

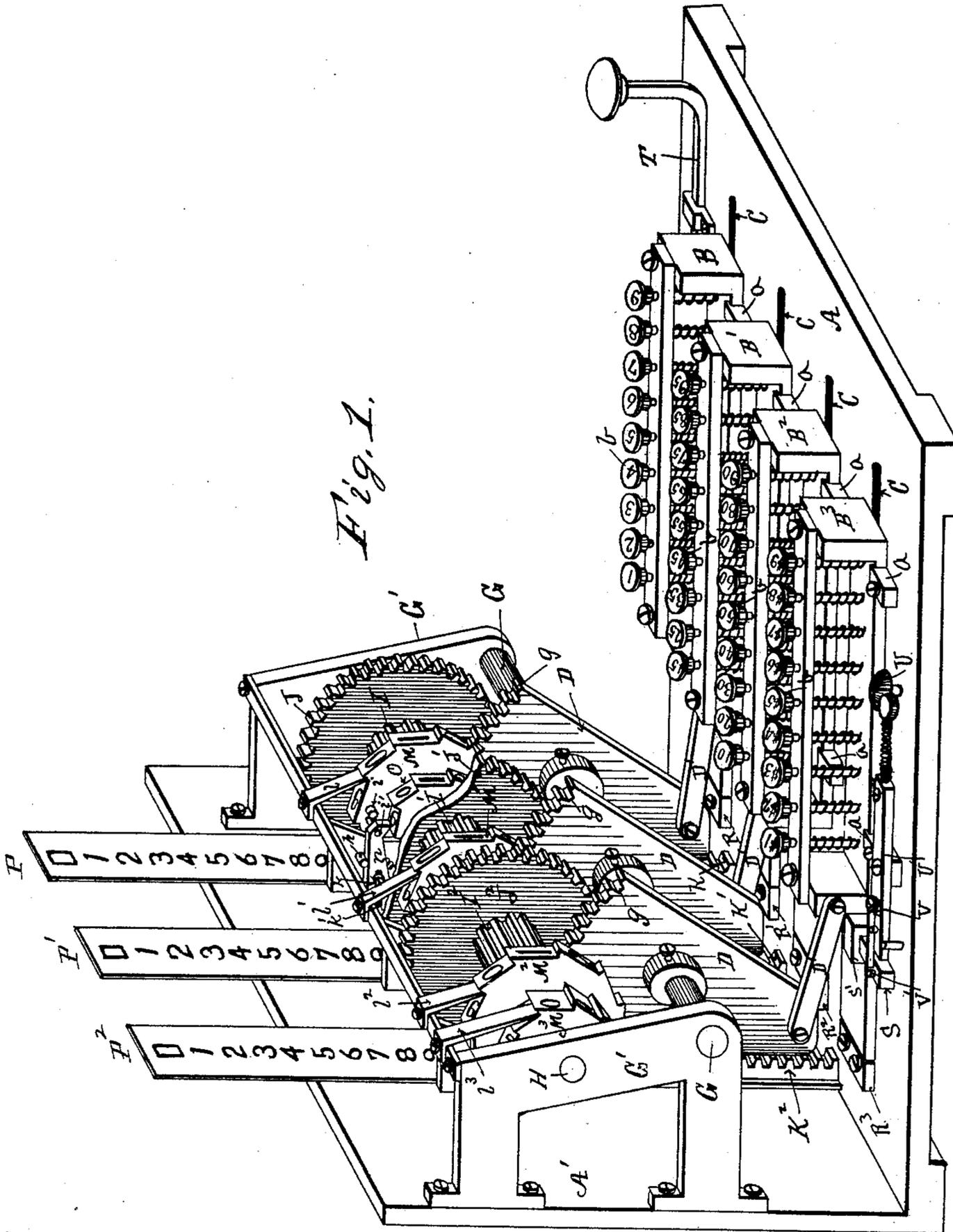
(No Model.)

5 Sheets—Sheet 1.

W. H. CLARK.
CASH INDICATOR AND REGISTER.

No. 435,396.

Patented Sept. 2, 1890.



Witnesses

A. L. Jackson
F. J. Bannan

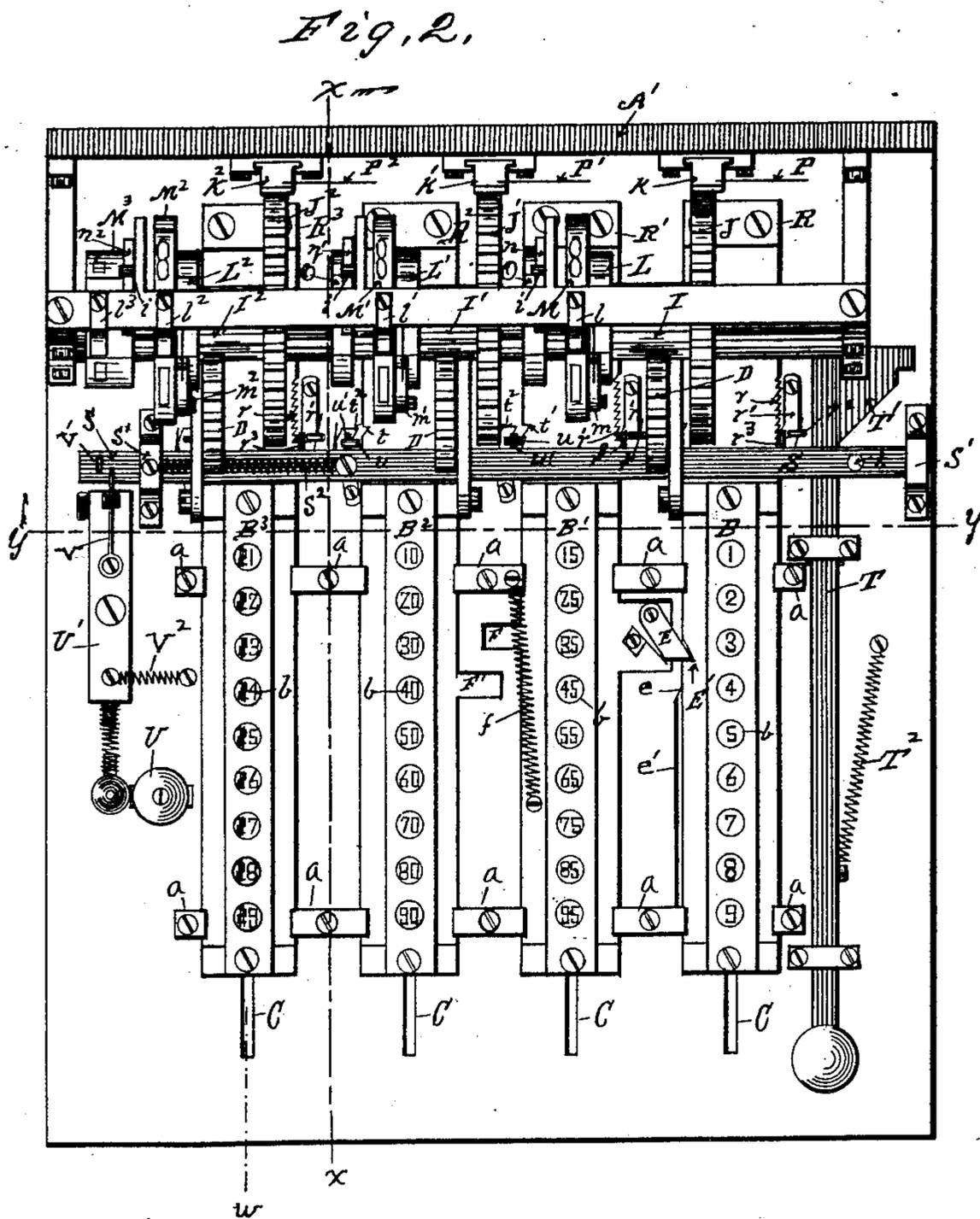
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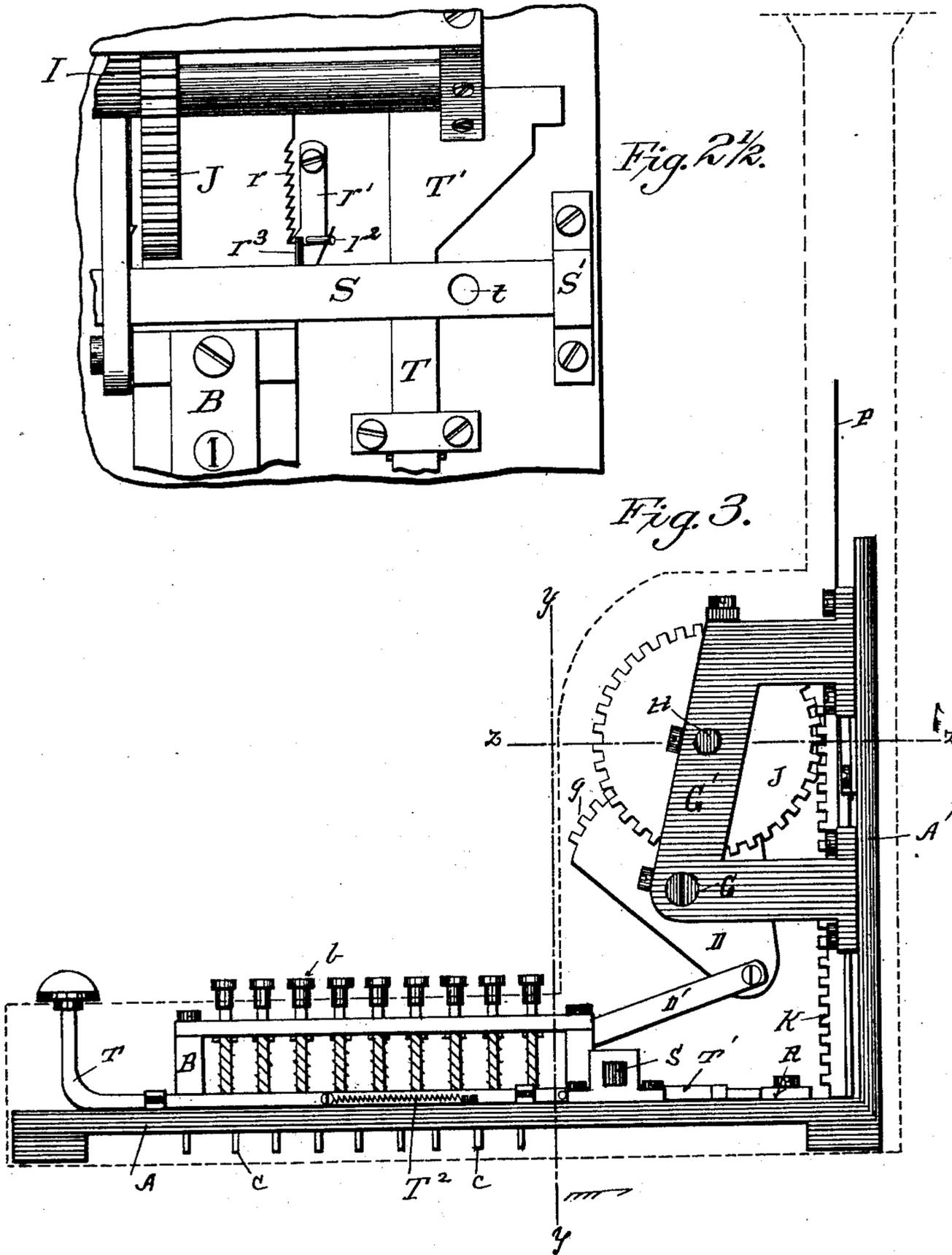
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