

(No Model.)

J. F. BROWN.
GOVERNOR FOR MUSIC BOXES.

No. 356,702.

Patented Jan. 25, 1887.

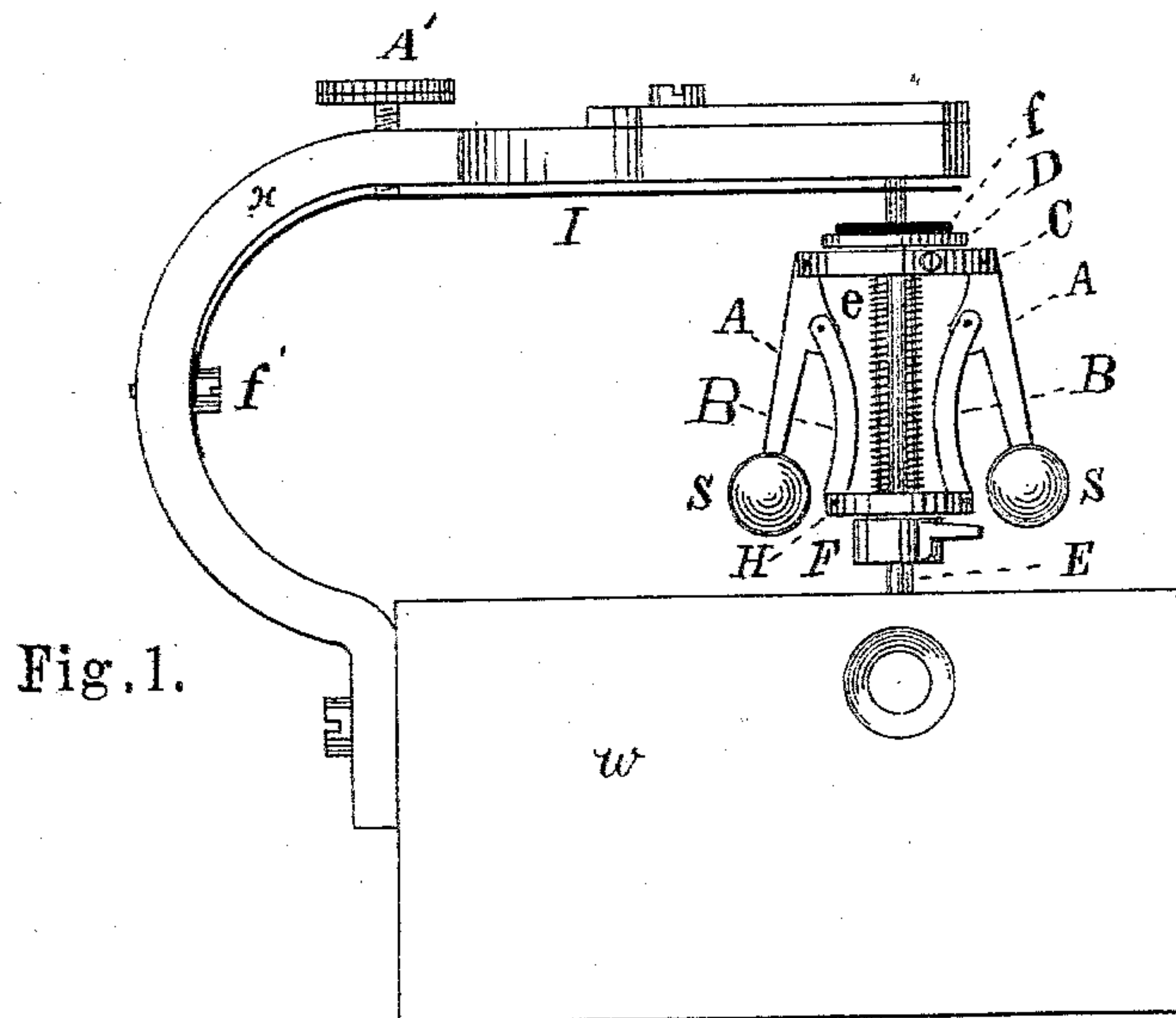


Fig. 1.

