R. C. PHILLIPS.

GAS METERS.

No. 183,510. Patented Oct. 24, 1876.

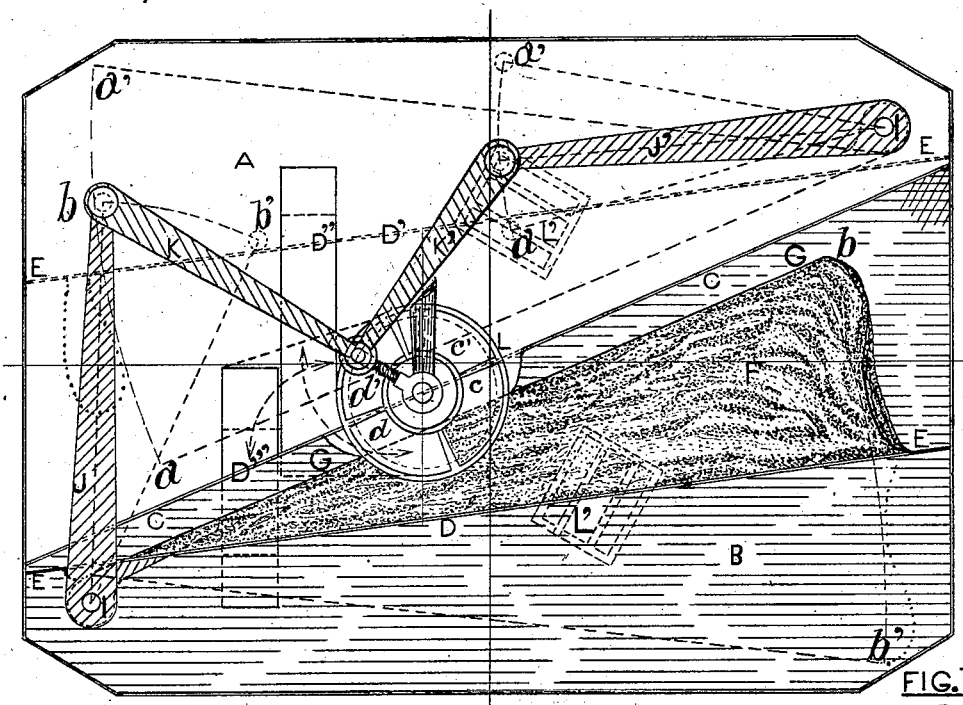

FIG. 1.

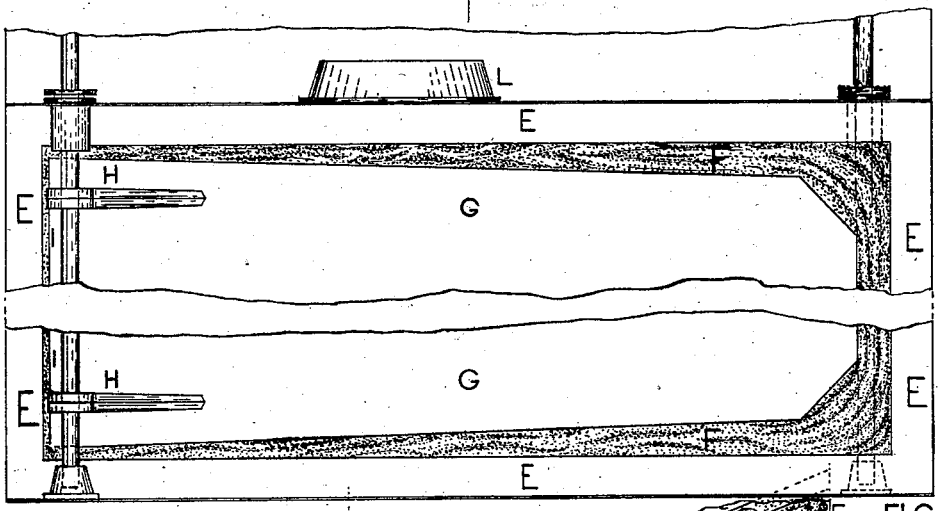

FIG. 2.

