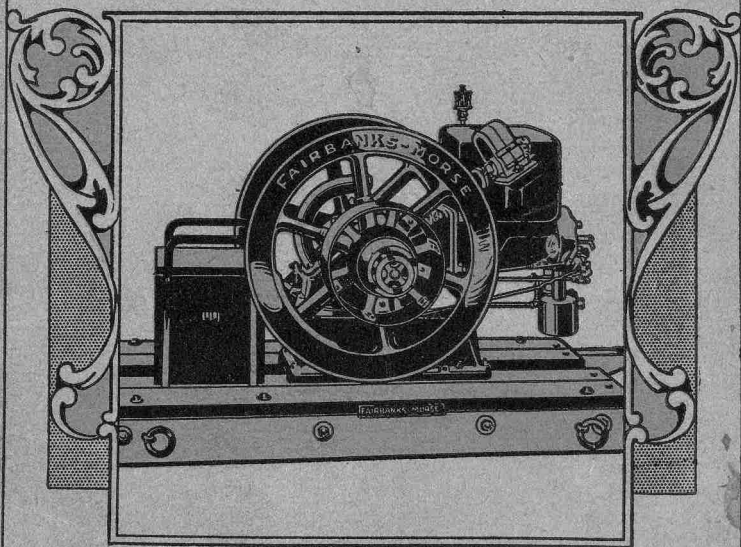


# 49 USES FOR A FARM ENGINE



# How This Little Book Was Written

## *What We Thought*

"We will sell the greatest possible number of farm engines by helping each owner of a Fairbanks-Morse engine to get the greatest possible value out of it. If the farmer is to get the greatest possible value out of his engine, he must be able to use it in the greatest possible number of ways.

"Therefore, we must continue not only to make absolutely reliable engines, but also to further increase the value of every engine sold by showing its purchaser, *from the start*, how to use it to the best advantage and with greatest profit to himself.

"We can do that by suggesting a large number of uses to which other farmers have put their engines, leaving it to him to see how many can be applied to his farm."

## *What We Did*

So we went to the farmers themselves—explaining that we wanted to know all the practical uses for a farm engine that they had seen successfully carried out. In order to make it worth their while to give us this information, we offered an engine free to the farmer suggesting the greatest number of practical uses.

This offer was not advertised broadcast, but only in a few selected farm papers, which we knew reached a particularly high class of farmers.

## *The Result*

Thousands of lists of suggestions were received. From among the hundreds of uses suggested, we have selected many of those that can be put in practice on nearly every farm.

We cannot begin to cover the subject within the limits of this first book. It will give some idea, however, of the labor-saving possibilities of a farm engine. We, ourselves, had not realized what the possession of an engine means to the average Canadian farmer.

We do realize it now, and are sincere in believing that a farmer might as well expect to cultivate his land without the aid of a plow as to expect full returns on his capital and labor without the aid of a farm engine.

# Forty-Nine Uses For a Farm Engine

THE rapid development of labor-saving farm machinery is making the farmer more and more like a manufacturer. His business is one of the most profitable in the world, when properly managed, for he is manufacturing—with the aid of land, sunshine, and labor—necessities without which the world cannot live. Labor is the biggest expense. Human labor is the most costly form of power, horse labor is next, and machine labor is cheapest. So, like all manufacturers, he is substituting machine power for horse power and man power as rapidly as possible, and is buying automobiles and pianos with the extra profits that the substitution gives him. *Modern Farming.*

There is hardly a farming operation, from plowing virgin ground to hauling the harvested crop to market, that cannot be done quicker, better and cheaper with the aid of an engine than by any other means. In fact the number of practical uses to which you can put a farm engine is limited only by the power of the engine and your own ingenuity. *Economy of Farm Engines.*

IT is not always possible, at the outset, for a farmer who has never owned an engine, to use it *at once* for all these operations. But in a short time he can so adjust his work and his equipment as to bring the engine into play at every possible opportunity.

*Profitable from the start.*

However, there are many big jobs on every farm for which a Fairbanks-Morse Farm Engine is particularly adapted and which make it a highly profitable investment from the start. Pumping water, sawing wood, operating a small electric plant, cutting ensilage, etc.—any one or all of these will provide steady work for the engine from the day it is installed.

With the engine “on the job,” working at these tasks, the farmer quickly exercises his ingenuity to discover other uses for it. He learns that it is a more reliable servant than any hired man and a cheaper and stronger beast of burden than a horse.

*Simple to operate.*

A FEW farmers have hesitated in buying an engine, because of an erroneous impression that it would require expert care and attention. Some farm engines of a dozen years ago may have justified this idea, but since that time great improvements have been made in gasoline engines of all descriptions. The demand for light, reliable engines for automobiles centered the attention of the world's best engineers on the problem. The result is, the gasoline (and kerosene) engine has been brought to a high state of perfection.

*Requirements of an engine.*

To be thoroughly satisfactory, a farm engine must be strong and simple in construction. The farmer is far from machine shops or supply houses, and even if he were a mechanical expert he is not provided with proper tools and machinery for repairs. Therefore he must have an engine that is extra strong—one that will stand rough usage, is simple and easily

understood and requires no troublesome and complicated adjustments—an engine which is thoroughly dependable at all times and under the most exacting conditions.

