(No Model.)

# J. SCHNEIBLE.

## PRESSURE REGULATOR.

No. 492,111. Patented Feb. 21, 1893.

Fig. 1.

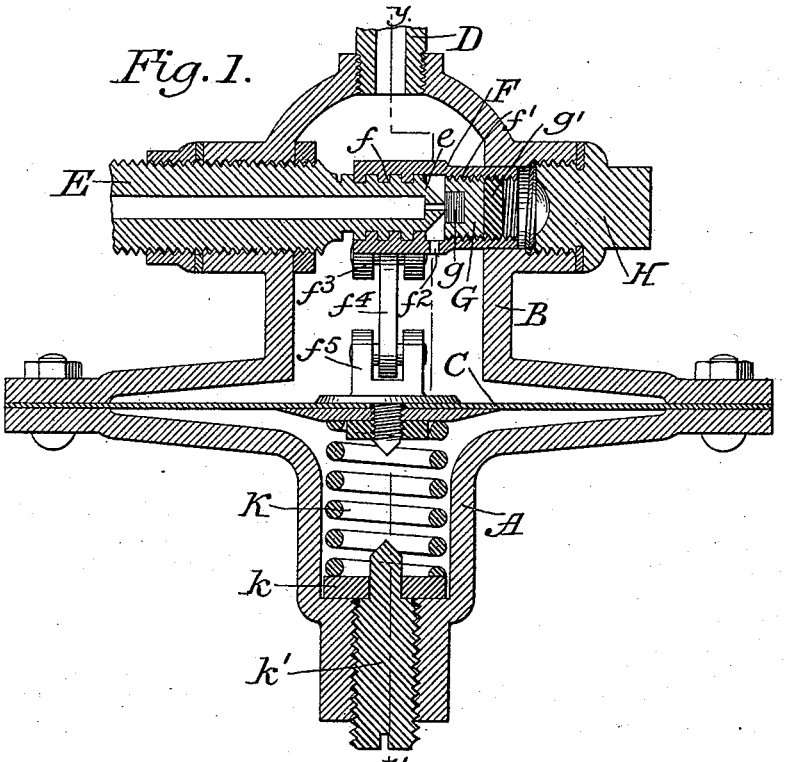
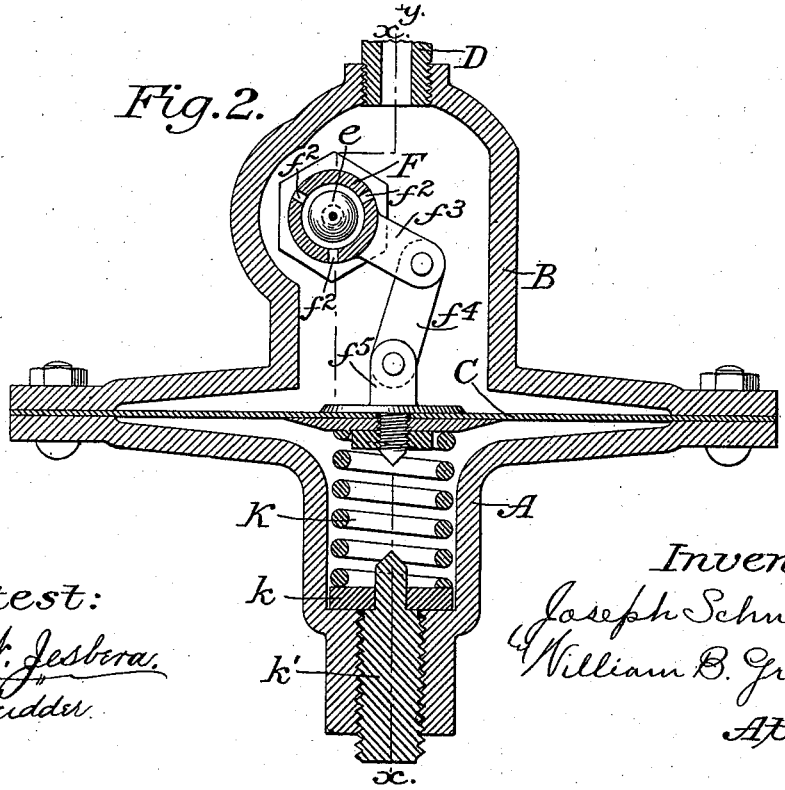



Fig. 2.

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# UNITED STATES PATENT OFFICE.

JOSEPH SCHNEIBLE, OF BROOKLYN, NEW YORK.

