in the grain raising industry. Previous to this time there had been several attempts made to solve the problem of mechanical threshing but they were far from successful, though paving the way for the success which was finally achieved. Up to the advent of the Meikli thresher the principal method of threshing was with the flail. This was slow and expensive and besides was very wasteful. A large amount of grain was always left in the straw. All things considered it was out of the question at that time to raise grain on a large scale, and yet this was what the world was demanding more than anything else.

During the middle and latter part of the eighteenth century a great industrial revolution set in all over Europe, but more especially in England. Several things transpired to bring this about. James Watt invented or rather perfected the steam engine at this time and gave to the world a cheap portable power which could be used to drive machinery in manufacturing.

The cotton and woollen industries gained a foothold in England, there were wars on the continent and the demand for textile goods was enormous. Just about this time, too, spinning and weaving machinery was invented which coming at the same time with the advent of the steam engine turned England in a very few years to the greatest manufacturing nation in the world. This caused the cities and larger towns to flourish. Wages were high and laborers flocked from the rural regions into the cities where steady work at good wages could be had.

All this reacted upon agriculture. It created a greater demand than ever for agricultural products to feed the factory workers, and raised the prices of farm produce to prices heretofore unheard of, but at the same time it left the agricultural districts with insufficient help.

Necessity again became the mother of invention. For the first time in the world's history a pecuniary regard was held out for the invention of labor saving machinery and this proved a much stronger incentive than the mere alleviating of human suffering or the fear of famine.

Inventors immediately set to work to solve the various problems involved in building labor saving agricultural machinery, and within a few years after the opening of the nineteenth cen-

tury, we find at least crude designs of all the leading types of farm implements which are so common and familiar at the present time.

Among the very first to be experimented with was, as previously stated, the threshing machine; and it remained for Andrew Meikli to show to the world the correct principles which must obtain in a successful thresher.

His machine consisted essentially of a revolving cylinder having four beaters faced with iron and extending outward from the body of the cylinder about four inches. A pair of feeder rolls were placed just in front of the beater between which the grain was compelled to pass on its way to the beater. These served to retard the straw until the beaters had knocked the grain out of the husks. The first machines built were over feed machines, that is, the straw was fed in over the top of the cylinder which revolved in a direction exactly opposite to that of the modern thresher. Instead of concaves there was a fairly close fitting behind and partly around the cylinder.

Behind and below the cylinder there was a set of slowly moving rakes which separated the straw from the chaff, the former passing backward to the rear of the machine, the latter together with the grain falling through a grating to the hopper of a fanning mill below.

These machines were made in various shapes and sizes suitable to be worked by hand, by horse

or power, by wind wheels or by water wheels. The small hand machines were worked with a crank, two men and a woman usually constituting the threshing crew. The larger machines were built in place and were rather expensive for the farm, especially where the tenant system of farming prevailed as it did in England, and where the tenants were obliged to furnish all the machinery and tools for doing the work. Consequently, only those who worked considerable land on long term leases could afford to invest in the larger machines. The small tenant farmer was obliged to still use the more primitive methods or else efficient hand thresher as is still done to-day in most parts of Russia.

Gray gives the following rather interesting account of one of these threshers driven by a large wind mill. "The machinery of the wind power of this machine is fitted up with a small vane to turn the large ones to fall the wind and with the machinery to roll the sails on or off, according to its increase or diminution; by which means unsteady power of wind is rendered as regular as that of horse or water. The threshing part of this machine contains the usual apparatus, and also a complete set of fanners or screens for cleaning the grain. To the board upon which the unthreshed grain is spread, and introduced between the feeding rollers, succeeds the drum, with the threshers, or beaters, fixed upon the extremity of its arms; then the shaker, that receives the straw from the threshing drum, and conveys it to the second shaker, by which it is thrown down a sloping scarce either on the low floor, or upon a sparrow rock, which moves on rollers, turned by the machine, and by this means is conveyed into the straw shed, or else into the barn yard. One scarce is placed below

the threshing drum, and while the drum's circular motion throws out the straw into the straw shaker which conveys it to the second shaker, the chaff and grain pass at the same time down through a scarce or sparrow rock into the hopper, which conveys it into the fanners. By the fanners the corn is separated from the chaff, and the clean grain running out at the opening, and the chaff or any light refuse blowing out at the end by the rapid motion of the fans, which are driven by a band or rope from the sheave placed upon the axle of the threshing drum, and passing over the sheave fixed upon the pivot of the fans."

The next improvement of note in European machines was the substitution of a loathed cylinder and concaves, also with teeth to take the place of beaters. A little later a straw carrier or elevator was added which with a winnowing machine or fanning mill made up all the essentials of the modern grain thresher. These machines to be sure were large and clumsy. Their capacity was much less than those of the present day, but they were a great improvement in every way over the old hand methods which they supplanted.

Moreover, any marked advancement in one phase of any industry brings with it a new set of needs which is bound to react on every other branch of that industry.

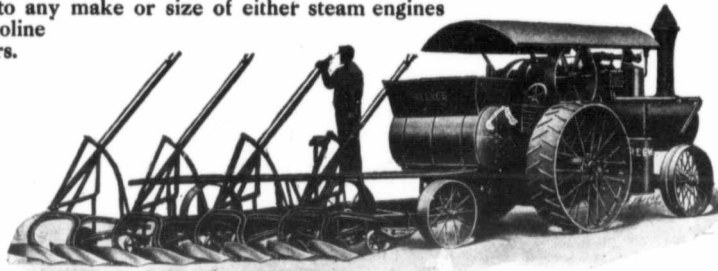
And as with the advent of the power thresher, it made better harvesting tools and better tools of tillage a necessity and these quickly followed during the succeeding century—that century of mechanical marvels—the nineteenth. And not the least of these marvels were the many and wonderful farming implements. But at the beginning of this list, which includes all that we have now, stands the grain thresher.



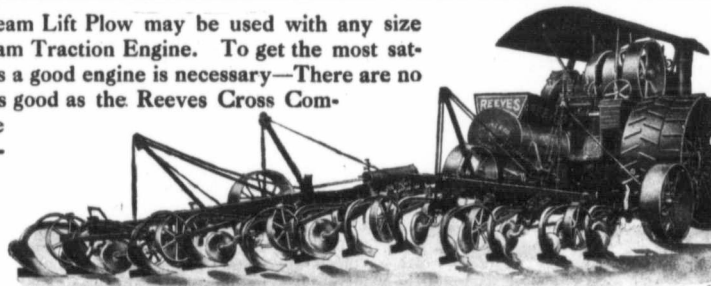
L.H.C. Tractor at work on the estate of Prince of Lieven of Megothen Russia.

REEVES STEAM LIFT ^{AND} HAND LIFT ENGINE PLOWS LEAD THEM ALL.

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



The Reeves Steam Lift Plow may be used with any size or make of Steam Traction Engine. To get the most satisfactory results a good engine is necessary—There are no other engines as good as the Reeves Cross Compound—Double Cylinder Plowing Engine.



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

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

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

The Reeves Flexible Frame Engine Gang Plow—either style, hand or steam lift—will do more and better work than any other Engine Gang Plow made. They cost more than others, but then you know the best is the cheapest—the Reeves is the best. Write for special catalog which tells all about it.

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GASOLINE TRACTION ENGINES

A DEPARTMENT FOR THE USER

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

*The Gas Tractor and the Horse.

In the last ten years, the internal combustion tractor (which we may call the gas tractor for short), has for the first time become of commercial importance. The rapidity with which it is being introduced is one of the most remarkable developments in the machinery world at the present time. It finds its greatest field upon the farm, where it becomes the natural rival of the horse. It is well to note a few points of comparison in order to see where the tractor has been made to surpass the horse, where to equal it, and wherein improvement must be made in order to offer the animal serious competition at all points.

If we look backward we will find the first horse of which we have any record, a five-toed animal, no larger than a dog, paddling about in the marshes. With the drying up of the swamps he became a land animal, losing a part of his toes. In the wild state he was obliged to procure his own food and protect himself from his enemies. The weakest were eliminated by natural selection, and gradually the race increased in size and swiftness. Not until about 1740 B. C. did man begin to use the strength and speed of the horse for the business of war and transportation. It was not until the tenth century, A.D., that his use in field labor was recorded. Many habits, instincts and characteristics developed during ages of the survival of the fittest are not essential in the domesticated horse, but these endure to affect the efficiency of the animal in its present field.

The present day farm horse is largely a man-made product. Starting with the wild horse, which was self-feeding, self-protecting, self-governing, self-repairing and self-reproducing, man has moulded the animal to suit his various needs. He has taken it out of its wild environment, given it food and shelter, protected it from its natural enemies, lengthened its life by breeding from the hardiest stock, and by studying how to conserve its health and strength. He has studied its possibilities, made use of its natural traits, and by selection of individuals varying in useful characteristics, has produced widely divergent forms, each fitted for a special purpose. However, in nature, selection was slow, often accidental. Under man's influence the process has been only a little faster. Defects

could be recognized and eliminated, but only by the slow process of mating and waiting for results. A fortunate breeder, starting with the best of stock, could not take over a dozen steps in advance in the course of a life time. The death of the best individual might wipe out the work of years, as could a capricious reversion to an abnormal or inferior type. Nevertheless, the accumulated improvement of ages of natural selection, thousands of years of selection by man and two-and-a-half centuries of scientific breeding, have resulted in a class of animal motors suitable for all farm work, great in numbers and value, and understood, almost by instinct, by every farmer in civilized countries. The horse is to-day our best all-around prime mover for farm purposes. There are twenty-one million horses and four million mules on farms in the United States alone. For the last sixty years they have been increasing in numbers at the rate of a third of a million head, and in value at the rate of \$20,000,000 each year. There may be five thousand gas tractors built this year, and at an average price of \$1,700 they represent a sale value of \$8,500,000. The crop of horse and mule colts for this year will number from one to three-fourths to two millions, worth on the farm five or six times the value of our entire output of gas tractors for domestic and foreign trade. We may compare the gas tractor and the horse on many points without presuming to have covered the subject. We may take up the question of thermal and commercial efficiency, flexibility, attendance and shelter required, the relation of power to weight, endurance, durability, size of power, units, safety, and numerous other factors without exhausting the list.

Endurance is the horse's weakest point. Ten hours a day is often assumed as a horse's working period. Authorities on the subject claim that eight hours is better for the health of the animal, and some say that six under a heavier load will accomplish the same volume of work with less tear and wear on the horse. The average farm horse cannot be depended upon for more than thirteen to fifteen miles of pull a day, nor more than four to six hours of work per day, as an average of even the busiest months. A gas tractor will net seventeen miles of furrow travel in ten hours, and double this in twenty-four, with all turns extra.

Properly handled, working about six hours a day, well and carefully fed, a horse may have a working life of ten years of one thousand hours each. Where used on railways and street car systems, his life of usefulness is from two to four years. The average farm horse will do well to develop 500-horse power hours per year or 5,000 in ten years. A tractor, carefully looked after, would probably double this for each rated horse power. Especially is this true in threshing, where a tractor develops about twice as much as in pulling, while a horse furnishes about ten to thirty per cent less, owing to the inefficiency of the apparatus through which his power is transmitted.

The horse cannot be overhauled when he wears out or when he runs down and stops; he must be kept in working condition by constant attention and precaution. In that respect he is perhaps superior to the tractor, as he inspires more care on the part of the operator. However, he needs the same care the year around, which is decidedly awkward when the owner has nothing else to do but watch the horse eat.

Weight—that is, undue pressure upon the ground—is constantly urged as an objectionable feature of the tractor. A horse in pulling, effects on the ground an average pressure of twenty to thirty pounds per square inch; a mule, even more. Pressure on the ground by the rear hoof is of course much greater than by the front. Assuming the drivers to have sunk one inch, the gas tractors seen at Winnipeg last year ranged from under eleven to slightly under twenty-three pounds of pressure to the square inch, averaging about fifteen. This, of course, will vary with different engines, but shows that in ordinary engine practice it is not necessary for the drivers to compress the ground appreciably in order to support the tractor's weight.

About one-fifth of the horse's weight may be taken as the maximum sustained draft, and six to eight miles per hour his maximum sustained speed for anything more than an hour or so per day. The draft horse ordinarily gives the largest volume of work per day at about one-half his maximum load, and one-third his maximum speed. Either his speed or load can be increased at the expense of the other until all of a horse's energy will be taken in moving himself at no load, or

he will be loaded until he cannot move at any speed whatever. Within these limits he has a great range of flexibility, which is not approached by any traction engine made. For an instant only, a horse has been known to exert a draft of 1,750 pounds for 1,550 pounds of weight, and we have a record of a horse pulling a load of thirty-eight tons at the rate of four miles an hour for a distance of six miles on an English railway.

One reason for the great flexibility of the horse is the fact that he works most economically at about one pound of draft for ten of weight, or from one-half to one-fifth the rate he can exert in a pinch. The horse would not last long if run at or near the maximum working power, while the traction engine is made to run at nearly full load the entire time. In the Motor Contests at Winnipeg last year, the gas tractors exerted one pound of draft for four and one-quarter pounds of weight on a good sod footing, and one pound for six pounds of weight on a soft dirt and gravel course. The average horse develops one useful horse power for 1,500 pounds of weight. Nine of these same tractors, which completed all those tests, developed a brake power for 465 pounds of weight, and under both good and bad footing a tractive horse power for 922 pounds of weight. These tests were made in public competition, with all engines in good hands. Even allowing for lower performance in practice, the gas tractor far surpasses the animal in this respect.

The animal's factor of safety, so vital to his earlier existence, is still useful in overcoming the extreme conditions presented by man's careless engineering. The traction engine has been built for average conditions, without regard for occasions requiring sudden excess of strength for fight or flight. Man calculated the probable loads, saw that economy lay in making the percentage of power required to run the engine low as compared to that required for load, allowed a little for emergencies, and designed his tractors accordingly. If we had some way of making the penalty for overloading the tractor as severe as for overloading the horse we could then give the engine that flexibility that is now one of its greatest disadvantages.

The horse carries eight or ten per cent of his total weight in what might be called supplies; i.e.

Continued on page 71

IF EVERY PROSPECTIVE PURCHASER OF A GASOLINE TRACTOR

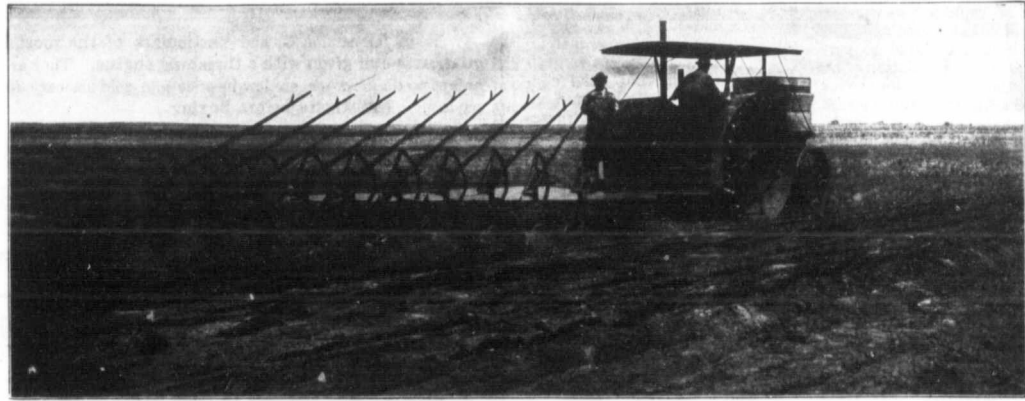
should make the same choice as the judges at the July Winnipeg Motor Contest, each of them would soon own an I H C. It was there decided after a more severe test than the engines would ever be required to stand in the field that :

1. I H C Gasoline Tractors deliver a greater per cent. of the engine's power at the draw-bar than any other tractor
2. I H C Gasoline Tractors consume less fuel for work accomplished than any other tractor

The determination of these two facts answers definitely the question every farmer and thresherman asks himself prior to his purchase of an engine. It required some such final impartial test as this to clear away the uncertainty which has arisen respecting gasoline and steam tractors.

When you buy a tractor, you pay on the basis of horse power and you certainly want as much as possible of this horse power delivered at the point where it takes the place of horses; that is at the draw-bar. At Winnipeg we proved our claim that International tractors deliver a great per cent. of the engine's rated horse power at the draw-bar than any other tractor on the market. You can be absolutely certain that every tractor which stood any chance to win was entered. Here are the official figures:

15-H.P. I H C TRACTOR DELIVERED 75. % OF ITS BRAKE H.P. AT THE DRAW-BAR
 20-H.P. I H C TRACTOR DELIVERED 71.1% OF ITS BRAKE H.P. AT THE DRAW-BAR
 45-H.P. I H C TRACTOR DELIVERED 75.8% OF ITS BRAKE H.P. AT THE DRAW-BAR



I H C TRACTOR IN THE FIELD

Compare this with other official figures:

Avery Co.	12-H.P. delivered 62.5 per cent. of its brake H.P. at the draw-bar
Avery Co.	25-H.P. (withdrawn)
Goold, Shapley & Muir Co.	20-H.P. delivered 44.7 per cent. of its brake H.P. at the draw-bar
Birrell Motor Plow Co.	22-H.P. (Test not completed)
Gas Tractor Co.	25-H.P. delivered 69.8 per cent. of its brake H.P. at the draw-bar
Goold, Shapley & Muir Co.	30-H.P. delivered 52.9 per cent. of its brake H.P. at the draw-bar
Kinnard, Haines Co.	40-H.P. (Withdrawn)
Gas Tractor Co.	20-H.P. delivered 51.1 per cent. of its brake H.P. at the draw-bar
Rumely Co.—Kerosene	25-H.P. delivered 56.5 per cent. of its brake H.P. at the draw-bar

These are the judges' figures—they cannot be questioned. They prove conclusively to the world that International tractors are more practical in design, better constructed, more nearly the ideal farm tractor than any other tractor on the market, because they deliver more of their power at the draw-bar than do other tractors. In transmitting power from the crank shaft to the draw-bar, I H C tractors lose less in friction than any other tractors—hence, their design must be the most practical. The figures above tell the story. You don't have to take our word for it.

As the purchaser of a traction engine, however, there is another point you want to consider; that is, the fuel consumption. The ideal tractor will not only deliver the largest per cent of power at the draw-bar, but will consume the minimum amount of fuel per horse power. That's just what International tractors did at Winnipeg, and here are the figures to prove it:

The I H C 45-H.P. used 2.11 gallons in plowing one acre. The I H C 20-H.P. used 2.19 gallons in plowing one acre

Note the amount of fuel used by other tractors—examine them carefully—they prove the economy of I H C tractors.

Avery Co.	25-H.P. (Withdrawn)	Gas Tractor Co.	25-H.P. used 2.42 gallons in plowing one acre
Goold, Shapley & Muir Co.	20-H.P. used 3.28 gallons in plowing one acre	Goold, Shapley & Muir Co.	30-H.P. used 3.89 gallons in plowing one acre
Avery Co.	12-H.P. used 3.37 gallons in plowing one acre	Gas Tractor Co.	20-H.P. used 2.20 gallons in plowing one acre
Birrell Motor Plow Co.	22-H.P. used 4.86 gallons in plowing one acre	Rumely Co.—Kerosene	25-H.P. used 3.49 gallons in plowing one acre

This contest developed other points, but the two most important—the per cent. of horse power at the draw-bar and the amount of fuel used—are the ones we want you to remember. These two points solve the traction engine question for any prospective purchaser. They are by far the two most important points which he has to consider and the fact that International tractors have come out of contests covering both points with flying colors is an argument which the wide-awake money maker will not fail to grasp.

Write to us or call on the nearest I H C local dealer and let us demonstrate to you that the International gasoline tractor is the modern horse—that it will pay a big dividend on its cost every year.

Canadian Branches : Brandon, Calgary, Edmonton, Hamilton, London, Montreal, Ottawa, Regina, Saskatoon, St John, Winnipeg, Yorkton.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
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Course in Gas Engineering

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

Systems of Governing

Continued from page 27 last month

creases with the maximum pressure has a favorable influence upon the crank-effort diagram, admitting of close regulation.

As between methods B and C, the former is slightly better because less work is lost in the lower loop. Everything considered, where close regulation is essential, the cut-off method of quantity governing is best.

Regarding the economy of the cut-off method as compared with the hit-and-miss method of governing, E. Meyer finds that down to about 1/2 load the two systems are about on a par. Below this load the efficiency of the cut-off as compared with the hit-and-miss method rapidly falls off.

4. Combination Systems:

It has been attempted to perfect quantity regulation by changing the compression space so as to keep the compression pressure the same at all loads. Thermally this is a step in the right direction, but no successful machine operating upon this system has yet appeared.

Another combination system is that of Letombe, which is in successful use. Letombe regulates by lengthening the time of opening of the inlet valve but decreasing the lift of the gas valve as the load decreases. As far as the fuel is concerned, this is quantity regulation, but the longer time of opening of the inlet valve increases the total charge volume, which means that the leaner mixtures will be more highly compressed than those for higher loads. This is thermally correct. Another point is that the richer mixtures at the higher loads, although less highly compressed, are less in total volume than the leaner mixtures. Hence the load increases the ratio of expansion increases as compared to the ratio of compression, which tends to draw the terminal pressure at the end of expansions and decreases the exhaust loss. The compression line A-B belongs to the full load card, line C-D to the minimum load card. The latter card shows succession full stroke and a compression pressure of about 190 lbs.; the former shows a suction volume equivalent to about 55 per cent. stroke and a compression pressure of about 115 lbs. In spite of the thermally excellent features, which gives good regulation, the economy regulating fuel is no greater than that obtained by a purely cut-off system.

Other combination systems that have been employed are quantity regulation at high loads combined with quality regulation at low loads or vice versa. This is done in some German engines. To compensate for the

slow burning of the leaner mixtures the spark is advanced. Lastly, engines that govern either by quantity or quality regulation at the higher loads have been governed by the hit-and-miss method at very low loads. This is done by the American-Crossley engines and also by Letombe in the system above described.

5. Governing by varying the time of ignition:

Strictly speaking, the time of ignition should be adjusted to suit the kind of charge. That means, for instance, that in quality regulation the spark should be advanced with a decrease of a load. It has already been mentioned that this has been tried both by governor control or by hand regulation. The former is rather difficult because proper ignition is subject to so many accidental variations, but hand control is quite practicable and all stationary engines should therefore be furnished with adjustable spark gear.

Automobile engines are generally governed by hand regulation of the throttle in combination with the spark.

Governing of Two-Cycle Engines

Small two-cycle engines are usually governed by throttling either the fuel or the charge. In the first case this results in what is practically quality regulation, in the second in quantity regulation. Liquid fuel engines of this type nearly always govern by adjusting the stroke of the pump to suit the load, resulting in quality regulation. In the larger machines, which are nearly always served by separate pumps, it is absolutely essential that the cylinder be thoroughly scavenged. Hence, it is usual to first admit air alone directly from the pump or an intermediate receiver, and a little later the fuel or the mixture, as the case may be, the point of admission of the latter being under governor control. The governor may act either on the inlet valve or directly on the pump. It should be noted that if reservoirs are used between pump and engine, there is likely to be a lag of several strokes between the action of the governor and its effect on the engine.

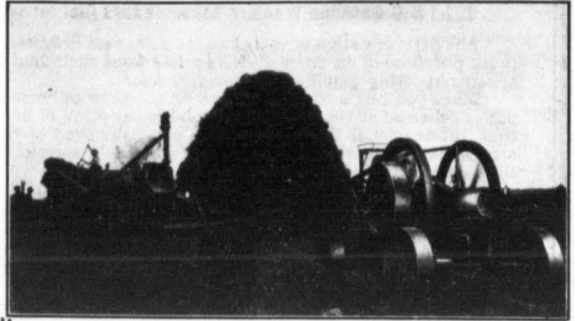
Some Types of Gas Engine Governors.

Fig. 1 represents a pendulum governor as arranged to operate a throttling device. The two balls bb are rotated from the camshaft or other convenient revolving portion of the engine through the bevel gears pq. As the speed of rotation increases, the balls move in the direction of the arrows, compressing the springs and depressing the stem S of the valve

The *Manitoba* 25 H.P.

Gasoline Threshing Engine

will save you
Money, Time, Worry



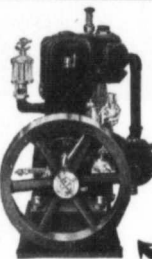
Write us for catalog C, and particulars of the most liberal guarantee ever given with a threshing engine. They are guaranteed to do the work, are low in price and sold on easy terms of payment. Investigate before buying.

We manufacture GASOLINE ENGINES for every purpose, POWER and PUMPING WINDMILLS, WOOD and IRON PUMPS, GRAIN GRINDERS, SAW FRAMES, ETC.

The Manitoba Windmill & Pump Co. Ltd.

Box 301

Brandon, Man.



Here's Your Binder Engine

Here's the engine that saved crops last year for thousands of farmers and it's going to do it again this year. Light weight and efficiency—that's the secret. Weighs only 165 pounds and the simplest and highest grade farm engine in the world. The

Cushman 3 h.p. 4 Cycle, 165 lbs. The Light Weight Wonder. Also a wonderful work, time and money saver on all other power work. Easiest to start, smoothest, quietest running—especially adapted for cream separator, pump, churn, grinder, wood saw, and all other farm machines, and it more than pays for itself in one season by saving your grain crops. Attach engine to your binder by our simple brackets. No blacksmith needed.

Send Your Name Now for Free Book. Let us tell you about the superiority of the CUSHMAN and its record in the hands of others. Carload shipment to be made in your territory for July and August delivery. Please state style of binder for which you want engine. Write postal now to Cushman Motor Works, 2052 N. St., Lincoln, Nebr.

You want a safe Engine for Threshing Purposes



that won't set fire to your property. The Stickney Gasoline Portable and "Flour City" Tractors are such. They furnish the Maximum of Power at the Minimum of cost.

You want Water P One of our Well Drills or Augers will find it for you and our Aylmer and Toronto pumps and Canadian Airmotors will deliver it just where you want it.

Our Aylmer Standard Scales will weigh your Grain and Stock and thus save their cost in a season.

Our Toronto Grinders and Saws will chop your feed and saw your firewood.

See us or our Local Agent, and get our Catalogues and prices before you buy.

ONTARIO WIND ENGINE & PUMP CO., LTD.

Winnipeg, Toronto, Calgary

Patronize those who patronize this Magazine

POWER FOR PROFIT

IS WHAT YOU GET WHEN YOU PURCHASE AN
"IDEAL" GASOLINE ENGINE

SOME FEATURES

Double Opposed Cylinders—Making a perfectly balance engine.

Wave Gear Drive Wheels—Acknowledged to be the best in sticky and muddy soils.

Automobile Steering Device—Doing away with steer chains and making steering almost automatic.

A Perfect Cooling Arrangement—Insuring perfectly cooled cylinders on a minimum of water.

Power Transmitted through Cone Clutches—One lever controls all speeds and reverse.

Larger Fuel Capacity—Fuel tank holds sufficient for a day's run.

Easily Operated—Using only one lever and the steering wheel is so placed that the operator has the engine under full control at all times.

Double Exhaust—Which ensures perfect scavenging of the cylinders and individually assists in keeping them running cool.

Heavy Channel Steel Frame—Insuring perfect support for both engine and traction, thus reducing the possibility of leakage to a minimum.

