

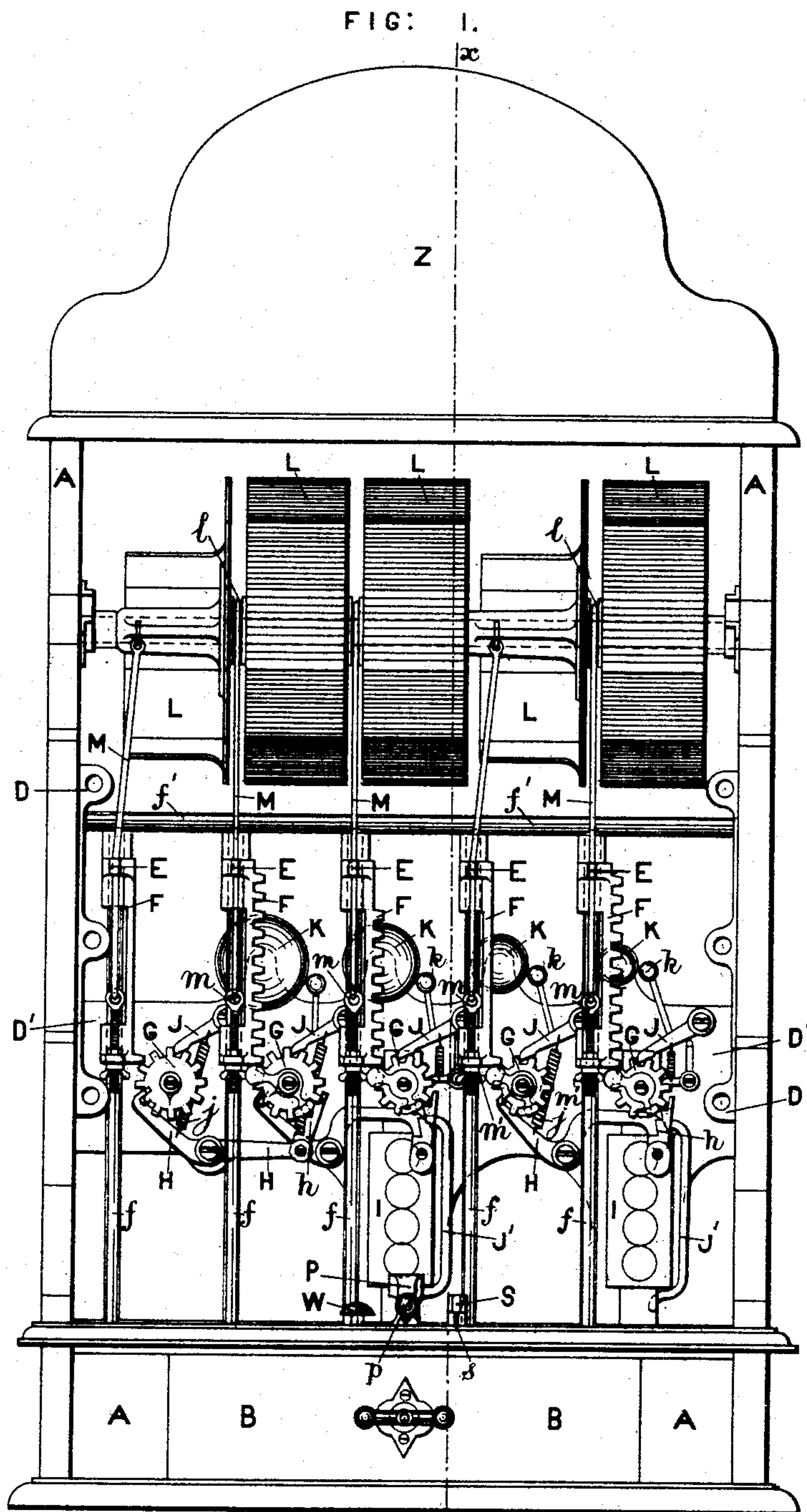
(No Model.)

6 Sheets—Sheet 1.

J. E. FARROW & J. MCG. CARSON.  
CASH INDICATOR AND REGISTER.

No. 410,685.

Patented Sept. 10, 1889.



WITNESSES

*C. O. O'Brien*  
*William H. Taylor*

INVENTORS

*J. E. Farrow*  
*J. M. Carson*

(No Model.)