FOR various odd jobs it is often desirable to move the farm engine (especially the smaller sizes) from one place to another. It should, therefore, be conveniently mounted and as light as possible without sacrificing strength. *Fool-proof construction.*

The engine is often cared for by careless or inexperienced hired help. It must be as nearly “fool-proof” as it can be made.

Economy of fuel is another point that must be given serious consideration.

These points must be considered in designing an engine for *any* purpose. They are of *vital importance* in designing a farm engine.

Each of these features, and many others, is given the most careful consideration in the building of Fairbanks-Morse Farm Engines. Twenty-five years' experience in engine-building “shows up” in the simplicity, strength, reliability, power and economy of every engine shipped from our factory. *Engine-building experience.*

A horse requires more expert attention, many times as much time, trouble, and expense, and *costs more in the first place (power considered)* than a Fairbanks-Morse Farm Engine.

COMPARE the first cost of engine power with that of horse power. It may surprise you to discover that a horse costs far more, even at first, than an engine that will do more work. *Engine power vs. horse power.*

The horse must be fed, 365 days in the year,



whether you have work for him or not. He must be allowed to rest at regular intervals. He must be bedded at night, and you must get up early in the morning so he may eat before the day's work begins. You are always taking chances that he will get sick and die, and even under the most favorable conditions his working life is limited to but a few years.

*The  
never-tired  
farm hand.*

Contrast the horse with the engine. Your engine costs less in the first place. It requires fuel only when it is working. It will work 24 hours a day, 365 days in the year, if you wish. A few minutes' attention a week, given when you have time to give it, suffices to keep it chugging away cheerfully.

The ordinary farm engine won't do everything a horse will do, perhaps. Unless mounted in the form of a tractor, it won't plow or haul your crop to town—but *that's about all it won't do.*

IT will do so many more things than the best registered Percheron ever foaled, that it isn't fair to the horse to compare them. It will do the horse's work and a lot of the man's work cheaper than the horse can do it and better than the man.

*A friend  
in need.*

As one farmer wrote us:

"My engine is a friend who won't leave me, a servant who won't shirk, and a mortgage-lifter that keeps lifting whether crops are good or bad."

A few of the most common uses for Fairbanks-Morse Farm Engines are briefly described in this booklet. As we said before,

there are scores of others which the farmer will discover when he gets an engine in operation on his place.

Almost any one of the uses described herein will make an engine profitable on every farm. There is no farm where it cannot also be used to advantage for many of the others.

A SATISFACTORY water-supply system *Water-supply system.* is one of the most necessary conveniences on the farm. Cisterns and wells near the house are both inconvenient and dangerous—inconvenient because of the trouble of drawing and carrying water, and dangerous because of possible contamination from seeping filth.

A small gasoline engine, operated at very slight expense, can be made to supply water for the home, milk-house, barn and stock-pens. The well may be placed at any distance from the house, or the engine can pump the water direct from a stream or spring—either into an elevated tank (from which it is distributed under the pressure of gravity, to all parts of the place) or direct to the various places where water is desired. If a tank is used, the engine need be run for only a short time every day or so.

Such a water-system enables the farmer to install modern plumbing, in kitchen and bathroom. It gives him abundant water in the milk-house, for cooling-troughs and washing basins. He can place the watering-trough for stock wherever it is most convenient, filling it by simply turning a faucet. There is no longer a muddy pool around the well in the yard, and *City conveniences.*

no one has to carry buckets of water to house or barn-yard at the end of a hard day's work in the fields.

*Protection from fire.*

**A**NOTHER great advantage of an engine for water-supply is in its value as a protection against fire. If the storage tank is high enough, the gravity pressure will be sufficient to throw a stream on any building that is afire. If the tank is too low for this, a small force pump, installed near the engine so that it can be belted up quickly, with a hose and nozzle, gives the farmer a chance to stop a blaze before it has gained much headway.

*Making ice.*

Several farmers have told us of another way in which they found their pumping engine to be most useful. Instead of hauling ice a long distance from lake or river to the ice-house, they simply made a rough pond on top of the ground, by packing the snow into the form of a big saucer. Water sprayed on the packed snow walls froze, forming a sort of open tank with ice bottom and sides. This was then filled with water, and as soon as the water had frozen the ice was cut and stored, leaving enough around the edges to hold the water for the next "crop" of ice.

*Turning timber into money.*

**E**VERY farm has a wood-lot—or if not, firewood is obtained from some neighbor's timber-land. Sawing cordwood into proper lengths for stove and fireplace is one of the most disagreeable jobs on the farm. The buck-saw has driven more farmer boys to the cities than any other influence. An engine-driven wood-saw not only frees its owner from this

back-breaking drudgery, saving his time and energy for more important tasks than sawing wood, but it also provides a steady source of cash profit as well. Where the farm is located near a town there is always a good market for stove-wood, cut into proper lengths. The same amount of wood cut into stove-lengths is worth nearly twice its value as four-foot cordwood. By adding a power wood-splitter to the equipment of the wood-lot, that usually neglected corner of the farm can be made to provide employment for the farmer and his help when there is nothing else to do, bringing in a handsome profit on the time employed. Many farmers have paid for their engines out of their first year's profits from this work alone. Others have done the same by sawing firewood for their neighbors on contract.

