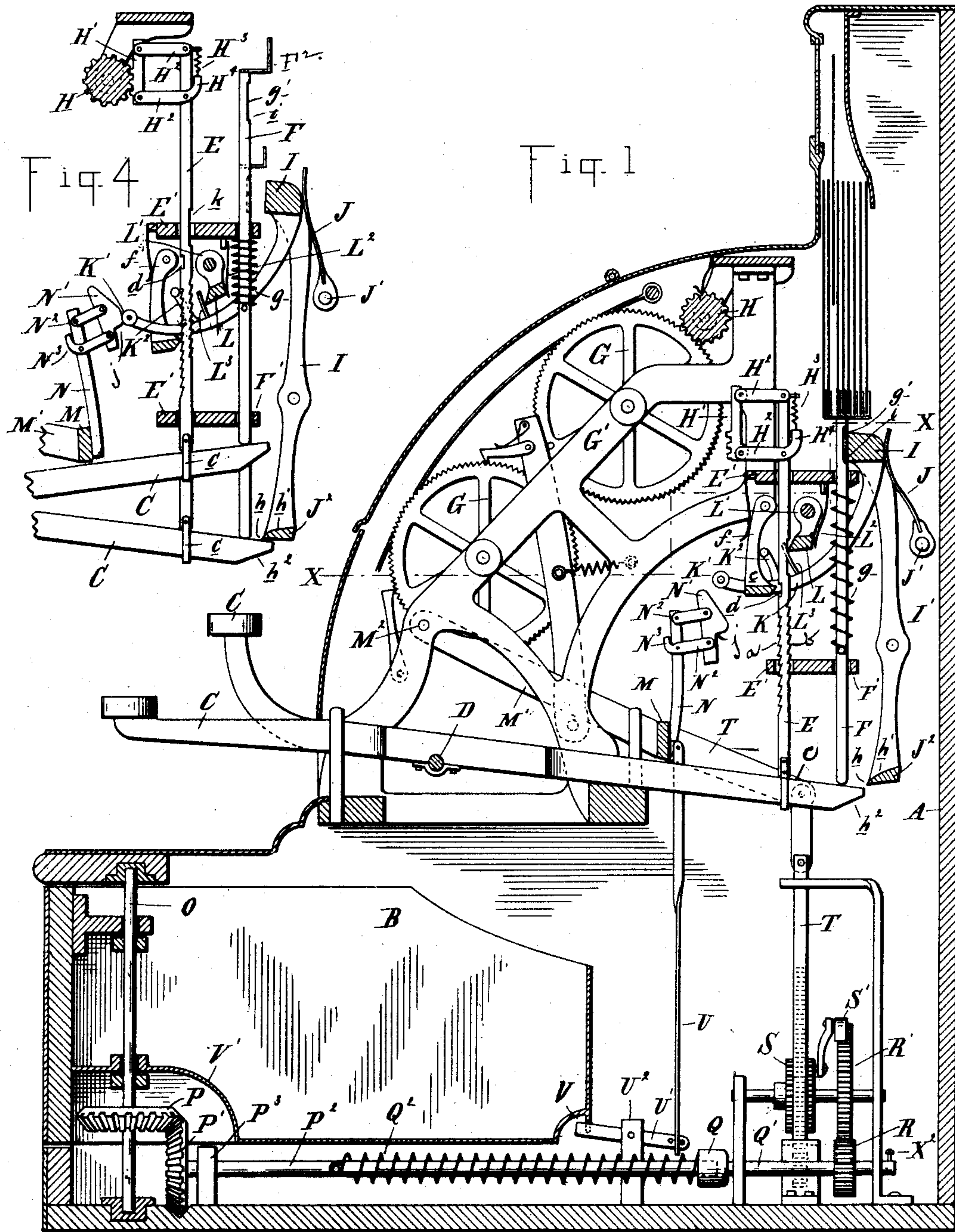


3 Sheets—Sheet 1.

No. 430,585.

Patented June 17, 1890.



Witnesses
P. M. Hulbert
Geo. A. Gregg

Inventor
William G. Latimer
By James Whittermore
Att'y.

