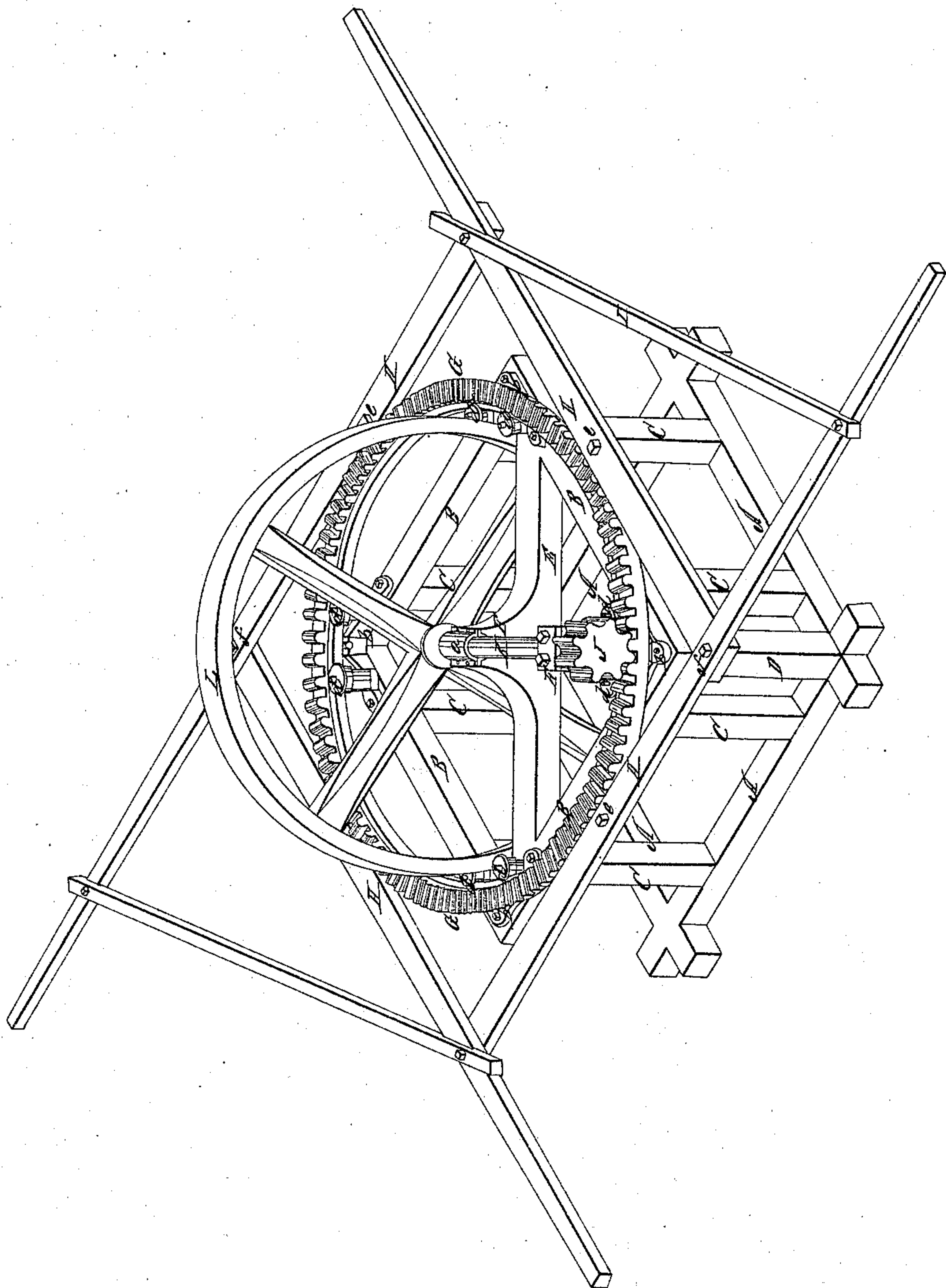


*S. B. Haines,*

*Horse Power.*

*N<sup>o</sup> 3871.*

*Patented Dec. 31, 1844.*





# UNITED STATES PATENT OFFICE.

SAMUEL B. HAINES, OF GREENSBURGH, PENNSYLVANIA.