Heavy Construction—In building our engines we have kept the needs and requirements of the traction plowman constantly in mind and have designed and built the "Ideal" Gasoline Traction Engine accordingly.



BUILT IN 28" H.P.—20" NOMINAL AND 45 H.P.—30" NOMINAL.

THE "IDEAL" GASOLINE ENGINE

Is in every respect exactly what its name indicates. It is a perfect engine for FARMERS and THRESHERMEN and there is not a job on the farm where power is required, which it will not adapt itself to perfectly. This unique engine is made (Stationary or Mounted) from 1½ to 60 horse power; is guaranteed in every detail to be constructed of the very best quality material and by skilled conscientious workmen.

THE "IDEAL" GRAIN GRINDER

is Canada's Standard. Built exceptionally strong and so nicely designed that it is very easy on power. Has sectional plates and all wearing parts are lathe turned. Large hopper capacity. An endless belt can be used with this grinder. We are also makers of Gasoline Plowing Engines from 20 to 35 h.p.

Factory: **GOULD, SHAPLEY & MUIR CO., LTD.** 230 Princess St. Winnipeg

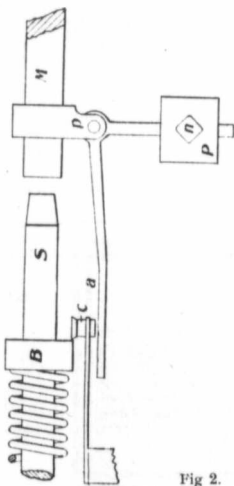


Fig. 2.

V by means of the collar c. As the valve moves downward, the holes a and g are gradually covered by the wall of the passage, contracting the opening from the gas passage G and the air passage A into the chamber X, and preventing the mixture from flowing in as great a quantity as before, into the inlet port I.

An example of the shaft governor is shown in Fig. 2 in connection with a device for opening the gas valve only when the engine is below speed. The balls bb are on the end of the short arms ll

pivoted at pp. As the crankshaft C revolves, the balls tend to swing in the direction indicated by the arrows, but they are withheld by the springs s. As the balls swing about the pivots pp, the opposite ends of the arms ll move toward x and carry with them the collar c. A long lever m with a fulcrum pivot at P is carried with the collar and the long end pushes the point out of line with the stem v of the gas valve. The point x is attached to the air valve mechanism so that

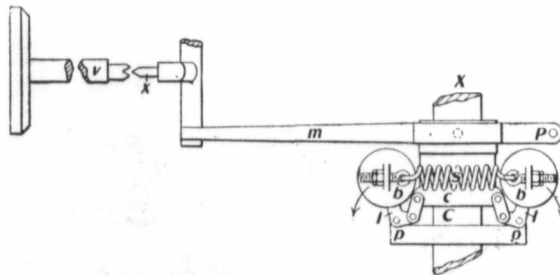


Fig. 3

it rocks backwards and forwards at every movement of the air valve. When the speed is too high the governor causes the point x to miss the valve stem and no gas enters the cylinder.

In Fig. 3 is illustrated one form of the pendulum or inertia governor arranged to hold the exhaust valve open so long as the engine is above speed. The valve stem is operated from the cam-

shaft by means of the slide M. raised.

On the slide is carried the pendulum P which swings about the pivot p. If, upon the return of the slide, the speed is higher than that for which the governor is set, the pendulum lags behind and the end of the long arms of the bell-crank to which the pendulum is attached, strikes the pin c and throws it in the path of the block B, holding the valve open. Upon the following stroke of the slide, the valve-stem S receives a thrust

makes the governor act at a lesser speed.

This form of governor is also much used to control the gas valve. The long arm of the bell-crank is pointed and it is used to give the necessary thrust to open the valve. In case the speed rises above a certain amount the arm a swings aside and misses the gas valve stem.

On the slide is carried the pendulum P which swings about the pivot p. If, upon the return of the slide, the speed is higher than that for which the governor is set, the pendulum lags behind and the end of the long arms of the bell-crank to which the pendulum is attached, strikes the pin c and throws it in the path of the block B, holding the valve open. Upon the following stroke of the slide, the valve-stem S receives a thrust

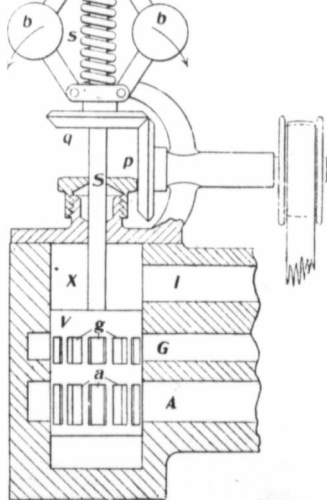


Fig. 1

sufficiently long to allow the pin c to drop out of the way of B unless the arm a is still in the way. If the arm allows the pin to drop, the valve closes and the engine takes up its cycle once more. The speed of the engine may be varied by a simple adjustment of the pendulum ball P. If it is desired to increase the speed of the engine, the set screw n is loosened and the ball P

Gas Engine Experience Department

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

Gasoline Cost 22½ cents per Gallon

I have a 20 h.p. International Traction gasoline engine. I have done nothing as yet but break with it and as it was late in the season when I got it, the ground was very dry and hard, so that I could not give it a fair test. But I know I will be pleased with it.

I found the amount of gasoline used was about 18 gallons per day. Gasoline in barrels cost 27½¢ per gallon.

This is all the information I can give you at present, but later on will be glad to send you my experience.

F. Fowler,
Moose Jaw, Sask.

Uses 2 Gallons per hour.

My brother and I own and operate a stationary gasoline engine 20 h.p., which we purchased from the International people of Brandon.

We used it last fall for threshing with an Aultman and Taylor Separator, size 27 inch cylinder, 42-inch body with high bagger, feeder and blower. This outfit we found to be entirely satisfactory, taking about two gallons of gasoline per hour while threshing. We also use our engine for crushing, running a twelve-inch crusher.

We have no photos of our machine at present, but may be able to send you one at another time. We found our engine easy to run after the first few days.

Yours truly,
Grant Bros.,
Lenore, Man.

Engine Consumes ¾ gallons of Gasoline per Day.

I have an 8-horse power Goad Shapley and Muir gasoline portable engine. With this engine I thresh and grind feed.

My engine consumes about ¾ gallon of gasoline per hour and I pay 30¢. per gallon for same. I use dry cell batteries to start and the dynamo when the engine is running.

I have had five years' experience with a gasoline engine and have never had any difficulty with it.

Yours truly,
Andrew Prive,
St. Antoine, Sask.

Disced at a cost of \$3.25 per Day.

Last fall I bought a 20 h.p. International gasoline engine and a 27-inch Aultman thresher. I ran my outfit 42 days, threshing 25,800 bushels of wheat, 6,000 bushels of oats and 4,331 bushels of flax. The cost of running per day for gasoline amounted to

\$4.75. I paid 25¢. per gallon for gasoline here.

I might say that I have had 26 years' experience in threshing, mostly with steam power. My new rig, however, has never given me a minute's trouble. I disced after threshing at a cost of \$3.25 per day, pulling four 16-16 disc harrows with ease.

I intend doing three-quarters of my farm work with this engine in the spring and summer. There is no work on the farm that requires four to six head of horses that the engine can't do at less cost than it takes to even feed the horses, not to say anything about the help that it takes to drive them.

My advice to any man that has 320 acres of land is to get a gasoline engine and do his own work.

Yours truly,
J. T. Ellis,
Semons, Sask.

The Care and Management of Gasoline Engines.

By R. G. Chapman.

Some time during the summer months, go over your engine piece by piece, try all nuts and screws to see that they are tight. If repairs are needed be sure to have the damaged parts replaced, for if you run with any of the works cutting, others will become loose in a very short time. Before pulling out in the fall grease the wheels and they will not need any more attention during the threshing season. If a portable is used and no grease applied to the wheels, they not only cut but the

draft is increased to such an extent as to make it twice as hard on the horses when moving.

It is a good plan to run your engine for say an hour or two a week before you intend to start threshing, to make sure that everything is in good working order. When you have the machine in place brace the wheels thoroughly and do not lower them, for if left to work a bed for themselves they will soon become quite firm, and there will be no jar even when driving a heavy load.

Fill your oil cups before starting and if the weather is cold use coal oil to dilute the lubricating oil. For the first half-day give more than the usual amount of oil so as to allow all parts to become thoroughly lubricated, but do not give an over-abundance or a large amount of grit will collect which will cut the bearings if it gets into them. Be sure to keep all dust away from the cylinder for if you allow any to be drawn into it heating will start at once.

Always keep your tank full, for if you allow the water to become low it will at once get hot and a large quantity will be required to cool it down again. Keep your strainer free from chaff or any substance that will stop the circulation, for if the flow of water is stopped the cylinder will become heated and the piston is likely to stick. As soon as it begins to freeze drain your tank as well as the cylinder and water pipes. If you put the water into a barrel and cover it over with a thick cloth it will be still warm in the morning and you will have no trouble in starting up again. At nights or during rainy weather cover the engine with a rich sheet or some such covering. During the threshing season clean the running parts at least once a week with cotton waste. When the season is over run the engine into the shed and after cleaning all

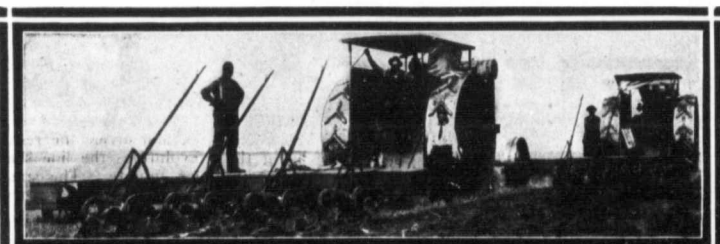
parts thoroughly, apply a coat of hard oil or grease. An engine treated in this way will be in an ideal shape to keep until the next year without any depreciation in value through weathering.

Attaching Gasoline Engine to Separator.

The economy of using a gasoline engine on the farm depends in no small degree upon the number of uses to which it can be put. It should be so arranged that it will drive practically all of the farm machines that come within range of its power, and not the least among these is the cream separator. In a recent issue of Hoard's Dairyman the following valuable information along this line is given:

As selling agents are sometimes so desirous of making a sale that they will sometimes stretch a point, their advice is apt to be misleading. At least I know of one such instance where the farmer bought the engine on the strength of the agent's recommendation that it could be stationed in the small milk room in the barn where he did the separating. The party knew little about gasoline engines at the time and taking the agent's word ordered the engine, thinking that it could be stationed in the small room in the barn. When the company's expert came to set the engine up, he soon ordered a different place, and the result was that it had to be set out-of-doors and a building erected over it. So one can not always place strict reliance upon agent's claims and must accept their advice with a pinch of salt.

A gasoline engine may be stationed in any milk room that is large enough, and it does not require a very large space. One should provide a solid founda-



The "Flour City"

Is The Engine You Want

If modern design and careful construction, coupled with ease and economy of operation, mean anything to you in a Farm Tractor, the "FLOUR CITY" is the engine you want. It has shown its superiority by **Twice Winning the Gold Medal** at the International Motor Contest at Winnipeg.

Built in two sizes—30 and 40 H.P.—has High Drive Wheels—Best Accessories—made on honor throughout, and gives lasting satisfaction to every buyer.

Write for Catalog and record of its Achievements in all classes of farm work.

KINNARD-HAINES CO. 828 44th Ave. North and Bryant, **Minneapolis, Minn.**
Ontario Wind Engine & Pump Co., Ltd. Dominion Sales Agents, Winnipeg, Calgary, Toronto

Nothing But Good Sound Working Capacity Won that Gold Medal.

The Gas Traction Engine would never have Won the Gold Medal in the Winnipeg Fair Plowing Contest if it could not stand up to the claims we make for it. But **The Gas Traction Engine did Stand Up.**

It did its work
It proved its quality
as an economical
labor saver before
the largest crowd of
expert critics ever
gathered together
in this country. In
the severest test it
could be given It
Made Good.

Therefore we say
to you

**Buy the
Guaranteed,
Golden Rule,
Tested,
Tried and
Proved
Gas Traction
Engine**



Send it in for United States, use. Write

The Gas Traction Co., Minneapolis.

For Canadian use. Write

Gas Traction Co., Winnipeg, Man.

**Your Order
must come now
if you are to get
The Gas Traction
Engine.**

The success of
the Gas Traction
Engine at the Win-
nipeg Plowing Con-
test, and its success
in agricultural work
on Canadian and
American farms has
stirred up the farm-
ers of the west to
the advantage of
owning this En-
gine. We are meet-
ing an enormous
demand but we still
want Your Order.

tion, preferably of concrete for both the engine and the separator. The engine cannot be connected direct to the separator, but must be operated through a line shaft. A belt from the driving pulley on the engine turns the line shaft, and the line shaft must have a proper sized pulley to connect with the separator. While there is no danger from fire with a gasoline engine in the barn, yet insurance companies have certain restrictions and charge extra insurance. Before buying, it is a wise plan to consult the insurance company and make sure that the type of engine is an approved make. The supply tank, from which the gasoline is pumped by a pump on the engine, must be at least 50 ft. away from any building.

In getting the pulleys for the line shaft one must take into consideration the driving pulley on the engine and the pulley wheel on the separator. The speed of the engine is generally at a fixed number of revolutions per minute and the speed of the separator must be regulated entirely by the size of the two pulleys on the line shaft. One general rule to be kept in mind: If the diameter of the driving pulley (or the one on the engine) is the same as the driven pulley (the one on the line shaft,) the revolutions of the driven pulley will be the same as the driving pulley. If the diameter of the driving pulley

is less than the driven pulley, the revolutions of the driven pulley will be decreased; and if the diameter of the driving pulley is greater than the driven pulley, the number of revolutions of the driven pulley will be increased. In other words, if the driven pulley on the shaft is a nine-inch pulley making 360 revolutions per minute and connects with an 18 inch pulley on the line shaft, the speed of the shaft will be less than that of the engine, or 180 revolutions per minute as the speed varies in proportion to the diameter of the two pulleys. The same mathematics applies to the pulley on the shaft which connects with the one on the separator, except that instead of being the pulley driven it is the driving pulley.

A simple rule for finding the number of the revolutions of the line shaft per minute, is to multiply the diameter of the engine driving pulley by the number of revolutions the engine makes per minute, and divide the result by the diameter of the driven pulley on the shaft. For example if the engine pulley is a nine-inch making 360 revolutions per minute and the one on the shaft is an 18-inch:

$$\frac{9 \text{ (dia. of engine pulley)} \times 360 \text{ (rev per min)}}{18 \text{ (dia. of shaft pulley)}} = 180 \text{ revolutions of shaft.}$$

The pulley on the shaft may be of any size, but it is desirable to reduce the speed at

least half for separation, which is done by getting a pulley twice the diameter of the one on the engine.

Now, the separator must be turned at a certain number of revolutions per minute and the problem must be worked backwards. If the pulley on the separator is a 12-inch and must make 50 turns per minute, and the revolutions of the line shaft is 180 per minute, we must find what diameter of the line shaft pulley will run the separator at the required speed. A simple rule for finding this is to multiply the diameter of the separator pulley by the number of revolutions it must make per minute and divide the result by the revolutions the line shaft makes per minute. The answer will be the size pulley required. For example, the separating pulley is a 12-inch and must make 50 revolutions per minute, and it has been previously learned that the line shaft makes 180 revolutions per minute:

$$\frac{12 \times 50}{180} = 3\frac{1}{3} \text{ size of pulley required.}$$

This pulley generally has to be made special as it is apt to be an odd size. One cannot substitute the next size to it, either larger or smaller, because it would change the speed of the separator which is never advisable if thorough work in separating is expected.

The belt from the shaft to the separator should be loose so

that the separator will be put under motion gradually. The engine starts out at full speed, but the belt connecting the separator being loose, slips and starts the separator as evenly and slowly as one can do it by hand, and when once started maintains the speed at a uniform unvarying motion.

A gasoline engine is a wonderful help in separating, doing the work cheaper than one can hire it done or afford to take the time to do it himself. It is not a difficult task to attach it to a separator and may be done by anyone possessing ordinary mechanical ability. The main points are to have solid foundations for the engine and separator, a line shaft on which are the proper sized pulleys and a loose belt for separating. Other pulleys may be put on the shaft and these connected with the churn, pump, or mill machinery.

Compulsory Marriage in France.

Hitherto France has been the most difficult of civilized countries in which to get married, nineteen different documents being required before the ceremony could be solemnized. Now a bill is being introduced in the Chamber of Deputies providing that all Government officials must be married. At present most of them are single; hurried courtships will now be the order of the day.

THE AMERICAN-ABELL SEPARATOR

Examine It. Order It. Test It. You'll be a Satisfied Customer

THE AMERICAN-ABELL SEPARATOR

OUR AMERICAN-ABELL SEPARATOR, with the Side Belt Wind Stacker, is a Separator in every respect. We recommend it to our customers with the fullest confidence in their being more than pleased with it. It has a wonderful capacity for handling grain and cleaning it perfectly without breaking the kernels.

Many of our customers report to us that grain from the American-Abell Machines brings a better price at the mill or the elevator, because of its superior condition as compared with the output of other machines. A customer more than satisfied is the best advertisement the owner of a threshing outfit can have, and insures him the best of the jobs in his territory for the following season. There is also a great deal of satisfaction in having the machine that is a little better than the best of others. That is one reason you should buy the American-Abell.

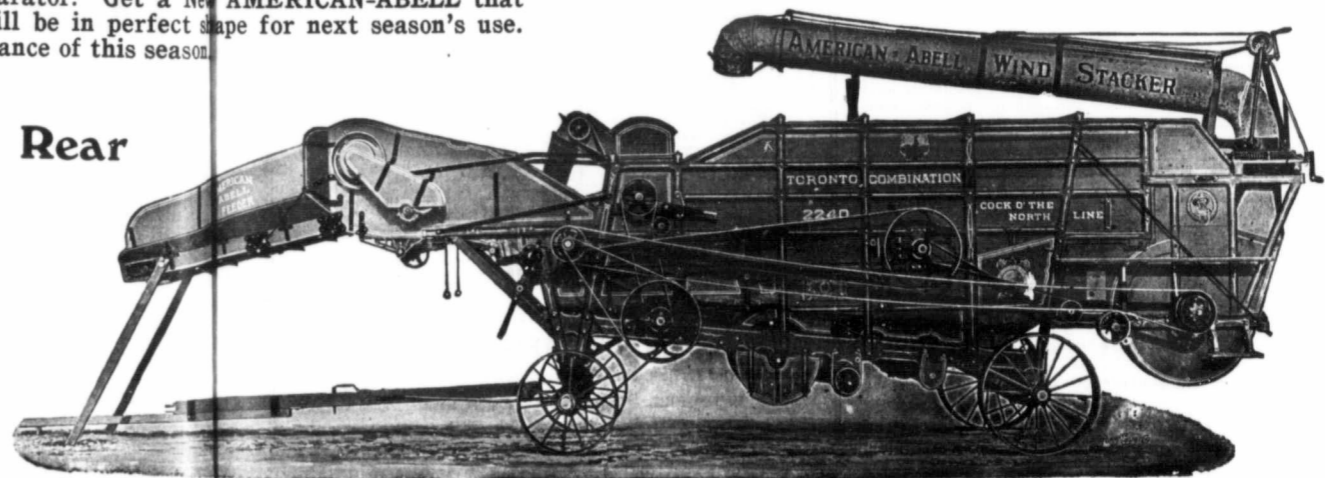
Another reason is that you get the best value for your money. The American-Abell requires less power to run it, it does the most work in a given time, it calls for little or no expense in the way of repairs, and it is so simple in construction and so easily handled, that it is quickly moved from one job and set ready for work at the next one.

Don't waste time trying to patch up that old separator. Get a New AMERICAN-ABELL that will run the remainder of this season without a stop and will be in perfect shape for next season's use. It will pay for itself in the extra work done during the balance of this season.

Our New 32 H. P. Cross Compound Rear

Mounted Plowing Engine

is a winner. Let us tell you all about it. We are confident it will appeal to your plowing engine judgment



THE AMERICAN AABELL SEPARATOR

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American-Abell Engine and Thresher Company, Limited
 Toronto Regina WINNIPEG Calgary Edmonton

We represent: The Advance Thresher Company,
 BATTLE CREEK - MICHIGAN

AND

The Minneapolis Threshing Machine Company,
 HOPKINS - MINNESOTA



Humble Teachers.

By Helen M. Richardson

The mild-eyed oxen stand and wait
Before the unbroken field.
That, though the harvest may be late,
At length will, fruitage yield.

Within the yoke's enfolding clasp
Their straining necks fulfil
The mission we but feebly grasp
Who watch the farmers till

Their little plot of upturned earth
So rich in things to be,
Which we who watch the seeding's birth
Can with dim vision see.

The ripened beauty of the grain
Swaying to meet the sun,
Drinking the freshening drops of rain,
Speaks of the task begun

Ere yet the seed had found its way
Into the earth's warm breast;
When the now upturned furrows lay
By life still unpossessed.

Till the yoked oxen side by side
Toil in the noonday sun,
Finding at last with honest pride
Some meed of praise they've won.

The patient, plodding oxen teach
A lesson true but true:—
That he who would to others preach
Must to small things prove true.

Cattle and sheep are frequently found badly distended with gas, which produces fatal results by rupturing the stomach or diaphragm unless relieved, and relief must come soon in most cases. The heroic treatment of trocar and cannula should not be resorted to until simpler and more natural means are tried. Some open the mouth of the patient and draw out the tongue, which encourages the belching of the gas. Others tie a stick or short piece of iron pipe in the mouth like a bit, to induce a like result.

If the animal is in immediate jeopardy, the gas may be let out directly by puncturing the left side at the point of greatest distention (the safe point is midway between the last rib, the hip and the backbone) with the trocar, the cannula being left in the opening for the vent. If this useful instrument is not obtainable, a sharp-pointed knife will answer, followed by the insertion of a goose-quill or a tube made of elder or other hollow wood in the opening, taking care to attach it so that it can not slip in.

Usually no evil results follow, the wound healing generally in a natural way. Follow the operation with a quarter of a pound of baking-soda every thirty minutes, to neutralize the gas. This may be fed in a little bran and salt, or may be given as a drench. Later a pound of Glauber's salts should be administered to a cow to cleanse the alimentary canal.

But best of all is to use caution in turning stock on to good feed from dry rations or poor pasture. When about to make such a change allow the animals to graze in lush pastures only a short time (an hour or less) the first day. Gradually, thereafter, increase the length of time, but do not allow them to graze when the grass is wet or frost-bitten. When stock get used to clover and are doing well on it, keep them on it all the time, as changing back and forth sometimes induces bloat.

Hens and Homes

By J. K. Cote.

Hens and Homes—are words that stand together closer in the development of the great Northwest than many suppose.

"The hen money keeps coming and that's what keeps us going" said a young farmer to the writer not very long ago, and herein lies one of the strongest points in this always interesting business—"it keeps coming." It is a profitable business, too—when properly handled—and for the capital invested—both in stock and buildings—as well as in labor necessary, gives big returns. It is even more profitable than some lines of stock business more often heard of.

"My poultry pays better than my cows," we have often heard farmers say—and only the other day one said to me: "There is more clear money in my hens than in my hogs," and this man who is a large Ontario hog breeder, by a system of well-kept figures, proceeded to prove it, and he did.

But it is my own personal experience with poultry that has convinced me, even more than wide observation, that poultry can be made one of the surest and most profitable sources of income.

The trouble with many western farmers is that they overestimate the big things in farming and correspondingly undervalue the small ones. More than once I have said to an audience of western farmers and village people, and more than once I have written in the press of Canada, that for making a home in the West, I would rather have one good live business hen than a steam thresher—and I surely would. I know how to run a hen for one thing, but more than that, a hen properly run will make a home both for herself and for the one who runs her—while I have seen

Manitoba Agricultural College

Applies Principles of Science to Practice of Agriculture.
Prepares Young Men for Leadership in Country Life.

Subjects Studied Include:—Farm Machinery; Live Stock Judging; Grain Judging; Soil Cultivation; Veterinary Science; Plant Diseases; Insect Life; Horticulture; Dairying; English, Etc., Etc.

NEXT COURSE BEGINS, OCTOBER 26th, 1910

Applications now being Received. Calendar sent free upon Application.

W. J. Black, Principal

Manitoba Agricultural College.

WINNIPEG, Canada

FORESIGHT

Means Provident Care For The Future

Is it **oresight** to waste money on a flimsy Cream Separator because it is a little lower in price? It may skim for a short time, soon gets out of repair and is ready for the scrap heap in a year or two.

"Care for the future" means, select the strong built "MAGNET" made by the Cream Separator specialists the

PETRIE MFG. CO. LIMITED, HAMILTON



THE SQUARE GEAR AND DOUBLE SUPPORTED BOWL DOES IT STEADY AS A ROCK

whose great success has been attained by building this Cream Separator superior in every way to all other Separators.

Do not take our word for it, but compare it, point by point with any or all Cream Separators, and you will find each part in the "MAGNET" stronger and better adapted for doing the work for years than the parts in any of the others.

Here are the Points:

- 1st—The square gear construction.
- 2nd—The strong and rigid frame.
- 3rd—The double supported bowl.
- "MAGNET" patent.
- 4th—The skimmer in one piece takes out all the foreign matter, leaving practically pure cream.
- 5th—Perfect skimmer, the advertised capacity.
- 6th—Easy turning, children operate.
- 7th—Easy cleaning. Clean within five minutes.
- 8th—Change of capacity in the same stand for a few dollars.
- 9th—Perfect brake, saves time.
- "MAGNET" patent.
- 10th—Safety. All parts covered.
- 11th—Skims standing on the ground or any floor.

Our guarantee covers each and every point. Send for Catalogue.

Free to every dairyman, Department E, under the management of a Graduate, will answer all enquiries in regard to dairying, free.

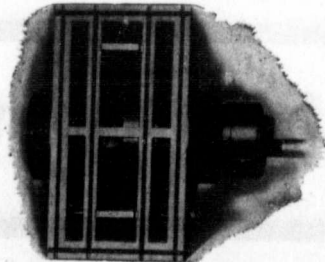
Our 12 years' experience, as Dairy specialists is at your disposal. We can and will help you. Write.

THE PETRIE MFG. CO. LTD.,

Head Office and Factory: HAMILTON, ONT.

Branches: WINNIPEG, Calgary, Alta. Regina, Sask. Vancouver, B.C.
Montreal, Que. St. John, N.B.

AND STILL THEY COME



Kankakee, Ill., Aug. 4, 1910
Baker Valve Company
Minneapolis, Minn.

Dear Sir,
Your Mr. Kent sold to one of your valves for our Atlas 100 H.P. Engine. The valve has been working for about a month and it is saving us from 20 to 25 per cent. of coal.

We are very well satisfied with the valve, and would recommend it to anyone working a side valve engine. Yours truly,
WEST SIDE QUARRIES CO.

Danville, Ill., July 21, 1910.
Baker Valve Company
Minneapolis, Minn.

The valves I purchased of your agent, Chas. E. Kent, have been found very satisfactory both in increasing power of engines and removing entire load of valve gear.

K. P. JENKINS.

How do you like them? What we have done for others, we can do for you. Send us your order to-day.

BAKER VALVE CO.