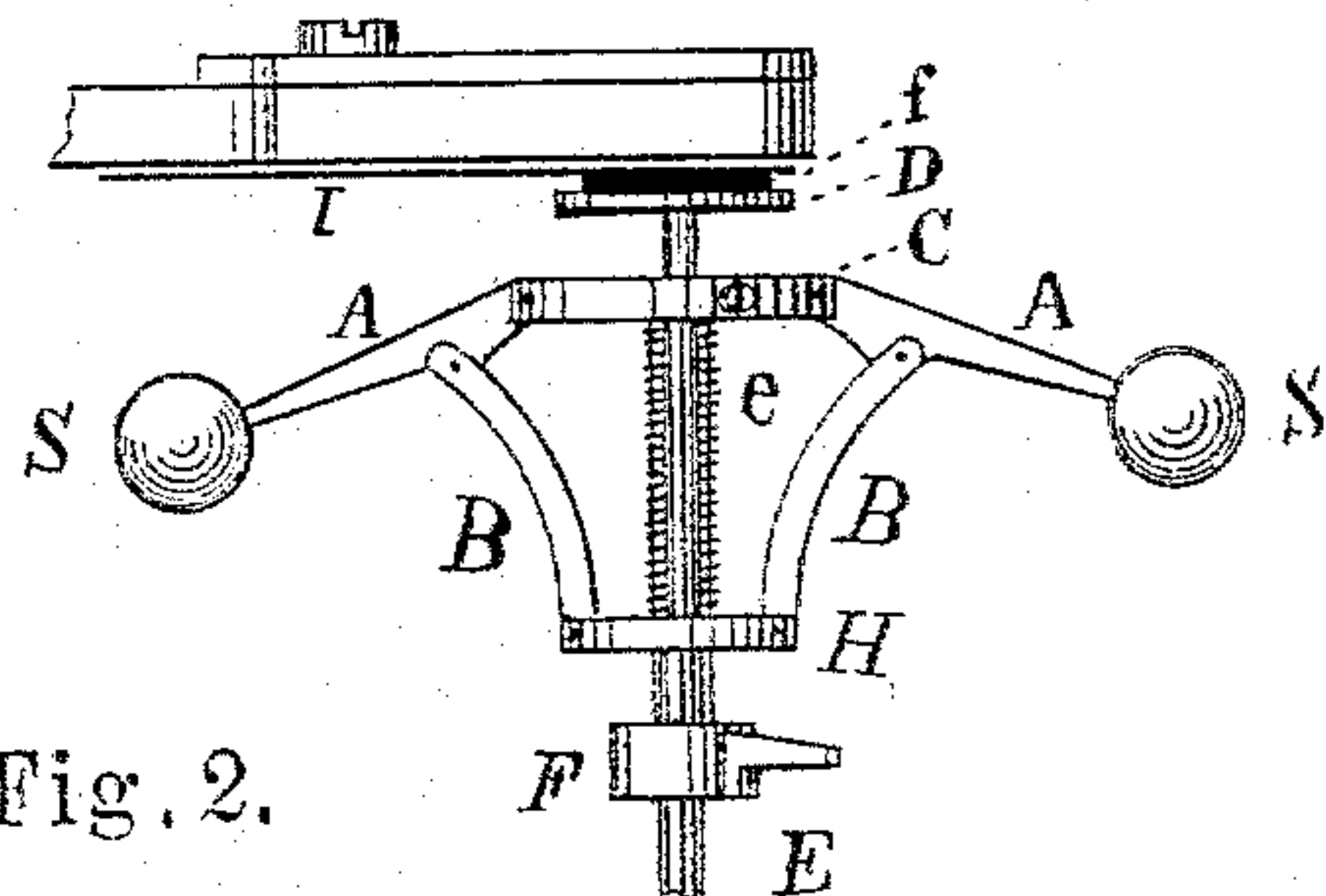


Fig. 2.

