J. Arnold,

Horse Power.

No. 5,769. Patented Sep. 12, 1848.

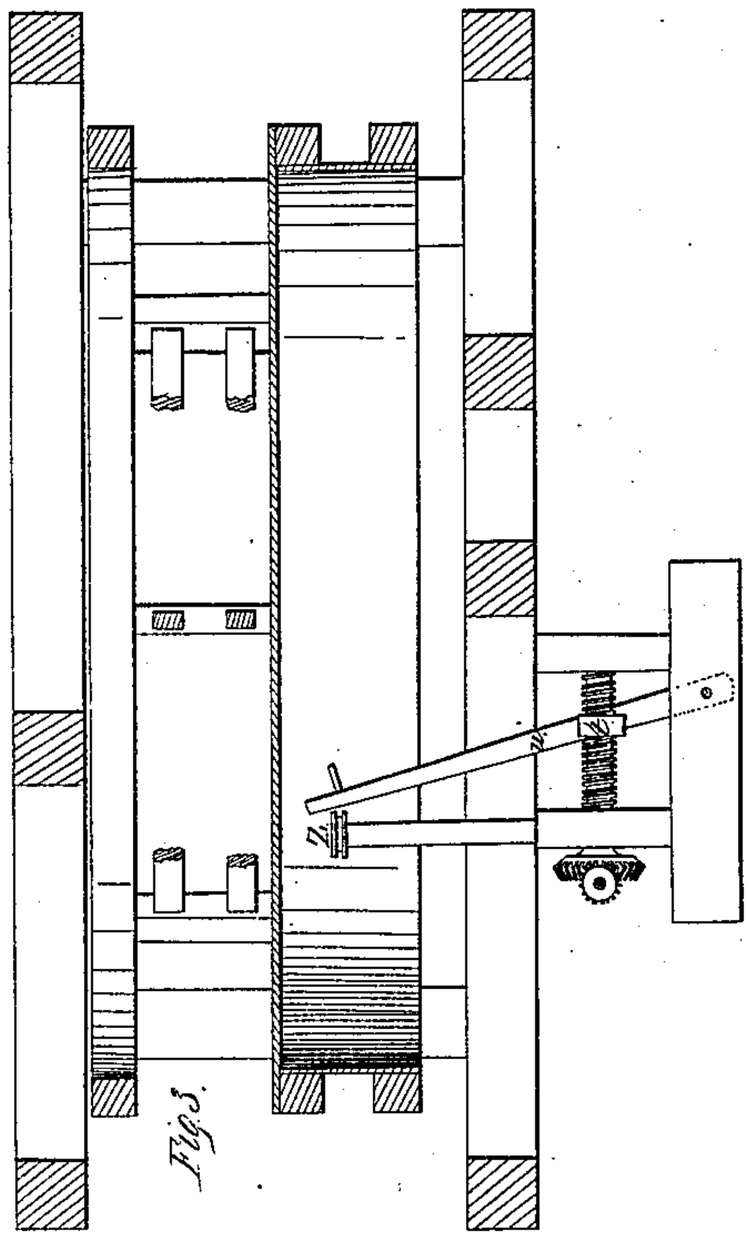

Fig. 3.