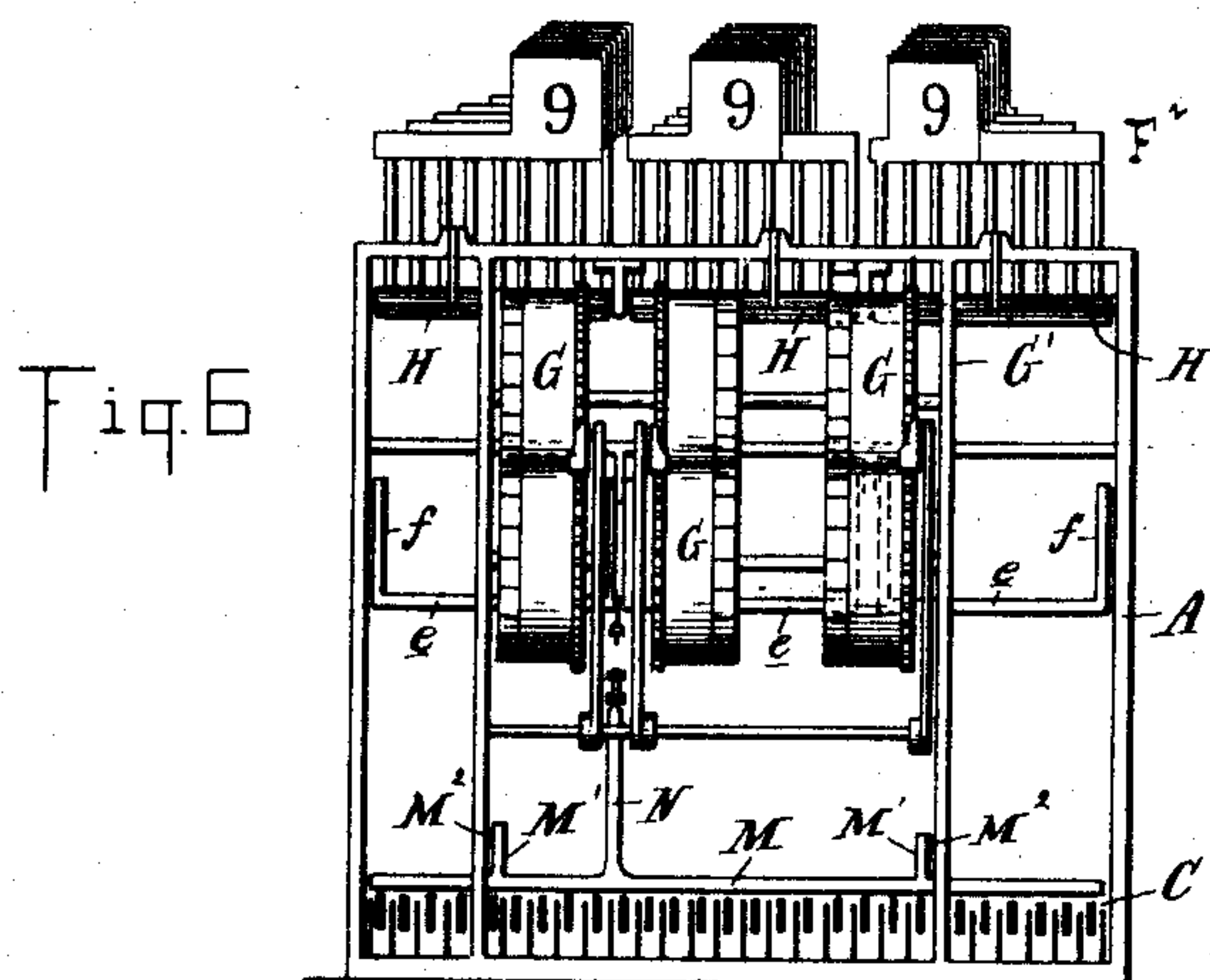
