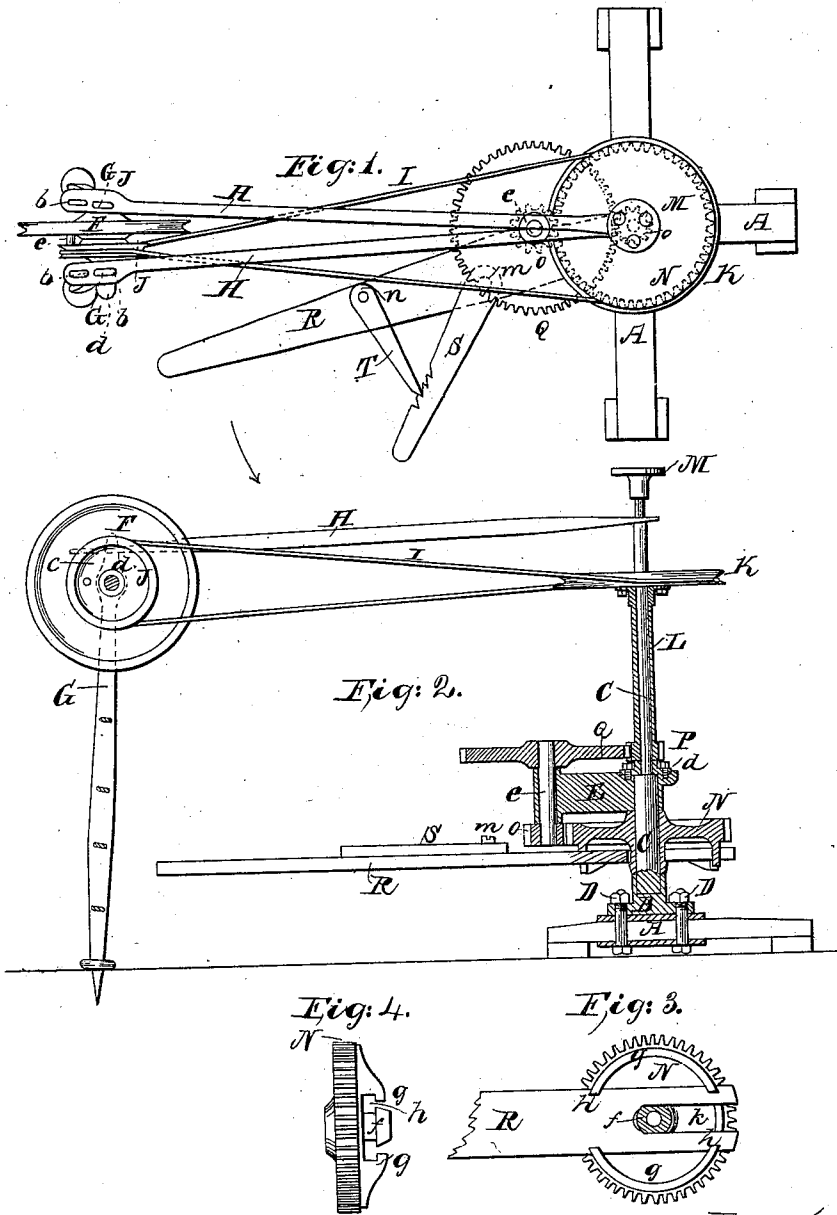


J. E. ATWOOD.

Horse Power.

No. 100,350.

Patented March 1, 1870.



Witnesses:
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United States Patent Office.

JOHN E. ATWOOD, OF WILLIMANTIC, CONNECTICUT

Letters Patent No. 100,350, dated March 1, 1870.

IMPROVEMENT IN HORSE-POWERS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JOHN E. ATWOOD, of Willimantic, in the county of Windham, and State of Connecticut, have invented a new and useful Improvement in Horse-Powers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents a plan of a horse-power constructed in accordance with my improvement;

Figure 2, a vertical longitudinal section of the same; and

Figures 3 and 4, an inverted plan and edge view of the main gear-wheel, in illustration of the provision made for connecting the draft-bar or pole therewith.

Similar letters of reference indicate corresponding parts.

My invention relates to horse-powers, in which the horse is made to walk in a circular path, and

The improvement consists in certain means and peculiarities of construction, whereby great simplicity and strength are attained, together with increased facility for putting together and taking apart the several or leading portions, which, while not limiting the power to a portable character, eminently adapts the same thereto.

Referring to the accompanying drawing—

A represents a base-frame, that may be seated on the ground or floor of a barn, and which carries on its top a metal base-piece, B, carrying a moderately stout stationary shaft, C, and which is secured to the base-frame A by bolts and nuts D, to facilitate erection and dismemberment of the power.