404 8th Ave. South, Minneapolis, Minnesota

DIST. OFFICE, WASHINGTON, OREGON, IDAHO AND CALIFORNIA, 14 MAYNARD BLDG., SEATTLE, WASH.

many a home lost by its owner trying to run a steam thresher.

I will here reproduce a portion of a letter that was written by a friend of mine who is now a prosperous farmer in the Dakotas. "When beginning on my farm, the possibilities of a well-cared-for flock of live business hens was very forcibly impressed upon me. During the dry years—when all were discouraged and many were driven to the wall—the poultry on my farm clothed the family, paid all my grocery bills, bought our flour and also furnished, for a time, the tax money. This left the profits of my other farming to go towards more cares, more stock and more buildings.

"We had so many dry, discouraging years and so much sickness and other drawbacks when beginning here, that I somewhat wonder if we should ever have had the beautiful farm home we now have, had it not been for the poultry."

Some of my readers might doubt the truth of the above statement and believe it is exaggerated, but let me tell the doubting Thomases, that if they feel like giving it a trial they will be better off in cash when they are through with the experiment.

Of course, to obtain results of that kind, one must have all hens, and a good lot of them, of a good active breed, and that a goodly lot of pullets must be hatched early, so as to be well started in laying before cold weather sets in. A variety of cheap food must also be provided with ample range in summer and cozy, dry, roomy quarters in winter.

In our country, where eggs are the principal source of income, one will easily find that to obtain good results one must confine his efforts to the laying varieties, and you must remember that the breed that lays is the breed that pays, and consequently, whenever I am asked for advice I always tell my friend and readers that the best breed for money making is the Leghorn.

I will in another issue explain, in black and white, the reasons why it is preferable to own a breed of layers and non-sitters and good foragers.

Fresh blood every season from a good laying strain will also be found indispensable. The less work you put on the feed, the better returns you will get, wheat and oats sown together—fed in the bundle—will be found about three fourths wheat, and one of the best rations for eggs. Corn on the cob broken up, in the afternoon winters, will prove excellent feed, and ripe millet fed unthreshed is always readily eaten and scratched out. To these rations add a little cheap meat occasionally, and two or three times a week green cabbage or some turnips, and simply sell the eggs and make money.

With properly constructed and conveniently located quarters, the presence of a good flock of poultry on the average farm need not add materially to the chores—and these are pleasant chores, most gladly looked after by the women and children of the family if, as they should be, the profits are left with them and the home. But one of the strongest things that commands this business to the man or woman of small means is that it takes so little to begin with and if the feed, care and room are correspondingly expanded as the flock expands, the business can, with scarcely any investment at all, be soon developed into a good one.

I could point out many a comfortable farm home that owes its existence very largely to the large and well-cared-for flock of laying hens that from the first took care of the expenses of the frequently large family.

Many a village resident, who was wise enough, and able, to secure a location out on the edge, when an acre or so could be had for a building place, has been able to supply the better part of his family's needs from a well-bred flock of poultry. When four or five acres can be had and a cow kept, by a little management, sufficient feed can be grown for both cow and poultry as well as for the family—the fodder from the corn and millet going to the cow; while the milk, potatoes and garden truck go to the family or poultry as needed. Altogether I do not know of a single class of stock, or branch of farming, that can be worked into the farm or village life with more profit or pleasure.

What Does Your Farm Need?

Recently in going through an exchange which by the way is published in one of the most fertile sections of the corn belt across the border, we came across the following. It is a note of warning and while it may be somewhat far fetched in some respects it contains a great deal that is of interest and much can be taken seriously by the average farmer anywhere. We give it in part.

In a very few weeks the magnitude and quality of the crops grown by farmers will have been determined. In fact, it is all determined now except the corn crop and the value of fall pastures, both of which will be measured by the rainfall in the next two weeks. The prices will then be fixed and the farmer will then know what income he has received for the year's work and what surplus. If it is not to go toward the payment of debts or other obligations, the farmer will have to determine what he will do with this surplus money.

A very great portion of the profits of the last four or five years has gone into the purchase of lands, and not alone lands in the corn belt states. Millions of

ABOUT HOW MANY HOURS A DAY CAN YOU WORK THEM

Ten hours a day is common, maybe you work them 12, occasionally you might make them go 14. But they won't last long at that clip.

How many days will it take this outfit to do your plowing this Fall?

Now, suppose you had 8 teams, 8 men and the necessary plows. How long would it take them?



is equal to 8, yes, even more, 3-horse outfits in any land.

If you had an **OIL PULL** you could do away with the hire of 6 or 7 men. **With the use of a headlight you could plow as many hours a day as you might want.**

You would burn kerosene, the cheapest of all fuels—cheaper than oats for horses. There would be no fuel expense when not working.

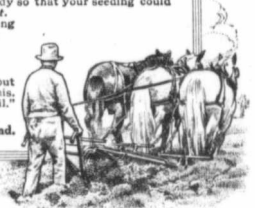
Your plowing and harrowing would all be done quickly. You would be sure to have your ground ready so that your seeding could be done when conditions were just right.

There is so much economy in using **OIL PULL** that it will be profitable for you to

Sell 3 out of Every 4 of Your Horses

We would like to tell you more about the economy you can effect by doing this. Let us send you, "Tilling & Tilling the Soil."

M. Rumely Company
1998 Main Street La Porte, Ind.



The only oil burning engine in the great motor contest

STEPHENS' PAINT SAVES ITS PRICE

Use it on farm implements--all colors.

Use it on your barn or house.

Paint your vehicle with it.

Whenever you use it, it will save its cost in longer life of materials and better looks.

Not only use paint this season but ask for Stephens'.

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PAINT DEPT.

WINNIPEG.

Potato Machinery



The O.K. Canadian Two Horse Elevator Digger will dig your crop and do it well. If you are in need of a digger you can do no better than to secure one of our machines. Write for our catalogue and prices.

CANADIAN POTATO MACHINERY CO., LTD.
119 STONE ROAD, GAITHERSBURG, ONT.
We have a transfer house at Winnipeg.

SHIP YOUR GRAIN THROUGH US
WE WILL LOOK AFTER YOUR GRADES

References any Bank or Commercial Agency.

THE CANADIAN ELEVATOR CO., LTD.

WINNIPEG, MAN.

millions have gone to Canada; other millions to the semi-arid sections; other millions to the irrigation sections; still other millions into the cheaper lands of the gulf coast and southern states. Some of this will yield a very considerable profit present or prospective. A good deal of it has been lost. The loss has been partial in some cases and in others total.

The land boomer no longer runs special trains to Canada or to the semi-arid section. He is not out of business, however, and does not intend to go out. Far-away pastures are always green; and the instinct for adventure, the desire for unearned increment, always lure men onward. Farmers are by no means proof against this allurements.

The question we want to raise now is: What does your farm need? Would it not pay you to spend your profits this year in improving your farm, whether that be eighty acres or a section, improving it in two ways; first, to make it more productive, and second, to make the farm a real home, a place better worth living in? In deciding this take your wife into your counsel.

We think we know what the farm needs. The average farm needs to fencing all around. It needs cross fences, the number of which is to be determined by the system of rotation that should be adopted. The average farm needs increased fertility, which can be had only by a rotation, whether you keep stock or not. There are few farms that are properly fenced, fenced so that you can have a systematic and scientific, or perhaps we had better say common sense rotation.

If you will ask your wife, she can tell you that the average farm house needs improvements to save her steps from kitchen to dining room. A great many of them need sanitary cellars, well drained and capable of being ventilated according to the requirements of the season.

The great majority of farms owned by the farmers themselves need a better water supply, or at least a better protected well. They need modern improvements in the house, hot and cold water, bathroom, some kind of light to take the place of kerosene lamp, which in turn took the place of the tallow candle and lard lamp. It is a very important thing to so improve the farm that it will be more productive and gain fertility instead of losing it; but it is quite as important to make the house a home with comforts for the wife and family. These are subjects we want the farmer to think about.

It is just as important to have a running water supply in the house as in the barn yard. Experience has long since proved that an automatic water supply on the farm is among the best paying investments. An automatic water supply in the house may not pay as much in dollars and cents directly, but even on a

THE CANADIAN LIGHTNING ARRESTOR AND ELECTRIC COMPANY



THE TOWNSLEY SYSTEM OF PURE COPPER CABLE

Farmers are seeking our protection against lightning.

We want good live agents to handle our goods.

Don't delay if you want the agency. Our salesmen are contracting every day for territory.

Write us at once for booklet of information. The secret of success is to grasp the opportunity.

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GUAR-
ANTEED

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TECTION

99%

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tenant farm it will prove equally profitable indirectly.

We are not competent to say what particular improvements you should make. Our suggestion is simply that you think about it, talk about it with your wife and your daughters, and then make such improvements as could be agreed upon after full discussion. If this drift from the country to the town, which is sterilizing farm life, is stopped, it can only be done by making the farm a more satisfactory place to live than it has heretofore been. We have made great improvements in the last ten years. What we want is a more comfortable and satisfactory life on the farm. Money will furnish it. The farmers generally, especially those who own their farms, have the money. If they can be made to see that in comfort as well as in dollars its investment at home would be profitable, they will invest.

Instructions to Farmers Shipping Grain.

Issued by D. D. Campbell, Dominion Grain Shippers Representative.

1. When placing your name on car order book state the size of car required.
2. If possible clean your grain well before shipping, by doing so the feed saved will in many cases more than pay cost of cleaning.
3. Sweep the car well, both floor and sides, especially if it has carried coal recently.

4. Examine car carefully for defects, and secure same against leakage.

5. In loading flax, it is a good plan to cover floor and sides of car with building paper (not tar paper).

6. If the grain door does not fit closely, do not drive nails through the door, as that interferes with the opening at the terminals. Instead drive a two and a half inch nail into the door post, press the door into place, and bend the nail against it. This will hold it secure, and will not interfere with the opening of the door as nails driven through it would.

7. If possible weigh your grain before loading, and keep accurate record of the weight of same.

8. Be particular to level the grain accurately in the car, and keep a record of how it compares with the load line marked in the car.

9. Wherever it is possible, shippers should draw the Agent's attention to the height of the grain and the fact that it is levelled.

It is also a good precaution to keep a record of the depth in inches of the grain loaded into the car if it has been levelled properly. In case of leakage or damage in transit, this is invaluable evidence in establishing your claim for shortage.

10. Do not load cars above amount allowed, as it endangers life and property, and weakens your chance to collect for

shortage in weight, in case of damage in transit.

11. If you have to partition your car, be careful to keep the partition clear of the grain doors, as they must be opened to unload the grain.

12. If you bill the car to your own order and advice, be sure to give your post office address on the bill of lading, otherwise the outturns and papers will go back to the Station Agent, who may be many miles from you, or if you have decided on a Commission Firm to handle the car for you, note on the bill of lading, advise this firm, then they will get all the documents and be in a position to look after your interests.

13. You can send the bill of lading to the Commission Firm, giving them instructions how you wish the car handled, or you can place it with your Banker to be handled to the firm on receipt of a certain amount as an advance, and when the sale is completed, you should receive a statement showing the whole transaction and closing it up.

14. If you have billed the car to your own order, before sending the bill of lading to your Banker or Commission Firm, you should endorse it as follows:—

Deliver to Bank (insert the name of your Bank or Commission Firm), then sign your name distinctly.

15. I do not sell grain for farmers, but if you wish me to look after your interests in regard to

grading, if you send me the car number, with the car initials, date shipped, station and railway, I am willing to give every assistance in my power to any farmer in securing a just settlement of any trouble he may have in the shipping of his grain.

There is no charge in connection with my work to any one.

D. D. Campbell, Grain Exchange, Winnipeg.

Good Words for the "Royal Line" Steamers.

Gentlemen,—

It has been my privilege to cross the Atlantic about a score of times, but I have never crossed in greater comfort than in the new Canadian Northern steamer "Royal George." Messrs. Mackenzie & Mann have placed the travelling public under a deep debt of gratitude in providing the "Royal Line" for the Canadian route. These steamers are a decided acquisition to the liners on the St. Lawrence route. Without a doubt they are the fastest, steadiest, most palatial steamers running to Canada. When the splendid sea-going character and equipment of these magnificent boats become better known, there is no doubt but that the "Royal Line" will become the favorite route for business men and pleasure seekers passing to and from the new World to the Old. A drawback in the past to the St. Lawrence route becoming as popular as it ought to have been has been the comparative inferiority of the steamers with the palatial liners leaving New York; but that drawback has been completely overcome by the advent of the "Empresses" of the C.P.R. and the "Royals" of the C.N.Ry.

These Royal liners were built by the Fairfield Shipbuilding Co., of Glasgow. No expense has been spared in fitting them out in a most palatial manner, fully equal to the best of the New York liners. Every convenience and luxury that anyone could possibly desire are provided in a most lavish manner. A most perfect system of ventilation prevails, rendering the steamers absolutely odorless, the wide sheltered promenades on every deck are a special feature. The Dining Saloon, Cafe, Music Room, Library, Smoking Room and Lounges, all beautifully decorated with hand carving and furnished with the costliest upholstery, make these ships floating palaces. These comforts not only pertain to the First Cabin, but also to the Second Cabin, which is undoubtedly superior to anything hitherto provided by most other steamers. We feel sure that when the foregoing facts are known, these steamers will become the favorites of the British Immigrant when he comes to Canada.

On this her first trip from Canada the "Royal George" was honored with the presence of His Excellency Lord Grey, Governor General of Canada, Lady Grey and family en-suite. A certain man was once asked the charac-

PUT YOUR FEET IN A PAIR AT OUR RISK! STEEL SHOES

Will Surprise and Delight You With Their Lightness, Neatness and Comfort — Their Almost Unbelievable Durability

We want you to slip your feet into a pair of Steel Shoes—to feel and see and know how much lighter, neater, stronger, more comfortable they are than any other work shoes in existence. Hence we are making this special Free Examination Offer, merely asking a deposit of the price, while you are "trying up" the shoes. If they fail to convince you immediately you can notify us to send for them at our expense and we will refund your money.

Must Sell Themselves

Let them tell their own story. It's no sale unless, of your own accord, you decide that you must have them.

We ask no favors for Steel Shoes. Compare them with the best all-leather work shoes you can find. Give them the most rigid inspection inside and out. They will tell you what you must have them.

Better Than the Best All-Leather Work Shoes

Steel Shoes are the strongest and easiest working shoes made.

There's more good wear in one pair of Steel Shoes than in three to six pairs of the best all leather work shoes. The leather is waterproof. The Steel Shoes are wear-proof and rust-resisting.

They are lighter than all leather work shoes. Need no breaking in. Comfortable from the first moment you put them on.

Impossible to get out of shape. They keep the feet dry. They retain their flexibility in spite of mud, slush or water. They cure corns and bunions, prevent colds and rheumatism—save doctors' bills and medicines.

Thousands of Farmers Shout Their Praises

The enthusiasm of users knows no bounds. People can't say enough for their comfort, economy, lightness and astonishing durability. The introduction of Steel Shoes in a neighborhood always arouses such interest that an avalanche of orders follows.

Here is the way Steel Shoes are made: The uppers are made of a superior quality of leather, as water-proof as leather can be tanned. Wonderfully soft and pliable—never gets stiff! The soles and sides are made out of one piece of special light, rust-resisting Steel. Soles and heels are studded with adjustable Steel Rivets, which prevent the bottoms from wearing out. Rivets easily replaced when partly worn. 50 extra rivets cost only 30 cents and should keep the shoes in good repair for at least two years! No other repairs ever needed. The uppers are tightly joined to the steel by small rivets of rust-resisting metal, so that no water can get between.

The soles are lined with soft, springy, comfortable Hair Cushions, which absorb perspiration and odors and add to ease of walking. (63)



FREE!

Send for Book, "The Sole of Steel," or order Steel Shoes direct from this ad.

For Men—Sizes 5 to 12

6, 9, 12 and 16 inches High

Steel Shoes, 6 inches high, \$2.50 per pair.

Steel Shoes, 6 inches high, better grade of leather, \$3.00 per pair.

Steel Shoes, 6 inches high, extra grade of leather, black or tan color, \$3.50 per pair.

Steel Shoes, 9 inches high, \$4.00 per pair.

Steel Shoes, 9 inches high, extra grade of leather, black or tan color, \$5.00 per pair.

Steel Shoes, 12 inches high, extra grade of leather, black or tan color, \$5.00 per pair.

Steel Shoes, 16 inches high, extra grade of leather, black or tan color, \$7.00 per pair.

N. M. RUTHESLEY, Sec. and Treas.

STEEL SHOE CO., Dept. 459, Toronto, Canada

Main Factory, Racine, Wis., U.S.A.

Overwhelmed by the World-Wide Demand

The success of Steel Shoes is almost startling. Within three years we have established Steel Shoe factories in Racine, Wis.; Toronto, Canada, and Northampton, England. These great factories, running at full capacity, can scarcely keep up with the demand from all over the world. The public is rapidly learning that Steel Shoes are GOOD FOR THE FEET! GOOD FOR THE HEALTH! GOOD FOR THE BANK ACCOUNT!

These shoes are better for the feet, better for the health, better for the pocketbook than heavy work shoes or rubber boots.

YOU ACTUALLY SAVE \$5 TO \$10 A YEAR by wearing Steel Shoes. Figure it out for yourself. One pair will outlast 3 to 6 pairs of ordinary work shoes. They save all repair bills and keep your feet in perfect condition.

Free Examination

And your money Back Promptly if It Looks Better Than the Shoes!

You owe it to yourself to investigate. Get a pair of Steel Shoes for Free Examination by sending the price, which will be returned to you and your own feet are not convinced of their merits.

For Boys—Sizes 1 to 5

Boys' Steel Shoes, 6 inches high, \$2.50 per pair.

Boys' Steel Shoes, 9 inches high, extra grade of leather, black or tan color, \$3.50 per pair.

Why Wait? Send Now!

No risk! No bother! No obligation! Don't hesitate! Act while this offer is open! Simply state size of shoe you wear, enclose the price and get the shoes for Free Examination.

For general field work we strongly recommend our 6-inch high Steel Shoes at \$2.50 per pair or the 9-inch at \$3.00 per pair. For all classes of use requiring high-cut shoes our 12 or 16-inch high Steel Shoes are absolutely indispensable.

STEEL SHOE CO., Dept. 459, Toronto, Canada

Great Britain Factory, Northampton, Eng.

From the Bar Ranch, Alberta, to the Seattle A.Y.P. with a Shipment of Pure Bred Percherons

LEAVING the ranch on the morning of Sept. 17, 1909, we finally arrived at High River, after our thirty mile trip, at about 3 o'clock in the afternoon. We speedily had our horses stabled (in our own barns) fed and watered and comfortably bedded for the night. The next morning we were busily engaged in cleaning the horses and one by one taking them out and showing them to curious visitors who wanted to see the Bar U horses going to Seattle. Our string consisted of fourteen head, nine mares and five stallions and in rotation of this final standing as prize winners, were as follows:

Garon, age three, dapple grey, 1900, reserve grand champion in the open class; Epitant, age five, iron grey, 1900, first out of a class of 15 head for aged horses; Halifax, age two, black, weight 1920, second for the two-year olds. This horse, who was grand champion wherever shown in Canada the previous season, was a very sick horse during all of the time that he was at the Seattle show and on the day of his showing he was forbidden by the fair veterinarian to be taken out of his box stall. As he was entered, however, he was taken out and shown to the judge, but the best that he could do was to draw second place. Halifax was a very sick horse the whole of the

two weeks that we were at the show and only recovered sufficient strength enough the last few days that we were there to enable him with the aid of a roomy stall on the car so that he could lay down to withstand the trip back again to the ranch.

Our next important stallion was the yearling Bonaparte. This colt is a native of Alberta, grey, high grade quality, splendid action, perfectly mannered and of perfect conformation. He was first in his class of yearlings and captured the reserve grand championship for two-year olds and under. Coming to the mares, the one coming easily in the lead was Bichett, a four-year old, black, imported, mare and taking the position of near swing in the six horse, first prize, winning team. She is of splendid quality, excellent action and almost perfect conformation. She was first in her class and also captured the grand championship for mares. Next in order was the off lead mare, Docile, a four-year old grey of perfect action and manners and capturing the position of reserve grand champion. Next in order was the old timer, Pantomime. Pantomime is an American bred pure Percheron, age 12, almost white, weighs 1800 lbs., perfect conformation; she has a deep crest, wide chest, large heart girth, strong, short back,

ter of another, and he replied "I do not know, I never lived with him." After living for a week on the same ship with Lord and Lady Grey, and seeing their cheerful, kindly, tactful, unostentatious, yet dignified manner, we are able to understand why they are among the most popular of all the residents that we have had at Rideau Hall, and why Canadians will welcome an extension of his term of office.

At a concert held in the Second Cabin his Excellency spoke most eulogistically of the "Royal George" and he prophesied that when these "Royal" liners became fully known, it would be difficult to secure a passage upon them, so great would be their popularity.

The Captains on the various passenger steamers running to Canada are noted for their splendid seamanship, and their kindly care of the passengers, and while comparisons are odious, the opinions of some who have crossed the sea many times are that though other Captains were excellent, Captain James Harrison of the "Royal George" excels them all. All the other officers and attendants on the ship were courteous and attentive.

As we left the boat at Bristol the word was passed from one to another "I am sorry the voyage is over" and when I return I am coming by the "Royal Line."

Signed Rev. Jesse Gibson, Secretary Bible Society, Toronto, Ont.

"The best way to train a child in the way he should go is to skirmish along in front of him." —Mark Twain.

strong smooth barrel, short couplings, well ribbed up, strong well developed hind quarters, and altogether an animal very hard to beat. She has splendid action, takes her place as the near lead of the six horse team and gaily shows the rest of the team the way to conduct themselves around the show ring. Pantomime has been grand champion wherever shown in Canada and was only turned down by the Seattle judge on account of her age and color. The other three mares of the six horse team were Poulette, the mate to Bichette, and Toupee and Duchess, the iron grey wheelers.

The next competing mare of importance was the grey three-year old filly Gardienne. She is a well built, blocky, well proportioned mare of good quality and captured the first prize for three-year old mares.

The other two fillies, Midnight, age two years and Alberta, age one year, are both natives of Alberta. These two fillies are of splendid quality, fine action, black, and of hardy constitution and good conformation. Alberta took second place for yearling fillies, but Midnight was not quite so successful but as a mare of good conformation and as an animal of the true brood mare type, she is very hard to beat.

All of the horses behaved well in the show ring and elicited great praise from the spectators while being put through their daily paces during their daily periods of exercise, which same daily exercise of all the horses entered, furnished more pleasure to the visitors than did the official daily parade. High River was left on the morning of Sept. 21 and the entire trip through the mountains as far as Mission Junction was a decidedly splendid one. At Calgary we took on board the Belgian four-year old stallion, Pompon, the property of Baron Rolls, of the Belgian Horse Ranch, of Calgary, and with which horse we succeeded in capturing the Grand Championship for Belgians at the show.

Leaving Calgary on our way to the foot-hills of the Rockies extensive ranches are passed in rapid succession, great herds of horses in the lawn valleys, thousands of cattle on the terraces, and flocks of sheep on the hill-tops may be seen at once, making a picture most novel and interesting. Approaching Kananaskis the mountains suddenly appear deeply tinted in purple and their sides flecked with white and gold, while high above, dimly outlined in the mists, are distant snowy peaks.

At The Gap the mountains rise abruptly in great masses, a bend in the line brings the train between two almost vertical walls of dizzy height. This is the gap by which the Rocky Mountains are entered. Through this gateway the Bow River issues from the hills. Passing along, Pigeon Mountain, Wind Mountain and the Three Sisters are passed on the left. A remarkable contrast between the ranges ahead are

noticeable. On the right are fantastically broken and castellated heights; on the left, massive snow laden promontories, rising thousands of feet, penetrated by enormous alcoves in which haze and shadow of gorgeous coloring lie engulfed. The jaggedness of profile observed from the plains is now explained. Those mountains are tremendous uplifts of stratified rocks, of the Devonian and Carboniferous ages, which have been broken out of the crust of the earth and slowly heaved aloft. Nearing Canmore one comes into plain view of the Three Sisters, the most southerly one rising to an altitude of 9,743 feet. Along the track may be seen the "hoodoos" giant earthen pillars, ten times the height of a man, some of them composed of hard enough material to withstand the erosions which have played havoc with the surrounding bank.

Passing along past Bankhead, the pass narrows suddenly and as the mountains are penetrated the scenery becomes grander and more awe-inspiring. Banff was passed in the evening. This is the station for the Canadian National Park and Hot Springs. This Park is a natural reservation of 5,732 square miles, embracing parts of the valley of the Bow, Spray and Cascade rivers, Lake Minnewanka and several noble mountain ranges, and beyond the "Divide," the Yoho Valley and the country to the west and south of it. Leaving Banff, the Vermillion lakes are skirted and ahead an excellent view is had to the right of Mount Bourgeau, and the snow-peaks far to the west, enclosing Simpson's Pass. Pilot Mountain, with an altitude of 9,680 feet, is then passed, also Hole-in-the-Wall Mountain, against whose side can be seen a cavernous opening to a mountain grotto. This cave is 1,500 feet above the valley bed, 12 ft. from floor to roof, and runs back into the mountain for 160 ft. Then Castle Mountain is passed, a sheer precipice of 5,000 feet, a giant's keep, stretching for eight miles, with turrets, bastions and battlements complete. Looking back to the East Pilot Mountain is seen, like a leaning pyramid high above the square-pointed ledges visible before. Entering Vermillion Pass, the view through the range permits of many a splendid view of a lofty spire and icy crest along the continental watershed, from whose glaciers and snow fields the Vermillion river flows westward into the Kootenay. On the east side Storm Mountain, 10,309 feet and the snow dome of Mount Ball 10,825 feet, are passed. Standing supreme over this part of the range is the prodigious, isolated, helmet-shaped mountain named Temple (11,626 feet) the loftiest and grandest in the whole panorama.

Laggan, a divisional point, is then reached, when the time goes back one hour to compare with the Pacific Standard. Here we have time to make some coffee and to get our breakfast, we

The "TAGGART" Portable Grain Elevator

Construction

The "Taggart" Portable Grain Elevator is built any height, standard 18-ft. leg.

Grain is elevated by cups and conveyor by worm screw.

Mounted on skids, but can be operated on a wagon or truck.

Hopper swings back out of the way for wagon.

Leg swings down when moving and rests on frame.

Spout can be swung in any direction, or up or down.

Will save its cost in one Season

It is a back saver, time saver, money saver.

It will save three men's time and two teams at least

Our Prices are Right

For loading cars and filling granaries—it can be operated by horse power or gasoline engine.



This cut shows Elevator mounted on truck, with leg up and hopper ready to receive grain. Write for prices and terms. Agents wanted.

Our Line Includes Case Plows and Engine Gangs, New Superior Fanning Mills, Owens' Smut Cleaners, Steel Wheel Trucks, Caboose Trucks, Rotary Plow Harrows, Harrow Carts, Sewing Machines, Disc Sharpeners, etc.

The Harmer Implement Company

WINNIPEG

THE DESMOND MODEL "U" INJECTOR

THE BEST FOR THE THRESHERMAN

FIVE Injectors in ONE and as many more as you desire.