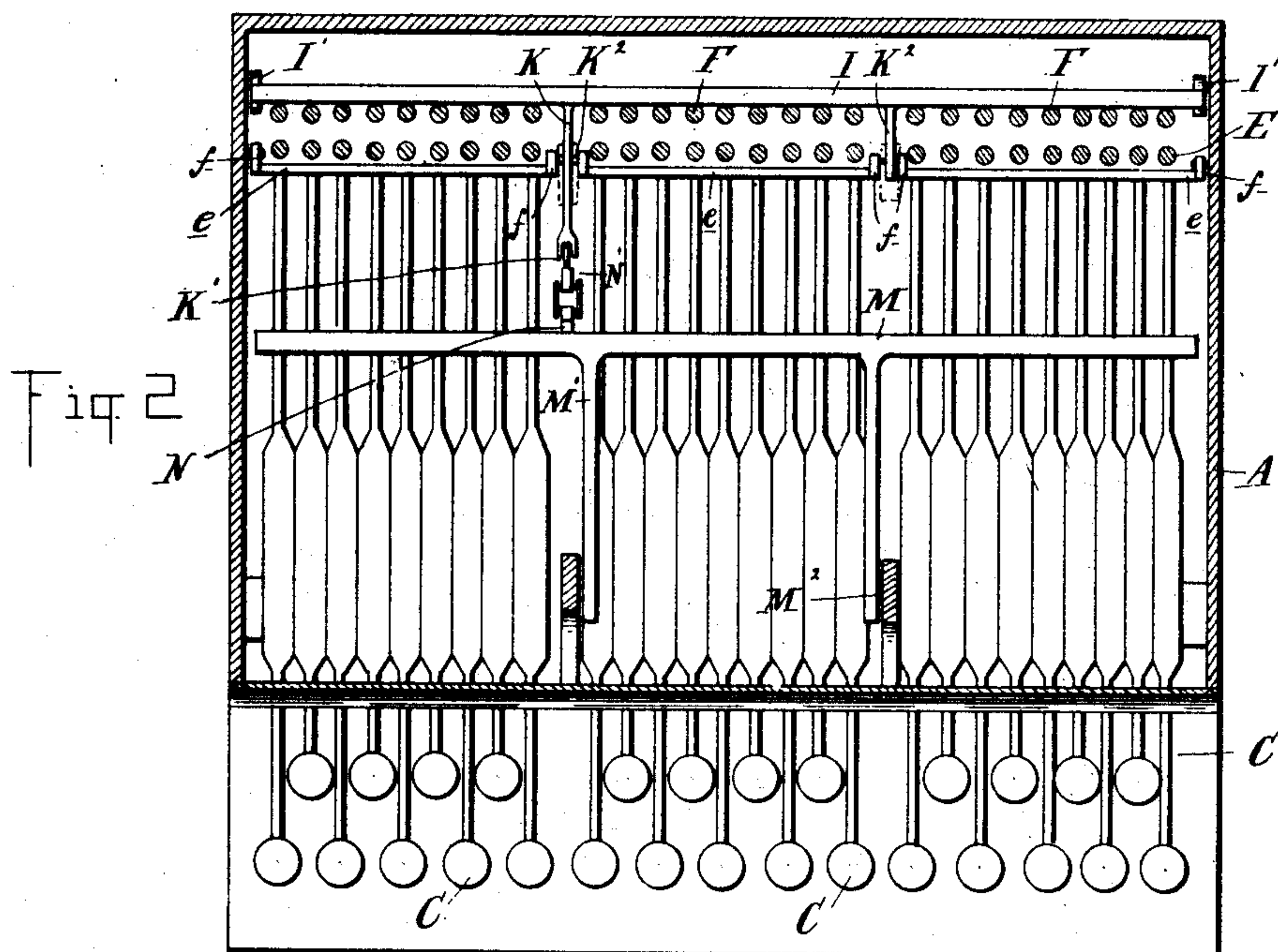
(No Model.)

