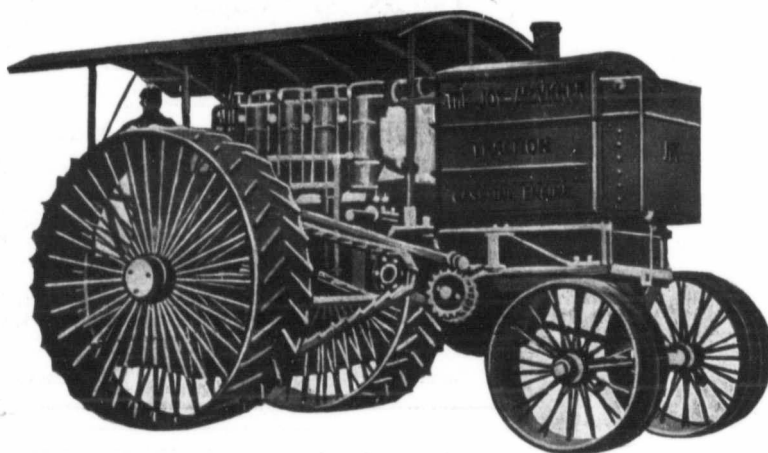


BIG WORK ^A_N^D BIG PROFITS

Fall to the lot of the Farmer who uses a Joy-McVicker Gasoline Traction Engine

Do not waste your time or that of your hired man with a small gas tractor, but get a machine that will do the work of the largest steam engine and requires no more men to operate it than the smallest gas tractor



The Joy-McVicker Gas Traction Engine is a 50 h. p. traction, (140 h p. brake) machine of the 4 cylinder, vertical type. It has a **double chain drive**, one on either side. It is the only chain driven gasoline engine on the market and owing to the fact that it is chain driven, a flexible mounting is obtained, taking the strain of the continued explosions in the engine off the frame work.

Plowing is a severe trial on any traction engine and it is an actual fact that any engine mounted on trucks will either shear off the bolts entirely, or work them loose, and with a great many of the gasoline traction engines on the market to-day, when in actual field practice, it is necessary for the operator, each morning, to take up the parts that have worked loose during the day.

The Joy-McVicker is the only engine on the market which has railway car construction in its frame work, using 2 by 4 steel beams rather than channel iron

or I beams. All cross pieces are dove tailed into the channels so that the strain is taken off the nuts and bolts. It is an actual fact that our engines have been in operation for two seasons without taking up a single nut. The Joy-McVicker engine is very economical on fuel and water consumption. The consumption of a 50 h. p. Joy-McVicker worked on a full load can safely be placed at less than 1 1/2 gallons of gasoline per acre and the water consumption at two to three barrels per day. This engine is also manufactured in 40 and 70 h.p. brake.

For Catalogue and other information write

THE
Canadian Port Huron Co.

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We still have some territory for a few live representatives

sary on the front wheels so that the engine may be steered when pulling, for the gearing then tends to lift the front wheels from the ground. Four wheel drive engines have been often proposed and sometimes built, one firm having manufactured them successfully for a number of years.

The differential gear, which allows both wheels to drive all the time independently of the direction of travel or the straightness of the path, is universally used. In practically all of the large engines, the differential gear is located on the countershaft with two sets of gears transmitting the power from the countershaft to the traction wheels. Friction clutches are in most cases provided to facilitate disconnecting the engine from the traction gearing when desirable for belt power.

Among steam engines, the locomotive type of boiler has become quite general and of the large man-

ufacturers there are now only three building the return-flue and of these only one builds it exclusively. Upright boilers and water-tube boilers have been and are used, but not generally. It is common to mount the engine above the boiler, there being only a few firms who have been or are building under-mounted engines and the number of these built is small in comparison with the total number of traction engines. Both single and two cylinder steam engines are built, a number of the leading firms building both types. Of the sixteen representative firms which may be considered the leading manufacturers, six build the single cylinder exclusively and one builds the two cylinder exclusively. The "live" axle, that is, the system of mounting whereby the traction wheels are placed upon an axle that turns, is gaining ground, and we now find more manufacturers us-

ing it, at least for their larger engines, than ever before.

In valve-gears, the Stephenson link was the favorite at one time, but at present we find only two or three of the leading firms using it. The simpler valve-gears are now more popular, the shifting eccentric and radial types both being well represented. Some form of the radial type is used on over fifty per cent. of the engines manufactured.

The throttling governor is generally used, and very close speed regulation has been obtained with it. The ideal speed regulation for driving a separator or other belted machine is to have a slight increase in speed with full load in order to make up for the slippage of the belts. Throttling governors are now made which will give ideal results in this respect, the speed increasing gradually with increase

of load until at full load it is about two per cent. faster than at no load. The automatic cut-off governor has been used on agricultural engines more or less in Europe, but very rarely in this country. The throttling governor dries and superheats the steam and, used in connection with a valve-gear which admits of "hooking up" to vary the point of cut-off according to the load requirements, gives good results in economy of steam consumption. These points are mentioned, as showing in a general way the tendency towards certain forms of construction by the leading manufacturers of traction engines, nearly half of whom have now been in the business above thirty years.

The following table gives some data of current practice in steam traction engines by leading manufacturers in the United States: