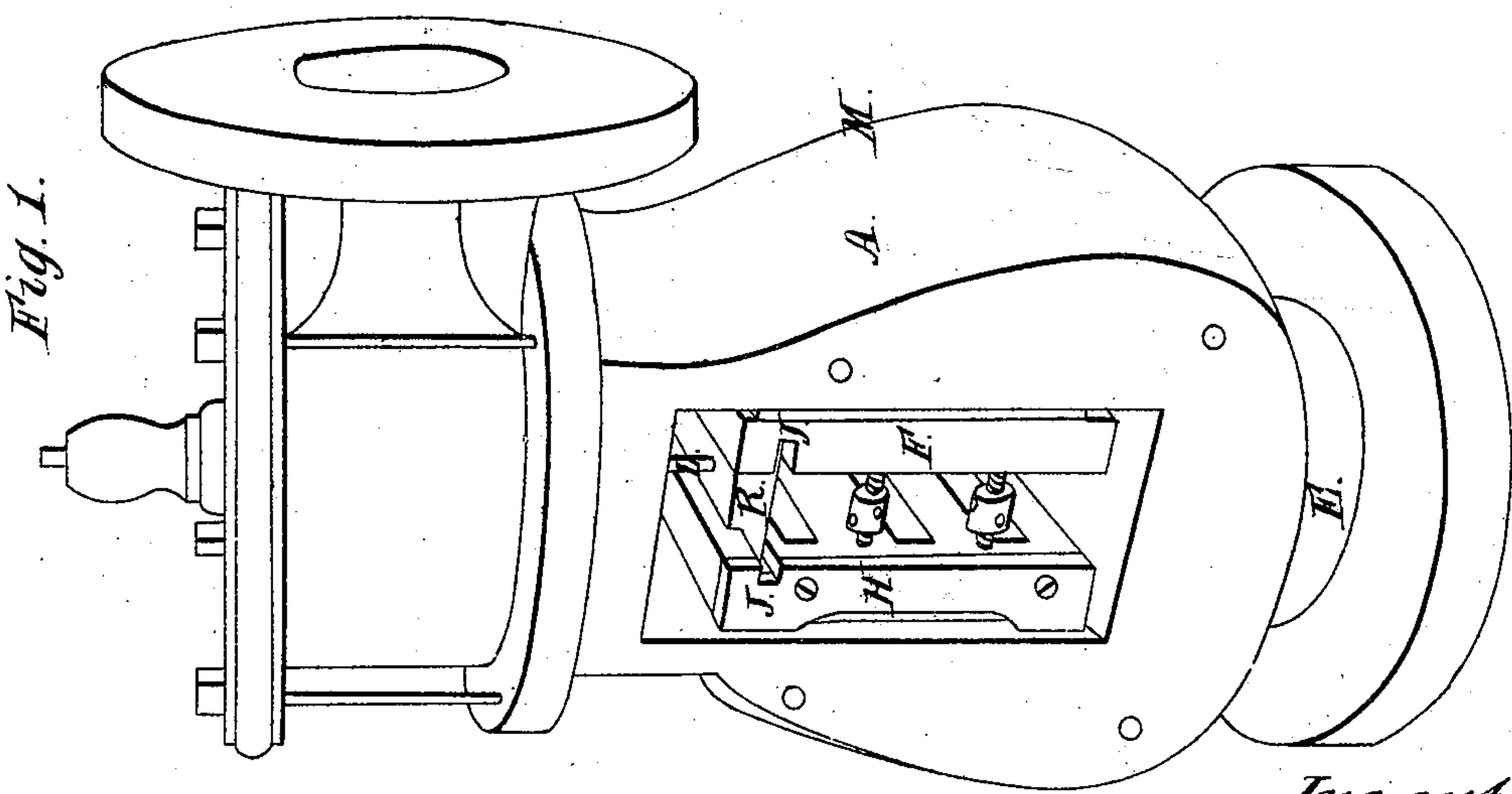
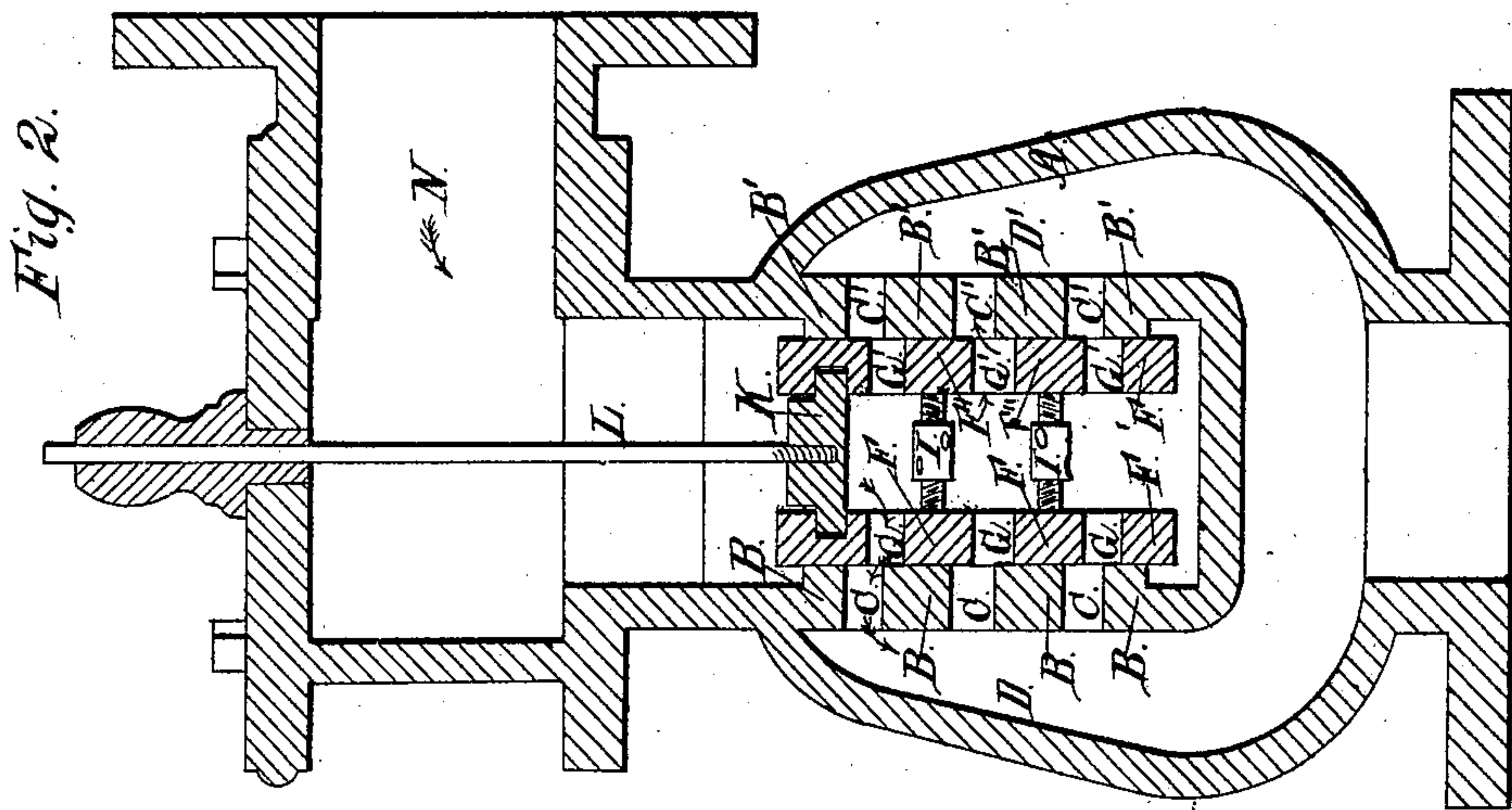


