

(No Model.)

4 Sheets—Sheet 1.

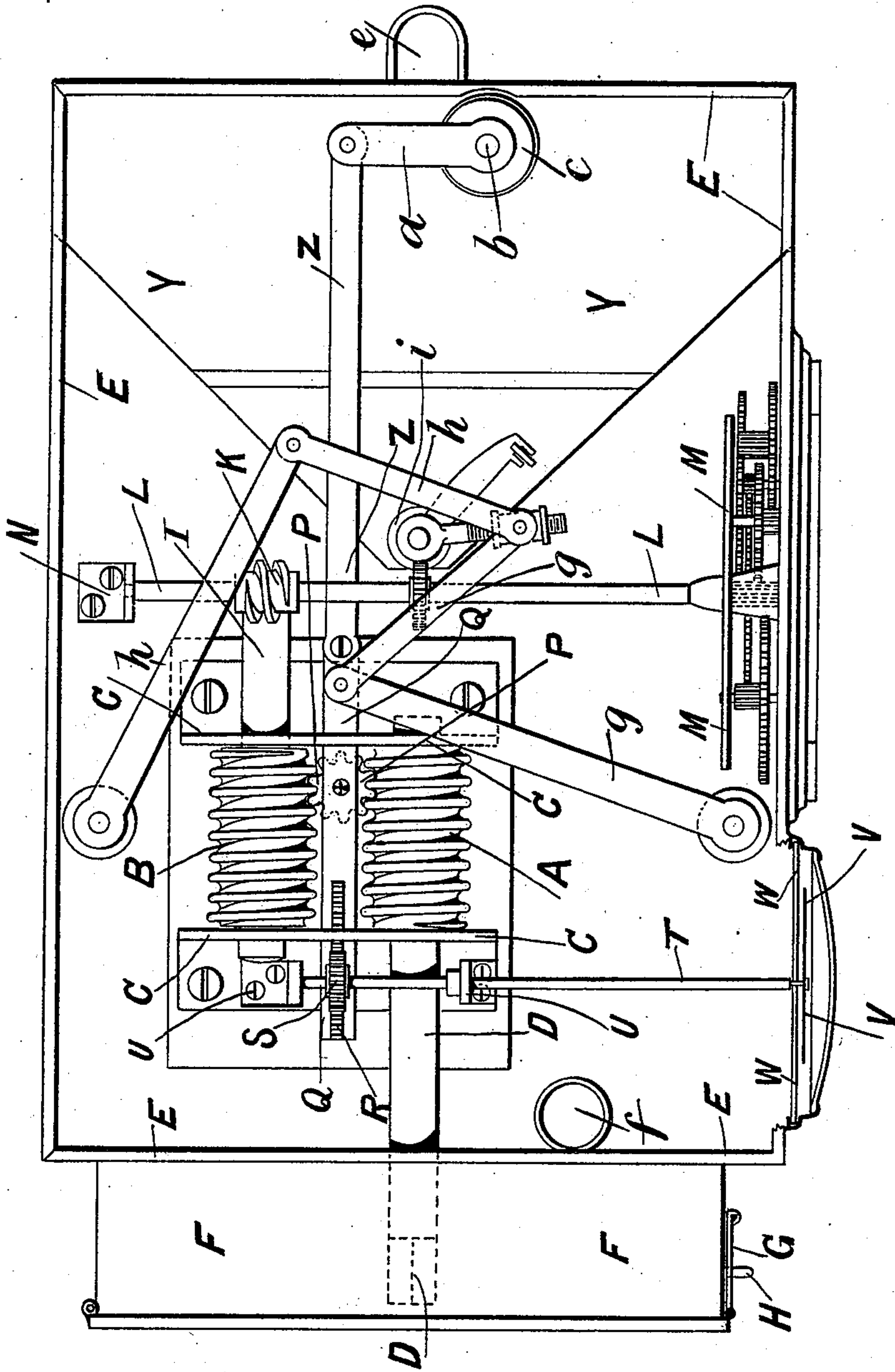
R. T. & J. G. GLOVER.

APPARATUS FOR USE IN CONNECTION WITH GAS METERS.

No. 541,740.

Patented June 25, 1895.

Fig. 1.



Witnesses.
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Albert Everett.

Inventors.
Richard T. Glover.
John G. Glover.
By James L. Norris.
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(No Model.)

