D. K. HUNGERFORD.

HORSE-POWER.

No. 191,858. Patented June 12, 1877.

Fig. 1.

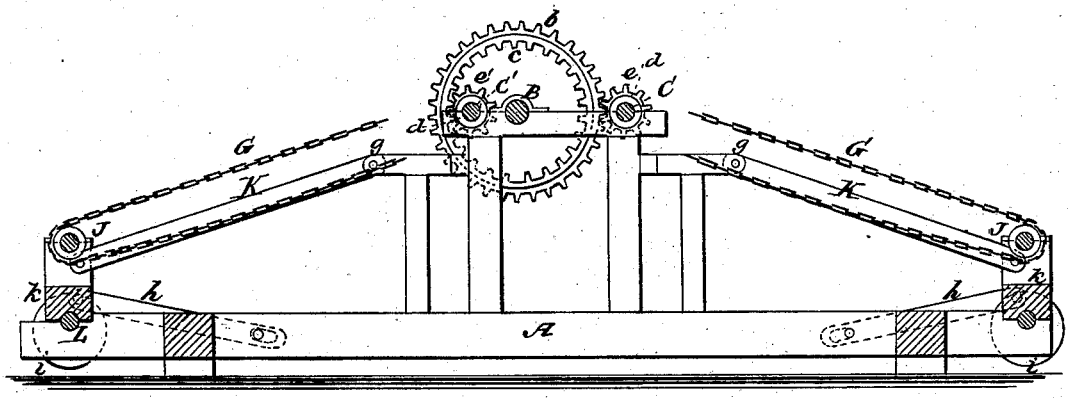
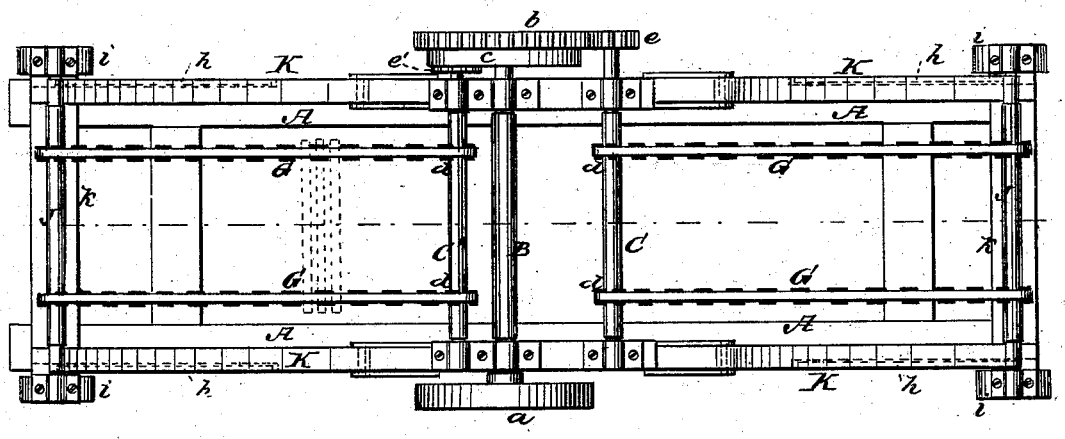


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DARIUS K. HUNGERFORD, OF DE WITT, IOWA.

IMPROVEMENT IN HORSE-POWERS.

Specification forming part of Letters Patent No. **191,858**, dated June 12, 1877; application filed May 21, 1877.

To all whom it may concern:

Be it known that I, DARIUS K. HUNGERFORD, of De Witt, in the county of Clinton and State of Iowa, have invented a new and Improved Horse-Power, of which the following is a specification:

This invention relates to horse-powers of the treadle kind; and the nature of my invention consists, mainly, in a double-tread power, constructed with the treadles arranged in planes inclining in opposite directions, and geared to a single driving-shaft, as will be hereinafter explained.

The invention also consists in means applied to the outer or free ends of the treadle-frames for giving them any desired degree of inclination, whether the horses be working or at rest.

Figure 1 is a section taken vertically and longitudinally through my horse-power. Fig. 2 is a top view.

Similar letters of reference indicate corresponding parts.

In the annexed drawings, A A designate the sill-beams of the frame, from which standards rise perpendicularly and support three shafts, B C C′, arranged parallel to each other and journaled in boxes on the cross-timbers of the said uprights. The intermediate shaft B bears on one end a belt-wheel, *a*, and on the opposite end a large perimeter spur-wheel, *b*, to which is concentrically secured an inside spur-wheel, *c*. The shaft C has keyed to it two sprocket or chain wheels, *d d*, and a pinion spur-wheel, *e*, which latter engages with the perimeter-wheel *b*, and the shaft C′ has also secured to it two sprocket-wheels, *d d*, and a pinion spur-wheel, *e′*, which latter engages with the teeth of the inside spur-wheel *c*. G G G G designate endless chains, which are applied around the sprocket-wheels *d d* on shafts C C′, and also around similar wheels on two shafts, J J. These latter shafts are journaled in boxes on two frames, K K, which are pivoted to the main frame at *g g*, and also connected to the sills of this frame by means of rods *h* pivoted and slotted at their ends, as shown in Fig. 1 in dotted lines. The frames K K are inclined from each other in opposite directions, and the chains of each frame should be connected together by lags or slats (not shown in the drawings) adapted to afford supports and foot-hold for two horses abreast.

Beneath the cross-bar *k* of each treadle-carrying frame K is a shaft, L, which has its bearings on the sills A, and which bears on its ends two eccentrics or cams, *i i*, on which the extremities of said bar *k* rest. By turning cams *i i* the treadles can be adjusted at any desired angle, and to facilitate this adjustment I shall employ worm-shafts with hand-wheels on them, and engage the worms with toothed segments on the shafts L.

I shall also use rollers or wheels on frames K as supports for the treadles.

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

1. In a horse-power, having its endless treadles inclined as described, the shafts C C′, geared to the driving-shaft B by means of pinions *e e′*, and large wheels *b c*, substantially as specified.

2. Inclined treadle-carrying frames K K, adjustable by means of eccentrics *i* on shafts L, substantially as specified.

DARIUS K. HUNGERFORD.

Witnesses:
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