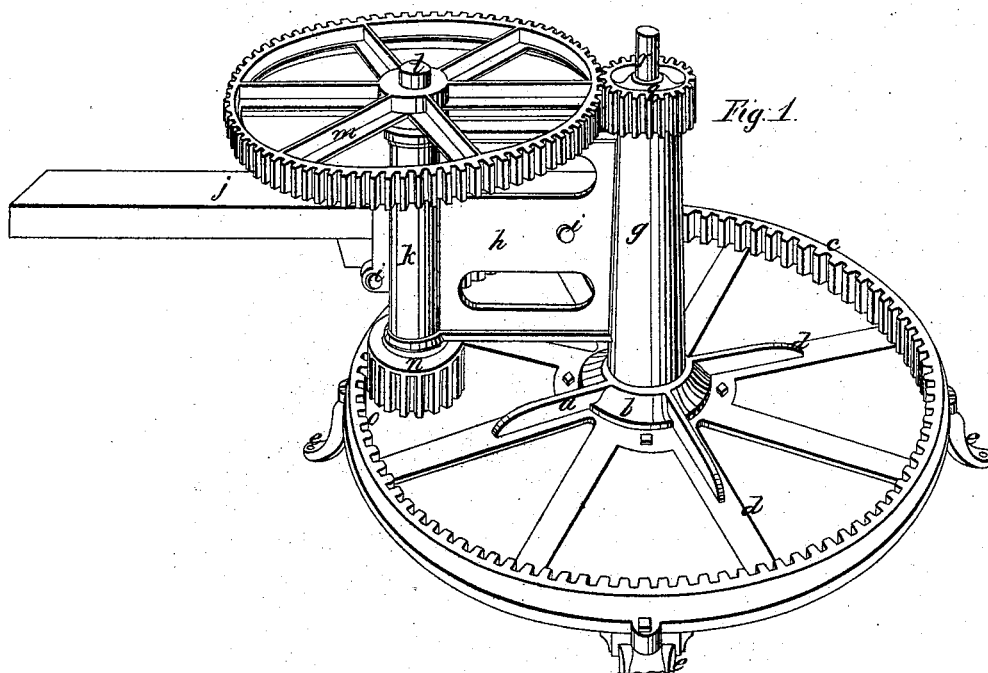


*J. Bogardus,*

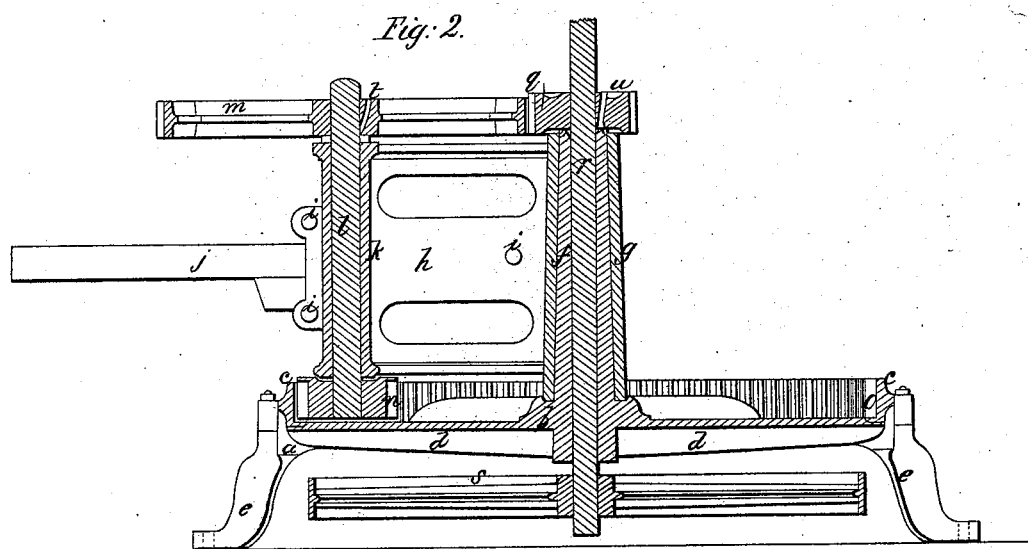
*Horse Power.*

*N<sup>o</sup> 5, 735,*

*Patented Aug 29, 1848.*



*Fig. 1.*



*Fig. 2.*

*Inventor;*  
*J. Bogardus*

# UNITED STATES PATENT OFFICE.

JAMES BOGARDUS, OF NEW YORK, N. Y.

