

(No Model.)

A. R. VARY.
HORSE POWER.

No. 385,392.

Patented July 3, 1888.

Fig. 1.

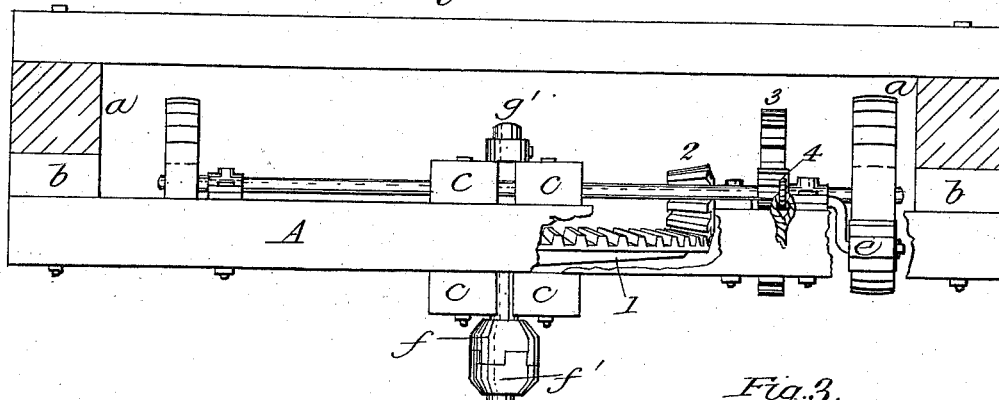


Fig. 2.

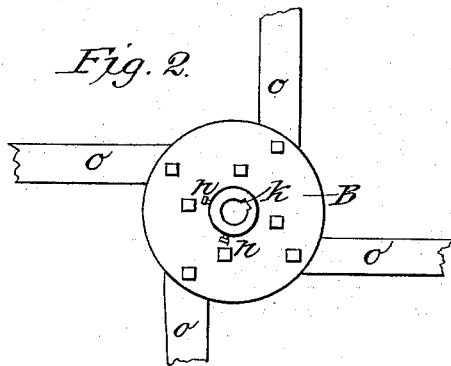
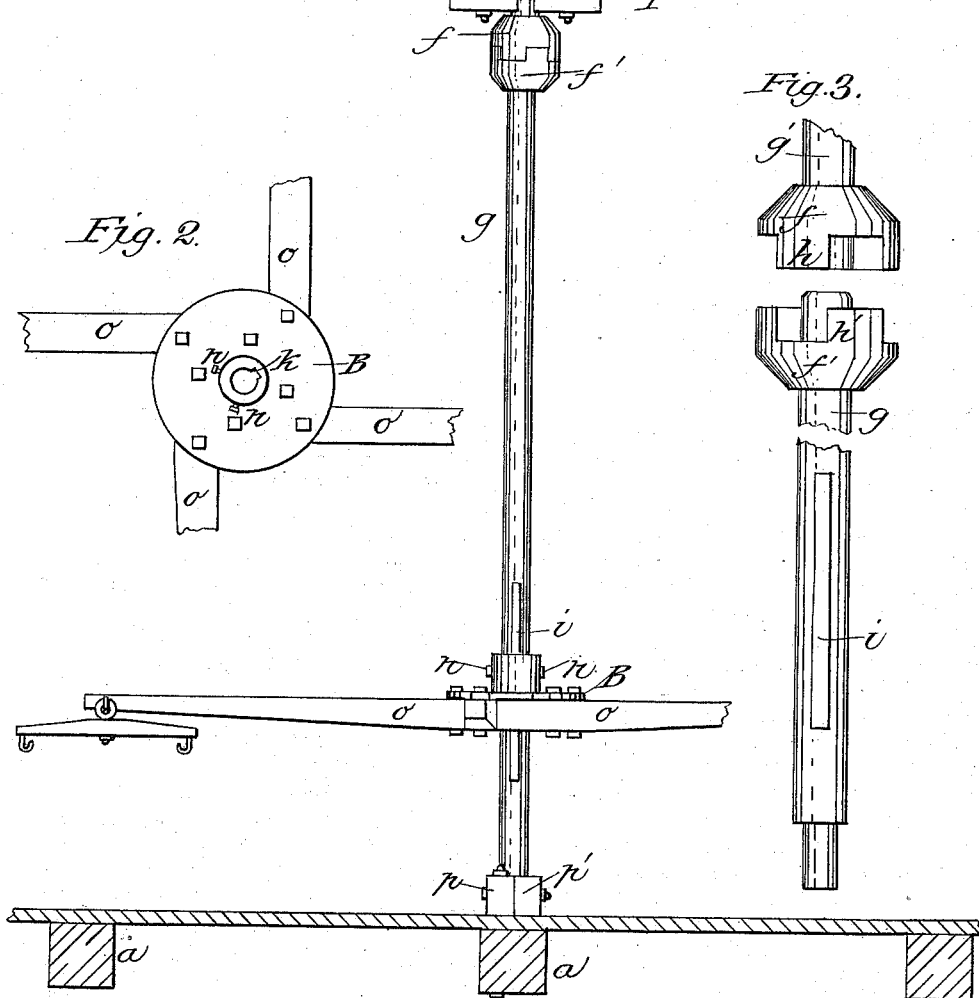
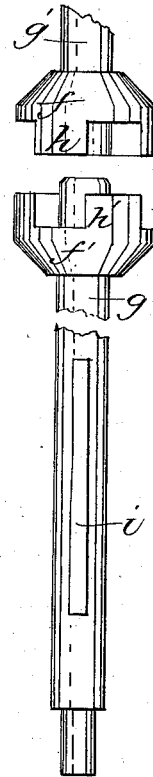


