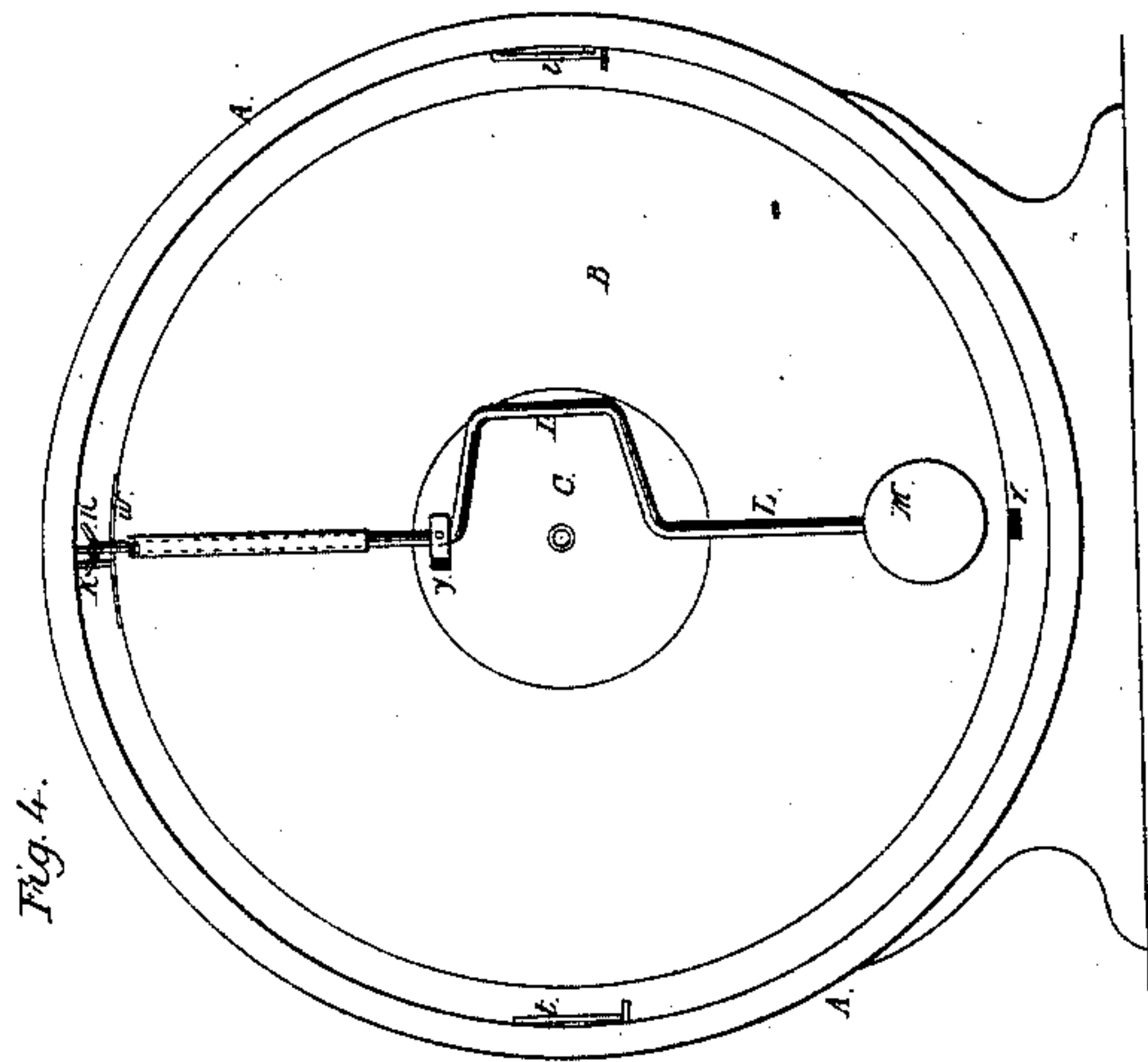