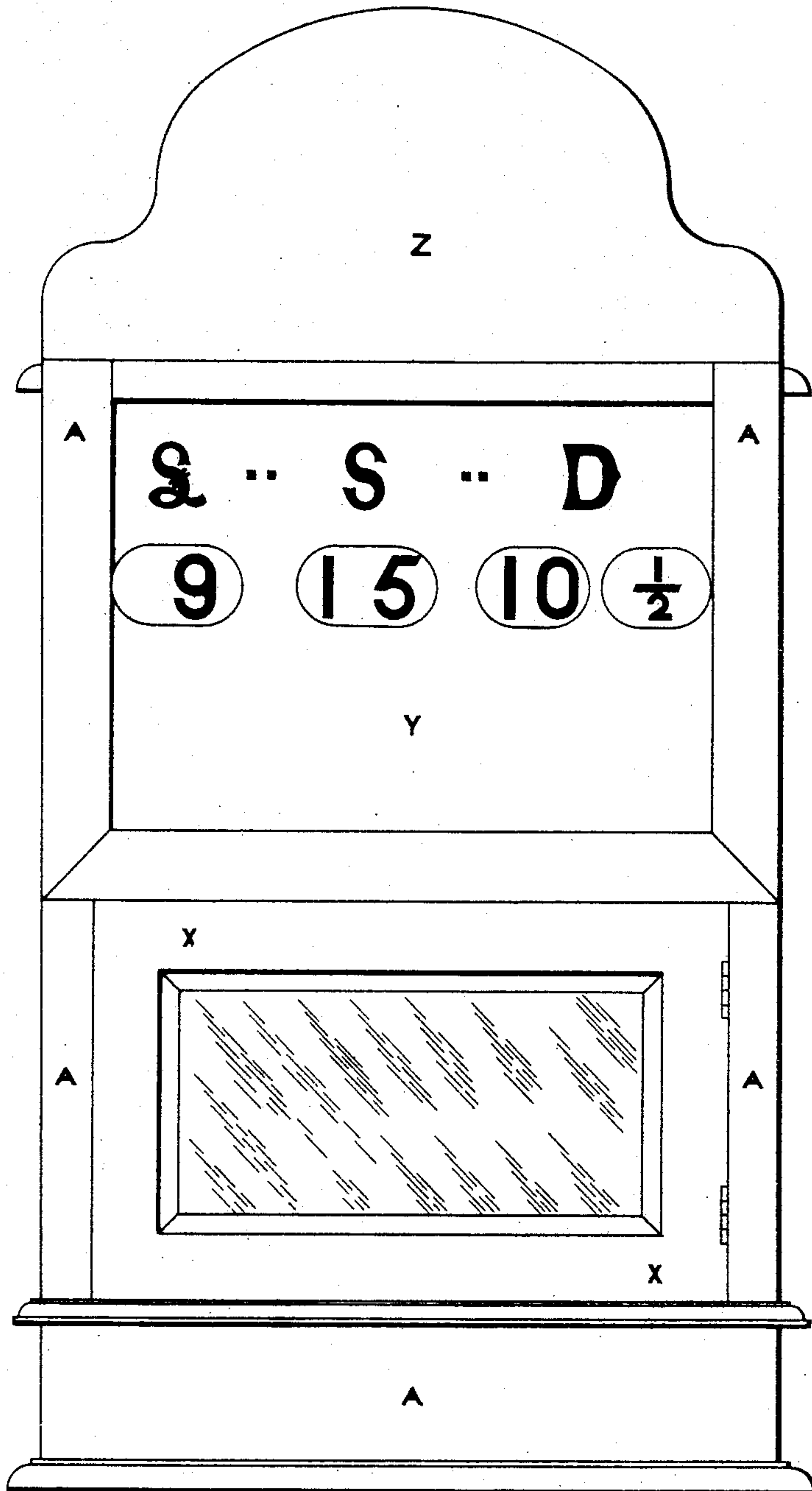
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FIG. 2.



WITNESSES

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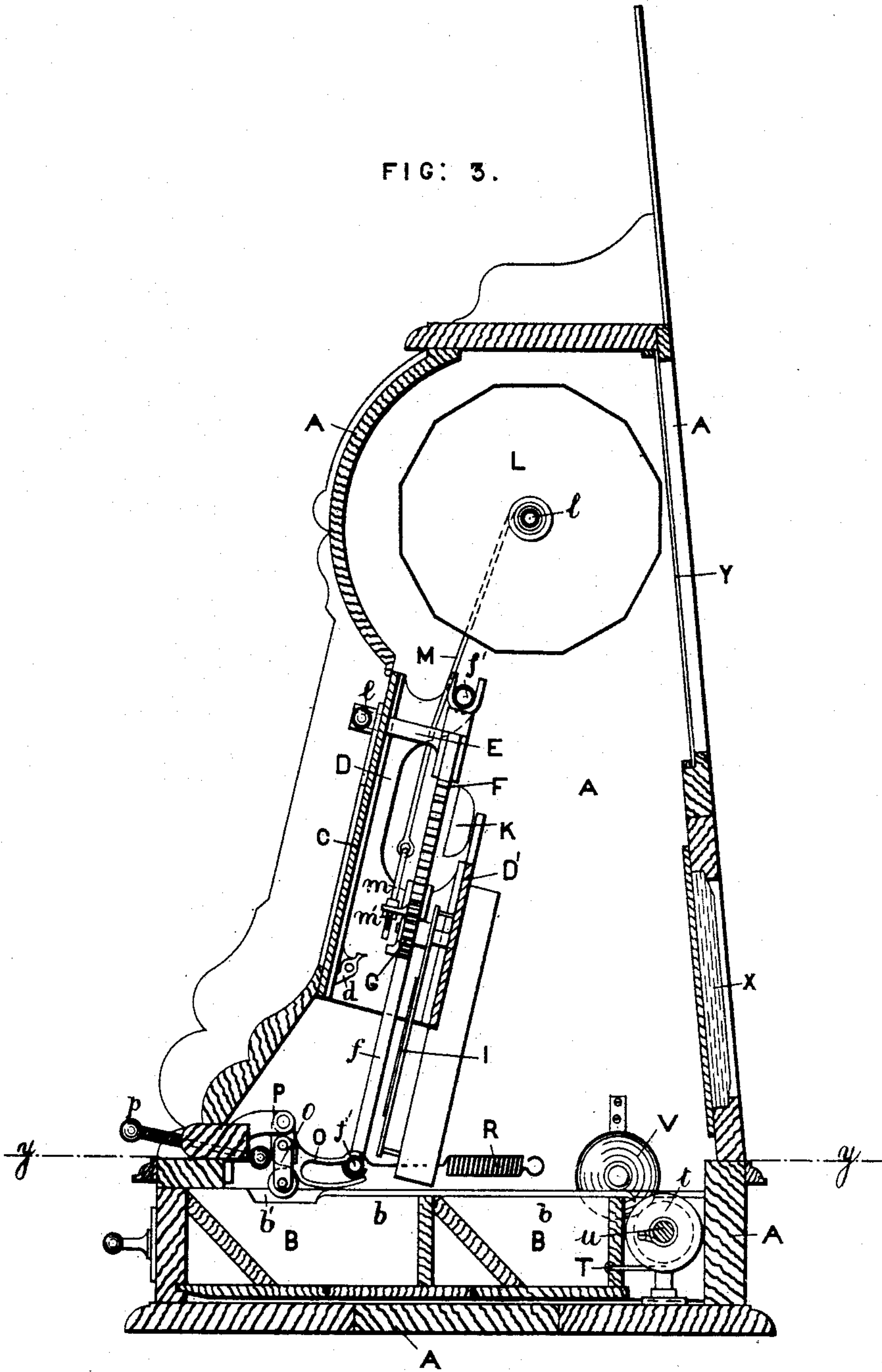
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FIG. 3.



