T. E. ADAMS.

HORSE-POWER.

No. 192,631. Patented July 3, 1877.

Fig. 1.

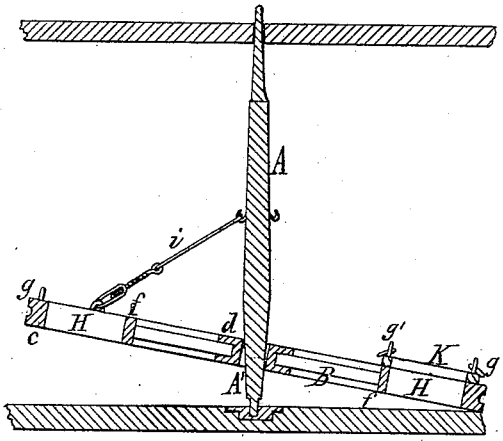


Fig. 2.

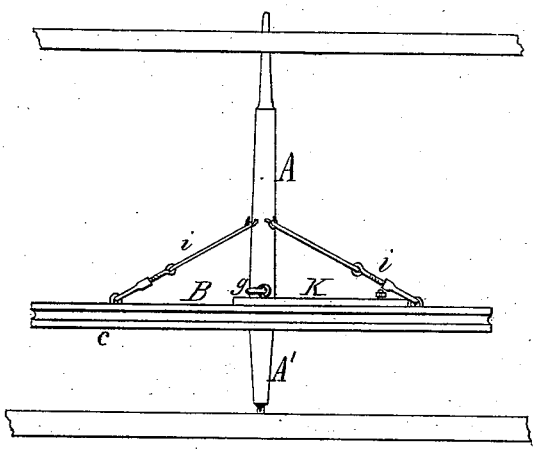
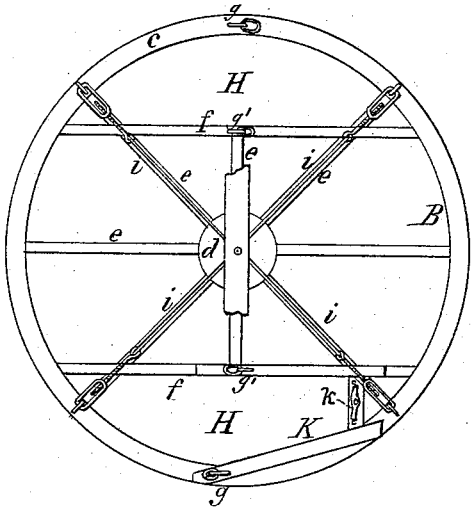


Fig. 3.



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THOMAS E. ADAMS, OF NORTH EVANS, NEW YORK.

IMPROVEMENT IN HORSE-POWERS.

Specification forming part of Letters Patent No. **192,631**, dated July 3, 1877; application filed February 22, 1877.

To all whom it may concern:

Be it known that I, THOMAS E. ADAMS, of North Evans, in the county of Erie and State of New York, have invented certain new and useful Improvements in Horse-Powers, which improvements are fully set forth in the following specification, reference being had to the accompanying drawing.

My invention relates to that class of horse-powers in which the draft-animals travel within the rim of a horizontal wheel, and which are designed to be used in barns and similar localities where the available room is limited.

The first part of my invention consists in constructing the wheel and attaching the draft-animals thereto in such manner that the power of the latter will be applied to the wheel to the best advantage.

The second part of my invention consists in so constructing the wheel that the draft-animals can be easily stepped into the wheel and hitched thereto by one man.

In the accompanying drawing, Figure 1 is a sectional elevation of my improved horse-power, with one side lowered to the ground preparatory to stepping the animal into the wheel. Fig. 2 is an elevation of my improved horse-power. Fig. 3 is a top-plan view thereof.

Like letters of reference designate like parts in each of the figures.