## HORSE-POWER FOR DRIVING MACHINERY.

Specification of Letters Patent No. 3,871, dated December 31, 1844.

*To all whom it may concern:*

Be it known that I, SAMUEL B. HAINES, of Greensburgh, in the county of Westmoreland and State of Pennsylvania, have invented a new and improved Horse-Power; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, and which represents the complete machine.

Construction.—The frame supporting the main or master-wheel, is perfectly square, about 4 feet each way, and about 18 to 22 inches in height. It consists of four sills A, four top plates B, and one each side two posts C, which are placed near the angles or intersections of the sills and top plates. Additional thereto there is another post D, directly on the corner where the pinion-wheel hereafter-described is placed upon the band-wheel-shaft. Diagonally across the frame, from one top-plate to another and flush with them on the top, is framed in a piece of timber E of suitable strength, placed in such a manner as not to pass through the center of the frame, but very near to it. On this piece is placed a pillar-block F and box and cap *a*, wherein the inside end of the band-wheel-shaft revolves. The other end of said shaft is supported by another pillar block F', placed at the corner of the frame where the post D is framed in.

The master-wheel is about 4 feet in diameter, placed horizontally upon the top of the frame, and is supported and kept in its place by the rollers hereinafter described. It may be made either of wood or metal; in the latter case, it may be beveled. On its inside edge, the said wheel G has a rim  $\frac{3}{4}$  of an inch wide, upon which the flanges of the upright rollers work. The cogs may be made to suit the motion intended to be given to the power. On each of the four corners of the frame, cast-iron pillar blocks *b*, of a suitable shape, are placed, upon which friction-rollers *c* are fixed horizontally, for the support of the master-wheel, the underside of the wheel resting thereon. Vertical journals are cast upon the said pillar-blocks, upon which horizontally revolving rollers *d* are fixed, having flanges at their upper sides. These rollers are kept upon the journals by means of keys, inserted through the upper extremities of the same. There are eight of these rollers, two near each corner of the

frame, and their object is to keep down, and steady the master-wheel. To the outer edge of the master wheel, flanges are cast, four in number and equidistant from each other, on which four levers H rest, and whereto they are fastened by means of screw-bolts *e*. Their larger ends are also fastened by bolts *f* to every next following lever, the whole forming a perfect square around the master-wheel. These levers are about 10 feet long each, and the whole fabric is strengthened by braces I. In the boxes on the pillar-blocks F and F' revolves the band-wheel-shaft K, to the inside end of which is fastened the band-wheel L, in such manner as to cause it to revolve, vertically, in the center of the frame and the master wheel, and diagonally to the former. It is about 3 feet 4 inches in diameter, and may be so constructed as to be adapted to cog—or strap-gearing. On the other or outer end of the shaft K, and directly over the post D, is placed the pinion wheel *g*, which receives motion from the master-wheel, and communicates it to the band-wheel.

The frame, in addition to being substantially mortised together, is secured by eight screw-bolts, which pass through it from top to bottom, near the posts, or through them.

Operation.—The frame having been secured, in the usual manner, to the ground or floor, the desired number of horses are attached to the extreme outer ends of the levers, and set agoing. The master-wheel thus set in motion, will act upon the pinion wheel, which communicates the motion to the band-wheel, whence, by means of cog or strap-gearing, it is conducted to any desired machinery.

The simplicity and economy of its construction, its strength and portability, and extreme lightness of draft, constitute the advantages of this over other horse powers.

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

The arrangement of the bandwheel within the master wheel, as described, with the arrangement combination of the horse-levers around and attached to the periphery of the main driving or masterwheel, the whole, being substantially as herein-above described.

SAMUEL B. HAINES.

Witnesses:

FRANCIS BENNE,

RICHARD KEY WATTS.