No. 775,156. PATENTED NOV. 15, 1904.

A. ULLMANN.

GAS CHECK.

APPLICATION FILED APR. 5, 1904.

NO MODEL.

Fig. 1.

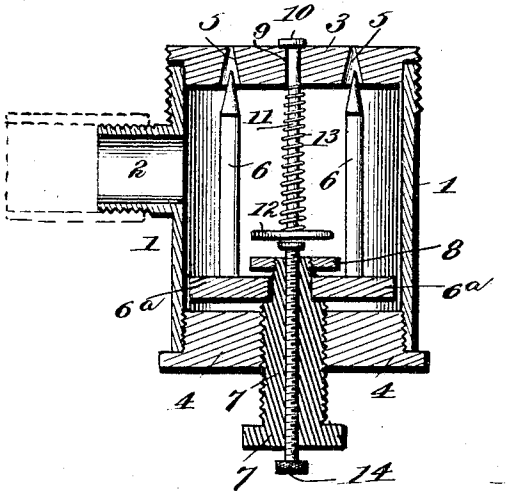


Fig. 2.

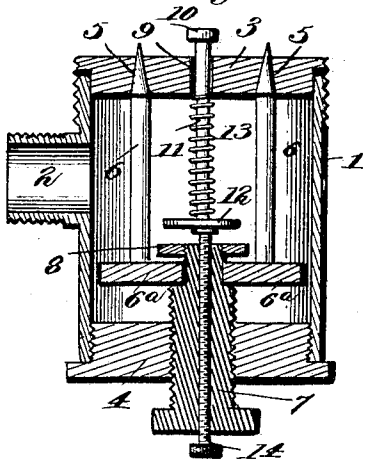


Fig. 3

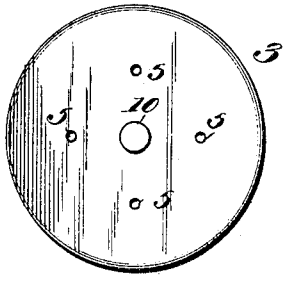


Fig. 4.

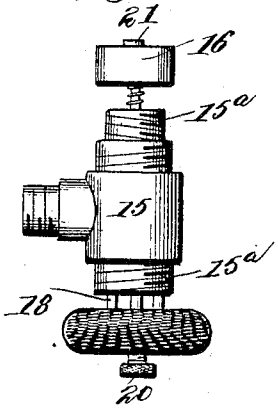
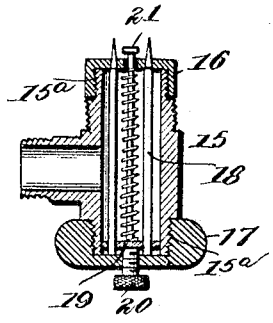


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALBERT ULLMANN, OF MACON, GEORGIA.

GAS-CHECK.

SPECIFICATION forming part of Letters Patent No. 775,156, dated November 15, 1904.

Application filed April 5, 1904. Serial No. 201,760. (No model.)

To all whom it may concern:

Be it known that I, ALBERT ULLMANN, a citizen of the United States, residing at Macon, in the county of Bibb and State of Georgia, have made certain new and useful Improvements in Gas-Checks, of which the following is a specification.

My invention is an improvement in that class of gas-checks in which a pin-valve is employed for regulating the flow of gas.

The invention is embodied in the construction, arrangement, and combination of parts, as hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a central longitudinal section of my improved gas-check, the pin-valves being shown adjusted to allow escape of gas. Fig. 2 is section similar to that shown in Fig. 1, except that the exit of gas is cut off by the pin-valves and the by-pass valve is adjusted to allow escape. Fig. 3 is a top view of the gas-check. Fig. 4 is a side view of a modification, certain parts thereof being shown dissociated or separated. Fig. 5 is a central longitudinal section of the modified gas-check, the parts being shown adjusted as when the pin-valves are seated and the by-pass valve open.

