

(No Model.)

7 Sheets—Sheet 1.

P. EVERITT.

AUTOMATIC GAS LIGHTING OR EXTINGUISHING APPARATUS.

No. 504,447.

Patented Sept. 5, 1893.

Fig. 1.

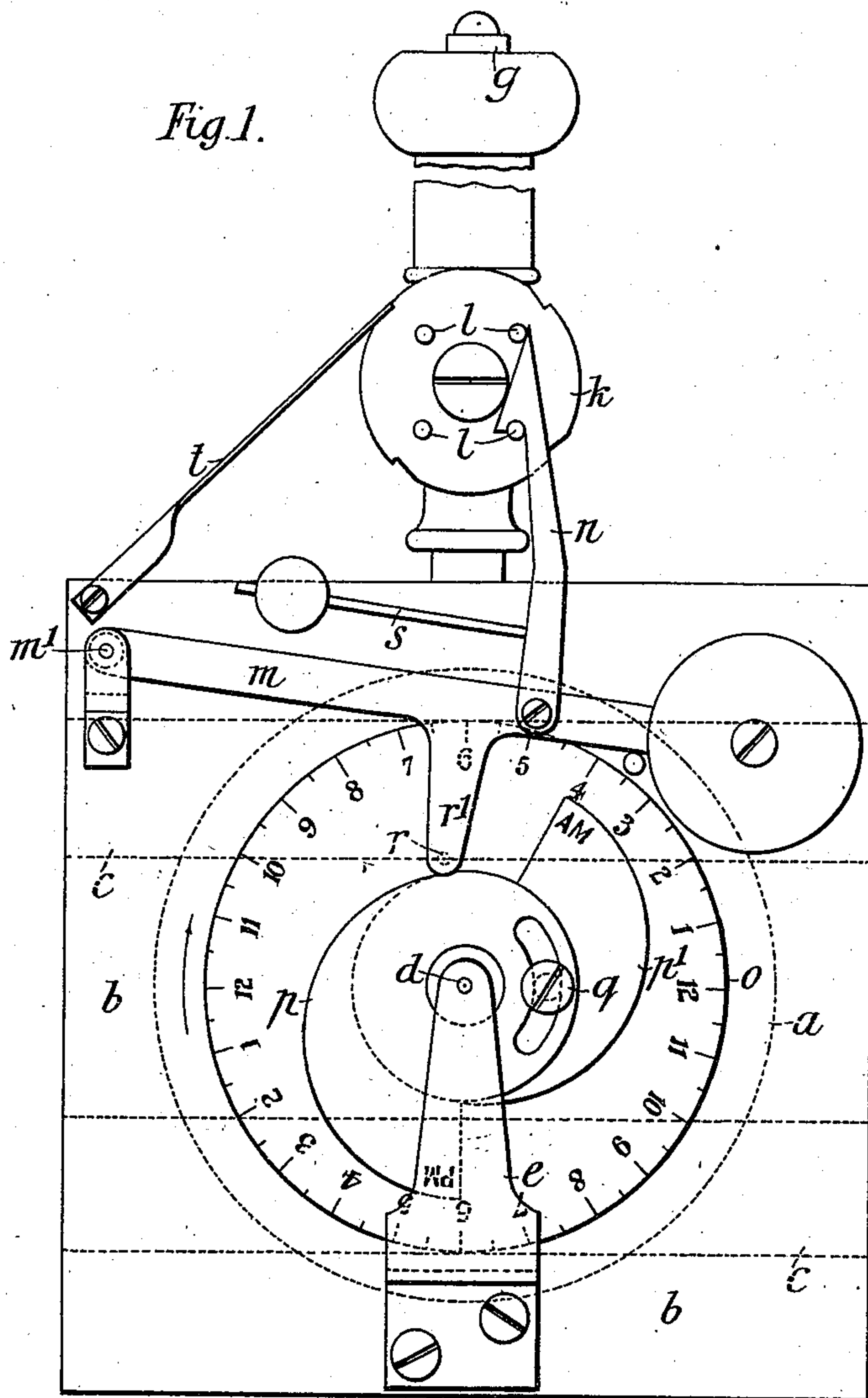
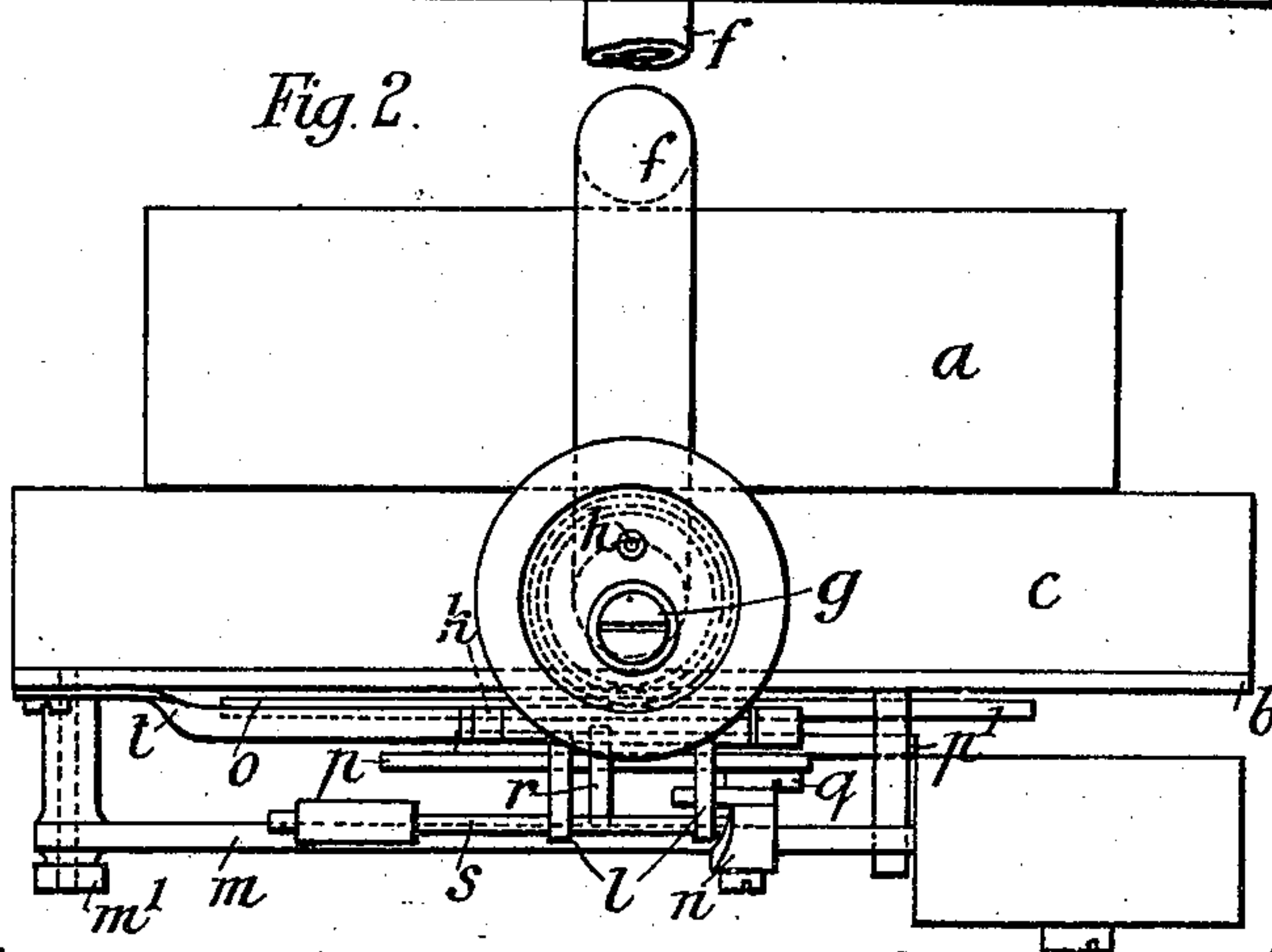