In addition to these comparatively simple means of making the wood-lot pay, there are several other methods successfully employed by farmers with proper timber-supply and marketing facilities. A small drag-saw costs comparatively little. In districts where lumber is high it can be used to make rough lumber, thereby disposing of the timber at a good price and also providing employment for the help during the winter. Shingle-making machines also help, in many cases, to glean profits from timber-land. Sawn fence-posts usually find a ready market, and offer a good means of disposing of logs too small for sawing into lumber.

*The farm saw-mill.*

*Shingles and fence-posts.*

An engine and a power-saw have made

many a wood-lot pay handsome dividends—and that without giving anybody a stiff back over the saw-buck.

*Electric  
light on  
the farm.*

**A**BUNDANT, cheap light—for house, barn and stables—is one of civilization's gifts that every farmer should have. The day of the old oil lamp, with its smoky wick, unhealthy fumes, eye-straining yellow rays, and dangerous possibilities of explosion, is nearly over. The improvements in engines and electrical generators have placed electricity within the farmer's easy reach. There is no need to urge the advantages of electric light. Every reader appreciates its convenience. And good, safe illumination in the barn and stable more than pays for itself in the saving of time required for various chores, to say nothing of the elimination of risk from fire.

*Power in  
the kitchen.*

The house-wife is most interested in many of the uses of electricity, because the same equipment that supplies current for lights at night also saves her many a wearying task in the day. By using a small motor in the kitchen she can run the sewing-machine, washing-machine, meat-grinder, apple-grinder (for making apple-butter), and vacuum cleaner, doing her day's work in half the time and with a tenth the effort used before. The cost of providing her with these conveniences is insignificant compared to the benefits she will derive from them. The cost of operating the electric plant, for all purposes, is very small, and the time required to attend to it, will not average an hour a week.

**A**NY farmer whose dairy herd is an important source of revenue, is losing money daily if he tries to get along without an engine. *Many uses in the dairy.* Engine power is the most economical for running the separator, milk-testing machine, churn, mechanical milker (a new device of which we have received many highly favorable reports), rotary curry-comb and other devices to save labor; and to pump a constant stream of cool, clean water through cooling-tanks, for washing milk-cans, strainers and everything else with which milk comes in contact. Where there is not enough of such work to occupy the entire time of an engine, it can also be used for other purposes.

The uses to which a gasoline engine may be put in the barn, granary and stables are limited only by the owner's ingenuity in making use of it. Here we have space to suggest only a few of the most important, out of the scores that farmers have written us about. *In the barn, granary and stables.*

The widespread adoption of the silo for storing winter fodder, has created one very important use for an engine on nearly every farm. There is no power more economical for the ensilage cutter, or for hoisting ensilage into the silo. Silo-filling is accomplished with the aid of an engine in a fraction of the time required by other means. This saving is doubly important, because it comes in the farmer's busiest season, when he seldom has sufficient help for the various harvesting operations. The corn-sheller, pea-huller, feed-grinder, grain-pickling machine, straw cutter, horse-clipper, etc. *Filling the silo.*

*Shelling,  
grinding,  
shearing,  
etc.*



sheep-shearer, root-pulper, and other small labor-saving appliances, are all run most successfully and most economically, with a gasoline engine. A small skidded engine of from 2 to 8 horse-power, can be attached to first one machine and then another, being kept busy almost constantly, or a number of tasks may be performed simultaneously.

*Handling  
hay and  
grain.*

THE cost of handling hay and grain, one of the biggest items of expense—for labor—on the farm, may be greatly reduced with the help of an engine. At a very low cost, a conveyor, consisting of an endless belt carrying metal "buckets," can be employed to hoist grain from the wagon to the highest point in the granary, from which chutes will carry it to any bin desired. An engine can be used to lift a loaded wagon-bed from the wagon-frame to a loading-platform, so that an empty bed can be put on the wagon, which can then be driven away for the next load. This saves time of driver and team. Hay stackers are also best operated with an engine. On many farms, especially in the West, there is more hay and straw than the owner can use. A hay-press, or baler, operated by a small engine, soon puts this hay or straw into shape for very profitable marketing.

