

S. Perry,
Horse Power,

No 35,064,

Patented Apr. 22, 1862.

Fig 3.

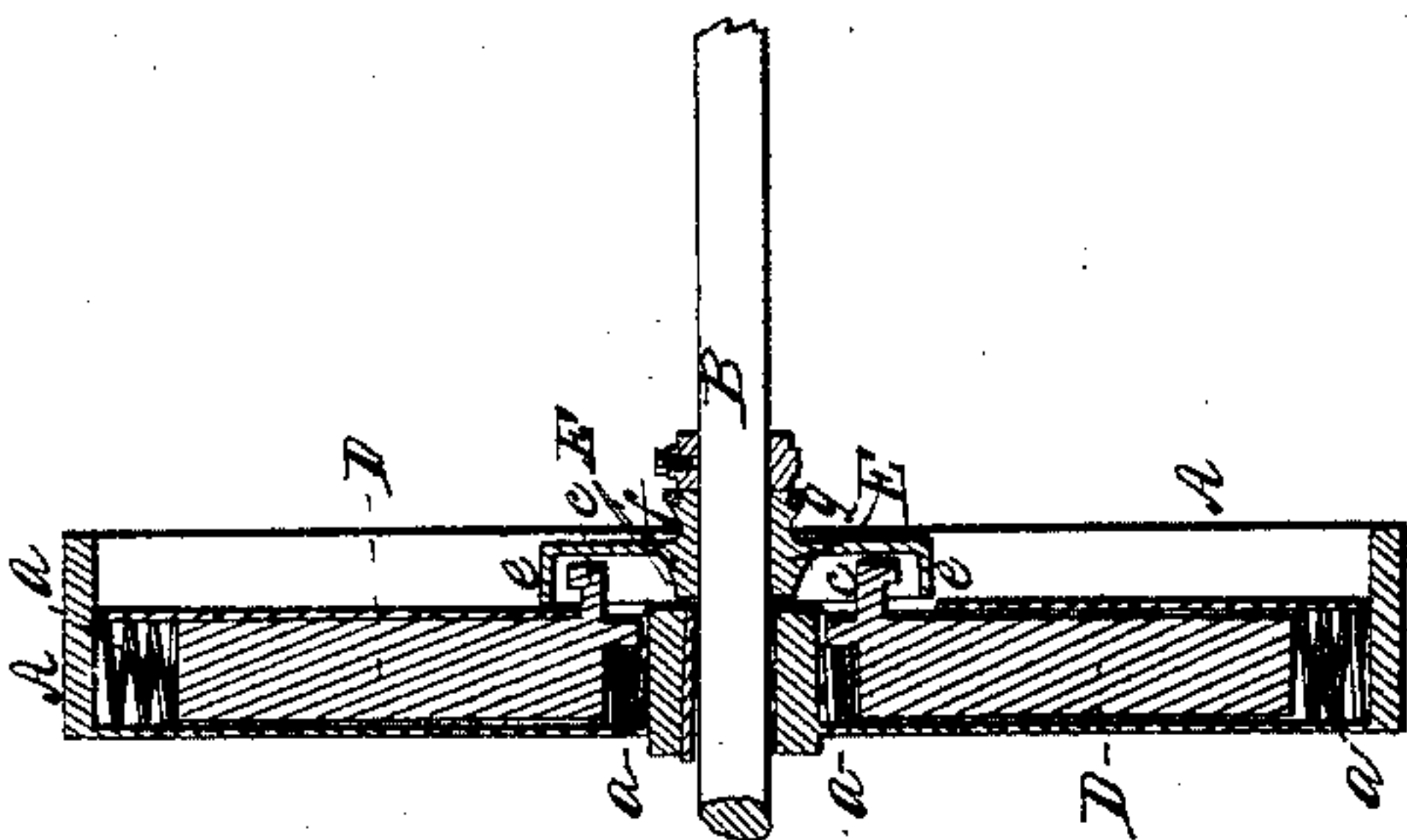


Fig 2.