Fig. 2.



Witnesses.

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(No Model.)

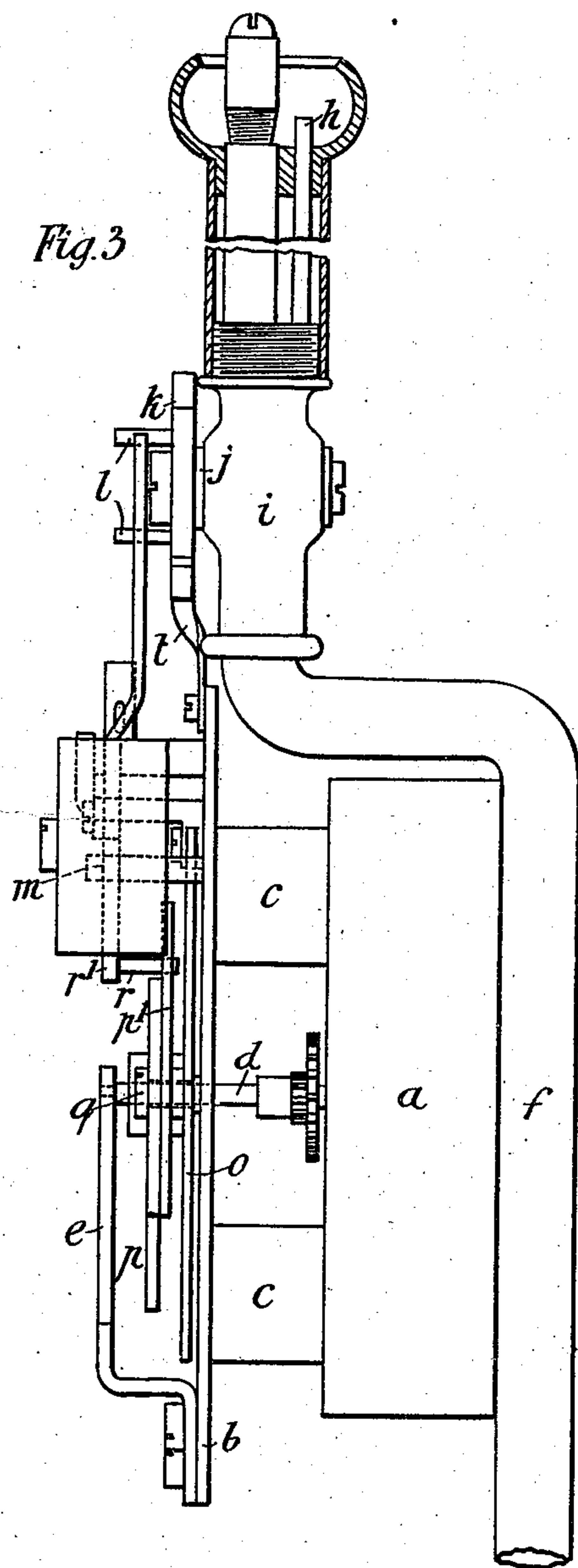
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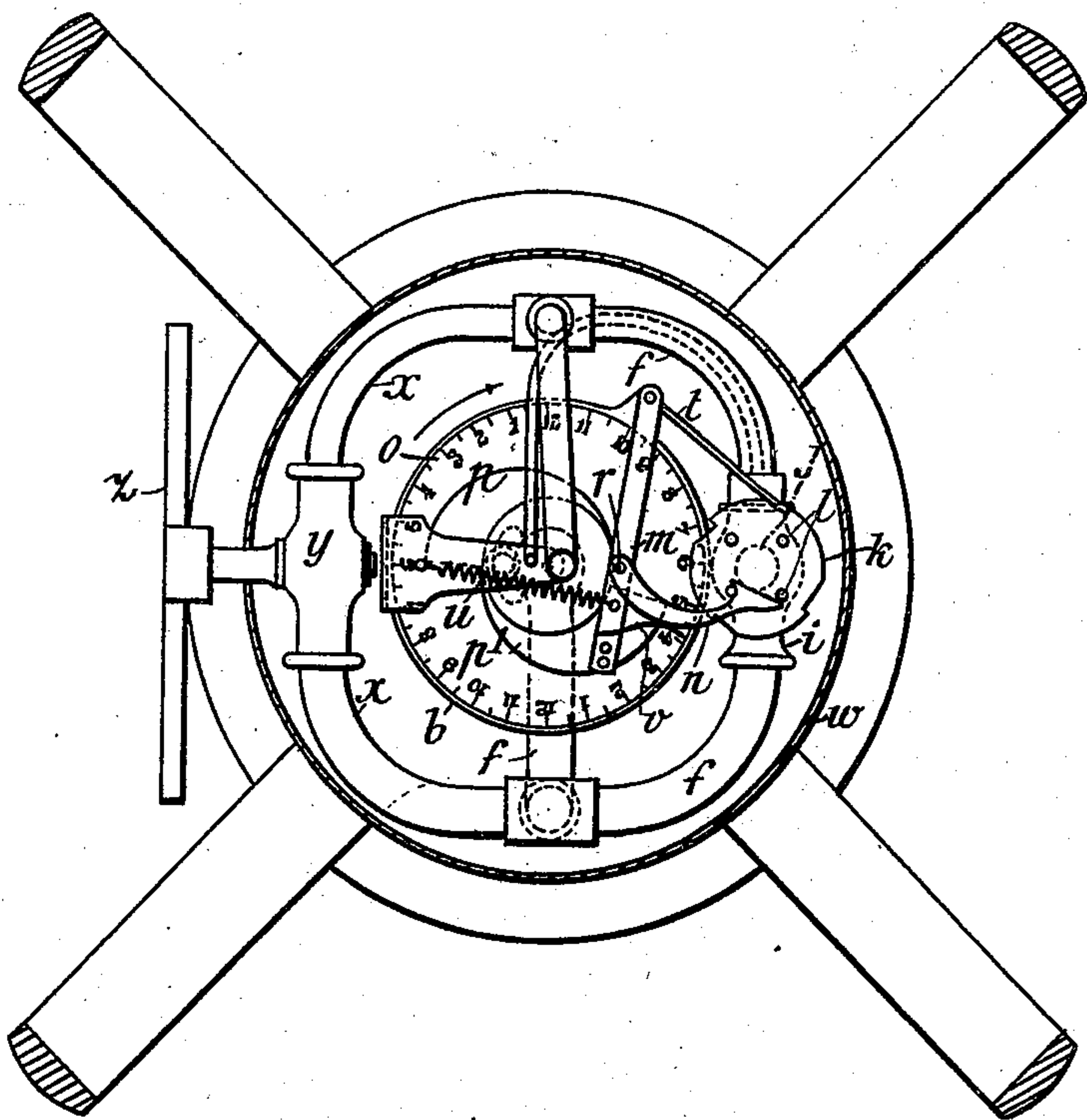
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Fig. 4



Witnesses.