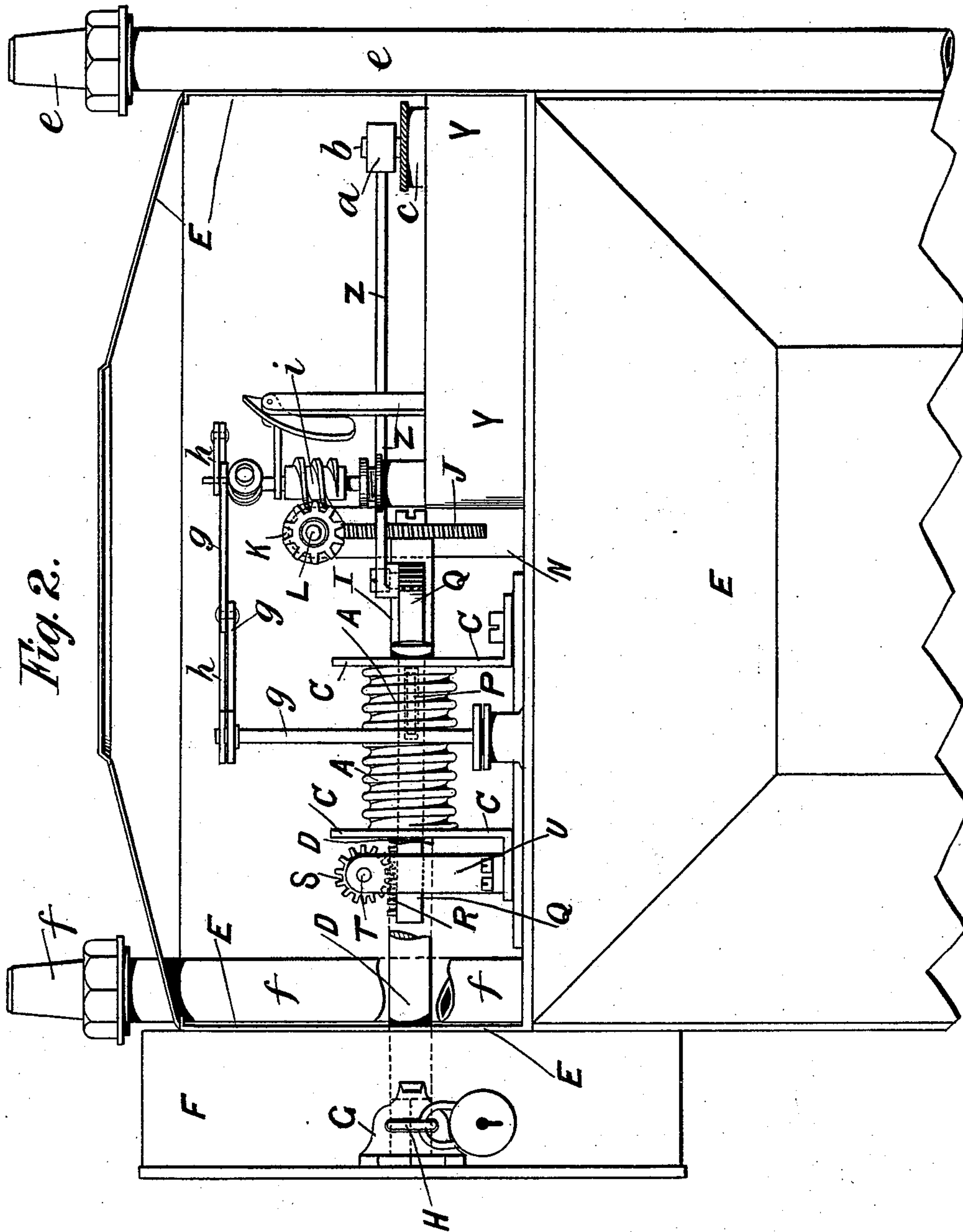
4 Sheets—Sheet 2.