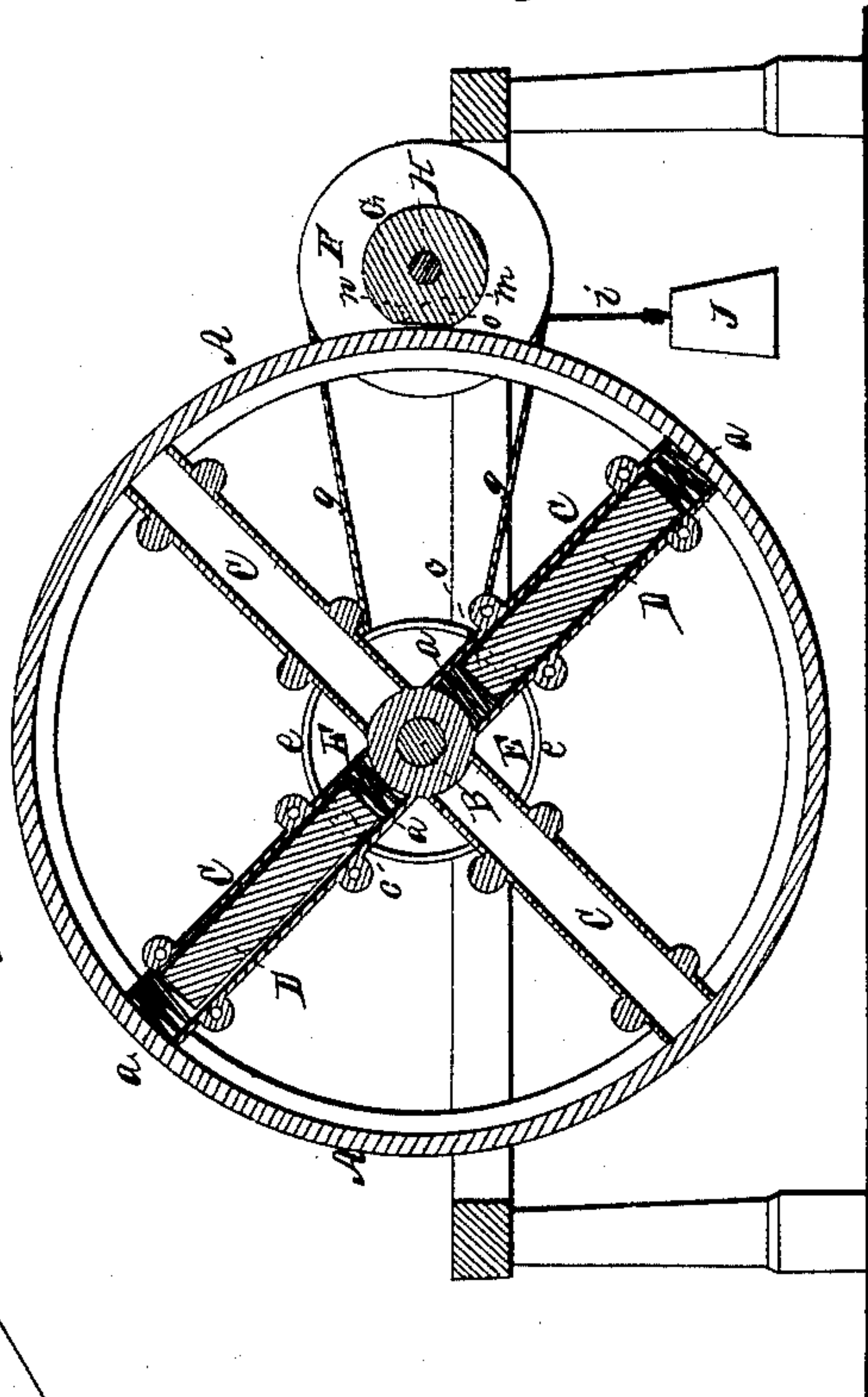