Any Model "U" fits any old connection

One Injector that fits all conditions

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

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

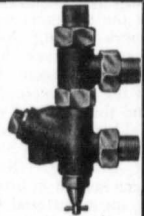
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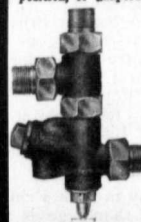
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Leaving Laggan and looking towards the North-west, towards Bow Lake and the huge rounded snow-capped peak of Mount Daly, a view is obtained of the glacier. It is a broad crescent-shaped river of ice, the further end concealed behind the lofty cliffs that hem it in. It is 1,300 feet above you, and a dozen miles away. Further north are other glacial fields, one of which is the source of three great continental rivers flowing to the three different oceans, the Athabasca or Mackenzie River flowing to the Arctic, the Saskatchewan to the Atlantic and the Columbus to the Pacific. Around this region also is Mount Robson, the highest peak yet known in the Rockies, exceeding 13,000 feet in altitude.

Passing along, the surrounding valleys on either hand are noted as the home of the big game, such as the big horn, goat and bear, while overtopping all, like the sky-line of a citadel, with white edging on every rock, ledge and crest hidden in the clouds, on the great buttressed mass called Mount Hector, after Sir James Hector, of the Palliser Expedition in 1858, one of the first to explore the Rockies. A monument is here erected to his memory. Stephen station is then passed, which is on the summit of the Rocky Mountains and has an altitude of 5,329 feet. This station, like the stupendous mountain ahead, is named in honor of the first president of the Canadian Pacific Railway. Here is the "Great Divide" and a sparkling stream separates in two, the waters of one flowing to the Pacific and those of the other to Hudson Bay. From here the line descends rapidly, passing the beautiful Wapta Lake at Hector and crossing the deep gorge of the Kicking Horse River just beyond. The tumultuous cataract that comes racing down rocky ledges to the left to lose itself in the emerald waters of Wapta Lake is Cataract Creek. The line clings to the mountain side at the left, and the valley on the right rapidly deepens until the river is seen as a gleaming thread five or six hundred feet below. Looking forward to the right the heights

of Mount Field are seen. On the left the basica-like spires of Cathedral Mountain loom against the sky and just beyond it the dome-like head of Mount Stephen. On its shoulder is seen a vast, shining green glacier, the forepart of the monster, which hangs obliquely forward, measuring nearly a thousand feet in length and its lower outer edge having a vertical depth of almost a hundred feet. Passing through a short tunnel and hugging the base of the mountain closely, the main peak is lost to view for a few minutes; but as the train turns sharply away it soon appears with startling suddenness and when its highly-colored dome and spires are illuminated by the sun it seems to rise as a flame shooting into the sky.

Field is then reached, which is the favorite stopping place and combines all possible attraction for the mountain tourist. It is at this point that the great glacier field first run northward from Laggan is reached and is only as it were a stone's throw from all the mysteries and wonders of an upper icy world. Two miles beyond Field very lofty glacier-bearing heights are seen at the right. The line follows the Kicking Horse, whose narrow valley divides the Ottertail and Van Horne ranges. About a mile away from the valley bed of the Kicking Horse River, at the last of the Ottertails, is a strange field of rakish-looking "hoodoos" with pillars left standing by the wash of mountain torrent, with stones tilted at all sorts of tipsy angles on their heads.

Passing along, Mount Hunter is seen pushing its huge mass forward like a wedge between the Ottertail and Beaverfoot ranges. The river turns abruptly against its base and plunges into the lower Kicking Horse canyon, down which it disputes the passage with the railway. The canyon rapidly deepens until, beyond Palliser, the mountain sides become vertical, rising straight up thousands of feet, in a bronze wall crested by a long line of unnamed peaks and within an easy stone's throw from wall to wall. Down this vast chasm go the railway and the river together, the former crossing from side to side to ledges cut out of the solid rock, and twisting and turning in every direction and every minute or two plunging through projecting angles of rock which

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seem to close the way. With the towering cliffs almost shutting out the sunlight and the roar of the river and the train, increased one hundred fold by the echoing walls, the passage of this terrible gorge will never be forgotten.

Golden is then reached and the broad river ahead, moving northward, is the Columbia. The Selkirk's, with their forest clad bases and lifting their ice-crowned heads far into the sky, may be seen to the south. Parallel with them and rising eastward, to the right and north from the Columbia, range upon range, are the Rockies, only the loftiest peaks to be seen just now over the massive benches upon which they rest. From Golden to Donald the railway follows down the Columbia on the face of the lawn bench of the Rocky Mountains, the Selkirk's all the way in full view opposite, the soft green streaks down their sides indicating the paths of avalanches. Moberley is the site of the oldest cabin in the mountains, seen just to the left, when a government engineering party under Mr. Walter Moberley, C.E., engaged in the preliminary surveys of the railway route, passed the winter of 1871-2.

At Donald the railway crosses the Columbia and enters the Selkirk's through the Gate of the Beaver River—a passage so narrow that a felled tree serves as a foot bridge over it just where the river makes its final and mad plunge down to the level of the Columbia. Here a natural bridge is seen across the boiling torrent. Passing Six Mile Creek Nature has worked here on so gigantic a scale that many travellers fail to notice the extraordinary height of the spruce, Douglas fir and cedar trees, which seem to be engaged in a vain competition with the mountains themselves. From here is seen the exceedingly lofty pinnacle of Sir Donald (10,808 ft.) which is seen more closely at Glacier House and on crossing the foaming cascade of Beaver Creek on a high bridge one of the most beautiful prospects of the whole journey is to be had. So improved were the builders with the charm of this magnificent picture of mountains, that they named the spot "The Surprise." As Bear Creek station is approached, a brief but precious glimpse is caught of Mount Tupper through a gap in the cliff to the right. Right here is where the snowsheds are encountered. These are built of heavy squared cedar timber, dove-tailed and bolted together, backed with rock and fitted into the mountain sides in such a manner as to bid defiance to the most terrific avalanche.

Rogers' Pass, which was named after Major A. B. Rogers, by whose adventurous energy it was discovered in 1881, previous to which no human foot had penetrated to the summit of this great central range, is entered between two lines of huge snow-clad peaks, having Mount Macdonald on the one hand and Mount Tupper on the other. From the

south stretches the line of peaks connecting Macdonald with Sir Donald, Uto, Eagle and Avalanche, from south to north—the rear slopes of which were seen in ascending the Beaver. This pass valley has been reserved by the Government as a National Park. Selkirk's Summit is then crossed, with Mt. Tupper, the Hermit, Seven Peaks and Rogers' Peak sloping down a gradual sky-line to Sifton, which is separated by a deep ravine from Grizzly, which in turn stands opposite to the pyramidal heights of Cheops, a veritable Titan of this group, with the profile of a hatted Napoleon plainly silhouetted against the face of Cheops over-looking the vast glacial field of the whole Hermit Range.

Leaving the summit the line follows the slope of the Axial range, of which Sir Donald is the chief and directly ahead is the Illecillewaet Glacier of the Selkirk's. Glacier House is then passed, which is only thirty minutes walk from the Illecillewaet Glacier and close by to the left Sir Donald (10,808 ft.) rises a naked and abrupt pyramid to a height of a mile and a quarter above the railway. This stately monolith was named after Sir Donald Smith (Lord Strathcona) one of the chief promoters of the C.P.R. Continuing the descent from Glacier House, and following around the mountain side, the loop is soon reached, where the line makes some startling twists and turns, first crossing a valley leading down from the Mount Bonny Glacier, touching for a moment on the base of Ross Peak, then doubling back to the right a mile or more upon itself to within a biscuit's toss; then sweeping around to the right, touching Caugar Mount, on the other side of the Illecillewaet, crossing again to the left, and at last shooting down the valley parallel with its former course.

Looking back, the railway is seen cutting two long gashes, one above the other, on the mountain slope, and farther to the left and high above the long snow-shed the summit range, near Rogers' Pass, is yet visible, with Sir Donald overlooking all. Night then closes in upon us and daybreak finds us approaching that beautiful fountain-enclosed picturesque spot Revelstoke. Here we take in a fresh supply of provisions and fresh water for the horses and also entertain numerous visitors who are anxious to see what kind of pure-bred horses we keep in Alberta, for that fact is made known to them by large streamers upon the sides of the cars. Resuming our journey after the usual delay of making up the train, accompanied with the necessary amount of shunting of our cars, we pass on the south east the two peaks Mackenzie and Tilly, with the Gold and Columbia range of mountains beyond. The Columbia range is crossed and the Gold range is at once entered by Eagle Pass. Lofty mountains rise abruptly on each side throughout, and the pass is seldom more than a mile

wide. At Craigellachie the last spike was driven in the Canadian Pacific Ry. on Nov. 7th, 1885, the rails from the East to the West meeting here. Sicamous Junction is then reached, which is the stopping place for the famous Shushup Lakes, which are the centre of one of the best sporting regions on the line. From here also a branch line runs to Vernon and the famous Okanagan Valley and near Kelowna, thirty-five miles from Vernon, Lord Aberdeen, formerly Governor-General of Canada, has a fine farm and another holding of 13,000 acres a few miles from Vernon, employing a small army of men raising fruit. Resuming the trip a recent writer says "for 50 miles the line winds in and out the bending shores, while geese and ducks fly over the water and light and shadow play upon the opposite banks. This Lake Shuswap, with its bordering slopes gives a fine reminder of Scottish scenery. The railway in getting around it, leads at different and many times towards every one of the thirty-two points of the compass. Leaving the Salmon Arm of the lake rather than go a circuitous course around the mountains to reach the south-western arm, the line strikes through the forest near the top of the intervening ridge, then gradually runs down hill until it reaches the level of the water, but here it has passed the lake, which has narrowed into

(Continued next month.)

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Handling Grain in Russia

By REGINALD V. RICKCORD.

I PROPOSE to talk to the readers of the "Canadian Thresherman" about the Russian grain trade. I will tell him about a voyage I made recently to a grain port in Southern Russia and I will try to point out to him under what circumstances the grain is produced. For little does he dream of the prosecutions and petty impositions brought to bear on the poor grain producer by the police and other government officials which surround him. Impositions not by way of export duties or other taxes, but extortions for no reason whatever, which, if the person approached refuses to pay, he is at least imprisoned. Frequently he considers himself fortunate to get off with that. Later on, I will give the reader an instance of this sort of thing which came to my notice only last week. However, I will not indulge in unnecessary preamble, but I will extend my hand to him and ask him to accompany me, there and back, to a place right at the very end of the sea of Azov, named Taganrog, from which many thousands of tons of grain are shipped to the western European ports each year. I should have liked to make the place Odessa, which is a larger grain shipping centre; but it is not within me to choose. I have been to Taganrog, whereas I have not been to Odessa; besides there are one or two things the reader would like to know about which would not have come within the scope of the article, had I chosen Odessa.

Up, then, reader, and follow me. Bring with you your powers of thought and attention. We walk through the docks of Cardiff in Wales, step onto the turret deck of the S. S. Gaisa, which has some eight thousand tons of coal on board. It does not matter about the ship being a coal tub, for nearly all the ships that find their way to Southern Russia first carry a cargo of coal to one of the European ports, such as Marseilles, or Genoa or Reggio or to Malta.

On board then we seek out the "Old man" (this is what the sailors call the captain), we settle down in the spare cabin and sleep for the night. Next morning early at six a.m., whistles going, shouting, booming of the syren; we felt a gentle movement, every now and then a dull thud; we are off, being towed out of the docks. As soon as we are out of the docks "full speed ahead" is rung down the engine room telegraph and we are steaming down the Bristol Channel, leaving a long line of foam behind us. Soon we leave Land's End behind.

Of course we are in the middle of August, the reader is then not likely to be troubled with seasickness, until perhaps we cross the Bay of Biscay; in that case

go to the cabin, reader, and lay down on the mat, you are soon alright again.

In three days we pass Gibraltar, that terrible frowning fortress mounted on a rock, which gives to the British the command of one end of the Mediterranean as the Suez gives them the command of the other. We round this terrible fortress and get out of the way of those ugly cannons, which

Well, then, I will tell him, for nearly every grain trader that goes with the grain from one port to another knows the *lengua franca*. It is a nautical language, consisting of scraps of sound and words, taken from nearly every nation that dwells on the shores of the Mediterranean Sea and includes a large number of gestures. Whether grain sailor or any other kind of sailor, there is scarcely

who dwelt at Messina a year or two ago.

We travel through a sea so clear that in places we can see the bottom and of such a nice blue color that the artist may well despair of imitating. We lose sight of land until we come to the Grecian Archipelago when every now and then huge masses of rock islands come into view and are so stately and imposing that we see their tops disappear into the clouds and their vertical sides meet the glassy water and continue in a vertical direction below the surface until the eyes loses sight of them. These giants of rock appear again and again and are silently left behind us, until we enter the Hellespont. There we see battleships with no engines, men-of-war with one solitary gun on board and on land there appears streets of perfectly white stately houses, mosquos with their imposing domes, and other large white buildings; we know then that when we have sailed the Sea of Marnora we shall be at Constantinople.

At Constantinople a host of officials come on board, customs officers, medical men and barterers and go through an absurd rigmerole which none understands and they sign official papers which also none understands.

At the end of a few hours' stop we proceed through the Straits of Constantinople into the Black Sea, a stretch of water very often unlike the seas we encounter a few miles from the mouth of the Thames. The journey across the Black Sea takes two or three days then we arrive at a place called Kerch, situated on the Straights Sea of Azov. This is the first Russian town we touch; consequently we have the customs rigmerole to go through again. Everyone is subjected to a medical examination and a customs official is placed on board fully armed who remains there as long as the ship is in the Sea of Azov, and until it returns to Kerch again en route to the Black Sea. Furthermore, everything on board, except some eatables, cutlery and crockery and a few other necessities is placed under seal and cannot be touched until the seals are broken by the customs officials when the ship leaves Kerch on the return journey. After leaving Kerch a day or so's run with a Russian pilot on board brings us to Taganrog. I hope the reader does not imagine this place situated on a grand harbour with every shipping facility. Far from it, the ships cannot get to more than about a mile from the town and there is no convenience for going ashore.

At Taganrog our real business starts. The months for grain shipping at that place are September, October and the early part of

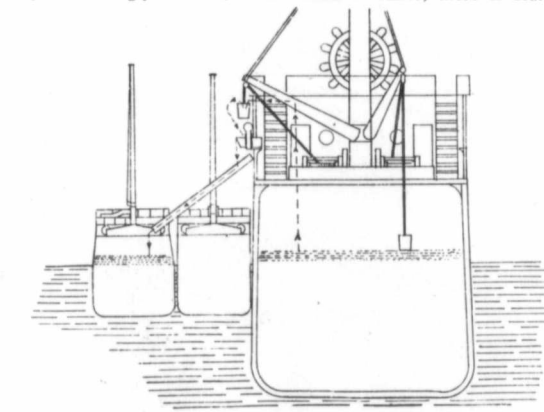


Fig. 6

peep from behind those rock-formed walls. On then, in a north-easterly direction and in another four days we arrive at Marseilles. Ancient Marseilles, so old, existed at the time when Carthage flourished; so prominent in the political history of France; so well-known to readers of Monte Christo.

At Marseilles we discharge our cargo of coal, the process taking

any European or Mediterranean port where he cannot make himself known if he knows this remarkable language, if I may call it so.

Onward, Onward. I am sorry I cannot come to the grain subject quicker, but the reader really should know everything which leads up to the grain shipping proper.

We leave Marseilles then and

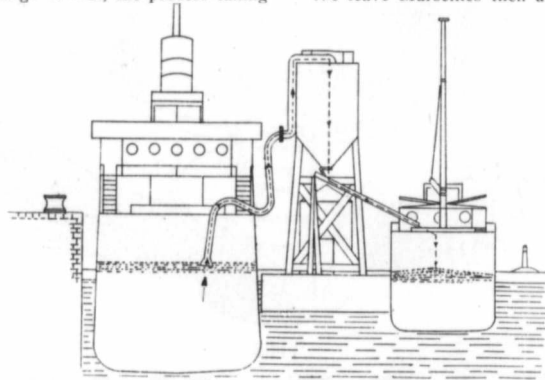
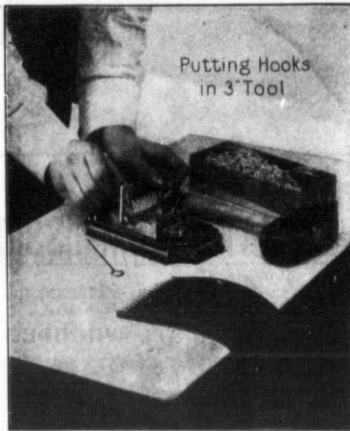


Fig. 5

one week. As coal does not interest us, we will walk along the breakwater and enter the town. More than one writer has asserted that the dregs and outcasts of the earth are gathered together at this spot. We will therefore go and see them; nay, we may even speak to them; if we cannot speak French we may talk to them in *lengua franca*. The reader does not know what *lengua franca* is?

proceed with a light ship through the Straits of Bonifacio, which separate Corsica from Sardinia, through the Straits of Messina, which separate Italy from Sicily. In the distance we have behind us the fuming top of Mount Etna. We are glad to leave this volcano as we cannot but think that at any moment we might see the ashes showering down upon us as they did on the unfortunate people

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November; during these few months there are between fifty and one hundred ships in the roadstead at Taganrog waiting to be loaded up; of course, ninety-nine per cent. of the ships are British. The loading process takes place in this manner. Although the Russians are so hampered and backward in some things, yet they have a really fine set of grain lighters, which convey the grain from the town to the steamers. These lighters were all built in England, and each has two boilers and twin screw, compound surface, condensing engines and are capable of steaming at 10 knots an hour and making half a revolution in one length. These lighters then load up with grain at Taganrog and steam to the ships in the roadstead. Each steamer on its arrival and almost as soon as it drops anchor, exhibits a sign, consisting of one or two hempen balls and a basket tied to a rope, one below the other and hoisted on one of the masts (Fig. 2). These can be seen from a great distance and are spotted immediately by the lighter, which accordingly makes for the ship, into which it has to discharge. Without these signs think of the trouble it would mean to the man in charge of the lighter. He might approach nearly everyone of the ships in the roadstead before arriving at the one he requires.

Once alongside the steamer, with remarkable rapidity, the hawsers are thrown out, the steamer and the lighter are linked

together with ropes. Up goes a telescopic trestle arrangement from the deck of the lighter. To the top end of this trestle is fixed a chute, the other end of which

rests over the hold. Men quickly scramble to their post and then the loading process commences. The grain is lifted from the hold in basket by crane; when the

basket is level with the upper end of the chute, the boom which carries the pulley is swerved round by means of a rope. A man sits on the end of the chute and tips the grain out of the basket into the chute, the grain is then carried by its own weight down the chute into the hold of the steamer (Fig 3. The arrows and dotted line show the direction of the grain). In this manner a thousand tons of grain are shifted in a few hours; then the lighter makes off as rapidly as it came and leaves the shipmaster to curse the Russian condition of affairs which compels him to wait a few days before another thousand tons comes along.

Let us consider this condition of affairs under which grain is produced in Russia. Until so recently as 1861, the noble not only owned the land but owned the people too; that is to say in that year, the peasants were liberated from slavery and commenced to own the land; until at the present day, the peasants own large portions of the land and grow rye, oats, wheat, barley, millet etc., but under what conditions? I should like to produce here a letter from a Russian lady (Princess Bariatinsky) which appeared in one of the London Magazines.

"A few days after my arrival (at Tiflis, which is not far from Taganrog) a letter reached me to the effect that 'unless I paid the sum of £3,000 as a fine to the Governor of the Province I

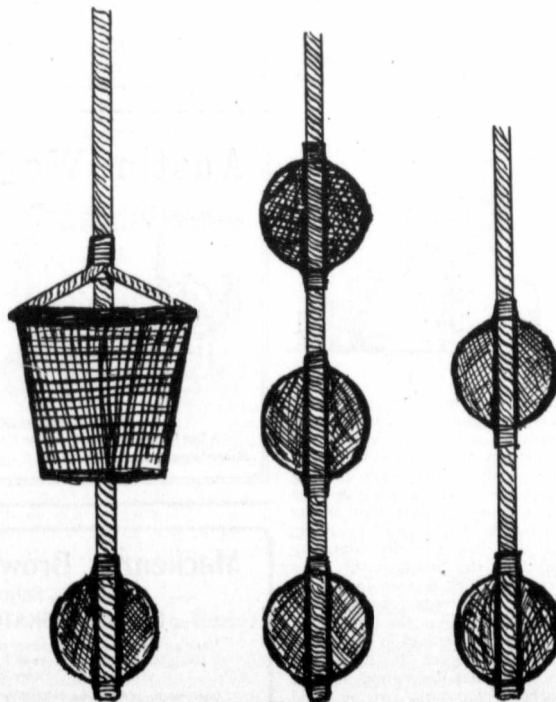


Fig 2

should be compelled to suffer the penalties of the law, my first question was 'what have I done?' In what way have I transgressed the law to such an extent that I should have to pay the by no means insignificant sum of £3,000 to expiate my transgressors." I could think of no explanation at all. Then, suddenly a thought crossed my mind that the fine was another somewhat aggravated example of the extortion carried on in various parts of Russia." I will let the reader think what he likes about this matter but it seems to me the wonder is how the Russians manage to grow and export the grain at all, when this sort of thing goes on to such a large extent. It only remains for me to add that the only reason one can attribute for the wonderful supply

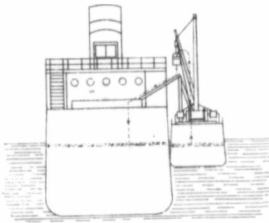


Fig. 3

of grain is the amazing fertility of the ground, consisting of what is known as "black" soil and extending to a very considerable depth. To come back to our ship. When ten of these lighters have discharged their contents into the steamer, the latter is pretty well full up; the holds are battened down, anchors drawn up and we commence our journey back to Kerch.

Now at Kerch there exists, presumably for warlike purposes, a bar across the straits, placed so near the sea level, that a ship of even modest dimensions could not possibly sail down the straits without striking it, i. e. the bar. All ships, therefore, returning this way are compelled to empty nearly half their cargo into small vessels, cross the bar and load up again on the other side. Remember, we are still in Russia and this is part of Russian officialdom. For the purpose of loading and unloading a hundred or so Russian grain men come on board and arrange themselves in pairs, commencing at the level of the grain and forming a line right up to the chute. Small baskets are then filled with grain and passed from hand to hand with exceedingly rapid movements. The last pair pitch the grain into the chute which runs it into the vessel below. For loading up again, platforms are erected on the side of the vessel and the baskets are thrown from pair to pair in the same lightning manner as we saw in unloading. (Fig. 4). When finished we batten down the holds, discharge the pilot; we are allowed to break open all the seals and we breathe freely once more.

A few days' trip and we are at Constantinople. Stop of several

hours, more customs business and we are off. We again see the many islands of the Grecian Archipelago and we tramp the Mediterranean Sea as did our predecessors, the Phoenicians of old, the English of antiquity.

By the time we reach Malta, we are running pretty short of coal, so we put into Valetta the capital. Oh, what a grand and imposing sight we see as we enter the grand harbour; parapets, forts, bastions all round us. Valetta mounted on a hill, a magnificent Quebec; the scene of distant and lost chivalry. As readers of the Canadian Thresherman know, this was for centuries the stronghold of the Knights of St. John. Well, we load up coal and leave Valetta behind us. A witty man wrote on leaving Valetta:

"Adieu, ye joys of La Valette. Adieu, Scirocco, sun and sweat, Adieu, ye cursed streets of stairs, How surely he that mounts you swears!"

So we, with our ten thousand tons of grain go on our way rejoicing.

We re-pass Gibraltar, sail northwards until we see the Isle of White and then proceed to Rotterdam, but we must go up the River Maas very carefully as it is very shallow and narrow; a few hours steaming up this river and we arrive at our destination. Rotterdam, for along with Antwerp, Rotterdam is probably the most important grain port in Western Europe, not only for European grain but for American grain also.

If the reader were to stand on the quay at Rotterdam during the months of September and October, he would be overwhelmed by the tremendous hum of activity. For during a few months at that time of the year, Rotterdam opens its flood-gates and the ships pour into the harbor in such rapid

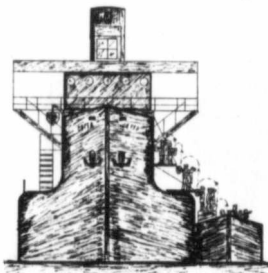


Fig. 4

succession that they are soon more in number than it can conveniently hold. The hissing of the steam, the roar of the cranes, the swish of the grain rattling down the chutes, which gives rise to volumes of dust like smoke during the discharge of a cannon, all this has a really alarming effect on the beholder. It is an activity which is seen in scarcely any other trade. As may well be imagined from the astounding activity, Rotterdam is not backward in regard to up-to-date means of handling grain, for the authorities possess two splendid steam floating grain elevators.



MANITOBA ELEVATOR COMMISSION

D. W. McCUAIG, W. C. GRAHAM, F. B. MACLENNAN,
Commissioner Commissioner Commissioner

Head Office: 279 GARRY ST., WINNIPEG
P.O. Box 2971

THE Commissioners wish to announce to the farmers of Manitoba that they have secured permanent offices for the transaction of their business, and all communications should be sent to the Commissioners at the above address. Petition forms and all information needed by farmers in order to secure elevators at their points will be mailed upon application. The Commissioners solicit the co-operation of the farmers of Manitoba in the work of establishing a system of public owned storage elevators in the province.

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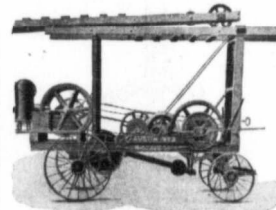


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Mackenzie, Brown, Thom & Frame

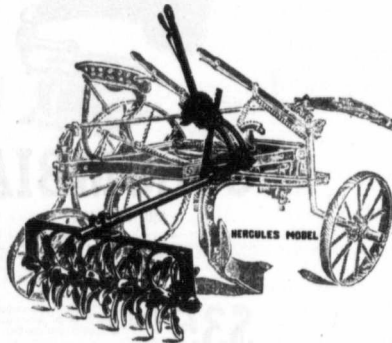
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REGINA, SASKATCHEWAN, CANADA

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MEETS ALL SOIL CONDITIONS.

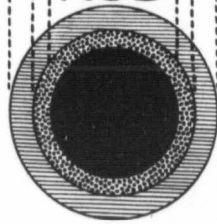


The E. M. KRAMER CO. is the **only concern** manufacturing a **Rotary Harrow** to-day that have made it their business to get into touch with the actual users of such goods—**The Farmers**. They have done this realizing that a machine like a **Rotary Harrow** must work under many different **soil conditions** and that **one type of machine will not meet every requirement**. We are visiting all the big fairs in the United States and Canada where we are getting into touch with **Representative Farmers from every locality**. From them we have learned that certain of our models are not adapted to certain heavy soil conditions and we now introduce our **Hercules Model** which is **absolutely guaranteed** to handle any heavy soil.

WE WANT TO CALL

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

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



WE ALSO MANUFACTURE A SPECIAL DISC

That works on the principle of the buzz saw, driving itself into the soil and at the same time tearing itself out. This disc will handle the toughest sod, pulverizing it into a perfect seed bed. It is a wonder and will do its work perfectly.

We manufacture 5 different models, in sizes and design to meet every soil requirement. **Don't forget that the name KRAMER stands for ROTARY HARROW—THE ORIGINAL.**

We are now in a position to take care of the trade in quantity of goods, in quality of goods and in variety of models to meet every requirement. Let us tell you all about this wonderful labor-saving, time-saving, money-making pulverizing proposition.