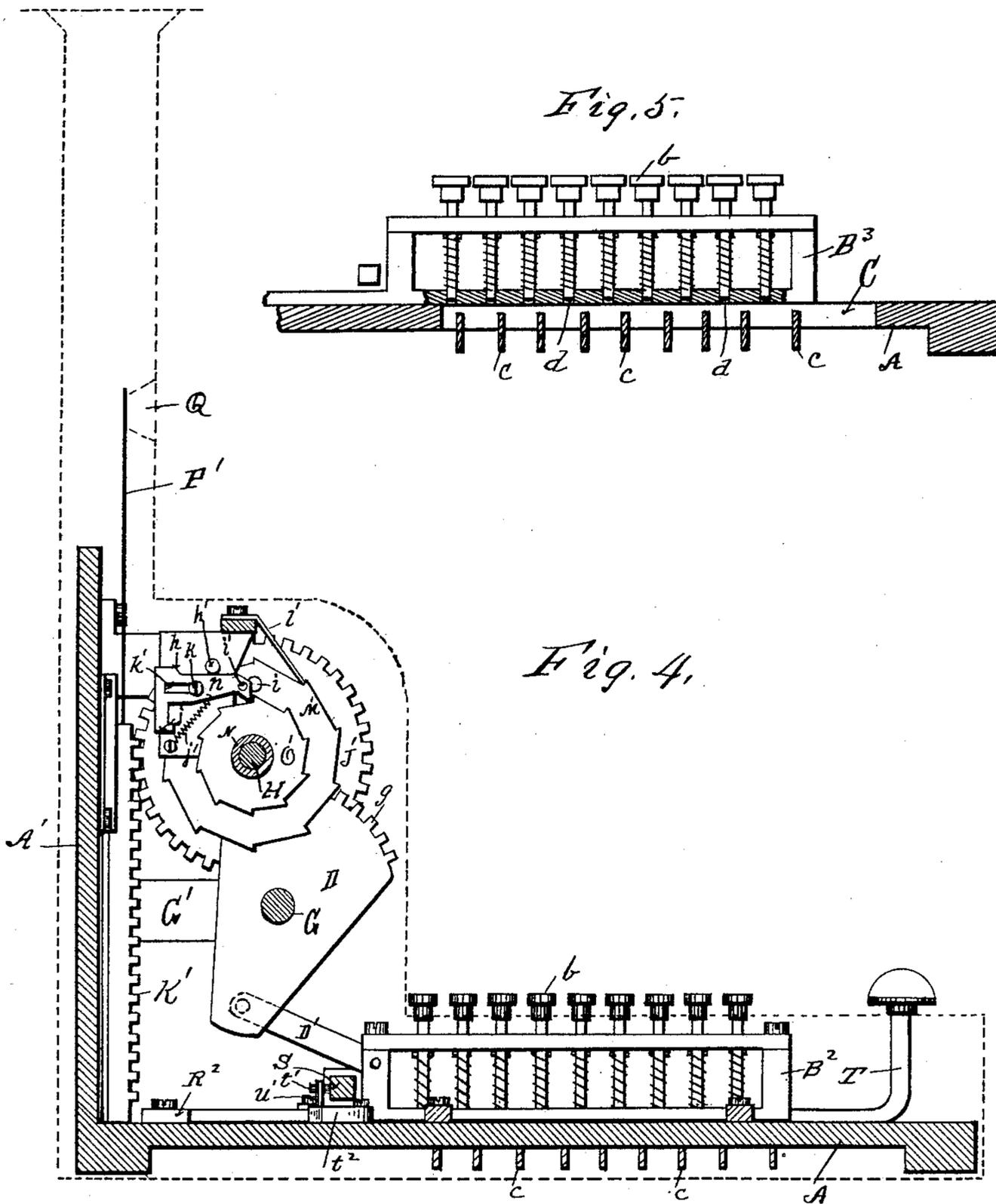
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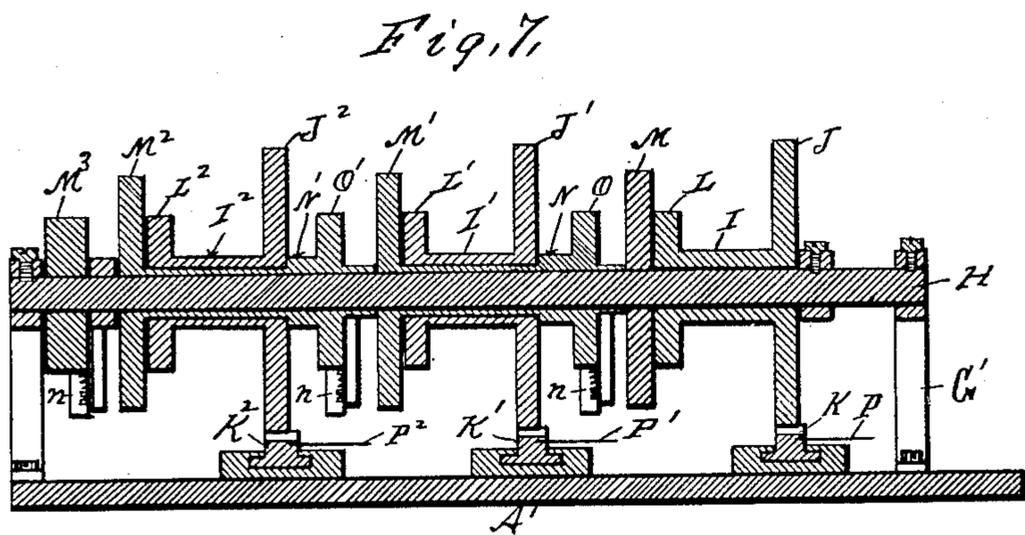
