

(No Model.)

3 Sheets—Sheet 1.

W. G. LATIMER.
CASH REGISTER AND INDICATOR.

No. 430,391.

Patented June 17, 1890.

Fig. 1.

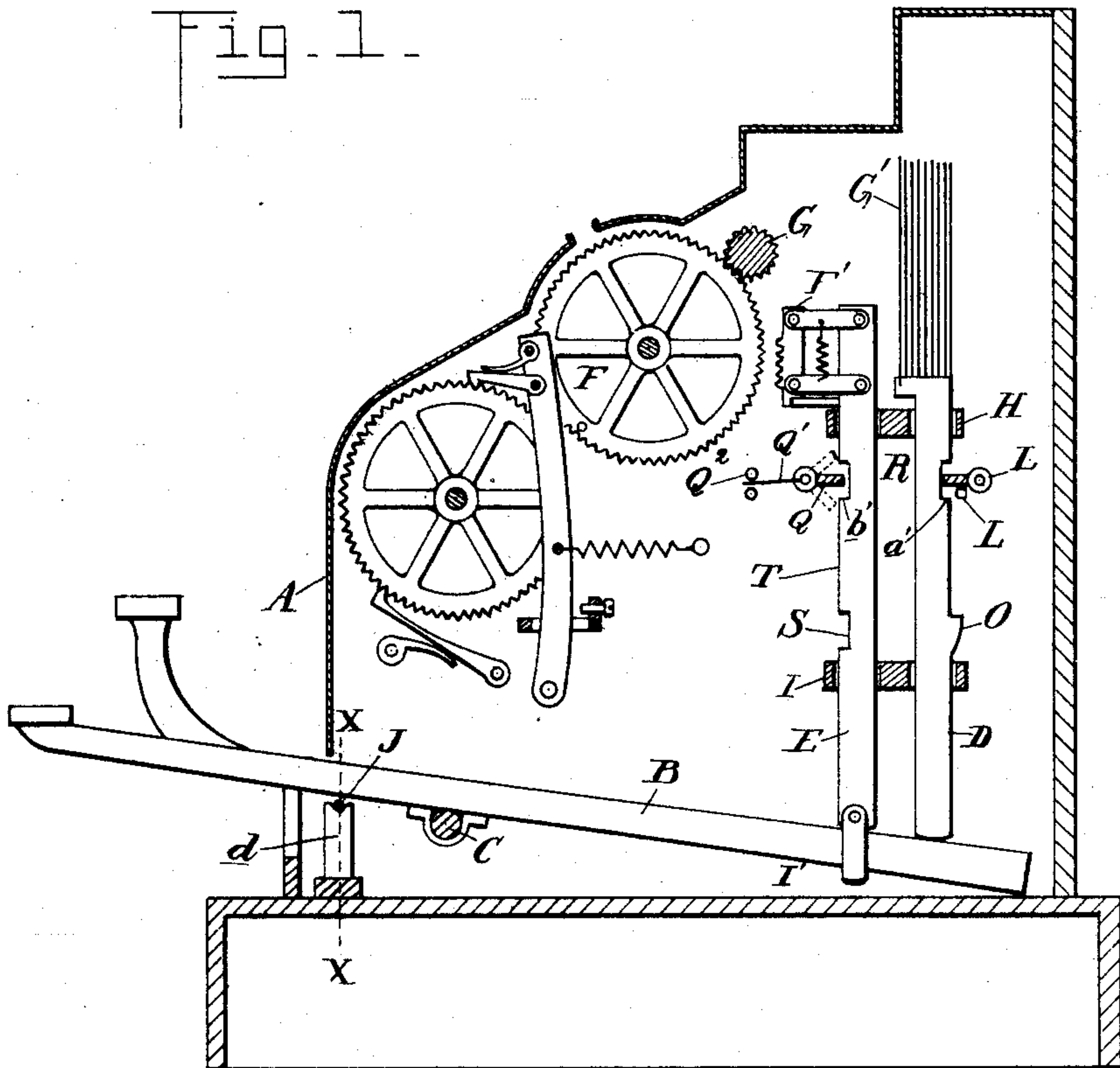
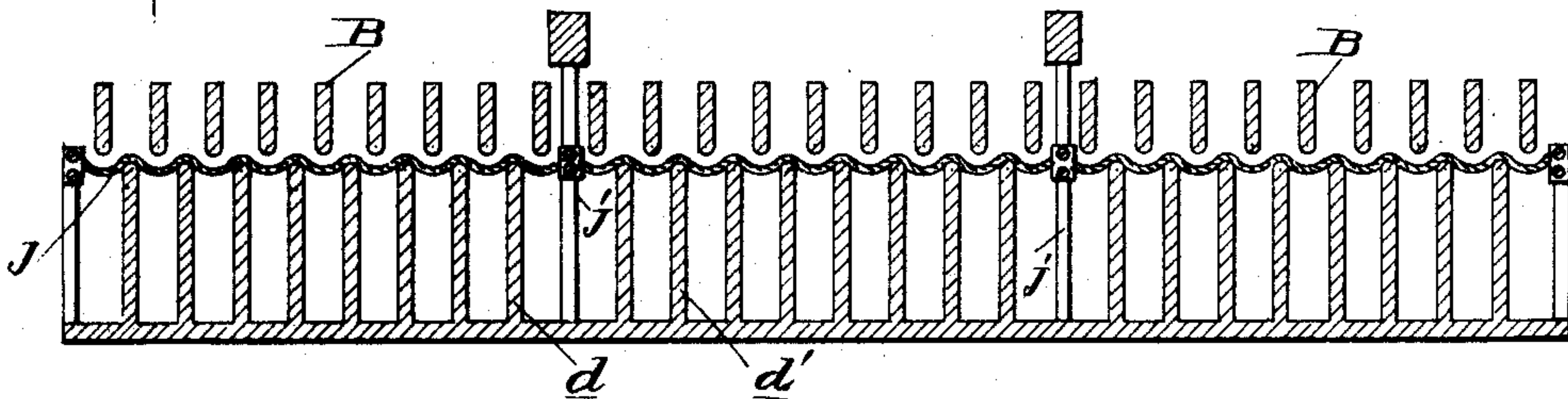


