

(No Model.)

D. F. MILNE.
Governor.

No. 232,836.

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Fig. 1.

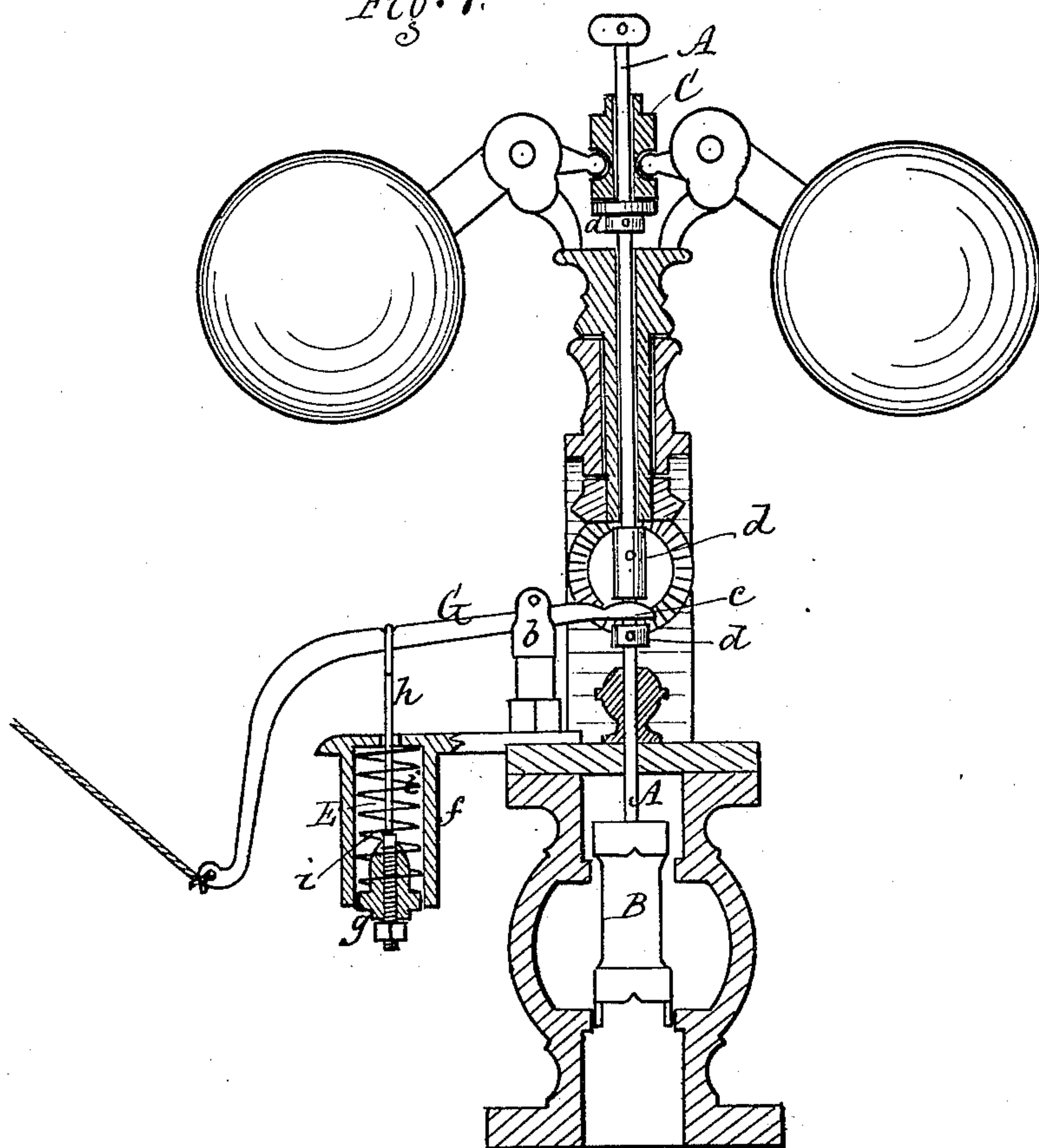


Fig. 2.