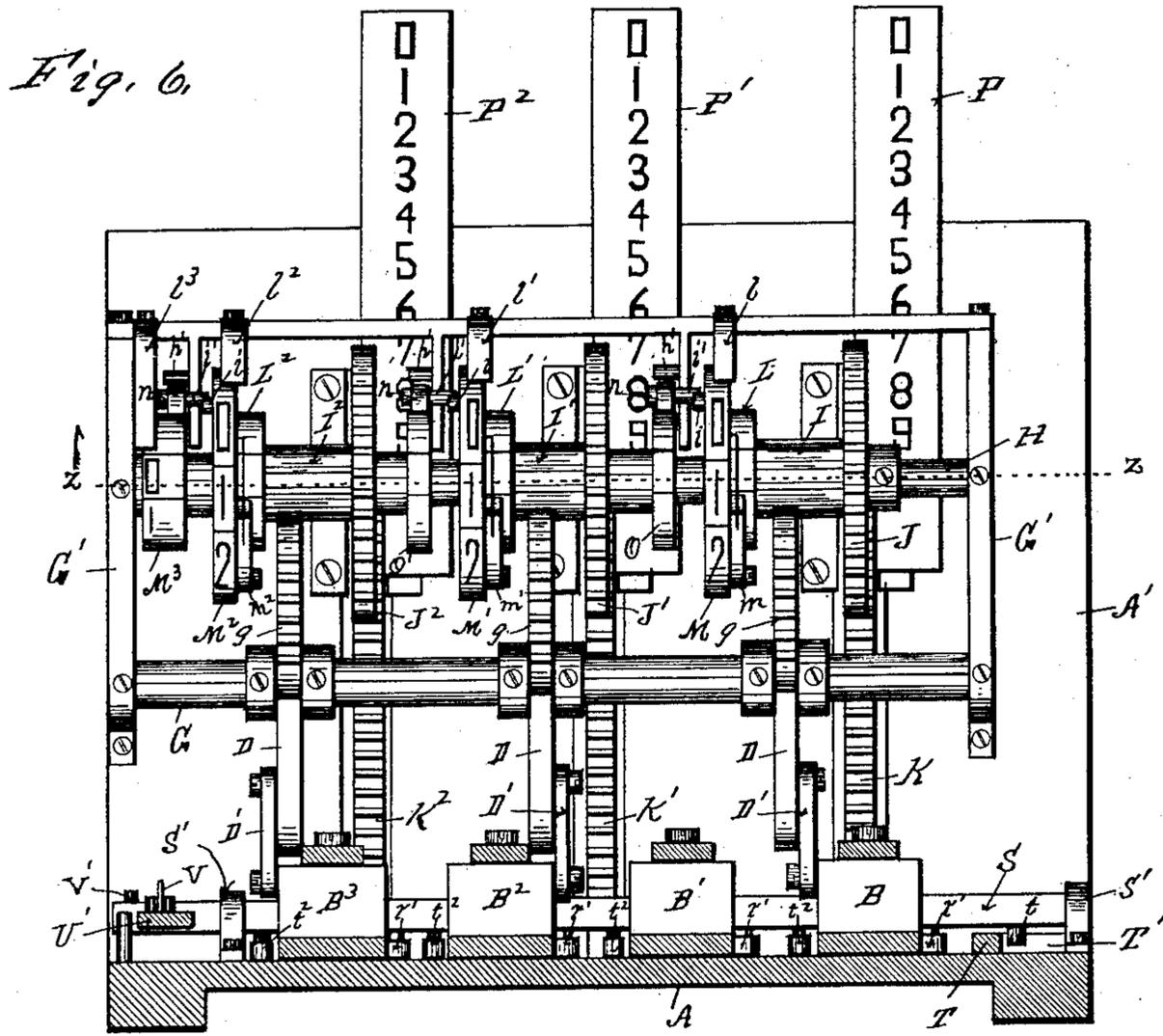
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UNITED STATES PATENT OFFICE.