WRITE OUR SALES AGENTS FOR CANADA:--

JOHN DEERE PLOW CO., LTD., WINNIPEG, REGINA, CALGARY,
EDMONTON, SASKATOON.
Manufactured by **KRAMER CO., PAXTON, ILL.**

(Fig. 5). Roughly the grain elevator consists of a large metal tank, the bottom of the tank is made to taper, so that the grain has no difficulty in running out when the door at the bottom of the tank is opened. Attached to the tank is a steam ejector, which serves to create a vacuum in the tank. A metallic flexible tube is also attached to the tank, the end of which tube is lowered into the grain. A man looks after this end of the tube and moves it backwards and forwards in the grain, so that it does not get choked when the grain is being drawn up which happens as soon as the ejector commences to work.

The whole thing is automatic and the operations take place as follows: ejector is turned on and exhaust tank; grain is drawn up into the tank and continues to be drawn up until the latter is full. When the tank is full, two things happen automatically, first, the weight of the grain in the tank is recorded; secondly, an iron door is opened and the grain is allowed to run out into a chute, thence into a barge below. The very act of the tank emptying itself, closes the iron door and sets the ejector going, which raises another tankful of grain; the cycle of operations going on ad lib. (The tank and all its steam gear are mounted on a floating platform and are usually placed between the steamer and the barge into which the former is to discharge. In the figure, the journey of the grain is shown by dotted lines and arrows.) They have one other

method of discharging in Rotterdam and that is by making use of the steamer's winches. A squad of men station themselves in the hold and fill the baskets. The latter are then hoisted to the level of the deck and the contents tipped into a scale pan; a man stands at the scale pan taking record of the weight of the grain tipped into it. The scale pan is made to tip into a chute and the grain then runs into a barge below (Fig. 6). In this figure the passage of the grain is again shown by the dotted lines and arrows.

The steamers that find their way to Rotterdam with grain, usually return to England when they have finished at Rotterdam and carry cargoes of various merchandise until the grain season comes round again.

By this time the reader will have seen to what extent the Russian grain is hampered by customs' officials, petty impositions, lack of transport, etc., which should appear all the more plain to him when compared with Canadian facilities. And it certainly is clear that if the Russian has to thank one nation more than another for helping him to get rid of his grain that nation is—the British.

Sawyer & Massey to Enlarge Factory.

A special from Hamilton, Ontario, Aug. 24, 1910, says:

The Sawyer-Massey Co., of this city, have under construction,

very large additions to their already big plant, which will easily double their capacity for the manufacture of Sawyer-Massey Engines and "Great West" Separators. They are also installing a large amount of the most improved machinery, specially designed for their work. In conversation with the president of the company have learned they intend to increase their already large production of Engines and Threshers and will establish branch offices and warehouses at the principal centres of distribution in the Western Provinces for the greater convenience of their agents and customers. They will likely require some good experienced men for the positions that will be open.

Gallant Engineer.

Cousin Will and his sister Mary, a maiden lady timidly disposed, were driving the old nag in the buggy when they met a traction engine. The old mare was of a calm and undemonstrative disposition, but Mary, fearing a runaway, insisted on alighting and walking past the engine. The engineer stopped the vociferous thing and came forward to offer assistance.

"Can I lead your horse by the engine, sir?" he inquired.

"Thank you," answered Will; "I can manage the horse very easily, but I would be much obliged if you would lead the lady by."—Lippincott's.

One Man's Way.

Writes a wise man: "My children and I are in partnership. Each one studies out the kind of stock he prefers and then I buy it for him and he gets a half interest in it by putting labor against by capital. We each pay for half the feed and each has half the profit and increase. After proving that they will care for the animals properly they can buy my interest for half what I paid in cash. If they do not give proper care I reserve the right to take the stock,—their mother to be the judge of the case. Under such agreement each one of the children has some fine stock, some of which they own outright now; but it is understood from the first that I may call upon them without warning at any time for a statement of how our affairs stand,—and they must be ready."

Some women make good friends but poor wives.

True love doesn't listen to the advice of outsiders.

An alarm clock makes a pretty good eye opener.

Tomorrow is sure to come if you have a note to meet.

A woman who weighs her words gives good measure.

A man who is worth doing at all gets done to a turn.

Conscience is something that some folks are short on.

It's human nature to want to get ahead of our neighbors.

Farm Life in Japan.

Continued from page 19

These are generally laid crosswise in small piles, and are allowed to dry during the day. At evening they are hung with heads down on bamboo poles, which, by means of cross sticks, are made into a structure like a fence. The lower pole is high enough to allow a space of about a foot between the suspended bundle and the ground. The upper pole is eighteen to twenty inches above this, the rice bundles on the upper pole overlapping the bundles below. After the bundles hang upon the poles long enough to become dry they are taken down by women and the grain removed by drawing the heads through a hatchel.

The grain is then placed upon mats and exposed to the sun till thoroughly dry. Before it is sent to market the hulls are removed by passing the grain through a pair of burrs of cement and bamboo and worked by hand.

Common laborers on the farm in Japan receive on an average six cents (gold) per day for women and ten cents for men with board, except in harvest time, when they are paid about double these amounts. Two men informed Dr. Knapp that they were paid two yen (one dollar gold) for cutting, binding and hanging on poles the rice in a small field by the roadside. The size of the field made it evident that this would mean five and one-half dollars an acre for harvesting. Still the methods employed have their advantages. The system of transplanting insures the best results and allows time to take off the winter crop. By the hand process the straw, which is quite valuable, is preserved, the grain is cut at the right time, even when it does not ripen evenly in the field and there is no loss from cracking of kernels.

How the Japanese farmers live can best be understood by giving a description of some particular farm house. While visiting the distinguished statesman, K. Mochizuki, at his country estate, a visit to the dwellings of some of his tenants was made. The following is a description of an average farmhouse on this estate.

In the rear of the house was a garden of about half an acre, planted to field crops, beans, barley, etc., and in front was a garden of about one-fourth of an acre, artistically laid out and planted to vegetables, with occasional flowers. The main building was one story high, about twenty-four by forty-eight feet in size, with the kitchen, fourteen by twenty-four feet across one end. Here was the usual clay stove, similar to those in Mexico, and a dirt floor, which by some process had been made as hard as cement. The remainder of the house was floored with mats. The family stores were packed in tubs, of which there were a dozen or more stacked at one side of the kitchen, all scoured to appear as if just brought from the shop.

The farmer's wife was cooking at the stove. On the left of the kitchen, in front of the house, was a room ten by twelve feet, covered with the customary mats and used for a sitting room. Each mat was three by six feet in size and two inches thick. Back of the sitting room and opposite the stove was a room, ten by twelve feet, used for a dining room. Beyond the sitting room, in the front of the house, was a private room, twelve by sixteen feet, for lodging. From the dining room a hallway extended to and along the end of the house. The partitions of the house, which are generally removed during the day to give more ventilation, were made of light sash, with strong white paper instead of glass. On the right of the kitchen was an addition, twenty by twenty-four feet, for the servants' quarters and general storage. Each servant had a small sitting room and a lodging room, with mats on the floor. There was no furniture, as we use the term, in the house; no chairs, tables, bedsteads, or mirrors. The members of the household sit, eat and sleep on the matted floor. How everything can be kept so perfectly clean, without soil or stains, belongs to the mysteries of Japanese housekeeping. In front of the servants' quarters a servant was cleansing grain and spreading it on mats to dry in the sun. The tub and pounder for cleaning rice were in front of her. She did not like to be photographed in her ordinary garb, but was satisfied when told to turn her back and appear to be at work.

Adjoining the house on the left was a beautiful Japanese garden or tiny park, possibly forty feet square, containing the usual landscape, trees and statuary. In the center of this park and about twenty feet from the farm dwelling stood an artistic little one-story house, about fourteen by sixteen feet in size. It looked like a large playhouse for children, but we were informed that this was a special house for receiving guests and serving tea. The Japanese paper windows were slid back, revealing a beautiful little parlor about ten feet square, with the usual seat or bench of honor on one side, and a tiny waiting room. The house was a frame building, cross lathed and plastered, with posts exposed, boarded up and down on the outside, and ceiled overhead. In the rear of the house was a barn, eighteen by twenty feet.

The house here described is a typical Japanese farmhouse, one story, with thatched roof. The laborers' cottages are built upon the same plan, but are smaller. The residences of wealthy country gentlemen are somewhat larger and with more elaborate grounds, but they retain the same simple arrangements and general style of living. There is no arrogant cast in Japan. The rich and the poor, the landlord and the tenant, the employer and the employed, live on the most intimate and friendly terms.

Among the farmers of Japan, rice is considered quite a luxury and many cannot afford to eat it regularly. Among the poorer farmers, barley, millet and sweet potatoes are substituted for rice. Among the better nourished Japanese the following constitutes the ordinary bill of fare: Boiled rice, boiled rape and daikon (half radish and half turnip), bean soup, and barley tea for breakfast and dinner. Lunch at noon is the same without the bean soup. A little salt fish is added occasionally.

Japan has an area of 147,655 square miles, exclusive of Formosa, about one-tenth of which, or 15,000 square miles, is tillable. The population is now not far from 45,000,000, which gives a ratio of 3,000 persons to the square mile of arable land. Japan is rapidly becoming a great manufacturing and commercial nation, for which she is, by virtue of the genius of her people, exceedingly well adapted. The trend of events indicates that when that time arrives Japan will be a large consumer of American wood and fiber products.

Saskatchewan's New Deputy Minister of Agriculture.

The many friends of Mr. A. F. Mantle in Western Canada will learn with pleasure of his promotion to the important position of Deputy Minister of Agriculture for Saskatchewan succeeding Prof. W. J. Rutherford, who goes to Saskatoon as Dean of the College of Agriculture.

Mr. Mantle has been connected with the Department of Agriculture here for about one year, and previous to that time was agricultural editor of the Weekly Free Press, a position to which he was invited soon after the death of the late Richard Waugh. He is a clever writer, which fact was evident during his occupancy of that position, while the demand from current periodicals for articles from his pen attests their popularity.

Abundantly qualified as he was for journalism by his agricultural experience in Manitoba, first farming on his own account and afterwards as manager of a large farm near Winnipeg. Mr. Mantle's connection with the Department of Agriculture here has contributed materially to the previous experience which alone fitted him well to assume the duties of his new office. As Chief of the Bureau of Information and Statistics and as lecturer at farmers' meetings, his practical knowledge of this province and its needs was still further increased.

The duties upon which Mr. Mantle now enters are rendered difficult by the high standard set by his predecessors, but he is eminently fitted by his own personal attainments and engaging qualities to discharge them with credit alike to the department and to himself.

Mr. Mantle assumes his new duties on September 1st.



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In beautiful oak cabinet with largest sound box, latest aluminum scientific tone arm and revolving horn, exactly as shown. No crane, stand or rubber tubing required. So simple, no Attachments. Plays all makes and sizes of disc records. The disc style reigns supreme.

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Here are some of our specialties: Columbia 10 inch Double Discs (2 different selections) 85c., new velvet finish, fit any machine, last for ever. All languages. Hear George Lashwood and Raymond Hitchcock; funder than Launder. We send records on approval, write for details. Gold Moulded Cylinder Records. Edison, Bell and Columbia, new, 25c.; were 40c. Columbia Indestructible Cylinder Records, 45c. Beautiful tone, cannot break, fit any machine. Four Minute Cylinder Records, 50c. Columbia Indestructible Four Minute Records, most wonderful invention, 65c. Edison Gem Phonograph and 12 selections, \$19.50. Brand new. Edison Fireside with 6 genuine Gold moulded two minute and 6 four minute records \$33.10. Victor Disc Gramophone with 16 large selections \$26.40 and upwards. Second hand machines at bargain prices. Old machines taken in trade: 40 styles of talking machines; 50,000 records; 40 styles of pianos.

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SEE LOCAL AGENT OR WRITE

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FRED. W. PACE, Superintendent

The Passion Play.

"The world is wide, but contains no sight like that of the Passion Play of Ober-Ammergau." Thus spoke an eye witness of this most thrilling religious drama, the only one of its kind now in existence.

In the beautiful valley of Bavaria, this mystery or miracle play (founded on the passion of our Lord), a dramatic representation of the sufferings of our Saviour, is still, every ten years, played with all the sincerity and love a Christian people can give it. The great religious drama is visited every Sunday from May till October by people from all quarters of the earth, and during this season nearly half a million have been known to come to this peaceful valley for this purpose.

The Passion Play would almost seem out of place anywhere else but in this village of Ober-Ammergau surrounded by mountains, towering 2,000 feet above the town itself, it seems most appropriate. A most fitting emblem is the cross fifty feet high, on the summit of the mountain, whose outstretched arms, that glitter as the sunset falls upon them, seem to be giving to that peaceful valley its benediction.

The actors in the play are the villagers, and only those who have always lived a pure, true life are chosen, and not to be able to appear at all is a disgrace. Therefore, it is the one great event of their lives. They are chosen by a committee of villagers, presided over by the priest. Each player is required to rehearse his part four times a week, and final rehearsals are given for months before the season begins. The sacred duty each actor feels in his or her part takes away all thought of drudgery. For them to be allowed to participate is an honor, and to shirk any duty or responsibility would be a disgrace. The part of the Christ has been taken by the same man for three successive periods; first when he was forty years old, then at fifty and sixty, and still no rival seeks his place, for his life has been such as to peculiarly fit him for the part.

To visit the Passion Play without visiting the village and its inhabitants, one could never fully appreciate all the great drama

means to them. The one desire and ambition in life to these pious mountaineers is to come from the farm or workshop worthily equipped to perform any part assigned to them. On nearly every house in the village is a cross indicating their religious feelings.

The money taken in during the dramatic season is divided into four parts. The first and largest share is used to defray the expense of building a theatre and providing stage appliances and costumes; the second share is laid aside as a permanent village improvement fund; a third share is devoted to the church and the poor; while the remainder is apportioned among some seven hundred actors. The very highest amount paid the most prominent actor for a whole summer's work (six months) was scarcely \$200. Surely, their motives are not mercenary. There is no striving for wealth. They are rich as they care to be and far richer than their more worldly neighbors, because within them is contentment. Large sums of money have been repeatedly offered them to perform their drama in Europe and America, but it has been emphatically declined. They live but to faithfully carry out the vows of their forefathers.

This historic drama has been an established fact in Ober-Ammergau for 250 years. A plague was raging in Bavaria. In Ober-Ammergau alone nearly half its people perished. The terrified survivors made a vow that they would thereafter every ten years portray for the instruction of mankind the story of Christ's sufferings, if they were spared another such a plague. The plague abated and never since have they been so afflicted. Therefore, the vow, given so long ago, follows from generation to generation as a sacred obligation and it is felt by all to be a duty and privilege to carry out the promise of their ancestors.

A greater part of the stage is open to the sky and only half of the seating capacity is covered with a roof, but all this only helps to make the surroundings more unique. The view of the mountains and the valley impresses one as four walls never could. Upon this stage in the open air, by a living multitude of 500 or 600



Price **\$1.25**
Big Money for Agents
Send \$1.00 for sample
and special offer to agents.

This newly patented sewing awl is the handiest farm tool invented. It is practically a Harness Sewing Machine. It makes a Lock Stitch and does away with the old fashioned brides with "sawed ends" for sewing leather. It will sew through any thickness of leather, green or dry. You can use it as a surgical instrument in sewing up wounds, such as wire cuts in stock. It will sew canvas, carpen, rugs, shoes, gloves, etc. It is fine for women's use in tying comforters, etc. Every awl is supplied with both a straight and a curved needle, grooved and fitted with an eye for the thread like a sewing machine needle.

Practical, Useful, Handy to Carry in the Pocket. Every farmer needs this Awl.
Address 514-515 Ashdown Block, Winnipeg

men, women and children (for it requires fully half the population) all in oriental dress of fine material, is performed in twenty-five tableaux and eighteen acts this famous Passion Play; the tableaux are as essential as the acts. Beginning at eight o'clock in the morning, the performance lasts all day long, with an intermission of an hour and a half at noon. Some of the tableaux are remarkable for the number that take part in them. In one as many as a hundred children, three and four years old, are on the stage and stand like little statues for several minutes before the curtain falls. Every man, woman and child knows his or her place in the tableaux. The months of constant practice make them perfect. Often some one drops out from sheer exhaustion, but others are ready and willing to fill the place.

Ober-Ammergau is transformed into another realm, it seems, on a Saturday before a performance. Peasants from all directions, north, east, south, and west, flock to the little village all day long. Some wise ones carry their bed and food with them, for it is impossible to care for the multitude. To these peasants the journey is a sacred and religious one. To see the Passion Play is the one event in their lives and no sacrifice is too great to make to witness it. Visitors are liable to encounter

stormy weather, but the play goes on in spite of tempests, though, as a rule, the elements are favorable.

Could They Be More Foolish?

The best proof that common cream separators are out-of-date is the fact that they contain 40 to 60 disks or other contraptions. They need such contraptions simply because they lack skimming force. Since they lack skimming force, they are neither modern nor properly built. In view of these facts, could any maker or agent of common cream separators be more foolish or incorrect than to claim that disks or other contraptions make, or are needed in, a modern machine?

Sharples Dairy Tubular Cream Separators



are entirely different from all others. They produce twice the skimming force of common separators. Dairy Tubulars neither use nor need disks or other contraptions. They skim faster, skim twice as clean, wash many times easier, and wear several times longer than common separators. The World's Best. The manufacture of Tubulars is one of Canada's leading industries. Sales easily exceed most, if not all, others combined. Probably replace more common separators than any one maker of such machines sells.

30 Yrs
Write for Catalogue No. 330
THE SHARPLES SEPARATOR CO.
TORONTO, ONT. WINNIPEG, MAN.

HE was a small, withered old man, gnarled and wrinkled and burned quite black by wind and sun. His face was small and meager, thatched with a covering of sparse gray hair, that looked as though it had been blown loosely about, like straw on the floor of a barn. His eyes were blue and watery, rimmed with little circles of red, and always they looked downward, shifting from one spot to another with furtive suspicion. His mouth was thin and tight-lipped, and it was through this organ that the Creator had shown the character of the man, stamping his otherwise expressionless features with a look of hard, cruel avarice.

He tramped into Landry one morning in the early spring, followed by two-ragged, half-grown children, and on his shoulder he carried an ancient gun. Save for the gun, he had no other belongings, no clothing, no food—nothing.

At the presbytere he told his simple story to Father Bertrand. His name was André, or old André, as some chose to call him. That was all, for he had no surname. The children's names were Marie and Jules, and their mother was dead. He was in search of work, as a water tender if possible, since that was his profession.

Father Bertrand advised the wanderers to apply to Mr. Gordon, the rice planter, and then he asked his visitors to rest and refresh themselves before continuing their journey. This the old man seemed unwilling to do. With a few muttered words of thanks, he took a fresh grip upon his heavy gun and, calling to the children, he set forth for Belrive plantation. That afternoon in speaking of the matter to Monsieur Landry, the priest said:

"They were a pitiful family, I assure you, my friend. The children were so wild and ragged that they had almost the appearance of little animals. As for the old man, he was little better, and not once did he raise his eyes to mine. I fear that he will have a hard time in persuading M'sieu Gordon to give him employment."

Despite the predictions of Father Bertrand, the old man not only found work at Belrive, but he also secured the desired position of water tender. Arriving at a period of discontent among the plantation hands, he had little trouble in persuading the overseer to give him a trial, wherein he easily proved himself an expert in his business.

So old André became water tender at Belrive and took up his quarters in a little, dilapidated cabin set far back at the end of the rice fields. It was a desolate place, far off from the plantation road, and rendered more lonesome by a thick growth of the ever-encroaching woodland, yet the old man seemed well pleased with his home. To the offers of a better cabin in the future he shook his head protestingly, saying that he would be very well satisfied where he was.

OLD ANDRÉ'S GOLD

By NEVIL G. HENSHAW.

Strangely enough, as the days passed, he made no effort to make the few necessary repairs that would have added to the comfort of himself and of his family. But one addition did he make to the interior of the cabin, and that was immediately upon his arrival. Going out into the woodland behind the place, he cut two heavy oaken forks, which he nailed with much labor to the wall, high above the wide, open fireplace. Upon them he placed his rusty gun, and in all the time that he lived at Belrive this ancient weapon, together with a table and some chairs, constituted the only furnishings of his home.

All through the growing of the rice old André worked at Belrive, moving tirelessly about the great fields as he tended the life-giving streams of water. Carefully he nursed the infant crop, holding in

his power the life or death of each feathery stool of rice, ruling it all with his long-handled shovel, which is the scepter of the water tender. For all this work and care they paid him well, yet never in the slightest degree did he seek to better his condition. Instead, he seemed to grow each day more miserly, more grasping.

When the weeds began to grow he sent his children into the field to work with the negro boys. From dawn to dark he made them pull the lacelike plants of indigo while they stood waist-deep in water under the blazing heat of the Louisiana sun. And while they worked they still wore the pitiful rags in which they had arrived at Landry and their faces were thin and wolfish—pinched with hunger. At the end of each week he pocketed their scanty earnings, reckoning with them to the last penny, furious if they had lost a moment of time in their round of labor.

He had no friends, no companions. Suspicious of everyone, he kept entirely to himself, and his children were not allowed to leave the cabin in their few moments of idleness. Once a week

he went to Landry for his provisions and once a month he went, strangely enough, to the far-off city of Mouton. On both of these journeys, whether it was the two miles to Landry or the fourteen miles to Mouton, he went always alone, dressed in the sodden garments that he had worn that day in the field. On Sundays he was dressed the same, for he had no other clothes, and the women would draw away their skirts as they passed him kneeling, damp and muddy, at the back of the church.

On Saturday afternoons, when the people from the plantation were enjoying themselves in Landry with the money that they had earned that week, he never joined them. He would come silently into the village, buy his few provisions, and then walk hurriedly away, as though the sight of so



Tramped into Landry one morning followed by his ragged, half-grown children.

much spending was a torture to him.

He did not drink, he did not smoke. He barely ate, as Monsieur Landry, the storekeeper, could testify. But once did he cross the threshold of the coffee house, and that was on the first pay day after his arrival. Then some of his fellow laborers asked him in to have a drink, thinking that he would treat in return. He accepted their hospitality, taking each time a cigar, and when he found that they were waiting his turn, he slipped quietly outside. After he had gone they found that he had sold back the cigars to the proprietor at a reduced rate.

Toward the middle of the harvest the sun had its effect upon his daughter Marie and she fell ill. Yet he drove her for two days more, until she fainted in the field and was carried to the cabin on a load of rice. There she lay for six long days, alone and unattended, until she was finally discovered by the overseer. When they told the old man that she would die without medical attention he shrugged his shoulders resignedly. He spoke very seldom, and then only in the fewest

words, for he was as miserly in speech as he was in all things.

"That is sad," said he, "but I can have no doctor. I have no money to pay him with."

From this determination they could not move him, although Father Bertrand came over from Landry to see him.

"But surely you have money," urged the priest. "Your pay is good and you spend nothing."

"I have a brother in France who is in trouble," mumbled the old man uneasily. "Each month I must send him money from Mouton."

"But this—this is your daughter!" stammered the priest in amazement.

"And the other is my brother," mumbled the old man, and would say no more.

After that Dr. Lemaire came each day from Landry and treated the girl for nothing, out of the kindness of his heart. It is probable that she would have recovered had the old man bought the medicine that was prescribed for her. But in this matter he was as miserly as he had been before, and the child died one night, despite all that the doctor had done for her.

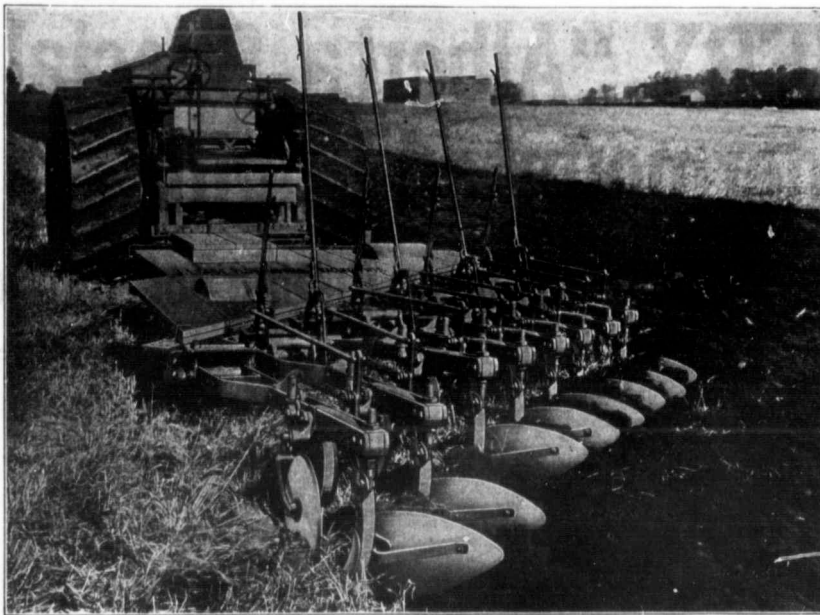
At the funeral many hard things were said of the old man, but he paid no heed to them. He went through the pitiful ceremony silently, with no apparent show of grief, walking behind the plain pine box in his same sodden garments of the field.

When, toward the end of the harvest, the last water had been taken from the rice and the old man's work was done, he went to the overseer and begged that he might remain at the plantation for another season. He would do anything, he said, although there was work enough to be done on the levees to keep him busy until the spring. At first the overseer turned a deaf ear to his pleadings, for, like the rest of the people at Belrive, he hated the old man for his miserly ways; but in the end he relented, for never had he seen so competent a water tender before.

So old André stayed on at Belrive, patching the levees, sharpening the plows, doing a countless number of things while he waited for the spring and the first green tips of the sprouting rice.

It was early in the fall that his son Jules got into difficulty. All through the harvest the lad had been busily employed, working hard each day and going to his rest exhausted each night. But when the last sack had been stored in the warehouse and the whole plantation had seemed to pause as if for a breathing spell he had been left with nothing to do.

Missing his sister, who had always stayed with him at the cabin, the boy began to roam abroad, wild and gaunt, ridden by neglect, by loneliness and starvation. Soon the small planters began to miss things from their stable yards. Here a chicken had failed to return to its roost, there a pig had mysteriously disap-



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peared, and then, one morning, a lamb was found roughly butchered in a neighboring field.

When the furious planter traced the blood stains to the old man's cabin, he found the boy in the woodland at the rear. There he had built a fire, over which he was roasting a piece of the stolen meat. On being accused of the crime, he made no attempt at denial. He was starved, he said; he had found the lamb, and he had killed it.

He seemed to have no shame, no sense of right and wrong. Crouching on the ground like some wild beast, he growled and glared at the planter, tearing ravenously at the half-cooked meat until he had devoured the last piece. Had the planter been a man with a family he would probably have felt nothing but pity for the half-starved boy. However, he was a hard old bachelor, close and grasping, and he had the lad arrested at once.

It was then that Father Bertrand once more turned his influence to the benefit of old André, and to such good effect that the planter finally made a compromise. If the boy's father would pay for the lamb he agreed that he would withdraw the charge and let the matter drop.

When the priest, overjoyed at his success, went to the old man, he was met again with a shrug of resignation.