## PRESSURE-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 492,111, dated February 21, 1893.

Application filed June 22, 1892. Serial No. 437,640. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH SCHNEIBLE, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Pressure-Regulators; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to pressure regulators of the general character of those employed to regulate the flow of carbonic acid gas during the processes of carbonating liquids. In such processes the gas is usually supplied to the regulator under great pressure with the result that a very minute particle of foreign matter between the valve and its seat occasions very considerable leakage. Heretofore these pressure regulators have been so constructed that it is necessary to take them apart in order to get at the valve seat, thereby causing much delay, inconvenience and expense.

It is the object of my present invention to construct and arrange pressure regulators of the class referred to so that access may be had to the valve seat without taking the regulator apart so that the adjustment of the regulator may be effected without disconnecting the same and more readily than heretofore.

In the accompanying drawings, Figure 1 is a vertical central section of a pressure regulator constructed in accordance with my invention, taken on the line $x$—$x$ of Fig. 2; and Fig. 2 is a vertical central section of the same on the line $y$—$y$ of Fig. 1.

The casing of the regulator may be made, as usual, in two parts A and B between which is clamped the diaphragm C. The upper portion of the casing is fitted with a suitable connection D for the exit of the gas, and is also fitted for connection with a supply pipe E which may be secured in place by jam-nuts, as represented, or by soldering, or in any other suitable manner, as it is not necessary that it shall be removed. The inner end of the pipe E is formed with a valve-stem or nozzle $e$ and is screw-threaded exteriorly as shown. Diametrically opposite the supply-pipe, and axially in line with the same, the wall of the same is bored to receive and permit the free movement therein of a sleeve F, which is interiorly threaded, as at $f$, to engage the exterior threads of the valve-stem, and is also interiorly threaded as at $f'$ to receive a threaded valve plug G which carries the valve seat $g$, and a jam-nut $g'$. The opening in the wall of the casing is closed by a suitable plug H and the outer end of the sleeve F and the outer faces of the valve plug and the jam-nut are suitably notched or slotted for engagement by a suitable tool or tools to effect the desired rotation of one with respect to the others.

The sleeve F is provided with suitable openings, as at $f^2$, to permit the gas which escapes between the nozzle and the valve seat to flow freely into the chamber above the diaphragm. The sleeve is rotated to regulate the flow of the gas by the movements of the diaphragm under the varying pressure on the gas. Any suitable connection may be employed for this purpose, but I have shown the sleeve F as having an arm $f^3$ which is connected by a link $f^4$ with a head $f^5$ which is suitably secured to the diaphragm C.

If desired, the natural elasticity of the diaphragm may be supplemented and regulated by a spring K which is interposed between the diaphragm and a washer $k$, carried by a screw $k'$ seated in the lower portion of the casing A.

If at any time it becomes necessary to clean the valve seat it may be removed readily by removing the cap H and then the jam-nut $g'$ and the valve-plug G, without taking the entire governor apart, or even detaching it.

I have herein described my improved pressure regulator as though the gas found its entrance through the pipe E and its exit through the pipe D, but it is obvious that the pipe D might be fitted for connection with the gas supply and the gas allowed to enter through the same and to pass out through the pipe E. This mode of using the regulator is preferable when it is intended to act as a relief or blow-off valve, in which case the movement of the sleeve is reversed, as by cutting its thread in the opposite direction or changing the arm thereon to the other side.

I claim as my invention—

1. In a pressure regulator, the combination of a casing having oppositely located open-

ings, a valve nozzle having an exterior thread and passing through one of said openings, an internally threaded sleeve engaging thread of said nozzle and arranged in the other of said openings, a flexible diaphragm secured in said casing, connections between said sleeve and diaphragm, and a valve seat carried in said sleeve; substantially as described.

2. In a pressure regulator, the combination of a casing having oppositely located openings, a valve nozzle having an exterior thread and passing through one of said openings, an internally threaded sleeve engaging the thread of said nozzle and arranged in the other of said openings, a flexible diaphragm secured in said casing, connections between said sleeve and diaphragm, and a valve plug screw-threaded within said sleeve; substantially as described.

3. In a pressure regulator, the combination of a casing having oppositely located openings, a valve nozzle having an exterior thread and passing through one of said openings, an internally threaded sleeve engaging the thread of said nozzle and arranged in the other of said openings, a flexible diaphragm secured in said casing, connections between said sleeve and diaphragm, a valve seat carried in said sleeve, a valve plug screw threaded within said sleeve, a jam nut engaging the same, and a plug as H; substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH SCHNEIBLE.

Witnesses:
A. N. JESBERA,
A. WIDDER.