2 Sheets—Sheet 1.

J. M. HILL & J. FORSYTH.

Horse Powers.

No. 197,367. **Patented Nov. 20, 1877.**

Fig. 1.

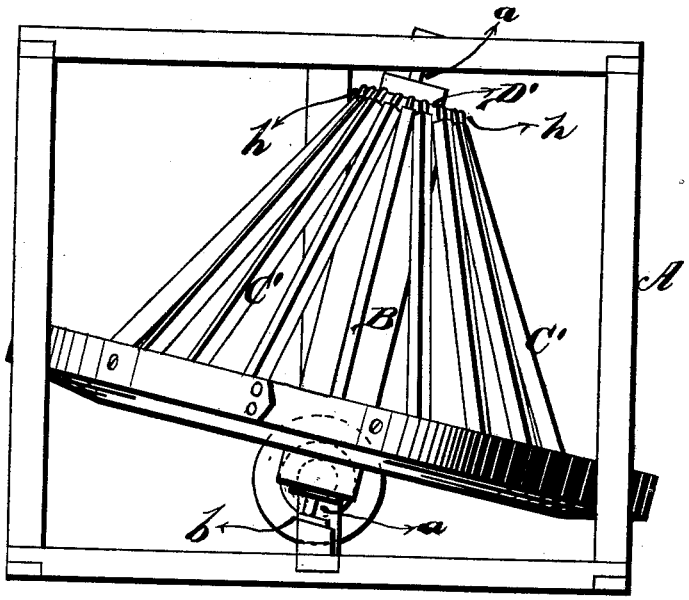
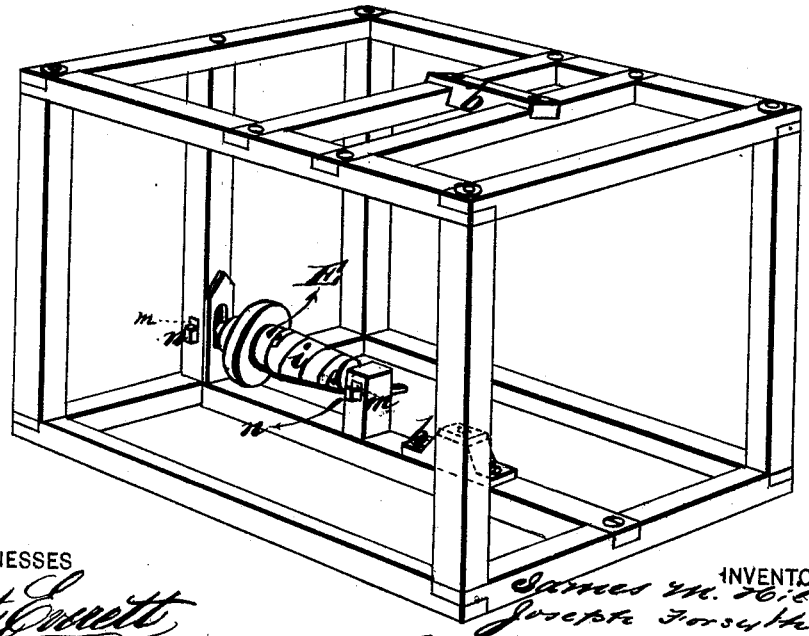


Fig 2.



WITNESSES

Robt. Everett

George E. Upham.

INVENTORS.

James M. Hill.

Joseph Forsyth.

Gilmore, Smith & Co.

ATTORNEYS.

2 Sheets—Sheet 2.

J. M. HILL & J. FORSYTH

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Fig. 3.

