No. 29,323. PATENTED JULY 24, 1860.

J. SCHATT.

GAS METER.

Fig. 1.

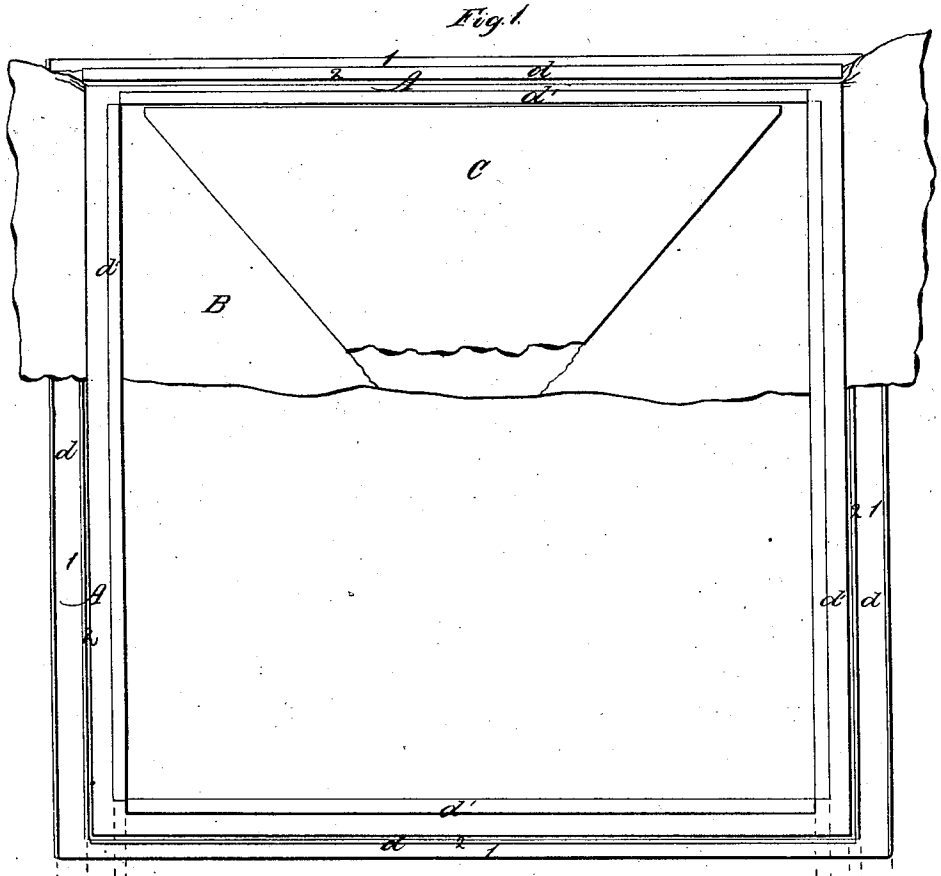



Fig. 2

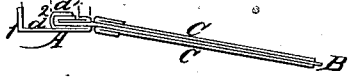
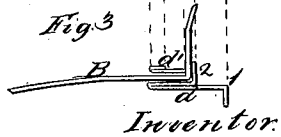



Fig. 3




Witnesses:

B. F. Shattuck

Inventor:

John Schatt

# UNITED STATES PATENT OFFICE.

JOHN SCHATT, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN GAS METERS.

Specification forming part of Letters Patent No. **29,323**, dated July 24, 1860.

*To all whom it may concern:*

Be it known that I, JOHN SCHATT, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Framing the Diaphragms of Dry Gas-Meters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents a sectional plan view of a diaphragm with my improvement applied; and Figs. 2 and 3, transverse sections of parts of the same, like letters indicating the same objects when on the different figures.

The nature of my invention consists in so enlarging and bending or folding the sheet metal, of which part of the frame of the diaphragm is made, as hereinafter described, that the outer edges of the said frame shall be much farther removed from the leather of the diaphragm than heretofore, whereby during the process of the subsequent soldering of the diaphragm in its place within the meter the edges of the said leather thereof are prevented from injury by the heat of the soldering-tool; and also the further advantages attained of permitting the shields to be attached nearer to the inner edges of the frame, thus preventing irregularity in the measurement, from the excess of their play at any time, from this cause, and also permitting the leather of the diaphragm to be saturated with oil, or its pores stopped up therewith, before the diaphragm is inserted in the meter.

In the drawings, A represents the frame of the diaphragm, B a section of the leather or skin partly secured in the frame, and C one of the shields usually attached to the skin.

The frame A is composed of two parts, *d* and *d'*, each consisting of four strips of sheet metal soldered together at their corners; but heretofore the part *d* has been formed of much narrower strips of sheet metal, and with their outer edges bent over upon the inner part, *d'*, the edges of the leather B being overlapped between the two parts, and consequently in subsequently soldering the diaphragms fast in the meters the leather between and near to the two parts of the frame would, from its nearness to the soldering-iron, become drawn and scorched, and as this injurious effect would be increased by the presence of oil in the leather or skin B the oil which is required to stop up the pores thereof had to be applied after the diaphragms were secured in the meter, and consequently some of this oil would necessarily pass through the pores (in the application) to the inside of the chamber, and would during the subsequent using of the meter rise with the gas and eventually cause a sticking condition of the valve. To obviate these objections, I construct the part *d* of the frame A by preparing much wider strips of sheet metal for the purpose, and bending them so as to form a projection, 1, extending beyond the part 2 thereof, which overlaps both the edge of the leather B and the inner part, *d'*, of the said frame, as seen in Fig. 2. This extreme outer edge of the projection 1 may be left either flat or bent upward, as seen in Fig. 2, or downward, as seen in Fig. 3, as may be found best adapted to the part of the meter to which it is to be soldered.

The leather B is applied, as heretofore, between the two parts *d* and *d'*, as seen in Figs. 1 and 2, and secured by simply pressing down closely the vertical edge 2 upon the part *d'*, with the edge of the leather B between them, the projecting surplus of the leather being afterward cut away, as seen in Fig. 2, and also partly in Fig. 1.

It will be evident by the thus forming the part *d* of the frame A with the projecting edge 1 that the heat of the soldering-iron, in fixing the diaphragms in the meter, cannot injure the leather B, or even cause it to become more than slightly warmed, and for this reason it is also evident that the usual shields, C, may be attached much nearer to the inner edges of the frame than heretofore, and thus a greater steadiness or uniformity in the motions of the joints will be produced, and so prevent the usual variations, from such cause, in the measuring capacity of the chamber; and also it will be evident that the pores of the leather B may be stopped up with the oil as required and the surplus oil wiped off clean before the diaphragms are soldered in the meter, all of which are advantages of great

importance in the manufacture and use of dry gas-meters.

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

Making the frame A with a projecting extension, 1 1, around its outer edge, substantially in the manner and for the purpose set forth and described.

JOHN SCHATT.

Witnesses:
BENJ. MORISON,
JNO. B. KENNY.