

J. S. de PALOS.
Gas-Regulators.

No. 146,661.

Patented Jan. 20, 1874.

Fig. 1.

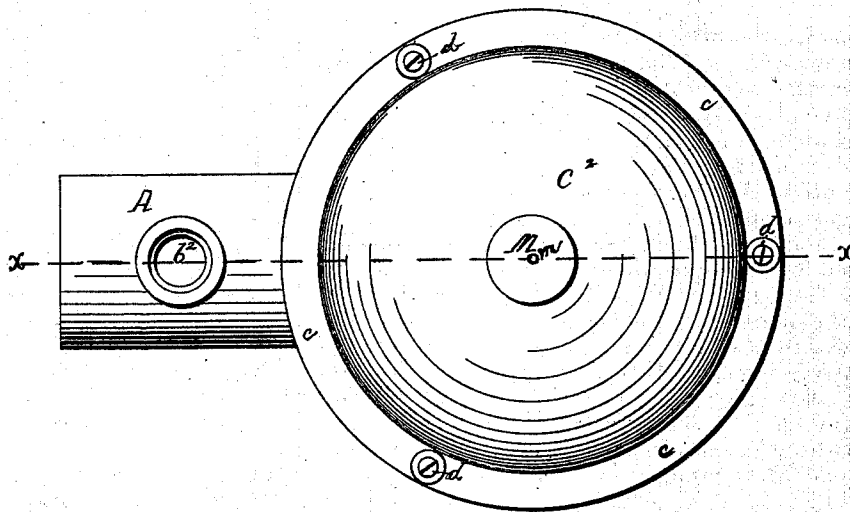


Fig. 3.

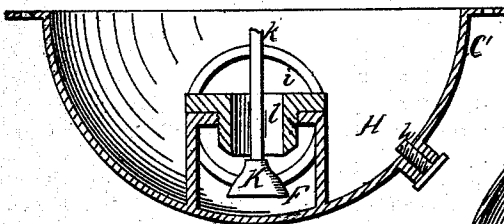
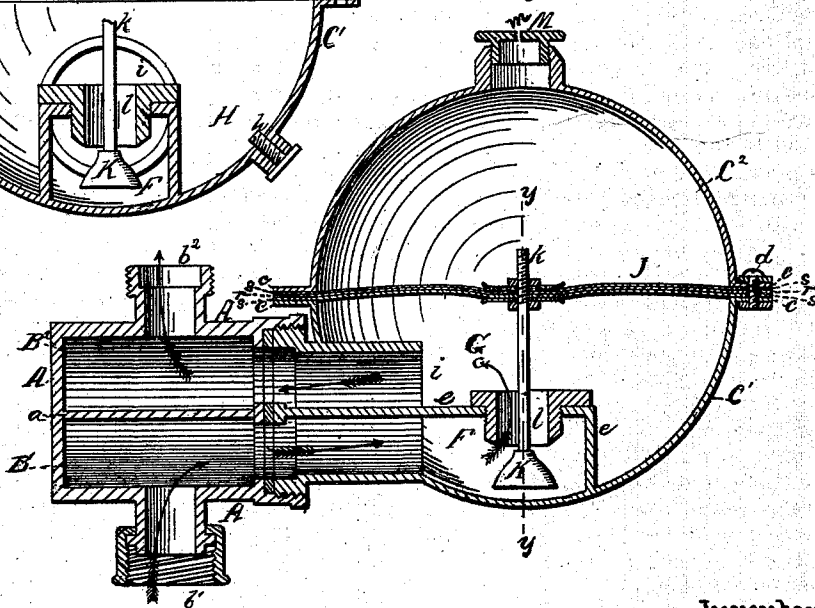


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES S. DE PALOS, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. **146,661**, dated January 20, 1874; application filed December 9, 1873.

To all whom it may concern:

Be it known that I, JAMES S. DE PALOS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gas-Regulators, of which the following is a specification:

My invention relates to certain improvements in gas-regulators to be attached to gas-meters; and it consists in a cylindrical casting divided by a longitudinal partition into two parts, the lower part to be attached to the outlet of the meter, and the upper part to be attached to the service-pipe, the inner end of the casting being attached by a screw-thread to the regulator. My invention consists further in the construction of the diaphragm with one or more thicknesses or layers of ductile metal, to render the diaphragm impervious to gas.

In the accompanying drawings, Figure 1 is a plan view. Fig. 2 is a longitudinal vertical section. Fig. 3 is a transverse vertical section.

A represents a cylindrical casting, divided by a longitudinal partition, *a*, into two compartments, B¹ B². The lower compartment B¹ forms an inlet-tube having an inlet-opening, *b*¹, on its under side provided with a screw-thread for attachment to the outlet-pipe of a gas-meter. The upper compartment B² forms an outlet-tube having an outlet-opening, *b*², on its upper side, provided with a screw-thread for attachment to the service-pipe. The outer end of the cylinder A is closed, and the inner end is open and provided with a screw-thread for attachment to the regulator, which consists of a spherical case made in two sections, C¹ C², each section being provided with a flange, *c*, for uniting them together by means of screws *d*. The lower section C¹ is divided by means of a partition, *e*, into an inlet-chamber, F, an outlet-chamber, G, and a drip-chamber, H, the outlet-chamber being above the inlet-chamber, and the drip-chamber being at one side. On the side of the regulator opposite the drip-chamber is an opening, *i*, provided with a screw-thread for attachment of the cylinder A. The partition *e* is in a vertical position between the drip-chamber, and in a horizontal position between the inlet and outlet chambers. About midway between the top and bottom of the regulator is a diaphragm, J, composed of two thicknesses of ductile

metal, S S, co-extensive with a sheet of leather, *r*, and which is placed between them. The thin sheets of metal serve to increase the imperviousness of the leather portions, and prevent any chemical action by the gas upon the leather, or the preparation with which the leather is coated.

I may use one central layer or thickness of metal with an upper and lower layer of leather, or I may use a single layer of metal with one of leather. This diaphragm is secured in place by having its periphery clamped between the flanges *c c*, when the sections C¹ C² are united together. In the center of the diaphragm is secured the stem *k* of a valve, K. The valve-seat *l* is arranged in the upper part of the partition *e*.

In the top of the regulator is an opening covered by a screw-cap, M. In the center of this cap is a vent-hole, *m*. The drip-chamber H has a discharge-orifice, *h*, near the lower corner, which orifice is provided with a screw-thread for the reception of a cap or plug. The cylinder A is attached to the spherical case C¹ C² by means of the screw-threads, and the apparatus is attached to the gas-meter by the inlet-opening *b*¹, and the outlet-opening *b*² is attached to the service-pipe.

The object in disconnecting the cylinder A from the spherical case is to enable the manufacturer to make the cylinder with different sizes of inlet and outlet openings to answer the purposes of a greater or less demand for gas, while but one size of regulator is used.

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

1. The detachable cylinder A, provided with a partition, *a*, abutting against partition *e*, and an inlet and outlet, *b*¹ and *b*², substantially as shown and described.

2. The diaphragm J consisting of a layer or thickness of leather between two continuous layers or thicknesses of ductile metal, the metal being co-extensive with the leather, substantially as shown and described.

In testimony that I claim the foregoing as my invention I hereunto affix my signature.

JAMES S. DE PALOS.

Witnesses:

FRANKLIN L. CHASE,
G. W. SULLIVAN.