

S. J. OLSSON.

Governors for Steam Heating Apparatus.

No. 140,156.

Patented June 24, 1873.

Fig. 1.

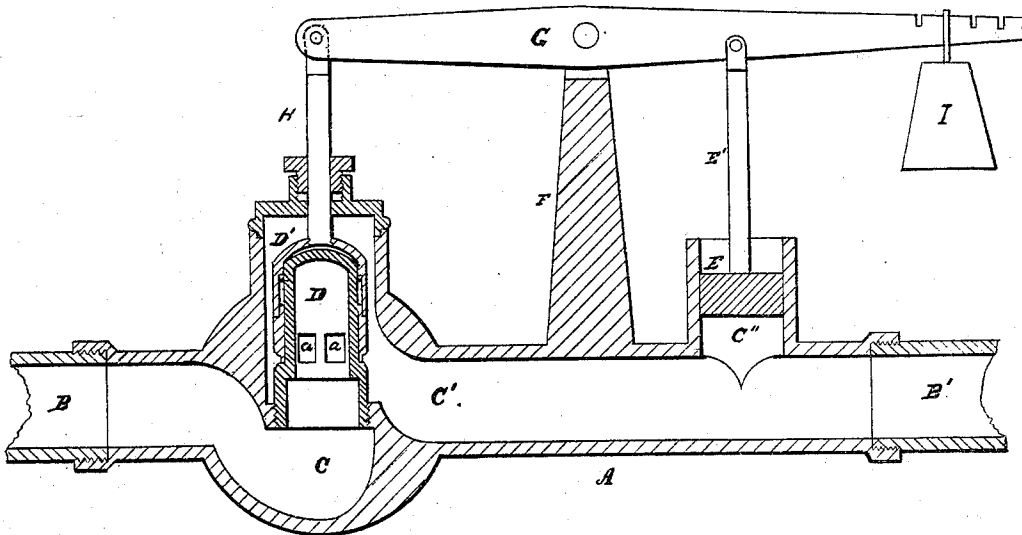
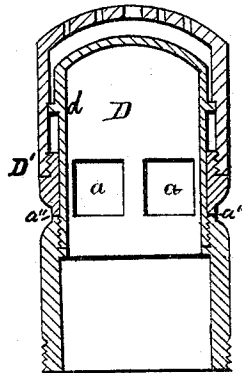


Fig. 2.



WITNESSES_

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SVEN J. OLSSON, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN GOVERNORS FOR STEAM-HEATING APPARATUS.

Specification forming part of Letters Patent No. **140,156**, dated June 24, 1873; application filed February 14, 1873.

To all whom it may concern:

Be it known that I, SVEN J. OLSSON, of Chicago, in the county of Cook and State of Illinois, have invented a new, useful, and Improved Governor for Steam-Heating Apparatus, of which invention the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part of this specification, and in which—

Figure 1 represents a vertical central longitudinal section of a governor in which my invention is embodied, and Fig. 2 a like view of the balance-valve.

Like letters of reference indicate like parts.

The object of my invention is to make a governor by means of which the pressure of steam in a steam-heating apparatus may be automatically rendered uniform without permitting the escape of steam and regardless of the degree of pressure in the boiler; and to that end my invention consists of a novel balance-valve, and in the means employed for the purpose of rendering it operative.

In the drawing, A represents the governor. B is a pipe communicating with the boiler, and B' is a pipe communicating with the heating apparatus. C and C' are chambers in the governor. The pipe B communicates with the chamber or induction C, and the pipe B' with the chamber or eduction C'. D is a canopy, which separates the chamber C from the chamber C'. *a a* are ports in the canopy D. The chambers C and C' communicate with each other through the ports *a a* when the latter are open and at no other time. D' is a cap, by means of which the ports *a a* are opened and closed. C'' is a chamber communicating with the chamber C'. E is a piston arranged in the chamber C'', and E' is the piston-rod. F is a post, and G is a lever pivoted thereto. H is a rod pivoted to the lever G, and attached to the cap D'. The rod E' is also pivoted to the lever G. I is a weight arranged on the lever G. The weight I draws the cap D' from its seat, and thus opens the ports *a a*.

When the steam enters the chamber C it

passes through the ports *a a* into the chamber C', and from thence into the heating apparatus; and as soon as the pressure is sufficient the piston E rises, and thus closes, or partly closes, the ports *a a*, which are again opened, or partly opened, as soon as the pressure decreases sufficiently; and the pressure in the heating apparatus is thus rendered uniform without regard to the pressure in the boiler, and without the escape of steam.

The degree of pressure in the heating apparatus is regulated by the weight I and by its position on the lever G, it being understood that the pressure in the boiler is equal to the pressure required in the heating apparatus.

The waste steam from an engine may also be conducted into the chamber C, and utilized in the heating apparatus; and if the pressure of the waste alone is insufficient the governor will admit steam from the boiler.

It will be observed, from the foregoing description that, when heaviness and position of the weight I is determined, the operation of the governor will thereafter be automatic.

The construction and arrangement of the various parts of the governor may be varied in some respects; but the construction and arrangement which I deem preferable is clearly shown in the drawing, and the parts which constitute the balance-valve are represented in Fig. 2.

It will be observed from reference to Fig. 2 that the balance-valve is there represented as made in four parts, but the number of parts is not essential, provided the cap is capable of a sliding movement, and that the part *d* of the canopy is provided with a shoulder to limit the upward movement of the cap, and that the latter is also provided with a shoulder, which rests on the shoulder of the canopy when the cap is resting on its seat. These two shoulders should be ground so that a tight joint will be formed by their contact. The lower edge of the cap, and the seat on which it rests, should also be ground, and the top of the cap should be either wholly or partly open. The point or vertical line *a''* should also be in the same vertical plane with that part of the outer face of the canopy-wall which

extends above the shoulder projecting from the said wall. My improved governor may also be employed for other similar purposes.

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

A steam-governor, consisting of the combination and arrangement of the chambers C, C',

and C'', canopy D provided with ports *a a*, cap D', piston E, and pivoted lever G attached to the cap and piston, all substantially as and for the purposes specified.

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Witnesses:

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