*Increasing  
the yield  
of fruit.*

No farmer who has an orchard, or who grows crops that are endangered by parasites, can afford to be without a spraying outfit. A small engine-driven spraying outfit, mounted in a wagon and hauled through the orchard, will often pay for itself several times over in the

saving on a single yield of fruit. Farm fences and buildings can be kept better looking, and protected from decay, if they have a coat of whitewash or mineral paint every year. An inexpensive outfit can be obtained to do this work easily, quickly and cheaply, spraying the paint over the surfaces with a force-pump driven by a small gasoline engine. Those who make a specialty of poultry-raising find an outfit of this kind indispensable for disinfecting and whitewashing both inside and outside of the poultry-houses. *Fences and poultry houses.*

CONCRETE is becoming more necessary *Concrete.* to the farmer every year. Its striking advantages over other materials for silos, feeding-floors, walks, foundations, etc., have made it justly popular. The biggest cost for concrete is the labor required to mix the concrete and place it in the forms. There are several very good small concrete mixers on the market, which can be run with a small engine. With an empty barrel, some plank and a little ingenuity the farmer can make a very serviceable home-made mixer. The concrete block and tile machines, with which many farmers are making money in spare time, also require an engine for economical operation. In building a silo, or any other high structure of concrete, some sort of an engine-driven elevating arrangement to hoist the wet concrete will greatly decrease the labor cost. This is usually in the form of an ordinary windlass hoist, operated by a friction-drum connected to the engine.

*Hoisting.*

An engine is a very convenient thing to have whenever there is any kind of heavy hoisting to be done. Its great power, and ease of control make it splendidly adaptable for such work.

*For the binder.*

A small engine, attached to the binding machinery of a self-binder, will do the work of two or four horses in wet weather, and will often permit the farmer to go ahead with the work when the slippery condition of the ground makes use of the binder in the ordinary way impracticable.

*Ground clearing.*

A SKIDDED engine, which can be moved from place to place with ease, is invaluable to pull stumps in new ground. Its power is so much greater than that of horses, that the tackle is greatly simplified, and the outlay of time—after all, the most expensive item—is greatly reduced.

*In the workshop.*

The average farmer must depend upon his own workshop for practically all his repair work, as well as for the many small conveniences that he finds necessary from time to time. He is usually too far from town to go there for such work, even if he did not prefer—as he usually does—to do it in his own shop. With a properly equipped shop he can save many a dollar in the course of a year by thus employing his spare time.

There is no limit to the number of power-driven tools, but the farmer does not usually need more than three or four. These few, however, are very necessary, and in many cases the purchase of a small engine would be justifi-

fied by the demands of the workshop, even if there were no other uses for it. A band-saw, a wood-drill, an iron-drill, an emery wheel, a grindstone, and, in many cases a small wood-lathe will equip the shop to turn out nearly any kind of work desired on the farm. An overhead line shaft, with proper belts and pulleys, can easily be installed. The engine will also operate the blower for the forge. Each of these uses may appear unimportant, but every farmer who has used a properly-equipped workshop knows that they mean a great saving in time and labor, and enable him to do much more and better work.

MANY a crop of “windfalls” or of late apples can be turned into dollars by use of the cider-mill. This is a much more profitable way of disposing of them than by feeding them to hogs—and if there is an engine on the place the proceeds are practically “found money.”

A ten or twelve horse-power engine, and our Midget flour mill form a combination that is enabling many farmers to greatly enhance their earnings. They can not only get a higher price for their own grain, by selling it in the form of flour, but can also keep the mill busy almost constantly by grinding for their neighbors. In communities that are far from the big grain markets, the saving in freight—on both grain and flour—is great enough to leave a wide margin of profit for the farmer-miller. The “Midget” is recognized throughout the world as the best small flour-mill. It is covered by



patents which prevent successful imitation. It will make a barrel of flour an hour, and the quality of its product is equal to that of the biggest flour-mills. While somewhat too expensive for many farmers, it is an ideal investment for the successful farmer who has a few thousand dollars and is desirous of making the best use of his money.

*Bee-keeping.*

**BEE-KEEPING** is one of the most lucrative "side-lines" that a farmer can have. The bees require little attention, and there is always a ready market for good honey. Like other farm products, however, the price received for honey depends largely upon the form in which it is marketed. For this reason, a honey-extractor is necessary, and a gasoline engine supplies economical power to operate the extractor.

*Well and post-hole drilling.*

An engine is infinitely superior to horse-power for well-drilling. It is far stronger, can be operated where the contour of the ground is such as to make the use of a horse-power difficult, and costs only a fraction as much. There is no need for an extra man to drive it, thus saving the labor of one man, to say nothing of the saving in time on account of faster work.

Several farmers have told us how they have used a small engine to dig or drill post-holes, either mounting it on a wagon, or hauling it from hole to hole on skids.

As remarked in the introduction to this little booklet, it is impossible to name *all* the practicable uses for a Fairbanks-Morse Farm Engine. We have described above a number

that are entirely practicable on the great majority of farms. In the prize contest, we received letters describing as many as 260 separate uses. While the engine could undoubtedly be used for every purpose suggested, the judges consider that many of these uses were impracticable, either because the power required was too small to justify running an engine to supply it, or because the operation itself occurs too infrequently on the average farm. The winner of the contest, Mr. F. W. Crealy, of Strathroy, Ont., listed 132 uses, of which we consider 76 entirely practicable. Many contestants, who submitted more than 200 uses, lost because the total of their practical suggestions was lower than the number given by Mr. Crealy. *The contest winner.*

*Many uses*

We have not attempted, in this preliminary edition of our Farm Engine book, to describe all of even the thoroughly practical uses. We feel sure that the suggestions made herein will help the reader to appreciate the importance of an engine as a labor-saver, and profit maker; and we rely upon his own good judgment to advise him, if he can, upon his own farm, use the engine for other purposes than those enumerated here.

