

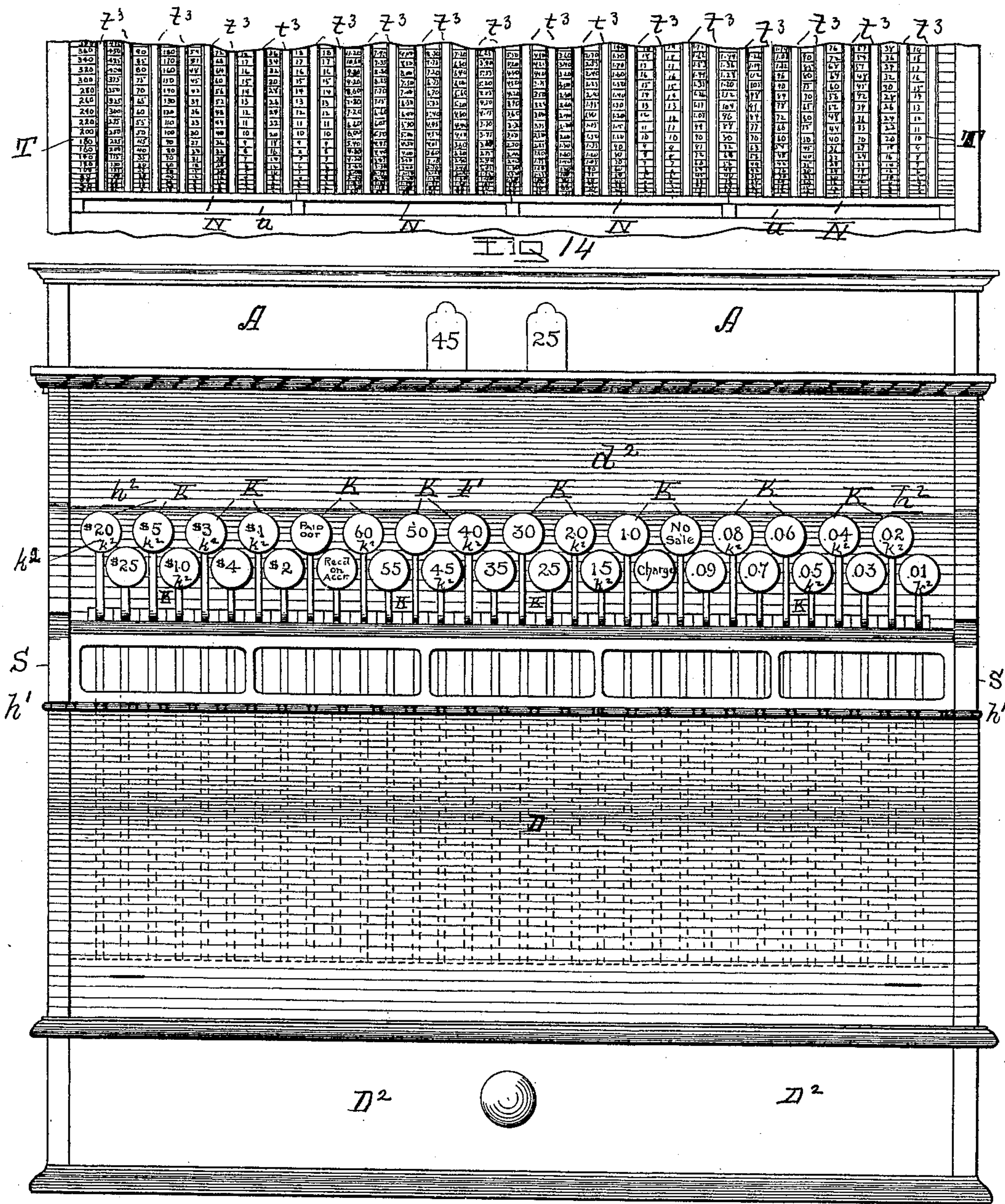
(No Model.)

4 Sheets—Sheet 1.

G. F. COOK.
CASH REGISTER.

No. 519,567.

Patented May 8, 1894.



WITNESSES

William A. Lunt

Alexander S. Brintnall

FIG 1

INVENTOR

George F. Cook

by W. E. Hagan atty

(No Model.)