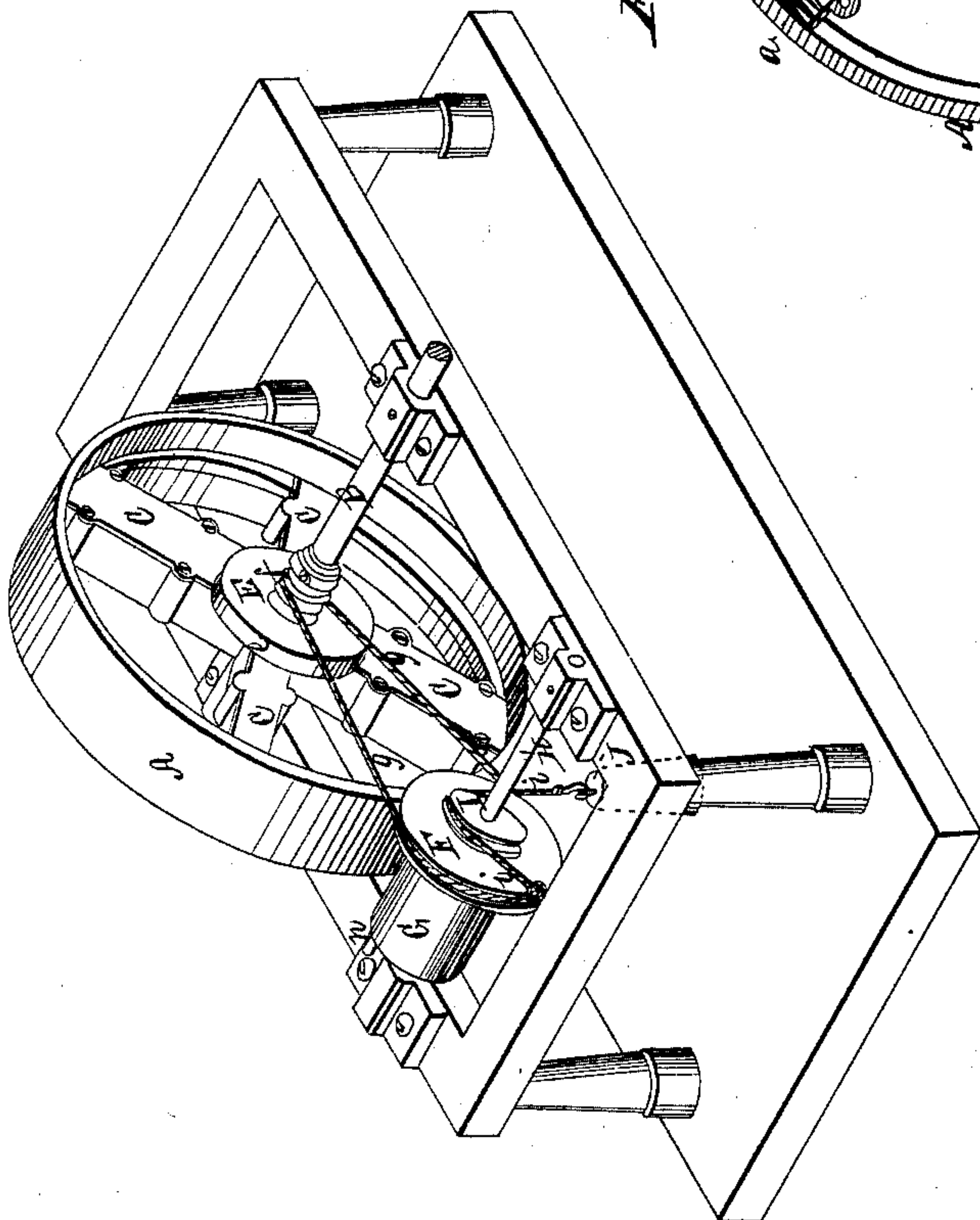


