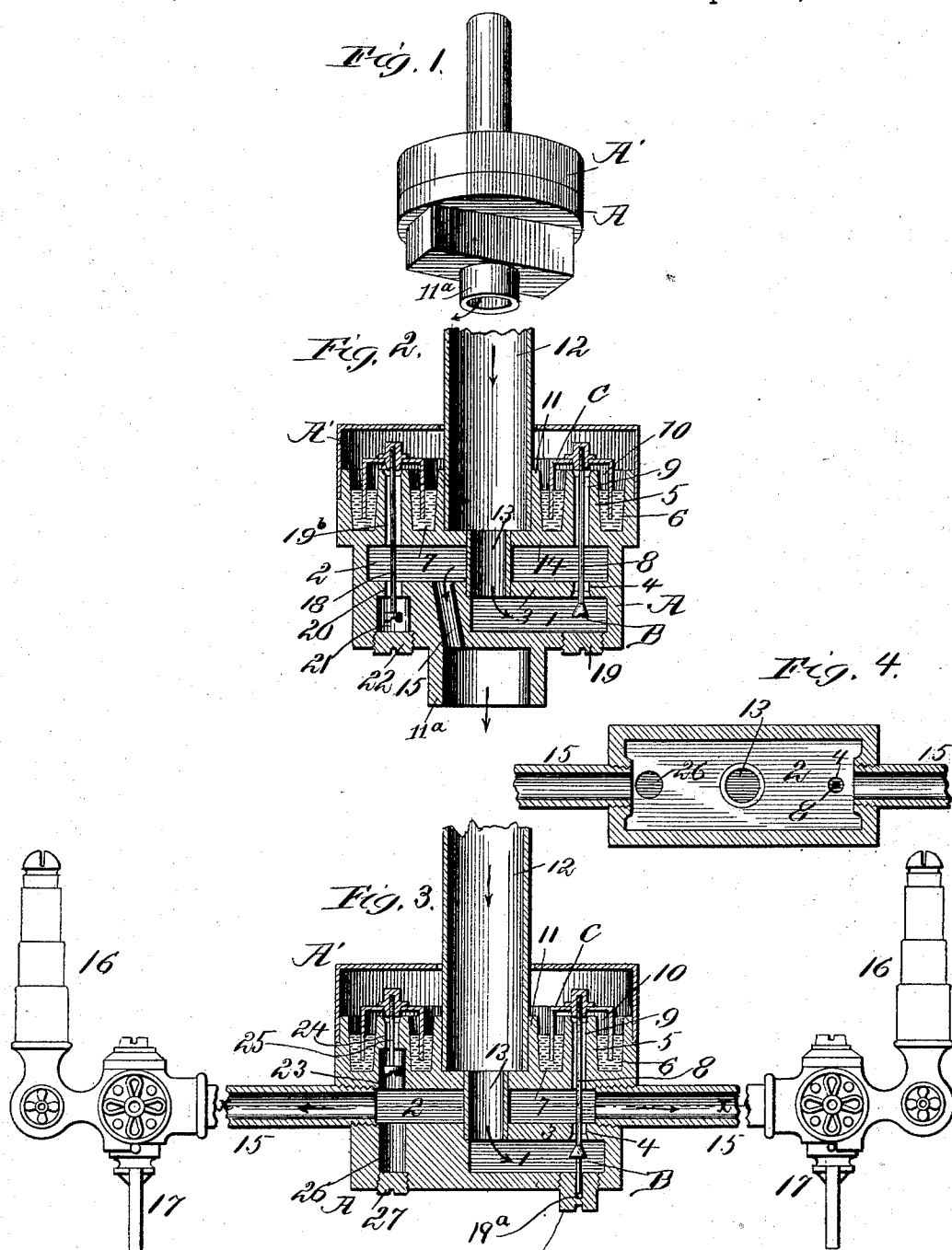


(No Model.)

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MERCURIAL GAS GOVERNOR.

No. 483,517.

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MERCURIAL GAS-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 483,517, dated September 27, 1892.