4 Sheets—Sheet 2.

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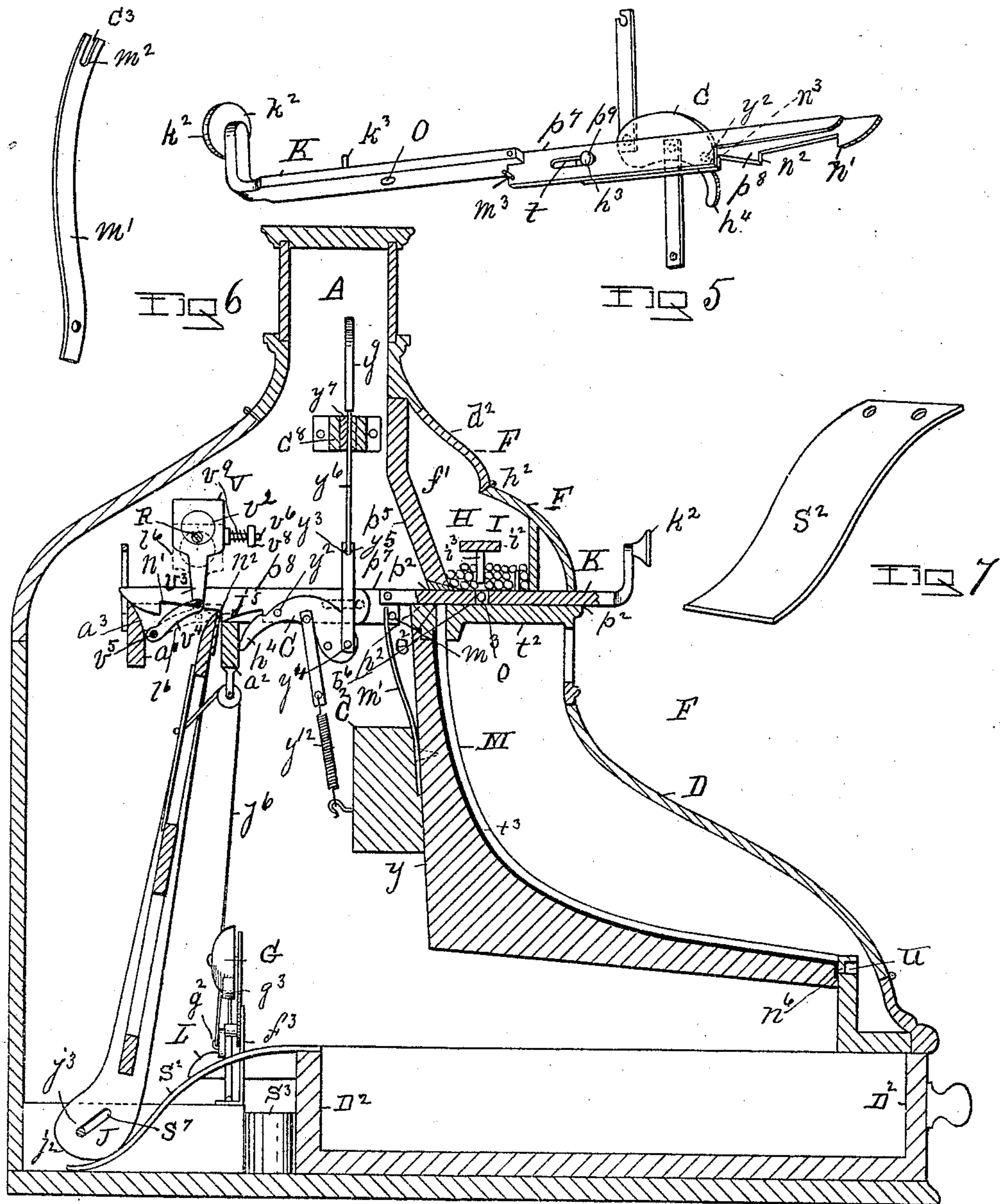