**I**T should be borne in mind that the gasoline engine is not simply a *machine*, limited to certain kinds of work. It's a *source of power*, cheap, convenient, and reliable, and it can be used for nearly any purpose where power is required. Its value, already so great, is being rapidly increased by the invention of new *Unlimited service.*

*The farm  
of the  
future.*

power-driven, labor-saving devices for farm use. The farmer has discovered that he can save to himself much of the profit that has been wasted, by adopting the same business methods and modern equipment that have made swollen fortunes for so many manufacturers. The time is coming when much of the manufacturing will be done on the farm, and the farmer will sell his products, not to the middleman, but direct to the consumer and retail dealer. The adoption of the gasoline or kerosene-driven farm engine is speeding the arrival of this profitable age.

*An  
important  
use.*

In reading the letters entered in our contest, we were struck with the frequency with which the writers closed their lists of suggestions with the remark "And it will help keep the boys on the farm." So it will. The farm engine relieves farm work of its drudgery. It helps to raise the farmer from the plane of the day-laborer, working with his hands for a bare living, to that of a business man, working with his head for the comforts and luxuries to which his brains entitle him. The boy on the farm is quick to see this. When he sees drudgery replaced by interesting work, and a bare living swelled into a piano-and-automobile income, he loses all desire to exchange the independence of his healthy outdoor life for the comparative slavery of some city office job.

So for the last use suggested in this little booklet, we list the most important and the most practicable of all,

*"To keep the boys on the farm."*

MR. ANDREW R. OLIVER, of Staffa, Perth County, Ontario, writes: "Hired help is so very scarce, and the wages for good help so high that the farmer must have power of his own. . . . Hydro-electric power is far too expensive for the average farmer, at least in this vicinity, and I suppose in many others, as it costs here over \$40 per horse power per year, whereas we run a 12 h.p. gasoline engine for one year, doing all the work on 150 acres, such as cutting, pulping, grinding and chopping, sawing wood, etc., for about \$22."

*Cheaper  
than  
Hydro-  
electric  
power.*

Mr. W. J. Erskine, of Rosetta, Ontario, who has used an eight horse-power gasoline engine for several years, describes many practical uses. He says in part: "I have been using my engine for threshing, silo-filling, cutting dry fodder for feed and bedding, also running a hasher. I might say that I have done quite a trade grinding breakfast foods such as germ meal, brose meal, corn meal, and even buckwheat flour, using a cheese cloth to sift the flour, and something coarser for the germ and corn meal. I have done the biggest business sawing poles and cordwood and even logs. I expect to build in the near future, and intend cutting my own shingles and edging them, also cutting lath, and running a band saw to do the scroll work. . . . I have had a wind mill for pumping water this last six years, and have no hesitation in advising others to procure an engine for that purpose, for then you have it for other things as well."

*Increased  
his earnings.*

*Something  
new in corn-  
husking.*

A UNIQUE method of husking corn by power is described by Mr. Frank Small, of Mount Elgin, Ont. He says: "I want to tell you how an engine can husk corn. Two years ago I had a large field of corn that we could not get husked before winter, and, as you know, it is an impossible job to husk corn in cold weather. We had an old horse-power cutting-box. Just back of the cutting-box I set up the back (circular part) of an old fanning mill with the fans on, and connected the fan shaft to cutting-box shaft by belt. The air driven by the fans struck the corn just as it went through the cutting-box (corn and stalks being all together) and I placed a dividing board to divide the clear corn (heavy) from the stalks and leaves (light), and it fell down into basement in two separate piles. In that way I cut my corn stalks, and saved 700 bushels of shelled corn separate; and never had a cold finger. I have often thought if I had a gasoline engine how much better and more satisfactory it would have supplied power than the horse-power."

*Interesting  
figures.*

Mr. B. F. Read, of Read P.O., West Co., N.B., compares the economy of engine power with other labor, most interestingly as follows: "A man works at the rate of about 1/10 horse-power. That is to say, the ordinary man in one hour does one-tenth horse-power of work. In a day of ten hours, he does one horse-power of work. If we consider a man's time to be worth at least one dollar a day, it costs one dollar to do one horse-power of work by man

power. A gasoline engine uses one pint of gasoline per horse-power per hour. If we take gasoline at 20 cents a gallon, a pint costs 2½ cents. The cost of one horse-power hour of work done by gasoline engine, therefore, is 2½ cents. The cost for man-power is one dollar—for gasoline power 2½ cents. This illustrated the great advantages of a gasoline engine."

MR. H. BARON, of Wheat Centre, Alberta, begins his letter by very clearly expressing the same idea which we have in mind in the preparation of this booklet.