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(No Model.)

6 Sheets—Sheet 4.

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FIG: 5.

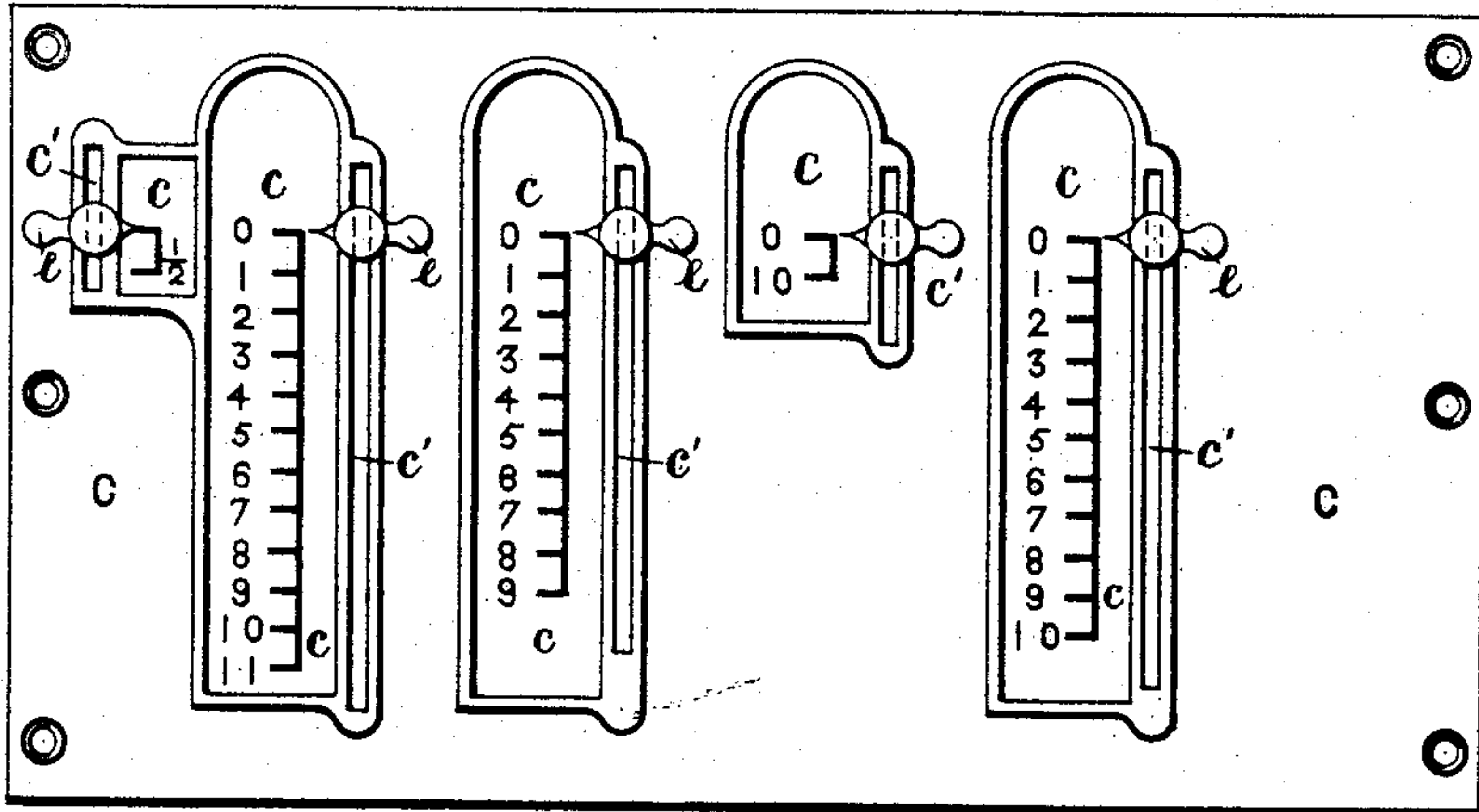


FIG: 6.

