

(No Model.)

J. W. HIEMENZ.

FRICTION LOCK FOR LEVER FAN BLOWERS, &c.

No. 277,487.

Patented May 15, 1883.

Fig 1.

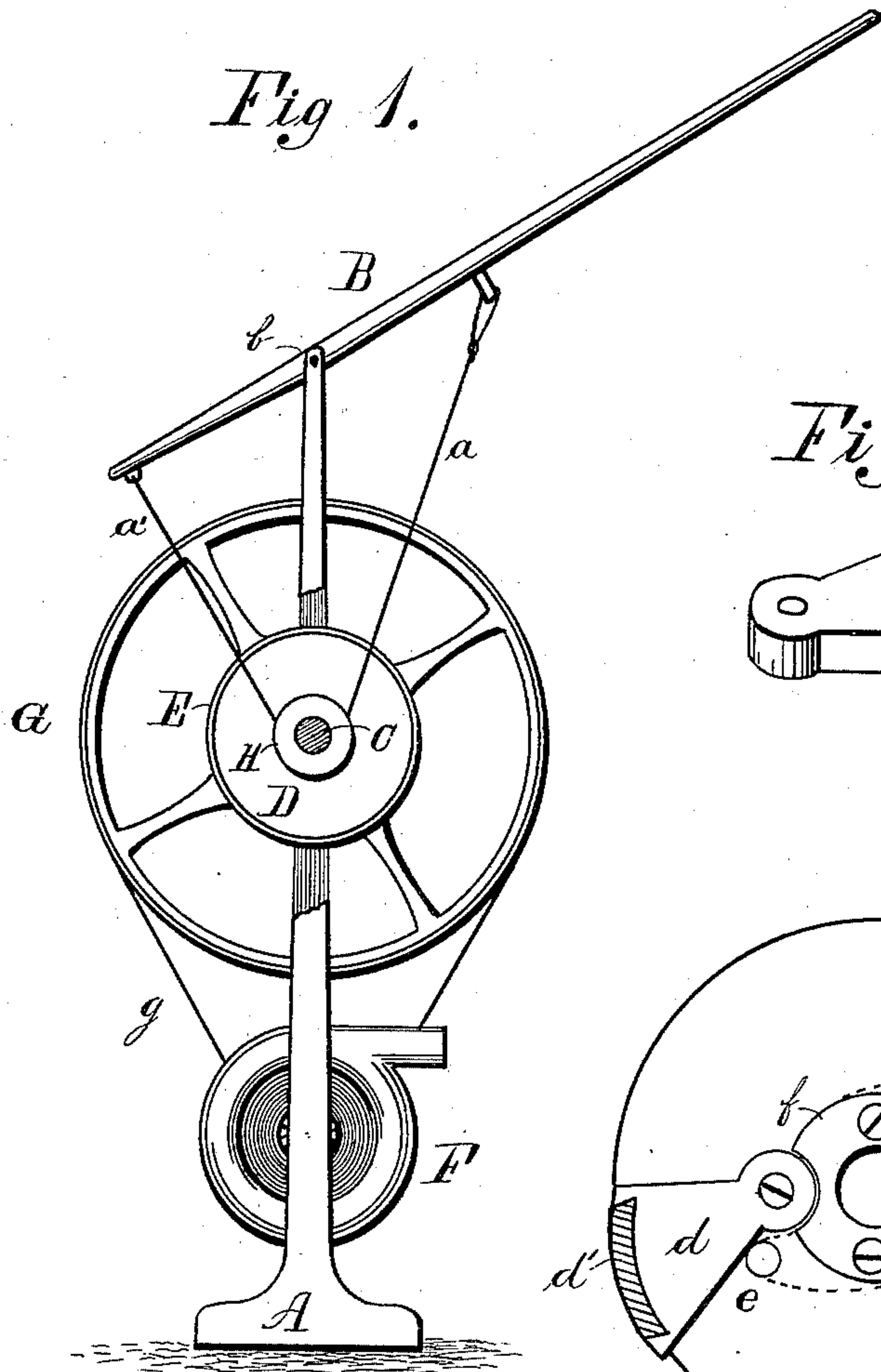


Fig 2.