WILLIAM H. CLARK, OF ALBION, ASSIGNOR OF ONE-FOURTH TO THE LOVELL MANUFACTURING COMPANY, LIMITED, OF ERIE, PENNSYLVANIA.

CASH INDICATOR AND REGISTER.

SPECIFICATION forming part of Letters Patent No. 435,396, dated September 2, 1890.

Application filed July 19, 1889. Serial No. 318,079. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CLARK, a citizen of the United States, residing at Albion, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Cash Indicators and Registers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and numerals of reference marked thereon, forming part of this specification.

My invention consists in the improvements in cash indicators and registers hereinafter set forth, and explained in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved cash indicator and register. Fig. 2 is a top or plan view of same. Fig. 2½ is a detail view of a section of my machine. Fig. 3 is a side elevation of same. Fig. 4 is a vertical cross-section of same on the line $x x$ in Fig. 2, looking in the direction of the arrow. Fig. 5 is a vertical section of the key-board of the machine on the line w in Fig. 2. Fig. 6 is a front view of the machine, partially in elevation and partially in section, on the line $y y$ in Figs. 2 and 3. Fig. 7 is a longitudinal section of my machine on the line $z z$ in Figs. 3 and 6, looking in the direction of the arrow.

Like letters and numerals refer to like parts in all the figures.

In the construction of my improved cash indicator and register shown, A is the base, and A' the upright portion, of the framework of my machine.

On the base A, I mount sliding key-frames B, B', B², and B³, any desired number thereof being used, there being nine vertically-moving keys b in each of said frames, these key-frames, together with the keys mounted therein, being adapted to be moved in and out on the base A. Directly under each of said key-frames is a longitudinal slot C, (see Figs. 1, 2, and 5,) in which are secured cross-bars c , adapted to engage with the lower ends d of the keys b when the same are depressed, so

as to limit the outward movement of the key-frames in which the keys are mounted, it being observed that the distance which the key-frame is allowed to travel outward on the depression of each key constantly increases from the key indicating "1" to the key indicating "9," the key indicating "9" permitting the key-frame to travel nine times as far before engaging with its stop c as does the key indicating "1."

The key-frames B, B², and B³ are moved independently of each other and of the key-frame B' by depressing the key desired and drawing outward on the key-frame until the key depressed engages with its stop c , and each of said key-frames is also coupled to a rocking lever D by means of a link D', as and for the purpose hereinafter set forth. The key-frame B', however, is not coupled to any lever D, but is located between the key-frames B and B², and is provided with a spring-dog E, adapted to engage in a notch E' in the key-frame B, and it also drops into a notch e on a rib e' on the base A, the notch e being inclined, so as to throw the dog E out of engagement with the notch E' when it has moved the key-frame B five spaces, or far enough to indicate 5 on the register, as hereinafter set forth.

On the opposite side of the key-frame B' is also a lug F, adapted to engage with a lug F' on the key-frame B², so that when the key-frame B' is moved outward it carries the key-frame B² with it. A retracting-spring f also extends from one of the lugs a on the base A to the key-frame B' to return it to its normal position.

The keys on the key-frame B are numbered from 1¢ to 9¢, and the keys on the key-frame B' from 15¢, 25¢, 35¢, &c., to 95¢; the keys on the key-frame B² 10¢, 20¢, 30¢, &c., to 90¢, and on the key-frame B³ from \$1 to \$9.

It will be observed that the key-frame B' operates to combine the key-frames B and B² and serves to operate the key-frames B and B² to indicate and register any of the amounts marked on the keys thereon without having to operate the key-frames B and B² separately.

The key-frames B, B², and B³ are coupled

to rocking levers D by links D', connecting with the lower ends thereof, the levers D being pivoted to a cross-shaft G, secured in a bracket G' on the upright portion A' of the machine-frame. On the upper ends of the levers D are secured segments of gearing *g*.

