

G. W. BROWN.  
Foot-Power Machine.

No. 198,272.

Patented Dec. 18, 1877.

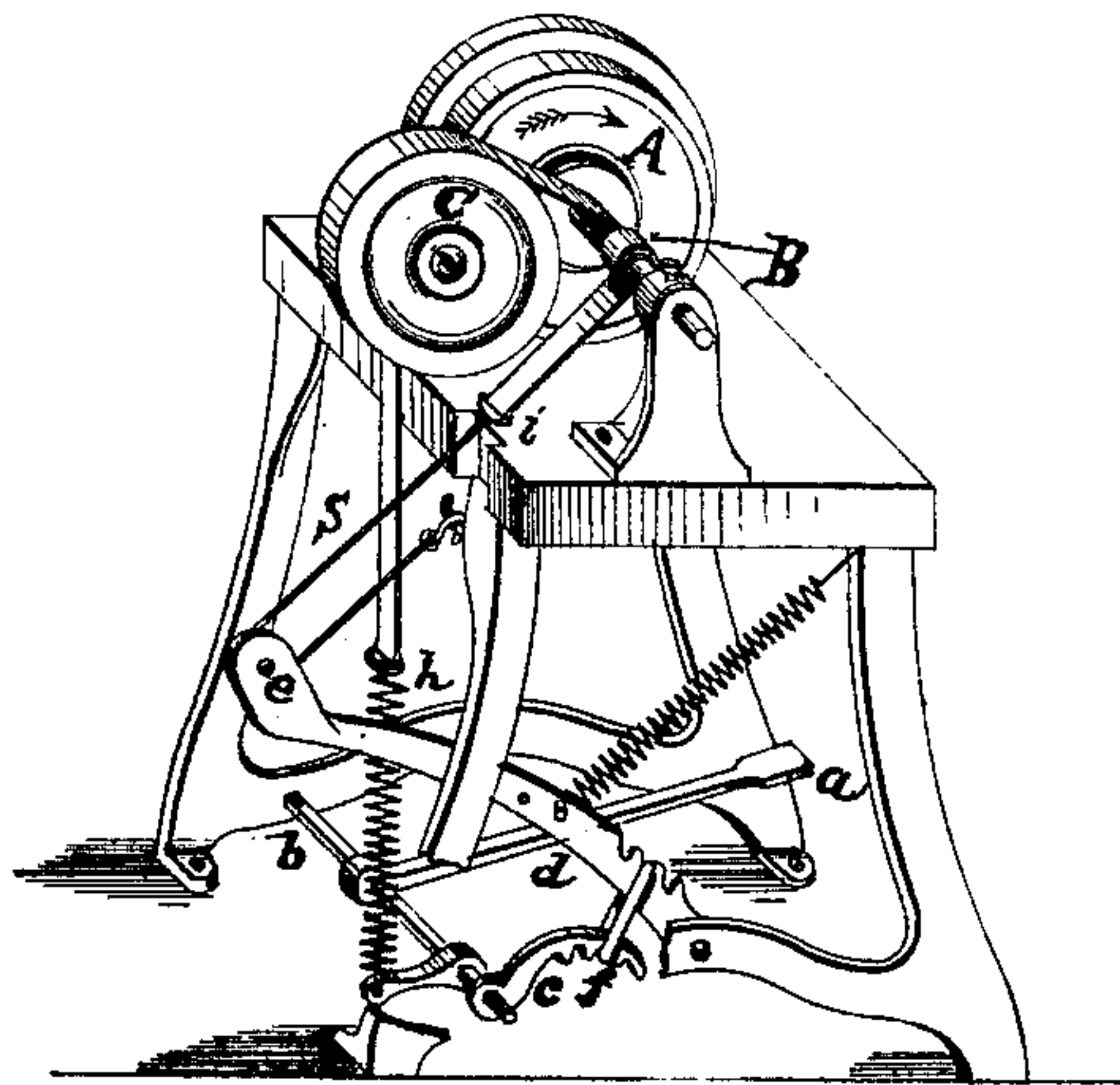


Fig. 1.