I will first describe the invention as illustrated in Figs. 1, 2, and 3. 1 indicates the cylindrical body of the gas-check, which is provided with a lateral tubular projection 2, adapted for connection with a gas-supply pipe. The said body has top and bottom closures 3 and 4. The former, 3, has a series of gas exits or ports 5, which are arranged equidistantly and taper from the bottom upward, as shown plainly in Fig. 1. A corresponding series of pin-valves 6 are arranged the same distance apart as the exits 5 and adapted to seat in the same so as to entirely close the ports, as illustrated in Fig. 2. These valves are attached to a disk 6^a, which is adapted to be adjusted vertically by means of a screw 7, that works in a threaded opening in the lower closure or bottom portion 4 of the gas-check. The lower end of the screw 7 is enlarged and milled to adapt it for convenient manipulation. The upper end is reduced and screw-threaded to adapt it to receive the disk 6^a, which has a central opening, and the nut 8, which secures the disk 6^a to the screw 7, but in such manner as to permit it be readily detached. It is obvious that by rotating the screw 7 the disk 6^a may be adjusted higher or lower and the pin-valve 6 thereby adjusted as required to open the gas exits or ports 5, as shown in Fig. 1, or to close the same, as shown in Fig. 2. The upper closure or head 3 of the gas-check is provided with a central opening 9, which is normally closed by a valve 10, the same being in the shape of a disk and forming an integral portion of a rod 11, whose lower end is provided with a larger disk 12 and whose body is encircled by a spiral spring 13. As indicated plainly in Fig. 2, the exit 9 is considerably larger than the body of the rod 11, so that when the valve is raised, as shown in Fig. 2, the gas has free exit. Such adjustment of the valve 10 is effected by means of a cylindrical screw 14, which passes through a threaded bore in the large screw 7 and is provided at its lower end with a milled head for use in rotating it. It is apparent that by such rotation the by-pass valve 10 may be raised whenever required, as when the pin-valves are seated, as shown in Fig. 2, and, on the other hand, when the screw 7 is adjusted down, as shown in Fig. 1, the by-pass valve is seated and the escape of gas through the central opening 9 cut off. Ordinarily the simple adjustment of the screw 7 will effect the desired closure of the ports 5 and the opening of the central port 9, and vice versa, since the screw 14 will be adjusted in the first instance so as to come in contact with the disk 12 of the by-pass-valve rod when the pins 6 are adjusted for closing the ports 5, as in Fig. 2, and, contrariwise, the screw 14 will be out of contact with the by-pass-valve rod when the pin-valves 6 are in the lowered position. (Indicated in Fig. 1.)

It will be seen that the heads 3 and 4 of the gas-check body are rabbeted so that a portion projects outside the body 1, and the same is milled, so that the heads may be readily screwed into or out of place. The heads thus form tight closures for the gas-check and yet their ready removal is provided for. By un-

screwing the lower head 4 all the parts save the by-pass valve may be detached, so that any soot or other matter which may have accumulated in the body 1 may be removed.

I am aware, as before intimated, that a single pin-valve has been employed for regulating the discharge of gas; but in such cases in order that the discharge may be in due quantity the port or exit-opening requires to be made so large that the pressure is insufficient to carry the flame to the top of the mantle of an incandescent or Welsbach burner, nor will the gas discharged through a single center port fill the mantle with a glowing light, which is produced when a plurality of ports is employed. When a single central pin or handle valve is employed and other ports or passages are used in conjunction therewith and unprovided with such valves, they soon become clogged by dust or other matter derived from corrosion of the metal, which at first makes the burner unsatisfactory in use and finally entirely useless, since the single opening or exit, as before stated, cannot furnish sufficient gas to give a satisfactory light. My improved gas-check obviates both these objections. In other words, by employing a plurality of small openings I am able to secure high pressure of gas and greater velocity of the same, and by employing a pin-valve for each port or exit the latter never become clogged. Again, the pin-valves being tapered correspondingly with the ports or exits the regulation of gas-flow is perfect, since when the valves are seated the flow is entirely cut off and when the valves are open to the least extent an annular passage is provided around them. The ports or exits being likewise kept clear and clean as regards deposit of foreign matter, the flow of gas is always the same completely around the mantle which incloses the gas-check, so that there will never be dark places in the latter, as usual when the flow of gas is unequal and the pressure insufficient. My gas-check is thus practically self-cleaning and never requires attention when once installed for use.