In the brackets G' is secured a rod H directly above the segment-gears *g* on the levers D. On the right-hand end of this rod H (see Figs. 6 and 7) is mounted a sleeve-pinion I, intermeshing with the segment-gear *g* on the lever D, connected with the sliding key-frame B, and on the right-hand end of this sleeve I is a gear-wheel J, which intermeshes with a vertical rack-bar K, which moves up and down in guides on the upright part A' of the machine-frame.

On the left-hand end of the sleeve I is secured a ratchet-wheel L. On the left of and close to the ratchet-wheel L is a registering-wheel M on the rod H, having ten notches thereon, marked from 1 to 0, inclusive. A spring-dog *m*, pivoted to the side of the registering-wheel M and engaging with the teeth on the ratchet-wheel L, operates to move the registering-wheel M forward, and a spring-dog *l*, secured to the frame, engages with the teeth of the registering-wheel M to prevent the backward movement thereof.

At the left of the registering-wheel M there is mounted on the rod H a sleeve N, having on its right-hand end a ratchet-wheel O and on its left-hand end a registering-wheel M'. The ratchet-wheel O is actuated by means of a sliding dog *n*, which is mounted on the upright portion A' of the machine-frame (see Fig. 4) by means of a stud-pin *k*, passing through a slot *k'* therein into the frame.

In the registering-wheel M there is a stud-pin *i* opposite the tooth marked "9," which stud-pin *i*, at each revolution of the registering-wheel M, engages with the stud-pin *i'* on the dog *n* and carries the dog *n* forward the length of the slot *k'* therein, which moves the ratchet-wheel O forward one notch, when a shoulder *h* on the rear end of the upper side of the dog *n* passes under a stud-pin *h'* on the frame, which tips up the point of the dog *n*, disengaging it from the tooth of the ratchet-wheel O and bringing the downwardly-projecting heel *j* on the dog *n* into contact with the ratchet-wheel O and stopping it. At the same time this movement of the dog *n* serves to disengage the stud-pins *i* and *i'*, when the retracting-spring *j'* returns the dog *n* to its normal position, as shown in Fig. 4. This movement of the ratchet-wheel O serves to carry forward the registering-wheel M on the left-hand end of the sleeve N one notch, where it is retained by a spring *l'*.

Surrounding the sleeve N is a second pinion-sleeve I', having thereon a gear-wheel J', intermeshing with and actuating a vertical sliding rack-bar K', the sleeve-pinion I intermeshing with and being operated by the segment-gear *g* on the lever D, coupled to the key-frame B², the ratchet-wheel L' on the

pinion-sleeve I' being actuated by a spring-dog *m'* on the registering-wheel M', as hereinbefore described in the description of the operation of the ratchet-wheel L and the registering-wheel M. On the rod H is also mounted another long sleeve N', having a ratchet-wheel O' and a registering-wheel M² thereon, and around the sleeve N' is a spur gear-sleeve I², having thereon a gear-wheel J², intermeshing with a vertical sliding rack-bar K², the spur-gear I² intermeshing with and being actuated by the segment-gear *g* on the lever D, coupled to the key-frame B³, the carrying-pawl and actuating mechanism of this portion of my machine being in all respects the same as that last hereinbefore described.

At the left-hand side of the registering-wheel M², I mount on the rod H a loose registering-wheel M³, which is actuated by a sliding pawl *n*, so as to be moved forward one notch at each revolution of the registering-wheel M² in the same manner as hereinbefore described, a spring-pawl I³ operating on said registering-wheel M³ to prevent its passage backward.

On the vertical rack-bars K, K', and K² are vertical plates P, P', and P², which move up and down in unison with the rack-bars K, K', and K². These plates are each marked with figures 0 to 9, inclusive, and when at rest in their normal positions the designation "0" is opposite the reading-line Q. (See Fig. 4.) The inner ends of the key-frames B, B', B², and B³ extend back under the lower ends of the oscillating levers D and rest against stops R, R', R², and R³ at the rear of the base-plate A of the frame, and on one edge of each of these extensions are ratchet-teeth *r*, in which spring-actuated pawls *r'* engage as the key-frames are being pulled out, so as to retain them in that position. This operates to retain the indicating-plates in a raised position.

Across the base A adjacent to the dogs *r'* is a sliding bar S, supported in brackets S' S' on the base A. In this bar S are stud-pins *r³*, adapted to engage with stud-pins *r²* on the dogs *r'*. The bar S is retained in its normal position by means of a retracting-spring S².