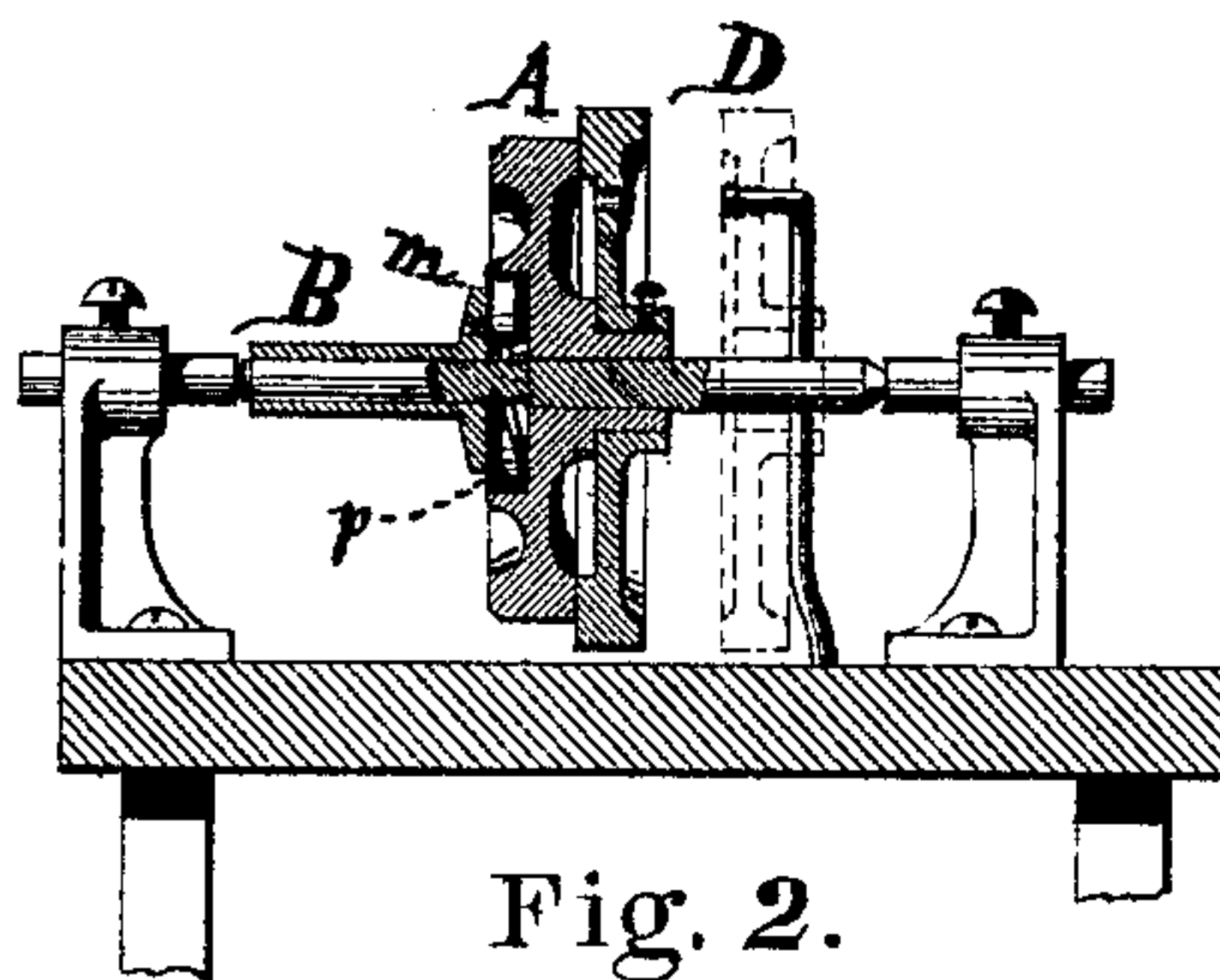


Fig. 2.

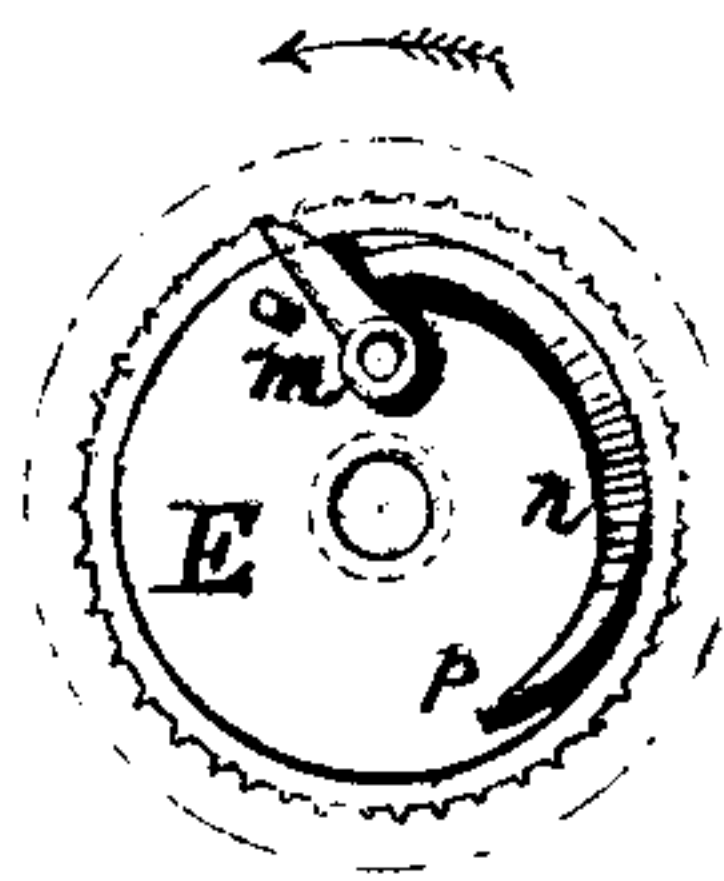


Fig. 3.