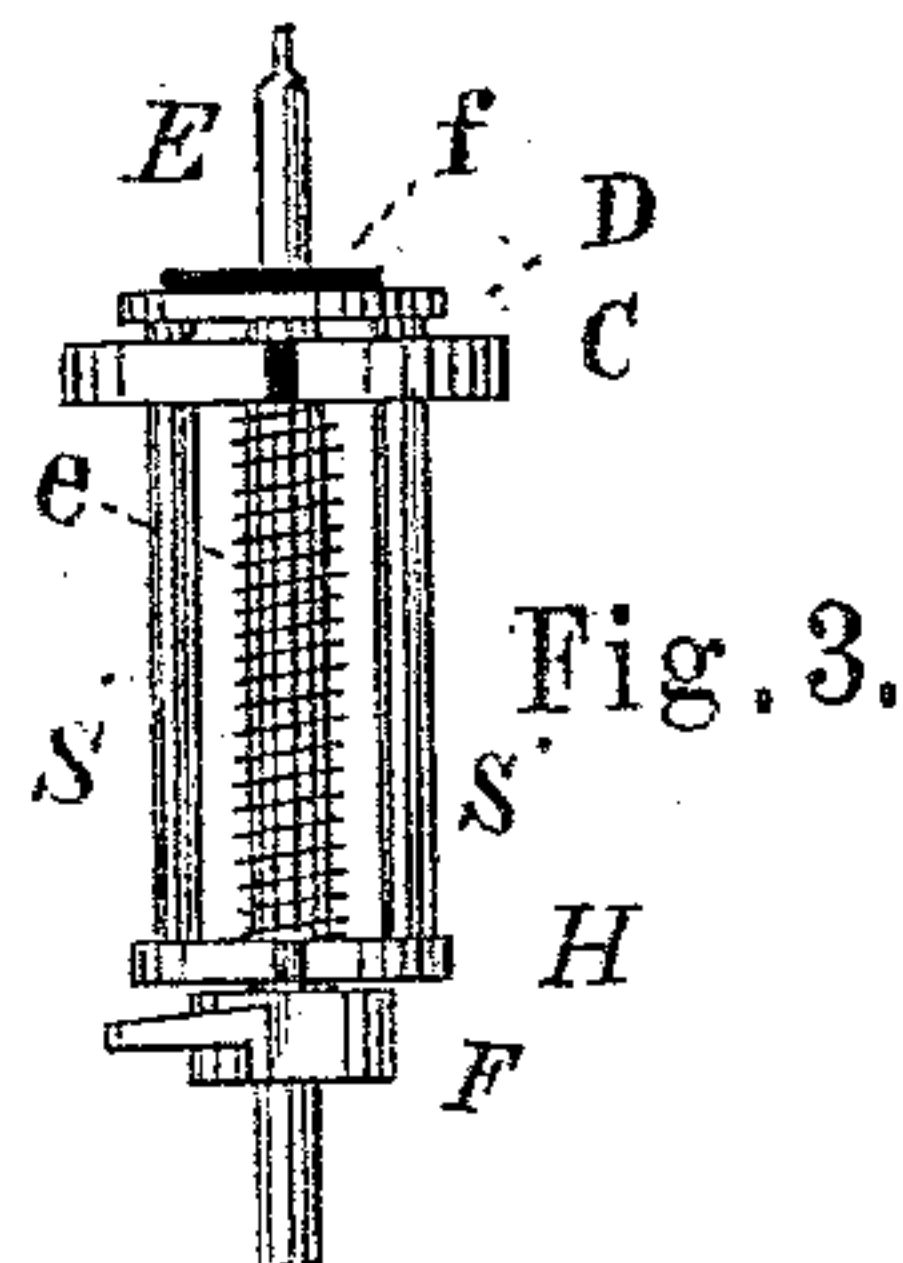
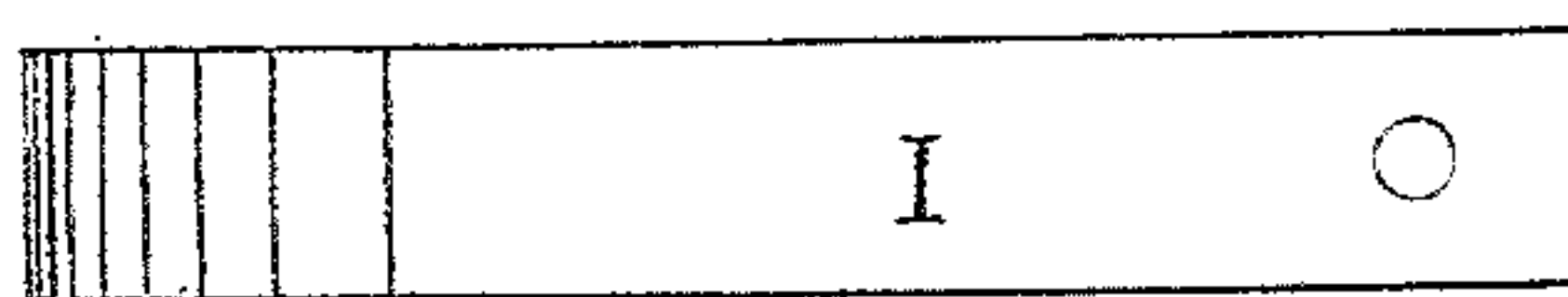


