P. GRIMM.

Governor for Steam-Engine.

No. 198,978. Patented Jan. 8, 1878.

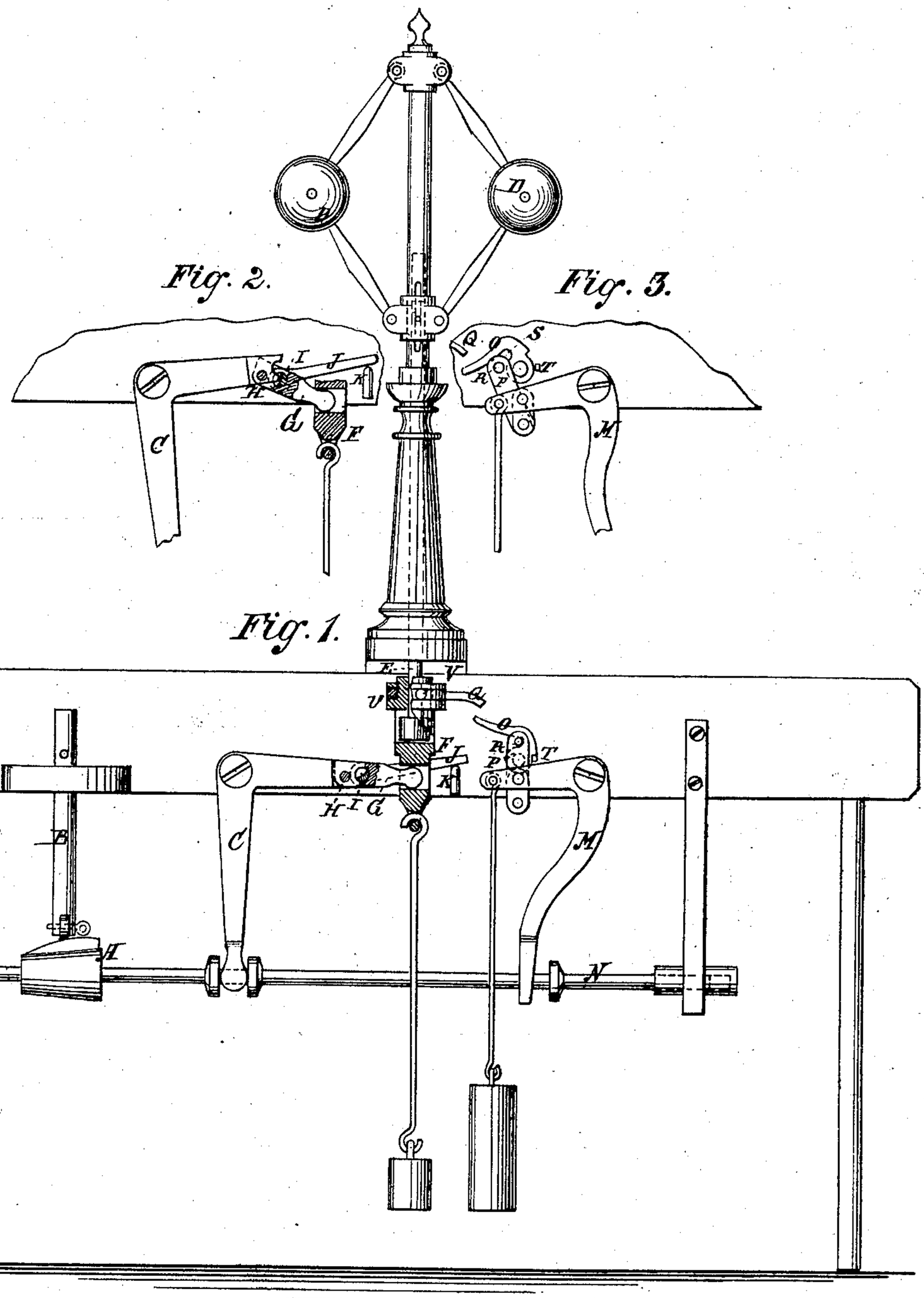

Fig. 2.

Fig. 3.

Fig. 1.

