

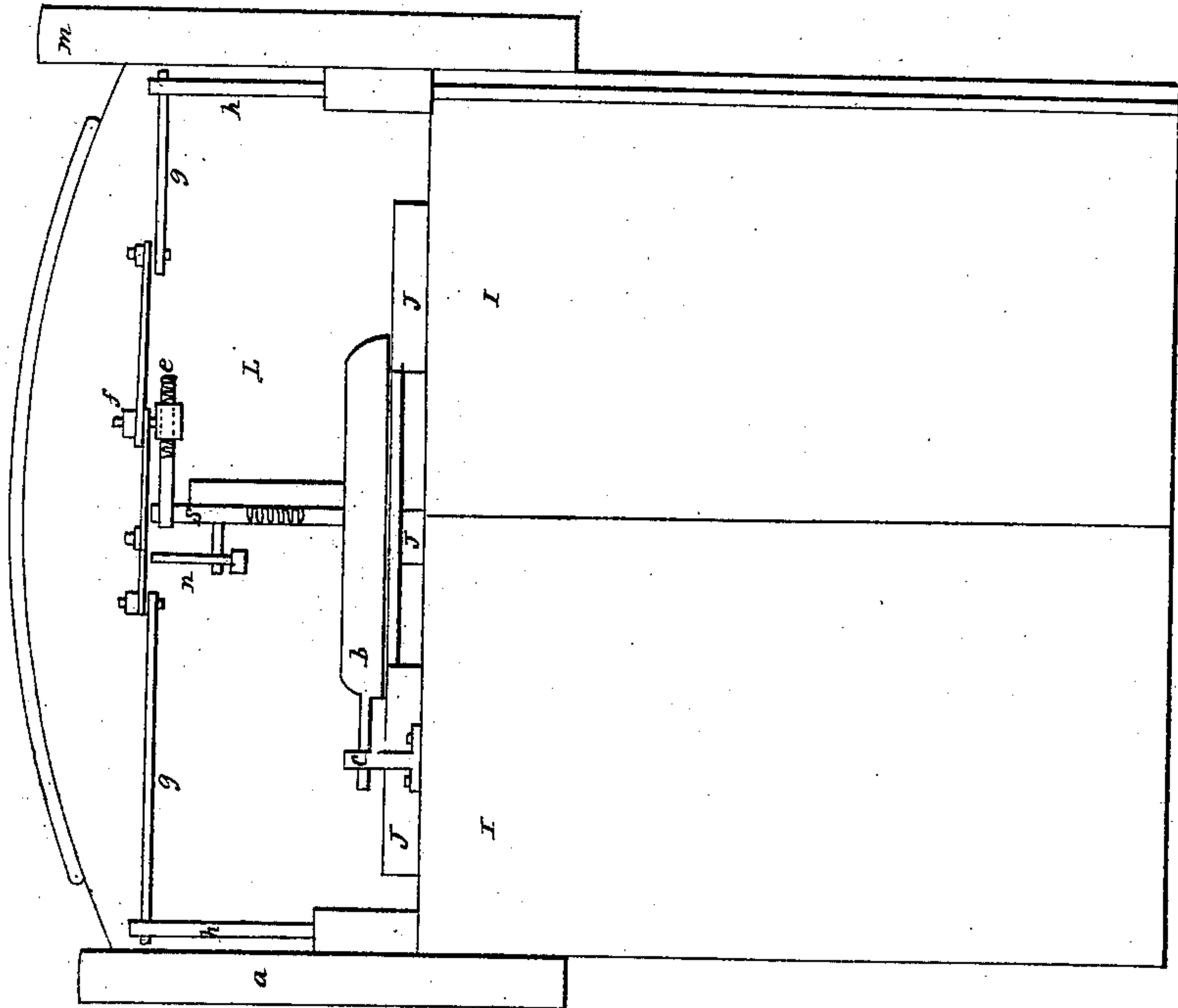
*R. M. Potter,*

*Gas Meter.*

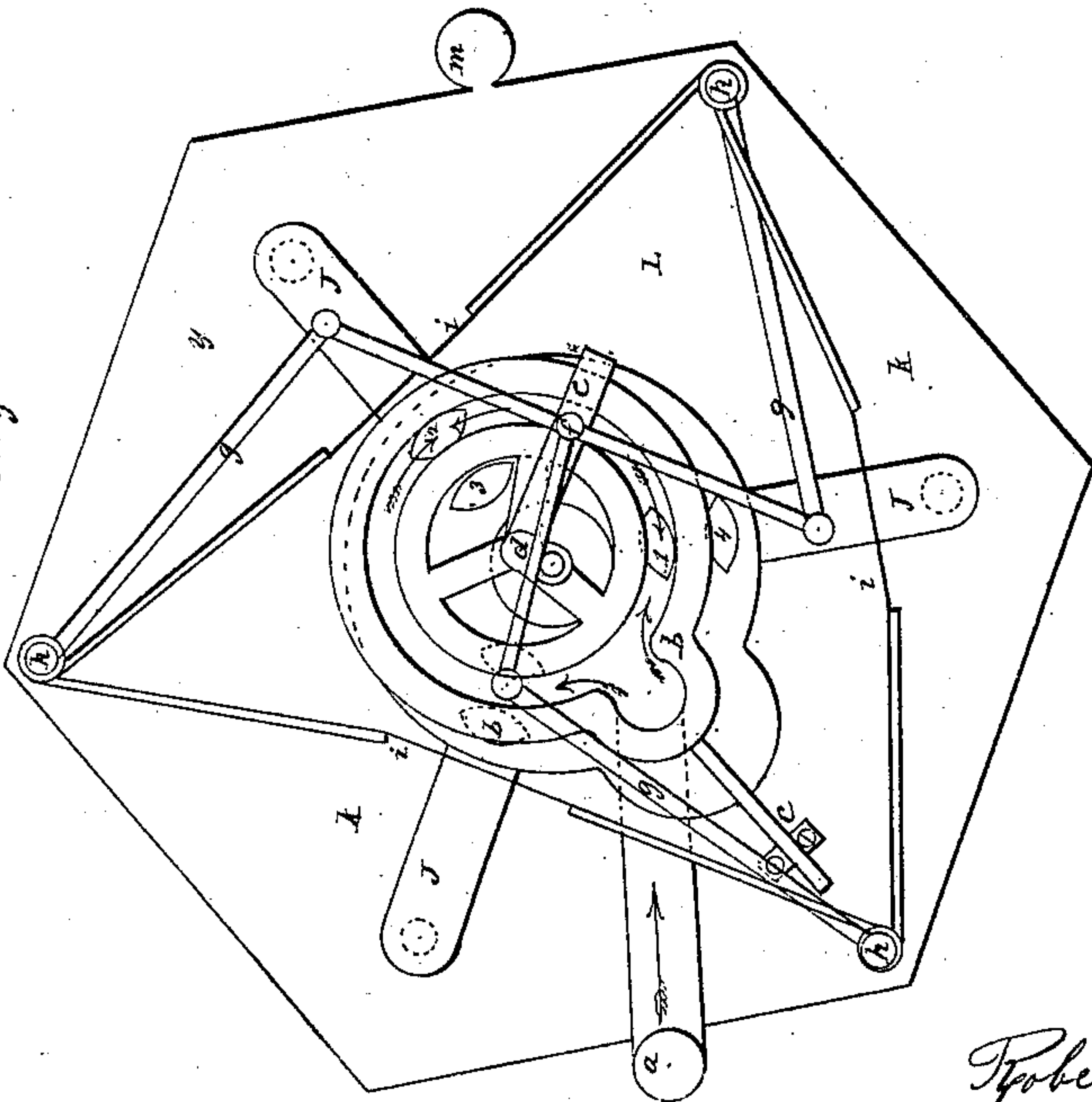
*N<sup>o</sup> 22,267.*

*Patented Dec. 7, 1858.*

*Fig. 2.*



*Fig. 1.*



*Inventor.*

*Robert M. Potter*

# UNITED STATES PATENT OFFICE.

ROBERT M. POTTER, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO HIMSELF.