"I thank you, mon pere," said old André, "but I can do nothing. I have no money."

"But it is only a matter of a dollar or two," begged the priest. "Surely you will not let your son go to prison for such an amount?"

"I have no money," repeated the old man. "Jules stole the lamb and he must suffer for it. Had I done so, how many do you think would be willing to pay the price for me?"

And after this, his longest speech, he would say no more.

When they took Jules away, the old man did not even go to his trial. He was busy, he said, and he could not afford to lose his work that day. After the boy had received a light term in the parish prison, he seemed actually relieved—possibly because there now remained but one mouth to feed.

He now reduced the number of his journeys from the plantation, going but once a month to Landry and making the trip to Mouton on the same day. These trips to Mouton were a constant source of speculation to the overseer. He had heard the story of the brother in France, but, like everyone on the plantation, he disbelieved it. Yet the old man made the long journey each month, and there must be some reason. The overseer decided that he would learn this reason, and on his next visit to Mouton he made some inquiries about old André.

At the post office they did not know the old man, but at the bank they knew him well. He came to them each month, they

said, and had his earnings changed into gold—two-dollar-and-a-half pieces, for he would take nothing else. They had now fallen into the habit of having them ready for him. No, he had never made a deposit. He must bury the money. It had been done by some of the old Acadians.

After this old André began to be disturbed at night by noises in the woodland about his cabin. Each morning he would find a fresh pit gaping beneath the trees, and the storekeeper in Landry did a thriving business in shovels with the negroes at Belrive.

It was at this time, also, that Jean Le Bossu, the little hunchback from the Grand Woods, became strangely interested in the old man's gold. He did not go about in the woodland digging pits in the ground, for after one careful inspection he saw that the money had not been buried there. Le Bossu had lived all his life in the woods, and there was little that he could not read in the open book of Nature. Accordingly, he began to haunt the cabin itself, dropping in upon the old man at all sorts of odd moments, and soon a strange intimacy sprang up between the two.

Old André seemed almost to care for Le Bossu, for, like himself, the hunchback was silent and morose, sitting for hours at a time in silence, staring straight before him. Also, Le Bossu seldom came without some gift of game or fruit, so that the old

man's need of provisions became small indeed.

When the people at Landry questioned Le Bossu about his business, he made a most astonishing reply.

"And do you think that you will find the gold?" they asked.

"Perhaps so. Who knows?" replied the little man.

"And what will you do with it after you have found it, Jean?" they persisted. "Surely you will never be able to spend such a great amount?"

"I will give it to the boy, Jules," replied Le Bossu. "He is at work in Mouton and doing well. Some day he will make a fine man."

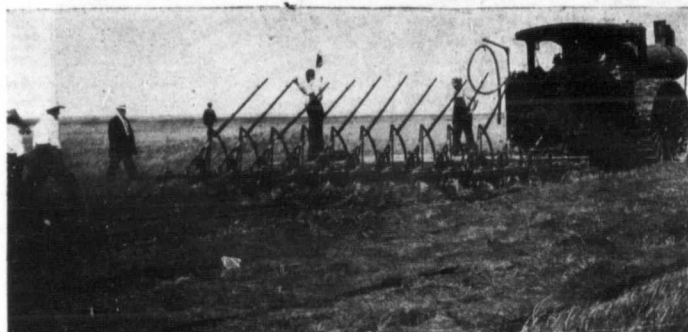
And so the search for the gold went on, while the hunchback spent long, silent hours in the cabin and the negroes dug beneath the trees. And then, one dark night a cow of Mr. Gordon's fell into a freshly dug pit and broke her leg. When the old man discovered it the following morning he was in despair. There was no way in which he could have been responsible for the matter, yet to his excited imagination the blame would fall upon him alone. He would be forced to pay for the cow, which to him would be little worse than death.

Cudgeling his brain for a way out of the difficulty, he suddenly remembered that he had seen a negro prowling about in the woodland the night before, a short, squat negro, who had seem-

Continued on page 68

The AVERY "Alberta Special" Undermounted Engine

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Complies fully with all the requirements of the Alberta Law. Has the best boiler of any engine built, as proven by the higher steam pressure it is allowed to carry. And besides having the best constructed boiler, it is also free from loose brackets, and leaky bolts, and is not weakened by being punctured with holes for attaching brackets as in the case of topmounted engines.

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In the first place it is more durable than others because of the fact that all the machinery is mounted on an independent frame work, and the boiler is relieved from all pulling strains.

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In the second place an Avery Undermounted Engine has two cylinders, which is the only correct construction of an engine for heavy work such as plowing. Besides this the pull of the cylinders through the gearing and back to the

load is in a straight line on this engine, while with other styles it is down from the top of the boiler at an angle.

In the third place the Avery Undermounted Engine is much more convenient to handle because of the fact that all of the machinery can be reached while standing on the ground, without having to climb around and over a hot boiler.

For all-around work, plowing, hauling or belt work of any kind, there is no engine built today that can compare with the Avery Undermounted Engine. The only engine of its kind on the market.

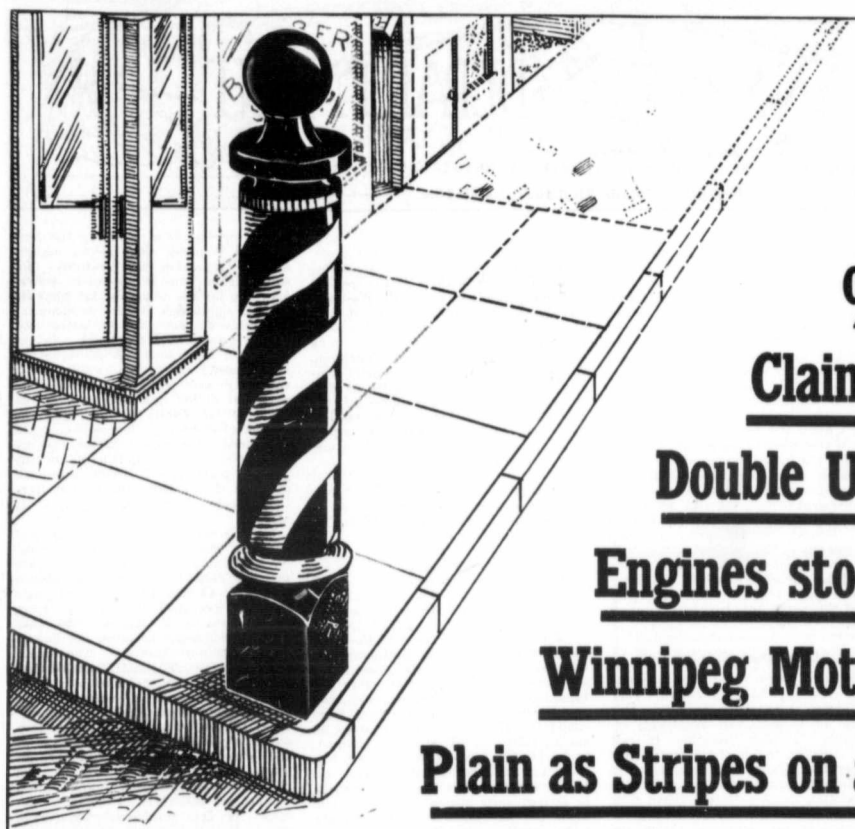
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About the engine that is built Undermounted. The only one that is like a Railroad Locomotive. An engine that will **LAST LONGER, PULL HARDER** and **HANDLE EASIER** than any other.

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of Superiority
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Engines stood out in the
Winnipeg Motor Contest as
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THESE ARE THE POINTS

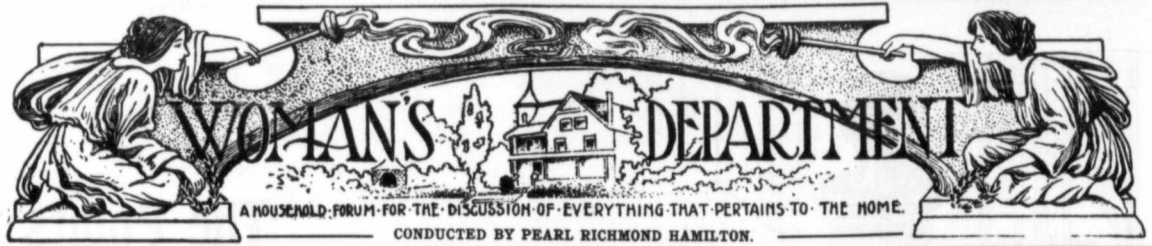
1. **The BEST BOILER.** It was allowed a pressure of 200 lbs—the highest of any—and ran through the entire brake and plowing tests without having to bead or caulk a single flue.
2. **The MOST DURABLE ENGINE.** Avery Undermounted Engines ran through the severe tests of the contest without a single adjustment or repair.
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SERVING AND WAITING.

Is it hard, dear to wait by the side of the road,
You, who yearn to be out in the throng
On the highway of life, where the busy ones are—
The fearless, the brave, and the strong?
Is it hard to rejoice when the others attain
And the laurels on them are bestowed,
While too feeble to run, and a-weary with pain,
You must wait by the side of the road?

Do you fancy the battles of life could be fought
And its victories won by the throng;
That its splendid achievements could ever be wrought,
If it were not for you and your song?

Is it hard, dear, to wait by the side of the road,
While the busy ones press toward the goal;
To bid them good cheer, and to lighten each load,
By that sympathy sweet to the soul?
Is it hard, dear, this being a blessing to man,
And pointing his pathway above;
When you know you're a part of God's infinite plan
A link in the chain of His love?

Be glad in your heart for your humble abode,
And your mission of peace in the strife,
Be glad, dear, to wait by the side of the road,
As a spring, on the highway of life.
—Molly W. Anderson

THE BY-PRODUCT.

By Eloise Jansen

One day the iron pierced my very soul,
Then flashing forth, transformed, in deed of steel,
Left in its place, ready to pay full toll
Of sympathy a heart made quick to feel.

ABOUT WOMEN

Florence Nightingale, the heroine of the Crimean war, died of heart failure last month. She was ninety years old. Florence Nightingale was the founder of the modern system of army field hospital service and was a life-long student of methods of saving life and diminishing suffering in times of war and pestilence. She was the only woman who ever received the Order of Merit. Florence Nightingale was born May 12, 1820, in Florence, Italy. She was the daughter of William E. and Lea Hurst Nightingale, of Hampshire and Derbyshire, England. She began visiting and studying hospitals in 1844 and eventually, in 1851, went into training as a nurse in the institution of the Protestant Deaconesses at Kaiserswerth on the Rhine. She also studied with the Sisters of St. Vincent de Paul in Paris and on her return to England, after an inspection of hospitals in all parts of Europe, took up work at the Sanatorium for Governesses. In 1854, during England's war with Russia, she organized a nursing department for the army and at one time had 10,000 sick men in her care. She worked indefatigably, often for 20 hours at a time, and earned the title of angel of the Crimea. She was

stricken with fever in the spring of 1856, but refused to leave her post, and remained at Scutari until the British evacuated Turkey in July.

For her services in this war, Queen Victoria sent her an autograph letter of thanks and a cross set with diamonds. The sultan of Turkey expressed his appreciation by sending her a diamond-set bracelet. In 1908 she received the freedom of the city of London and King Edward bestowed upon her the Order of Merit, the most exclusive distinction within his power to give. The membership of this order is limited to 24, and it includes the foremost men of the world. In recent years Miss Nightingale has devoted her time to the direction and improvement of hospital work and to the authorship of books and pamphlets on army sanitary reform, army hospitals and nursing. She received many tributes from people in all parts of the world, not the least of which was Longfellow's poem, "Santa Filomena," published in praise of her humanitarian work.

Agnes Dean Cameron.

We have every reason to be proud of our Western Canadian women. They are doing their share to bring this section of Canada into world-wide recognition. I wish especially to call your attention to one of the most clever women that Western Canada has produced—Miss Agnes Dean Cameron. Who has written the New North. Some of us know her personally and know her to be a person of rare womanly charm and unusual ability. She is now in London, England. I quote this reference to her from "The London Times":

"Miss Cameron is a Canadian tempered in the tense life of Chicago, and when she made up her mind to 'run as far as God has any land,' and not to follow the lines of lesser resistance from that midway metropolis, nothing in the world could have prevented her from travelling northward through Central Canada to the delta of the Mackenzie, the land's end in that direction.

"A kindly humor (comparable with that of Mark Twain's travel-books) and a gift of shrewd observation are revealed in her impressions of the people she met—Indians of several 'nations' and Eskimos, English and French pioneers and the various types of half-caste.

"She sees that the unsettled lands above the Saskatchewan river are as suitable for agricultural occupation as those between that mighty stream and the 49th parallel of latitude, the greater length of the summer days compensating for the comparative shortness of the open season in the North. North of the 55th parallel there is no agricultural settlement to speak of, though fine wheat is grown and ground at the Hudson's Bay Company mills, and without railway communication (which is bound to come in the near future, a number of charters having been granted by the Canadian Government for construction northward) a population of farmers is out of the question, albeit the advantages of the Peace River country for the rancher whose wares are self-portable are already being turned to account.

"The fact that the Russian province of Tobolsk—which has the 55th parallel for its southern boundary, and is subject to a longer and more severe winter than that of the Mackenzie Basin owing to the absence of a great body of water like the Hudson Bay to act as a climate regulator—produced in 1900, 21,000,000 bushels of grain, and butter to the value of £300,000, and supports a population of one and a half millions, helps

to understand the potential value of the similar section of Central Canada.

"Miss Cameron is most interesting when she ceases to think of the spectacular development of the North-West and introduces her readers to the makers of this New North at their work and at their play. She gives us a charming description of a hall at Fort Chipewyan, that ancient seat of an inclusive hospitality. Louis-the-Moose acted as caller of the dancers, and none of the dancers in moccasins on the earthen floor (obviously the waltz is impossible at Fort Chipewyan) dared to disobey his orders.

"Ladeez, join de lily-white han's,
Gents your black-and-tan!
Ladeez, bow! Gents, bow-wow!
Swing 'em as hard's ye can.

"Swing your corner Lady,
Thee the one you love!
Then your corner Lady,
Then your Turtle Dove.

"A picture of the kind she gives us, always allowing the Northerners to talk their trans-Athabaskan lingo. Here are some specimens of their queer colloquialisms. 'He reached out his hand for a drink' rendered into that lingo would be 'He got his thievien' irons on 'the joy juice,' or 'He stretched his mud-hooks for the fight-water.' 'He set him afoot for his horse' means 'He stole his horse,' and from this form of expression is derived such phrases as 'He set him afoot for his blankets.' To call the tribe together the Indian chief sends round little pieces of wood, and from this custom originates the phrase 'to send out chips' for a dance or a business gathering.

"Again, Miss Cameron's book is illustrated by many significant quotations from the records kept at the northern forts and factories of the Hudson's Bay Company. Here is the account of the ew Year's festivities at Fort Simpson in 1838.

"The morning was ushered in by a salute fired by our people at the windows and doors, after which they came to wish us a Happy New Year—and, in return, in conformity with the custom of the country, they were treated, the men with half a glass of brandy each, and the women with a kiss, and the whole with as many cakes as they chose to take and some raisins. One of our gentlemen who had a bottle of shrub treated them to a glass, and after some chit-chat conversation they retired, firing a salute on going out. In the evening they played at blind-man's buff, concluding the fete by a supper in the Hall. I also gave each man a fathom of twist tobacco and a clay pipe."

"The outcome of Miss Cameron's energy and enterprise is a living book which will delight."

Caroline Seymour Severance

Some fifty-two years ago a matron of Boston asked herself why it would not be a good plan to hold weekly meetings of the women of the city to discuss questions of interest to their sex. The women was Caroline Seymour Severance. She answered her own question by forming the New England Women's Club of Boston, March 10th, 1868, and by so doing inaugurated the woman's club movement in America. Today, at the age of 90 years, she has lived to see her idea accepted and put into service in every city, town and hamlet of the United States.

Mrs. Severance, in founding the New England Woman's club, helped materially to crystallize the sentiment for equal rights. She is an ardent suffragist. To her the woman's club finds its deepest significance in the development of woman for her office of motherhood and to preside over the home. As the mother of three sons and one daughter, her domestic life is one which in its simplicity and perfection overshadows that part of her career which has been given to her sisters in extending the bounds of clubdom. "I was very much frightened," she says, "in making my first public address and never in the past 40 years have I spoken before an audience that I have not shrunk from the ordeal and the publicity that it brings."

Mrs. Severance comes from a family of bankers. She was born in Canandaigua, N. Y., January 12, 1820, and in 1840 married Theodor C. Severance, also a banker of Cleveland, O. Fifteen years later she prevailed upon him to move his business to Boston in order that her children might be given the largest opportunity for education. The founding of the New England Woman's Club of Boston was accomplished only after much difficulty and 13 years of gentle agitation on the part of Mrs. Severance. Many believed it to be detrimental to a woman's modesty and the interests of the home. In the end, however, all intimate acquaintanceship with men and obstacles were overcome, and such against her will Mrs. Severance was made its first president. This office she held until 1875 when upon her departure for California she was succeeded by Julia Ward Howe, who holds the honor in name to this day.

In Los Angeles Mrs. Severance brought her organizing powers into play by the formation of a club. Later this became the Friday Morning Club, now one of the most prominent and powerful in the country. She lives alone with her companion and secretary at "El Nido" (the Nest), a flower-embowered home in the Adams Street district of Los Angeles, where she has resided for 34 years. When she is not driving or being read to, she is employed in dictating her reminiscences of a life filled with women who have done much to shape the national, civic and literary tendencies of the past half century.

Bessie Smythe's Wonderful Work.

Bessie Smythe deserves to rank with Miss Florence Nightingale and our own Clara Barton in her remarkable work as a nurse and her spirit of self-sacrifice. She is the pioneer nurse of wild west Africa, and she is to return to England during the coming summer, after a long absence in a field into which few women would be willing to venture. It is now nearly thirty years since Bessie Smythe began her career at Kimberley and was graduated as a nurse. Once in the possession of her well-earned diploma, she looked about for some field in which she could be of the greatest possible service. She possessed a spirit of adventure combined with a desire to be useful. In the year 1868, when a severe smallpox epidemic broke out in the Transvaal, it was Bessie Smythe who went to the stricken district. She took charge of the work in Pretoria, organized the wards, and trained the Kaffir boys as orderlies. She stayed until the epidemic had been checked, and it is certain that she helped to save many lives. Then came the war to make a new demand upon the brave young nurse. She was in the fighting line at Kimberley and Boshof, and a little later

she took full charge of a hospital. Then when the war came to an end she took charge of the Government Hospital at Mombassa. Later she set off unarmed, and, attended only by occasional carriers picked up on the way, through north-west Rhodesia, across a corner of the Congo Free State and along the shores of Lake Tanganyika, until she came to the Victoria Nyanza, which she crossed in an Arab show. Everywhere she went she won lasting gratitude.

The year, 1906 found Bessie Smythe on the Gold Coast, which she left for Liberia after the hospital closed. Then she found herself at the scene of the Cape colonial fisheries, where she became the friend of the Norse fishermen who needed her services. Finally a whaling ship brought her to Cape Town, and a tourist who saw her at the time of her arrival gives this description of her:

"Khaki clad from head to foot, her whole demeanor speaks of readiness and service. A strong, sweet face gazes at you with the most understanding eyes you could meet—gray eyes, which twinkle with sudden humor as readily as they moisten with pitying tears."

She has done a wonderful work, and a great deal of it has been entirely without compensation other than that which came to her in a knowledge of the fact that she was doing good.

The Wife's Allowance.

Nine-tenths of the domestic troubles arise from the position of the wife in the home regarding money matters. The position of some wives is pathetic; they work and slave and keep the house together and then have to beg the husbands for even a pair of shoes or a new print dress. In many homes the daughters have the same difficulties to contend with. Why, I know of girls who never had a five cent piece that they could call their own and their parents wonder why their daughters will not stay on the farm!

The mother is living for the interest of her family, spiritually, mentally, and physically while the father is handling every cent that comes into the home. When father and mother meet the money question like two rational beings we shall have better homes, more contented women and more of our daughters marrying farmers and settling down near the old homes instead of going to seek a situation, where they can earn a little pocket money for themselves.

In a business institution, or on a farm, every employee is paid, and paid regularly, but in the home, which is the greatest institution in the world, the women are seldom paid in cash. This is the secret of so many girls leaving home.

Men who give their wives a stated allowance will tell me that it is economy besides it gives women more self-respect and independence.

Every farmer's wife should handle all the money derived from her department, including butter, eggs, chickens, geese and garden vegetables.

Let us hear from some of the women on the farm on this subject. What do you think would be a fair allowance for you?

A ROYAL VISIT.

The visit of King George and Queen Mary to London Hospital was a striking instance of the Royal solicitude for the sick and suffering. It is more marked because it was the first public function since the accession of King George. The King and Queen spent an hour touring the wards and cheering the patients. The poor people were much impressed by the King's interest in their welfare.

The London Hospital is the largest hospital in England—it is the greatest institution voluntarily supported in the world.

The East End appreciated the honor to the full.

A quotation from The Daily Graphic describes Oriental loyalty thus:

"OUR KING."

"Quite ten thousand Oriental families lined Whitechapel Road in waiting for

His Majesty. These people are always orderly, and generally polite, but on Saturday they were one and all touched with an unusual enthusiasm. They were waiting for the English King, and anxious to give him a noteworthy reception. Realizing this, it was curious to look along the line of faces, old and withered faces, young and beautiful, coarse and refined, and notice that not one per cent. of the waiting crowd bore the stamp or suggestion of Anglo-Saxon origin. Poles and Russians abounded, hooked-nosed and fierce-eyed, Germans and Swiss could be discovered, but the typical face of the typical Englishman was remarkable for its absence. Jews abounded everywhere, Jews with clever and astute faces, patient faces, peaceful and forbearing faces, cunning and even fierce faces. But the typical Saxon was not to be discovered. And, realizing this, the magnitude of this alien crowd, and the genuine character of its enthusiasm for an English King, the suggestion was forced upon one that the strange and indefinable strength of this wonderful Empire that we call British is not to be discovered in strength of aggressive character. We do not conquer; we absorb."

SOME OF LIFE'S SICES.

A man must make love to his wife all his life or another man is pretty certain to do it for him.

Cruel Comeback

"I'm doing my best to get ahead," asserted Chollie.

"Well, Heaven knows you need one," assented Dollie.

A penniless man, however, does not always lack sense.

The trouble with a lot of the near-rich nowadays is that they are auto-nobiliouas.

Now, Would You?

Maud Muller on a summer's day Raked the meadow sweet with hay. You'd hardly expect a girl, you know, In summertime to be shoveling snow. —Lippincott's Magazine.

Up-to-date Farmers.

"Do you blow the dinner horn here?" asked the summer boarder.

"No," said the boss farmer sourly.

"The hands get such good pay nowadays that they all carry gold-case 18-jewel watches."

One Between Two.

"I see you have only one chair in the kitchen, Mary. I must get another one for you."

"You needn't mind, ma'am. I have none but gentleman callers."

Woman's Passion.

Mrs. Lomas: "I don't see what she wanted to marry him for; he has a cork leg, a glass eye, as well as a wig and false teeth?"

Mrs. Smith: "Well, my dear, you know that woman always did have a hankering after remnants."

Unfair.

Hazel, aged 7, while feeding the cat at the dinner table, was reproved by her father, who told her that the cat must wait until later, whereupon the small girl wept and said:

"I think if a shame, just because she is a poor dumb animal, to treat her like a hired girl."

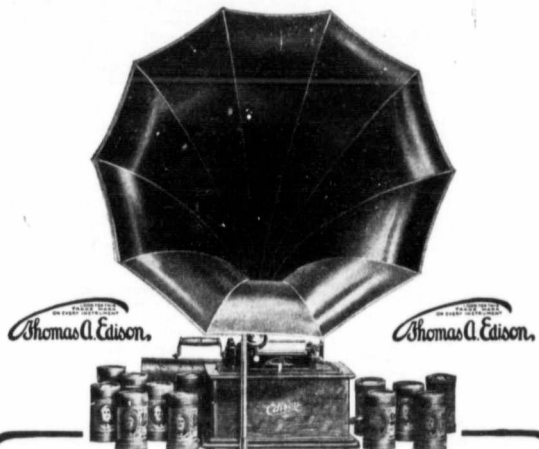
A Terrible Apparition.

Mrs. Benham: "Henry, I am more than glad that you don't drink now, but how did you come to leave off?"

Benham: "You remember the last time your mother was here?"

Mrs. Benham: "Yes."

Benham: "Well, one night while she was here I came home in pretty bad shape and saw three of her. That settled it."



You, Too, Should Certainly Get a FREE LOAN

YES, AN ABSOLUTELY FREE LOAN—World's greatest phonograph, our new No. 9 model, 1911 outfit, offered on a free loan. This outfit includes the great Standard Edison machine, the new machine on which Mr. Edison has been working for several years—the climax of this wonder worker's skill. It eclipses all former phonographs. It has wonderful improvements all its own!

WHEN WE SAY FREE LOAN WE MEAN FREE LOAN. We will ship you a machine without a cent down, and without any C. O. D. payment to us, so you can take it right to your own home and play the music there. You can hear vaudeville sketches, minstrel shows, comic operas, grand operas, waltzes, the old-fashioned hymns, all kinds of comic and serious music and songs right in your own home. All this on a free loan. Then when you are through with the free loan, simply return the phonograph outfit to us at our expense.

IS THERE A CATCH IN THIS? I will tell you my reason for this extra liberal offer. I feel that when I ship you a phonograph on a free loan, you will help me advertise it by letting your friends and neighbors hear the concert at your own home. Someone, somewhere, will then want to buy one of these phonographs; perhaps several people will want to buy. Tell your friends, please, that they can have an Edison on terms of \$2.00 a month, and absolutely at the rock-bottom price. I simply want you to get an Edison phonograph on a free loan, and help me advertise it in that way. Write to-day for the Free Catalog.

Don't you want your wife, and your children, and all the family to have the benefit of these grand concerts? Remember, we charge you nothing. We put you under no obligations at all by the free loan. If none of your friends happen to buy one of the machines, there's no harm done and no obligations.



Mr. Edison Says: "I want to see a Phonograph in every American home."

The phonograph is his pet and hobby, and it is true that there should be no home in the country without this grand and magnificent entertainer. At any rate, you ought to seize this opportunity to let your family hear the new style Edison phonograph free for awhile and hear all the music at least a few times before shipping back the phonograph.

And remember, please, you can't imagine what a talking machine is like, what the latest improvements mean, until you have heard our new outfit No. 9.

Now Write for FREE Catalog

I want to send you absolutely free our great new Edison Catalog, containing the list of records and a full description of the new Standard Machine. I ask you as a favor to me to read this catalog anyway, even if you should decide that you would not want a free loan. But anyway, let me send you this catalog today, absolutely free, prepaid, without any charge. Fill out the coupon and send it today.



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Without any obligation on me, please send your Great Edison Catalog free and prepaid and your Free Loan Phonograph Trial Offer.

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Just fill in this coupon; no letter is necessary.

MOTHER'S CORNER

Work for All.