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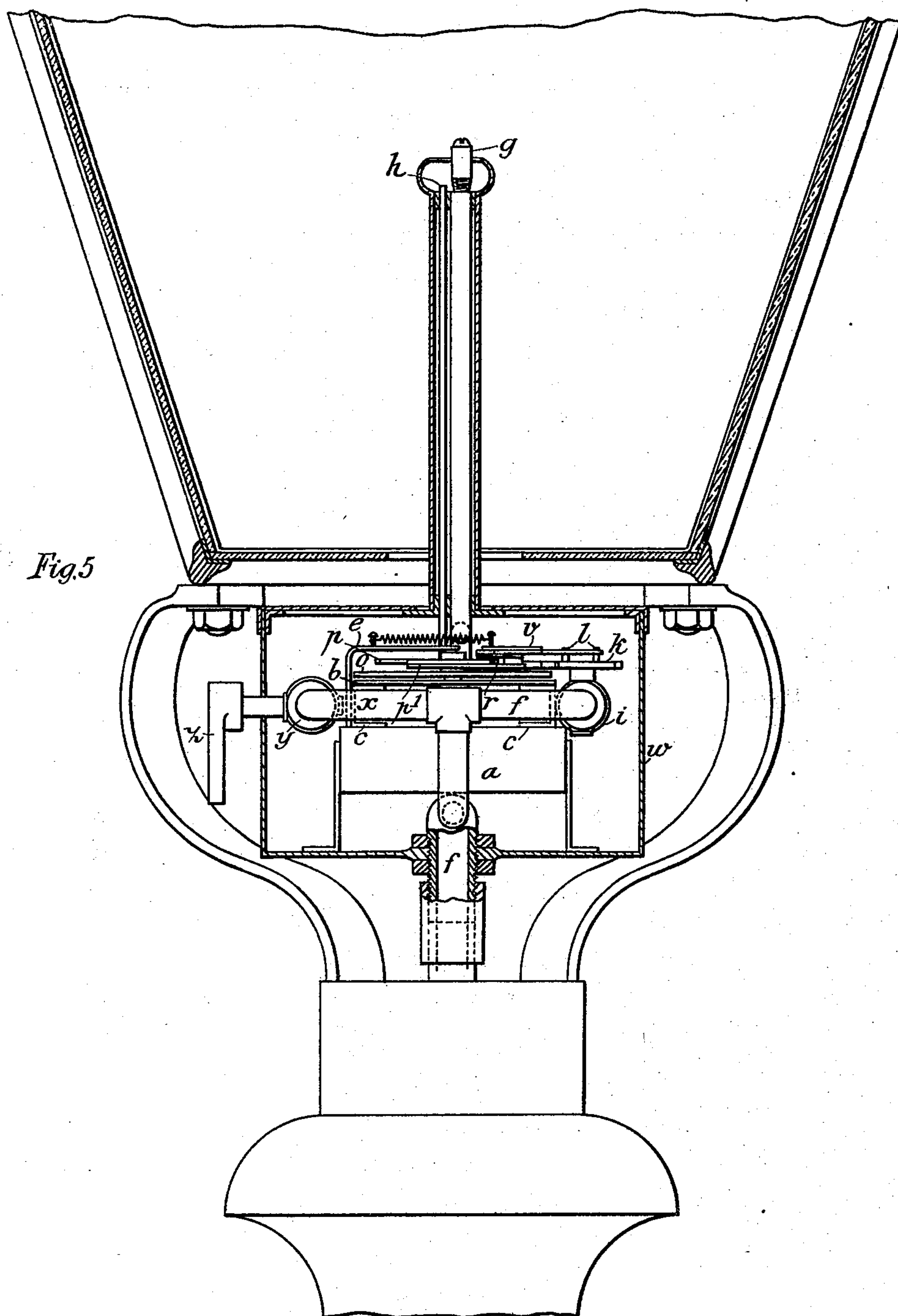
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