## IMPROVEMENT IN VALVES FOR GAS-METERS.

Specification forming part of Letters Patent No. 22,267, dated December 7, 1858.

*To all whom it may concern:*

Be it known that I, ROBERT M. POTTER, of the city, county, and State of New York, have invented a new, useful, and Improved Gas-Meter, which consists in the peculiar construction of the valve and other important points connected therewith and essential to a correct working of the whole, combining simplicity of construction, durability, and perfection in operation, all of which is clearly and fully set forth in the following specification and accompanying drawings in such a manner as to distinguish what I claim as new and enable experts in the art to make and use the same, reference being had to the letters upon the drawings, wherein—

Figure 1 is a plan view, and Fig. 2 a side view.

Like letters refer to like parts in each and make part of this specification.

*a* is the inlet or supply pipe.

*b* is the concentric sliding valve, constructed with a center vent and circular gas-canal formed in the underside of the valve between two concentric rings by a continuous groove, making a complete circle. *d* is also constructed with a piston, which has a fixed point at bracket *c*. This piston is the center of equipoise, equipollence, and semi-equal motion, and prevents *b* from a possibility of rotating or being displaced and better secures its uniform eccentric slide motion. The gas from *a* is received directly into the gas canal in *b* at this central point of equilibrium and does not communicate with the center of *b* until having done full duty and in the act of being exhaled for consumption.

Immediately on the outer and inner sides of the circular gas-canal is a set or two rows of gas-ports, consisting of three of each, (marked 1, 3, and 5,) interior, and three marked 2, 4, and 6, exterior, and antagonistic to the interior ports. Each pair of antagonistic ports is on the same respective sides, and each in a line with its fellow pointing to or radiating from the center of *b*, which permits the direct and reverse conducting gas-pipes *j* (leading to and from the exterior gas chambers) to be made straight.

The short crank *d*, vertical shaft *s*, with the long crank *e* and vertical crank-pin *f*, double-jointed levers *g'*, vertical shafts *h'*, and diaphragms *i'*, with their relative connections and operations, are all well known and need not be explained or described, except that the vertical shaft *s* has a pivot-point or center of support at its lower end, which is important, owing to the extreme subtlety of the gas and consequent delicate pressure upon the parts. It is essential that all the moving parts should be nicely adjusted and fixed upon or at permanent centers, else they are liable to twist or cant and arrest action altogether or produce irregularity.

*m* is the outlet-pipe to the consumers, leading from the upper interior gas-chamber, *l*, while *k'* is the exterior gas-chambers.

From this description of construction it will be seen that the operation consists of the gas being received from *a* into the circular gas-canal in *b* at the point of equipoise, equipollence, and semi-equal motion, and circulates in the two directions indicated by the arrows shown in Fig. 1, and enters the interior port, 1, and exterior port, 2, and immediately sets the eccentric sliding valve *b* in motion, said motion being determined by the revolving crank *d* and secured by the piston of *b*, and as the motion is continued the circular gas-canal alternately supplies the interior row of ports, 1, 3, and 5, and the exterior row of ports, 2, 4, and 6—one interior and one exterior port being supplied at the same instant—while the concentric rings alternately cut off the gas from the interior and exterior ports, one of each being cut off at the same instant, and one of each being open at the same instant free to discharge into the common upper chamber *L*, the interior ports exhaling from and through the center vent in *b*, and the exterior ports exhaling outside the circumference of *b*.

This simple yet beautiful construction of the valve *b*, with a center vent, piston, concentric rings inclosing a circular gas-canal midway between a double tier (exterior and interior) of gas ports and receiving the gas from *a*—the center of equilibrium—including the straight, direct, and reverse conducting-



pipes *j'* and lower pivot or center support of *s*, each and all contribute to a most perfect and durable gas-meter.

Having thus fully and clearly described the construction and operation of my gas-meter, I would state that I disclaim the eccentric rotary valve; but

I do claim as my invention and desire to secure by Letters Patent of the United States—

The eccentric sliding valve *b*, when constructed, arranged, and operating substantially as herein described.

ROBERT M. POTTER.

Witnesses:

J. WELLSLAGER,  
GEO. M. RAMSAY.