Fig. 4.



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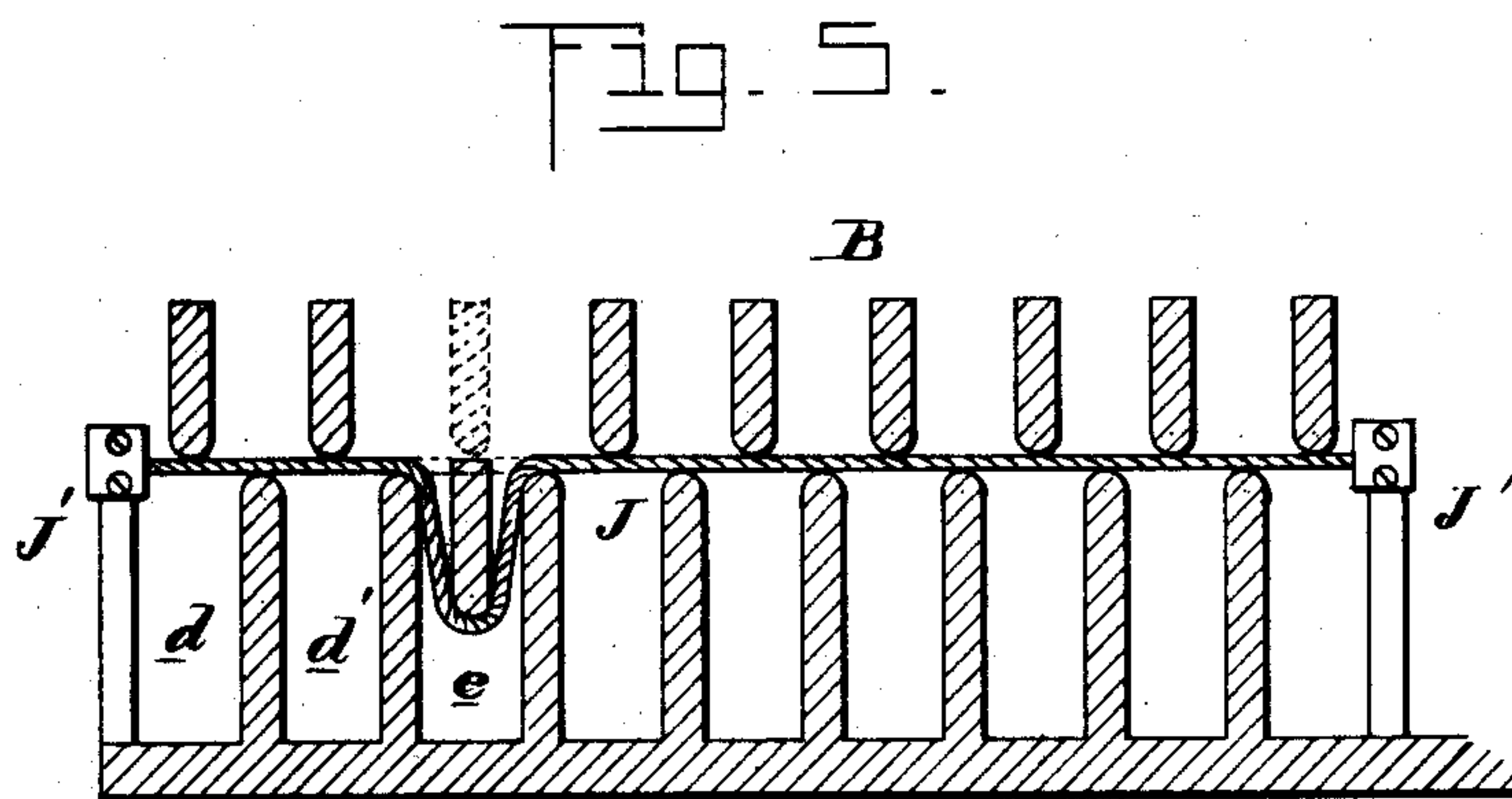
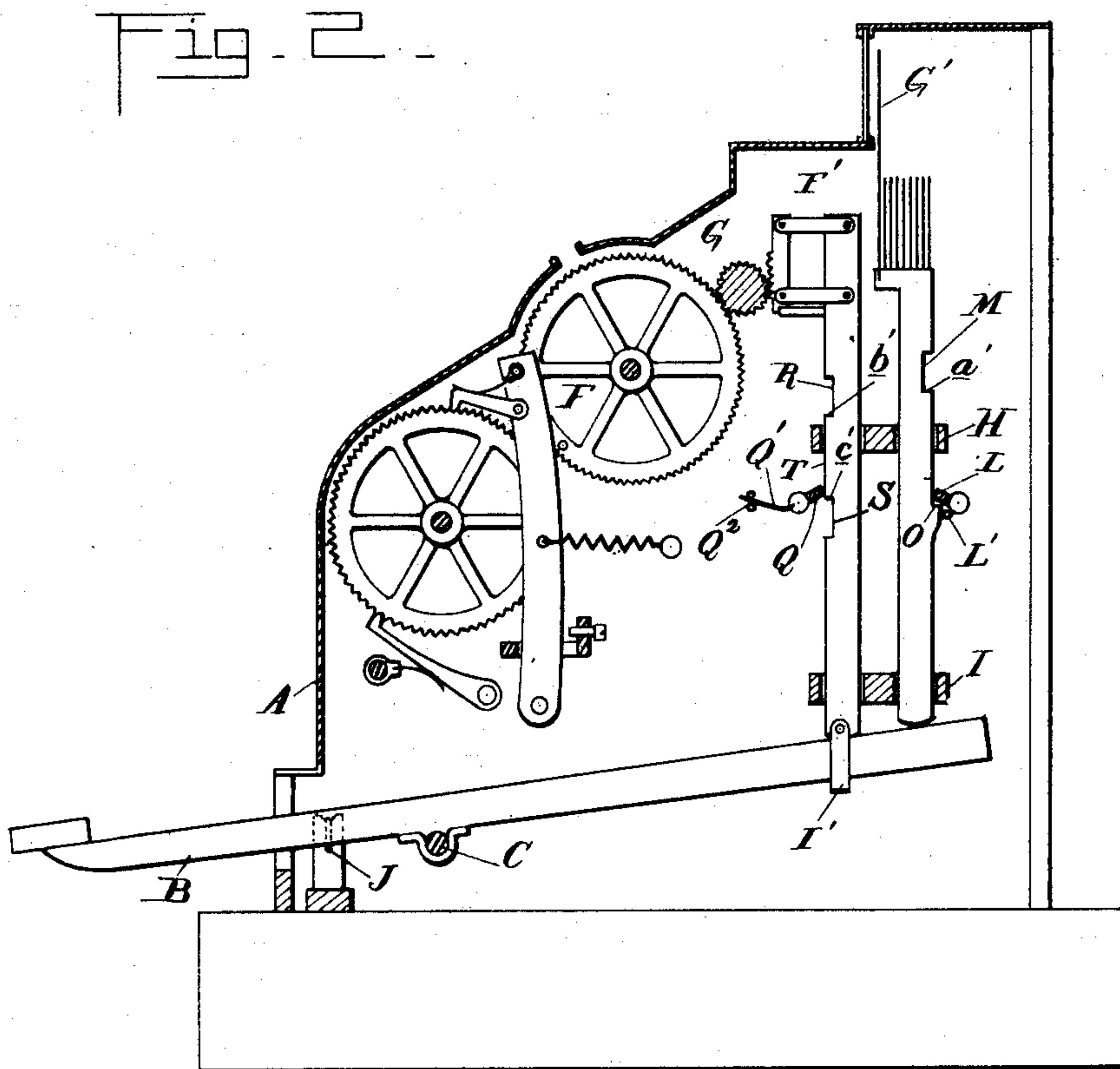