"There is no doubt," he says, "that a gasoline engine on a farm is an asset, the value of which it is practically impossible to estimate or limit. In attempting, therefore, to describe the uses to which an engine can be put on a farm, as required by this competition, the writer is conscious of the fact that conditions will vary in many parts of the country, and that his ideas and suggestions will not always be applicable, and in other cases may be carried to still further and to greater advantage."

*Value  
unlimited.*

Mr. Harry Strauswell, Kinglake, Ont., says, "Many times a farmer wants holes drilled in iron. A few pieces from an old binder and some drill points can be made to do as much drilling in fifteen minutes, with the aid of an engine, as a man can do by hand in half a day."

*Iron  
drilling.*

"For less than \$20 a tractor can be constructed suitable for two to six horse-power engines. There are three such in this vicinity."



Overcoming  
difficulties.

An emergency may spring up at any time and a gasoline engine be the means of saving thousands of dollars. An instance is mentioned by Mr. Stanley E. Lapp, of Dellwood, Sask. "This fall it was very wet in this part of Saskatchewan and the ground became so saturated that it was next to impossible to run a grain binder, but the gasoline engine came to the rescue and some hundreds of acres of crop were saved, which otherwise could not be cut.

"The binder was mounted on runners, or skids (all wheels off the ground) and a small gasoline engine attached to drive chain to furnish power to cutting and binding machinery. Six horses were hitched to the skids and the binder drawn over the mud, rather than through it, and a splendid crop was harvested."

THE saving in labor on a single operation will oftentimes pay for an engine. Mr. C. A. Ham, Bruce, Alta., gives an illustration: "A drilled well in this vicinity costs, say, \$500. A farmer with some mechanical ability can construct, for about \$100, an outfit which, run by a gasoline engine, will drill his well and when he is done he will have his well and engine too at a price he would have paid for his well alone."

Mr. Ham might also have added that the farmer would also have an efficient well driller that would soon earn for him *many times* what he originally paid for his engine.

Many letters have been received from farmers who already are the owners of Fairbanks-Morse Farm Engines and their actual experi-

A big  
saving on a  
single job.

ences are interesting. Mr. T. R. Olive, Carbon, Alta., the owner of a Fairbanks-Morse Eclipse Engine, says in part: "We have an Eclipse and have used it 5 to 8 hours a day, watering 13 horses, 40 head of cattle and 100 pigs. It has been running continuously for seven months and given great satisfaction, while our neighbor's different make has given him endless trouble. The Eclipse has stood the test. It is so simple, accurate and true that a child can handle it. It is of great interest to the boys and has made the farm work for them a pleasure instead of drudgery."

Actual  
figures.

MR. N. W. THOMPSON, Justice, Man., gives some instructive figures which prove the value of a Fairbanks-Morse Farm Engine to the grain-grower. "Last year we shipped 12 cars of grain, and this year 8. The elevators charged a cent a bushel for elevating, which amounted to \$220. If you sell it to a commission house, the elevating charge is a cent and a half per bushel. Had we done this our elevating charge would have been \$330. A small engine would have saved us this expense. With the engine at home we also could save the expense of shovelling. For cleaning grain sold to the commission houses the elevators charge  $2\frac{3}{4}$  cents a bushel, for our 20 cars, 22,000 bushels, the cost would have been \$550, which amount would pay for a fanning mill, elevator and engine, and still leave us \$65 clear profit, besides the cleaning being done at home the freight charges would be saved. One man here shipped a car this fall that was docked

For the  
grain-  
grower.

11 per cent. He was allowed \$6.00 for the dockage. If the cleaning had been done at home he would have saved \$9.00 freight and would have had 120 bushels for feed. I could cite dozens of cases that range from 4 to 8 per cent. Grain choppers charge 8 cents a hundred pounds, and as we feed about 3,000 bushels (102,000 lbs.) a year to horses, cattle and pigs, an engine would save us \$81.60 on this one operation.

Clipping.

Mr. Fred V. McKinney, Box 230, Boissevain, Man., says: "I know of a farmer who has 28 working horses, three driving horses and a number of colts, that he clips in two days with the aid of an engine. He sells the hair, which more than pays for the gasoline, and he doesn't have to *urge the boy on the handle.*"

Excavating.

FOR well boring, ditch digging or excavating of any kind, a Fairbanks-Morse Farm Engine will do more work in a shorter time, with less labor and at a lower expense, than the same jobs can be done in any other way. Mr. Harry Hall, Tyrrell, Ont., says: "One of my neighbors used his engine to remove the earth from under his house in excavating for a cellar. He made a carrier something like a grain elevator and attached the engine to it. The engine could also be attached to a windlass for removing earth from a well."

As a means of increasing the fruit and vegetable crops, Mr. Win Surgenor, P.O. Box 352, Cornwall, Ont., states: "I would also use the engine in season for spraying the orchard,

and for watering the celery and strawberries. By watering these I could make from one-third *Orchard and garden.* to one-half more on these crops."