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To all whom it may concern:

Be it known that we, VAN H. HIGGINS and WILLIAM D. SMITH, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Mercurial Gas-Governors, of which the following is a specification.

This application is filed as a division of our former application, Serial No. 397,774, filed June 29, 1891.

The objects of the construction herein involved are to adapt the governor for service in a chandelier or like fixture, and to provide for the flow of gas downwardly through the governor.

To the attainment of such ends our invention consists in matters hereinafter described, and particularly pointed out in the claims.

Figure 1 represents in perspective the mercurial gas-governor having an inlet at the top and an outlet at the bottom. Fig. 2 represents the same in vertical central section on a slightly-larger scale. Fig. 3 represents in vertical central section the device having lateral outlets and shows in elevation a couple of burners with the hollow arms between the same and the regulator broken away for convenience of illustration. Fig. 4 is a section on line *xx* in Fig. 3.

In each of the two constructions herein shown the shell or body A is provided with a gas-conducting passage which is enlarged within the body at a point to form a receiving-chamber 1, and also expanded to form a centrally-arranged pressure-distributing chamber 2, which is arranged over and separated from the receiving-chamber by a partition 3 and connected with the same by a supply-port 4, which is adapted to be closed by a governor-valve arranged within to open within the receiving-chamber 1.

The shell or body A is at its top provided with an annular mercury-holding chamber, which is arranged over the pressure-distributing chamber and divided by an annular well 5 into the two annular compartments 6 and 7, each of which contains a suitable quantity

of mercury. The stem 8 of the governing-valve B extends up through the port 4 and also up through a passage 9 in the annular wall 5 and connects with the float C, which consists of an annular inverted cup arranged to dip into the mercury and provide a pressure-chamber 10, which connects with the pressure-distributing chamber 2, substantially as and for the purpose set forth in our said application. The shell or body A is also provided at its top with a centrally-arranged neck 11, which rises from the partition 14 between the mercury-holding chamber and the pressure-distributing chamber and forms a socket for a gas-pipe 12, through which the gas flows downwardly into the regulator. The body A is also provided with two central bores or openings arranged in vertical line with the portion of the supply-passage through the pipe 12 and adapted to receive a short tube 13, one of said openings being formed through the partition 14, which is arranged between the pressure-distributing chamber 2 and the mercury-holding chamber, while the other is formed through the partition 3, which is arranged between the chamber 2 and the receiving-chamber 1. The tube 13 extends centrally through the chamber 2 and provides a continuation of the supply-passage through the pipe 12. The portion of the supply-passage formed through the short pipe or tube 13 opens at its lower end into the receiving-chamber 1, in which way the gas takes a downward course through the supply-passage formed through the pipes or tubes 12 and 13, and after entering the receiving-chamber flows upwardly through port 4 into the pressure-distributing chamber 2.

In Fig. 2 the shell or body is provided at its bottom with a neck 11^a and with a short open delivery-passage 15, which leads from the pressure-distributing chamber 2 down to the space within said neck. The outlet is therefore at the bottom of the governor, and the neck 11^a can be coupled with any suitable pipe or passage in a chandelier or the like.

In Fig. 3 open outlets for delivering gas from the pressure-distributing chamber are

formed by one or more hollow arms 15, which extend laterally from said chamber and support burners 16 and which are provided with cocks 17 between the burners and the chamber.

In Fig. 2 the guide or steady pin 18 extends from the float downwardly through a passage 19^a in the annular wall 5, and also through an opening 20, formed between the chamber 2 and the top of a small chamber or recess 21 in the bottom of the shell or body A. The stop or head on the lower end of the steady-pin is arranged within the recess 21, and said recess is closed by a removable screw-plug 22.

In Fig. 3 the pin is made shorter and has the head on its lower end arranged within a small chamber-recess 23, which extends from the top of chamber 2 up into the annular wall 5 and connects at its upper end with a passage 24, which is formed in wall 5 for the pin 25. The recess 26 below and directly under the steady-pin 25 extends from the bottom of chamber 2 down to and through the bottom of the shell or body A and is closed by a removable screw-plug 27.