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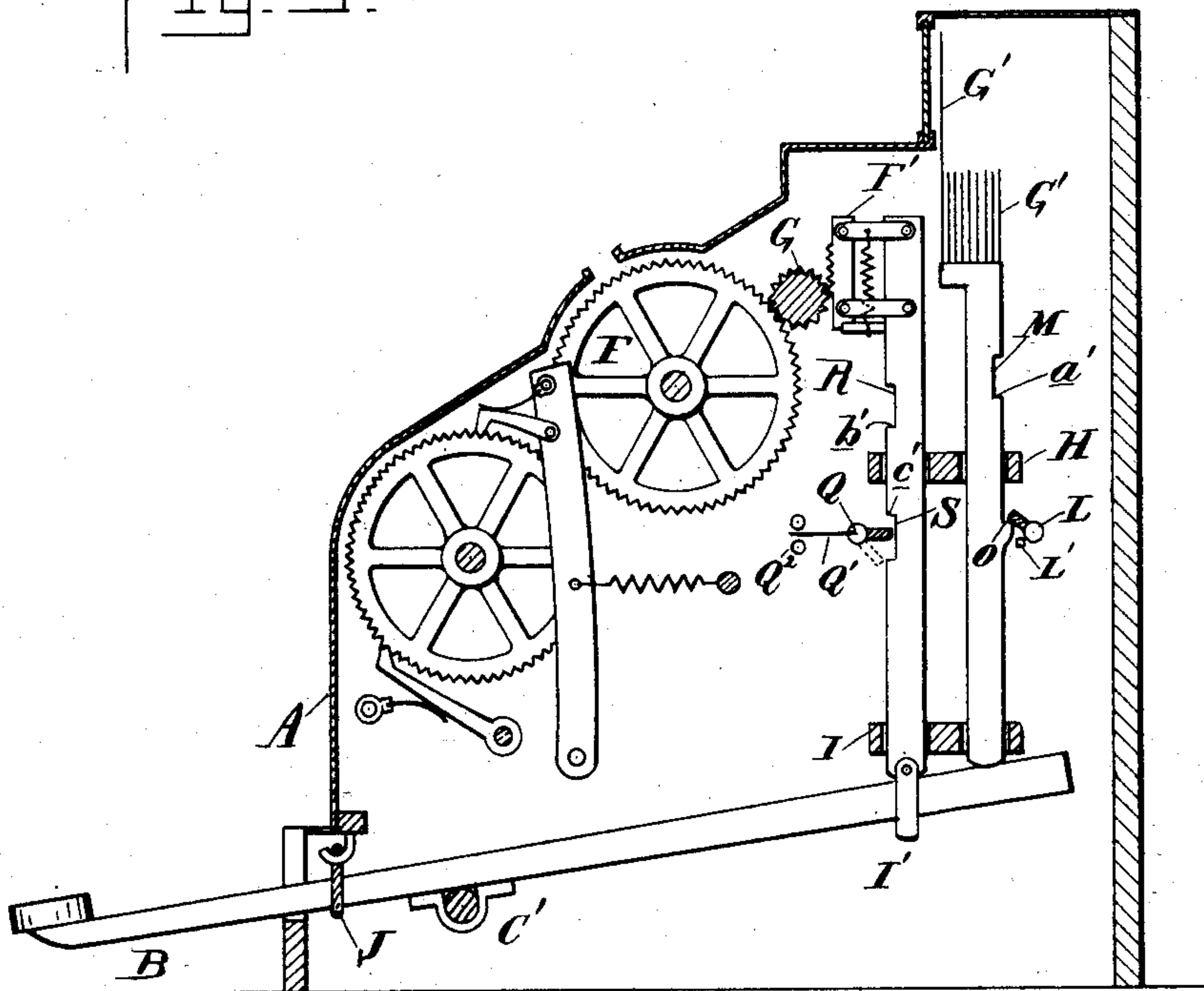
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W. G. LATIMER.
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