Witnesses:

Wright Brown

W. F. Robinson,

Inventor:

Paul Grimm

UNITED STATES PATENT OFFICE.

PAUL GRIMM, OF GLEN COVE, NEW YORK.

IMPROVEMENT IN GOVERNORS FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. **198,978,** dated January 8, 1878; application filed July 5, 1877.

To all whom it may concern:

Be it known that I, PAUL GRIMM, of Glen Cove, Queens county, and State of New York, have invented new and useful Improvements in Governors for Steam-Engines, of which the following is a specification:

The object of my invention is to provide for automatically preventing the opening of the valve by the falling of the balls when the governor-belt breaks, runs off, or the governor-spindle sticks fast, which commonly causes the opening of the valve wide, and consequently sets the engine racing, particularly those in which the governor regulates the cut-off valves, and the throttle is kept wide open.

In the example here represented there is a trip contrivance in the lever, by which the balls are made to regulate the cut-off, allowing a reverse movement of the regulating-cam to that which the lever naturally gives when the balls fall, and there is a weighted lever, which is also tripped at the same time, and which gives such reverse movement to the cam, so that instead of opening the valve wider it allows the valve to close, and thus stops the engine till the belt is readjusted.

Figure 1 is a side elevation of a governor constructed according to my invention, showing it in the working position, and with some of the parts in section. Fig. 2 is a detail of the tripping device of the regulating-lever, showing the positions when tripped, and with some of the parts in section. Fig. 3 is a detail of the weighted-lever trip, also in the tripped position.

A is the cam for regulating the cut-off valve by the stem B, and C is the lever employed to adjust the cam through the medium of the balls D, rod E, and the swivel-head F of the governor. In this lever I make a trip-joint in any approved way—say, by the piece G, pivoted to the main part of H, tripping-pin I′, and the tripping-arm J—with which I fix a tripping-stud, K, in the beam or any other suitable support, the said stud being so placed that while the governor is working properly the arm J will be held sufficiently above it to prevent tripping the joint of the lever C; but whenever the balls fall, as when the governor-belt breaks, the arm J will be arrested by the tripper K, which will trip the joint in lever C, to allow the cam A to be moved back to the right; and for so moving it at such times I have arranged the weighted lever M, in connection with its shaft N, and provided therewith the notched and pivoted dog O and link P, for holding it out of action when the governor is working all right, as represented in Fig. 2; also the toe Q, for tripping it when the governor falls.

The link P has a pin, R, which drops into the notch S when the dog is turned up against the stop T, to hold the weighted lever up. The toe Q is swiveled on the head F by a ring, U, to allow it to be swung out of the way of the dog O by the handle V, so as not to trip the weight when the engine is to be stopped, and to allow the toe to rise above the dog when the engine starts, and for the same reason the tripper K is made to slide forward and backward in its support, and, if desired, it may be connected to the ring U or toe Q, to be operated by the handle V.

When the lever C is connected directly to the stem of the valve, as when it is made to regulate by the throttle-valve, the weighted lever may be caused to act directly on it; but in this case it is made, when it falls, to slide the shaft M, and thus move the cam A from under the valve-stem B, and permit the valve to close when the balls fall, instead of opening wider. Thus the closing of the valve is effected in such cases by, first, the tripping of the joint in lever C, so that its arm, which is connected with the cam, may be moved, while the balls are down, in the contrary direction of that in which it is moved by the falling of the balls; and, second, the tripping of the weighted lever M, which then slides the cam from under the valve-stem and lets the valve close.

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

1. The tripping weighted lever M, combined

with a governor having a trip-jointed regulating-lever, C, substantially as described.

2. The combination of the tripping weighted lever M with the governor having the trip-jointed lever C, and with the regulating-cam A and shaft N, substantially as described.

3. The stud K, arm J, and tripping-pin I, combined with the jointed lever C, and with the head F of the governor-spindle, substantially as described.

4. The notched and pivoted dog O, link P, and pin S, combined with the weighted lever M, toe Q, and the head F of the governor-spindle, substantially as described.

PAUL GRIMM.

Witnesses:
WRIGHT DURYEA,
W. B. ROBINSON.