It will be seen that the by-pass valve allows escape of gas when the pin-valves are seated, or it may be adjusted on its seat so as to close the central exit 9 when the pin-valves are seated.

In Figs. 4 and 5 I illustrate a modification. 15 indicates the cylindrical body of the gas-check, and 16 and 17 screw-caps which are applied to the top and bottom, respectively. The cap 16 has a series of openings similar to the cap or closure 3 in my preferred form of gas-check, and pin-valves 18 are similarly arranged with reference to such ports or exits and rigidly attached to the lower cap 17, so that they are adjusted therewith. A by-pass valve 21 is also provided, this rod being rigidly connected with a disk 19, which slides on the pin-valves 18 and may be adjusted higher or lower by means of a screw 20, that forms an attachment of the lower cap 17. The latter has a milled edge for convenience in rotating it. The two caps 16 and 17 are threaded internally, but in opposite directions, the one being right and the other left. The parts 15^a of the tubular body 15, upon which the caps screw, are similarly threaded in opposite directions. By this construction and combination of parts when the lower cap 17 is rotated the pin-valves 18 also cause a like movement or rotation of the upper cap 16, so that both are screwed off or on the body 15 simultaneously, and thus again the pin-valves are adjusted up or down in the gas ports or exits of the upper cap 16. In brief, by such rotation of the lower cap precisely the same adjustment of the pin-valves relative to the top closure of the body of the gas-check is effected as in the invention illustrated in Figs. 1, 2, and 3 by adjustment of the screw 7.

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

1. In a gas-check of the class described, the combination, with the tubular body and top and bottom closures, the top closure having a series of tapered openings forming gas-ports, of a corresponding series of pin-valves having tapered points adapted to fit in the said ports, a carrier for the valves, and means for adjusting the valve which consists of a screw working in a threaded opening in the bottom closure and connected with the valves, substantially as described.

2. In a gas-check of the class described, the combination, with a tubular body, top and bottom closures, the former having a gas port or exit, a pin-valve adapted to regulate the flow of gas through said port and rigidly attached to a disk arranged within the tubular body, a screw working in a threaded opening in the lower closure and having its inner end reduced and projecting through a hole in the said disk, and means for securing the disk to the screw, the latter being left free for rotation, substantially as described.

3. In a gas-check of the class described, the combination, with a tubular body and top and bottom closures therein, the top closure having a gas port or exit, of a valve for controlling the passage of gas therethrough, and a by-pass valve arranged in another opening in the top closure, a spring which holds the by-pass valve normally seated, and a screw for adjusting the valve vertically, substantially as described.

4. In a gas-check of the class described, the combination, with the tubular body having top and bottom closures, the top closure having tapered gas-ports, of a disk and a series of pin-valves for closing such ports, a screw connected with the valves for adjusting them higher or lower, a by-pass valve arranged in a central opening in the top closure and seated

downward thereon, a spring for holding such valve normally seated, and means for adjusting the by-pass valve for opening it, which consists of a screw arranged in a threaded bore in the screw which adjusts the pin-valves, substantially as described.

5. In a gas-check of the class described, the combination, with the cylindrical body having top and bottom closures, the top closure being provided with gas-ports, of a by-pass valve arranged in one of said ports, other valves for closing the remaining ports, and means for adjusting both sets of valves independently, substantially as described.

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Witnesses:
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