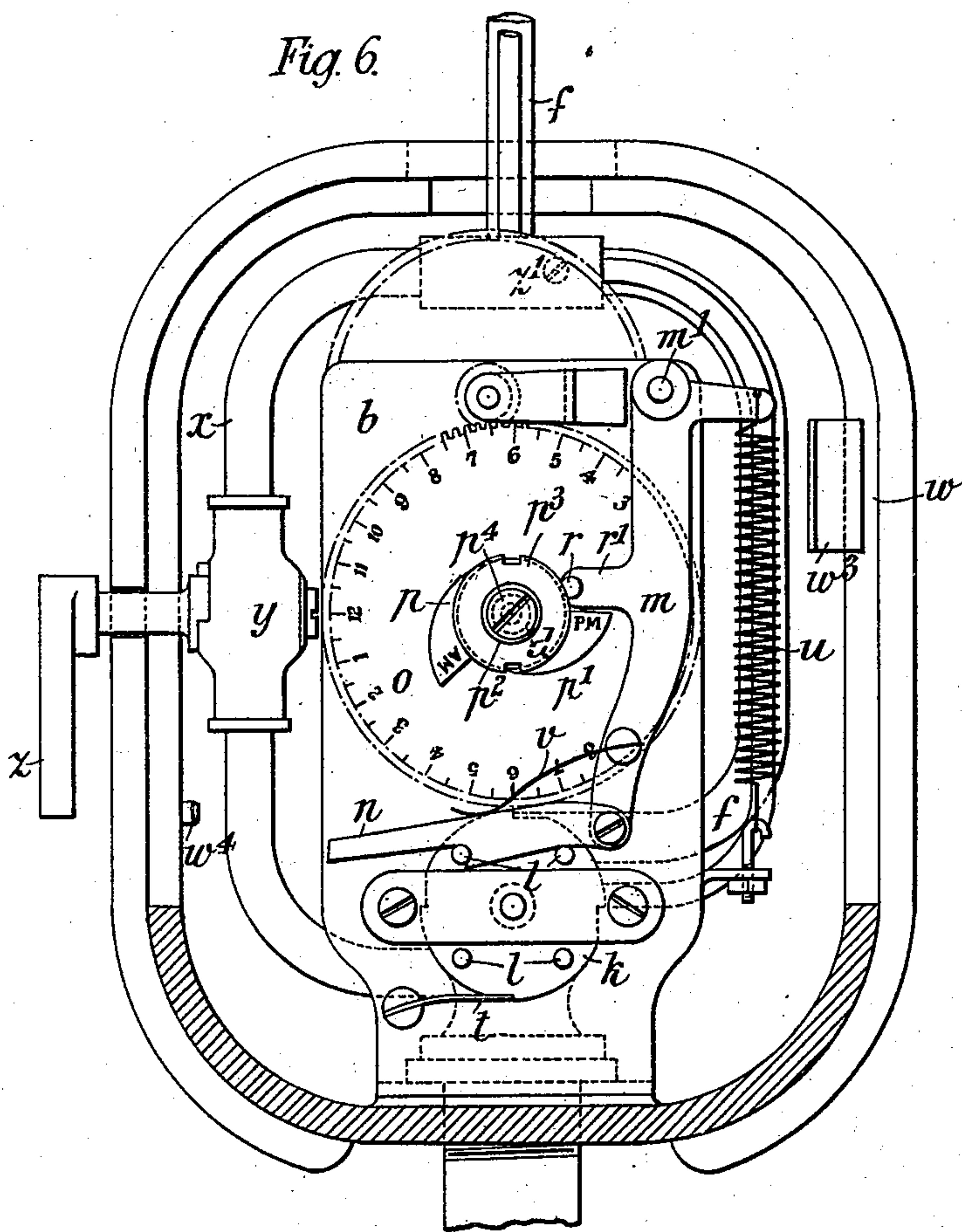
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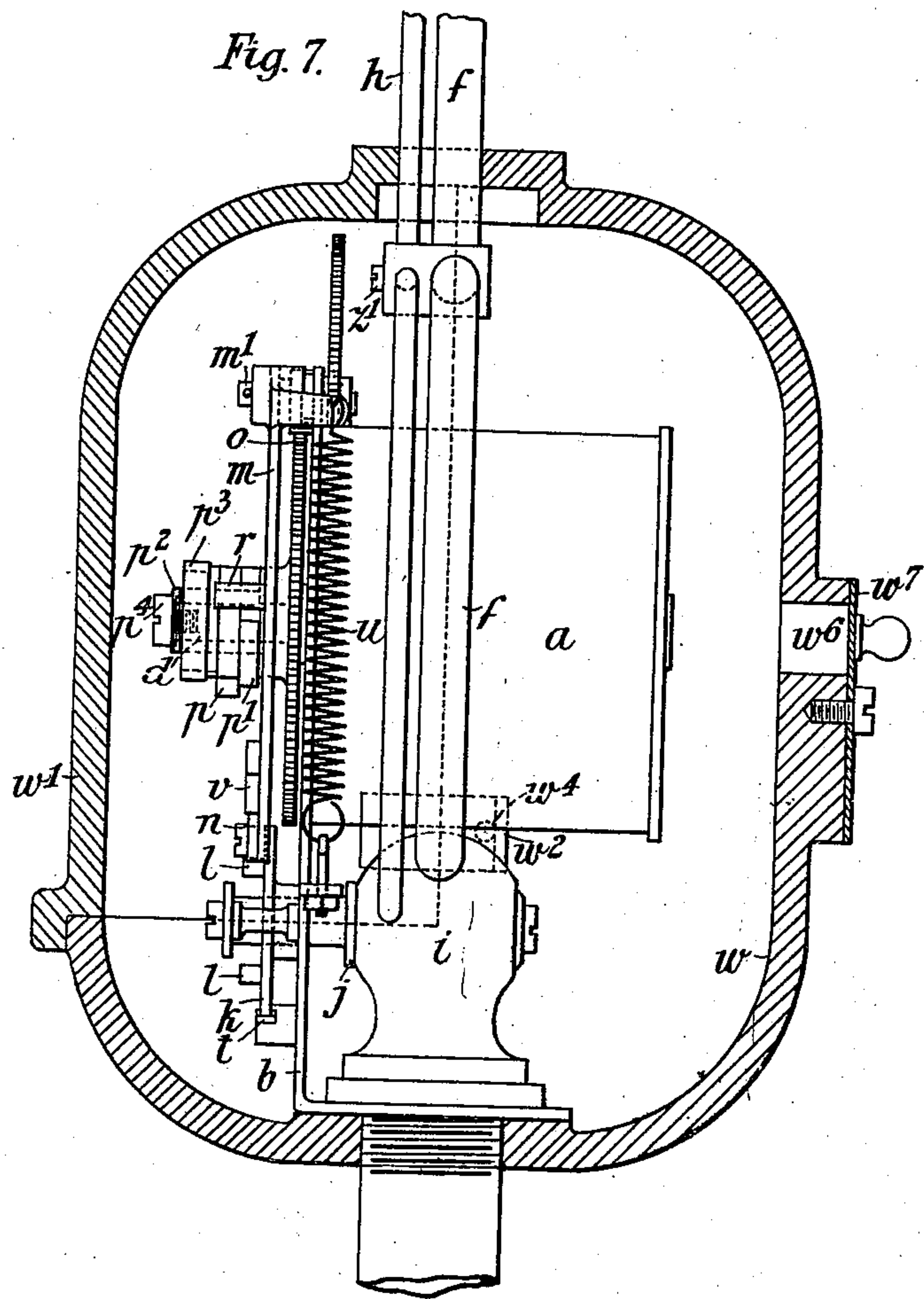