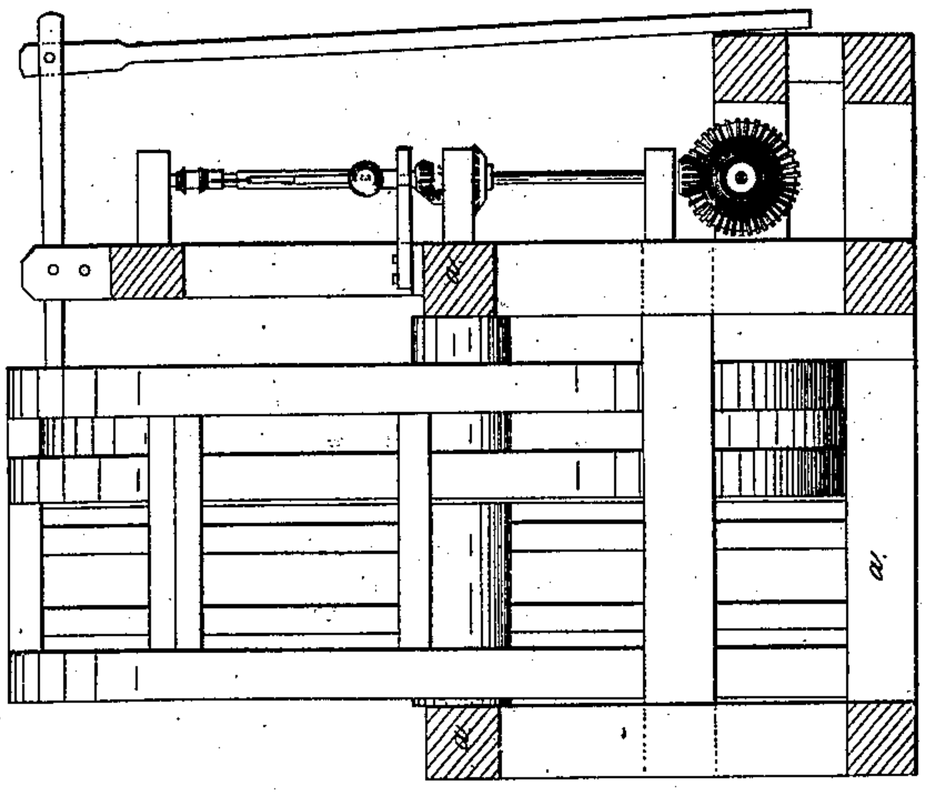

Fig. 2.