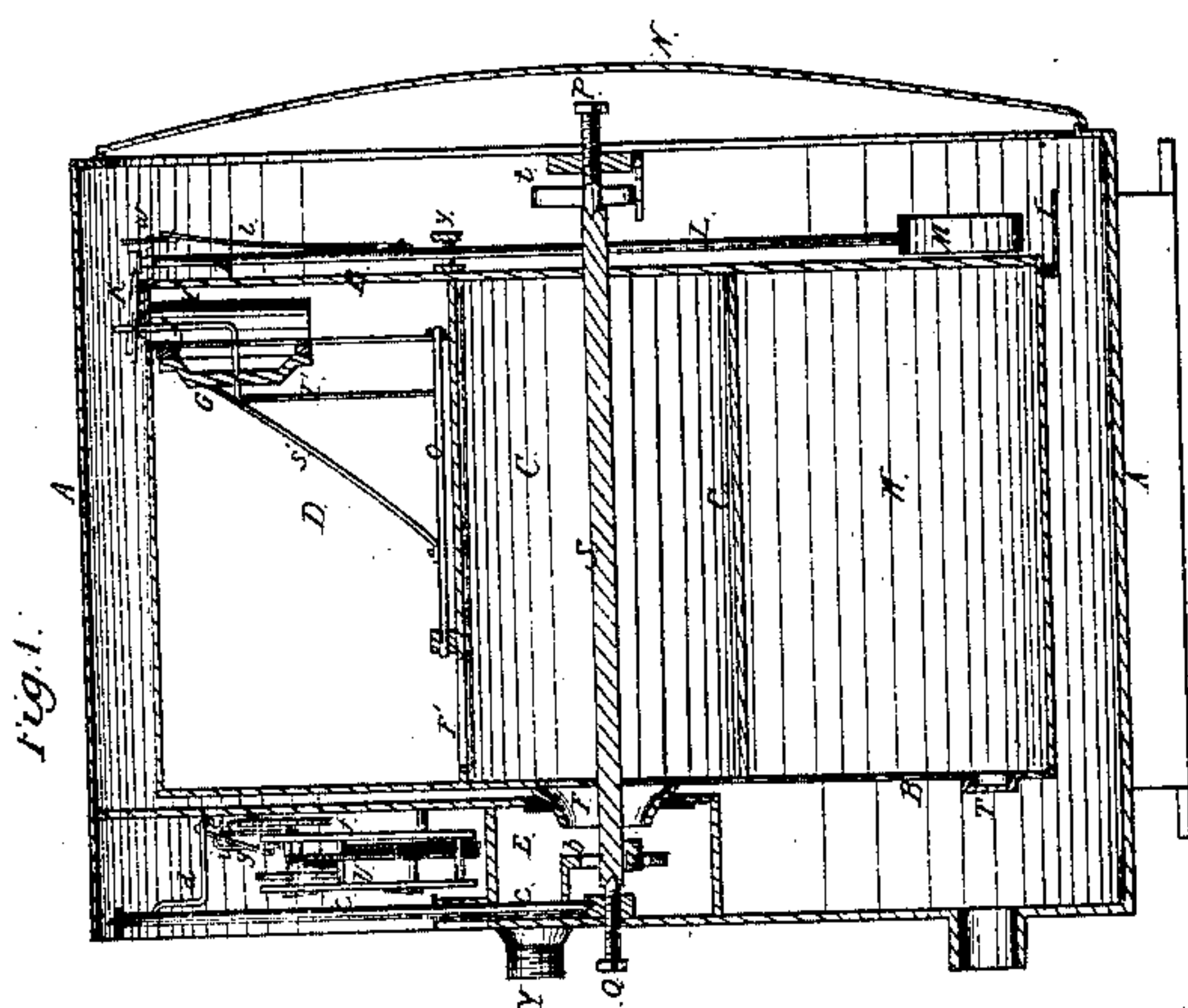
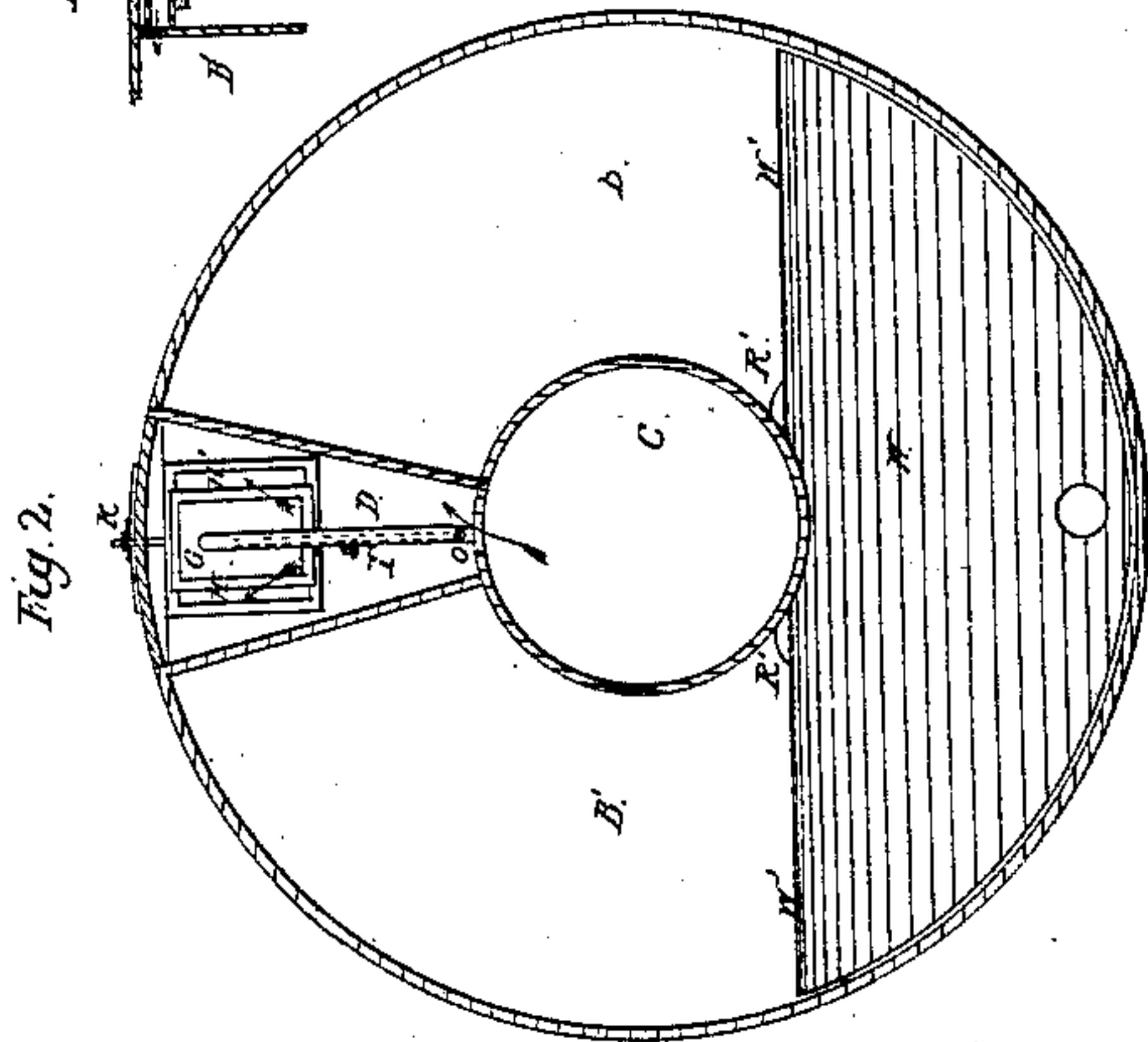