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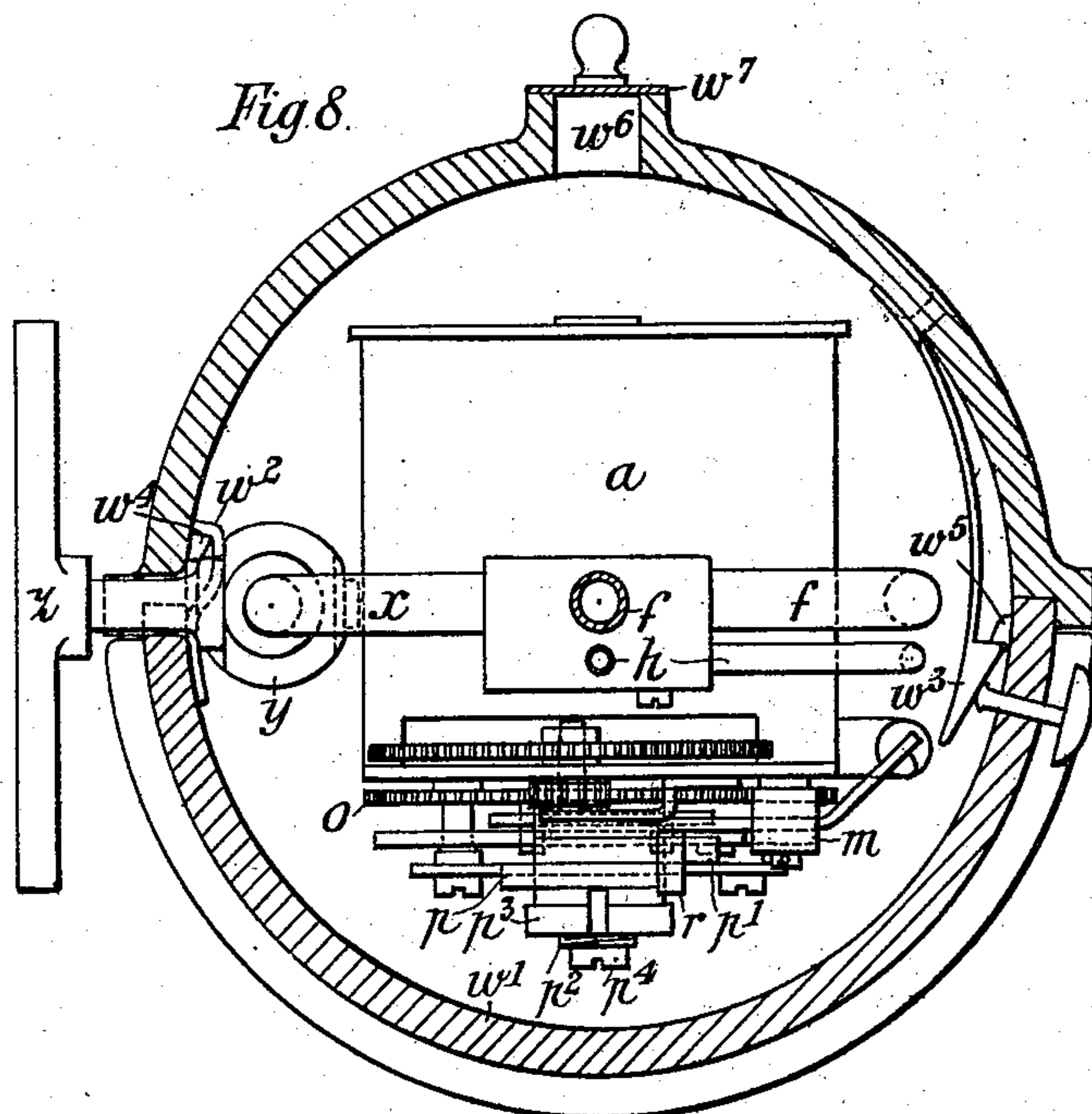
7 Sheets—Sheet 7.