We cannot all be preachers and sway with voice and pen
 As strong winds sway the forest, the minds and hearts of men,
 But we can be evangelists to souls within our reach;
 There's always love's own gospel for loving hearts to preach.
 We cannot all be heroes, and thrill a hemisphere
 With some great, daring venture, some deed that mocks at fear;
 But we can fill a lifetime with kindly acts and true;
 There's always noble service for noble souls to do.
 "A little land well tilled,
 A little house well filled,
 A little wife well willed,
 Are great riches."

Talking to the Child.

"Mrs. X talks to little Madge just as Mr. X talks to their dog," said a little girl of a neighboring family. And it was indeed true. Mrs. X is a very well-meaning woman and would be greatly surprised if she should hear the foregoing statement. She has simply unconsciously acquired a harsh tone of voice in dealing with her children. This is altogether unnecessary and is not, as many mothers seem to think, a mark of good discipline. The mother whose manner is quiet but firm is generally a much more successful disciplinarian than the harsh-voiced mother who issues her commands in a dictatorial manner. Kindness never spoils children. It is flabby indecision, sometimes mistaken for kindness, which spoils them.

THE SCHOOL CHILD AND HIS HEALTH.

Better Health in School Children Today Will Insure a Stronger Citizenship, Mentally and Morally for the Future.

By W. L. Bodine.

One of the greatest obstacles to the progress of successful public school education is the physical condition of many children when they reach the daily life of the teacher.

It is impossible to give children a keen interest in school work when their bodies are more or less diseased. Boards of education exercise a certain health-control over their pupils, but at the best they can accomplish only a little. The inspiration and effort for good health in the school child must have its origin in the home, and this is one reason why so many state legislatures are considering the enactment of laws which will directly punish the parents who are negligent of the physical, let alone moral, condition of their children.

The care of a school child's health is somewhat different from that to be given to a boy and girl living steadily in the open air, and having a minimum of nervous strain upon them. This is a point many parents do not appear to understand.

The workman in the ditch, breathing from thirty to forty per cent. more oxygen, hydrogen and nitrogen each day than the man confined to the office, is a far less nervous human being. It is quite possible, if he is an expert open-air brick-layer, stone cutter or structural iron-worker, that in his niche of life he is the center of intelligence of the lawyer or business man in an office, but he is more than that; he has far better control of his nerves, and almost invariably enjoys better health.

With a child the situation is little different. Thanks to the growth of modern intelligence, babies are kept out of doors a maximum number of hours, almost from the time they are born. The house-coddled baby is disappearing, and it is right it should. But at five or six years of age this child, saturated with natural, pure air, suddenly enters kindergarten, or a primary grade, where, for a certain number of hours, it must cease to be restless and must breathe transmitted air, use transmitted light, have transmitted heat.

Transmitted or precolated light, heat and air, even under the most favorable conditions which modern boards of education can provide, produce an almost instant change in the child's physical condition. This should be instantly comprehended in the home, and be carefully looked after by the parents.

The important physical changes in the child are:
 A greater strain upon undeveloped eyes.

Adjustment of the lungs to breathing a considerable quantity of impure air.
 An acute strain upon the auditory or hearing facilities.

A new necessity to control the body and limbs white under class discipline.

Inability of the digestive organs to assimilate the same quantity of rich and heavy food as when the child was constantly in the fresh air.

Adjustment of the lower limbs and nervous organs to climbing up and down stairs, and to becoming accustomed to concussion on uncovered, hard floors.

Increased tension of the perceptive, discriminating and retentive faculties of the mind, making a greater demand upon the stomach, heart and lungs for pure blood.

Increased mental excitement through the strain of study and association with large numbers of other children from varying walks of life.

Increased mental and bodily strain through a natural child-tendency, after it begins to mingle with others, to imitate adult life.

I presume few parents have ever analyzed school attendance as involving all these drafts upon the mental and physical resources of the young child, but it does, and there is no valid reason why it should not, if the child's health outside of school hours is sanely cared for by the hands that rock the cradles of the world.

Education is a human, governmental and moral necessity, but no education can be of value which permits the child to burn the candle at both ends. By this I mean that a parent with children of school age should support the efforts of the teacher to strengthen its mentality by watching its body and mind more jealously than treasures of gold would be guarded.

Near-sighted, cross-eyed, anaemic, neurasthenic, serofulous school children, while necessarily accepted by boards of education, are dead weights upon their own careers and the whole educational system. Among them may appear precocious children, who, for a few months or years, astound with their mental capacities, but like a candle flame upon which the wind suddenly bursts, they are doomed to be snuffed out.

Suggested Home Regime.

In the effort to increase the school child's health, and hence the strength of the future citizenship, there are some useful hints which those connected with educational work can give parents. There are: Taking a hard rub-down, sponge bath or hand bath massage at least once a day. Parents can do much in building up the strength of a school child by instilling habits of regular cleanliness.

Educating the child to use the lavatory every morning without fail, and to have personal knowledge of the ability of its body to throw off secretions. A large number of school children steadily suffer from irregular action of the bowels.

Providing for the children after school hours suitable outdoor recreation; walking with them, playing with them, giving them home outdoor toil until their lungs have filled with fresh air, and their muscles been properly tried out for the day.

Preventing reading or studying late at night, or by improper light, or after the stomach is full from the evening meal. Giving them in parental companionship home games and entertainments that will divert their nerves from the strain of the day.

Having their eyes, ears and throats examined by a competent physician before the beginning of each school term. Their teeth should also have skilled examination. To some parents this may seem to be a useless expense, but the parents who do it find that it pays in the long run.

No TRAIL too LONG

for the Flour that
Always Gives Satisfaction

The Star They Are All Looking For

The FLOUR OF QUALITY UNIFORMITY STRENGTH and BREAD PERFECTION

LAKE OF THE WOODS MILLING CO.

Patronize Those Who Patronize This Paper

SIMPSON'S PREPAID EXPRESS
WE NOW PREPAY CHARGES TO DESTINATION



WITH the issue of our new Fall and Winter Catalogue, The Robert Simpson Company Limited, starts a new chapter in the mail order business of Canada.

To further develop our Great Mail Order System and spread its benefits to all parts of the Dominion, we will, until further notice, pay all charges on the great bulk of our shipments, and thereby put our mail order customers on an absolute equality with city customers.

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The **SIMPSON** Company Limited
 TORONTO



Joining the home work and the school work, and the home play and the school play, so that the child is steadily occupied up to regular sleeping time without a temptation to seek the street or cheap places of amusement. In other words, being part of the child's daily life.

Know the teacher of the child. Get personally acquainted with him or her. Exchange experiences about the particular child, find out where you can aid the teacher in holding up the body of the child, and learn from the teacher things that make you both stronger in caring for it.

Because you pay taxes and support a school system don't imagine for one instant that it lessens your duty to send to school a child sound in body and mind. Before you start to blame a teacher or a school system for some breakdown in the child, study yourself. There are times when the system of the teacher is at fault, but not as often as the parent of the child.

An educational system is wholly at fault which purposes to develop a set of all-mind and no body children. But what shall we say of any home system which thinks the school must be held wholly responsible for the physical condition and health of the child?

Such a proposition is absurd, and, so far as health is concerned, the school parents will not primarily educate their children to the rules that produce good health and sane minds.

The girl sent to school gaudily overdressed, improperly attired for weather or school work conditions; the boy sent to school with his pockets filled with spending money he has not earned; the children entering the schoolroom with abused stomachs and aching heads, are all enemies of good health. They are innocent victims of vanity and ignorance, twin sisters of idleness encouraged by their parents.

When such conditions can be changed by the parent acting in complete harmony with the teacher and educational systems, we shall have far better health in school children than exists today, and therefore, a new and stronger citizenship arising for the future.

Poor Creature.

"Little boy," asks the well-meaning reformer, "is that your mamma over yonder with those beautiful feathers in her hat?"

"Yes, sir," answers the bright lad.

"Well, do you know what poor creature it is that has had to suffer in order that your mamma might have the feathers with which she adorns herself so proudly?"

"Yes, sir, My papa."

Monthly as well as powder magazines occasionally explode.

Superiority is not always the name of a condition; frequently it's the name of a very big bluff.



"Makes more bread and better bread"
PURITY FLOUR
"ask for it"

she did Anne. She enjoyed seeing the house with its treasures of china and rare old furniture, and she was greatly interested in Jack's experiments in farming. So, late that afternoon, a tired but blissfully happy girl knocked boldly at the door of the inner office of Norwood, Norton & Co.

"It's the Party of the Second Part," she explained, "and she has something very important to say to the senior member of the firm."

"She has, eh? Well, what is it? Struck it rich out at Blue Hills Harbor?"

"Very rich," Kitty repeated, looking hard at the back of her uncle's head. "I have given your word that you will sell the farm for me back to the original owners for the amount of the mortgage and back interest."

"Now, what on earth made you do that?" said Mr. Francis Norwood, angrily, swinging around in his chair.

Kitty told. It was a very long story, for in it were woven the threads of a boy's ambition, the golden lights of girlish hopes, and a frail old woman's life-long struggle against debt and poverty and disgrace. When it was finished, Francis Norwood was no longer angry.

"I always said you had a sense of justice," he observed, "but you have thrown away your chance for a vacation, Kitty. There are no more farms up my sleeve."

"I am going to make Anne a long visit when the apples are ripe," was Kitty's smiling comment.

hat to get the money to support their families."

He furthermore stated that: "the purpose of the boy scouts was not to make soldiers. This was wide of the mark. The purpose of the organization was to train boys by drill and discipline so that they may become better citizens than they otherwise might be. If in becoming better men they became soldiers, well and good, but that was not the prime object of the movement. The organization was not a military one with military aims. Its aims, Sir Baden-Powell pointed out was to develop the boy as an individual."

General Baden-Powell joined the 13th Hussars in 1876 and saw his first real fighting in Zululand in 1888, when he was "mentioned in despatches." Since then he has served in Ashanti, Matabeleland and South Africa. At the time of the latter campaign he was lieutenant-colonel commanding the 5th Dragoon Guards and his famous hundred-day defence of Mafeking gained him a promotion to be major-general. After the close of the war he organized the South African constabulary and in 1898 founded the boy scouts.

When Buffalo Bill was here with his circus he gave the scouts much encouragement. They met in Winnipeg and the boys enjoyed his talk to them. One of Buffalo Bill's Indians wanted a water bottle which a boy scout carried. The boy gave it to him, and in return the Indian gave the boy a fine pair of beaded moccasins.

In order to make you still more familiar with the movement, I give you here an article written by Clarence B. Kelland in a boys magazine.

Sincerely,
Cousin Doris.

THE
Canadian Boy's Camp

If any little love of mine
May make a life the sweeter,
If any little care of mine
May make a friend's the fleetier
If any little of mine may ease
The burden of another,
God give me love and care and strength
To help my toiling brother.

Dear Camp Boys:—I want to tell you something of the Boy Scouts' Movement this month so will leave your letters until next month. In the meantime I hope every boy will write a letter to this department and tell me what you think of the Canadian Boys' Camp. You know this department is for you and we want it to be helpful to our Canadian boy readers. By the way our Canadian boys are commanding worldwide recognition, we were very proud of our Winnipeg crew when they won the great race in London at the Henley meet. We are looking for a great future for our sturdy Canadian boys.

Now, every Canadian boy should be familiar with the Boy Scouts' movement. You know the founder of this movement is General Sir Robert Baden-Powell, the hero of Mafeking and the idol of millions of boys in all parts of the world.

Just now he and several of England's Boy Scouts, are visiting western Canada, and they are being royally entertained. In Sir Baden-Powell's address in Winnipeg, he said:

"By the boy scout movement we make the boys a great brotherhood in which they indulge in games and talks and forget all differences of race, of religion and of everything else and are thus bound together to support one another.

In this country where you have many different nationalities flocking in and growing up in the country you need something to bring all together and to make you as one, and I believe the boy scout movement is the best means to accomplish this."

He says the organization teaches self-reliance. One requirement before a boy scout can get a badge is that he shall have a balance in the bank showing that he, at least, knows something of saving. He made this statement in his address:

"In England we are becoming a nation of beggars. Our lads start with their foot-ball teams and they pass around the hat and get the necessary money for support and from one thing they pass round the hat till another and then we find them passing round the

THE BOY SCOUTS' MOVEMENT
By Clarence B. Kelland.

"Single file, a half-dozen English lads, khaki clad, broad-brimmed felt hats well tilted over noses and strapped under chins, trudged along the highway between the greenest of hedgerows. Silently they plodded, apparently bent on no other object than arriving at their destination. There was little or no conversation, and the sounds of the fields were only interrupted by the pad of their footfalls and the thump of their long staves.

Half concealed in the hedge at the roadside lay a man, dirty, disreputable, a vagabond. With insolent eyes he stared at the lads, and even chuckled derisively as they filed past. The boys gave no sign; it was as if they had not seen the half-hidden man. On they plodded a thousand paces, which is well on half a mile. Still they spoke not at all. Suddenly the leader signaled a halt and sat down upon the greensward while the lads gathered about him.

"Wilson," said he, "did we see anything of importance on the road?"

"A man," replied Wilson.

"Describe him."

"He was a large man, dirty, with torn clothes."

"Is that all?"

"That is all I remember."

"Very good for a recruit. Browne, describe the man for Wilson so he may see how a first-class scout observes."

"The man," said Browne slowly and carefully, "was, I estimate, about an even six feet tall, he wore a plaid golf cap. His eyes were gray and there was a scar on his right cheek running from the ear to the nose. He wore no collar. His coat was brown, patched at the right elbow; his trousers were black with a thin white thread running through and were frayed at the heels. His shoes were very large, and there was a triangular hole in the sole of the left at the ball of the foot. I should say the man was about forty years old and weighed a hundred and eighty pounds. See, he passed here, for there in the sand is the mark of the shoe with the hole in the sole."

So are the Boy Scouts trained and drilled in England; so are they taught to use their eyes; in this manner do they jaunt through the country improving mind and body, and seeking to be of service to their country and their neighbor.

tion, which is regarded by the Government as one of the most valuable instruments ever invented for the production and education of good patriotic citizens. It was organized in 1907 by Lieut.-Gen. Sir Baden-Powell, one of the heroes of the Boer War. The purpose of this organization is not only to arouse patriotism in the boys of the country, but to give those boys a healthful object in life, to make them strong mentally and physically, and at the same time to furnish them with amusement which at some time might be of the very highest value to their country in time of war.

While the Boy Scouts might be regarded somewhat in the light of a game, nevertheless its purpose is decidedly serious. This may best be seen by a reading of the oath which every boy takes upon becoming a member of the Scouts: "On my honor, I promise that I will do my best to do my duty to God and king; to help other people at all times; to obey the Scouts' law." The motto of the Scouts is "Be prepared," which means that every Scout must be always in a state of readiness to do his duty, that he must be ready to obey every order, and that he must have applied himself so to the art of scouting that he will know just what to do in any emergency, and that he will have trained his body so that it will be able physically to carry out whatever it shall be called upon to perform.

The Scouts' Law is so short that it can be most easily learned, yet it is a very important law. Briefly, it is as follows: The honor of a Scout is always inviolate. No Scout will do a dishonorable act. If he makes a statement upon his honor, that statement is just the same to him as though he had made it upon a solemn oath. If a Scout officer says to him, "I trust you on your honor to do this," he is bound to carry out this order and let nothing whatever come between him and its fulfillment.

Each Scout is the brother of every other Scout. No Scout may be a snob. No matter what his social position may be, he is the equal of every other member of the organization. A Scout must be always courteous. He must protect dumb animals. He must obey the orders of his parents and of his officers without question. If any order be unpleasant, he must carry it out so much the more quickly because it is his duty, only stating his objections to performing the act after he has performed it. He must be always cheerful in adversity. He must be thrifty. Every Scout must be able to show that he has at least something in the savings bank.

The Boy Scouts' organization consists of the chief scout, who is Lieut.-Gen. Sir R. S. Baden-Powell, K. C. B. Under the Chief Scout come the Scout Councils, of which there is one in every country or large city. The Scout Councils are composed of leading gentlemen and other citizens interested in the Scout Movement, and representatives of other organizations for boys in the district. It is their duty to advise local committees. Each Scout Council has a Scout Commissioner who is appointed by the Chief Scout and the Council. He acts as Secretary of the Scout Council and as Inspector. He is responsible to headquarters for the Boy Scouts in his district. Under the authority of the Scout Councils are local committees, of which there is one in every town and vicinity. These local committees are composed of Scout Masters and others interested in the work among boys in the district. It is their duty to assist the Scout Masters in every way possible to develop the Boy Scouts' Movement. Each local committee has a secretary whose duty it is to keep a register and to report to the Scout Commissioner. The next unit of the organization is the Troop. A Troop consists of three or more patrols of Boy Scouts. The next unit is the Patrol, which contains six to eight Boy Scouts, and lastly come the individual boys making up the Patrol. Each of these Patrols consists of six or eight Scouts with a Corporal and a Patrol-Leader. Each patrol has a different name and call and secret signs. At the head of every Troop is a Scout Master, who must be an older man, at least twenty years of age. He can en-

roll and discharge Scouts. When a boy enrolls in the Scouts he must serve on probation for one month, during which time he is known as a Tenderfoot.

At the end of this time he must take an examination to receive the Second-Class Scout's badge. In this examination he must show that he has an elementary knowledge of first aid to the injured and of bandaging wounds; that he can signal and has some knowledge of the semaphore, and of the Morse alphabet. He must be able to tie four of the following knots in less than thirty seconds for each knot: Bowline, fisherman's bend, reef knot, clove hitch and sheath bend. He must track a deer's spoor or a horse's track for a quarter of a mile in not less than fifteen minutes; and if he is in a town, describe satisfactorily the contents of one shop window out of four observed for one minute each. He must travel one mile at the Scout's pace in not less than thirteen minutes. He must be fully acquainted with all the Scouts' Laws and Signs.

In order to advance in the organization and become a First-Class Scout, the candidate must pass more rigorous tests than those required of him when he became a Second-Class Scout. He must be able to discover and point out five different points of the compass; he must make a journey alone of not less than fifteen miles by walking, riding, boat, or bicycle; he must be able to point out the proper means for saving life in a selected instance of accident by means either of fire, drowning, runaway horses, escaping gas, or breaking ice; and he must be able to bandage properly an injured patient or to revive one apparently drowned. He must show that he has brought a recruit to the Scouts and has taught him to tie the principal knots. He must be able to prepare and light a fire using no more than two matches, and to cook a quarter of a pound of flour and two potatoes without using cooking utensils. He must be able to swim fifty yards; read a map correctly, and draw an intelligent sketch map of some locality through which he has passed. He must be able to judge distance, size, numbers and height within twenty-five per cent. error.

Having won the position of First-Class Scout, the boy may gain further honors for competency in certain special branches. For instance, he may gain an Honor Badge for ambulance work; he may gain a marksman's badge or a pioneer's badge.

In all of these exercises, however, the greatest emphasis is laid upon the tenet of the order that even in contests brotherly help must prevail over rivalry and competition, and that the primary aim of the organization is to train boys to be manly, unselfish, helpful and self-reliant.

There are numbers of most interesting exercises which the Scouts are put through by their Scout Masters. These exercises all have a view to sharpening the intellect, to making the eye more keen, or the body more perfect.

The education of the Boy Scout also includes the reading of a number of good books. Among these are recommended "Kidnapped," by Robert Louis Stevenson; "Kim," by Rudyard Kipling; "Two Little Savages," by Ernest Thompson Seton; "Heroes of Pioneering," by Edgar Sanderson.

The uniform of the Boy Scouts consists of a hat, khaki color, with a flat broad brim, with a strap around the brim and a chin strap; a neckerchief of the especial color of the individual troop. This is worn knotted loosely about the throat, and at the end is also a second knot which is to remind the Scout that he is to do some good deed every day. The shirt is blue, khaki, or gray, with two patch pockets and shoulder-straps. The trousers are short, coming about the knees, and these may be either blue or khaki. About the waist is worn a belt of brown leather, upon which are awivels, a coat strap, pouch, and axe. The stockings are dark or khaki with colored tops. These come below the knee, the leg being left bare. Each Scout carries a staff marked in feet and inches, and a haversack over his shoulder. Each Scout must carry a whistle and knife.

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Old Andre's Gold

Continued from page 58

ed strangely like the one that they called Booqui, the possum, at Landry.

Booqui lived upon the outskirts of the village, and although no one had ever been able to prove anything against him, it was said that he was "bad." Twice he had been suspected of murder, and there was little doubt that he was a thief also, since, although he spent his days in idleness, he lived upon the fat of the land. Most people were afraid of him, for, despite his short stature,

"As soon as I get out," said he, "I'll kill you." Although the crowd could not hear what he said, they shrank away from the savage look in his little, blood-shot eyes.

That night Le Bossu called upon the old man with a warning, for he had heard the negro's whispered words.

"He will surely kill you when they set him free," said the hunchback. "Also, I do not know why you testified against him, for I saw him on that very night far away at the edge of the Grand Woods. Had I not known

over the great plantation, from the big house to the humblest hovel, there were signs of joy and festivity. Lights glowed from every window, voices laughed and talked and sang, and from the long white row of quarters came the happy prattle of excited children.

But in the old man's cabin at the edge of the woodland all was dark and still. There was no sounds of talking or of laughter. Save for the murmur of the trees and the queer night noises that came from the wood, the silence was unbroken. No lights gleamed from the windows. There was only the dull glow of the open fire, where old André sat at his meal of rice and milk. Yet the old man seemed also to have absorbed some of the holiday spirit. Indeed he seemed expectant, excited, and his face glowed with some strange happiness of his own.

For a long time after he had finished his meal he sat silently before the fire, rising every now and then, with flushed cheeks and eager eyes, only to return to his chair again with the determination of one who puts off a pleasure to the last possible moment that he may enjoy to the fullest extent its anticipation. Finally, as though he could stand this waiting no longer, he sprang to his feet and carefully examined the wooden shutters that closed in the windows at the side and rear. Then he stood for a moment looking uneasily about him, his fingers working joyously as though they already fondled a hoard of gold, his breath coming in short, hard gasps of pure delight.

As he stood thus there came a knock on the door. In an instant the old man was across the room, his joy all gone, his face alive with hate and suspicion.

"Who—who—are you? What do you want at such an hour?" he gasped unsteadily.

From outside came the voice of Le Bossu. "Let me in," it panted. "Let me in at once. I have something to tell you."

Before the old man had opened the door a quarter of its width, the hunchback had slipped inside with surprising agility. His face was white, his eyes were wide with fear and horror, and he panted loudly, as though he had run at his utmost speed.

"André! André! you must go at once," he gasped hurriedly as soon as he was in the cabin. "It is Booqui. They set him free yesterday, and all day he has drunk at Landry, swearing that he will cut your heart out. When he left the coffee house a while ago, I felt sure that he was coming here, and I followed him. He is coming through the woods and he has a long knife. I saw him trying it in the moonlight. Then I ran ahead to warn you."

He paused for lack of breath and stood panting and blowing, his arms outstretched as though he would push the old man into the safety outside. But old André made never a move, gazing

abstractedly before him as though he had not heard a word that the hunchback had said. There was no fear in his face. Only a look of impatience, of annoyance, at this sudden interruption.

Frantic with excitement, Le Bossu seized his arm.

"Man, you must hurry!" he cried. "He is right behind me. You have not a moment to—"

Again Le Bossu paused, and this time he trembled violently at a sound that came from outside. It was not a pleasant sound, for it was the voice of a drunken negro. It was not a pleasant song, either, for Booqui was singing "Batson," the song of the murderer who had died at Lake Charles.

At the end of the verse Booqui paused for breath, and on the instant Le Bossu found his voice again.

"You are too late, André," he cried. "He will be here in a moment. Quick! get the gun and kill him as he comes in. You say that it is always loaded. He has only a knife, and is too drunk to be cautious. Can you not hear him singing as he comes, Quick, man! You must be mad."

"Here!" he cried, as he thrust the gun into his hands. "Shoot him as he comes in the door, and do not miss your aim."

Then, with incredible swiftness, the hunchback hurried to the rear of the cabin, threw open



"But this—this is your daughter," stammered the priest in amazement.

he was as strong as two men, with a sullen, brutal nature that never forgot or forgave a wrong.

But of all this old André, in his terror, took no account. Going straight to the overseer, he reported the matter, naming Booqui as the one who had dug the pit. When the overseer in turn made his report to Mr. Gordon, the young planter was furious. It was bad enough to have his land dug up by the plantation hands, but when this was done by a negro from Landry the matter had gone too far. Also, here was a chance at last to entrap the wily Booqui.

Sending for his water tender, Mr. Gordon asked him if he could swear in court that he had seen Booqui digging the pit, and the old man in his fright said that he could. Then Booqui was arrested. At the trial old André went upon the stand and perjured himself, while the people looked on in amazement, wondering how he could make so terrible an enemy.

After Booqui had been convicted and they were taking him away he leaned toward the old man and whispered a few words,

of some of his crimes I would have tried to save him.

"It was the cow," muttered the old man. "I could not have paid for her."

"But you will pay for her," cried Le Bossu; "you will pay for her with your life. You must be ever ready so as to kill him first. See, you have your great gun there. You must load it and have it ever within your reach."

"Bien," said the old man, "I shall be ready. The gun is always loaded."

The days went by, growing shorter and cooler, and where the great green carpet of the rice had been the summer before there was now only a barren, weed-grown desolation. Week after week the teams went round in a straggling circle, busy with the fall plowing, and the flames roared high from the brush piles and hedges, glowing far into the dusk like some burnt offering to the goddess of the coming crop.

And then, one cold, clear night, the moon slipped quietly into the sky and bade the stars to shine their brightest in sacred memory, and it was Christmas Eve. All



There was only the dull glow of the fire where old André sat at his meal of rice and milk.

the window, and leaped over the sill. Once outside in the darkness and safety of the woodland, Le Bossu's courage began to return. Booqui did not know that he had been in the cabin, and even if he found him he could easily lose his drunken pursuer.

Raising his eyes cautiously to the edge of the window frame, the hunchback peeped inside. The low, bare room showed quite clearly in the firelight which glowed softly upon the figure of old André. He stood just as Le Bossu had left him, save that he now held the old gun clasped protectively against his breast as he gazed abstractedly toward the door. Booqui had ceased his singing, and for a long minute there was a close, dreadful silence about the cabin while the little man peered over the window ledge.

Then there came a crash from outside, the door swung slowly

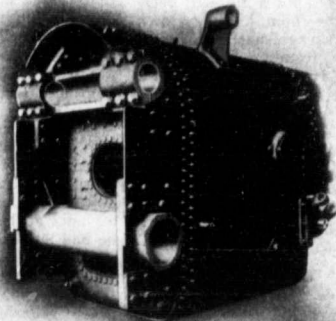
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inward on its broken fastenings, and Booqui stood in the doorway.

Framed by the blackness of the night, the negro made a picture that would have terrified the bravest of men. Short and squat, with the arms and chest of a gorilla, he stood for a moment peering into the room, his lips drawn back in a savage snarl, his wicked little eyes gleaming with hate and revenge. In one hand he held a long knife, and as he caught sight of the old man he raised it with a meaning gesture.

Without a word, without a sound, he crept upon his prey, and as he did so old André seemed at last to come to his senses. As though for the first time he understood the meaning of the hunchback's words, he whirled the great gun from his close embrace and threw it to his shoulder. Then, with a cry of rage, the negro sprang upon him.

At the window Le Bossu raised a trembling hand, as though to shut out the thunder of the monstrous weapon, half turning away his head that he might not see the shattered body of the murderer. But to his waiting senses there came no shock, no roar—only the dull thud of meeting bodies and the soft swish of the knife as it descended.

