R. W. GARDNER & J. ROBERTSON.

GOVERNOR VALVE.

No. 51,037. Patented Nov. 21, 1865.

Fig. 1.

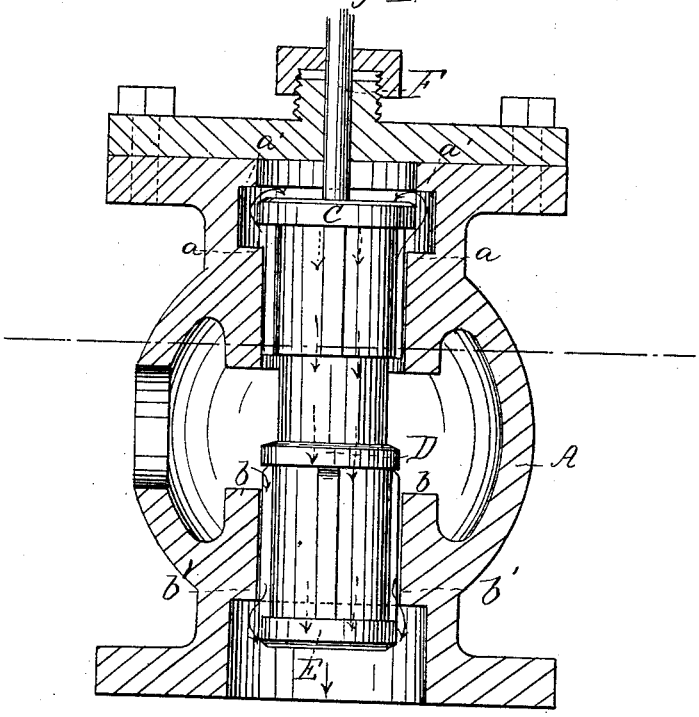
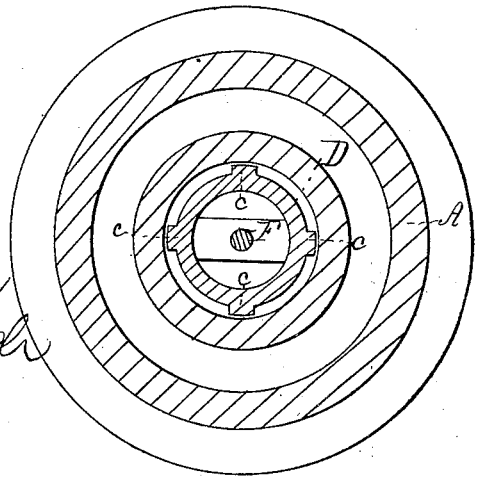


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT W. GARDNER AND JOHN ROBERTSON, OF QUINCY, ILLINOIS.

IMPROVEMENT IN GOVERNOR-VALVES.

Specification forming part of Letters Patent No. **51,037**, dated November 21, 1865.

To all whom it may concern:

Be it known that we, ROBERT W. GARDNER and JOHN ROBERTSON, of Quincy, in the county of Adams and State of Illinois, have invented a new and useful Improvement in Steam-Valves; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a vertical central section of this invention. Fig. 2 is a horizontal section of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a balanced governor-valve, to be used with or without a system for stopping the engine, in case of accident, by automatic stop-motion, or otherwise. Said valve is hollow and provided with two faces, and it is fitted in a case with two sets of seats, one above and one below, steam being admitted by a suitable pipe. This steam passes in between the two faces of the valve, and when said valve is partially raised a portion of the steam passes down on the outside and another portion through the inside of the valve, and the valve is balanced under all circumstances; but when the valve is raised clear up it cuts off the steam the same as when it is stopped.

A represents the case or chamber into which is fitted the triple-valve C D E. This valve is made hollow, as seen in Fig. 2, and its upper collar, C, closes down upon the seat *a*, and if raised clear up closes again on the seat *a'*, whereas its middle collar, D, closes down upon the seat *b* when the valve is dropped, and when it is fully raised the collar E closes against the seat *b'*. When the valve is closed the downward pressure of the steam on the back of the collar D is equal to the upper pressure on the under side of the collar C, and the valve is balanced; and if the valve is opened the steam passes down between the seat *b* and collar D on the outside of the valves, and up between the seat *a* and collar C, and down through the interior of the valves, as indicated by the arrows in Fig. 1 of the drawings. Thus, when the valve is open, it floats in the steam, and it can be moved freely in either direction.

On the circumference of the valve guides *c* are arranged, which leave sufficient steam-room between the cylindrical portion of the valve and the chamber, and a suitable stem, F, connects the valve to the governor. This stem passes up through a stuffing-box in the top of the valve, as indicated in red outlines in the drawings.

In case of accident that would stop the rotary motion of the engine, and where an automatic stop arrangement is employed—such, for instance, as described in Letters Patent granted to R. W. Gardner, December 27, 1864—the valve would be raised until the same closes up against the seats *a' b'*, thus cutting off the supply of steam to the engine.

It will be noticed, by referring to Fig. 1 of the drawings, that the shoulder formed by the collar C is somewhat larger than that formed by collar D, and consequently there is a slight degree of upward pressure, tending to raise the valve and to keep the same from striking on its seat when the action of the governor shuts the valve close, or nearly so.

What we claim as new, and desire to secure by Letters Patent, is—

A hollow valve provided with three collars, C D E, arranged and operating in a case or chamber, A, with four seats, *a b a' b'*, substantially as and for the purpose described.

The above specification of our invention signed by us this 17th day of August, 1865.

ROBT. W. GARDNER.
JOHN ROBERTSON.

Witnesses:
JOHN BAILEY,
JOSEPH D. ROBINSON.