WITNESSES

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# UNITED STATES PATENT OFFICE.

GEORGE W. BROWN, OF PROVIDENCE, RHODE ISLAND.

## IMPROVEMENT IN FOOT-POWER MACHINES.

Specification forming part of Letters Patent No. **198,272**, dated December 18, 1877; application filed August 30, 1876.

*To all whom it may concern:*

Be it known that I, GEO. W. BROWN, of the city of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Foot-Power Machines, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

Figure 1 is a perspective view. Fig. 2 is a longitudinal section. Fig. 3 is a detached section.

This invention consists of means for driving rotary foot-power machines, such as saws, lathes, emery-wheels, &c., without the use of heavy balance-wheel and crank motion, and so constructed that the speed can be adjusted to any number of revolutions required without the aid of the ordinary cone-pulleys and belt, as will hereinafter more fully appear.

A is a balance-wheel, fastened to the spindle of the machine to be driven. B is a sleeve, loosely fitted to the spindle. Two straps are fastened to the sleeve B, and wound around it in opposite directions, one of which passes up to the take-up wheel C. The other passes down, and receives a three-cornered link, *i*. The cord S is fastened to the link *i*, and passes down and over the pulley *e* in the end of the lever *d*; thence up, and is fastened to the side of table by means of a small hook and eyebolt. The treadle *a* and the short lever *c* are rigidly attached to the rock-shaft *b*. In the under side of short lever *c* and upper side of long lever *d* several notches or scores are cut for receiving the connecting-link *f*.

When the treadle *a* is pressed down by the foot, a rotary motion is given to the sleeve B by means of compound levers *c d* and the strap and cord S. The sleeve is reversed, and the strap rewound on the sleeve by means of the take-up wheel C, actuated by the spiral spring *h*. Motion is communicated to the balance-wheel A by means of a noiseless catch, *m*, on the end of sleeve B, which engages in the slightly-notched circular recess in the side of balance-wheel A, Fig. 2.

The construction of the catch is more clearly shown in Fig. 3. E is the disk on the end of sleeve B. *m* is a steel catch, hinged to the disk E by means of a steel pin. *n* is a friction-

spring, rigidly attached to the catch *m*, with the end *p* turned out in such a manner that it presses slightly on the side of the circular recess in the balance-wheel A, as shown at *p*, Fig. 2.

The distance between the pin on which the catch *m* hinges and the end *p* of the friction-spring is so great that a very little friction at *p* will prevent the point of the catch *m* from dragging on its backward motion, and will also throw the point out on its forward motion, so that it will be sure to catch and rotate the balance-wheel in the direction of the arrow.

It will be seen that the cord S travels twice the distance by passing over the movable pulley *e* in the end of lever *d* that it would if it were attached to the end of lever *d*.

It will be evident that the same result may be obtained, as far as the use of the movable pulley *e* is concerned, by placing it in the treadle *a*; but for the purpose of getting a greater variety of speeds, I make use of the compound levers *c d*.

When a slower speed is required, the connecting-link *f* should be moved one or more notches toward the rock-shaft *b*; and if the speed is then too quick the hook in the end of cord S can be unhooked from the eyebolt at the under side of the table and hooked into the three-cornered link *i* in the end of strap.

For the purpose of reducing the heft of the balance-wheel A, when it is to be run at a very quick speed, it is made in two parts, with a hole in the center of the loose or movable part, fitted to the hub of the part that is rigidly fixed to the spindle, and held in place, when required to run, by means of a set-screw or its equivalent. When not required to run, it can be removed from the hub of the fixed part, and hung so as to clear the spindle, as shown at D Fig. 2.

I claim as my invention—

1. The movable pulley *e*, applied to the treadle mechanism in such a manner that the strap which communicates motion to the reciprocating sleeve B is caused to unwind a greater number of turns, thus increasing the speed, as shown and described.

2. The catch *m*, provided with the friction-



spring *n*, arranged to operate in combination with the reciprocating sleeve, strap, and treadle, for the purpose set forth.

3. The balance-wheel A, constructed in two separate parts, so that one part may be detached, for the purpose specified.

4. In combination with the reciprocating sleeve B, the arrangement of the compound

levers *c d*, provided with notches or scores, for the purpose of adjusting the power and speed, substantially as shown and described.

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Witnesses:

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