Mr. Soren Orum, Fessemur, Sask., has had an interesting experience that proves the durability of Fairbanks-Morse Farm Engines. He says in part: "I ran a Fairbanks-Morse engine for seven years at Ridgeway, Iowa. My repair bill was 1 ignitor spring, 5 cents; 2 ignitor gaskets, 4 cents; total repair expense in 7 years, 9 cents. Our Fairbanks-Morse engine at Ridgeway has run over 20 years with practically no repairs. But best of all, the engine will run in cold weather as well as in warm weather, and without an expert. Any man with sufficient brains to turn a grindstone can start the engine in a few seconds. The engine will always work, and work cheap."

*Economy of up-keep.*

OUR contest brought forth many testimonials similar to the one here quoted from the letter of Mr. Harry Bryant, Box 583, Innisfail, Alta.: "I might say without fear or favor that I think a great deal of your engines as far as I have seen. I am a pumpman on the Canadian Pacific Railway, and they installed one of your 15 h.p. combined pumping engines, and I have never had any trouble the whole three years it has been in. I have still got the same battery and it is as strong as ever."

*Durability.*

## Gasoline and Oil Power on the Farm

### How Engines Have Lightened Farm Work

By Philip S. Rose

(From the *Scientific American*, February 1, 1913)

**T**HE uses for the gas engine are legion. It is the mechanical chore boy of the farm, the Percy, or mechanical man of agriculture. It can be and is used in the house, in the barn, in the field and in the garden. There is hardly any place where there is work for a man to do that the gasoline engine cannot be used to advantage. It can be used in the house to run the washing machine and wringer, to pump water and furnish lights.

Many farmers have a small shop fitted up near the house where they have installed a shop for the repairing of tools, a laundry, an electric lighting plant, a cream separator, and perhaps a churn and other small machinery, all of which is run by a four or five horsepower engine.

An electric generator of two kilowatts capacity, with a storage battery, will light the house, the barn and the grounds; besides furnishing enough current to operate fans, flat irons, a sewing machine and perhaps a mechanical milker.

**T**HE cost of current so generated will not exceed ten cents a kilowatt hour, a figure that compares favorably with what the city dweller has to pay to the central station. If the shop can be built around the well, as many

of them are, the same engine can also pump the water and deliver it to all parts of the farm buildings. One of these little machines makes it possible for every farm to have all the modern conveniences of the city home and at no greater expense.

Even if the same engine cannot be used to do all this work it costs very little to buy enough small units to take care of the various jobs that need to be provided for. The cost of a gasoline engine ranges from twenty-five to thirty-five dollars a horsepower whether the engine be large or small, so there is no economy in buying one large engine. It is better to buy several and place them where they will be needed most of the time.

**S**UCH engines will run on about a pint of gasoline per horsepower per hour, or with gasoline at 16 cents a gallon, at a cost for fuel of only two cents a horsepower hour. The same amount of work with human labor will cost at least one dollar and twenty cents, for a man will charge at least fifteen cents an hour, and can do only one-eighth of a horsepower of work. Furthermore, you know when you set an engine at work that it will not loaf on the job, and you are getting the full worth of your money.

If the gasoline engine had been invented and brought to its present state of perfection a hundred and fifty years ago we would never have had human slavery in the South. No slave, no matter how hard the task master, was ever able to compete with one of these mechan-



ical men in the amount of work turned out in a day nor in the cheapness with which such work can be accomplished.

**O**UR teachers of agriculture tell us that if we are to maintain the fertility of our soils and make a permanent success of agriculture we must raise more live stock. To do this we must grind feed, shred corn fodder and put up ensilage. Cattle and hogs and sheep cannot be allowed to pasture on high priced land; they must be kept in the stables and fed. Here then is where the engine of a little larger size can and must be used. Engines of twelve to fifteen horsepower, either stationary or mounted on trucks so that they can be moved easily from place to place, are the ideal size for this heavy work. In addition they can be used to thresh the grain, and many farmers are so using them. There are a number of small separators on the market designed for just this purpose.

**A**S an example of how efficient a gasoline engine is for filling silos, all we need to do is to turn to a bulletin published by the Virginia Experiment Station which gives the report of experiments on the cost of filling silos with different kinds of power. It was shown in these experiments that the cost of filling a silo with gasoline engine power, using gasoline that costs thirteen cents a gallon, amounted to only two to three cents a ton as against two to seven cents a ton for steam engines using coal at five dollars a ton.

Another big field for the gasoline, or to be more exact in the use of terms, for the crude oil engine is in irrigation. Vast areas in Colorado, Texas and Kansas have been reclaimed with the use of such engines which pump from wells sixty, seventy and even eighty feet deep. Thousands of engines of from five to fifty or more horsepower are already in use and the number is daily increasing.

**I**N the fruit growing regions every fruit grower needs a gasoline spraying outfit and it requires one such outfit for every ten acres of orchard, because the time when spraying must be done is very limited and a day or two's delay means the saving or losing of a crop worth thousands of dollars.

Even the poultry farmer finds the gasoline engine indispensable for grinding bone and preparing food for his poultry, while market gardeners all through the humid belt, circumvent the vagaries of the weather and overcome the handicap of a long drought by the use of some overhead system of irrigation.