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Witnesses.

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UNITED STATES PATENT OFFICE.

PERCIVAL EVERITT, OF LONDON, ENGLAND.

AUTOMATIC GAS LIGHTING OR EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 504,447, dated September 5, 1893.

Application filed December 2, 1891. Serial No. 413,805. (No model.)

To all whom it may concern:

Be it known that I, PERCIVAL EVERITT, a subject of the Queen of Great Britain, residing at London, England, have invented a new and useful Improved Apparatus for Automatically Lighting or Extinguishing Street and other Gas-Lamps, of which the following is a specification.

This invention relates to a novel and simple apparatus for automatically lighting or extinguishing gas lamps at predetermined times.

In carrying out my invention I employ a clock movement suitably fixed or connected to the lamp. The arbor of the hour wheel of the clock movement is provided with a pair of adjustable cams, adapted to operate upon a suitable clock in such a manner that as the cams revolve they raise a weight and at a certain predetermined time (which is regulated according to the adjustment of the cams) release it to operate the cock. By this arrangement the gas of the lamp to which the apparatus is applied will be automatically lighted or extinguished at predetermined times according to the adjustment of the cams which are adapted to be revolved by the clock once in twenty-four hours.

It will be obvious that instead of employing weights, springs may be used.

To enable my invention to be fully understood I will describe the same with reference to the accompanying drawings, in which—

Figure 1 is a front elevation of apparatus arranged according to my invention. Fig. 2 is a plan, and Fig. 3 is a sectional side elevation. Figs. 4 and 5 are a plan and sectional elevation respectively showing how my apparatus may be, with advantage, applied to an ordinary street lamp. Figs. 6, 7 and 8 are sectional elevations at right angles to each other and a sectional plan of a modified form of apparatus suitable for street lamps.

Similar letters of reference indicate corresponding parts in the several figures.

a indicates a case containing the clock movement, and *b* is a plate connected to the said case through the medium of the pillars or blocks *c, c* and serving as a support for parts of the mechanism.

d is the arbor of the hour wheel of the clock mechanism, such arbor passing through the

plate *b* and being carried at its outer end in a bracket *e* secured to the said plate.

f is the gas supply pipe provided at its upper end with the ordinary burner *g* and with a burner *h* for a pilot flame, and *i* is the cock for controlling the passage of the gas through the said pipe *f* and having the plug *j*, to which is secured a disk *k* having upon it pins *l, l*.

m is the weighted lever for operating the plug *j* of the cock *i*, the said lever being pivoted to the plate *b* at *m'* and having connected to it the pawl catch or hook *n* adapted to engage with the pins *l, l*.

o is the dial graduated for the twenty-four hours of the day and secured to the arbor *d*, and *p, p'* are the cams by means of which the lever *m* is raised. These cams are mounted upon the arbor *d* but are independent thereof and of each other, so that they may be adjusted relatively to each other according to the time at which the gas is to be lighted or extinguished and being independent of the arbor, may be slipped off and replaced by others if desired. As shown in Fig. 1, the cams are set to light the gas at 6 p. m. and to extinguish it at 4.15 a. m.

q is a screw which passes through slots in the cams into the dial *o* and the tightening of which serves to hold the said cams in any position in which they may be placed.