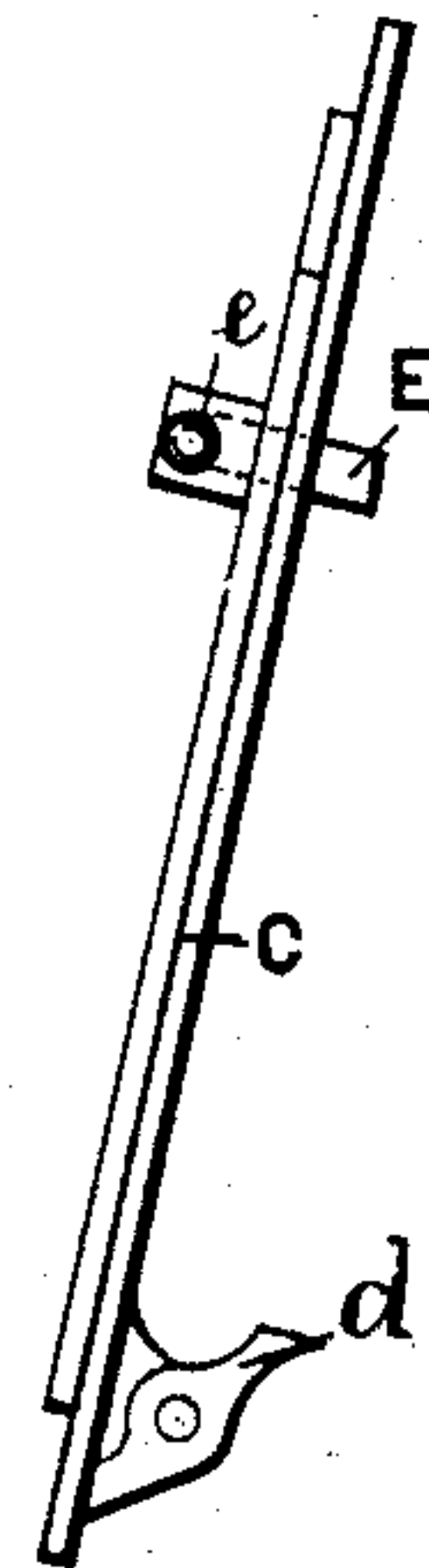
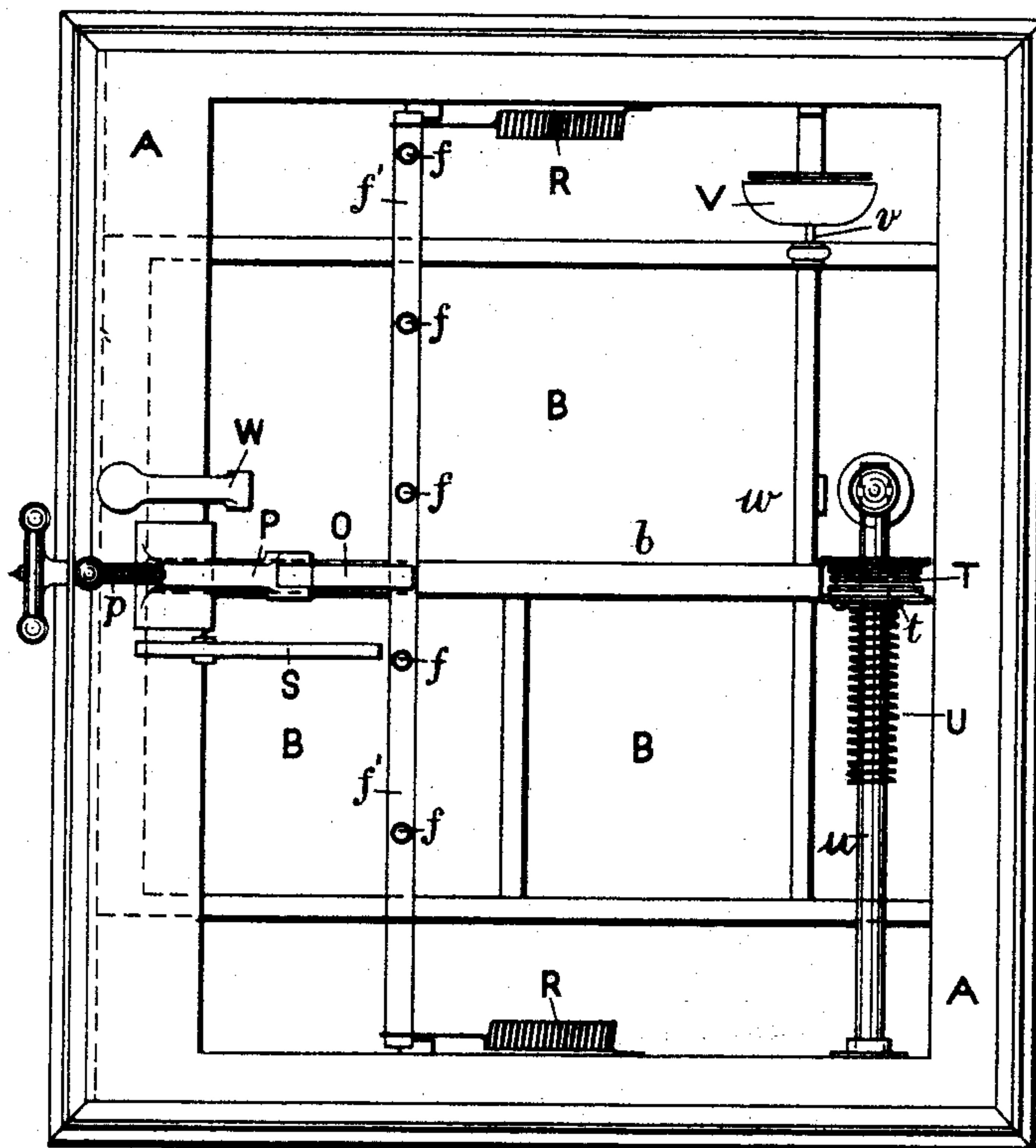


FIG: 4.



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(No Model.)

6 Sheets—Sheet 5.

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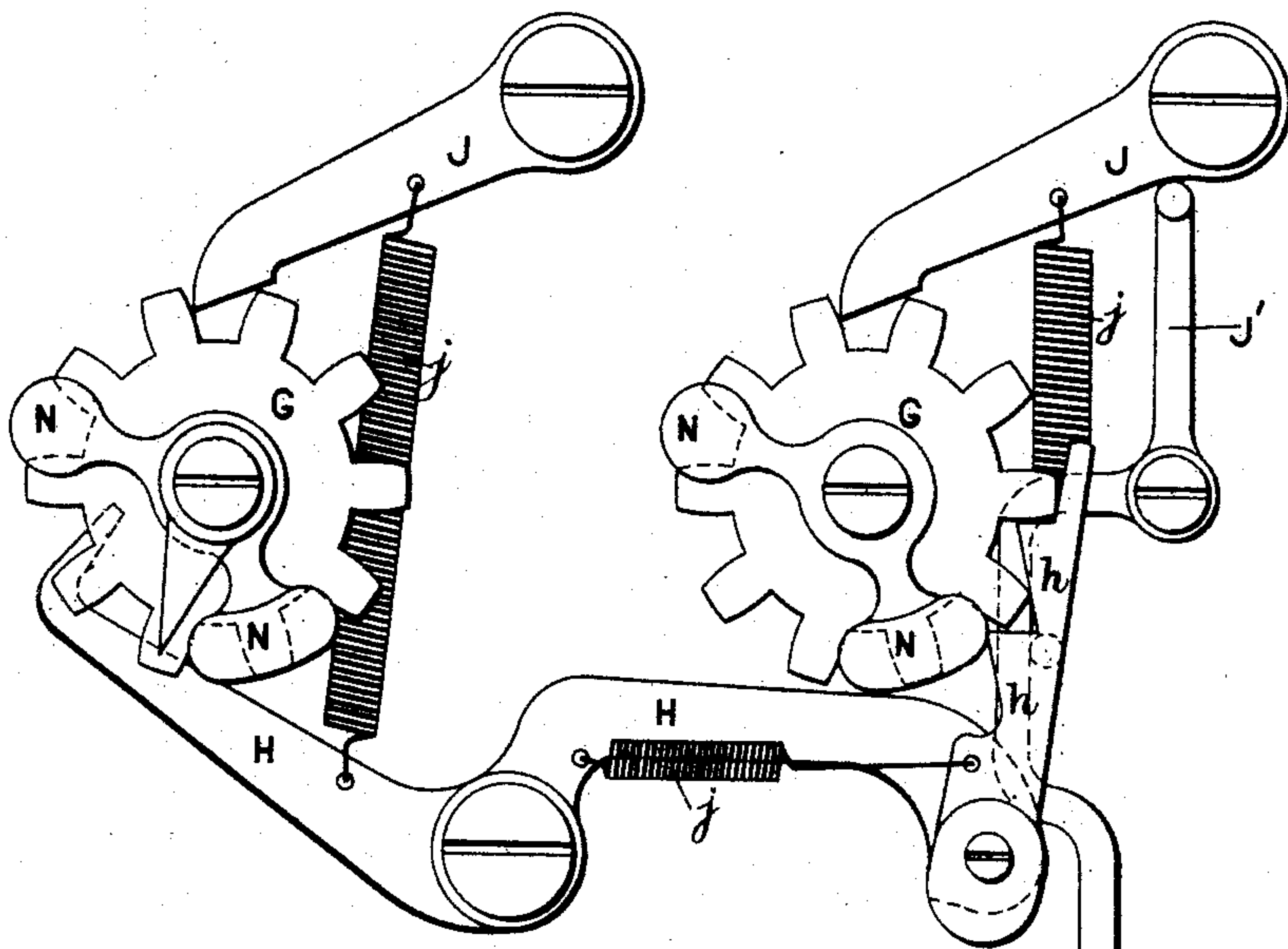