FIG 2

WITNESSES

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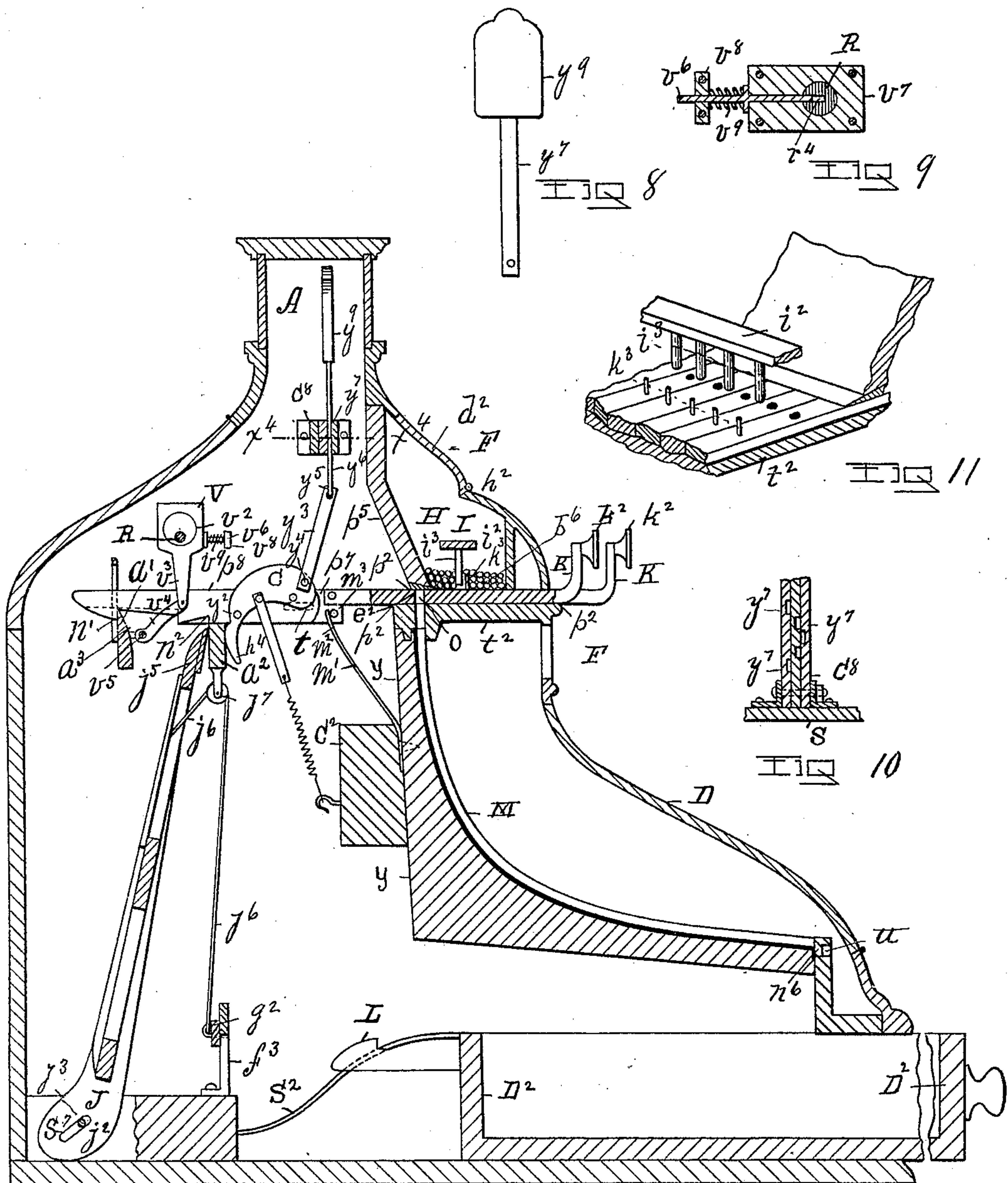
(No Model.)

4 Sheets—Sheet 3.

G. F. COOK.
CASH REGISTER.

No. 519,567.

Patented May 8, 1894.



WITNESSES

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FIG 3

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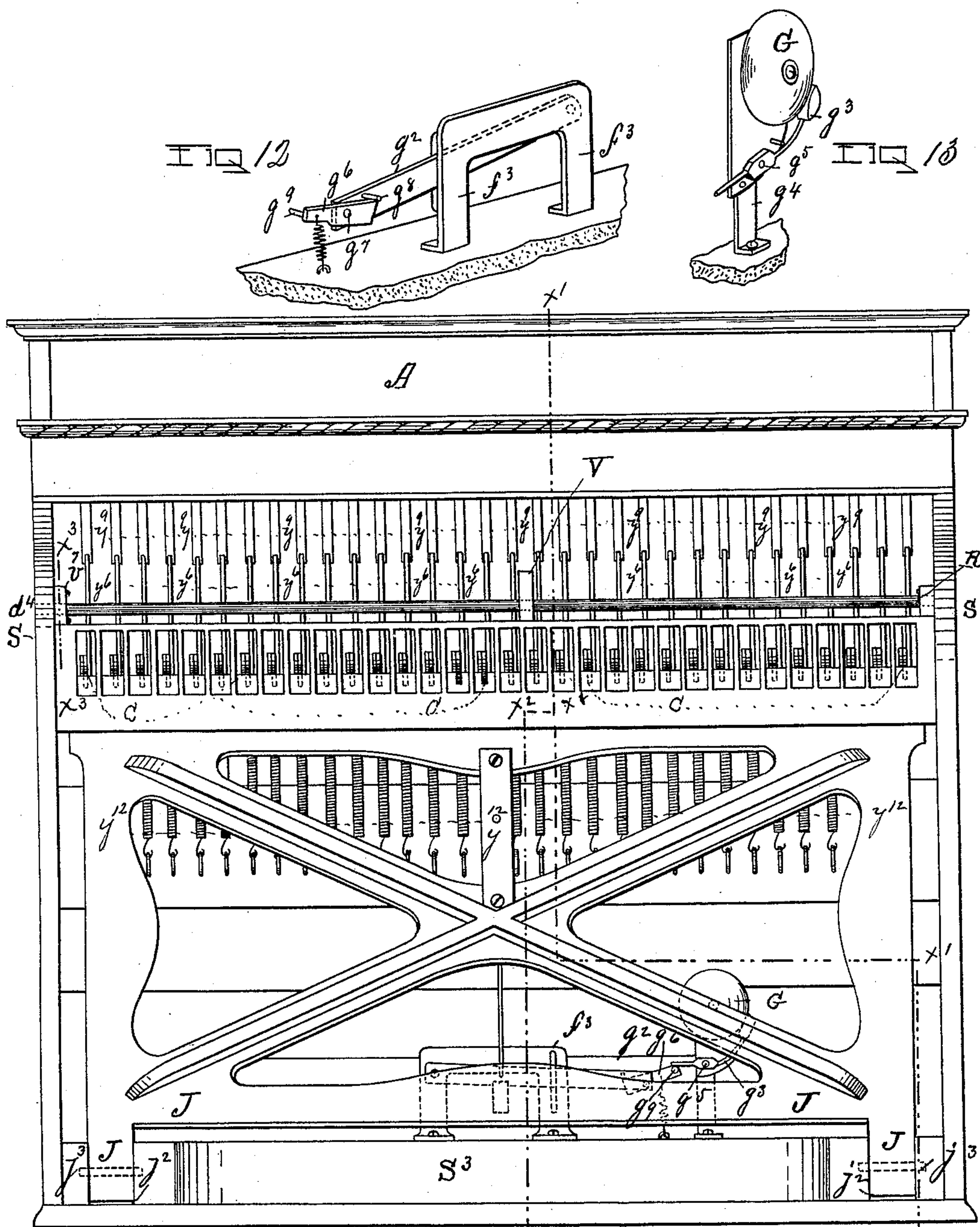
(No Model.)

