No. 686,348. Patented Nov. 12, 1901.

A. SCHOFIELD.

DRY GAS METER.

(Application filed June 8, 1901.)

(No Model.)

Fig. 3.

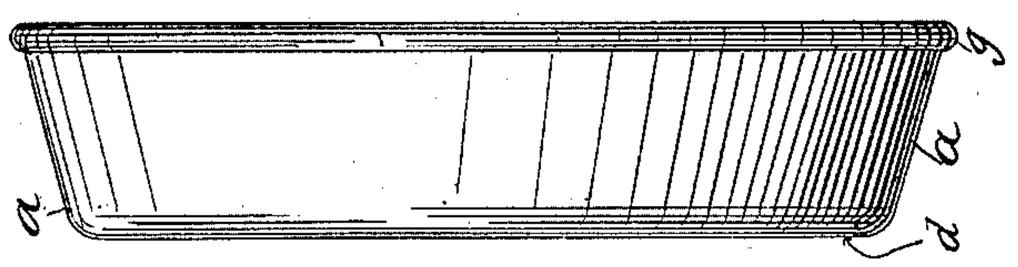


Fig. 2.

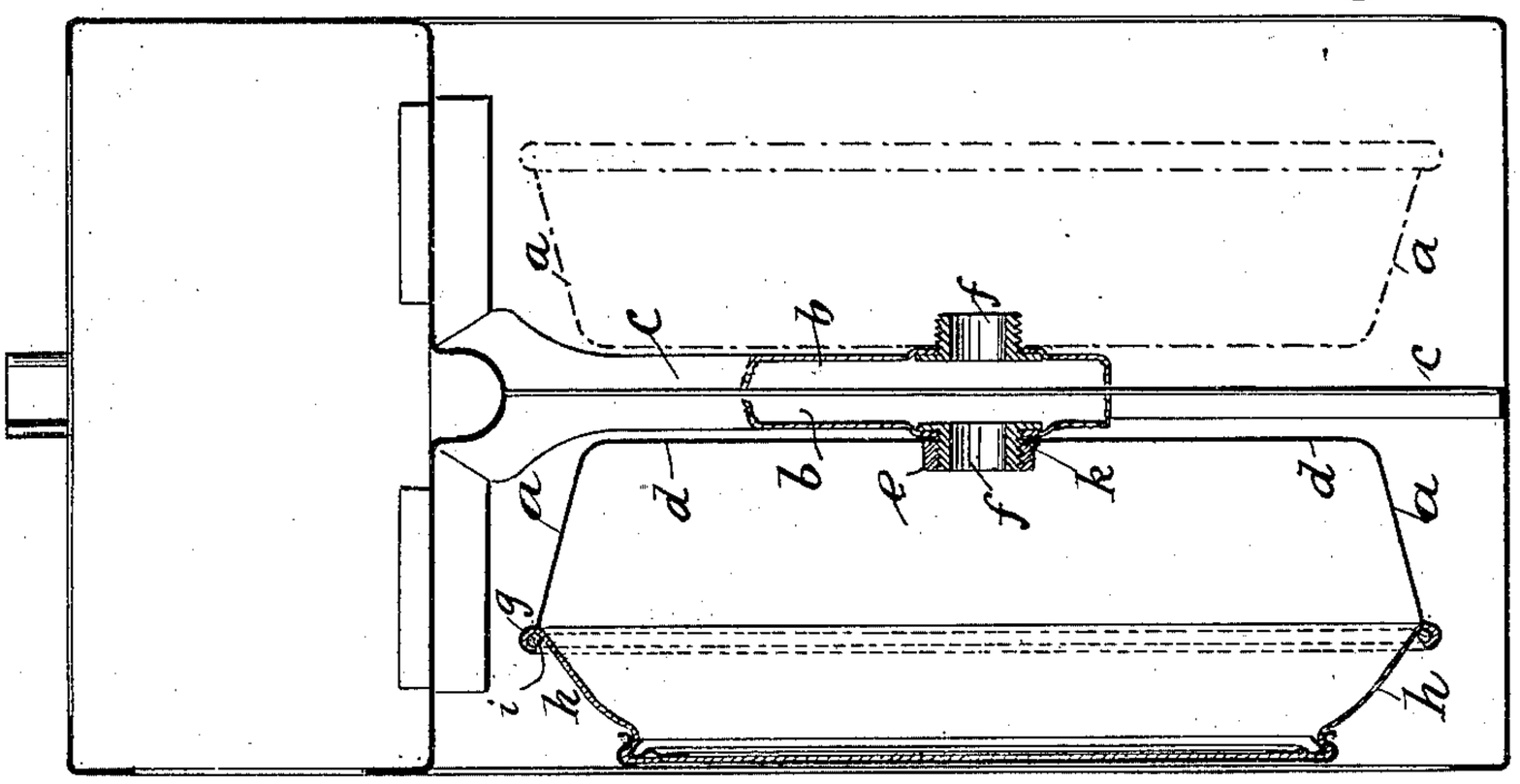
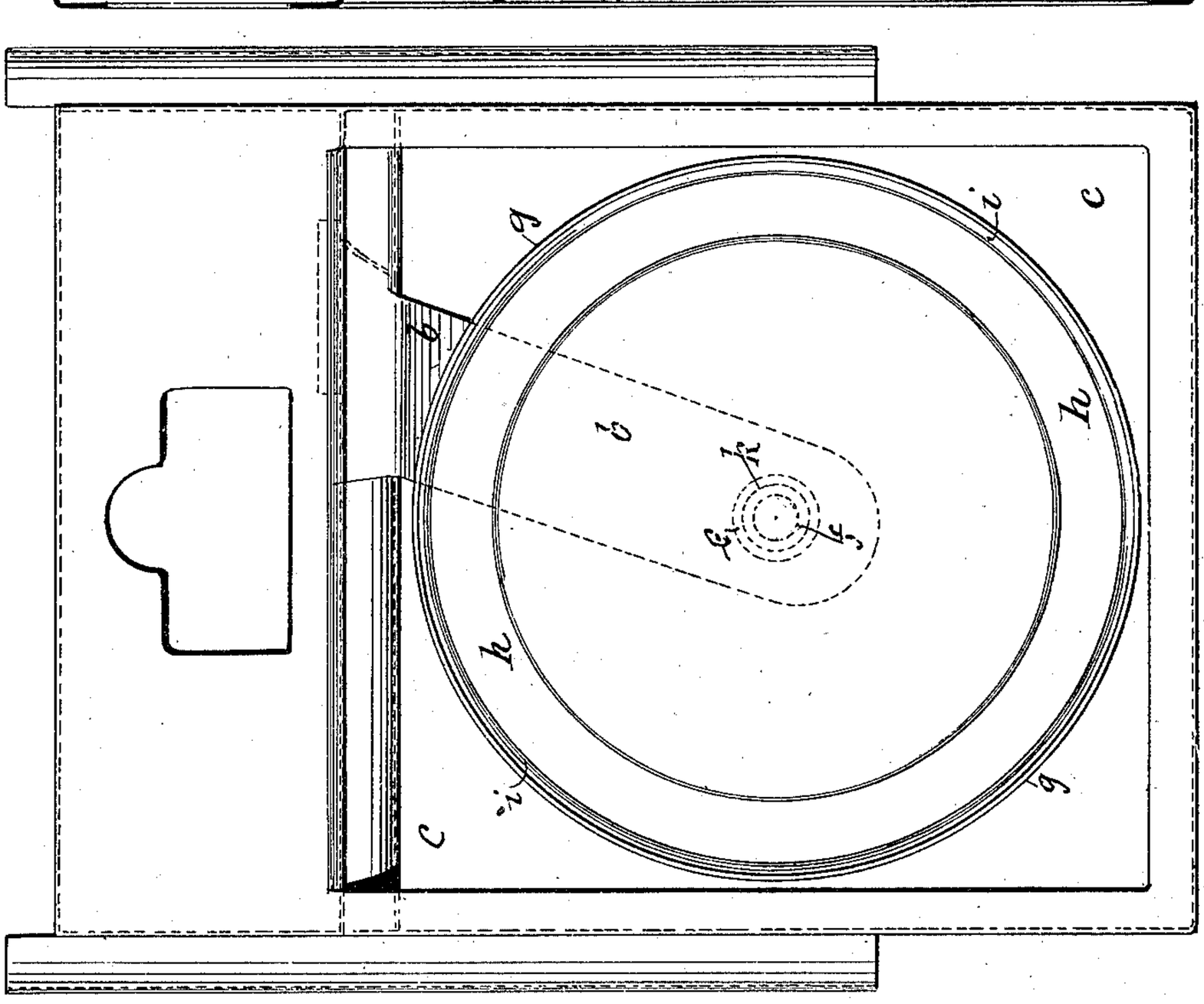


Fig. 1.