FIG. 7.

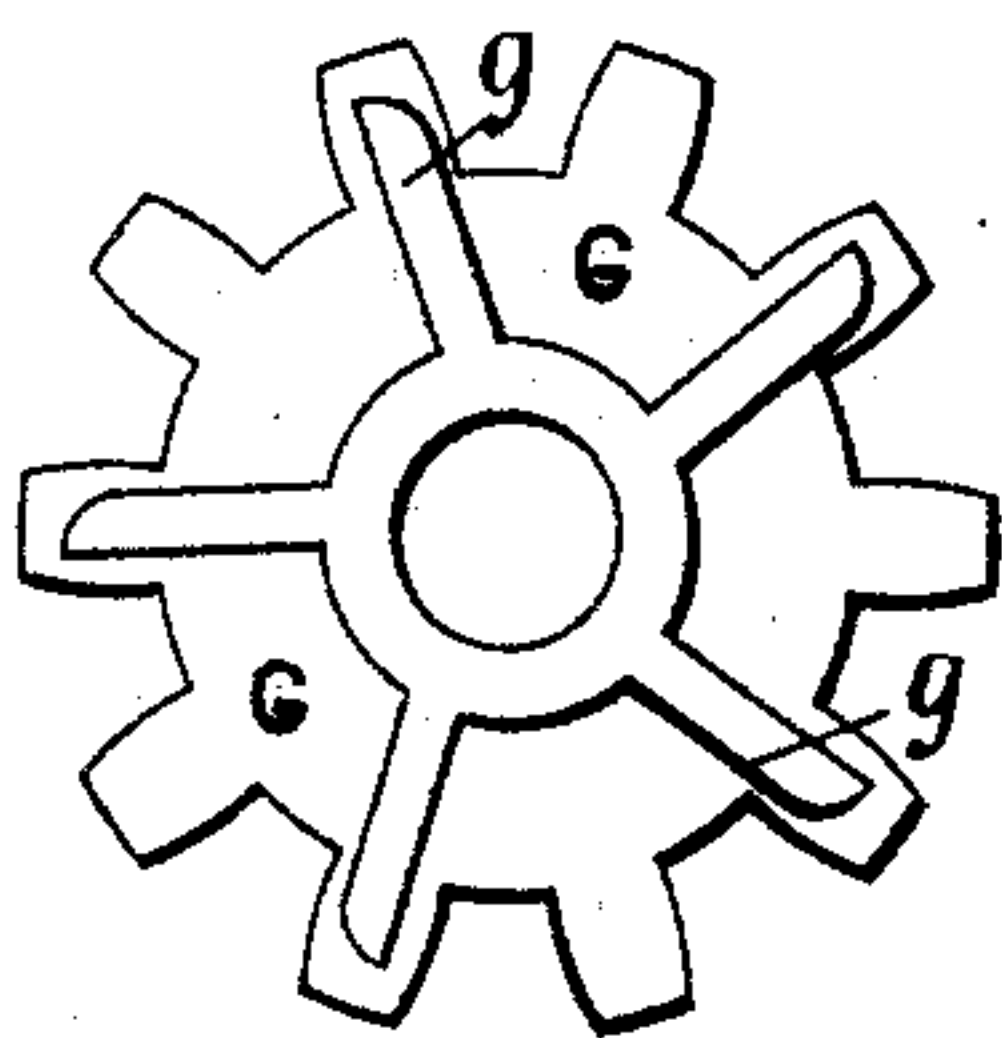


FIG. 8.