4 Sheets—Sheet 4.

G. F. COOK.
CASH REGISTER.

No. 519,567.

Patented May 8, 1894.



WITNESSES

William A. Sweet

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UNITED STATES PATENT OFFICE.

GEORGE F. COOK, OF LANSINGBURG, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE CAPITAL CASH REGISTER COMPANY, OF TROY, NEW YORK.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 519,567, dated May 8, 1894.

Application filed June 8, 1893. Serial No. 476,904. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. COOK, of the village of Lansingburg, county of Rensselaer, and State of New York, have invented a new and useful Improvement in Cash-Registers, of which the following is a specification.

My invention relates to cash registers and in some of its features to improvements upon the mechanism shown and described in an application for Letters Patent made by John Hare and myself, which was filed in the United States Patent Office October 5, 1892, and known as Serial No. 447,922, and which is now pending, and also to other features not shown and described in said application, and these improvements have for their object the better adaptation of this class of apparatus to the uses for which it is designed, and to cheapen the cost of producing them by simplifying their construction.

Accompanying this specification to form a part of it there are four plates of drawings containing fourteen figures illustrating my invention, with the same designation of parts by letter reference used in all of them.

Of these illustrations Figure 1 is a front view of the apparatus. Fig. 2 is a cross section taken from front to rear on the line x' , x' , of Fig. 4, with the cash drawer shown as closed. Fig. 3 is another cross section taken from front to rear on the line x^2 , x^2 , of Fig. 4, with the cash drawer shown as opened. Fig. 4, is a view of the back of the apparatus with the back-plate removed to show the interior. Fig. 5, is a perspective of one of the push-keys, connected stop-bar, latch-bar, and crescent-form turn levers having an upcast arm by which the card indicating the amount of each sale is raised, these connected parts being shown as detached from the other mechanism. Fig. 6, shows as detached from its connections and in perspective one of the leaf-springs, which are made with a slot in their free ends, and each of which when in position are adapted to straddle at their slotted ends one of the stop-bars, back of a pin projected horizontally through the latter, and against the force of which spring as applied to each of said stop-bars the latter, the keys, and connected latch-bars are moved inwardly.

Fig. 7, is a perspective of an ogee-form leaf-spring shown as detached, and which when in position is attached to, and projected from the rear end of the cash drawer. Fig. 8, is a front view of one of the sales indicating tickets or cards, and the slide-bar by which it connects with the crescent-form turn lever, shown as detached. Fig. 9, is a section taken on the line x^3 , x^3 , of Fig. 4. Fig. 10, is a section taken on the line x^4 , x^4 , of Fig. 3. Fig. 11, is a perspective of a part of the ball-hopper interior. Fig. 12, is a perspective of the gong and its striker, and part of the connection the latter makes with its ringing apparatus. Fig. 13, is a perspective of the gong ringing mechanism, shown as detached. Fig. 14, shows in perspective a portion of that part of the interior in which the ball registering chutes are contained.

The several parts of the apparatus thus illustrated are designated by letter reference and the function of the parts is described as follows:

The letter F designates the front of the cash register, which is made with a door D, that is hinged to the sides S, at h' , on which connection it is adapted to be swung up to obtain access to the tube-chamber. This front has an upper story or apartment f' , having a door d^2 , that is hinged at h^2 , and on which connection it is adapted to swing up for access to the ball hopper interior H.

The letter A designates a chamber formed in the top of the apparatus, said chamber having glass in its front and rear walls, and into which chamber the sales tickets or cards are caused to rise so as to be seen when the drawer is opened and a sale made.

The letter D^2 designates the cash drawer arranged in the bottom of the inclosure containing the apparatus. This cash drawer at its rear end is provided with a spring S^2 , which under-runs the rounded lower end of the tripping lever J, the construction of which will be subsequently described.

