H. F. Sharr,

Governor.

No. 15,834. Patented Sep. 30, 1856.

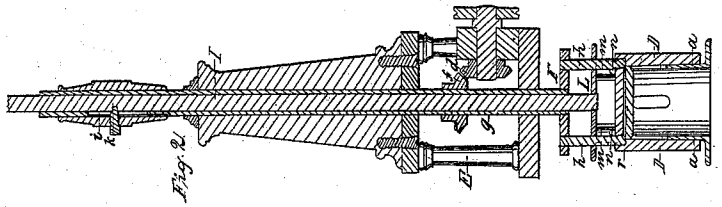

Fig. 2.

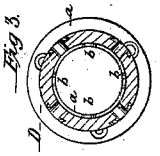

Fig 3.

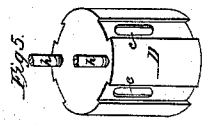

Fig 5.

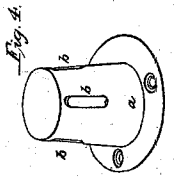

Fig 4.

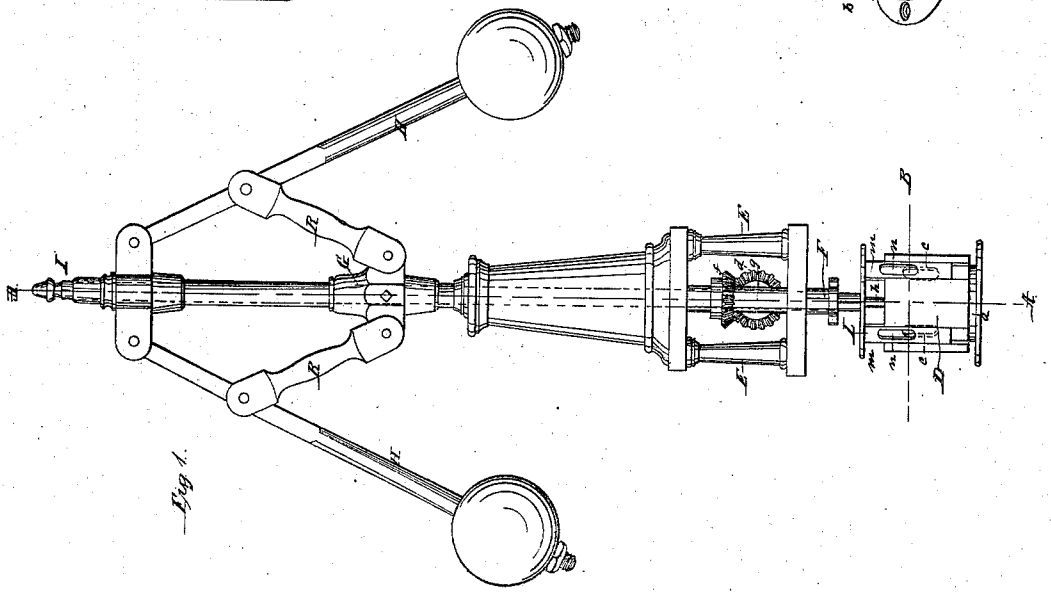

Fig 1.

UNITED STATES PATENT OFFICE.

HENRY F. SHAW, OF WOBURN, MASSACHUSETTS, ASSIGNOR TO H. F. SHAW AND GEO. F. SHAW.

REGULATING-VALVE FOR STEAM-ENGINES.

Specification of Letters Patent No. 15,834, dated September 30, 1856.

To all whom it may concern:

Be it known that I, H. F. SHAW, of Woburn, in the county of Middlesex and State of Massachusetts, have invented a certain Improvement in Valves for Regulating the Flow of Steam by Means of the Governor, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a front view. Fig. 2 a vertical section through the line A. A. of Fig. 1. Fig. 3 a horizontal section upon the line B. B. of Fig. 1. Fig. 4 a view of the valve seat. Fig. 5 a view of the valve D.

To enable others skilled in the art to understand my invention I will proceed to describe the manner in which I have carried it out. In the said drawings *a* is a cylindrical valve seat, which is secured to the interior of the steam chest, through the ports *b* of which the steam is admitted to the cylinder. This valve seat, in lieu of being exactly cylindrical, may be slightly conical and is surrounded by a corresponding valve D, seen detached in Fig. 5. This valve is furnished with ports *c* and is caused to revolve in a manner which will be presently described, by which means the ports *b* and *c* are made to correspond with each other and the way is opened for the steam.

E is the governor stand which may be bolted directly upon the top of the steam chest.

d is a bevel wheel which is set in motion by any suitable connections with the driving machinery and which engages with a similar bevel wheel *f* upon the hollow shaft *g*. This shaft carries the governor arms H, and is connected by means of the cross head F and rods *h* with the valve D and thus the latter is caused to revolve.

G is a sleeve to which the arms R are hinged and which rises and falls under the action of the governor balls in the well known and customary manner. This sleeve plays freely upon the hollow shaft *g* through which there is a slot at *i* for the passage and play of the pin *k* which connects the sleeve with the interior shaft H. This shaft plays freely up through the hollow shaft *g* and revolves therewith. At the bottom end the shaft H is connected with the disk L to which are attached the gates *m* that slide up and down in the dovetailed grooves in the exterior valve D immediately over the ports *c;* these gates have ports *n* of a size and shape corresponding with those in the exterior valve, and so arranged that when the gates are in their lowest position the ports shall be wide open, and when the gates are raised to their highest position the ports are nearly or entirely closed. It will be perceived from the connections above explained, that as the velocity of the balls increases the gates will be raised, and the steam way through the ports *c* will be diminished; and as the velocity of the balls decrease the gates will descend, and an increased amount of steam will be admitted. The valve D may be balanced by admitting steam between its upper plate and the valve seat *a* at *r*.

What I claim as my invention and desire to secure by Letters Patent—

On the regulating gates *m*, as connected with the valve D and the governor for the purpose set forth.

HENRY F. SHAW

In presence of—
JOHN NELSON,
LUCINDA NELSON.