

(No Model.)

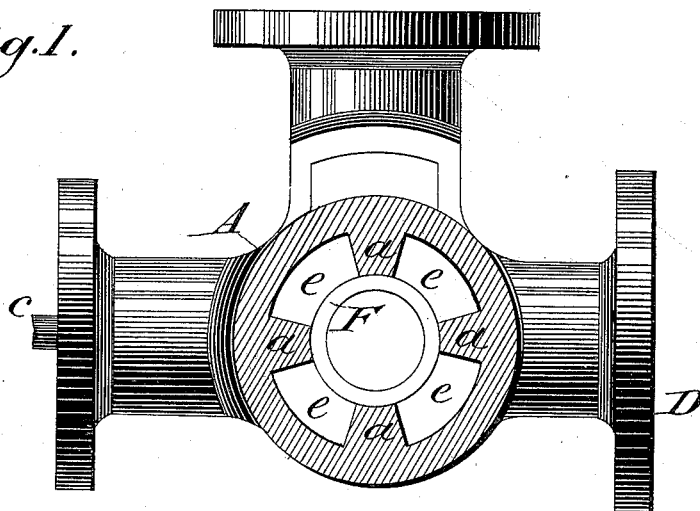
2 Sheets—Sheet 1.

P. S. KINGSLAND.  
BALANCED GOVERNOR VALVE.

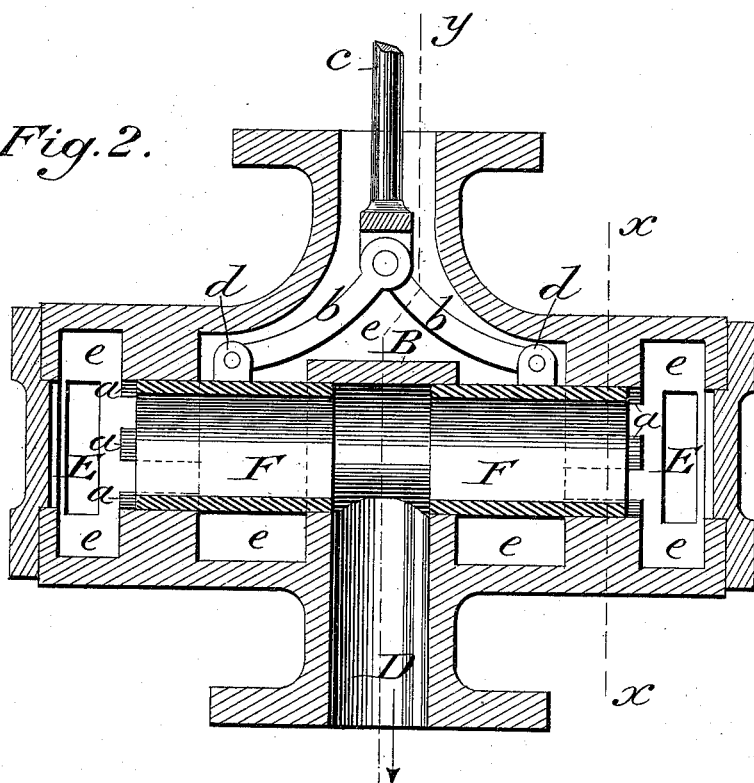
No. 385,273.

Patented June 26, 1888.

*Fig. 1.*



*Fig. 2.*



Witnesses,

*J. H. Schott,*

*M. Burroughs*

Inventor,

*Philip S. Kingsland*

By his Attorney

*W. H. Chandler*

(No Model.)