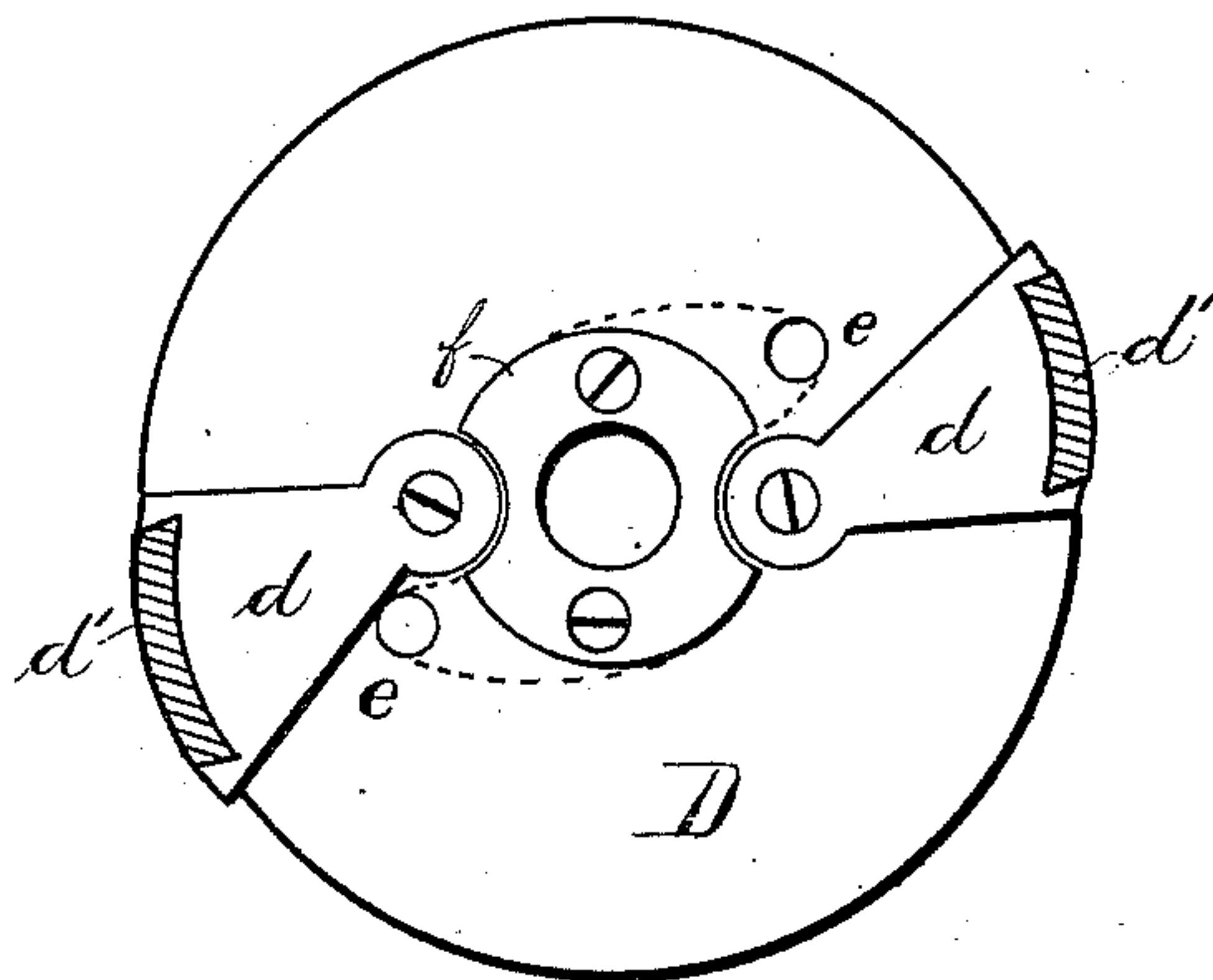