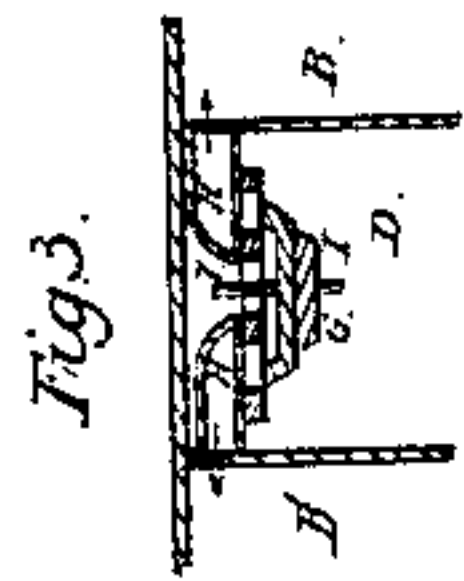
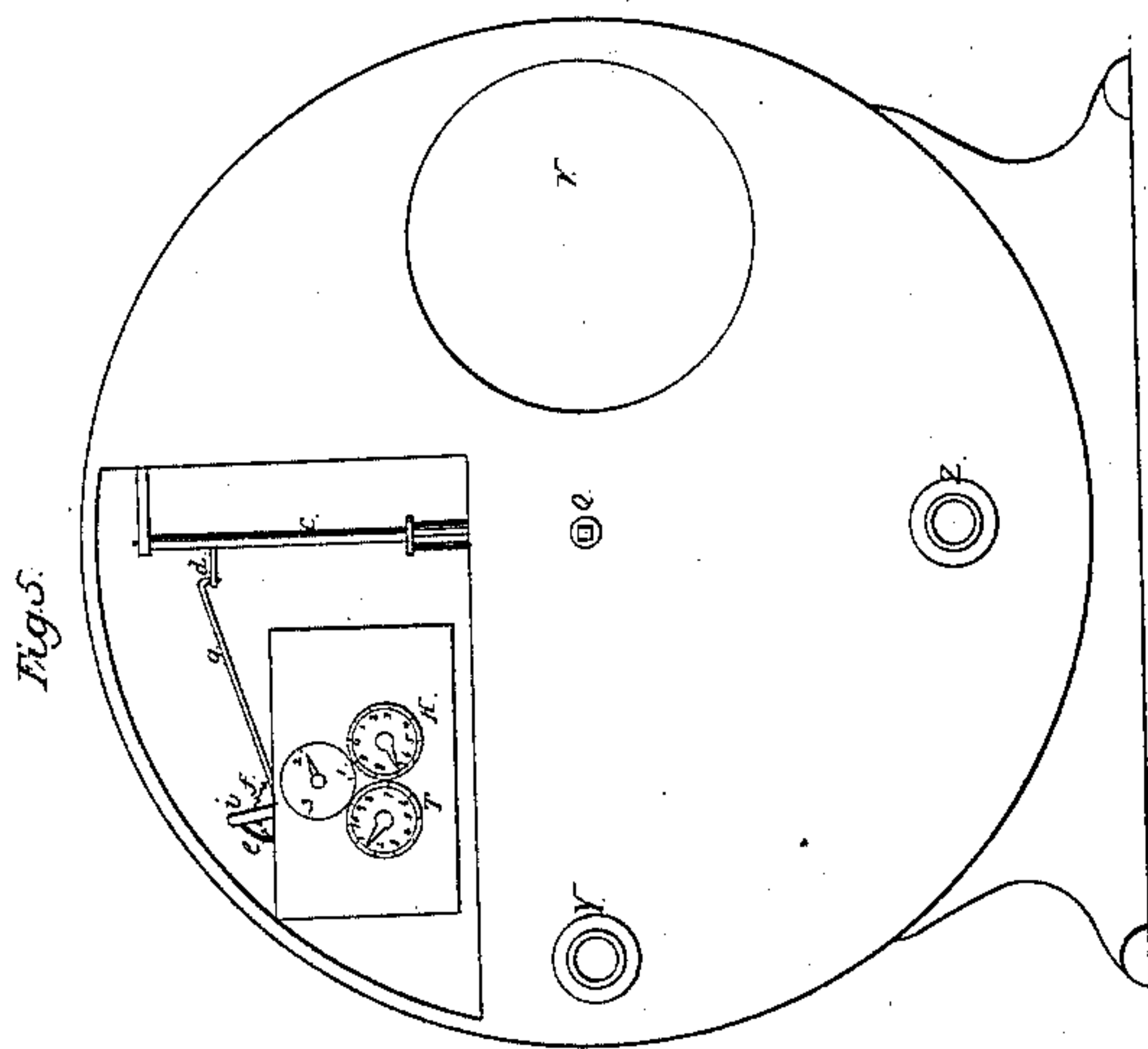