WITNESSES

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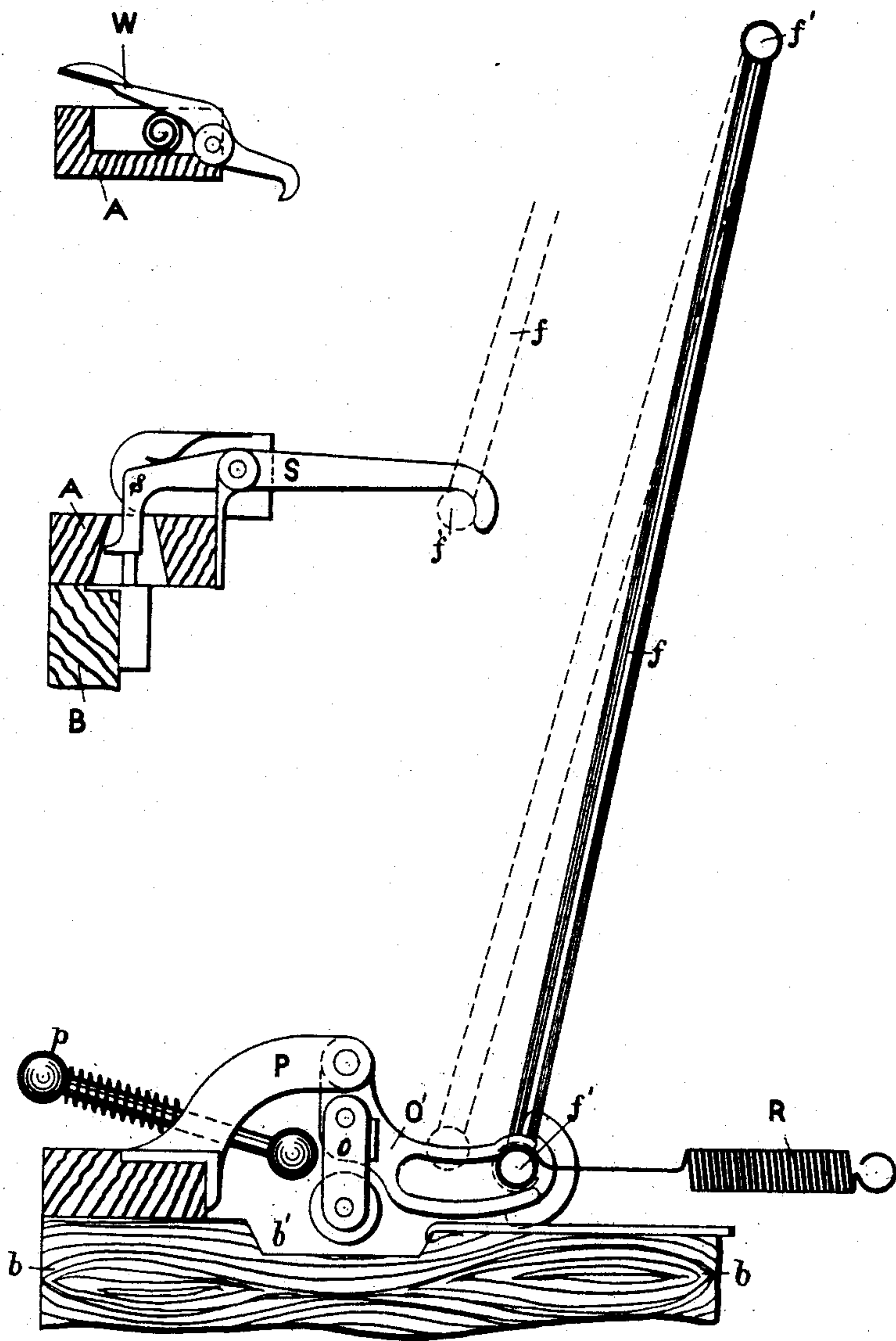
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WITNESSES

FIG: 9.

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# UNITED STATES PATENT OFFICE.

JAMES E. FARROW, OF SOUTHPORT, AND JAMES MCG. CARSON, OF SALFORD,  
COUNTY OF LANCASTER, ENGLAND.

## CASH INDICATOR AND REGISTER.

SPECIFICATION forming part of Letters Patent No. 410,685, dated September 10, 1889.

Application filed May 29, 1888. Serial No. 275,524. (No model.) Patented in England September 1, 1887, No. 11,856.

*To all whom it may concern:*

Be it known that we, JAMES EDWARD FARROW, of Southport, in the county of Lancaster, in the Kingdom of England, decorator, and JAMES MCGUFFOG CARSON, of Salford, in the said county, agent, both subjects of the Queen of Great Britain, have invented certain new and useful Improvements in Cash Indicators and Registers, (for which we have applied for Letters Patent in Great Britain, No. 11,856, bearing date September 1, 1887,) of which the following is a specification.

This invention relates to that class of cash indicators and registers designed chiefly for use on shop-counters and similar places where in the sum of money paid by the customer is to be deposited in a drawer and registered and the amount displayed by the action of opening the drawer and the manipulation of certain keys or levers. The object of this apparatus is to keep a correct account of each transaction, with the amount received, and to serve as a check to prevent fraud on the part of the shop assistant or operator.

Several apparatus of different sorts have heretofore been designed for this purpose. In one the amount has been written on a traveling paper band and displayed under a small glass plate. In another the money itself has been disclosed to view for a certain length of time after the transactions, while in another the amount of each transaction is counted upon a certain number of finger plates or keys, each of which communicates with a lever carrying an indicator engraved with the same amount, and which is raised and displayed in a prominent position. We consider either of these apparatus imperfect for the purpose for which they are designed.

Our apparatus we construct to indicate always in the same position, in a prominent place, in plain, bold figures the amount of the purchase or the sum to be deposited in the cash-drawer and at the same time to keep a correct account of the amounts that have from time to time been deposited. It will best be understood by reference to the accompanying drawings.

Figure 1 is an elevation of the apparatus, looking at the front or operating side with

the front of the casing removed; Fig. 2, an elevation looking in the opposite direction; Fig. 3, a transverse sectional elevation on line  $x x$ ; Fig. 4, a sectional plan on line  $y y$ ; Fig. 5, a front elevation, enlarged, of index-plate; Fig. 6, an end elevation of index-plate; Fig. 7, a front elevation, enlarged, of the counting-wheels and their connecting-levers; Fig. 8, a back view of wheel G; Fig. 9, a side elevation, enlarged, of the operating apparatus for returning the racks and their pointers to normal position, or zero, of the locking apparatus and of the catch for the drawer.

The apparatus may be constructed of any convenient shape or form, with a casing A, preferably made of wood—such as mahogany, walnut, oak, pine, or the like—and polished or painted, as may be required. Instead of wood, however, the casing may be made of iron or other suitable material. Below or in the bottom of the apparatus is placed a cash-drawer B, divided into the usual compartments to receive the different denominations of money or coin, and in the front or operating side is placed the index-plate C, which is provided with a certain number of scales  $c$ , on which are inscribed different denominations or amounts of money.