A represents the vertical shaft, and D the horizontal wheel of my improved horse-power. The shaft A is supported with its lower end in a suitable step-bearing arranged on the barn-floor or in the ground, and with its upper end in a bearing secured to one of the cross-beams of the scaffold, or in any other suitable support. The lower square portion A of the shaft is made tapering downwardly from the point at which the wheel B is arranged when in a working position. The wheel B is composed of a rim, *c*, and hub *d*, connected by spokes *e* and braces *f*. The latter form two spaces, H H, inside of the rim, for the horses to travel in. *g g'* are draft staples, one arranged on the rim *c*, and one on a brace, *f*, on each side of the shaft, in a line drawn about through the middle of the space H.

The draft-animals are, preferably, hitched by short tugs running from the collars directly to the staples *g g'*, whereby the draft is applied with the greatest possible leverage in a wheel of a certain size.

Ordinarily the draft-animals are hitched to the wheel by whiffletrees secured to the rim of the wheel; but this is objectionable, for the reason that when the whiffletrees in this class of horse-powers are arranged on an incline as not to project beyond the rim of the wheel the leverage on which the animals work is much reduced, and the line of draft is at such an angle to the radius drawn through the whiffletree-pivot and the shaft that a heavy pull against the shaft is exerted, and a consequent binding thereof in its bearings is produced, thus rendering horse-powers of this kind impracticable for small barns.

The tendency of the draft-animals to turn inward in traveling in the wheel embodying the feature of my invention, throws the greater portion of the draft on the staple *g* on the rim of the wheel, where it is applied with the greatest possible leverage, thus enabling one horse to develope about as much power as two horses hitched by whiffletrees to the same wheel, as I have found from practical experience.

If desired, to avoid the pull against the shaft without hitching directly to the staples *g g'*, a U-shaped draft device, K, may be arranged upon the wheel, so as to inclose the rear portion of the space H. It is secured with its ends to the rim and brace, respectively, at the points where the draft-staples *g g'* are arranged. *k* represents a short whiffletree, secured to the draft device K at its bend. By this means the draft is applied at right angles to a line drawn through the shaft and the points where the draft device K is secured to the wheel, whereby, although the leverage on which the horses work is not increased, the pull against the shaft is avoided. *i* represents four adjustable guys, connecting the wheel B to the shaft A, so as to be readily attached and detached. The lower tapering portion A' of the shaft A is so shaped that when the wheel B is in its normal position, as shown in Fig. 2, the hub of the wheel will snugly fit on the shaft, while upon detaching two of the guys *i* from the shaft the tapering form of the

portion A′ will permit the unsupported side of the wheel to be lowered to the ground, as shown in Fig. 1.

In order to hitch the draft-animal to the wheel the latter is lowered to the ground, and the shaft inserted in its bearings One animal is then stepped into one of the spaces H, and that side of the wheel raised and supported by two of the guys *i*, and the animals hitched to the staples *g g′*. The other animal is then stepped into the other space H on the opposite side of the wheel, which is still resting upon the ground, when that side is raised also, and secured to the shaft by the remaining guys *i*, when the power is ready for work.

When the apparatus is not required for use it is readily taken apart and put aside.

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

1. In a horse-power, the wheel B, provided with one or more spaces, H, for the draft-animals, and having the draft staples *g g′*, arranged one in the rim *e*, and one in the brace *f* in a line drawn through the centers respectively of the wheel and the spaces H, so as to apply the draft, substantially as set forth.

2. The combination, with the wheel B, provided with one or more spaces, H, of the U-shaped pusher or draft device K, arranged upon the wheel, and secured with its forward ends respectively to the rim and brace of the wheel at or near the middle of the space H, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the wheel B, provided with square hub *d* and space or spaces H for the draft-animals, of the shaft A, having its lower portion A′ made tapering downwardly, and detachable guys *i*, so that either side of the wheel may be lowered to the ground for stepping the animal into the wheel, while the other side thereof is supported by the guys, substantially as hereinbefore set forth.

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