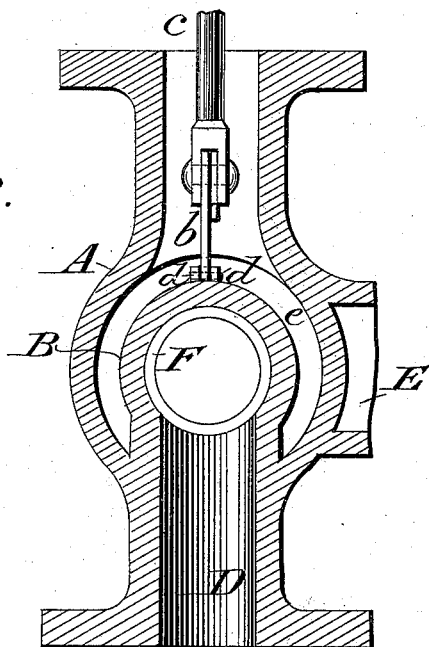
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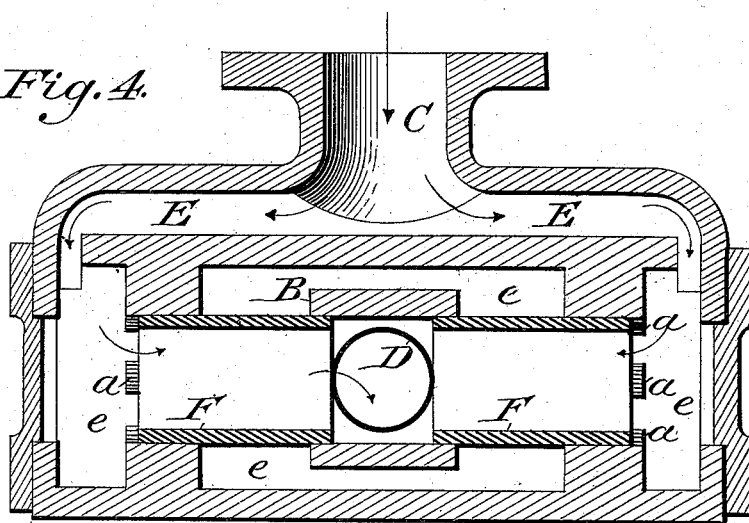
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*Fig. 3.*



*Fig. 4.*



*Fig. 5.*

Witnesses,

*H. H. Schott.*  
*W. Burroughs.*



By *his* Attorney

Inventor,  
*Philip S. Kingsland.*  
*W. H. Chandler.*

# UNITED STATES PATENT OFFICE.

PHILIP S. KINGSLAND, OF CHICAGO, ILLINOIS.

## BALANCED GOVERNOR-VALVE.

SPECIFICATION forming part of Letters Patent No. 385,273, dated June 26, 1888.

Application filed August 30, 1887. Serial No. 248,271. (No model.)

### *To all whom it may concern:*

Be it known that I, PHILIP S. KINGSLAND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Balanced Governor-Valves for Steam-Engines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a governor-valve that shall be so nearly balanced as to offer but little resistance to the action of the regulating device, while at the same time the volume of steam is not broken up and sifted through a number of small openings, as is usually the case with balanced governor-valves. I accomplish this by the mechanism shown in the drawings, in which—

Figure 1 is a cross section through the dotted lines *x x* in Fig. 2. Fig. 2 is a vertical longitudinal section of my improved valve. Fig. 3 is a vertical section with the side pipe partially broken away. Fig. 4 is a longitudinal horizontal section. Fig. 5 is a plan of one of the valve-cylinders.

Like letters indicate like parts in the several views.

A is the shell or casing of my improved valve, which should be made of sufficient thickness to withstand the pressure that it may be liable to be subjected to.

B is an inner casing, which is bored out to allow the valve shown in Fig. 5 to slide freely through in the direction of its length, while being at the same time steam-tight.

C is the steam inlet or induction pipe.

D is the eduction-pipe.

E E are the side pipes, which convey the steam from the induction-pipe C to the valve F, which is literally floated in steam, being not only filled with steam, but surrounded with steam except where it enters the inner casing, B, and is in contact with the guides *a*, projecting inwardly from the outer casing, A. The annu-

lar space *e e* and insides of the valve F are always full of steam when the governor is in operation.

To operate my improved valve, the spindle *c* can be attached to any ordinary pendulum governor-head. Then as the speed of the engine increases the balls will be thrown apart by centrifugal force and the spindle *c* will be raised. The links *b b*, connected to the valve by means of the lugs *d*, will draw the valves F together, thereby shutting off the steam-supply from the eduction-pipe D until the speed of the engine is reduced, when they will be again opened.

In some cases it may be necessary to connect the links *b b* to the bottom of the valve, where the action of centrifugal force on the pendulum balls would be to lower the spindle *c*, instead of raising it.

I am aware that it is not new to use balanced governor-valves formed as hollow cylinders, two of which are operated simultaneously by the governor, and do not, therefore, broadly claim such a valve, my invention consisting in the devices employed to operate the valves and the annular steam spaces or chambers around them by the steam in which they are partially supported and lubricated.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. In a balanced governor-valve, the tubular valves F F, surrounded by steam-spaces *e e*, the links *b b*, and spindle *c*, in combination with the case, all arranged and operated in the manner substantially as shown and described.

2. In a balanced governor-valve, the outer casing, A, inner casing, B, induction-pipe C, eduction-pipe D, side pipes, E E, and valves F F, inclosed in the annular space *e*, when arranged as shown and described, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP S. KINGSLAND.

Witnesses:

E. C. DICEY,  
GEORGE KINGSLAND.