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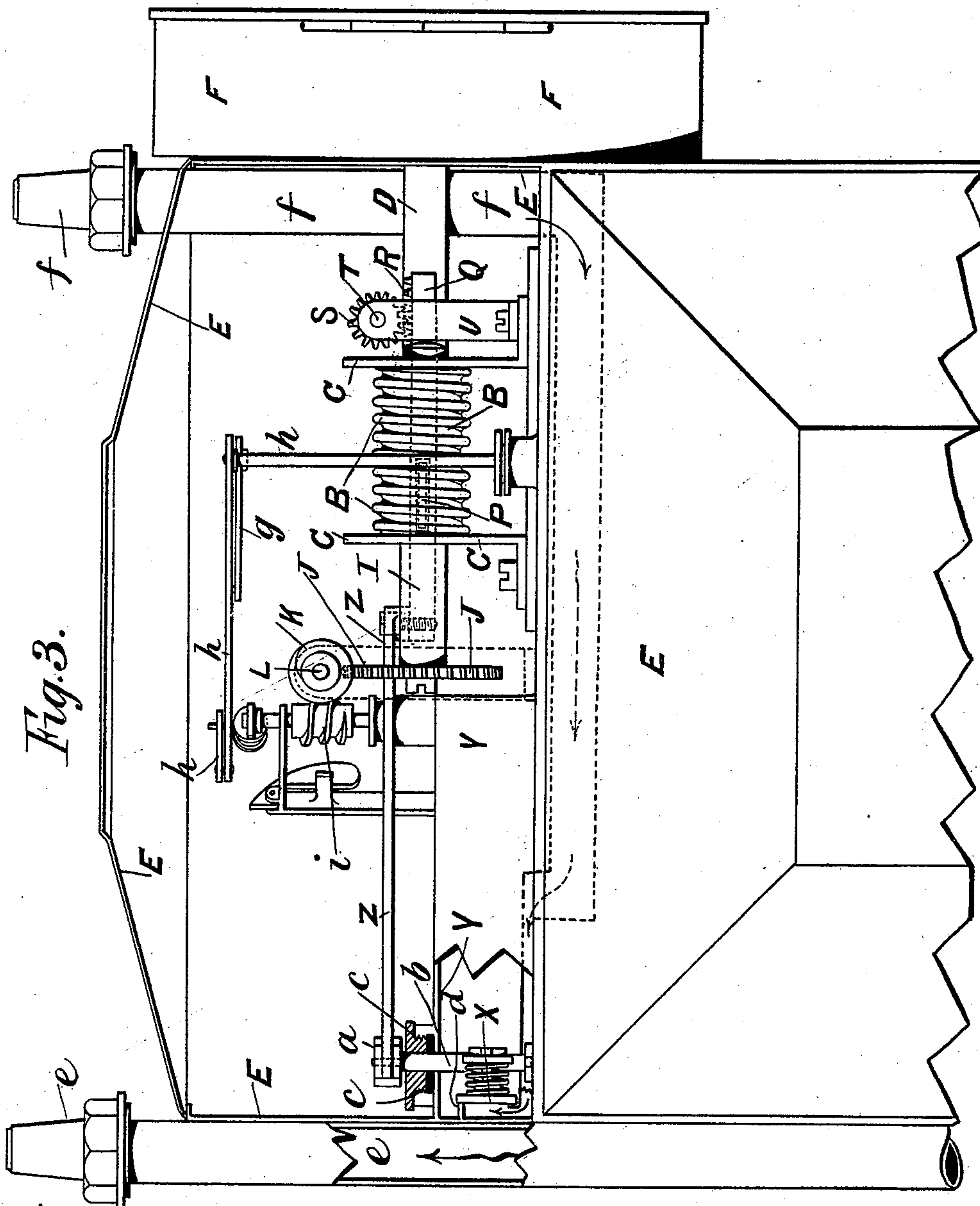
4 Sheets—Sheet 3.