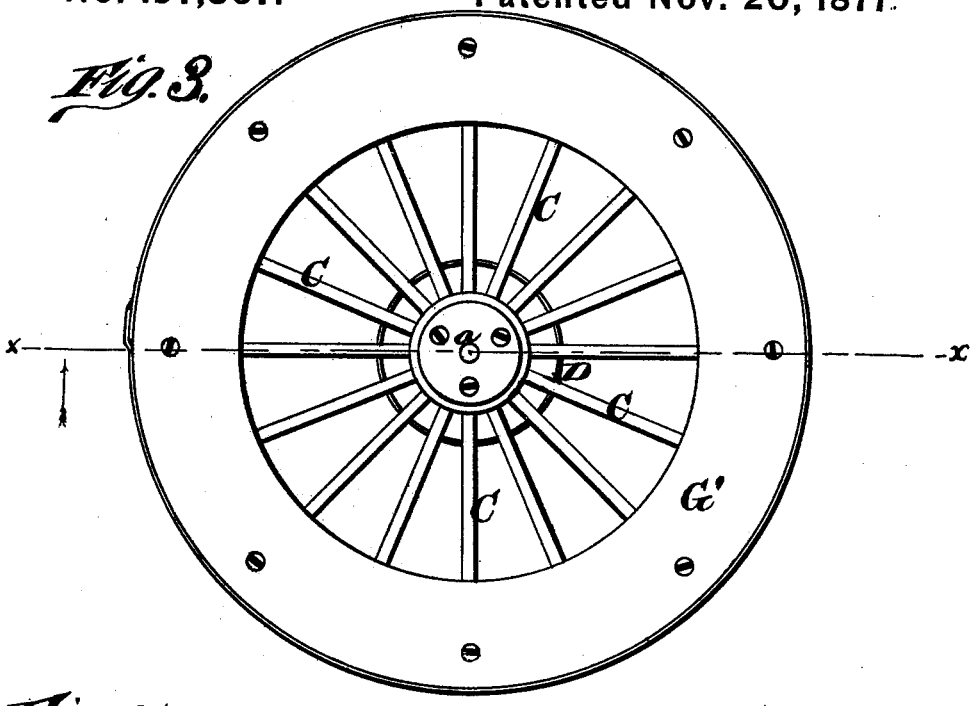


Fig. 5.

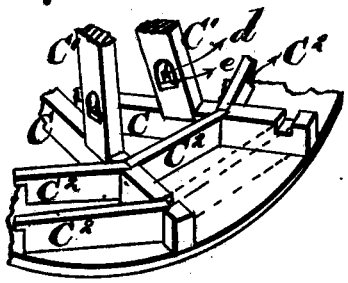
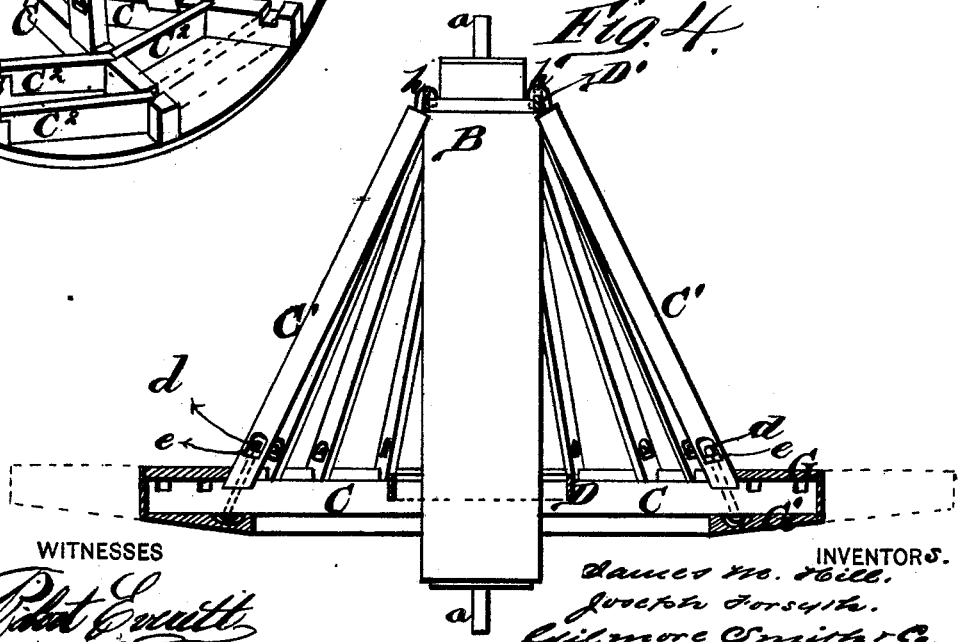


Fig. 4.