The shaft C forms the lower portion of the stationary pillar or dead spindle, around which the horse walks as a center of motion. Said portion having the heaviest strain to carry, is made stouter than the upper part C', which is an independent section, and may be a simple piece of light bar-iron, arranged to sit down upon the stouter shaft C, and coupled therewith by a box, a, fast to the base portion of the section C', and secured by screws to a stationary arm, E, fast to the lower shaft C. This forms a cheap and simple, yet strong construction of the dead-spindle, and adds to the portability of the power, by reason of the construction of said spindle in parts, as described. Such dead spindle will stand free from any regular frame-support at its top, which is very desirable, and I dispense with any general frame to the power, and largely contribute to the portability of the structure, as a whole, by providing for the support of the driving pulley F, by a ladder, G, which may be staked or driven into the ground, and is connected at its top on either side of the driving-pulley, by brace rods H H, with the upper portion of the top section

C' of the dead spindle, thus tying the latter and ladder or frame, which carries the driving-pulley together.

These brace-rods H H are connected by any one of a series of holes, b b, with either top end of the ladder, to provide for the adjustment of the latter relatively to the dead spindle and tight run of the belt, rope, or chain I, by which motion is communicated to the driving-pulley F, through a secondary pulley, J, and center pulley K, fast to a sleeve, L, on the upper section C' of the dead spindle. Said brace-rods H H are removable alike from their connection with the ladder and with the dead spindle, to facilitate transportation or portability of the power.

If necessary, the upper section C' of the dead spindle may have fitted on it a perforated cap, M, for the attachment of guy-ropes, to stiffen the power when at work.

The pulleys F and J are made independent of each other, to allow of varying their relative sizes, according to the speed means required, but are connected to work as if one structure, by means of a connecting driving-stud or pin, c, and both pulleys hung to run loose on a pin, d, arranged to pass through the one side of the ladder from the exterior, and screwing into the opposite thereof. This is a ready and convenient means of fitting together said parts, and by it the pin d is made to stiffen the ladder.

The pulley K has its lower flange made larger than its upper one, to keep the driving-band I from falling or running off said pulley.

The sleeve L is driven by the main wheel N, through pinions O P and intermediate gear-wheel Q, the latter wheel and the pinion O being fast to a vertical shaft, e, carried by the stationary arm E, while the pinion P is fast to the sleeve L, and the main wheel N arranged to turn loose on the lower section C of the dead spindle, said main wheel being formed with a collar-like socket, f, and opposite curved side ribs or extensions g g, below which latter are slotted at their ends, as at h h, facing the reduced portion of the socket f, and such reduced socket portion flattened on opposite sides, in line with the slots h h.

This construction of the main or master-wheel is to afford afford a simple and strong support for or connection of the draft-pole R with said wheel, and whereby the same may be readily attached or detached at pleasure, and which conduces to the portability of the power. To this end, the draft-bar or pole R, has a slot, k, formed at its inner end, so as to make it clip the flattened sides of the reduced portion of the socket f, and the bar is of such a width and thickness as to fit, when slid to its place the slots h h.

S is the arm, which serves by proper hitching of the horse at its head thereto, to direct the animal in the requisite path. This arm is pivoted to the draft-bar,

as at *m*, and held at any required angle, to suit different-sized horses, or as other circumstances may require, by means of a dog or pawl, *T*, pivoted, as at *u*, to the draft-bar, and biting into ratchet teeth *r*, on the inside edge of the arm *S*. When transporting the bar *Q*, after the same is detached from the machine, the arm *S* and dog *T* may be shut up on to or over the bar, so as to be out of the way.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The wheel *N*, with its slotted face-ribs or extensions *g g* and collar-like socket *f*, flattened on its sides, in combination with the draft-bar *R*, having a slot, *k*, in its end, substantially as specified.

2. The dead spindle *C C'*, formed of upper and lower sections, as described, in combination with the coupling *a*, stationary arm *E*, and metal base *B*, essentially as herein set forth.

3. The combination of the ladder *G*, the base rods

H H, and the dead spindle or upper section *C'* thereof, substantially as described.

4. The combination of the pin *d*, the ladder *G*, and the pulleys *J F*, with their connecting stud *c*, essentially as specified.

5. The combination of the pivoted arm *S*, and pivoted dog *T*, with the draft-bar or pole *R*, as described.

6. The combination of the guy-cap *M*, with the dead spindle *C C'*, the brace-rods *H H*, and the ladder *G*, substantially as specified.

7. The combination of the gear-wheels and pinions *N, O, P, and Q*, with the stationary shafts or sections *C C'* of the dead spindle, and sleeve *L*, substantially as shown and described.

JOHN E. ATWOOD.

Witnesses:

ORLO ATWOOD,
EUGENE ATWOOD.