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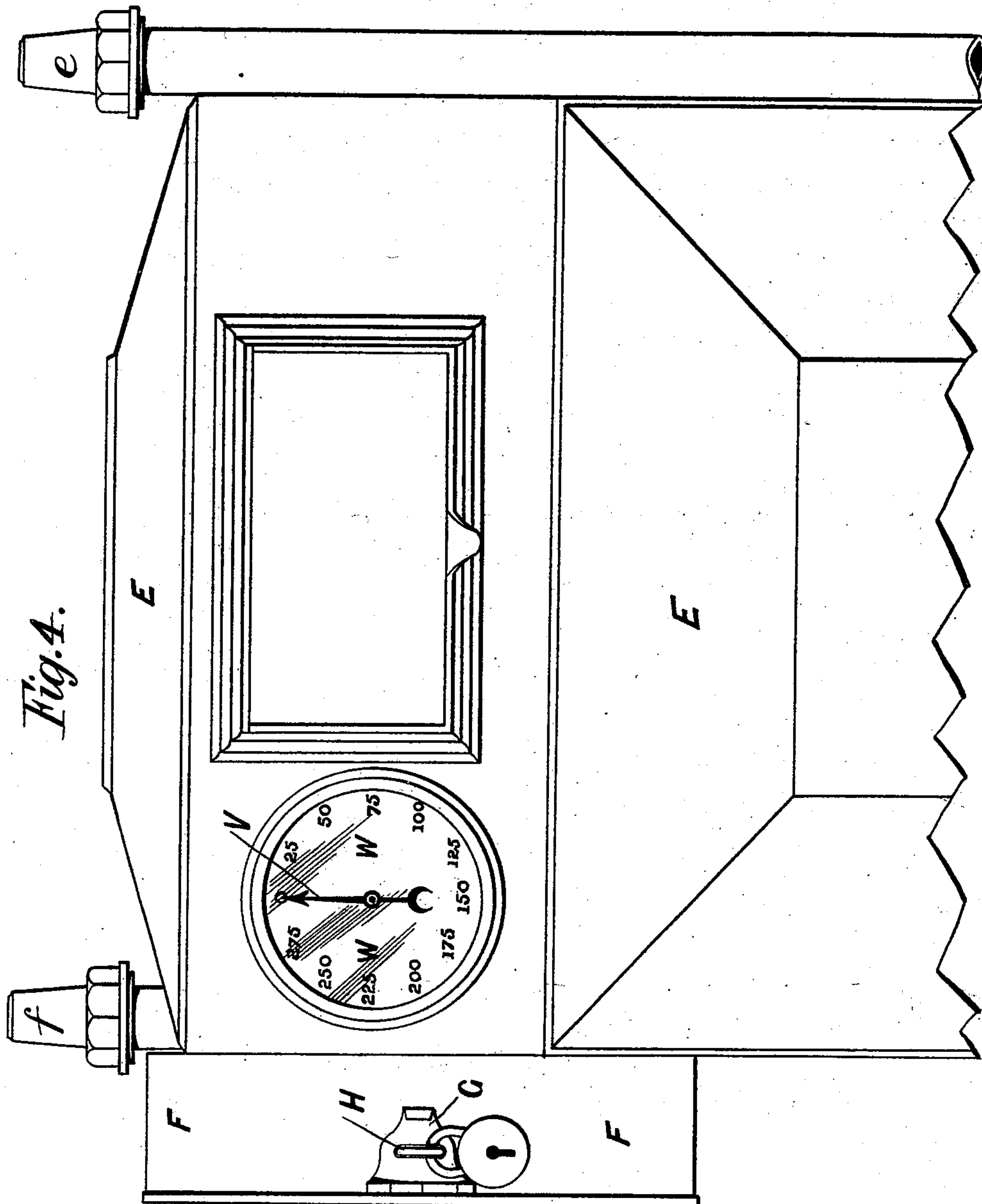
4 Sheets—Sheet 4.

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UNITED STATES PATENT OFFICE.

RICHARD THOMAS GLOVER AND JOHN GEORGE GLOVER, OF LONDON,
ENGLAND.

APPARATUS FOR USE IN CONNECTION WITH GAS-METERS.

SPECIFICATION forming part of Letters Patent No. 541,710, dated June 25, 1895.

Application filed March 18, 1895. Serial No. 542,254. (No model.) Patented in England November 24, 1894, No. 22,830.

To all whom it may concern:

Be it known that we, RICHARD THOMAS GLOVER and JOHN GEORGE GLOVER, subjects of the Queen of Great Britain, residing at 214 to 222 St. Johns Street, Clerkenwell, London, England, have invented a certain new and useful Improved Apparatus for Use in Connection with Gas-Meters, (patented in Great Britain, No. 22,830, dated November 24, 1894,) of which the following is a specification.

The object of this invention is to provide an improved apparatus for use in connection with wet or dry gas meters, its function being, first, to open a valve or faucet of a meter to admit a supply of gas to a consumer's pipes proportionate to the amount of rotative movement imparted to a screw by an inspector or other authorized person after the receipt from the consumer of an equivalent value, or if our invention be used in connection with any system of coin-freed mechanism, the necessary rotative movement may be imparted to the said screw, by the consumer turning a handle after the insertion of a given coin; second, to close the before-mentioned valve or faucet and stop the supply of gas after the amount of gas prepaid has been supplied to the consumer by the rotation of a second screw operated by the ordinary mechanism.

In order that our invention may be thoroughly understood we have appended the accompanying four sheets of drawings, in which—

Figure 1 is a top plan of an ordinary dry gas meter with the cover removed to clearly show the position and relation of our improved apparatus to the ordinary meter mechanism; Fig. 2, a part sectional front elevation. Fig. 3 is a part sectional back elevation, and Fig. 4 is an exterior front elevation of part of the meter.