Then Le Bossu fell, sick and fainting, upon the grass beneath the window, muttering brokenly—"God! and it did not go off!"

When, a little later, he staggered weakly to his feet and again peered through the window, Booqui had gone, with never a glance at the terrible thing that he had left behind. For, scattered about the body of old André was a thin stream of golden coins that still dribbled slowly from the tilted muzzle of the ancient weapon, glistening softly in the light of the dying fire.



The Boy Scouts' Movement. Continued from page 67.

The many subjects of instruction of the Boy Scouts include scout craft in campaigning, which includes camp life and resourcefulness, hut making, fire lighting, cooking, judging distances and numbers, signaling and pioneering. Another important branch upon which great stress is laid is observation, which consists in noting and memorizing details far and near, such as landmarks, the appearance of persons, number and placing of objects, so that either the person, place or objects may be identified again. The power of deduction from tracks and signs is developed to the highest degree. The next branch of learning is wood-craft, which includes the study of animals, birds, plants, the stars, etc.; seamanship, with the knotting and splicing of ropes and management of boats, both single-handed and in crews, and some knowledge of engines; the use of the compass, and the telling of direction by the stars. The greatest importance is given to a consideration of the subject of Chivalry. This teaches the ancient code of honor of knighthood, unselfishness, courage, duty, charity, and thrift. The chivalry intended to be taught is not the theoretical, impracticable chivalry, or the chivalry of knight-errantry, but practical every-day, useful, courtesy.

Some of the remaining subjects in the curriculum of the Boy Scout are live-saving, endurance, hygiene, sanitation, patriotism, the history of the empire and of the army and navy, use history and meaning of flags and medals, the duty of citizenship, marksmanship, aiding the police, and loyalty. Much of this instruction is given in the guise of games or of stories told about the camp fire. It is the opinion of General Baden-Powell that the best way of imparting theoretical knowledge is to give it out in short installments with ample illustrative examples when sitting around a camp fire or otherwise resting, and to follow this by a practical demonstration.

The General gives an instance of how this should be done taking his example from the subject of Observation. First, at the camp fire over night the boys are told some interesting instance of the value of being able to track. Second,

next morning the boys are taught to read tracks by making footmarks at different places and shown how to read them and to deduce their meaning. In the afternoon this is followed by a game such as Deer-Stalking, in which one boy goes off as the deer with half a dozen tennis balls in his bag. Twenty minutes afterwards four boys start after him, following his tracks, and each of them armed with a single tennis ball. The deer, after travelling a mile or two, hides and endeavors to ambush his hunters and get them within range of his tennis balls. Each hunter struck by the deer's tennis ball is counted gored to death. If, on the other hand, the deer is struck by three of the hunters' tennis balls, he is killed.

But of all the precepts inculcated in The Boy Scouts the greatest is that section of Scout Law which says that every lad shall strive to do a good turn to someone every day—and without acceptance of remuneration. This does not mean that on every one of the three hundred and sixty-five days of the year the Boy Scout must try to save a life, or that he shall take upon himself great personal risk; it does not mean that he is bound once in twenty-four hours to perform some great service for his fellow men. Its real meaning is that he shall be courteous, generous, ready to serve. If the Scout can aid a stranger in his town to find the address he seeks he is satisfied that he has fulfilled the law; if he gives up his seat in a crowded car he has done his duty; if he runs an errand for the neighbor next door it counts as a good turn. But—and mark this well—he must accept no pay for what he does or the act does not go to his credit. He must regard simple thanks and the knowledge that he has done the thing he ought to do as his ample remuneration. If the Boy Scouts did nothing save to teach this one thing the organization would be one of the greatest influences for good in the present century.

This movement has not confined itself to England or Great Britain, but has spread to several of the Continental countries, notably Russia, where the imperial government has given the Boy Scouts its countenance, and has done much in the hope of making it popular and profitable."

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The Gas Tractor and the Horse.

Continued from page 34

contents of stomach and intestines. In pinches he can go several days without food or water—a necessary provision in his wild state against the time when the sources of supply might be cut off. The gas tractor on the farm is seldom called upon to go far from the sources of supply; hence has no need to carry dead, useless weight. Probably ninety-five per cent. of the weight may be put into metal, two and one-half per cent. into the cooling water and two and one-half per cent. into fuel. The latter may be increased easily in tractors designed for use in dry stretches. Nobody wants to be or to own a camel, but that beast's capacity for stocking up for a journey would be mighty valuable in a tractor for our dry farming regions.

The horse needs a drink and a bite of food after every seven or eight miles of plowing, but of course can be forced to go a greater distance. Some of the best known gas tractors could go from ten to fifteen miles under full load if it were possible entirely to empty the fuel and water tanks without stopping. Actually, they need water about as often as the horse. Others of different type could go for fifteen or twenty miles without fuel and several times that without water, with their present tank capacity. A better balance in this respect would render the tractors more convenient, and undoubtedly some weight would be eliminated in so doing. A steam plowing engine does well to travel two miles on the water taken in during a quarter of an hour.

The gas engine in itself is not a dangerous proposition. Occasionally a careless operator gets tangled up in the fly wheel or gearing, or lets the connecting rod bolts work loose, with disastrous results. Correct design minimizes these dangers, and since they occur in much the same way and place each time, a good engineer can avoid them. Consider our faithful friend, the horse. As a colt he may ride you down in flight. Breaking horses is an occupation of extreme hazard. The mature animal may either playfully, wickedly or accidentally, plant his hoof on your person at any time, in the barn, and when in harness a scare or a whim may set him off at a gallop while you or your surviving friends follow to pick up the pieces. One great danger, however, besets the "tractioneer," and that is the presence of the death traps which span our streams. So long as state laws permit the maintenance of weak bridges the concentration of weight in a tractor must result in frequent distressing accidents. Success to the organizations of threshermen who are fighting these laws, and to the movement for a national Good Roads and Bridges policy!

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Of the horse's food, supposing him to work at full capacity every day and to waste no food at all, about one-half is not digested. Of the remainder one-fifth goes for maintenance, one-fourth for locomotion, and a little over one-half is applied toward work production. Of the last fraction approximately one-third is recovered as useful work. According to computations by Prof. Armsby, the leading authority on animal nutrition in America, the thermal efficiency under the conditions just described would be six and two-tenths per cent. Now, consider that the average farm horse works one thousand hours out of nearly five thousand, and while not fed during idleness as during work must be fed more for each unit of work. Consider that on the farm he is even wastefully fed, usually getting twice as much hay as is necessary, and that during the many so-called working hours he is doing very light work, as low as one tenth horse power. His thermal efficiency, then, is extremely low, netting one and one-half to two per cent. for the year.

For every hour of work during the year, the farm horse obtains three and one-half pounds of grain and six and one-half pounds of hay; for the year, three and one-fourth tons of hay and one and three-fourths tons of grain. Taking prices which prevailed from 1905 to 1907 his feed alone cost four and three-tenths cents per hour, with possibly one-half horse power as the return. The steam traction engine uses approximately a ton of coal per horse power hour at the drawbar, costing from two to four cents. A gasoline tractor's fuel under the same conditions will cost approximately the same, or a trifle more. The price of horse feeds at the present time is higher than three years ago and much higher than fifteen years ago. In 1895 corn and oats were so low in farm value that traction engines could not compare with the horse as a source of power. Conditions have changed. We have no hope of a return to former prices for grain, and the mechanical motor has come to stay. A similar change has occurred in the fuel supply in the last fifteen years. Gasoline, which was

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Amount of Insurance in force Dec. 31st, 1907 - - - \$20,355,303 00
 Assets over Liabilities - - - - - 269,273.10

THE NUMBER OF FARMERS INSURED DECEMBER 31ST, 1907, 16,316

Over 16,316 Farmers Insured. The Largest Agricultural Fire Insurance Company west of Lake Superior. Agents wanted in unrepresented districts

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Authorized Capital, \$500,000.00 Subscribed Capital, \$300,000.00

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Double-acting Lift Tank and Spray PUMPS
Stove Ladders, Etc. **HAY TOOLS** of all kinds. Write for descriptive circular and prices. Exclusive agency given to right party who pay in quarterly. **J. H. ASHDOWN & CO.** Agents, Ont.

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DON'T FAIL TO RENEW YOUR SUBSCRIPTION
Before it is too late.

a by-product, selling at a few cents per gallon, leaped into prominence with the introduction of the gasoline engine. To-day it sells at twelve cents in quantity, and fifteen to twenty cents at retail, while the quality is far below that of even ten years ago. Electricity and gas have occupied the illuminating field, and kerosene is the by-product. The production of kerosene has increased not only absolutely but relatively, and it can now be bought at from four to six cents in quantity, or ten cents at the corner grocery. Fuel that was economical in the gasoline engine of ten or fifteen years ago is fast becoming a luxury. But with the present price of kerosene, the builder of the oil engine to-day is only following the greatest law of invention—that of necessity.

One man in the field may handle four to six horses, developing from 2½ to 4½-horse power. Two men on a gas tractor will handle an outfit doing from ten to twenty times the work. To care for a traction engine doing the work of twenty-five horses requires approximately the same time in the course of a year as to care for one horse. The cost of a building for sheltering a 25-horse power tractor is approximately one-tenth of that required to shelter twenty-five horses and their food supply for a year. The fuel for a gas tractor occupies about two and one-half per cent. of the space required for the feed for twenty-five horses, and will weigh from one-fifth to one-tenth as much.

Objection is heard that it is not fair always to compare the horse and the tractor on their performance in plowing. However, we have plows especially designed for engines, and practically no other implements. A man can not cut much grain with a sickle; he never even attempted to use two or three at once by some makeshift connection, but the tractor-engine has found ways of coupling up horse binders, harrows, and drills and doing a fairly economical job. Given other implements and machines, designed especially for use with engines, and greater economy may be expected. The combined harvester, with all its objectionable features, is a sample of the economy which may be expected of machines designed for use with a large number of horses or a single engine.

Objection is also heard that we are not comparing the gas tractor and the horse, which is true. We are comparing the gas tractor with the number of horses which will equal it in power. These engines are now wanted by big men on big work. Perhaps in the future the one-horse or two-horse tractor may be realized. So far we have not approached the ideal of a small unit that will compete with the horse in price and versatility.

The horse gets less out of its food than any other farm animal. The gas engine gets more out of its fuel than any other heat engine. The gas tractor now gets

WOULD YOU LIKE TO PLOW QUICKER WITH LESS LABOR AND LESS EXPENSE?

When plowing, one man, one plow and 3 horses are equal to about 2½ acres per day.

It's easy to figure out how long it will take you to do your Fall plowing or how many **one-man, one-plow and three-horse** outfits you will need to prepare your ground for seeding.

Now, horses can be worked only so many hours a day—they must be fed and housed, whether working or not and every 3 horses require one man for a driver.

But, should you own and operate a



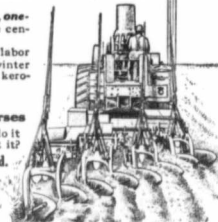
you can, with a headlight, plow as many hours a day as you wish. **Oil Pull** consumes no fuel when not working, and, when working, it burns kerosene—the cheapest, most concentrated and most easily obtained fuel known—it's much cheaper than gas.

With **Oil Pull** the power of 8, yes, even more, one-man, one-plow and three-horse outfits are centered in the hands of one operator.

So you see with **Oil Pull** you save time, the labor of 6 or 7 men, expense of feeding during winter months and the surplus in cost of oats over kerosene per unit of power delivered. **Oil Pull** is economy.

Sell 3 out of Every 4 of Your Horses

We will gladly show you where you can do it and make money. Will you write us about it? **M. Rumely Co., 1996 Main St., La Porte, Ind.**



The only oil burning engine in the great motor contest

We Are Manufacturing the

IMPROVED STRAW FUEL MACHINE

This machine takes the straw in at one end and is conveyed to rollers and is rolled into bundles 4 ft. long and anywhere from 2 to 6 ins. in diam. Instead of the farmers burning their straw in stacks they can have it all rolled and have all the fuel they want. No need of hauling fuel miles when they have it on their own farms.

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THE FAVORITES WITH THRESHERMEN AND PLOWMEN

These pumps have won an enviable reputation among all heavy power machine users owing to their simplicity, long life and durability. The present Madison-Kipp construction is the result of years of actual experience in oil pump manufacture. The pawls are all drop forgings, forged from open hearth steel and hardened in the most modern hardening ovens. The plungers are a special grade of steel, case hardened as hard as the hardest glass and after hardening are ground as smooth as a mirror.

All castings, both gray and malleable, are made from the best known formulas. No acid, sand, dirt or grit will affect our pumps. Our style B force feed lubricator is especially recommended for use in temperatures where the oil will not remain in a liquid state.

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Our shop is devoted exclusively to the manufacture of oil pumps and force feed lubricators. All our energies are expended in this line. The highest grade of mechanics and skilled workmen are employed by us, and our shop equipment consists of the most modern machine tools, jigs, fixtures and limit gauges. This combination, together with our knowledge of knowing how to combine and use the best known materials, enables us to furnish a pump that will meet every requirement, and will work for years without any expense.

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Sole Agents for Canada WINNIPEG, Man.

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 CAPITAL PAID UP 5,330,000 00
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more power out of its fuel than the average farm horse out of his feed. The farmer demands a larger power unit than ever before. If necessary, he will adapt his farm work to it, just as he has been doing for a half century. The day can easily be foreseen when the farmer will want two tractors—one a massive engine for rapid, heavy work; the other a light nimble motor for cultivating and other light tasks. He has never expected the same cow to produce both beef and milk economically; nor the same horse to draw both the heavy plow and the light road wagon, at a wide range of speeds. Neither should the builder of a gas tractor expect seriously to compete with all classes of horses by offering a machine half automobile and half traction engine. Neither the gasoline engine nor the gas tractor was widely adopted by farmers before the close of the nineteenth century. Considering the progress that man has made in centuries, starting with Nature's offering, and in decades, working out his own ideas first on the drawing table and then in iron and steel, it is not too much to expect that he will finally work out something better suited to his uses at every point and for every condition, than the living motor.

Reo Motor Car Company of Canada, Limited, Makers of the Canadian Reo Publicity Department.

Mr. J. P. Fillingham, until recently Assistant Superintendent of the Reo Factory at Lansing, Mich., has been appointed General Superintendent of the Reo Motor Car Co., of Canada, Limited, at St. Catharines, to succeed Mr. R. B. Hamilton, resigned. Mr. Fillingham, who has been for the past ten years engaged in the manufacture of automobiles designed by R. E. Olds, is a native of Canada, and received his early mechanical training in the Waterous Engine Works at Brantford. Mr. Fillingham's return to his former home will be welcomed by his many friends in manufacturing circles throughout the Province.

In order to take care of the increasing demand throughout the Dominion for the Reo Thirty, the Directors have decided to increase the capacity of the Canadian plant. Additional ground in the vicinity of the factory has been purchased, and on it will be erected a modern, 2-storey, brick building, 90 x 100 ft. Work on the erection will be begun at once, and it is planned to have the new building ready for occupancy by October 1st. Machine tools to the value of \$20,000.00 have been purchased for installation in the new plant and orders for material, sufficient to build 600 four-cylinder cars, have been placed. A majority of the orders for raw material are being placed with Canadian firms, which clearly shows the remarkable progress made in this branch of special work by Canadian mills.

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The oldest Insurance Office in the world
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The MANITOBA ASSURANCE CO.
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 All Policies Guaranteed by
 THE LONDON AND LIVERPOOL AND GLOBE INSURANCE COMPANY
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 Agents wanted in unrepresented districts. FRED. W. PACE, Superintendent

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 "THE LARGEST FIRE COMPANY IN THE WORLD"
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Wall Plaster

If you intend building this year, see that you get a good Plaster Job.

The Sackett Plaster Board
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THE MANITOBA GYPSUM COMPANY, LIMITED
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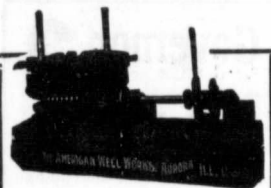
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The only successful Balance Valve placed on a traction engine.
 Guaranteed to increase the power from 18 to 30%.
 Warranted for five years.
 Over 500 different styles and makes of valves in stock.
 No measurements required.
 Shipment can be made promptly on receipt of order.
 Agents Wanted.

Ger. White & Sons Co., London, Ont., Manufacturers
 In Canada.
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Care of the Shoulders of young Horses.

The care of the shoulders of young horses is one of the most important factors to keep in mind during the first few weeks of work.

A horse cannot do satisfactory work with shoulders that pain him every time he takes a step. The horse may be looked upon as a machine that is expected to do so much work, and if some of the mechanism is out of order, then the amount of work is lessened. But, also, the animal must be looked upon as a creature with feeling and ambition, taking pride in its work, that is a willing, obedient and therefore valuable servant, and should be properly cared for.

The first thing of importance to consider in the draught horse is the collar. Most of the injured shoulders are the result of poorly fitting collars, and the fault usually lies in a collar being too large. It is a good idea to have a harness maker fit the collars to your horses. He may be able to remove padding and in other ways make the collar over so that it will fit nicely. Heavy collar pads are to be avoided if possible. They are hot and cause the shoulder to sweat; this keeps the pad and shoulder wet, and the skin becomes soft and blisters easily.

Dirty collars are probably as responsible for sore shoulders as ill-fitting ones. In the spring the horse's hair is long and holds large quantities of dirt and scales from the skin. He is soft from lack of work and sweats profusely. This forms a gummy dirt that adheres to the collar and makes, when dry, a hard, rough surface. The ordinary farm hand feels that his duty is done if he scrapes the dirt from the collar with the back of his jack-knife. This method, however, is not an especially good one for the leather of the collar, and a smooth surface is not left. A damp sponge used in the evening as soon as the collar is taken off will, in one or two minutes, remove the dirt. This may be followed by an oiled rag; if this is done, the collar, in the morning, should be soft and smooth.

Careless driving, jerking a horse out of the furrow and into it again, allowing him to work with his head around on one side, all tend to produce sore shoulders.

Of course, the first precaution to take is not to ask the colt to do a full day's work until he learns something about his job and ceases to fret. The shoulder will then gradually become toughened. It is a good idea to sponge the shoulders with cold water—just plain cold water. Alum water has been used to good advantage; also weak solutions of tannic acid. Alcohol tends to toughen the skin.

The injuries to the top of the neck very frequently terminate in fistulas, withers, etc. A blister near the point of the shoulder is likely to become a callous and form what is known as a "cold abscess." Ill-fitting collars and poor drivers are equally respon-

IN SOME LANDS— EVEN TO-DAY— PLOWING IS DONE WITH A CROOKED STICK.

In some lands, cattle are used; in others, horses are used with the plowman wall'ing and in some places the plowman ride;

Each method marks an improvement—shows an advancement and the attainment of a higher degree of efficiency and effects a saving in human muscle, animal muscle and a saving in time.

But, today, for the big American farmer, these methods are slow, irksome, expensive and inefficient—one man with three horses being able to plow *only* two or three acres per day.

But, there's an improvement over this, a still higher development—it's the



With a *horse* the power of 20 to 30 horses is centered in one man's hands. Eight furrows can be turned at one time, twenty-five acres plowed in a ten-hour day.

Oil Pull burns kerosene, the cheapest, most concentrated, most easily obtained fuel known, at all loads, in all weathers, under all conditions.

We would like for you to know more about *Oil Pull*. Let us send you "Tolling and Tilling the Soil."

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The only oil burning engine in the great motor contest

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THE BETTER KIND

For the thresherman who wants the BEST, the Overall with the K. of R. Brand are the only kind. They represent the high-water mark in Overall manufacture.

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No matter where you are located you can obtain them readily. You are guaranteed immediate shipment of any regular size. Made by the inventors of The Gandy Stitched Cotton Duck Belting, and used throughout the United States. The first canvas thresher belt on the market as well as the best. Guaranteed absolutely as to material and workmanship.

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We positively have the Best File Expander and Cutter on the market.

All wearing parts tool steel and tempered, equal to any. Our ratchet is the simplest and best ever shown. Any parts that show defect in material or workmanship will be replaced Free Grats.

Price of 2 inch expander and Ratchet, \$5.00
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Harner Implement Co., Winnipeg, Western Jobbers

CALVES Raise Them Without Milk.
Bought from Steele, Briggs Seed Co. Winnipeg

sible for a condition known as "sweeny."
It has been the earnest endeavor of this article to show that the farmer is directly responsible for the sore shoulders of the young horses; that by observing a few simple things he may avoid loss of time, expense and suffering or perhaps permanent injury to his animals.
If an accident occurs and in spite of careful attention a horse's shoulder becomes injured, do not wait until a fistula has developed, or an abscess has formed, or the animal is "sweened," but seek the advice of a veterinarian while there is still a chance to check the progress of the injury. This is not the proper place to teach the treatment of such conditions after the injury has been done; it takes years of school work to do that, but it is a good opportunity to impress upon the minds of horse owners that such unfortunate things may be entirely avoided.

The following is a list of Canadian patents recently issued through the agency of Messrs. Ridout & Maybee, Manning Chambers, Toronto, from whom further particulars may be obtained:
Howard H. Hodgson, improvements in tires; Donald Rawstron, improvements in moulding and casting re-inforced brake shoes; Jas. Martin, picker spindles for looms; Chas. S. Brand, extraction of zinc; Geo. J. Ogden, Electric oven; F. Lilienthal and G. Lauer, treatment of mica; William Rickmers, improvements in explosives; William Rickmers, improvements in explosives (2); Chaimsonovitz P. Elieson, Electric accumulators; Arthur J. Bedford, tubular fence dropper.

How many of your neighbors would shed tears do you think if you moved away?

The respect your heirs may have for you depends on the amount of money you save.

Some people's morals are like their best clothes, only worn on extraordinary occasions.

There is something radically wrong with the hearing of some musicians who play by ear.

When a man is discharged he thinks his employer is making the mistake of his life.

When a woman asks a man's advice on a proposition, she just wants him to O. K. a scheme she has already decided on.

Watch the man who boasts of his willingness to do his duty, and you will find him trying to dodge it the first chance he gets.

A man who tells a young widow that she is the only woman he ever loved is eligible for membership in an Ananias club.

"I have known sixteen-hour wives of eight-hour men."—Graham Taylor.

Unless you are looking for trouble, don't criticise a woman's husband in her presence.

Is Your Governor Satisfactory . . . ?



The cost of a new Governor is a trifling amount when compared with service.

WE FIT EVERY BUILD OF ENGINE
AND GUARANTEE RESULTS.

Just give us size of steam pipe and name of engine builder, and we will write you.

PATENT BALL RANGER SPEED CHANGER SUPPLIED ON ALL GENUINE PICKERING GOVERNORS

The Pickering Governor Co.
PORTLAND CONN., U.S.A.

Granite Harvester Oil

For Reapers, Threshers, Plows, Harrows



Insures better work from the new machine and lengthens the life of the old. Wherever bearings are loose or boxes worn it takes up the play and acts like a cushion.

Changes of weather do not affect it.

Gasolene and Kerosene Engines

Standard Gas Engine Oil
is the only oil you need. It provides perfect lubrication under high temperatures without appreciable carbon deposits on rings or cylinders, and is equally good for the external bearings.

Steam Traction Engines and Steam Plants

Capitol Cylinder Oil
delivers more power, and makes the engine run better and longer with less wear and tear, because its friction-reducing properties are exactly fitted to the requirements of steam traction engines and steam plants.

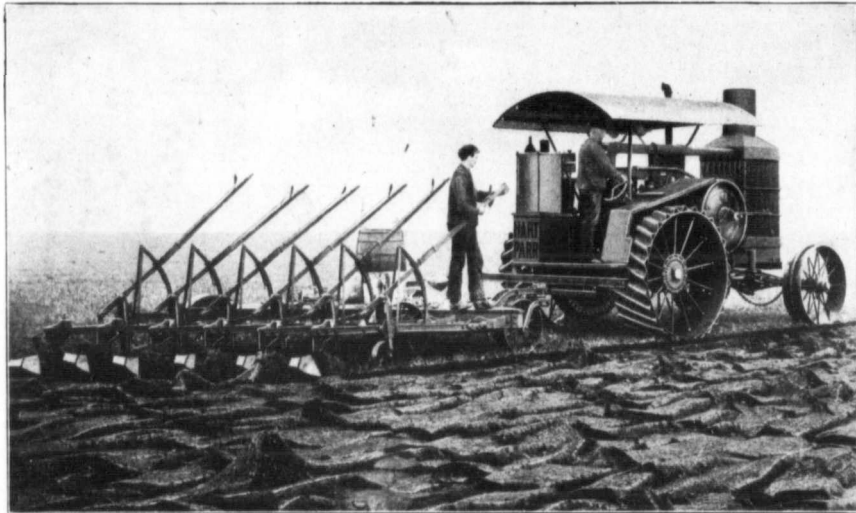
Traction Engines, Wagons, Etc.

Mica Axle Grease
makes the wheel as nearly frictionless as possible and reduces the wear on axle and box. It ends axle troubles, saves energy in the horse, and when used on axles of traction engines economizes fuel and power.

Every dealer everywhere. If not at yours, write for descriptive circulars to
The Imperial Oil Company, Limited

Don't Fail to Renew Your Subscription Before it is Too Late.

POWER FOR FALL PLOWING



Deep Plowing requires lots of power but it produces the best seed bed, and the best crops. You probably have never plowed as deeply as you would like, because you would kill your horses if you did. But if you own a Hart-Parr Gas Tractor you will have an abundance of power at your command, a horse that never gets over-heated or tired, and can turn over 20 to 30 acres per day and as deep as you wish. Hence your next year crop will be better. That means **MONEY EARNED.**

Early Plowing is also best because it kills the weeds before the seed matures; it also conserves moisture by preventing evaporation and permitting the rain and melted snow to enter the soil instead of running into ravines and depressions, hence

forming an ideal seed bed. If you have a large farm you cannot get your plowing done early enough to do this if you use horses. But if you own a "Modern Farm Horse" which will do the work of 22 to 25 horses you can get your fall plowing done several weeks earlier than usual. Here again you are preparing for a better crop next year. Hence **MORE MONEY EARNED.**

Horse Feed is High and is going to be higher next winter. Sell most of your horses and save this heavy feed bill by buying a "Modern Farm Horse," which uses cheap **KEROSENE** for "feed," and eats nothing while standing idle. The price of the horse feed you will save this coming year will go a long way towards paying for your Tractor. **THAT'S MONEY SAVED.**

A Hart-Parr Tractor is a Money Maker—Money Saver

Let us tell you more about this "Modern Farm Horse," and its advantages on your farm. Mail us a postal card' we will do the rest. We can make prompt shipments.

HART-PARR CO.

30 Main St., Portage la Prairie, Man.

THE CHAPIN CO., CALGARY, Sales Agents for Alberta

Wanted! Threshermen To Husk Corn-



THE 1909 Corn Crop approached the enormous figure of nearly *Three Billion* bushels—the wise ones say the the 1910 Crop will cross the *Three Billion* mark.

Thousands of threshermen with *Case Huskers* will be required to care for this stupendous Crop.

On actual results the *Case Husker* is the peer of them all—husks faster, husks cleaner and shreds the fodder into an unexcelled stock food. *Case Husker*—Shredders are built for *long service* and *satisfactory service*—no loss of time or money for repairs.

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