

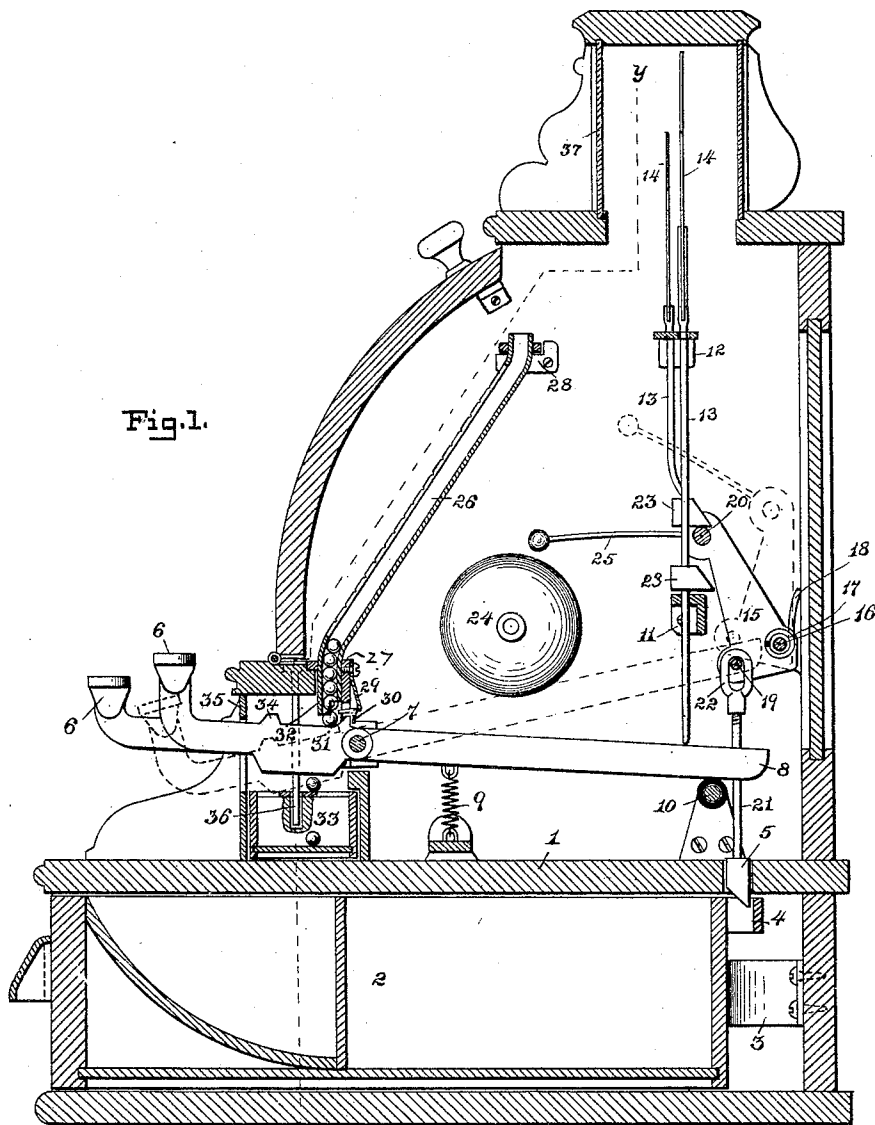
(No Model.)

3 Sheets—Sheet 1.

C. J. CARROLL.
CASH REGISTER.

No. 522,823.

Patented July 10, 1894.



Charles J. Carroll

WITNESSES:

A. O. Babendreier

Emil A. von Noe

INVENTOR:

By

Price Stewart

ATTORNEYS'

(No Model.)