Referring more particularly to Fig. 1 it will be seen that two screws A, B, respectively are mounted between the frames C, C, and have reduced ends or spindles D, I, that rotate in the bearings formed by said frames C, C. The end of one spindle D, which is partly broken away to more clearly show the rack behind it, projects through the meter casing E proper into a box F to which a hinged door

is secured by a hasp G engaging over a staple H and fastened by a lock, or it may be by a seal or other suitable device in such a manner that said door can be opened only by an inspector or other authorized person, unless it has been fraudulently forced or the end of said spindle D may be in connection with any system of coin freed mechanism inclosed within the box F. The end of the spindle I projecting from the screw B is fitted with a worm wheel J (Figs. 2 and 3) that gears with worm K fixed to a spindle L, one end of which is supported by the usual registering mechanism frame M, the other end by a pillar or bracket N.

Each screw A, B, is in gear with a pinion P on opposite sides for imparting a rectilinear motion to the bar Q, to which said pinion is pivoted, when either of the screws A B is rotated.

A rack R is cut upon or attached to one end of the sliding bar for gearing into a pinion S that is secured to a spindle T rotating in supports U, U. Upon the end of the spindle T is a small index finger V that moving over the indices of a dial W shows to the consumer the amount of gas prepaid or remaining unconsumed.

The valve X is preferably inclosed within the usual bellows valve chamber Y and is operated by means of a connecting link Z connected to the end of the sliding bar Q and the crank *a* fixed to the end of the vertical spindle *b* projecting from the stuffing box *c* of the chamber Y.

The action is as follows:—Assuming for example that the invention is not used in connection with a coin freed mechanism but that a consumer wishing to obtain a supply of gas has paid some authorized person for the delivery of a given quantity of gas, the said person then unlocks or opens the box F and by means of a key or handle turns the spindle D and screw A which by gearing into the pinion P causes it to turn upon its pivot and move over the teeth of the other screw B as upon a rack and thereby causes the bar Q to slide or move longitudinally in its bearings a distance proportionate to the number of times the screw is rotated by the official who will continue such rotations until the index finger

V has moved to the numeral representing the quantity of gas in cubic feet for which he has been paid. The longitudinal movement before mentioned of the bar Q by the intermediation of the link Z and spindle *b*, to which the valve X is connected, removes said valve from the orifice or seating *d*, and allows the gas to enter the consumer's pipes from the outlet *e*.

When being consumed the gas enters the meter by the inlet *f* and operates the bellows and usual radial link gear *g, g, h, h*, and worm *i'* in the well known manner but it also rotates the screw B by means of the worm K gearing into the wheel J fixed to the end of the spindle I. This rotation of the screw B consequent upon the passage of gas through the meter turns the pinion P upon its pivot in the reverse direction and which moving over the teeth of the first screw A as upon a rack causes the bar Q to return and move the index finger V to zero, and the valve X to close and stop the supply.

By pivoting the pinion P to the sliding bar Q and arranging said pinion P in gear between two screws A, B, it will be noticed that the bar Q and consequently the valve and index finger and gear are absolutely locked in any given position and can be moved only by the rotation of either one screw or the other to open or close the valve as the case may be. Therefore the mechanism cannot be altered or varied by persons with fraudulent intent by subjecting the meter to shock of any kind.

What we claim, and desire to secure by Letters Patent, is—

1. In an apparatus for use in connection with gas meters, the combination of two screw-threaded rods arranged parallel to each other, the sliding-bar located between said screws, a pinion pivotally carried by said bar, a gas supply valve, and mechanism connected with

said valve and said sliding-bar, whereby the said valve is opened and closed.

2. The combination with a gas-supply-valve for a gas-meter, of two axially rotatable screw-threaded shafts or rods, arranged parallel to each other, a pinion interposed between and in engagement with the threaded portions of the two shafts and adapted to rotate and travel longitudinally of one of the shafts or rods, and suitable mechanism connecting the pinion with the gas-supply-valve, substantially as and for the purposes described.

3. In an apparatus for use in connection with gas meters, the combination with two parallel screws or screw rods, of a sliding bar arranged between the same, a pinion wheel pivoted to said bar and in gear with said screws or screw rods, one of said screws or screw rods being adapted to be rotated by the consumer or other authorized person and the other being connected to and adapted to be rotated by the meter mechanism, substantially as described.

4. In an apparatus for use with pre-payment meters, the combination with two screws, a sliding bar arranged between said screws, a pinion wheel pivoted to said bar and in gear with said screws, a link connected to one end of said sliding bar, a valve connected to said link, a rack at the other end of said sliding bar, a spindle geared with said rack, and an indicator carried by said spindle, substantially as described.

In witness whereof we have hereto signed our names, in the presence of two subscribing witnesses, this 27th day of February, 1895.

RICHARD THOMAS GLOVER.

JOHN GEORGE GLOVER.

Witnesses:

ARTHUR F. WIGHTMAN,
HERBERT ERNEST HARKER.