*T. Warren.*

*Governor Valve.*

*Nº 98,322.*

*Patented Dec. 28, 1869.*



*Witnesses.*

*H. F. Ebert.*  
*Charles A. Rice*

*Inventor.*  
*T. Warren*  
*Per attorney*  
*Thos B. Sprague*

# United States Patent Office.

THOMAS WARREN, OF FLINT, MICHIGAN.

Letters Patent No. 98,322, dated December 28, 1869.

## IMPROVEMENT IN GOVERNOR-VALVES.

The Schedule referred to in these Letters Patent and making part of the same

### To whom it may concern:

Be it known that I, THOMAS WARREN, of Flint, in the county of Genesee, and State of Michigan, have invented a new and useful Improvement in Governor-Valves; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a perspective view of my invention, and Figure 2 is a vertical section of the same.

Like letters indicate like parts in each figure.

The object of my invention is to construct a double governor slide-valve, working between vertical seats in a case, and so arranged that the pressure of the steam is the same on each of the valves, making what is termed a balance-valve, for the more perfect regulation of the speed of the engine to which it is attached, and which is equally well adapted for regulating the supply of water delivered to a water-wheel.

My invention consists in the combination and arrangement of the several parts of said valve, and of the case in which it is contained.

A, fig. 1, represents a case, within which and opposite to each other are valve-seats B B', having one or more openings, C C', as may be necessary.

These openings lead into side-pipes D D', which terminate in a common outlet steam-pipe, E, under the case.

F F' are ordinary slide-valves, provided with ports G G', corresponding in size and number to the openings C C', and having a vertical travel on the seats B B', and, to prevent swaying or lateral motion, are provided with guides H.

The valves F F' are adjusted in their proper positions and there secured by the right-and-left screws I, tapped into their backs, or by any other suitable device which will permit the valves to be "set out"

against the seats sufficiently to prevent leakage of steam, without creating undue friction between them.

At the top of each valve is a groove, J J', in which is placed a nut, K, to which is secured the lower end of the valve-stem L, the upper end of which is connected to and actuated by any proper governor.

M are plates or covers for closing the chest or case A.

N is the inlet steam-pipe, which may enter the case A at the top or one side, as may be convenient.

Among the advantages which I claim for this device are the following:

The construction of this valve is such that its openings have sufficient capacity to convey into the side-pipes all the steam which may enter the chest through the inlet steam-pipe, and consequently preventing any tendency to wire-drawing the steam in passing through the openings.

Second. After long use, should the valves or seats need facing, it can be expeditiously and cheaply done. By removing the covers M, detaching the guides H, and loosening the right-and-left screws I, the valve can be removed for examination and repairs.

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

In combination with the case A, provided with seats B B', openings C C', inlet-pipe N, and outlet-pipe E, the slide-valves F F', provided with ports G G', adjusting right-and-left screws I, guides H, nut K, and valve-stem L, in connection with any proper governor, when each of said parts is constructed as described, and all are arranged to operate as and for the purpose set forth.

THOMAS WARREN.

Witnesses:

H. F. EBERTS,  
CHAS. A. W. RICE.