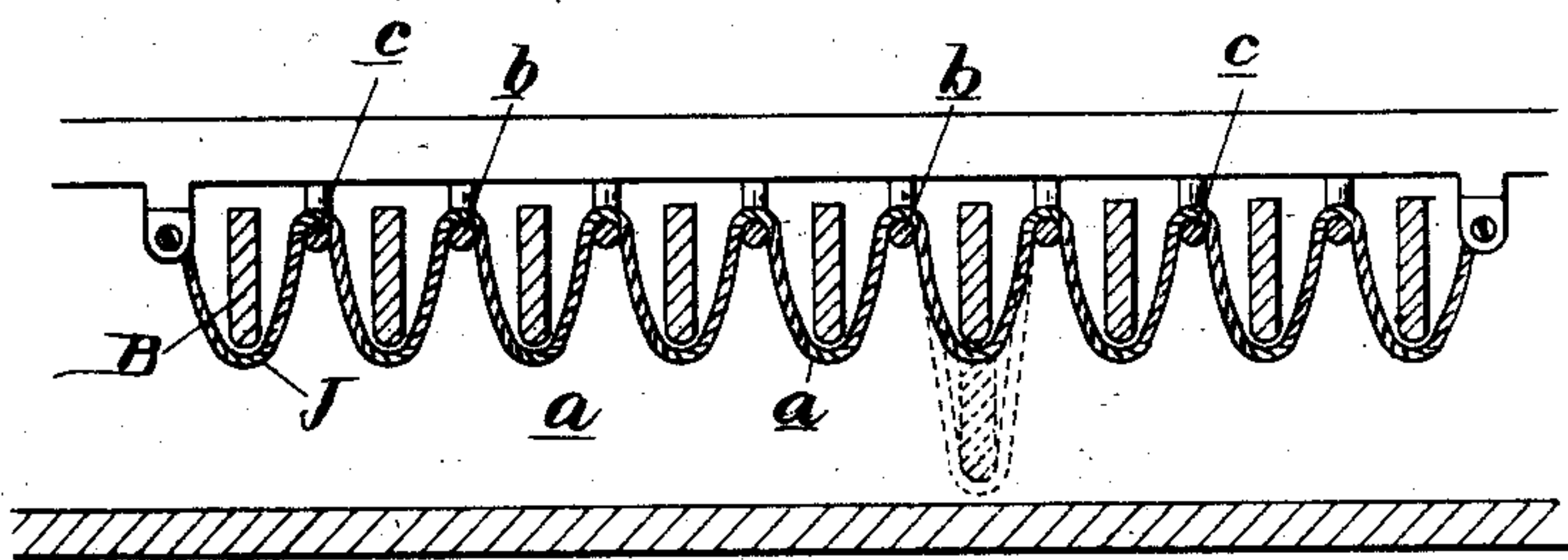
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Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM G. LATIMER, OF DETROIT, MICHIGAN, ASSIGNOR TO THE LATIMER
CASH REGISTER COMPANY, OF SAME PLACE.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 430,391, dated June 17, 1890.

