2 Sheets--Sheet 1.

J. D. HEEBNER.

Governor for Horse Powers.

No. 160,595. Patented March 9, 1875.

Fig. 1.

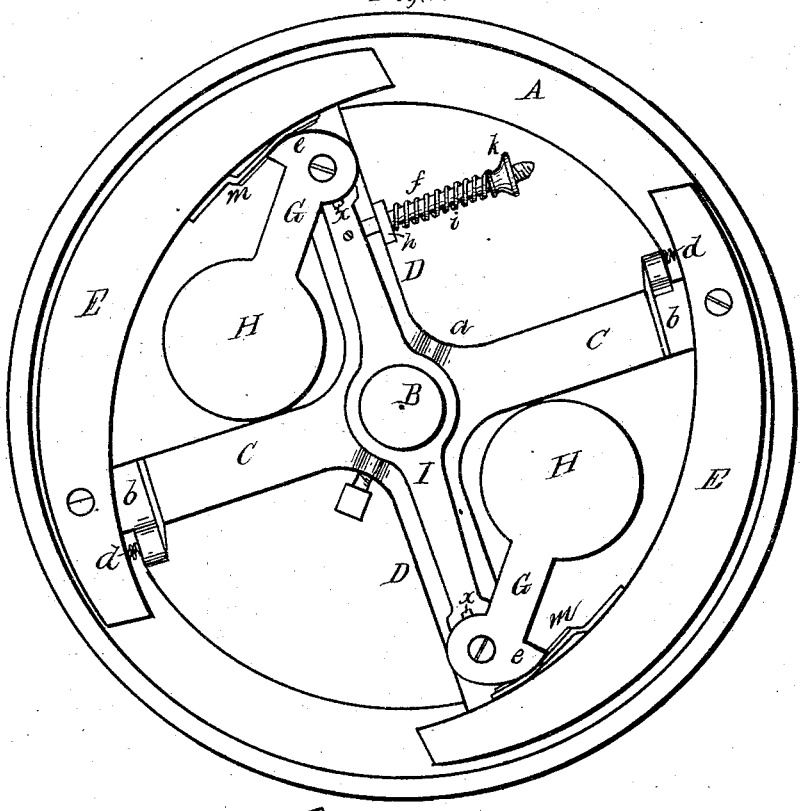
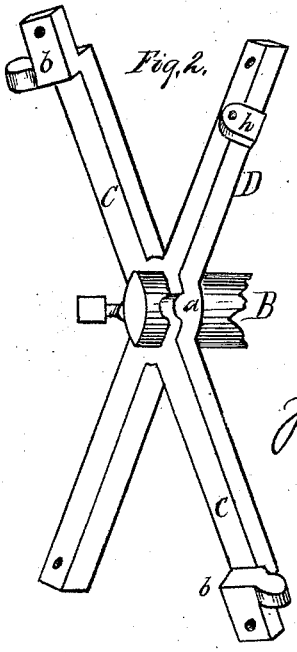


Fig. 2.



Witnesses;

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2 Sheets--Sheet 2.

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Fig. 3.

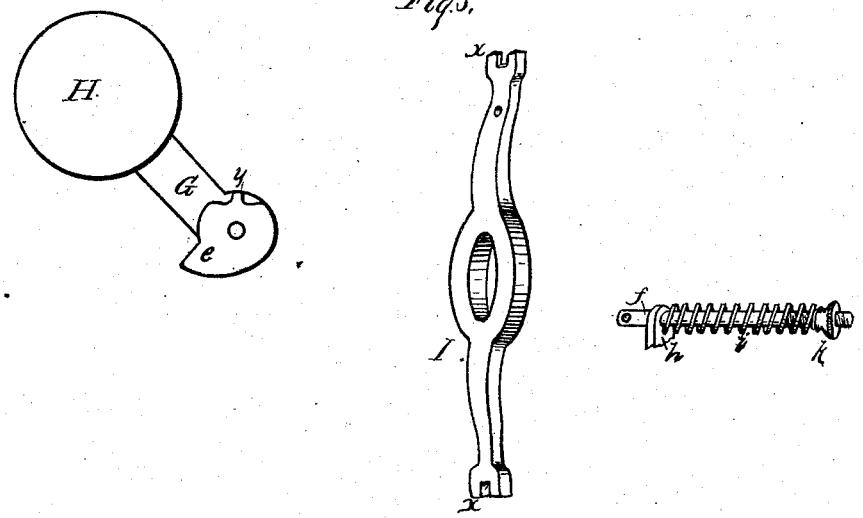
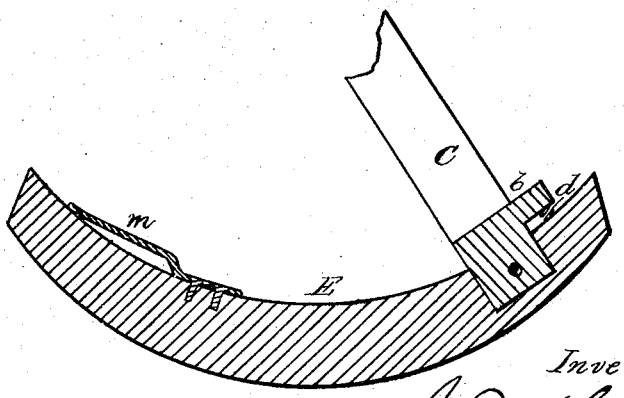