The apparatus shown is designed for use with English money, and to indicate a purchase of any amount between one half-penny and twelve pounds. The apparatus may, however, be constructed for use with any denomination of money or coin, and to indicate up to any amount that may be required by a simple addition to or adjustment of the several parts of the mechanism. The apparatus will therefore be herein described, as shown, with reference to the counting of English money in three denominations—pounds, (£,) shillings, (s,) and pence, (d.)

The index-plate C is formed with slots  $c'$ —one corresponding with each of the scales  $c$ —and through each slot projects a connecting rod or piece E, carrying at its outer end an index finger or pointer  $e$ . The lever E is attached to or forms part of a sliding rack F, which moves with it, and in turn operates or rotates a pinion G. Each rack F is fitted to and is capable of sliding up and down upon



a rod or pillar *f* of a swinging or pivoted frame formed of the upright rods *f* and the cross-rods *f'*, top and bottom. The racks *F*, as shown, have a varying number of teeth, 5 which is required for the counting of English money from one denomination to another; but when used for a decimal coinage the number of teeth on each rack would be the same.

Gearing with each rack *F* is a pinion *G*, 10 which moves one tooth for each tooth moved by the rack. The back of the wheels *G* are formed with one or more projecting pieces or teeth *g*, which, as the wheel rotates, come in contact with the levers *H* and transmit a 15 movement to the next wheel. This combination of levers is shown enlarged in Fig. 7. These wheels as the machine is operated thus transmit motion from one to the other at each revolution, and thence to a series of registering-dials *I*, upon which are added up and registered the total amount of the transactions. In Fig. 1 five racks and pinions are shown. The first one, at the left-hand side, is for half- 25 pence and requires but one tooth, the second corresponds with the index-plate for pence and registers up to eleven. The pinion *G* in connection with it has twelve teeth, and at each revolution a shilling is counted and the levers move the next wheel *G* on one tooth. 30 The third rack and pinion corresponds with the units of shillings, and at each revolution of the wheel ten shillings is registered on the dials *I*. The fourth rack and pinion is the tens of shillings, and as every two teeth are 35 moved one is passed on to the pounds and registered on the second set of dials *I*. The wheels shown in Figs. 7 and 8 are the tens-of-shillings wheel has ten teeth, and as every 40 second tooth is revolved one of the teeth *g* on the back depresses the lever *H* at one end and raises it at the other, and with it the lever *h*, which gears or meshes with the teeth of the other wheel and advances it one tooth. 45 *J* are catch-levers or pawls to prevent any movement of the wheels *G* in the reverse direction. They are held in position by springs *j*.

*J'* is a lever which extends below the index- 50 plate *C*, by means of which the catches *J* and *h* may be drawn out of gear to allow of the apparatus being turned back to zero.

Two sets of registering-dials *I* are shown. The object of using two sets is to reduce the 55 friction consequent on passing all the transactions through to one set of dials for registration. If desired, one set of registering-dials may be used or a greater number than those shown.

60 A bell *K* is provided for each rack, which is struck by the hammer *k* each time the rack is moved. To prevent two racks being moved at the same time, a rod or lever may be connected to the lever *J* and reach to the base of 65 the boss of the next rack. As the lever *J* is raised by the movement of the teeth of the wheel *G* the rod will be brought under the

boss and the downward movement of the rack prevented.

Placed above the racks on a suitable shaft 70 or support are a series of revolving drums *L*, with a number of sides, on each of which is printed a numeral, the number of sides of each drum corresponding to the number of 75 figures which each will be called upon to display. These drums are connected to the racks *F* by means of a band or cord *M*, which passes round a sheave or pulley *l*, or is otherwise attached to the boss of the drum. Each 80 drum is provided with a spring or weighted, so that when released it will return to its original position at zero. The drawing down of the rack causes the drum to rotate, and when it stops it exposes through a glass at the 85 other side of the machine the figure upon it, indicating the amount to be registered. The bands *M* are attached to the screws *m*, which can be readily adjusted by the wing-nuts *m'*,

When each rack *F* is drawn down, it is prevented rising, as the wheels *G* rotate only in 90 one direction. To allow the racks *F* to rise and return to zero, a swinging frame formed of the rods *ff'* is drawn forward at the bottom until the racks are clear of the pinions, and when released they are raised to their original 95 position by the springs which control and move the drums *L*.

The rack is prevented engaging with the teeth on the pinion during its upward movement or before it has reached its zero position 100 by a weighted guard or tumbler *N*, pivoted to the center, on which the pinions revolve.

The swinging rack-frame is drawn forward by the mechanism shown enlarged at Fig. 9. The bottom bar *ff'* is embraced by the fork *O*, 105 pivoted to the bracket *P*, fixed to the case or frame of the apparatus. To the fork *O* is pivoted a lever *o*, carrying a bowl or runner, which runs along the top of the center partition *b* of the drawer *B*. When the drawer is 110 drawn out, the lever *o* drops down behind it, and the pushing in of the drawer forces the lever in the same direction as the drawer and raises it, and with it the fork *O*, thereby drawing forward the rack-frame and releasing 115 the racks *F* from the pinions *G*. By pressing in the spindle *p* when the drawer is in position shown in Fig. 9, the rack-frame may be drawn forward with the same result. The indentation *b'*, cut in the partition *b* of the 120 drawer *B*, allows the lever *o* to drop into its normal position.

*R* is a spring attached to the lower bar *ff'* of the rack-frame for the purpose of drawing it back into the position shown when the fork 125 *O* is released. The dotted lines show the position of the slide-rods *f* when the swinging frame is drawn forward by the action of the fork *O*.

On the back of the index-plate *C* is pivoted 130 a small catch or lever *d*, the end of which passes in between the teeth on the racks *F* when the rack-frame is drawn forward and they are out of gear with the pinions *G*. The



catch *d*, being pivoted, as shown, does not interfere with the upward or return movement of the racks.