## SUN AND PLANET HORSE-POWER.

Specification of Letters Patent No. 5,735, dated August 29, 1848.

*To all whom it may concern:*

Be it known that I, JAMES BOGARDUS, of the city, county, and State of New York, have invented a new and useful Improvement in Horse-Power for Driving Machinery, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the machine, and Fig. 2, a vertical section thereof. The same letters indicate like parts in all the figures.

My improved horse power is based on the principle of the well known sun and planet motion, and consists of a base frame having cogs in the inner periphery of the rim into which mesh the cogs of a pinion on the lower end of the arbor of the planet wheel, the cogs of which drive a pinion on a central shaft that carries the driving pulley—the arbor of the planet wheel being adapted to turn in a sleeve in a traveling wing to which the horse beam is secured, and the said wing having another and parallel sleeve that turns on a central hollow standard of the frame through which the shaft of the central pinion and driving pulley passes and in which it turns.

In the accompanying drawings (*a*) represents the base frame cast in one piece, consisting of the central hub (*b*) and the outer ring (*c*) connected by radial arms (*d, d, d*) and standing on legs (*e, e, e*). The central hub is cast with a hollow standard (*f*) properly turned with a slight taper to which is fitted a sleeve (*g*) that turns thereon freely but accurately, and resting on the upper surface of the hub; and with this sleeve and making part thereof, is cast a wing (*h*) to which is secured by bolts (*i, i*) the horse beam or lever (*j*) by which the whole is operated. The other end of the wing is also provided with another sleeve (*k*) cast therewith, and parallel to the other to which is fitted accurately, (but yet to admit of turning freely,) the arbor (*l*) of the planet wheel (*m*) and planet wheel pinion (*n*), the former being at the top and the latter at the

bottom. One of these, either the wheel or the pinion can be permanently attached to the arbor, and the other keyed on after it has been inserted in the sleeve. The cogs of the pinion of the planet wheel take into the cogs (*o*) formed in the inner periphery of the rim (*c*) of the base frame, and which may be called the master wheel; and the cogs of the planet wheel take into the cogs of, and drive, the central pinion (*q*) on the upper end of a vertical shaft (*r*) that passes through and turns freely but accurately in the central hollow standard, which is adapted to it, the driving pulley (*s*) being keyed on the lower end and below the hub. A band from the driving pulley can be carried under the frame and between the legs to any place required in the usual manner to drive any piece of machinery, but if desired the driving pulley can be attached to the central shaft above the central pinion *q*.

The arbor of the planet wheel is oiled through a hole (*t*) in the wheel which delivers it at the junction of the sleeve and arbor, and in like manner the central shaft and the sleeve that turns on the central standard are oiled by pouring the oil through a hole (*u*) in the central pinion which delivers it onto the upper end of the hollow standard which is grooved to direct the oil to its inner and outer peripheries. In this way the whole apparatus is completed, made light and portable, and as the whole rests on the base frame and turns on the central standard which makes part of the base frame, without supports or bearings at the top, the whole can be taken apart for transportation and put together with facility. The whole strain comes onto and is supported by the hollow standard which being cast with the base frame will resist any strain that can be applied to it by horses employed to drive the machine. The sleeves of the wing and the inside of the central standard are or may be lined with soft metal.

I am aware that the sun and planet motion has heretofore been applied for driving machinery, and therefore I do not claim this as of my invention; but

What I do claim as new and desire to secure by Letters Patent is—

Making the central standard in which the

central shaft turns and on which the main sleeve of the traveling wing turns a part of and projecting upward from the base frame of which the master wheel makes part, when  
5 this is combined with the wing, to which the horse lever or beam is attached, and made with two sleeves one fitting to and turning

on the central standard, and the other forming the box for the arbor or shaft of the planet wheel, substantially as described.

JAMES BOGARDUS.

Witnesses:

ALEXR. PORTER BROWNE,  
C. W. M. KELLER.