WITNESSES

Robert Ernest

George E. Topham

INVENTORS.

James M. Hill.

Joseph Forsyth.

Gilmore, Smith & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES M. HILL AND JOSEPH FORSYTH, OF BRIGHTON, TENNESSEE.

IMPROVEMENT IN HORSE-POWERS.

Specification forming part of Letters Patent No. **197,367**, dated November 20, 1877; application filed June 23, 1877.

To all whom it may concern:

Be it known that we, JAMES M. HILL and JOSEPH FORSYTH, of Brighton, in the county of Tipton and State of Tennessee, have invented a new and valuable Improvement in Horse-Powers; and we 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 drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of our horse-power. Fig. 2 is a perspective view. Fig. 3 is a plan view of the wheel. Fig. 4 is a longitudinal vertical sectional view, and Fig. 5 is a detail, of the same.

The nature of our invention consists in the construction and arrangement of a horse-power, as will be hereinafter more fully set forth.

The annexed drawings, to which reference is made, fully illustrate our invention.

A represents the frame of our horse-power. B is the wooden shaft, to or on which the main or master wheel is built, said shaft being provided at its ends with gudgeons *a a*, which have their bearings in boxes *b b* in the frame, so arranged that the shaft will have a suitable inclination.

The main or master wheel is constructed in the following manner: C C are radial arms extending from the shaft B at right angles, and at equal distances apart. D is an iron band sunk into the top of the arms C concentric with the shaft, making it impossible for said arms to draw out of the shaft.

Each arm C has a brace, C^1, extending upward to a metal ring, D′, encircling the upper end of the shaft, and resting on a shoulder formed thereon. The brace C^1 rests in a notch made in the upper surface of the arm C, and is fastened thereto by means of a bolt, *d*, which is passed from underneath upward through the arm, and then into the end of the brace, and screwing into a nut, *e*, let into said brace. In like manner a hook, *h*, is fastened in the upper end of the brace, and this hook is placed over the band D′, so that when the parts are properly fastened a strong and durable frame is formed for the wheel. Between the outer ends of the arms C C are framed connecting-pieces C^2 C^2, which are entirely independent of each other, and when broken or otherwise injured can easily be removed and replaced by others.

On the top of the outer ends of the arms C is placed the floor G, on which the horses are placed to work. This floor is wide enough so that we can use two or three horses at a time, if desired. Underneath is also a floor or rim, G′, attached to the wheel, this latter floor or rim being, however, beveled to correspond with the tapering band-wheel shaft E underneath.

By our construction of the wheel, having the braces extend upward and inward to the shaft, the floor of the wheel is brought so near the ground that the horse can be put on and taken off without the least inconvenience.

Our master-wheel runs directly on the band-wheel shaft, which forms a bearing for it the entire width of the flooring, whereby the power is increased with but little wear. The tapering portion of the shaft E, on which the wheel runs, is wrapped with rubber *i*, which prevents wear of the bottom rim or floor of the wheel, and also makes the friction-power greater.

The band-wheel shaft E has its journal-bearings in boxes *m m*, placed in slotted posts or standards of the frame, and held up by wedges *n n*, so that the shaft can easily be adjusted to the wheel.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a master-wheel for a horse-power, the iron band D, concentric with the shaft, and sunken into the radial arms, substantially as and for the purpose set forth.

2. The combination of the tapering band-wheel shaft E and the beveled bottom rim or floor G′ of the master-wheel, as herein set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

JAMES M. HILL.
JOSEPH FORSYTH.

Witnesses:
J. C. MCLISTER,
JAMES MCLISTER.