3 Sheets—Sheet 2.

W. G. LATIMER.
CASH REGISTER AND INDICATOR.

No. 430,585.

Patented June 17, 1890.



Witnesses:
P. M. Hulbert
Geo. A. Gregg.

Inventor:
William G. Latimer
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(No Model.)

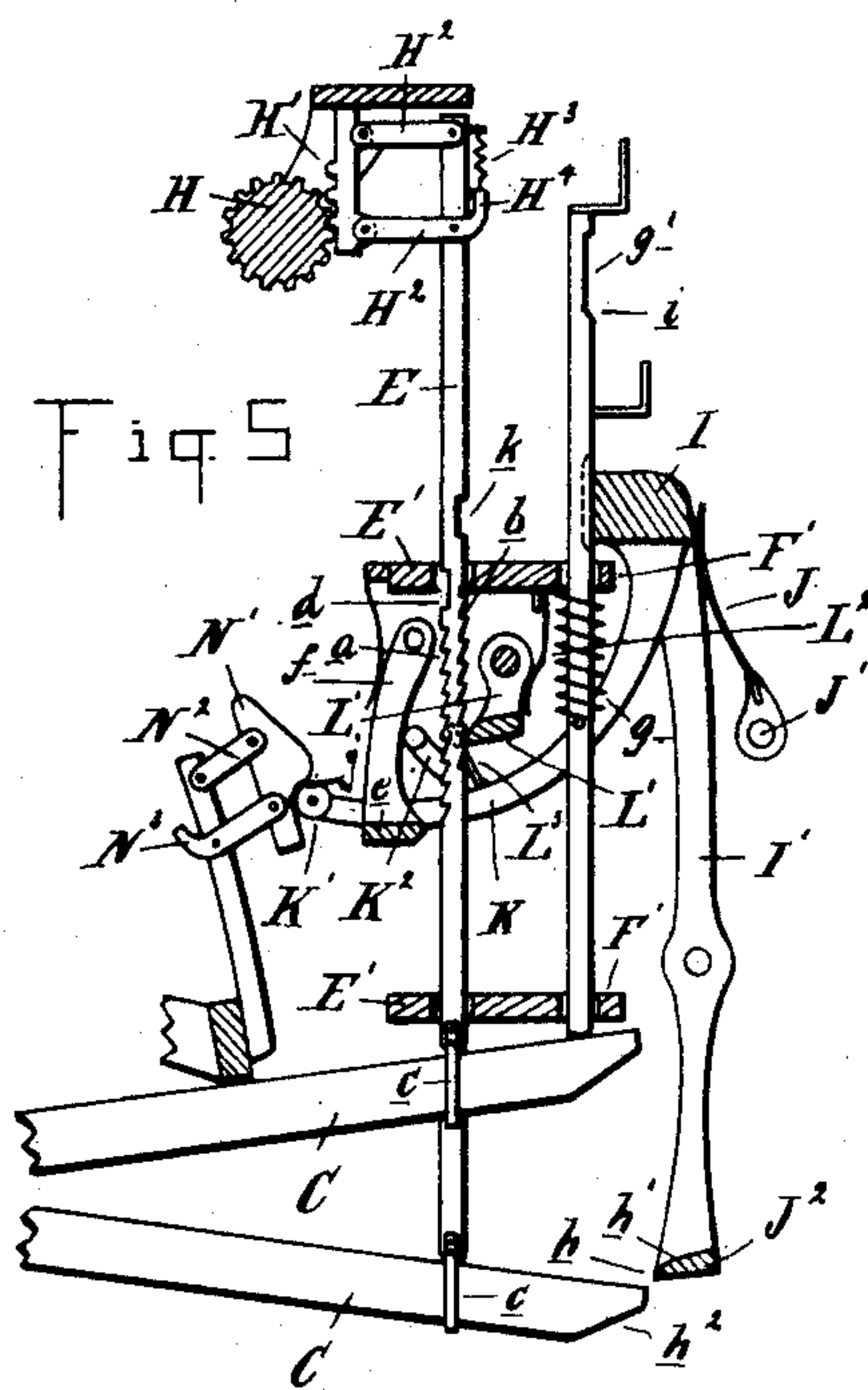
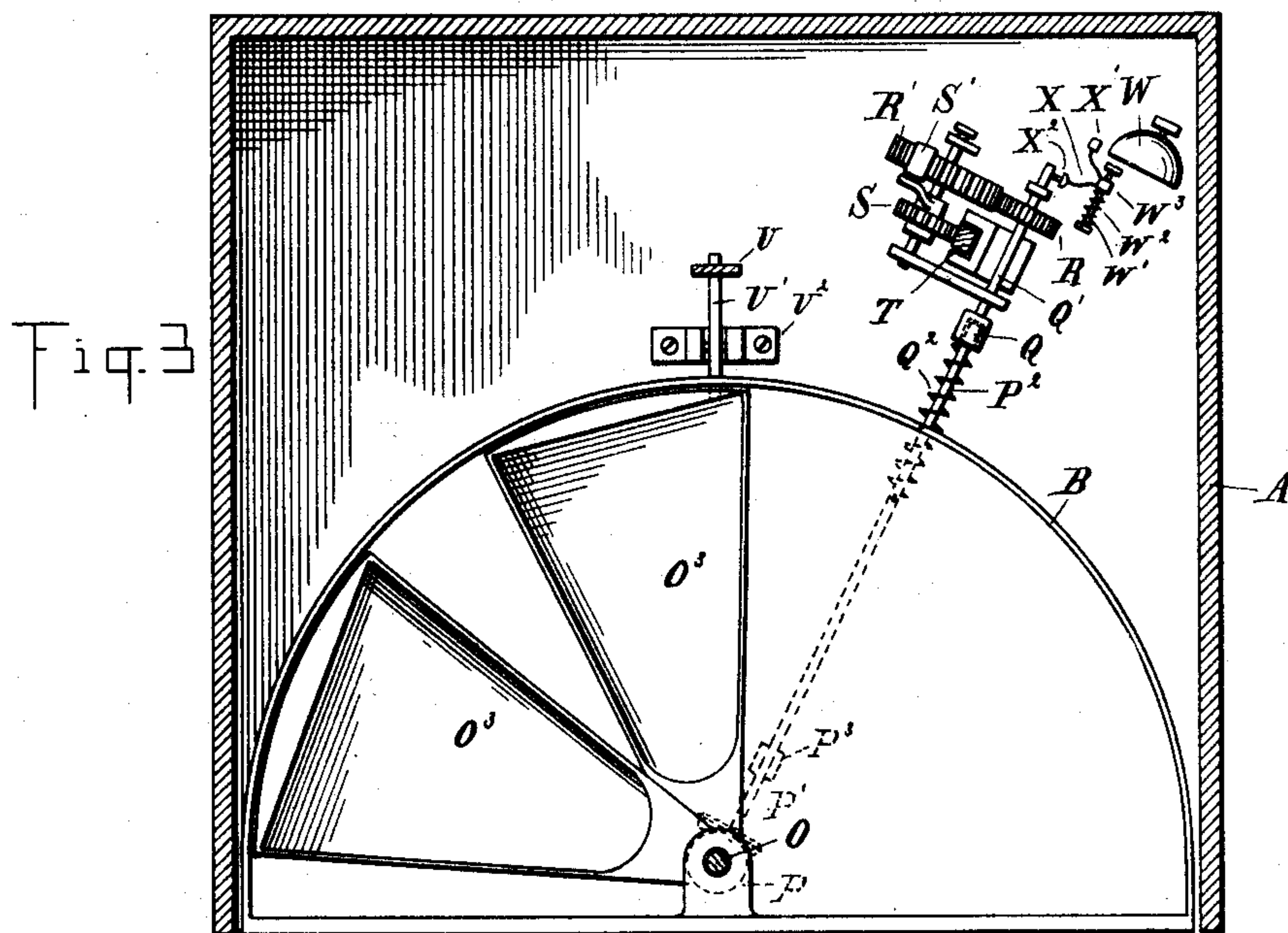
3 Sheets—Sheet 3.