Fig. 3.

Fig. 4.



Witnesses.

Asa Smith
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By O. N. Fuller
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UNITED STATES PATENT OFFICE.

JAMES F. BROWN, OF LANSING, MICHIGAN, ASSIGNOR OF ONE-HALF TO
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GOVERNOR FOR MUSIC-BOXES.

SPECIFICATION forming part of Letters Patent No. 356,702, dated January 25, 1887.

Application filed April 7, 1886. Serial No. 198,143. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. BROWN, a citizen of the United States, residing at Lansing, in the county of Ingham and State of Michigan, have invented a new and useful Speed-Governor, of which the following is a specification.

My invention relates to improvements in speed-governors in which a horizontally-rotating disk is vertically operated by centrifugal balls; and the objects of my improvements are, first, to provide a governor that with the slightest change of speed shall cause a corresponding change, by friction, of the regulating resistance; second, to afford a means by which any degree of speed that is desired may be maintained uniformly. I attain these objects by the mechanisms illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the entire machine. Fig. 2 is an elevation showing the balls extended. Fig. 3 is a side view of a part of the machine as it would appear from the right of that in Figs. 1 and 2, with the balls, arms, and links removed; and Fig. 4 is a top view of the spring I.

Similar letters refer to similar parts throughout the several views.

My improved speed-governor is more particularly adapted to regulating the speed of the operating mechanism of music-boxes, and by which a uniform measure of time can be obtained throughout the entire action of the driving-spring.

I will now proceed to explain my improvements in connection with the drawings.

The arms A A, having balls S S secured to their lower ends, swing on a pin by which they are attached to a disk, C, which is secured to the shaft E by a set-screw, and thereby made to rotate with the shaft.

Arms A A are connected pivotally by links B B to collar or disk H, which is free to slide on shaft E, and to this latter collar or disk are secured rods S' S', which pass freely through disk C, and secured to their upper ends is a

disk, D, having a friction-pad, *f*, of leather, cork, or any suitable substance, which, by the centrifugal force of the balls, is forced up and held in contact with spring I, and the resistance here caused by friction maintains a uniform and equal measure of time.

I is a spring, previously referred to, curved to conform to the under side of the curved arm *x*, and attached by a screw at *f'*. At the opposite end of said spring there is an opening, as shown in Fig. 4, through which the shaft E passes, and which opening is considerably larger than the shaft, so that they may not come in contact.

A' is a thumb-screw for adjusting spring I to contact with friction-pad *f* at any degree of speed desired, and by which that degree of speed may be maintained uniform by the resistance there created by friction.

The block *w* and curved arm *x* are no part of my invention, they being the same as heretofore constructed in all music-boxes for supporting the old fan-governor.

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

1. The combination, with a centrifugal ball-governor composed of the rods S' S', secured to collar or disk H, which is vertically operated by centrifugal balls, disk D, secured to the upper end of said rods and having friction-pad *f*, of the adjustable spring I, operating as and for the purpose specified.

2. The combination, with the rotating disk D, having friction-pad *f*, and the means for rotating the disk, of the adjustable spring I and adjusting thumb-screw A', for the purpose of adjusting the spring to contact with friction-pad *f*, substantially as and for the purpose specified.

In testimony whereof I sign this specification in presence of two witnesses.

JAMES F. BROWN.

Witnesses:

CHAS. C. HOPKINS,
M. R. TAYLOR.