The letter S^3 designates an elliptical-form leaf-spring, against the recoil force of which the drawer D^2 is forced inwardly to close.

The letter L designates a latch on the rear end of the cash drawer, the operation of which

serves to hold the drawer when forced inwardly and to operate the striker of the gong bell when the drawer is opened or closed, as will be more fully described hereinafter.

5 The letter K designates the keys or push-bars, which at their outer ends where upcast on an angle are provided with a disk k^2 , facing to the front, and having thereon the sale amount which each key is designed to register. These keys each are adapted to be moved
10 inwardly and outwardly in a slide-way p^2 , made in the interiorly placed inclined partition p^5 , and the tube support y . Each of these keys, on its inner end is pivotally connected to the front end of a blade-form horizontally arranged stop-bar p^7 . Each of these
15 stop-bars connects with a horizontally arranged blade-form latch-bar p^8 , by means of a horizontal slot t , made in the stop-bar, and a slide-pin p^9 , attached to the latch-bar projected through said slot in the stop-bar, said
20 pin having a head h^3 , which overlaps the edges of the slot. As thus constructed when each key is moved inwardly the stop-bar moves rearwardly the full length of the slot t , before
25 the pin p^9 engages with the outer end of the slot to move the latch-bar, thus affording an interim in the rearward movement of the key for the balls carried thereby to enter the
30 chutes or tubes, as will be more fully explained hereinafter in connection with the operation of the latter and the keys. Each of the latch-bars are made with a latching notch n' , and a tripping notch n^2 , on their lower
35 edges, and each of the stop-bars are made with a tripping notch n^3 ; and when both the latch-bar and stop-bar are forced inwardly for the former to latch, the tripping notch n^2 , of the
40 latch-bar is parallel with the notch n^3 , of the stop-bar, as shown at Figs. 3 and 5, and when the latch-bar after being unlatched is moved frontwardly, the notch of the stop-bar will be in front of and in advance of that of the latch-bar, as shown at Fig. 2, in part by a dotted
45 line.

The letters a' , and a^2 , designate bridges, which extend across the interior of the apparatus from side to side. That one of them designated at a' , having its inner top edge
50 rounded off to form a latching face at a^3 , whereon and whereat the latch-bars p^8 , engage by means of the notch n' , formed thereon when forced inwardly. The bridge indicated at a^2 , being arranged to arrest the inward
55 movement of the tripping-bar, and to engage with to operate the turn levers, as will be more fully described hereinafter.

The letter m' designates a leaf spring made with a slotted free end m^2 , as shown at Fig. 6.
60 This spring at its lower end is connected to the cross-bar C^2 , and at its upper end is made with an open slot C^3 , adapted to receive the lower edge of the blade-form stop-bar back of the pin m^3 , extending through said bar, so as
65 to project from each side of the latter, there

being one of these springs for each stop-bar. As thus constructed when either of the keys, connected stop-bar, and latch-bar are moved inwardly, they are together so operated
70 against the force of its spring m' .

The letters C designate a sheet-formed crescent shaped turn-lever, of which there is one for each key, stop-bar, and connected latch-bar. Each of these turn-levers C is pivoted
75 at y^2 to one of the latch-bars.

The letter y^3 designates an arm of which there is one pivoted to each of the crescent-form turn-levers at y^4 , and at their upper ends, each of these arms are pivotally connected at
80 y^5 to a slide-bar y^6 , that is arranged to be vertically reciprocated in a guide-bar y^7 , made in the cross-bar C^8 ; and the letters y^9 designate a card arranged on the upper end of each of the arms y^3 , on both sides of which are
85 shown in figures the sales amount expressed on the disk of the key which when moved inwardly operates said arm and connected turn lever.

The letter y^{12} , designates a spiral spring connected to each of the turn levers against
90 the force of which spring they are operated to turn upwardly to actuate the arm and card connected thereto as before described. As thus constructed when the keys are pushed inwardly they cause the horn-form end h^4 , of
95 the connected crescent-form lever to engage with the bridge a^2 , and this causes the turn levers in each instance of their use to move on their pivotal connection and thereby project upwardly the arms y^3 , so as to show the
100 card on each of them in the chamber A.

The hopper H, is formed in the upper part of the apparatus inclosure, and extends interiorly from side to side, having the inclined
105 partition p^5 , for its back, the door d^2 , at its front, with the bottom formed by the upper surface of the keys K, arranged side by side to rest on the transverse partition t^2 , as shown at Fig. 11. The hopper interior I, has arranged therein the bar i^2 , which at its ends is
110 secured to the sides S, and extends from end to end of the hopper.

The letters i^3 , designate pins that are pendent from the under side of the bar i^2 , and so
115 as to have their lower ends above, but not in contact with the tops of the keys, and the function of these pins is to act upon the balls contained in the hopper, as the keys are moved to guide the balls into the vertical openings or passages O, made in the keys.
120

The letters k^3 , designate pins that are upwardly projected from the face of the keys and the function of these pins is, as the keys are moved to stir up the balls resting on the
125 keys, to facilitate their entering the holes O, made in the latter.