Application filed January 27, 1890. Serial No. 338,298. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. LATIMER, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in a Cash Register and Indicator, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to new and useful improvements in a cash register and indicator; and the invention consists in the peculiar construction of a device for locking the tablet-holding rods and the register-actuating rods; 15 and, further, in the peculiar construction of an apparatus designed to prevent the simultaneous operation of two or more keys; and, further, in the peculiar construction, arrangement, and combination of the parts, all as 20 more fully hereinafter described.

In the drawings, Figure 1 is a vertical section through my machine. Figs. 2 and 3 are similar sections showing the tablet-rods, registering-rods, and connecting mechanism at 25 different points of operation. Fig. 4 is a cross-section on line $x x$ in Fig. 1. Fig. 5 is a similar section showing one of the keys operated. Fig. 6 is a similar section showing a modification.

30 The invention herein described is designed to be an improvement upon my previous patent, No. 409,107, dated August 13, 1889, and upon my application for patent, Serial No. 326,805.

35 A is a case of the machine in which are the series of keys B, pivoted to the transverse shaft C, and each key supporting at its rear end a tablet-rod D and a registering-rod E.

40 F is the registering mechanism, designed to be operated through the medium of the swinging rack-bar F', which is secured to the upper end of the registering-rods and is adapted to engage into the gear-toothed roller G, through which motion is transmitted to the 45 registering mechanism. Each of the tablet-rods carries an indicating-tablet G'.

Suitable guides H and I are arranged for the tablets and registering-rods. The registering-rods are preferably connected to the 50 keys pivotally by means of the stirrups—such as I'—these parts being the same as

shown in my previous patent and application for patent referred to, and operated as described and shown therein in a well-known manner.

55 The keys in my machine are preferably arranged in banks, representing, respectively, units, tens, and hundreds, and each bank of keys has its own registering mechanism and operates such registering mechanism.