T. Shaw,
Gas Meter,

N^o 20,130.

Patented Apr. 27, 1858.



UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
HIMSELF AND C. S. PATTERSON, OF SAME PLACE.

IMPROVEMENT IN GAS-METERS.

Specification forming part of Letters Patent No. 20,130, dated April 27, 1858.

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Gas-Meters; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, like letters referring to like parts, in which—

Figure 1 is a vertical section through the center. Fig. 2 is a horizontal view of the drum, taken through in rear of the valve. Fig. 3 is taken through the valve horizontally. Fig. 4 is an end view of the meter, showing operating-lever. Fig. 5 is a front end view.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In Fig. 1, A is the outside case; B, the drum; C, the inner cylinder; D, the chamber; E, the opening or chamber through which the gas passes from the inlet-hole in the outer case; F, inlet into drum B; G, the valve; H, opening for escape of gas from the valve; I, rod through the valve G, and operating in a fork at the end of lever L; K, the fork; L, weighted lever with fork K; M, the weight on said lever; N, the curved end of the outer case; O, the vibrating arm on which the valve rests and operates on its seat; P and Q, centers on which shaft of drum B operates; r, a spring-guard to guide the motion of the drum; S, the shaft through the drum; T, the opening in the drum to insert the fluid; U, the machinery for measuring the gas; W, the fluid in the lower side of the drum; Y, the inlet-passage; Z, the outlet; a, the cam on shaft S, operating in yoke b; c, a rod attached to yoke b, acting as a rock-shaft; d, a rod extending from the rock-shaft to rod g, which operates the lever i, and spring catch-pawl, e, operating ratchet-wheel, which gives motion to the hands on the dial-plates, thus measuring the amount of gas used; S', the spring for keeping the valve against its seat; l, spring attached to lever L, and catching in alternate ends of plate u, through which is a slot in which the end of said lever moves; y, fulcrum of lever L, and on which it plays; t, a guide on the inner side of case A to disengage spring l to allow the weight to fall.

In Fig. 2, B and B' represent the two chambers, one on each side of center chamber, D, made so by the seal or liquid W; C, the inner cylinder in drum B; G, the valve; H and I, the valve ports or openings; K, the fork on lever L; W, upper edge of the liquid; S', the spring for pressing the valve on its seat; R and R', friction-rollers, which may be used to prevent friction when a piece of glass is inserted as high up as the liquid.

In Fig. 3, B and B' represent the inside or the chambers of the drum; D, the chamber through which the gas passes to the valve; G, the valve; H and H', the valve-ports; I, the rod through the valve and operating in fork K.

In Fig. 4, A is the outer case; B, the drum; C, the inner cylinder; K, the fork on end of lever L; M, the weight on said lever; l, the spring on said lever; y, the fulcrum of said lever; r, catch or guide; t, catch or guide on inside of case A; u, plate for spring l to catch in.

In Fig. 5, c is the rock-shaft; d, arm on same; g, connecting-rod; i, arm to which said arm is attached; e, spring catch-pawl; f, ratchet-wheel; Q, bearing of shaft S; Y, inlet; V, opening into case A; Z, outlet.

In the operation of my invention the gas is admitted at inlet Y of outer case, A; then through inlet F and through opening F' into chamber D; then through port-hole H into chamber B', the spring-catch l being at this time fast in the plate u opposite port-hole H', which is closed. Then as the gas passes into the chamber, the fluid W acting as a seal, the drum is made to revolve until spring l is disengaged from its position, when, by means of the weight M, the lever falls and the spring catches in the other notch in spring u, and the gas will then enter through port-hole H' into chamber B, and by the pressure of the gas, as before described, will cause the drum to revolve in the other direction until the spring is detached, when the weight again falls and changes the valve, and thus this process is alternately kept up. The gas which leaves the ports H or H' enters the outer case and passes off to the burner through escape Z. The spring S', together with the gas in chamber D, keeps the valve G always firm and close on its seat, and the cut-off is made suddenly and renders the operation complete. As the drum revolves, the

cam *a* on front end of shaft *S*, working in yoke *b*, operates rock-shaft *c*, causing it to revolve, which moves rod *d*, rod *g*, arm *i*, and ratchet *e*, which causes ratchet-wheel *f* to revolve, which gives motion to the machinery which revolves the pointers on the dials, thus recording the amount of gas consumed.

Having thus fully described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

The construction of the oscillating drum *B* in such a manner as to contain the sealing-fluid or seal *W*, with lever *L* attached to said drum, the whole for operating the valve *G* by the oscillation of the drum, as set forth, in combination with the inlet and outlet passages *Y* and *Z*, as herein described.

THOMAS SHAW.

Witnesses:

JOHN H. SHEETS,
WILLIAMS OGLE.