The letters M designate tubes or chutes which are preferably made of sheet metal, which are arranged to curve downwardly and frontwardly in parallel alignment upon the
130

front face of the support y , which latter is arranged within the interior of the apparatus and extends from side to side, as shown at Figs. 2 and 3 in cross section. Each of these tubes is provided with a slot t^3 , through which the balls that have descended into the chutes or tubes may be seen when the front door D is opened.

The letter N designates stops arranged in sections, and they are made rectangular in cross section as they are shown at Figs. 2 and 3, and in side elevation at Fig. 14, with the stop side n^6 , inserted between the lower ends of the tubes, and the cross-bar u , and the other face of the section resting on the top of the latter. These stops detain the balls in the chutes, and upon their upper surfaces have figures representing the unit amount which the balls in the tubes opposite which they are placed, represent, their figures designating value are not shown.

The letter T designates indicating tables of amounts of which there is one for each tube, at its sides, these tables being arranged upon the front curved face of the support y , and which figures where read from the uppermost ball of the series in each tube indicate the amount that the balls in each tube represents, which in each instance in unital character are multiples of the amount expressed on the key with which the tube connects. These tubes M at their upper ends e^2 are each immediately beneath that one of the keys operating to register at each movement a unit of the same value, and their operation in connection with the chutes is as follows: When the keys are in the position shown at Fig. 2, one of the balls b^6 , will enter the passage-way O in each of them, to be retained there by the upper surface of the transverse partition t^2 . When either of the keys are moved inwardly and the vertical passage O, in each of them is over the upper end e^2 , of each of the chutes or tubes N, the balls held by the keys in the passages O, in each instance, will drop into the upper end of the chute or tube beneath the key with which it registers, to descend therein, with the first ball so entering resting on the stop N, at the bottom of the chute, and each succeeding ball so entering the same chute to rest against the ball which preceded it, with the number of the balls in each tube or chute indicated by the adjacent table of figures where opposite the uppermost one. The pivotal connection between the key and the stop-bar permits the latter and latch-bar to rise when latching without compelling the key-bar to rise on its inner end as it must do when the key and latch-bar are moved as one piece. When the account of the balls is taken, the stops N are removed, and the balls fall into the drawer to be returned to the hopper and the stops are replaced. When the keys are being pressed inwardly to insure sufficient time for the balls to pass into the

chutes the stop-bar as moved inwardly by the keys does not act on the latch-bar and crescent-form turn-lever until the end of the slot made in the stop-bar and this engagement allows of enough detention to insure the positive descent of the balls into the chutes or tubes.

The letters J designate a tripping lever which extends across the back of the mechanism within the inclosure from end to end. This tripping lever has a rounded lower end j^2 , and it is hung on stationary journals j^3 , at each side of the apparatus, as shown at Fig. 4. These journals have a slotted bearing S^7 formed in the lower rounded end of the tripping lever on which the latter can be operated to rise or fall, and also to turn. The upper end of this tripping lever is made with a tripping bar j^5 , extending throughout its length from end to end of the apparatus, and which is adapted, when said lever J is raised to engage with the tripping notch n^2 , on the latch-bar, and the notch n^3 , on the stop-bar, when latched on to the bridge a' , to raise them from off the latter to be drawn forwardly by the action of the spring m' . As thus made when any one or more of the latch-bars are latched on to the bridge a' , and the cash-drawer D^2 , is forced inwardly its spring S^2 , will under-run the rounded lower end j^2 , of the tripping lever J, and thus raise its tripping-bar j^5 , to trip all the latch-bars that are latched on to the bridge a' , and to bring them each under the action of one of the springs m' by which they are moved forwardly to be operated upon as before. The tripping lever J, is provided with a cord j^6 , which is connected thereto, and therefrom passes over a pulley j^7 , pendent from the bridge a^2 , and where extending downwardly from the pulley this cord attaches to a pivoted lever g^2 , connected to a frame f^3 , on to which lever the cash-drawer under-runs to latch when pushed rearwardly, and by which cord and its connections as the tripping lever is moved outwardly at its upper end by the keys, connected latch, and stop bars, this cord is actuated by the tripping lever to raise the lever g^2 , on its pivotal connection to thus unlatch the cash-drawer, and operate the gong striking mechanism. This latch L, on the cash-drawer under-runs the pivoted lever g^2 to latch thereon and to hold the drawer closed against the recoil action of the spring S^3 , and when the cord is operated to raise the lever g^2 , the drawer is forced to open by the spring S^3 .

The letter G, designates the gong or bell which is provided with a striker g^3 , which is pivoted to the gong support g^4 , at g^5 .