S is a fork or catch pivoted to the framework, which, when required, can be hooked over the bottom bar of the swinging rack-frame to retain it in the position shown by the dotted lines. When the swinging rack-frame is in that position, the counting or registering part of the apparatus is out of gear with the racks F, and the index-fingers cannot be drawn down, as the racks are prevented moving downward by the catches *d*. The pivoted forked catch S is provided at its other end with a snug *s* above the bolt of the lock of the drawer B. When the drawer is locked, the forked end is depressed and catches over the bar *f'*, so that the machine cannot then be operated.

The cash-drawer B may be of any suitable shape or size and with compartments to receive the different denominations of coin or money. As shown in the drawings, it is fitted with a center partition *b*, which operates in combination with the fork O and lever *o*. At the back it is fitted with a band T, which is wound upon a pulley or sheave *t*. The pulley *t* is attached to a spiral spring U on the spindle *u*, on which the pulley revolves. As the drawer is drawn out the band T is drawn from the pulley and the spring U tightened. When the drawer is released, the spring draws it in and closes it.

A bell V, with a revolving spindle *v*, is placed so as to ring as the drawer is opened, so that attention is called should an unauthorized person open it.

The drawer may, when required, be held open by the catch W, pivoted to the frame, which catches over the projecting piece *w* at the back.

At the back of the drawer may be fitted a recording-dial or other recording mechanism to keep a correct account of the number of times the money-drawer has been opened.

X is a door through which the back of the works of the apparatus may be examined.

Y is a glass plate fitted in that side of the apparatus which faces the customer. Through this plate the amount indicated on the drums L is displayed, and on it may be painted either in colored or gilt letters any wording to draw the customer's attention to the working of the apparatus.

Z is an ornamental name-plate, carrying any distinctive or distinguishing name by which the apparatus will be known.

The operation of the apparatus is very simple. If the amount of nine pounds fifteen shillings ten and one-half pence is to be registered, the index-pointer to the left, Fig. 5, is first drawn down, which registers the half-penny. The rack attached to the pointer moves on the first wheel G one tooth, and by the same movement  $\frac{1}{2}$  is displayed on the first drum through the glass X. The second index-pointer is then drawn down to the num-

ber 10. The second rack is moved with it and the second wheel G moved on ten teeth, while the second drum L is rotated to display the figure 10. For the fifteen shillings, the next two pointers are moved, the third one to number 5 and the fourth one—the tens-indicator—is moved one, and the corresponding racks, wheels, and drums are moved as before. Similarly for the nine pounds the last pointer is moved nine places and the amount is displayed and registered as before. The cash-drawer B is then drawn out and the money deposited therein. If the drawer has been drawn out to the full extent, as it moves in it presses on the lever *o* and fork O and, drawing forward the swinging rack-frame, releases the racks F, which allows the index-pointers *e* to return to zero. As the wheels G are geared with the wheels of the registering-dials I, each amount is counted up and registered thereon.

Having now fully described the invention, what we claim, and desire to secure by Letters Patent, is—

1. In a cash indicator and register, the combination, with an index-plate cut with a slot and inscribed with a scale of the denomination of money, and an operating-rod or pointer, of a revolving drum, which displays or indicates the amounts of money to be registered at each transaction, a sliding rack which actuates the registering mechanism, and mechanism to register the amounts successively indicated.

2. In a cash indicator and register, the combination, with the index-plate having scales inscribed thereon, the operating-rod or connecting-piece E, and pointer *e*, of a sliding rack which actuates the registering mechanism and swinging rack-frame, by the movement of which the racks are moved into and out of gear with the pinions with which they engage.

3. In a cash indicator and register, the combination, with an index-plate having one, two, or more scales inscribed thereon—one for each denomination of money—one, two, or more operating-rods or connecting-pieces E, and pointers *e*—one for each scale—of one, two, or more sliding racks, which actuate the indicating and registering mechanism, one, two, or more sets of registering mechanism, and one, two, or more indicating-drums—one for each denomination of money—each operated by one connecting rod or piece E through a sliding rack.

4. In a cash indicator and register, the combination, with the sliding racks F, of the swinging rack-frame composed of the upright rods or pillars *f* and the cross-bars *f'*, substantially as described.

5. In a cash indicator and register, the combination, with the sliding racks F, of the pinions G, the pivoted levers H, the levers *h*, substantially as and for the purposes described.

6. In a cash indicator and register, the combination, with the sliding rack F and swinging



frame  $f f'$ , of the pinion G and the weighted guard or tumbler N.

7. In a cash indicator and register, the combination, with the sliding racks F, and pinions G, having teeth  $g$  on their back, of the catch or pawl levers J, the pivoted levers H and  $h$ , and the recording-dials I.

8. In a cash indicator and register, the combination, with the sliding rack and swinging rack-frame, of the pivoted lever  $d$ , substantially as and for the purposes described.

9. In a cash indicator and register, the combination, with the index-plate having scales inscribed thereon, the operating connecting rod or piece E, and pointer  $e$ , of the sliding racks F, revolving drums L, bands M, and pulleys  $l$ , substantially as described.

10. In a cash indicator and register, the combination, with the sliding racks and swinging rack-frame, of the pivoted fork O and swinging lever  $o$ , substantially as and for the purposes described.

11. In a cash indicator and register, the combination, with the sliding racks and swinging rack-frame, of the fork O, bracket P, swinging

lever  $o$ , and spindle  $p$ , substantially as described.

12. In a cash indicator and register, the combination, with the sliding racks and swinging rack-frame, of a pivoted hook or catch S to lock or retain the racks out of gear with the pinions.

13. In a cash indicator and register, the combination of the sliding racks, swinging rack-frame, pivoted hook or catch S, and bolt or lock on the drawer, substantially as and for the purposes described.

14. In a cash indicator and register, the combination, with the cash-drawer, of a pulley  $t$ , band T, spiral spring U, and spindle  $u$ , substantially as described and shown.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES E. FARROW.  
JAMES McG. CARSON.

Witnesses:

J. OWDEN O'BRIEN,  
CHARLES OVENDALE.