60 I will first describe the operation of the device for preventing the simultaneous operation of two or more keys, the same consisting of a flexible chain or cord J fixably secured at its ends to the side of the machine. In 65 this machine the keys are arranged in groups, and in such a machine each group has a separate cord J secured at the side of the group upon suitable cross-bars J'. $d d'$ are a series of guides arranged below the keys (or if in 70 the rear of the shaft C above the keys) and forming between them guide grooves or spaces for the keys. The cord J, secured at its ends to the cross-bars J', lies loosely upon the tops of the guides $d d'$, having slack enough to al- 75 low of the depression of one key only, the slack being taken up in the loop e , formed under the key between the guides. The cord is stretched tightly over all of the remaining guide-grooves, this preventing the depression 80 of the keys therein, as shown in Fig. 5. While I preferably use this construction it may be varied to the form shown in Fig. 6, wherein the cord is formed into the loops a , which 85 pass under each key at its lower end and into the loops b between each of the keys which pass over the rods or bearing c . The length of the cord is such that it will allow of the depression to the full extent of one of the 90 keys; but when one key is thus depressed there is no slack in the cord to allow of the depression of any of the other keys, as shown in Fig. 5. As soon as the key—such as B—is released it assumes its upper position, as 95 shown in dotted lines in Fig. 5. It is evident upon the depression of any key that the slack will be taken up by such key in its depression, the flexible cord simply pulling over the bearing c and under the keys. It will thus be seen that no two keys of any bank can be 100 operated simultaneously to their full extent. The object of this is to prevent the simulta-

neous operation of two keys, whereby but one might register, and a dishonest employé might put two small amount in the cash-drawer to offset any such registration.

5 The next feature of my improvement relates to the means for holding up the tablet-rods, and the same consists in journaling in the rear of the tablet-rods a cam-eccentric or a bar acting as a wedge.

10 In the drawings I have shown a universal bar L pivoted in the sides of the frame held from downward movement by a stop—such as L'—but free to move upwardly. This bar enters a cut-away portion or notch M in the rear side of each tablet-rod. O is a shoulder arranged some distance below the notch on the rear side of each tablet-rod and in such relation to the length of the tablet-rod that it will strike the bearing L just before the tablet-rod has been raised to its highest point, for the purpose as more fully hereinafter described.

The operation of these devices is as follows: When a key is depressed it carries with it, in the upward movement of the rear end, its tablet-rod. As soon as the tablet-rod begins its upward movement the shoulder *a'*, below the cut-away portion M in the tablet-rod, strikes the under side of the bar L and swings it upward to the position shown in Figs. 2 and 3, allowing the tablet-rod to come up; but in case the operator releases his hold of the key the tablet-rod would be held in its elevated position by the wedging action of the friction-bar L against the rear side of the tablet-rod, as shown in Fig. 2. Just before the key has completed its movement the shoulder O will strike the under side of the bar and raise it clear therefrom, as shown in Fig. 3, thus allowing any key which may have been previously elevated to fall; but as soon as the operator releases his hold of the key the friction-bar L will again come in contact with the rear side of the tablet-rod and hold it in its elevated position, so that the tablet may be seen from the front of the machine in the usual manner. It will be seen that as the cut-away portion M of the unoperated tablet-rods is opposite the friction-bar L, and as that portion of the operated tablet-rods upon which the friction-bar engages extends across that cut-away portion, only the operated tablet-rods will receive the friction of the bar, thereby making it more efficient than if the friction-bar touched all of the keys.

While I show in this application a bar acting as a wedge it is evident that a cam or an eccentric would effect the same result.

The registering-rods I desire to lock in their elevated position at any point of partial registration, but allow them to fall as soon as the registration is completed. To this end I have arranged the friction-bar Q, pivotally supported at the sides of the machine, or in suitable cross-bars upon the side of each bank of keys, and this bar is held normally in horizontal position by means of a spring Q', slid-

ing between two guides Q². Any other form of spring may be used, as may be desired. I simply show this as being a simple form of construction. The forward edge of this friction-bar Q engages into corresponding cut-away portions or notches R in the front side of all of the registering-rods.

S is another cut-away portion or notch in each of the registering-rods at the point which will be opposite the friction-bar when the rods are in their highest position.