The letter g^6 , designates a lever or bar which is centrally pivoted to the lever g^2 , at g^7 , and adapted to engage with a pin g^8 , laterally projected from the lever g^2 , at one of its ends, and at its other end it is constructed with a striker tripping pin g^9 , and is provided with

a spring connecting with said lever g^6 , and the floor of the apparatus inclosure. As thus made when the lever g^2 , is under-run by the latch of the cash-drawer, so as to be raised it operates the lever g^6 , to actuate the striker and ring the gong; and when the cash-drawer is released by the action of the tripping lever as before described, and the lever g^2 , when raised also actuates the lever g^6 , to operate the gong striker, so that the gong rings when the drawer is opened or closed.

The letter R designates a lock-bar which is arranged to turn in journals on the lower face of the sides S, and extend along over the latch-bars, and stop-bars, as shown at Fig. 4. Centrally this lock-bar is constructed with a lock-block V, arranged on an eccentric v^2 , that is keyed to the lock-bar.

The letter v^3 designates a leg that is pendant from the block V, which leg at its lower end pivotally connects with the link v^4 , the latter at its lower end being at v^5 , pivotally connected to the side of the bridge a' , below its latching top edge.

The letter v^6 designates a detaining pin which is arranged to enter the journal box v^7 , of the lock-bar to bear upon the latter, in a recess r^4 and to keep it from swinging down as acted upon by the weight of the lock-block. This detaining pin outside of where engaging with the lock-bar is provided with a nut v^8 , and a spiral spring v^9 , encircling the pin between the said nut and the journal bearing. This lock-bar on one of its ends where projecting through the side S, has a slit end indicated by the dotted line d^4 , of Fig. 4, for the use of a key by which the lock-bar may be turned to lock or unlock. When the rod is turned so that the block V, is by the eccentric moved downwardly into the position indicated by the dotted line l^6 , of Fig. 2, it engages with the tripping-bar l^5 , to prevent its movement; so that with the lock-block down upon the latter the keys cannot be operated to open the cash drawer, when unlocked the lock-block is moved away from its engagement with the tripping-bar. The guide-ways y^7 , made in the cross-bar C^8 , which latter extends across to connect with the sides of the interior wherein the apparatus is placed, are made to break joints relatively to each other as to position, and so as to allow the sales indicating cards when raised to be seen upon their front and rear faces. At Fig. 10 this cross-bar is shown in part in transverse section and also a part of one of the sides S, with which the cross-bar C^8 , connects.

The apparatus thus constructed is operated as follows: The cash drawer being closed, and a sale made, the key having on its front end the amount of the purchase, is moved inwardly. This opens the cash drawer, as before described, and the key so moved deposits in the tube corresponding in amount to the sale value expressed on its disk face, a single

ball; where it takes more than one key to express the odd cents constituting a sale, for illustration, one dollar and sixty cents, the one dollar key is pushed in, which opens the cash drawer and deposits one ball in the one dollar tube, with the drawer remaining open the sixty cent key is then moved inwardly and this causes a ball to descend in the sixty cent tube, and the eight cents key is moved in and it deposits a ball in the tube where each of them represents eight cents, when the drawer is closed, and the cards elevated by the key in the chamber A, will express the amount one dollar, sixty-eight cents, and remain there until another key is operated for a different amount.

In the apparatus shown in the pending application, Serial No. 447,922, the keys are made in one piece, which construction I disclaim in this application, and I disclaim the use of glass tubes for the reception of the sales registering balls, and substitute therefor metallic tubes made with an open slot through which latter the balls may be seen, and which do not become clouded and dirty from the passage of the balls through the chute, as when glass is used.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a sales registering mechanism, the combination with a key-bar provided with slide-ways in which to move horizontally, of a stop-bar pivotally connected to said key-bar, and made with a horizontal slot therein, and having a connected spring against the force of which said stop-bar is moved inwardly; a latch-bar having a latching inner end, and connected with said stop-bar by a slide-pin arranged in the slot of the latter; a bridge on which said latch-bar may latch, and a tripping lever operated by the cash drawer to trip said latch-bar, substantially in the manner as and for the purposes set forth.

2. In a cash registering mechanism, the combination with a key-bar having slide-ways in which to move horizontally, of a stop-bar pivotally connected to said key-bar, and provided with a horizontal slot, and having a spring against the force of which it is moved inwardly; a latch-bar having a latching inner end, and connected to said stop-bar by means of a slide-pin arranged in the slot of the latter; a bridge on which said latch-bar can latch when moved inwardly; a turn-lever pivoted to said latch-bar and provided with an up-cast arm which is pivoted thereto; a vertically arranged slide-bar pivotally connected to said arm and arranged in a vertical slide-way and provided with a sales indicating card; and a bridge with which said turn-lever will engage when moved inwardly by the latch-bar, substantially in the manner as and for the purposes set forth.

3. In a cash registering mechanism, the combination of a series of key-bars, each provided

with slide-ways in which to move horizontally; of a stop-bar pivotally connected to each of said key-bars and each made with a horizontal slot and provided with a spring against the force of which they are moved inwardly; a latch-bar provided with a latching inner end, and connected to each of the stop-bars by means of a slide-pin arranged in the slot of the latter; a bridge into which said latch-bars may latch, and a tripping-lever operated by the cash drawer to trip said latch-bars, substantially in the manner as and for the purposes set forth.