Witnesses:
Alfred Bosshardt
Stanley R Bramall

Inventor.
Arthur Schofield.
per L. Bosshard & L.
Attorney

UNITED STATES PATENT OFFICE.

ARTHUR SCHOFIELD, OF ASHTON-UNDER-LYNE, ENGLAND.

DRY GAS-METER.

SPECIFICATION forming part of Letters Patent No. 686,348, dated November 12, 1901.

Application filed June 8, 1901. Serial No. 63,823. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR SCHOFIELD, a subject of the King of Great Britain, residing at Ashton-under-Lyne, in the county of Lancaster, England, (whose post-office address is 34 Duke street, Ashton-under-Lyne,) have invented new and useful Improvements in and Connected with Dry Gas-Meters, (for which I have made application for patent in Great Britain, No. 10,770, dated May 24, 1901,) of which the following is a specification.

My invention relates to improvements in that type of dry gas-meters wherein diaphragms instead of bellows are used. Hitherto it has been customary in such meters to fix each diaphragm to a ring. This ring has been soldered to a rim, forming a chamber for the diaphragm, and this rim has been soldered to the partition in the meter. This construction of diaphragm-chamber is very troublesome to make. The soldering often damages the diaphragm and renders repairs difficult. To overcome these defects, the chief object of my invention is to provide means whereby such diaphragm-chambers are rendered quickly attachable to and detachable from the partition in the meter, so as to facilitate testing and repairing, and whereby such diaphragms are thoroughly protected from injury, soldering, which tends to damage the diaphragm, being entirely dispensed with and the diaphragm thus rendered more durable and reliable in action. My invention also dispenses with a great amount of skilled labor hitherto necessary and reduces the cost of production of such dry gas-meters. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front view of a dry gas-meter with cover removed, provided with my improved diaphragm-chamber. Fig. 2 is a vertical section thereof, showing one of the diaphragm-chambers removed, and Fig. 3 a view of the latter detached.

Similar letters refer to similar parts throughout the several views.

In carrying out my invention and referring to the figures generally I use in lieu of the said ring and rim as diaphragm-chamber a dish or other suitably shaped receptacle *a*, the interior of which is brought into communication with the gas-passage *b* on the partition *c* in the meter through the bottom *d* of the said dish or receptacle by a tubular connection *e f*, forming a gas-inlet for the said dish or receptacle so constructed as to allow of quickly securing the said diaphragm dish or receptacle to and removing it from the said partition. The top or edge of this dish or receptacle I form internally with an annular groove *g*, (see more particularly Fig. 2,) into which the diaphragm *h* is secured by a ring *i*, gripping the edge thereof. This dish or receptacle I preferably stamp out of sheet metal in one piece, and the said tubular connection I may arrange by forming a hole *k* in the bottom *d* of the said dish or receptacle, preferably in the center thereof, and furnishing the same with a nut *e*, adapted to be screwed onto an externally-threaded nozzle *f*, secured to the said gas-passage *b*, which latter for this purpose is brought to the middle of the partition in the meter, so that the said diaphragm receptacle or chamber can be quickly screwed onto or off the said partition and removed from the meter when desired.

It is obvious that the screw-threaded connection described may be substituted by another form of tubular connection—say, for instance, by such as a bayonet or spring joint forming a passage between the said gas-passage and interior of the said diaphragm dish or receptacle, as will be readily understood without illustration.

I also wish it to be understood that I do not confine myself to the exact shape of the said dish or receptacle, as the same may be varied without departing from the nature of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

In and connected with dry gas-meters, a removable diaphragm-chamber, composed partly of the rigid receptacle *a* and partly of the flexible diaphragm *h* of about equal capacity, the said receptacle being of such a depth as to completely cover the said diaphragm when in its inner position and its bottom formed with the gas-inlet *d*, all substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ARTHUR SCHOFIELD.

Witnesses:

ALFRED BOSSHARDT,

STANLEY E. BRAMALL.