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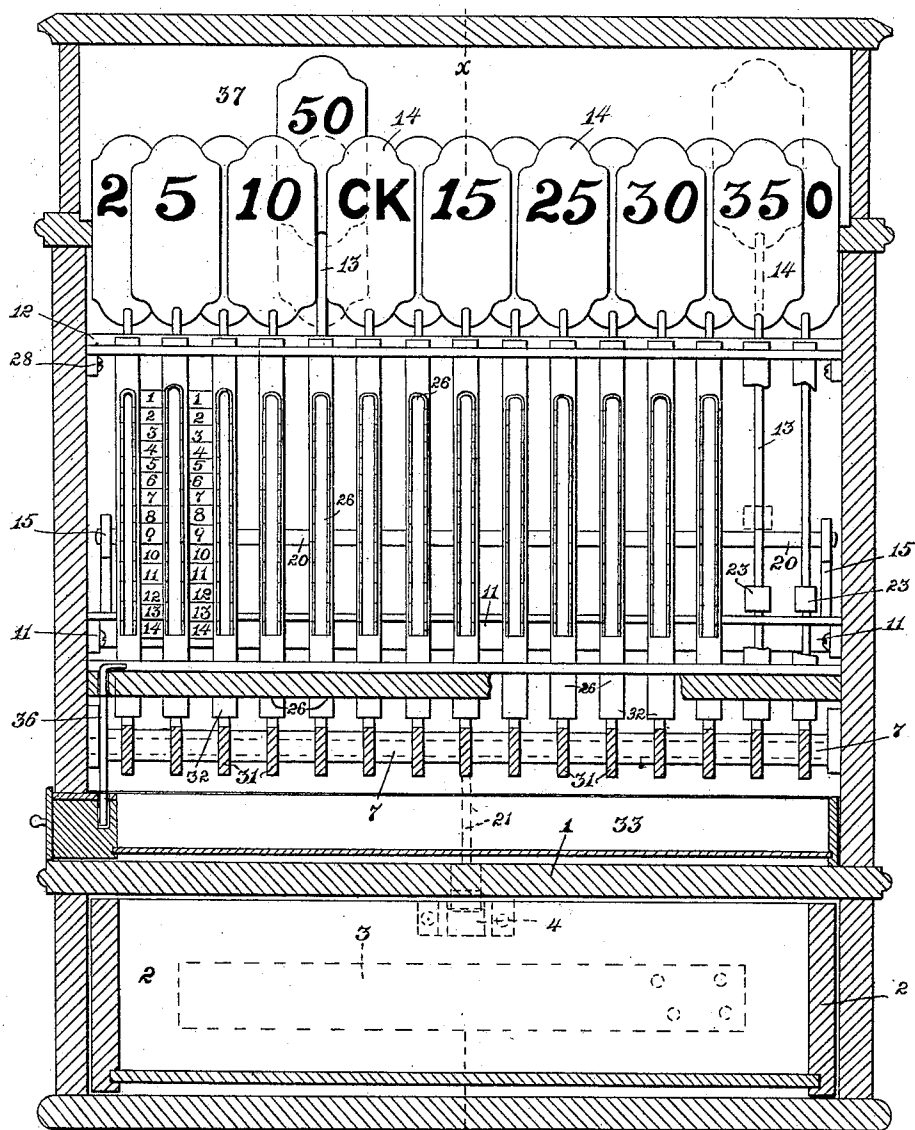


Fig 2

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(No Model.)