4. In a cash registering mechanism, the combination with the hopper H, made with the cross-bar i^3 , having pendent pins i^3 , arranged thereon, of the keys K, arranged in the hopper side by side to rest on the hopper bottom t , and each of said keys made with the vertical passage O, substantially in the manner as and for the purposes set forth.

5. In a cash registering mechanism, the combination with the hopper H, made with the cross-bar i^3 , having the pendent pins i^3 , arranged thereon; and the keys K arranged side by side on the hopper bottom t , each made with the ball passage O; and a pin l^3 , upwardly projected from each of said keys, substantially in the manner as and for the purposes set forth.

6. In a cash registering mechanism, the combination with the cash drawer D², made with the latch L, and spring S³, of the lever g^2 , pivoted at one of its ends to the frame f^3 , and having the pin g^8 , at its other end; the lever g^6 , pivoted to said lever g^2 , and provided with a striker tripping pin g^9 ; the gong G, provided with the striker g^8 ; the tripping lever J, provided with the cord j^6 , passing over the pulley j^7 , and connecting with the pivoted lever g^2 , constructed and arranged to be operated, substantially in the manner as and for the purposes set forth.

7. In a cash registering apparatus, the combination with a series of sale-amount-indicating-keys, each connecting pivotally with a stop-bar, that attaches to a latch-bar by means of a slot in the stop-bar, and a slide-pin in the latch-bar, and each stop-bar having a spring against the force of which it is moved inwardly to latch, substantially as described; of a bridge on which the latch-bars are adapted to catch; and a tripping lever having a tripping bar at its top, which when raised trips the latched bars; and a cash drawer provided with an ogee-form spring adapted when the drawer is moved inwardly to under-run said tripping lever, and raise the latter to trip the latch bars, substantially in the manner as and for the purposes set forth.

8. In a cash registering mechanism, the combination with a series of keys, each pivotally connected with a horizontal stop-bar made with a slot, and each of the latter connecting with a latch-bar by means of a slide-pin arranged in said slot, substantially as described;

of a bridge on which said latch-bars are adapted to catch; a tripping lever having a rounded lower edge and mounted on slotted bearings on which to rise and oscillate; and a cash drawer made with an ogee-form spring adapted to under-run the rounded end of the tripping lever to raise the same, substantially in the manner as and for the purposes set forth.

9. The combination with the keys K, each made with a slide-way in which to be moved horizontally, and each connected pivotally with a stop-bar, the latter having a horizontal slot for attachment to a latch-bar by means of a slide-pin on the latter; and a bridge on which the latch-bars may catch, substantially as described; of the turn-levers C, of which there is one for each latch-bar that is pivoted to the latter; the arm y^3 , at its lower end pivoted to each of said turn-levers; a slide-bar y^6 , pivotally connected with the upper end of each of the said arms, and having a card y^9 , on its upper end, and arranged to move in the guide-bar y^7 ; and a spiral spring y^{11} , connected to each of said turn-levers, against the force of which they are operated to turn upwardly, substantially in the manner as and for the purposes set forth.

10. In a cash registering mechanism, the combination with a lever which is at one of its ends pivoted to a support, and at its other end is provided with a laterally projected stop-pin and a centrally pivoted bar having a tripping pin, and provided with a spring, and adapted to operate a gong striker when the free end of said lever is raised; a cash drawer having a latch on its inner end adapted to under-run, to latch on to said lever, and raise it when so latching; and a tripping-lever operated by said cash drawer to raise said pivoted lever on its free end when being closed, substantially in the manner as shown and described.

11. In a cash registering mechanism, the combination with a series of keys each connecting with a stop-bar, a latch-bar, and provided with a bridge on which the latter are adapted to latch, substantially as described; of a lock-bar which at its ends is journaled in the side-walls forming part of the apparatus inclosure; an eccentric arranged on, so as to turn with said lock-bar; a lock-block arranged to turn on said eccentric and having a depending leg which at its lower end connects with a link, and the latter with the bridge, whereby said lock-block may be moved down on its eccentric to prevent the tripping of the latch-bars, substantially as shown and described.

12. In a cash registering mechanism, the combination with the keys K, each connected with a lock-bar and latch-bar, with the latter adapted to be moved horizontally to latch on to a bridge; of the lock-bar R, made to journal in the sides of the apparatus inclosure, and provided with a detaining spring-pin v^6 ,

and having an eccentric v^2 , keyed thereto; the
lock-block V, arranged to turn on said eccen-
tric and made with a depending leg v^3 , pivot-
ally connecting at its lower end with the link
5 v^4 , and the latter connecting with the latch-
ing bridge, substantially in the manner as
and for the purposes set forth.

Signed at Troy, New York, this 1st day of
June, 1893, and in the presence of the two
witnesses whose names are hereto written.

GEO. F. COOK.

Witnesses:

CHARLES S. BRINTNALL,
W. E. HAGAN.