Fig. 3.



Witnesses:
J. H. Church,
David Cunningham.

Inventor.
A. R. Vary.
per J. C. Wells, Atty.

UNITED STATES PATENT OFFICE.

ALBERT R. VARY, OF MARSHALL, MICHIGAN.

HORSE-POWER.

SPECIFICATION forming part of Letters Patent No. 385,392, dated July 3, 1888.

Application filed August 11, 1887. Serial No. 246,752. (No model.)

To all whom it may concern:

Be it known that I, ALBERT R. VARY, a citizen of the United States, residing at Marshall, in the county of Calhoun and State of Michigan, have invented a new and useful Improvement in Horse-Powers, of which the following is a specification.

My invention relates to that class of horse-power transmitters which are adapted to be placed above the horses and permanently fixed to the frame of the building in which they are to be used, and having a removable vertical shaft to connect the mechanism above with the sweeps, to which the horses are attached.

It is a fact well known to those accustomed to the use of draft-horses that a great advantage is gained when the point of draft is at the proper height. This point will vary according to the height of the horses used; and to meet these varying conditions is the first object of my invention. I attain this object by the mechanism illustrated in the accompanying drawings, of which—

Figure 1 is an elevation of the entire machine. Fig. 2 is a top view of the plate, to which the sweeps are attached. Fig. 3 is an enlarged detail view of the removable shaft, with annular rib and manner of coupling to the upper section.

Similar letters refer to similar parts throughout the several views.

Referring to Fig. 1, *a a a*, &c., are sections of the frame of the building in which the machine is placed. *A c c c* are several parts of the frame of the machine. *b b* are blocks by which the machine is held in proper position to allow its wheels to revolve without coming in contact with the timbers above. *1 2 3* are ordinary gear-wheels to multiply the motion. *e* represents a brake to facilitate stopping the machine. *g* and *g'* are the two sections of the vertical shaft. *f* and *f'* are the upper and lower sections of the coupling. *B* is a plate to which the sweeps are attached; *r* and *r'*, the step in which the lower journal of the vertical shaft revolves.

Referring to Figs. 2 and 3, *i* is an annular rib on the vertical shaft *g* near the lower end, adapted to and bearing in an annular groove, *k*, in the boss of the plate *B*. This rib and groove prevent the plate *B* from turning on the shaft, but admit of it being raised or lowered, by which means the point of draft at the outer end of the sweeps *o o o o* can be adjusted and can be retained in adjustment by means of set-screws *n* and *n*.

When the plate *B* is properly adjusted, the draft of the horses is slightly upward and tends to lift the vertical shaft *g* from its step *r* and *r'*. To prevent this and to facilitate the removal of the shaft is the second object of my invention. This is attained by the use of the coupling illustrated in Fig. 3. A flange, *f'*, secured to the upper end of the lower section of the vertical shaft, is provided with three or more lugs, *h'*, extending upward and adapted to the spaces between like lugs on a similar flange attached to the lower end of the upper section, *g'*, of the shaft and to engage with them in such a manner as to impart a positive motion to the upper section when the lower section is made to revolve. This coupling prevents the shaft from being lifted out of the step *r* and *r'*.

To remove the lower section, *g*, of the vertical shaft, it is only necessary to remove the half *r'* of the step, when the lower end of the shaft can be moved out and thus allowing the coupling to become disengaged.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a horse-power, the vertical shaft *g*, having a rib, *i*, in combination with the sweep-plate *B*, having a groove, *k*, and set-screws *n* and *n*, substantially as shown and described.

ALBERT R. VARY.

Witnesses:

DAVID CUNNINGHAM,
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