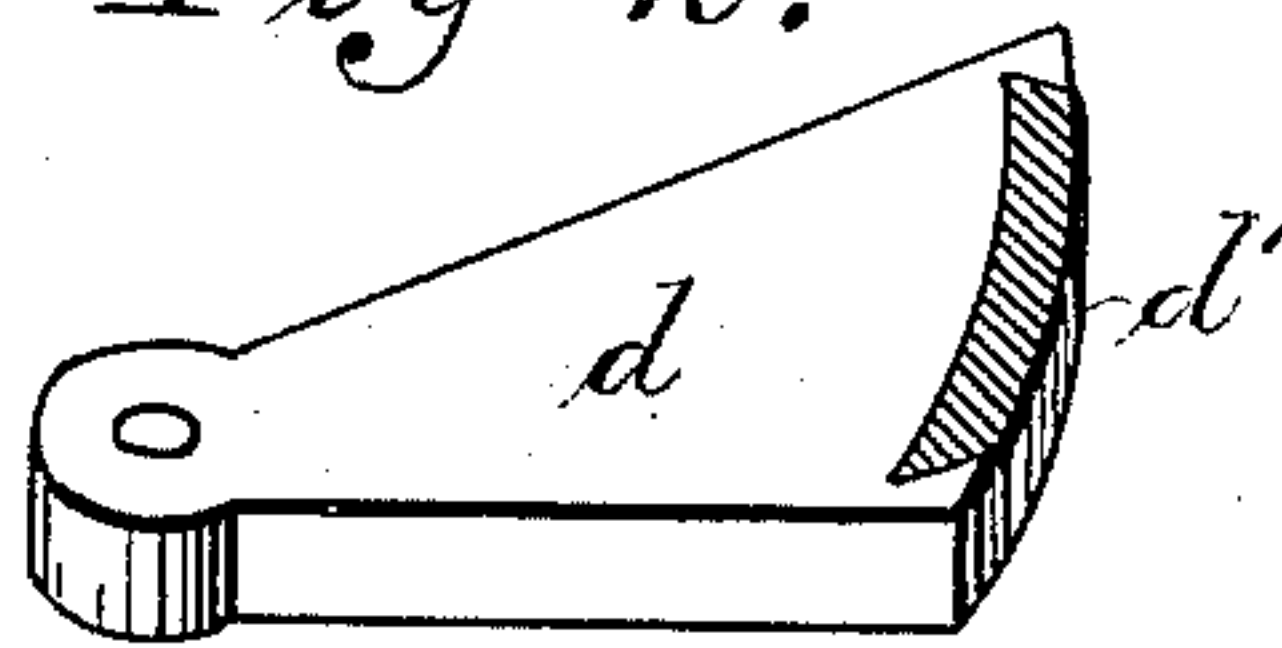