W. G. LATIMER.

CASH REGISTER AND INDICATOR.

No. 430,585.

Patented June 17, 1890.



Witnesses:

P. M. Hulbert
Geo. A. Gregg.

Inventor:

William G. Latimer

James Whittemore
Atty.

UNITED STATES PATENT OFFICE.

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

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 430,585, dated June 17, 1890.

Application filed January 22, 1890. Serial No. 337,769. (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 Cash-Registers, 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 cash registers and indicators; and the invention relates to that class of machines combining a series of keys, a series of indicating-tablets, a series of actuating-rods
15 actuated thereby, and registering mechanism, together with a cash-till designed to be automatically opened and closed at each registration.

20 The invention consists, first, in the peculiar means for holding up the registering-tablets; second, in the peculiar means of locking down the unoperated keys during the interval of registration of the operated keys; third, in the peculiar construction, arrangement, and
25 combination of the various parts, all as more fully hereinafter described.

30 In the drawings which accompany this specification, Figure 1 is a vertical transverse section of my device. Fig. 2 is a horizontal longitudinal section thereof on line $x x$. Fig. 3 is a plan of the till and its operating mechanism. Figs. 4 and 5 show parts of Fig. 1 with the mechanism at different stages of operation, and Fig. 6 is a diagram front ele-
35 vation of the machine.

40 A is the case of any suitable shape and construction, in the upper part of which is secured the registering indicating mechanism, and in the lower part of which is secured the rotating till B.

45 C are the keys pivoted upon the transverse shaft D, and each key carrying at its rear end a registering-rod E, passing through the guides E', and a tablet-rod F, passing through the guide F', the latter carrying the tablets F² at their upper ends.

50 G are registering-wheels journaled in the frame G', of any suitable construction, and preferably arranged as in my Letters Patent, No. 409,107, dated August 13, 1889, and operated through the gear-roller H, which is actu-

ated by means of the racks H', pivotally supported upon the registering-rods by means of the connecting-arms H², which are held normally in a vertical position by means of a spring H³. The upwardly-projecting arm H⁴ of the lower connecting-arm H² engages with the rear side of the registering-rod and acts as a stop to hold the rack in its vertical position in its upward movement, but allows it to swing back out of engagement with the roller H in its downward movement. Each of the registering-rods is provided on its front surface with a series of detents a , forming a rack on its rear face with a series of detents b , forming a similar rack, and these registering-rods are pivotally connected with keys in any suitable manner, preferably by means of the stirrup c . Each of the registering-rods is also provided with a cut-away portion d , opposite the swinging bar e , which latter is pivotally supported by the hangers f to the frame and preferably arranged with one bar to each group of keys, the keys being arranged in groups of nine, as explained and claimed in my previous patent, above referred to.

Each of the tablet-supporting rods has sleeved thereon a spring g , secured at its lower end to the rod, and bearing with its upper end against the guide F', acting with its tension to withdraw the rod to its lowest position. The tablet-rods are provided with the cut-away portion g' at their upper ends opposite the universal bar I, which extends across all of the tablet-rods, and is pivotally supported in position by means of the hangers I', pivoted to the sides of the frame. This bar is held in contact with the tablet-rods by the tension of the spring J, which is supported at J' in any suitable manner. The hangers I' extend below the pivotal point to at or near the bottom of the machine, and are connected together by the cross-bar J², which moves slightly above the rear ends of the keys, and is preferably made with a sharp forward edge h , an inclined top h' , and the end of the keys are beveled on their lower sides at h^2 .

K is a forwardly-projecting actuating-arm extending from the bar I at suitable intervals between the groups of keys or at each side of the machine, as desired, and carrying

at its forward end the roller K' , and intermediate of its ends is provided with an auxiliary actuating-arm K^2 , which contacts at its upper end with the hanger f of the bar e .

5 L is a cross-bar pivoted by means of the hangers L' in the rear of the registering-rods. It is acted on forward by the tension of the spring L^2 , and is held from such motion, except at stated intervals, by the arm L^3 , se-
10 curred to the actuating-arm K of the bar I .

M is a reciprocating cross-bar extending across all of the keys or across each group of keys, supported by means of the hangers M' , pivoted at M^2 in the frame G' of the ma-
15 chine, and so arranged that it is carried up and down upon the depression of any key. This cross-bar is provided with a standard N , provided with a swinging knocker N' , the attachment between the two being by means of
20 the links N^2 , the extension N^3 of the lower link acting as a stop to the swinging knocker in its downward movement, but allowing it to move upward freely.

