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A. G. COOKE ET AL

GAS METER

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Fig.1.

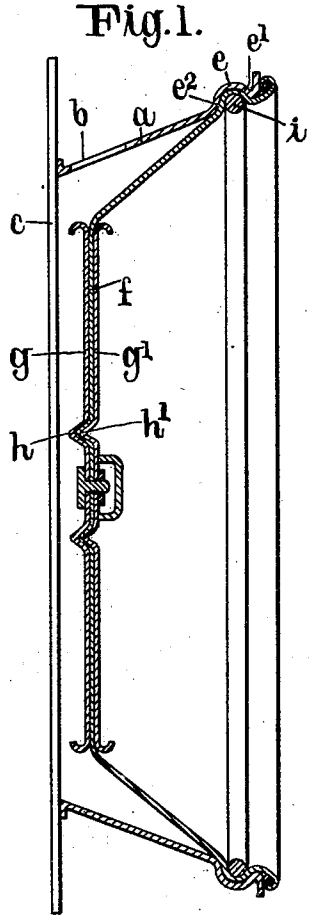


Fig.3.

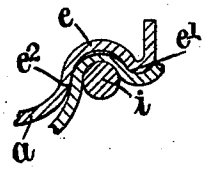


Fig.2.



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UNITED STATES PATENT OFFICE.

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GAS METER.

Application filed March 25, 1925, Serial No. 18,259, and in Great Britain August 14, 1924.

This invention relates to certain new and useful improvements in gas bellows or measuring chambers of the diaphragm type, and has for its object to provide means for procuring a satisfactory gastight joint between the component parts, and prolonging the life of the flexible material used in the removable diaphragm.

In our United States application No. 641,522 filed May 25, 1923, we have described a gas bellows having a removable diaphragm fitted to a metal rim by means of a split ring with a depression in each end, mounted over the flexible material of the diaphragm into an annular recess of semi-circular shape swaged at a distance from the outer edge of the rim.

Owing to the swage in the rim being of a semi-circular shape, we have found in practice that the split ring fitted the annular recess too closely and had the effect of compressing the flexible diaphragm material too firmly, thus pressing out the dressing oil in the skin, necessitating the frequent renewal of the flexible material.

In the present invention these defects are eliminated as will appear from the following description and with reference to the accompanying drawings in which Fig. 1, is a section of a gas bellows showing our improvements; Fig. 2, is a detail of the split ring and, Fig. 3, is an enlarged sectional detail showing the removable diaphragm attached to the rim.

In the accompanying drawings we have shown one gas bellows wherein the tapered rim a, may be either of a circular or square shape, having the usual gas passage at b, and one of said rims a, is soldered on each side of a partition c, and the outer end is turned outwards.

The rim a, has an annular recess stamped or swaged therein, being shaped like a semi-ellipse as shown at e, close to the outer edge. The leather, skin or the like of the removable diaphragm f, is secured to the rim a, by means of a split ring i, being compressed at two positions namely at e^1, and e^2, as shown in Figs. 1, and 3, near each end of the swage e, thus giving a gas tight joint. The portion of the flexible material lying between these two positions e^1, and e^2, are not compressed as will be clearly seen in Fig. 3, which allows the said material to retain the dressing oil in the portion of the skin in said swage at the circumference of the split ring thereby actuating as a constant lubricator, and having a further advantage, of giving greater freedom to the skin, where oscillation takes place during its working. From the above description it will be readily seen that the life of the skin used for the flexible material of the diaphragm is greatly extended, and this particular shape of the swage in the rim provides increased strength and assists in keeping the said rim a, in its original shape and giving a more satisfactory joint.

The removable diaphragm f, is constructed and arranged and attached to the rim a, in a manner substantially as described in our United States application No. 641,522 filed May 25, 1923, with the exception that the annular groove in the discs g, and g^1, of the removable diaphragm, instead of being semi-circular, may be, if desired, of a U or V shape as shown at h, and h^1, in Fig. 1, and the split ring i, used for securing the removable diaphragm f, to the rim a, has no depression in its respective ends thereby giving a more simplified construction.

The aforesaid swage in the rim is formed very closely to the outer edge which latter is turned outwards allowing its easy displacement of the split ring, for the purpose of inspecting or renewing the removable diaphragm.

We claim:

1. A measuring chamber for dry gas meter comprising a partition, a rim soldered thereto, an annular semi-ellipse shaped recess swaged at the outer edge of said rim, a removable diaphragm mounted on said rim, a split spring ring inserted into said annular recess over said diaphragm, and said diaphragm being secured to said rim near the respective ends of said swage.

2. A measuring chamber for dry gas meter comprising a partition, a rim soldered thereto, an annular semi-ellipse shaped recess swaged at the outer edge of said rim, a removable diaphragm of flexible material, two metal discs secured to said flexible material, a circumferential groove formed in said discs, said removable diaphragm mounted on said rim, a split spring ring inserted into said annular recess over said diaphragm, and said diaphragm being secured to said rim near the respective ends of the recess.

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