The operation of the apparatus hereinbefore described is as follows, that is to say, assume the parts to be in the position shown in Fig. 1, then, as the arbor *d* rotates in the direction of the arrow the cam *p* acts upon a pin *r*, secured to the extremity of an arm *r'* upon the lever *m*, and causes the raising of the said lever whereby the catch *n* engages with the pin *l* above that with which it is shown in engagement in the drawings. When the highest part of the cam has moved beyond the pin *r* the weight on the lever *m* causes the said lever to drop and the hook *n* to pull round the plug of the cock *i*, thereby allowing gas to pass to the burner *g* where it will be lighted by the pilot flame; as the rotation of the arbor *d* continues the other cam *p'* gradually raises the lever *m* to engage the hook *n* with another pin, the lever being allowed to fall at a predetermined time ac-

according to the setting of the disks, thereby shutting off the gas and leaving the pilot flame burning. It will be understood that the plug of the cock *i* is turned a quarter of a revolution at each downward movement of the lever *m* the movement of the said plug being always in the same direction.

s is a weighted arm attached to the pawl *n* and serving to keep it in contact with the pins *l*, and *t* is a spring catch or detent for preventing the plug *j* from being rotated in a backward direction.

To prevent the plug of the cock *i* from being turned too far under the impulse which it receives when the weighted lever *m* drops, I shape the head of the hook *n* in such a manner that, when it has rotated the plug *j* to the required extent by the engagement with one of the pins *l*, the next following pin will come into contact with the head of the said hook and prevent any further rotation of the disk, as shown most clearly in Fig. 1.

In the arrangement of my invention shown in Figs. 4 and 5, where the apparatus is applied to a street lamp, it will be noticed that the parts are arranged to work horizontally: in this case, instead of weighting the lever *m*, I arrange in conjunction therewith a spring *u*, and, instead of the weight upon the pawl *n*, I arrange the spring *v*: in this arrangement also, the mechanism is shown as inclosed in a case *w* the lid of which is made removable in order to afford access to the interior thereof for adjusting the positions of the cams.

In the modified form of apparatus for street lamps shown in Figs. 6, 7 and 8 the general arrangement of the parts is substantially the same as hereinbefore described with reference to Figs. 4 and 5. In this modification however the parts are placed vertically and instead of securing the cams *p*, *p'* to a disk *o* upon the arbor of the hour wheel, I arrange the said hour wheel itself to serve as the disk the said hour wheel which in Figs. 6 and 7 is indicated by the letter *o* being adapted to rotate upon the arbor *d* fixed to the plate *b*. The cams *p*, *p'* are carried upon the boss *p²* of the hour wheel and adapted to be clamped thereon in any position in which they may be adjusted by a nut *p³*. *p⁴* is a screw introduced into the end of the arbor *d* to retain the hour wheel *o* thereon. In this modification also the case *w* is provided with a removable part *w'* which is retained in position by a hook *w²* at one side and a spring catch *w³*

on the other side, the said hook and spring catch engaging respectively with pins *w⁴*, *w⁵*, the former of which is upon the fixed part of the case while the latter is upon the removable part. *w⁶* is an opening through which the key for winding the clock mechanism can be introduced the said opening being normally closed by a pivoted cover *w⁷*.

When my invention is applied to street lamps it is necessary that in some cases, for instance in foggy weather, it should be possible to light or extinguish the gas independently of the automatic mechanism, I therefore provide a by-pass around the cock *i* through which the gas may be allowed to pass direct to the burner, such by-pass in Figs. 4, 5, 6, 7 and 8 is indicated by the letter *x*. *y* is a cock placed in this by-pass and provided with a lever *z* by means of which the cock may be opened or shut by a lamplighter in the ordinary manner. *z'* Figs. 6, 7 and 8 indicates a screw which I advantageously place in the gas passage for the pilot flame for controlling the supply of gas thereto.

It is obvious that the adjustable cams can be made to release the cock or valve, which latter is operated by a weight or spring previously wound up, instead of the cams lifting the weight.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. Apparatus for automatically lighting and extinguishing gas, having in combination with a clock movement and with an illuminating burner and also with a pilot or lighting burner, two eccentric cams on a common arbor and at any desired angle relatively to each other, a re-acting or drop lever *m*, actuated by said cams, a pawl catch or hook actuated by said lever, a stop-cock actuated by said catch, and a by-pass *x* around the cock, all substantially as set forth.

2. In combination, a clock movement, cams on a common arbor and at any desired angle relatively to each other, means substantially as described for letting on and cutting off the gas, a by-pass *x* around the cock through which the gas may if desired be allowed to pass direct to the burner, and a cock in such by-pass.

PERCIVAL EVERITT.

Witnesses:

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