The operation of the parts described is as
25 follows: Upon the depression of any given key its rear end is elevated, carrying with it its registering-rod and tablet-rod. The shoulder i , between the lower part and the cut-away part of the tablet-rod, will strike the
30 bar I and move it slightly to the rear. The upward movement of the key carries with it also the bar M and the swinging knocker N' , which strikes against the roller K' on the arm K of the bar I , as shown in Fig. 4, swinging
35 the bar I out of engagement with the tablet-rod and also withdrawing the auxiliary arm K^2 from engagement with the hanger f , thus allowing the bar e to assume a vertical po-
40 sition, in which position its inner edge engages with the rack a on the registering-rod. When the key has completed its upward movement, the cut-away portion j on the
45 swinging knocker will engage over the roller K' and allow the arm K to swing back again to its normal position, the knocker swinging
out of the way, as shown in Fig. 5. This brings the friction-bar I into contact with the
50 rear face of the elevated or operated tablet-rod, and it will not have contact with the un-
operated tablet-rods, for the reason that it is opposite the cut-away portion thereof, and therefor all tension of the spring J will be
55 exerted to make a friction-contact between the bar I and the elevated or operated tablet-rods, tending to hold them in their position. As soon as the bar I swings into contact with
the tablet-rods and the arm K returns to the position shown in Fig. 1 the bar L swings
60 into engagement with the rack b on the rear side of the registering-rod, thereby preventing the further actuation of that rod, being held in contact therewith by means of the
spring L^2 . As soon as the bar e engages with the rack a it is evident that that registering-
65 rod will be held in its adjusted position during the operation at any adjusted point of incomplete registration by such engagement,

and the bar e will be held in engagement with the rack, as shown in Fig. 4, until the bar K swings back into the position shown in Figs. 70
1 and 5. This construction makes necessary the complete operation of each key before that registering-rod can be again returned to its lowered position. The rear end of the
75 key is elevated a slight distance before the knocker N' actuates, through the medium of the roller K' , and arm K and swinging bar I . This movement is sufficient to allow the end
80 of the keys to raise above the bar J^2 before that bar is swung over the ends of the unoperated keys, as will be the case as soon as the bar I is moved as above described. It will be
seen that just as soon as the bar J^2 is moved over the ends of the unoperated keys it will act
85 as a lock to prevent their operation during all of the period that the bar I is swung back-ward—that is, during the period of registra-
tion of the registering-rods, or until each key has completed its movement. This makes im-
90 possible the operation of any second key during the movement of an operated key.

The construction of the till and till-operating mechanism is as follows: O is a vertical shaft journaled in the frame of the machine
95 at its top and bottom, and secured therein is a till B' . This till is preferably of semicircular shape, as shown in Fig. 3, and is provided with suitable movable coin-receptacles, such
as O^3 . Its inner construction is, however, of no importance in this application, as it may
100 be as desired. The shaft O has secured to it the bevel gear-wheel P , which meshes with the bevel-pinion P' on the horizontal shaft P^2 , journaled in suitable bearings P^3 in the bot-
105 tom of the machine. This shaft loosely engages at its rear end into the sleeve Q , which is secured upon the shaft Q' .

Q^2 is a spring secured at one end to the shaft P^2 and at the other end to the sleeve Q .

R is a gear-pinion secured upon the shaft
110 Q' , which meshes with the gear-wheel R' , secured upon the shaft R^2 , which is journaled in suitable standards on the base of the machine.

Upon the shaft R^2 is loosely sleeved the gear-
115 pinion S , which carries upon a laterally-extending arm a spring-pawl S' , which engages with the gear-wheel R' .

T is a rack-bar secured at its upper ends to an extension T' of the hangers M' .
120

U is a vertical arm connected at its upper end to the cross-bar M , and at its lower end provided with a slot in which engages one
125 end of the stop U' . The stop is pivoted in a standard U^2 in the base of the machine and projects with its forward end in the path of the till. The till is provided on its under side with a suitable cut-away portion V . The forward part of the till is provided with the
130 curved shield V' , covering the pinion P .

The parts being thus constructed, their operation is as follows: Upon the depression of a key, such as C , the hanger M' is raised, and with it the bar U and the bar T . In raising

the bar U the forward end of the stop U' is moved out of engagement with the cut-away portion V of the till, thereby allowing the till to freely rotate upon its shaft. The bar T, having a rack on its face which engages with the gear-wheel S as the former is raised, rotates said wheel, and through the medium of the lateral arm and the pawl S' rotates also the gear-wheel R', which in turn imparts motion to the gear-wheel R and the shaft Q', winding up the spring Q². The tension of this spring will act to rotate the shaft P², which, through the medium of the bevel gear-wheels P' and P, will rotate the shaft O, and with it the till, swinging it out of the case into convenient proximity for the operator to make change. As soon as the key is allowed to return to its former position the stop U' will drop into engagement with the underside of the till, so that when the till is drawn by the action of the string into its closed position by completing its revolution it will enter the cut-away portion and stop and lock it in said position. As the bar T falls, the spring-pawl will be carried back over the gear-wheel R', ready for a new operation. It will thus be seen that the till is opened and closed by its rotating movement, and that the motion is imparted thereto by the tension of the spring.