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSIAH D. HEEBNER, OF NORRITONVILLE, PENNSYLVANIA.

IMPROVEMENT IN GOVERNORS FOR HORSE-POWERS.

Specification forming part of Letters Patent No. **160,595**, dated March 9, 1875; application filed January 21, 1875.

To all whom it may concern:

Be it known that I, JOSIAH D. HEEBNER, of Norritonville, county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Horse-Powers, of which the following is a specification:

The nature of my invention consists in the construction and arrangement of a speed-regulator or governor for horse-powers, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which forms a part of this specification, and in which—

Figure 1 is a front view of my speed-regulator or governor complete. Fig. 2 is a perspective view of the spider that carries the regulating parts. Fig. 3 is a similar view of the weighted arms, connecting-bar, and regulating-spring. Fig. 4 is a longitudinal section of one of the shoes and the arm to which it is attached.

A represents a stationary circle or casing, attached to the frame of the horse-power in any convenient position, so that the belt-wheel shaft B will pass through the center thereof. On the shaft B, within the circle A, is secured a four-armed spider, consisting of the hub *a*, with four radiating arms, C C and D D. The outer end of each arm C is formed with a tenon, *b*, which passes into a mortise in or near the heel of a curved wooden shoe, E, which is pivoted to said tenon by a pin or screw passing through the same. The shoe E is of such size that its toe will be nearly opposite the end of the adjoining arm D on that side. The heel of the shoe is thrown outward by means of a spring, *d*, thereby throwing the toe of the shoe inward from the circle or casing A. Near the outer end of each of the arms D is pivoted an arm, G, the outer end of which is formed or provided with a weight or ball, H, while the inner end or hub is formed with a cam projection or eccentric, *e*, to operate against the shoe E.

When the spider revolves the tendency of the weight or ball that is down would be to fall down on the block or shoe; but to obviate this difficulty I place a cross-bar, I, on the spider-hub *a*, which bar extends across from one arm, G, to the other, and has cogs *x* formed upon its ends, said cogs meshing into similar cogs *y*, formed on the hubs of the arms, thereby causing the weighted arms to counterbalance each other. To one end of the cross-bar I is attached a rod, *f*, which passes up through an ear, *h*, on the arm D, and has an adjusting-nut, *k*, on its upper end. Between the ear *h* and nut *k* is a spiral spring, *i*, surrounding the rod, thereby regulating the speed, as by adjusting the nut the tension of the spring is increased or diminished, so as to take greater or less centrifugal force to throw the weighted arms outward.

When the spider revolves the weights or balls H are thrown outward, causing the cams or eccentrics *e* to press the shoes or blocks E against the circle or casing A, creating friction, thereby controlling the speed and rendering the same even and regular.

At the points where the cams *e* come in contact with the shoes E I attach inclined or wedge-shaped plates *m*, which, as the shoes wear, may be moved outward to compensate for such wear, and by this means I am enabled to use the shoes until they are entirely worn out, with precisely the same result as when they were new.

This speed-regulator or governor is simple in construction, not liable to get out of order, and will accomplish the object sought in a thorough and efficient manner.

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

1. The stationary circle or casing A, arranged as described, in combination with the revolving shoes E E, substantially as shown and described.

2. The combination of the weighted arms G, having cogged hubs, the cross-bar I, having cogged ends, and the regulating-spring *i*, substantially as and for the purposes herein set forth.

3. The combination of the arms C, with tenons *b*, shoes E, and springs *d*, as and for the purposes set forth.

4. The combination, with the shoes E, of the inclined planes *m*, for taking up wear of the shoes, as set forth.

5. The combination of the stationary circle A, spider C D, shoes E, weighted arms G, with cams *e*, connecting-bar I, and regulating-spring *i*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my invention I hereunto affix my signature this 19th day of January, 1875.

JOSIAH D. HEEBNER.

Witnesses:
B. F. TYSON,
JACOB B. METZ.