Fig 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN W. HIEMENZ, OF LANCASTER, PENNSYLVANIA.

FRICTION-LOCK FOR LEVER FAN-BLOWERS, &c.

SPECIFICATION forming part of Letters Patent No. 277,487, dated May 15, 1883.

Application filed February 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HIEMENZ, a citizen of the United States of America, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Friction-Locks for Lever Fan-Blowers and other Machinery, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to mechanism for converting vertical to rotary motion. It may be used in connection with any machinery requiring such conversion of movement; but in this application I illustrate its use in connection with a blacksmith's fan or blower.

The description following, together with the accompanying drawings, will fully set forth the nature and form of the invention.

In the drawings, Figure 1 is a side elevation of my device in connection with a smith's blower. A part of the frame is broken away to exhibit more clearly the entire side of the device. Fig. 2 is a perspective view of the friction clutch or lock, and Fig. 3 is a plan view of the clutch-bearing disk with two friction-locks attached.

Similar letters of reference indicate corresponding parts in the several views.

The letter A indicates a frame composed of suitable base and upright supporting-posts, and furnished with bearings for the journals of the horizontal shaft C, the bolt *b*, and the fan F.

G is a balance-wheel provided with a band tire, and having an annular side extension or box-wheel, E, firmly fixed to it. The wheel G is fixed upon the shaft C.

D is a disk, loosely turning on the shaft C. This disk has an annular extension on its outer side, on which the straps *a* and *a'* alternately wind. The recesses in which these straps are wound are separated by a suitable partition, and each strap has one end fixed in its recess and the other end to the lever *b*. Fig. 3 represents the inside of the disk D.

f is a circular projection, attached with screws or cast in one piece with the disk. It is of equal thickness with the locks *d d*, and has recesses to receive the inner ends of the locks *d d*. Check-pins *e e* are also provided,

or the central part, *f*, may be formed, as indicated by the dotted lines, to answer the same purpose as the pins. The locks or clutches *d d* are secured by bolt or screw, on which they are free to turn until checked in one direction by the pins *e e*, and in the other direction by the piece *f*. Each lock *d* is provided on its peripheral surface with a friction-bearing face, *d'*, made preferably of leather or rawhide; but any suitable material may be used. The front edges of the locks *d d*, or those edges which impinge upon the checks *e e*, are slightly longer than the rear edges, so that when the lock *d* falls away from the pin *e* its forward edge and the friction-surface *d'* extend beyond the circumference of the disk. The disk D is slightly smaller circumferentially than the inside of the box-wheel E, and the locks *d d* are so adjusted that when the disk revolves in one direction the surfaces *d' d'* bear against the inner surface of the wheel E; but when it revolves in the opposite direction they fall away from the wheel E.

My invention is operated in the following manner: Depress the handle of the lever B, the strap *a'* is unwound from the disk-spool and causes the disk to revolve in a forward direction, the locks *d d* extending beyond the edges of the disk, their friction-surfaces engage the wheel E and cause it and the balance-wheel to revolve also, by which, through the band *g*, the blower F or other machinery is set in motion. As the strap *a'* is unwound the strap *a* is wound upon its spool, and when the lever-arm is raised the strap *a*, unwinding, causes the disk D to revolve in the opposite direction. The clutches *d d* immediately fall away from contact with the wheel and hang loosely until a forward movement is again imparted to the disk by depressing again the lever-arm B. The impetus given the balance-wheel causes it to continue its motion through the intervals between consecutive depressions of the lever, and thus a uniform and powerful force is obtained.

In the drawings two clutching-blocks are shown, but one only or three or more may be employed, and their size and the extent of their bearing-surfaces be varied, according to the power required, or other circumstances controlling its application.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

- 5 1. In a device for converting vertical to rotary motion, the combination, with a lever, B, having straps *a a'*, of a disk, D, working loosely on a shaft, C, provided with suitable recesses for the straps *a a'*, and with check-pins *e e* or their equivalents, and having movable friction-locks *d d*, furnished with leather or rawhide bearing-surfaces *d' d'*, a box-wheel, E, and balance-wheel G, fixed to the shaft C, and a supporting-frame, A, provided with bearings, as required, substantially as herein set forth.
- 15 2. The herein-described mechanism for driving a smith's blower or other machinery, con-

sisting of the combination, with a supporting-frame, A, furnished with requisite bearings, of a lever, B, bolt *b*, straps *a a'*, shaft C, balance-wheel G, box-wheel E, disk D, having 20 the spool-bearing extension H, and clutch-blocks *d d*, each having bearing-surfaces *d' d'*, the central projection, *f*, pins *e e*, the band *g*, and the blower F, all constructed and operated substantially as herein set forth. 25

In testimony whereof I affix my signature, in presence of two witnesses, this 16th day of February, 1883.

JOHN W. HIEMENZ.

Witnesses:

M. M. ROHRER,
C. WESSOLOWSKY.