**T**HUS it will be seen that every farm, no matter what the product thereof, can find profitable use for gas engine power. The small farm of only an acre or two needs at least one, while the large farms need several. One farmer writes that he has seven gasoline engines and finds them indispensable, while another reports five. A man engaged in mixed farming in Minnesota declares that every farmer on a quarter or a half section farm ought to have at

least three engines of two, six and twelve horsepower, respectively. This man started out a few years ago with horses and men as his only source of power, and now has adopted gasoline engines everywhere he possibly can. He still uses horses, it is true, but with the small engines about the farm and a tractor in the field he finds it easy and more profitable to dispense with a large number of surplus horses and keep fewer hired men.

**A**S an example of the value of one of these engines for special service, consider the special binder engine, which, mounted on the rear of a binder, operates the sickle and binder head and thus dispense with two horses. Where the grain is heavy or the ground muddy it requires at least four horses on a grain binder, but with an engine to operate the working parts of the machine, two horses are sufficient. This was discovered a number of years ago in the Red River valley when a heavy rain came on just when the grain was ready to harvest. The straw was very heavy and the soil so saturated with moisture that the wheels would fill up with mud and refuse to turn. A number of people then resorted to a gasoline engine fitted up on the rear of the binder, and in that way all that was saved that year of the wheat crop of the valley was saved by the aid of gasoline. Since then there has been a growing demand every year for binder engines. Wherever the grain is very heavy the little engine will relieve one team and do the work easier and cheaper. Last year, owing to the heavy straw, these

engines were shipped from the factory to the grain fields in carload lots by express.

**I**N parts of the country where there is much tile draining to be done special gas engine driven ditchers are coming into use. Some of these are home-made, some factory-made. An example of one of the former type came under the writer's observation not long since in Iowa. It is fitted with a fifteen horsepower gasoline engine and is capable of digging twenty rods of trench a day for 36-inch tile at a fuel cost of only five dollars. There are millions of acres of land in this country that need drainage, and it is such machines as these that will make the work possible. If we had to depend upon human labor to do all the excavating the cost would be well nigh prohibitive, even though tile draining doubles and in some cases trebles the value of the land. One of these machines can easily do as much in a day as fifteen men.

**I**NSTANCES of the use of gasoline engines could be multiplied almost indefinitely. The experiences of farmers everywhere are the same. Listen to what a few of them have to say in regard to this subject. Here is one from Indiana. He writes: "Three years ago I purchased a two horsepower engine to pump water from a hundred and fifty foot well. In the fall we used it to cut corn fodder, then fitted it up to a wood saw and later to run a small feed grinder. If I were buying another engine I would get a larger one, but I only expected to

use this one for pumping until I realized its adaptability and added the other duties."

**A**N Illinois farmer reports as follows: "We have three engines on our farm, one is two and a half horsepower, one six and the other eighteen. The small one is used for pumping water, washing, sawing wood and for all small jobs. I got the six-horse engine to run the corn dump and to help out the small engine. Later, I converted it into a tractor to more easily take it to the various jobs I wanted done. It is a success, too. The big engine is used to run a feed mill and has ground thousands of bushels of corn and oats for cattle feeding."

**A**NEW YORK farmer, evidently a poultryman, writes that he uses his seven-horse engine to run a pneumatic ensilage cutter, a meat chopper and a bone grinder, while a Nebraska farmer who kept an accurate record of his work writes that he sawed eighty-four loads of pole wood, each load averaging three quarters of a cord, in fifteen hours and fifty-five minutes and used only four and a half gallons of gasoline.

From all parts of the country come the same reports of adaptability, efficiency and economy. We are only at the beginning of the use of power in agriculture, but its use is spreading with tremendous rapidity. The era of power farming is upon us, and it seems destined to work almost as much of a revolution as did the entrance of mechanical power in manufacturing.



WE have not used any of the space in this booklet to describe the quality of Fairbanks-Morse Farm Engines. Our aim in writing it has been to give you suggestions for the profitable use of a gasoline engine. Any reliable gasoline engine possesses great advantages over other forms of power on the farm. To get the greatest possible value out of your investment, however, choose an engine that is specially designed for farm use by a manufacturer who has given thought to the farmer's particular requirements.

The same quality of design, material and workmanship that has made Fairbanks Scales the world's standard, is built into Fairbanks-Morse Farm Engines. There are cheaper engines and engines which cost more, but we do not believe that there is any reliable farm engine that can be sold for less than our prices, nor any other engine, at any price, that is better either in construction, or in adaptability to farm use, than those we build.

We handle a large line of farm machinery, including farm engines, tractors, scales, electric lighting and fresh-water systems, feed mills, ensilage cutters and flour mills. Our Farmers' Information Department will gladly supply you with complete information concerning any or all of these machines, as well as about Fairbanks-Morse Farm Engines. This department is maintained to advise and inform those interested in power-farming. Its assistance is free and carries no obligation on your part.

Address such communications to

*Farm Information Department*

**Canadian Fairbanks-Morse Co., Limited**

**Montreal**

We have sales offices at Montreal, Ottawa, Toronto, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver, Halifax and St. John.