W. H. POUNDS.

Gas-Regulator.

No. 162,948. Patented May 4, 1875.

Fig. 1.

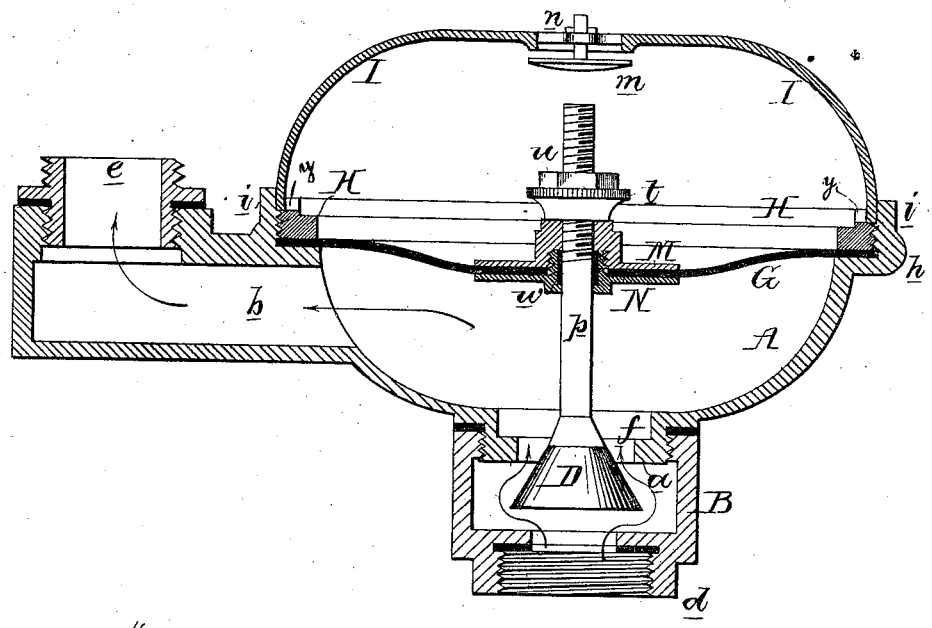


Fig. 2.

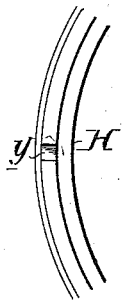
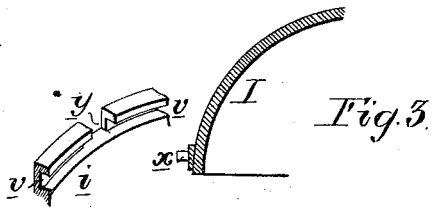


Fig. 3.



Witnesses.
Harry Smith
Hubert Howson

Wm. H. Pounds
by his Attorneys
Howson and Son

UNITED STATES PATENT OFFICE.

WILLIAM H. POUNDS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THOMAS J. MARTIN AND DAVID W. STUART, OF SAME PLACE.

IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. **162,948**, dated May 4, 1875; application filed March 22, 1875.

To all whom it may concern:

Be it known that I, WILLIAM H. POUNDS, of Philadelphia, Pennsylvania, have invented certain Improvements in Gas-Regulators, of which the following is a specification:

My invention relates to improvements in the construction of that class of gas-regulators in which a flexible diaphragm is so combined with a valve that the latter will insure the transmission of a uniform flow of gas of a determinate pressure to the burners; and the main objects of my invention are ready access to the interior of the instrument, the ready adjustability of the latter, and general simplicity and efficiency in construction.

These objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, which exhibits a vertical section of my improved regulator.

A is the body of this regulator, and the inlet branch *a* and outlet branch *b* form parts of this body. To the branch *a* is screwed a coupling, B, the lower end *d* of which is prepared for attachment to the main gas-pipe of any building or room containing the burners, a thimble, *e*, being screwed to the branch *b* for attachment to the distributing-pipe. Near the upper edge of the body A is formed a shoulder, *h*, bounded by an annular flange, *i*, and to this shoulder is confined the flexible diaphragm G, by means of a screw-ring, H, the thread of which is adapted to the internally-threaded portion of the said flange *i*, the ring having in its upper edge notches, as shown in Fig. 2, for receiving a suitable instrument, by which it may be screwed down tight onto the flexible diaphragm. The upper portion of the interior of the flange *i* is without a screw-thread, and receives the lower edge of the cover I, which rests on the screw-ring H, and fits loosely in its place, so as to be readily detached therefrom, the said cover having, in the present instance, two pins, *x*, Fig. 3, which can be introduced into notches *y* in the flange, and thence, by turning the cover, into grooves *v*; other devices may, however, be employed for confining and readily releasing the said cover. The central portion of the central diaphragm is clamped by and between the two plates M and N, the latter having a threaded projection screwed into the hub of the upper plate M, both this hub and a projection on the under side of the lower plate being six-sided, or of any other form for facilitating the screwing of the plates together, and tightly confining the diaphragm between them.

A packing for embracing the spindle *p* of the conical valve D is contained within a recess, *w*, of the plate N, the upper portion of the spindle being threaded for the reception of the nut *t* and jam-nut *u*, the former of which bears on the hub of the plate M.

As in other gas-regulators of this class the diaphragm G will rise or fall as the pressure of gas increases or decreases, and the inlet-opening *f* will be expanded or contracted accordingly.

The detachable cover I permits ready access to be had to the interior of the instrument, either for the purpose of vertically adjusting the valve by means of the nuts *t* and *u*, or by the addition of weights to the diaphragm.

In the top of the cover is an opening, *n*, to which is adapted a valve, *m*, opening downward, so that air may be freely admitted to the interior of the instrument as long as the latter remains entire and performs its operation properly; but should the diaphragm become damaged, and permit the escape of gas into the cover, the valve will be closed, and prevent the gas from passing into the room.

I claim as my invention—

1. The combination, in a gas-regulator, of the body A, its flange *i*, grooves *v*, and notches *y*, the diaphragm G and cover I provided with pins *x x*, adapted to said grooves and notches, as and for the purpose set forth.

2. The combination of the cover I, inclosing a chamber above the diaphragm of a gas-regulator, and a valve, *m*, opening downward, as and for the purpose set forth.

3. The combination of the spindle *p*, clamping-plate N, having a threaded projection for the reception of the clamping-plate M, and jam-nut *t*, bearing on the plate M, as set forth.

4. The combination of the spindle *p*, clamping-plates M N, and packing *w*, confined in a recess in the plate N, as specified.

5. The combination of the body A, its flange *i* and shoulder *h*, the screw-ring H, adapted to the threaded interior of the flange *i*, and the diaphragm G, clamped upon the shoulder by the screw-ring, as set forth.

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

WM. H. POUNDS.

Witnesses:
HUBERT HOWSON,
HARRY SMITH.