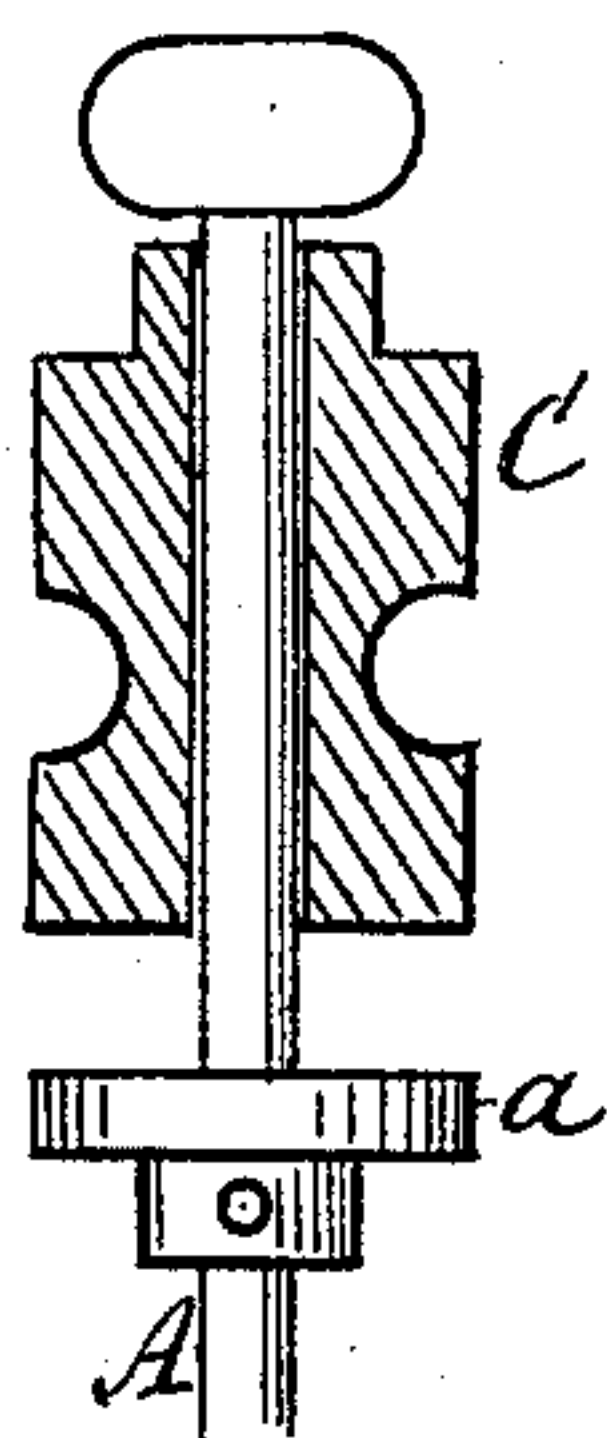


Fig. 3.



Attest.
Chas. F. J. J. J.
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UNITED STATES PATENT OFFICE.

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GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 232,836, dated October 5, 1880.

Application filed March 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, DAVID F. MILNE, a citizen of the United States, residing at West Newton, Middlesex county, Massachusetts, have invented a certain new and useful Improvement in Governors; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—
Figure 1 is a central vertical section of a governor showing my improvement. Fig. 2 is a section through the swivel on an enlarged scale. Fig. 3 is a detail view, showing the connection of the operating-lever with the valve-rod.

My improvement relates to steam-governors in which the valve-rod is made in one continuous length from bottom to top, and in which the swivel with which the governor-arms connect turns upon the rod.

The invention consists in the combination of certain parts by which the rod may be thrown down to close the valve without raising or otherwise operating the balls.

The drawings show an ordinary Judson governor. In this governor the rod A, which is attached to the valve B, extends in one unbroken length from bottom to top, and the swivel C, with which the governor-ball arms connect, turns free on the rod, so that the rod has no revolving or turning motion, differing in this respect from those governors in which the rod revolves with the governor-balls, or in which the rod is made in two sections separated in the middle.

Heretofore, in the Judson governor, the swivel C, although turning freely on the valve-rod A, has been confined between two fixed collars pinned to the rod, one above and the other below the swivel, so that in order to move the rod either up or down the balls would have to be correspondingly moved.

In some instances it is desirable to operate the rod and close the valve independently of the balls—for instance, in Sawyer's valves; but as heretofore constructed it has been impossible to do so without raising the whole weight of the balls. However easy it may be to do this in small governors, it is practically out of the question to do it in large governors, where the balls are heavy.

I obviate these difficulties as follows: I employ the ordinary fixed collar *a*, pinned to the rod below the swivel, so that as the balls are thrown out by centrifugal action the valve will be closed; but instead of using a similar collar above the swivel pinned to the rod, as is usually done, I allow the swivel to rest loose on the rod and the rod to have a free sliding movement down through the swivel, by which means it will be seen that the rod may be drawn down at any time to close the valve and shut off the steam without correspondingly raising or otherwise affecting the balls.

E is a spring attachment connected with the top of the valve-case, and G is a lever, having its fulcrum at *b*, and provided with a forked end, *c*, which embraces or otherwise connects with the valve-rod between fixed shoulders *d*, or is so attached to the rod that as the lever is thrown in one direction or the other the rod will be correspondingly thrown up or down. The spring attachment consists of a barrel, *f*, a follower, *g*, provided with a rod, *h*, attached to the lever, and a spring, *i*, which presses down upon the follower and draws down upon the long arm of the lever and rises upon the valve-rod. This particular form of the spring attachment I do not claim.

In the natural action of the governor it will be seen that the rod will be pressed up by the spring attachment, so that contact will be maintained between the rod and the swivel during the play of the governor; but whenever sufficient force is applied to the lever to overcome the power of the spring, then the valve-rod will be forced down to close the valve and shut off the steam, irrespective of the action of the balls, as before described.

I do not claim a governor having the valve-rod made in two separate sections, the lower one of which is capable of independent movement.

What I claim as new is—

In a governor, a valve-rod made in a single length, having a fixed collar or shoulder below the swivel, but having a free sliding movement in the swivel above said collar, a lever connected with the rod, capable of throwing the rod in either direction, and a spring or weight connected with the lever, for bearing the collar of the rod up against the swivel,

the whole combined as described, so that in ordinary action the valve will be controlled by the balls, but when desired the rod may be thrown down independently of the balls to
5 close the valve and shut off steam, as specified.

In witness whereof I have hereunto signed

my name in the presence of two subscribing witnesses.

DAVID F. MILNE.

Witnesses:

JOHN COON,
HENRY COON.