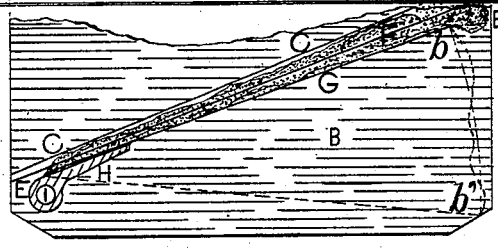

FIG. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT C. PHILLIPS, OF CINCINNATI, OHIO.

IMPROVEMENT IN GAS-METERS.

Specification forming part of Letters Patent No. **183,510**, dated October 24, 1876; application filed August 31, 1876.

To all whom it may concern:

Be it known that I, ROBERT C. PHILLIPS, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Gas-Meters, which is applicable to water or liquid meters also.

My improvement is fully set forth and described in the following specification, reference being had to the accompanying drawings.

The object of my invention is to utilize more completely the measuring chambers or spaces, thereby lessening the size of a meter of any given capacity, and at the same time securing a more accurate measurement, dispensing with much of the machinery in other meters, and so arranging all the parts that they can readily be reached when adjustments or repairs become necessary.

This meter is substantially the same as that for which a patent was granted to me by Letters Patent of the United States, dated August 1, 1876, and numbered 180,631, but differing from that in this, that the flag-rods D or hinges in that meter are both located in one end of the meter, and the partition K is parallel to the sides of the meter.

My present improvement consists in placing the partition C C, Figure 1, diagonally or obliquely in the case, and locating the flag-rods I and hinges H in the opposite corners of the case, as is clearly shown in Fig. 1 in plan, one of the diaphragms G G, hinges H H, diaphragm-frame E E, leather F F, and valve-seat L being shown in elevation in Fig. 2. The arms J J′, the pitmen K K′, diaphragms G G, and the position of the diaphragm-frames E E are shown at D and D′, Fig. 1, in plan. The ports *c c′ d d′* of the rotary valve and the direction of the channels D″ D‴ from *d* and *d′*, which cross each other, are shown by the curved arrows, Fig. 1. The position of the slide-valves, when they are used, is given in dotted lines, same figure, L′ L′. Fig. 3 is a plan of another arrangement of the diaphragm, when constructed to fold the leather down upon itself, instead of passing through the frame E E.

The same letters refer to the same things in all the figures.

In Fig. 3 the leather is wide enough to allow G to traverse from *b* to *b′* and back again to *b*, when the leather is folded together similarly to the ordinary blacksmith's bellows, close to the partition C C, the other diaphragm being constructed and hinged in the same manner in opposite diagonal corners.

The operation is as follows: The arm J being in the position shown in Fig. 1, its diaphragm is at its extreme stroke, and the tangent or crank is on the dead-point of the pitman K, while the arm J′ and its diaphragm are at half-stroke, moving, say, in the direction from *a* to *a′*. When J′ reaches the position *a′* its diaphragm will be at *a′*, K′ will be at its dead-point in reference to the crank, and J will be at half-stroke, and its diaphragm passing through the frame E E. Thus the reciprocating motion of the diaphragms is converted into a rotary motion of the spindle of the crank, and this rotary motion is communicated to the rotary valve; or, by a crank on the lower end of the spindle, a reciprocating motion is given to the two slide-valves L′ L′.

The action of the meter constructed as shown in Fig. 3 is precisely the same as above described, except that the diaphragms do not pass through the frames E E.

I claim—

The diagonal partition C C, the diaphragms G G, the flag-rods I I, located in opposite diagonal corners of the meter, the arms J and J′, the pitmen K and K′, the tangent or crank with the spindle, arranged and located substantially as shown and described.

ROBERT C. PHILLIPS.

Witnesses:

J. H. PHILLIPS,

GEO. W. CHADWICK.