A. B. FARQUHAR.

Horse-Power

No. 168,469. Patented Oct. 5, 1875.

Fig. 1

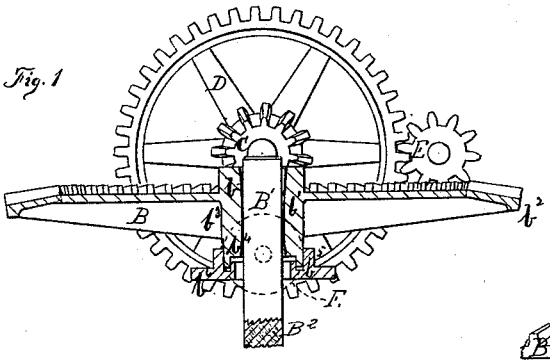


Fig. 3

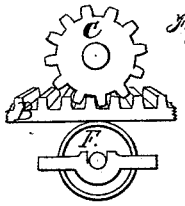
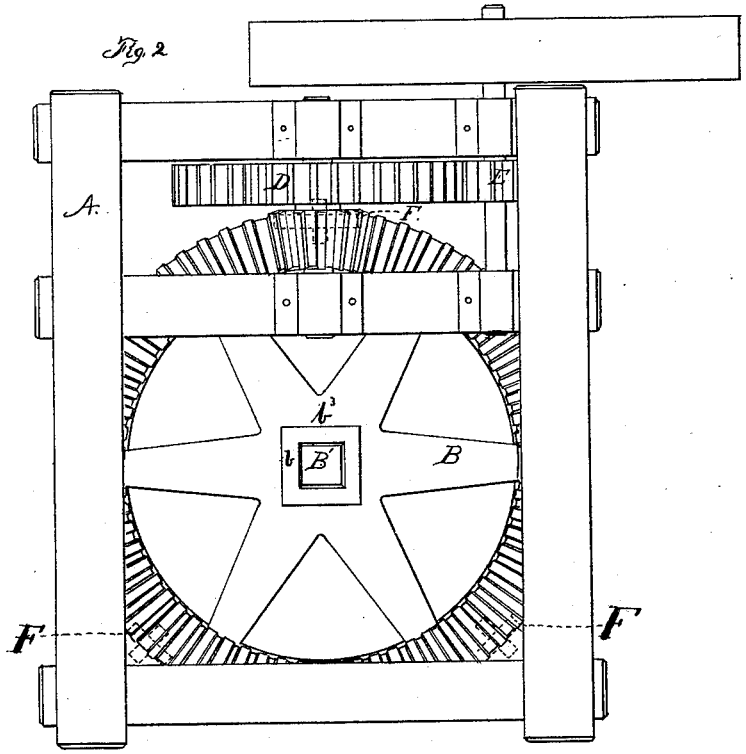


Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

ARTHUR B. FARQUHAR, OF YORK, PENNSYLVANIA.

IMPROVEMENT IN HORSE-POWERS.

Specification forming part of Letters Patent No. **168,469**, dated October 5, 1875; application filed September 16, 1875.

To all whom it may concern:

Be it known that I, ARTHUR B. FARQUHAR, of York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Horse-Powers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in that class of devices commonly known as horse-powers; and the object of my invention is to prevent the disarrangement of the apparatus, or snapping of the vertical shaft, by reason of the sagging or spring of the floor on which it is supported, caused by the placing thereon or removal therefrom of heavy weights, the nature of which will be fully explained by reference to the accompanying drawings.

Figure 1 represents a vertical section, Fig. 2 a plan, and Fig. 3 a detail view, of so much of a horse-power as will illustrate my invention.

A A represent a frame-work supporting the gearing. B is the main driving-wheel, the teeth of which gear into a pinion, C, by means of which the pinions D and E are operated, as is well understood. The main driving-wheel B is provided with an opening or eye, *b*, in the center of the hub, for the reception of the squared or feathered end B^1 of a shaft, B^2. The sides of the opening or eye *b*, in place of being vertical, are curved or inclined from the center toward the upper and lower edges of the hub of the wheel B, in such a manner that the eye *b* shall only bear against the squared or feathered end of the shaft B at the point b^1, thereby allowing the vertical shaft to have considerable play vertically within the eye *b*, and deviation from a true vertical line without interfering with the operation of the driving-wheel B. The wheel B at its outer edge is provided with a smooth rim or surface, b^2, which rests upon friction-pulleys F, shown at Fig. 3, and by dotted lines at Fig. 2, mounted and revolving on suitable bearings or supports, while it is retained in its proper position by means of the lower portion of the hub b^3 being provided with a projecting rim, b^4, adapted to be received within a grooved channel, b^5, in a step-box, b^6.

By thus constructing horse-powers with the vertical shaft or king-post B^2 passing through an opening or eye, *b*, having inclined sides, as shown, and the driving-wheel B being supported on friction-pulleys F independently of the shaft or king-post B^2, and retained centrally in correct position by the lower end of its hub passing into a grooved step-box, b^6, the danger of disarrangement of the working of the gears, as well as the liability to fracture of the shaft or king-bolt B^2, is greatly diminished, if not totally avoided.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A horse-power constructed with a vertical shaft or king-post, B^2, the upper end B^1 of which is squared or feathered, and works loosely in the eye *b* of a driving-wheel, B, the sides of such eye *b* being inclined, or curved from the upper and lower edges of the hub toward the center, substantially as and for the purpose described.

2. A horse-power constructed with a main or driving wheel, B, provided with an eye, *b*, mounted loosely on a vertical shaft or king-post, B^2, and supported on friction-pulleys F, substantially as shown and described.

3. A horse-power constructed with a main or driving-wheel, B, mounted loosely on a vertical shaft or king-post, B^2, supported on friction-pulleys F and retained centrally in position by means of its hub b^3 and a step-box, b^6, substantially as shown and described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

A. B. FARQUHAR.

Witnesses:
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