On the right-hand side of the base of the machine is a sliding bar T, which is provided with an incline T' on its inner end adapted to engage with a stud-pin *t* in the sliding bar S, so that when the bar T is pulled out it moves the sliding bar S to the right and releases the pawls *r'* from the ratchet-teeth *r* and allows the indicating and registering mechanism to return to zero, which is accomplished by the gravity of the rack-bars K K' K², together with the weight of the oscillating levers D operating to return the mechanism to its normal position. The bar T is also provided with a retracting-spring T² to return it to its normal position when released.

In the projections R, R', R², and R³ are also notches *t'* and spring-dogs *t²*, pivoted to the base A, adapted to engage with the notches *t'*

by means of stud-pins *u* in said dogs, which normally engage with stud-pins *u'* on the sliding bar *S'*; but when the sliding bar *S* is moved to the right to release the pawls *r'* this movement operates to bring the pawls *t'* into engagement with the notches *t'* to prevent the sliding key-frames from rebounding as they return to their normal positions.

On the left-hand side of the machine there is also secured to the base *A* an alarm-bell *U*, and also a bell-hammer lever *U'*, which is provided with a projection *V*, adapted to engage with a stud-pin *V'* in the end of the sliding bar *S*, so that when the bar *S* is moved it operates the lever *U'* so as to strike the bell *U* and sound an alarm.

I have shown no money-drawer connected with my machine; but it is obvious that it can be placed upon any convenient base containing a money-drawer, or, if desired, used without one.

The operation of the mechanism described is so obvious from the foregoing description of the parts of my machine that further description thereof is deemed unnecessary. Therefore,

Having thus described my machine so that others skilled in the art to which it appertains can construct and operate the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a cash indicator and register, of sliding key-frames and keys therein adapted to be depressed, with stops adapted to engage the keys therein when depressed, substantially as and for the purpose set forth.

2. The combination, in a cash indicator and register, of rotary registering mechanism with oscillating levers having segmental gears thereon intermeshing with gears on said registering mechanism, and key mechanism connected by means of links *D'* with said oscillating levers for actuating and controlling the movement of said levers, substantially as and for the purpose set forth.

3. The combination, in a cash indicator and register, of sliding key-frames, oscillating levers coupled thereto, and segmental gears on said levers, with registering-wheels and rack-bar-actuating wheels mounted on a common shaft and actuated by the segmental gears on

said levers, and vertically-sliding rack-bars carrying indicator-plates and intermeshing with the rack-bar-actuating wheels aforesaid, substantially as and for the purpose set forth.

4. The combination, in a cash indicator and register, of a series of independently-sliding key-frames and depressible keys mounted in said frames, with other key-frames having depressible keys therein between said independently-sliding key-frames, and lugs on said intermediate frames adapted to engage the key-frames on each side thereof, substantially as and for the purpose set forth.

5. The combination, in a sliding key-frame for a cash indicator and register, of vertically-moving keys, with stops in the frame of the machine adapted to engage with said keys when depressed and thereby limit the movement of such key-frames, substantially as and for the purpose set forth.

6. The combination, in a cash indicator and register, of sliding key-frames having ratchet-teeth *r* thereon and spring-dogs *r'* on the frames adapted to engage with the said ratchet-teeth, with a sliding lever *S* and a sliding lever *T* engaging therewith for releasing said dogs *r'* from the ratchet-teeth *r*, substantially as and for the purpose set forth.

7. The combination, in the registering mechanism of a cash indicator and register, of stud-pins *i* in the registering-wheels, with sliding carrying-pawls *n*, mounted on the frame and having stud-pins *i'* therein, with which the stud-pins *i* in the registering-wheels engage at each revolution of said registering-wheels, and a limiting-pin *i*, substantially as and for the purpose set forth.

8. The combination, in the registering mechanism of a cash indicator and register, of a loose pinion *I*, having a ratchet-wheel *L* thereon and a registering-wheel *M*, the ratchet-wheel *L* and a spring-dog *m*, with a ratchet-wheel *O*, and a pin in the registering-wheel *M* with a sliding dog *n*, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. CLARK.

Witnesses:

WM. P. HAYES,
MARY BLOOM.