The operation of this device is as follows: As soon as the operator has depressed the key the shoulder *b'* at the lower edge of the notch R strikes the under side of the friction-bar and causes it to assume the inclined position, as shown in Fig. 2, bearing with its inner edge against the rear side of the registering-rod. It is evident that the registering-rod can freely pass upward with the bar in this position; but if at any point of partial registration the operator should release his hold of the key the rod could not fall because of the frictional contact of the bar with the registering-rod thus elevated. As soon as the registration is completed the bar R is brought opposite the lower notch S in the registering-rod, which it enters, assuming its horizontal position, as shown in Fig. 3. As soon as the operator releases his hold of the key it is evident that the registering-rod can freely descend. The shoulder *c'* at the upper edge of the notch S will strike the friction-bar and incline it downwardly until it reaches the notches R, when it will again assume its horizontal position. A cam or an eccentric will act in the same manner as this friction-bar, which has simply a wedging action, wedging the registering-rod between the friction-bar and the guides. It is evident that in this construction, as in that of the tablet-rods previously described, as the friction-bar Q is opposite the cut-away portion R, common to all the rods, and as the bearing-portion T between the cut-away portions in the operated rod extends across the cut-away portion R in the unoperated rods, the friction will be brought to bear only upon the operated rod, thus making it positive in its action, as the key is locked to the registering-rod by means of the stirrup I'. The key itself is locked in its depressed position, should the operator release it at any point of an uncompleted registration. It is evident that the tablet-rod or the registering-rod is clamped in its elevated position between its guide and the friction-bar, and that such clamping is due entirely to the eccentric arrangement of the friction-bar in relation to the rod and the weight of the rod—in other words, that the tablet-rod is held up by the clamping effect due to its weight acting between an eccentric or wedging-bar and the guides.

What I claim as my invention is—

1. In a cash register and indicator, the combination, with a series of keys and series of tablet-rods operating thereby in guides, of a

horizontal friction-bar pivoted at its outer edge, bearing against said tablet-rods in their elevated position, and held in binding-contact with the vertical edge thereof by the weight of the rod, substantially as described.

2. In a cash register and indicator, the combination, with a series of keys and a series of tablet-rods operated thereby, moving in guides, of a corresponding notch or cut-away portion in each of said rods, a friction-bar pivotally secured opposite said notch, extended therein and adapted to bear against said tablet-rods in their elevated position and clamp them between said bar and the guides, substantially as described.

3. In a cash register and indicator, the combination, with a series of keys and a series of tablet-rods operated thereby, of guides in which the said tablet-rods move, a horizontally-disposed friction-bar pivotally secured at its outer edge in rear of said rods in binding contact with the vertical edge of the rods, whereby the rods are held against the guides, and tripping mechanism, substantially as described, for releasing such frictional contact upon the operation of a key, substantially as described.

4. In a cash register and indicator, the combination, with a series of keys and a series of tablet-rods operated thereby, of guides in which said tablet-rods move, a horizontal friction-bar pivotally secured at its outer edge in the rear of said tablet-rods, normally held in binding contact therewith during its upward movement and adapted to wedge said rods against the said guides by the weight of the rods, and a shoulder at or near the lower end of said tablet-rods to trip said friction-bar upon the operation of a key, substantially as described.

5. In a cash-register, the combination, with a series of keys, of a series of notched tablet-rods operated by the keys, a pivoted friction-bar normally held in a horizontal plane with the pivots resting in said notches and arranged to bear against the rods in their elevated position, and a shoulder on the rods for tripping the bar, substantially as described.

6. In a cash-register, the combination, with a series of keys and a series of registering-rods operated thereby moving in guides, of a series of corresponding notches on said rods, and a friction-bar engaging into said notches and adapted to clamp the registering-rod against the guide at any point of partial registration, substantially as described.

7. In a cash-register, the combination, with a series of keys and a series of registering-rods operated thereby moving in guides, of two series of corresponding notches in said rods, and a friction-bar engaging into the upper series of notches, adapted to wedge an operated registering-rod against the guides at any point between the two notches and to be released therefrom upon entering the lower notch, substantially as described.

8. In a cash register and indicator, the combination of a series of keys and a series of tablet-rods operated thereby, of a gravity-latch engaging only the operated tablet-rods to hold them in their elevated position at any point during partial registration, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 16th day of December, 1889.

WILLIAM G. LATIMER.

Witnesses:

J. H. WILLIAMS,
JAMES BRADY.