

# The "Flour City" Tractor

*The Most Economical Power for Plowing, Threshing and General Farm Work*

It is accurately balanced, free from vibration and delivers a steady motion to the belts

It does not require a fireman; it dispenses with the waterman and team; likewise the fuel man and team. It is not subject to boiler troubles and the danger of fire is eliminated.

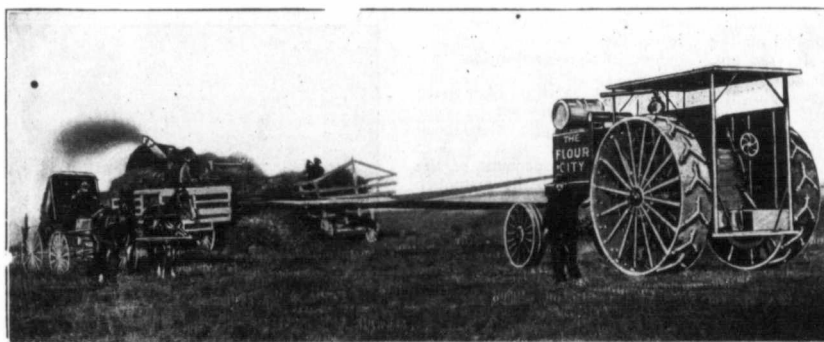


It is especially designed for plowing, and its general construction, simplicity, horse-power and weight, together with its large drivers, appeal to any one who has given the matter thoughtful consideration.

The rigid construction and excellent workmanship embodied in the "FLOUR CITY" minimises the liability of breakages under the severest strain.

**Kinnard-Haines Co.** 828, 44th Avenue North  
Minneapolis, Minn., or  
Ontario Wind Engine & Pump Co., - Toronto, Winnipeg, or Calgary

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more easily overcome some of the mechanical difficulties presented in the design of the engine.

Another reason for the stationary engine being of the "long stroke" type is that they are usually built to operate at a low rotative speed, thus allowing a longer stroke without producing an excessive piston speed, which would rapidly wear the piston and cylinder.

Vertical engines are usually constructed with shorter strokes, and higher rotative speeds. One reason for this is that it is desirable to keep the height of the engine as low as possible. Inertia effects must also be considered as vertical engines have rather a

small base area compared with the horizontal.

For the past few years, the general trend of automobile design has been to use the short stroke motor. However, with the advent of lower powered cars, and in some cases, the reduction of the number of cylinders, the long stroke motor is coming into its own. The principal reason for the use of the short stroke motor was that for the same space and height available under the hood of the machine, a higher powered motor could be used. The mania for high powered cars is gradually dying out, and other factors are being taken into consideration to a greater extent.

For the same power the long stroke motor will, of course, have the smaller piston diameter. This will mean that the shock produced by the explosion will be less than in the other type. The long stroke engine is also more flexible on account of the greater radius at which the force of the explosion acts. It is thus possible to operate this type of engine over a greater range of speed and thus eliminate considerable gear changing, which is somewhat tedious to the operator. The short stroke motor operates at a higher rotative speed so that the number of shocks to the motor are greater in number as well as in value, so that the long

stroke motor is considered to be somewhat longer lived on this account.

Firemen frequently find it necessary to play the hose on their fellow firemen to protect them from the intense heat of the conflagration which they are fighting. Borrowing from this idea, an inventor has devised a helmet formed with a spray nozzle, which is connected to a small hose line. The water spouts out from the nozzle in all directions, causing a miniature cascade around the body of the fireman, enabling him to attack at close quarters fires that would be unendurable under ordinary conditions.—Ex.