With the construction illustrated in Fig. 1 the gas flows downwardly into the receiving-chamber 1, and thence into the pressure-distributing chamber 2 through the normally-open port 4, and from chamber 2 the gas is conducted downwardly through passage 15 on its way to such burner or burners in the fixtures as may be open. Should, for example, but one burner be open, the pressure within chamber 2 will be transmitted to the pressure-chamber 10 within the float, and hence the latter will rise and close the valve to an extent to reduce the supply and pressure to a point where the pressure and supply are not in excess of the demand at the burner. Should two burners be opened the pressure-distributing chamber 2 will of course be called upon for a greater supply, and hence the pressure therein will be reduced. This will necessarily reduce the pressure within chamber 10, and thereby allow the float to sink and open the valve to an extent to properly supply both burners, but cut off the supply in excess of the combined demand of the two burners.

In the construction illustrated in Fig. 3 the foregoing-described results are also attained, it being observed, however, that the gas flows from the pressure-distributing chamber directly into the hollow burner-arms 15, and that while communication between the burners and chamber 2 is normally closed by cocks 17, either or both burners can be placed in open communication with said chamber by opening one or both of the burner-cocks. It will also be observed that we can tap through the side of the shell or body A, so as to provide it with more than two laterally-arranged burner-arms 15.

The shell or body A is in both Figs. 2 and

3 provided with a removable cap A', having a centrally-arranged opening for the pipe 12.

The device, considered as an entirety, is neat and compact and can be incorporated in a gas-fixture without injury to its appearance, it being seen that by arranging around, as inlet-pipe 12, the annular mercury-chamber and the annular pressure-chamber formed by the float said pipe 12 can be arranged centrally with relation to the shell or body A, and hence that said body will not form an objectionable feature in a gas-fixture.

In Fig. 3 the valve-stem is extended below its valve B, so as to work in a guide-recess 19^a in plug 19, and thereby cause the valve-stem to move steadily and work centrally within ports 4 and 9. The steady-pins may also be extended down, so as to work in guide-recesses in the plugs below them, and in such case the heads on the pins could, if desired, be omitted.

What we claim is—

1. A mercurial gas-governor comprising a shell or body provided with the receiving-chamber 1, the centrally-located pressure-distributing chamber 2, arranged over the said receiving-chamber and separated therefrom by a partition having a port which the governor-valve is adapted to close, and one or more open outlets leading from the said centrally-arranged pressure-distributing chamber, so as to supply therefrom a burner or burners, a centrally-arranged supply-passage extending downwardly through the pressure-distributing chamber and opening at its lower end into and serving to supply the receiving-chamber, and an annular mercury-holding chamber arranged around the supply-passage and over the pressure-distributing chamber, combined with the open-bottom float arranged to dip into the mercury within the mercury-holding chamber and providing a pressure-chamber which is in open communication with the pressure-distributing chamber, and the governor-valve arranged to open within the receiving-chamber and having its stem extended upwardly through the port between the receiving-chamber and pressure-distributing chamber and connected with the float, substantially as described.

2. A mercurial gas-governor comprising a shell or body provided with the receiving-chamber 1, the pressure-distributing chamber 2, arranged over the receiving-chamber and separated therefrom by a partition having a port which the governor-valve is adapted to close, the centrally-arranged supply-passage extending downwardly and centrally through the pressure-distributing chamber and opening into and serving to supply the receiving-chamber, an open delivery-passage 15, leading downwardly from the pressure-distributing chamber into the neck 11^a, and an annular mercury-holding chamber surrounding the

supply-passage and arranged over the pressure-distributing chamber, combined with the open-bottom float arranged to dip into the mercury within the mercury-holding chamber and providing a pressure-chamber which is in open communication with the pressure-distributing chamber, and the governor-valve arranged to open and close the port between the receiving-chamber and pressure-distributing chamber and having an upwardly-extending stem connected with the float, substantially as described.

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