The bell-ringing mechanism is designed to strike the bell upon the depression of each key or keys, and the same is of the following construction: W is the bell, secured in any suitable manner upon the base of the machine in proximity to the rear end of the shaft Q'. Beside this bell is supported the shaft W', upon which is secured the spring W², one end of which only is secured to the shaft, and the other end of which is secured to a sleeve W³. This sleeve carries two outwardly-projecting arms X X'. The former projects into the path of the abutment X² on the shaft Q', while the latter carries the bell-hammer, also arranged that as the shaft Q' rotates, as before described, upon the depression of a key or keys the abutment X² will strike the arm intermittently, thereby causing the spring W² to be under compression temporarily, and as soon as the abutment is released from the arm X the spring will expand and the hammer X' will strike the bell. In constructing the registering-rods with the indented rack a, in order to have the bar e engage into that rack upon the operating-keys, all of the registering-rods are necessarily provided with a cut-away portion k opposite the bar of corresponding depth to which the rack is cut. Otherwise the bar would not engage into the rack. To indent the rack into the bar, making the bar the same thickness the whole length, is a decided advantage in construction, as it enables me to make my guides all of the same size and to take plain rods, which can be readily purchased, and simply form the notches therein.

I do not herein broadly claim a rotary till nor the vertically-operated registering and

tablet rods and operating mechanism for the same, as I have embodied the same in another application filed on October 5, 1889, No. 326,085.

What I claim as my invention is—

1. In a cash register and indicator, the combination, with a series of keys and a series of tablet-rods operated thereby, of a spring-actuated friction-bar engaging with the even rear edge of the operated tablet-rods to hold them in their elevated position by frictional contact only, 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, of corresponding cut-away portions upon said tablet-rods and a friction-bar opposite said cut-away portions, adapted to engage only the operated tablet-rods to hold them in their elevated position, 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 corresponding cut-away portions upon the tablet-rods, a spring-actuated friction-bar opposite said cut-away portion, and connecting mechanism between the key and said friction-bar, whereby it engages only upon the operated tablet rod or rods to hold them in their elevated position, substantially as described.

4. In a cash-register, the combination, with the keys and the registering-rods actuated thereby, of a corresponding detent in said registering-rods, a rack on said rods below said detent, a movable bar opposite said detent, and mechanism for moving said bar into engagement with the rack during the period of registration, substantially as described.

5. In a cash register and indicator, the combination, with a series of keys and a series of tablet-rods operated thereby, of the bar I, engaging with the rods, the hangers I', supporting the bar, and the bar J² on the hangers, substantially as described.

6. In a cash register and indicator, the combination, with a series of keys and a series of tablet-rods operated thereby, of the bar I for engaging with the rods, hangers I', supporting the bar, the bar J² on the hangers, having the incline h', and the incline h² upon the keys, substantially as described.

7. In a cash register and indicator, the combination, with a series of keys, a series of tablet-rods, and a series of registering-rods operated thereby, of the bar I, the arm K, the auxiliary arm K², the bar e, the bar L, and the spring L², substantially as described.

8. In a cash register and indicator, the combination, with the keys, of the bar M, the rack-bar T, gear-wheel S, spring-pawl S', connecting mechanism with the shaft Q', the sleeve Q, shaft P², and connecting mechanism with the shaft O' and the money-till secured upon said shaft, substantially as described.

9. In a cash-register, the combination, with a series of keys, of a rotating till below said keys, a spring-actuated shaft and connecting

mechanism between said shaft and the keys, and an alarm operated from said shaft upon the operation of a key or keys, substantially as described.

- 5 10. In a cash register and indicator, the combination, with a series of keys, of the bar M, the rack-bar T, gear-wheel S, spring-pawl S', gear-wheel R', gear-pinion R upon the shaft Q', the spring-hammer X, bell W, and

abutment X², the parts being arranged to operate substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 17th day of October, 1889.

WILLIAM G. LATIMER.

Witnesses:

ED. MCBREARTY,
M. B. O'DOHERTY.