Fig 1.



Witnesses.

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UNITED STATES PATENT OFFICE.

STUART PERRY, OF NEWPORT, ASSIGNOR TO CHARLES H. A. CARTER, OF
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IMPROVEMENT IN SPEED-REGULATORS FOR HORSE-POWERS, &c.

Specification forming part of Letters Patent No. 35,064, dated April 22, 1862.

To all whom it may concern:

Be it known that I, STUART PERRY, of Newport, in the county of Herkimer and State of New York, have invented a new and useful Improvement in Speed-Regulators for Horse-Powers and other Machinery; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of the entire apparatus. Fig. 2 represents a longitudinal vertical section through the regulator. Fig. 3 represents a transverse vertical section taken through the main, balance, or fly wheel.

Similar letters of reference, where they occur in the separate figures, denote like parts of the apparatus in all the drawings.

My invention consists in applying a friction-brake to machinery by or through the centrifugal force of weights that in sliding out bring said brake into action, so as to preserve a constant or nearly constant and uniform speed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

I am aware that levers or rubbers thrown out by the centrifugal force of a revolving wheel have been essayed for regulating the speed of machinery, but from the want of simplicity and practical utility have failed to go into general use. My object and purpose are to make the centrifugal force of a revolving wheel on any machinery so available as to regulate its speed and keep it constant or practically so however the power applied to the wheel may vary. This I accomplish as follows:

A represents a wheel on a shaft, B, which may be driven by horse or any other power. The arms C C of this wheel are made hollow, so as to receive weights D within them. It may not be necessary to have all the arms hollow or to have weights connected with all of them; but at least two of them, diametrically opposite each other, should be so arranged in order to keep the wheel balanced. The weights D may have light springs *a* at

both of their ends to prevent them from moving suddenly either way, said springs acting as cushions to prevent too much motion or jar on starting or stopping the machine, and the outer springs may be so regulated as to vary the power centrifugally brought upon them, causing it to act with greater or less force. Small arms, hooks, or studs *c*, connected to the weights D, project far enough to catch against (when thrown out by the centrifugal force of the revolving wheel A) the rim *e* of a wheel, E, that is loose upon the shaft B; and upon the hub of this wheel E there is a pulley, *f*, around which and around another pulley, F, on the brake-block G or its shaft H passes an endless belt, *g*.

On the pulley F or on the shaft H there is another pulley, I, over which a cord or chain, *i*, fastened by one of its ends to the pulley F, passes, the other end of said cord or chain *i* having a weight, J, attached to it.

The brake-block G may be made of wood or any other suitable material, and has a portion, *m*, of its perimeter cut away, so as to allow it to come up to the wheel A fairly and with sufficient bearing-surface to produce frictional contact with it. A pin, *n*, may be inserted in this block G to prevent it when the wheel is at rest from bearing against it, which would impede it at starting.

When the motion of the wheel A becomes so rapid as to move the weights D from the center toward the circumference of the wheel A, the projections *c c* on said weights come against the interior of the rim *e* of the wheel E, and the contact produces friction enough to cause the wheel E to rotate with the wheel A. The rotation of the wheel E when it becomes powerful enough rocks the shaft H in its bearings by means of the belt *g* and pulley F and brings the lower portion, *o*, of the cut-away part *m* of the brake-block G against the rim of the wheel A, thus retarding its motion. It will be seen that the cord *i* and its weight J are hung upon the retrograde side of the pulley I, and hence the force from the wheel E must be sufficient not only to turn the shaft H, but to turn it against the resistance of the counterpoise or overpoise J; and the moment the friction between the arms *c* and rim *e* ceases to be enough to rock the

shaft H and apply the brake that moment the overpoise J rocks the shaft in an opposite direction and removes the brake from the wheel. By increasing or diminishing the weight J of course the brake can be made to act at a greater or less degree of motion or power on the main wheel, and thus the motion of machinery may be kept constant or nearly so at any desirable or regulated speed, and by an exceedingly simple contrivance that cannot get out of repair.

The wheel E may rest upon the shaft, or upon a fixed hub surrounding the shaft, if so preferred. By the above arrangement an immense leverage can be obtained with comparatively a small weight, owing to the fact that the rimmed wheel E will move, if necessary, a complete revolution or several revolutions to make a movement of the brake at the point of contact of only, say, the one hundredth part of an inch, and consequently the speed can be regulated and adjusted with the utmost nicety by this contrivance.

Having thus fully described my invention, what I claim is—

1. In connection with a speed-regulator for machinery, the arranging of the weights that are to be centrifugally acted upon in the hollow arms of the wheel A, in connection with restraining or regulating springs, substantially as and for the purpose set forth.

2. In combination with the weights acted upon centrifugally by the wheel A, the loose wheel E, belt g, and pulley F, or their equivalents, constructed, arranged, and operating substantially as herein described.

3. In combination with a brake which is operated by means of weights acted upon centrifugally, the poise J, applied on the retrograde side of the pulley F, substantially as and for the purpose described.

STUART PERRY.

Witnesses:

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WM. H. CHAPMAN.