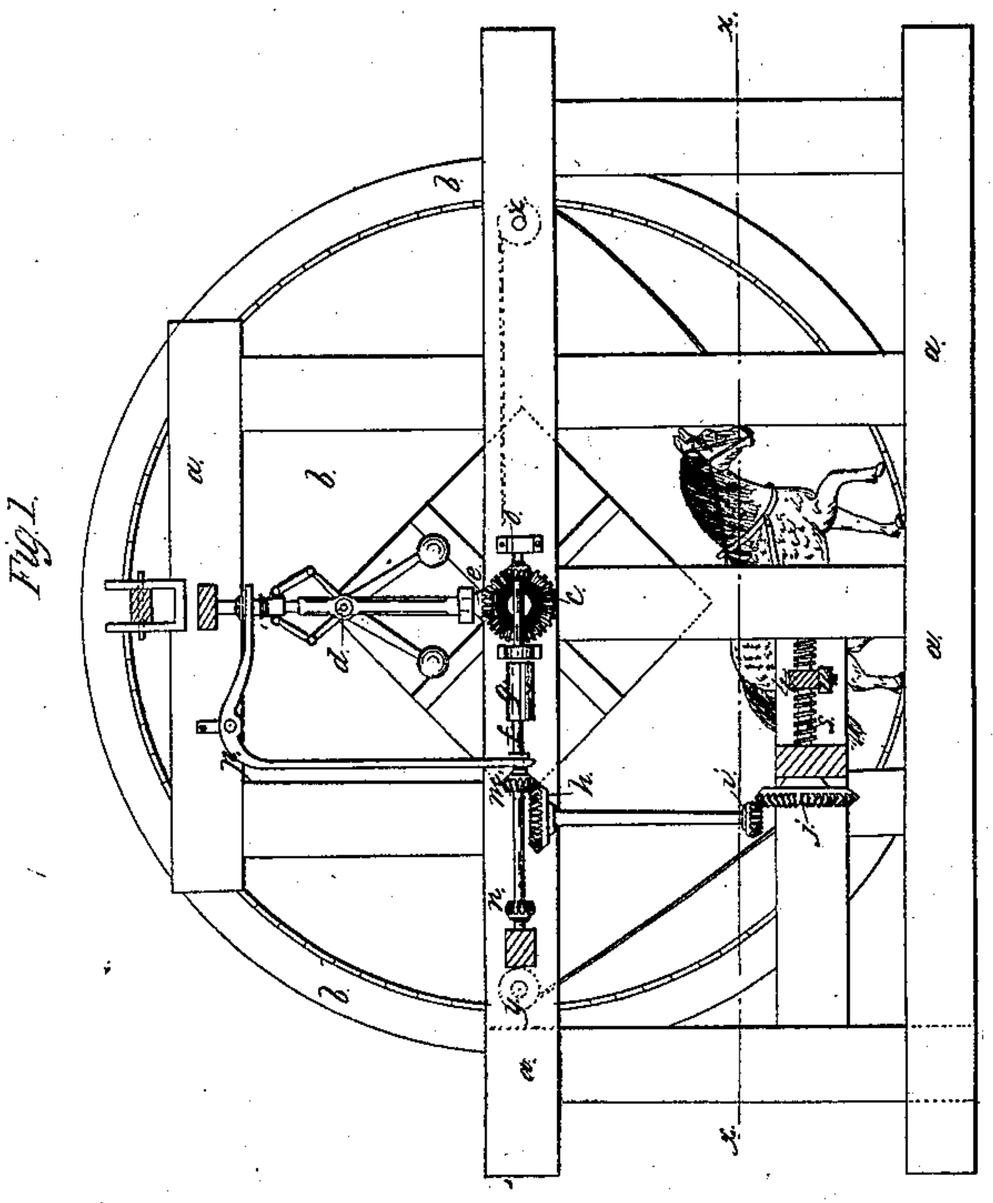

Fig. 1.

UNITED STATES PATENT OFFICE.

JOB ARNOLD, OF FREEPORT, ILLINOIS.

METHOD OF APPLYING A GOVERNOR TO HORSE-POWER.

Specification of Letters Patent No. 5,769, dated September 12, 1848.

To all whom it may concern:

Be it known that I, JOB ARNOLD, of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Machinery, Being a Horse-Power, of which the following is a full and exact description, reference being had to the annexed drawings of the same, making part of this specification, in which—

Figure 1 is a side elevation; Fig. 2 is an end elevation, and Fig. 3 is a horizontal section through the line *x x* of Fig. 1.

The same letters indicate the same parts in all the figures.

My invention and improvement consists in applying to a vertical wheel sufficiently large to admit of a horse traveling on the interior of its periphery to propel it, a regulator, which will maintain its velocity at a uniform rate, irrespective of the freeness or laziness of the horse, who is compelled whether he pulls much or little, to perform a uniform amount of work by being removed farther from the vertical center of the wheel when he pulls least, and coinciding with or behind it when he pulls most. In the accompanying drawings *a* is the framework which supports the wheel and its appendages, *b* is the wheel made in the form of a large drum, the periphery of which projects on one side of the arms sufficiently far to admit of the animals traveling thereon which are employed to propel the wheel, the power thus obtained may be employed in the propulsion of machinery, and may be transmitted either from the periphery of the wheel *b* or from a drum or cog wheel placed upon the rear end of the main shaft. On the opposite or front end of the shaft the wheel *c* is secured, which communicates motion to the governor *d* through the pinion *e* and also gives motion to the wheels *m n h i j* through the pinion *o*. When the wheel *b* is being revolved too fast, the governor *d* acting in the usual way through the bent lever *p* moves the pinion *m* into gear with the wheel *h*, which acting through the intermediate wheels turns the wheel *j* and its axis the screw *s*, from the left to right, the screw acting upon the pivot nut *t* will draw back the lever *u* by which the horse pulls which will bring him to, or back of the center, and thus diminish his action upon the wheel. When the great wheel is moving too slow, the action of the governor is reversed, the pinion *n* being brought into gear with the wheel *h* by sliding the shaft *f* into the socket *g* which will turn the screw *s* from right to left, and move the lever *u* forward, causing the horse to walk before the center to bring his gravity into coöperation with his muscular force exerted in draft.

When the velocity of the great wheel is within certain limits which may be arbitrarily fixed, the governor holds both the wheels *m* and *n* out of gear with the wheel *h* and consequently the screw is for the time being quiescent and the position of the horse unchanged.

To keep the horse in his proper place, a cord fastened to his bit is reeved through the pulleys *x*, *y*, *z*, passing over his back and terminating at the lever *u* to which it is fastened at the point of draft, so that whenever the latter point advances or recedes there is a corresponding movement of the cord fastened to the head of the horse.

Belts or chains and pulleys may be used to operate the regulating apparatus in lieu of the cog wheels if they be preferred, and the cog wheels themselves may be differently arranged also, if it be deemed advisable.

What I claim as my invention, and desire to secure by Letters Patent, is—

The method herein described of regulating and rendering equable, the motion of tread-wheel horse-power for driving machinery, by simultaneously changing the position of the adjustable beam on which the horses moving them pull, and the halter to which their heads are fastened, all herein set forth, by which they are compelled, without whip or driver, to perform a uniform amount of duty.

In testimony whereof I have hereunto signed my name, this eleventh day of May, A. D. 1848.

JOB ARNOLD.

Witnesses:

D. A. KNOWLTON,
T. N. JOHNSON,
WM. A. KNOWLTON.