3 Sheets—Sheet 3.

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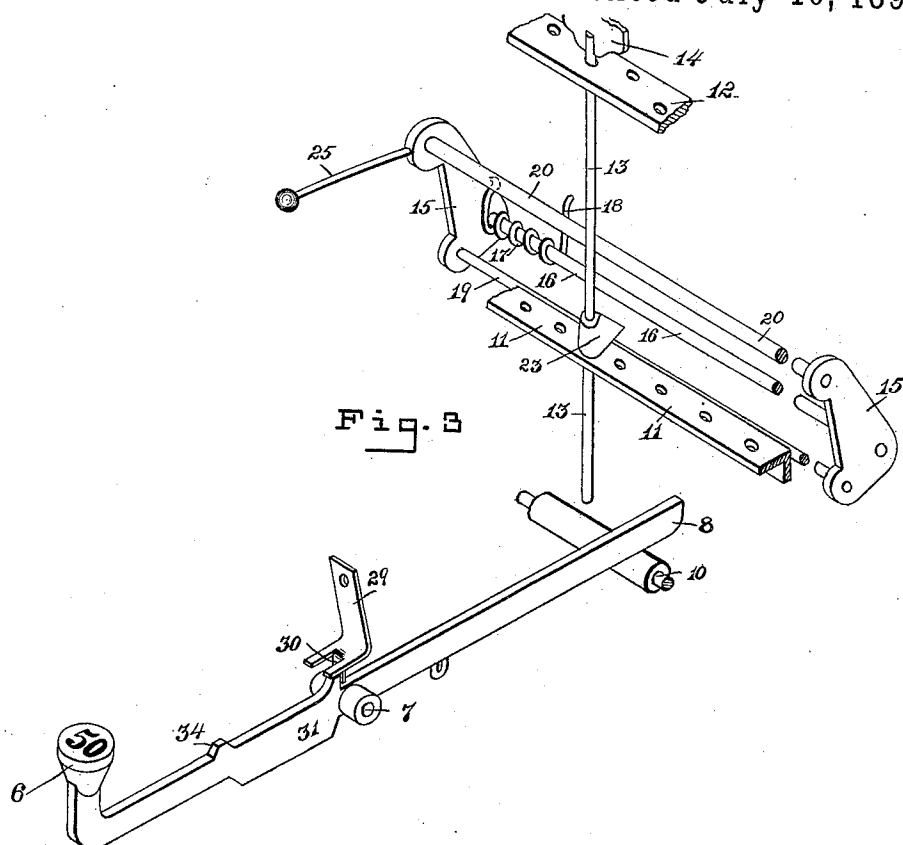


Fig. 3

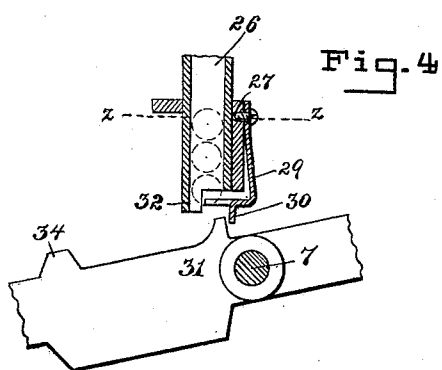


Fig. 4

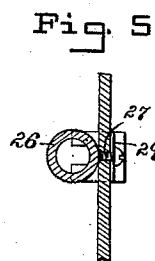


Fig. 5

Fig. 6



WITNESSES:

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Emil A. van Houten

Charles J. Carroll

INVENTOR:

BY Price Stewart
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES J. CARROLL, OF BALTIMORE, MARYLAND, ASSIGNOR OF TWO-THIRDS TO DAVID STEWART AND WILLIAM ASHTON, OF SAME PLACE.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 522,823, dated July 10, 1894.

Application filed December 1, 1893. Serial No. 492,440. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. CARROLL, a citizen of the United States, and a resident of the city of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification.

My invention relates to a cash register designed for the purpose of keeping an accurate record of money paid out or paid in to a cash drawer.

The general combination of my machine is one which opens the cash drawer, throws up a tablet corresponding to an amount of money to be paid in or taken out, as the case may be, and makes a register of the tablet thrown upon a device in the mechanism, thus indicating the amounts put in or taken out of the cash drawer. Each key has a separate register and the reading of all of the registers together will show at the end of any period just what the contents of the drawer ought to be or exactly how much has been withdrawn.

In the drawings, Figure 1 is a vertical section of my machine taken through the line $x-x$ in Fig. 2. Fig. 2 is a front elevation of the interior of the machine showing certain parts in section, taken through the line $y-y$ of Fig. 1. Fig. 3 is a perspective view of one of the key levers and its tablet mechanism. Fig. 4 is a vertical section of one of the registering tubes containing balls and the stop device by which the balls are retained or released. Fig. 5 is a horizontal section of the registering tube through the line $z-z$. Fig. 6 is one of the balls enlarged.

Referring to Fig. 1, 1 is the case of the machine.

2 is a cash drawer sliding in the lower portion of the case 1.

3 is a spring behind the cash drawer and compressed when the drawer is fully in.

4 is a keeper secured to the back of the drawer and with which the latch 5 engages to hold the drawer while shut and prevent it being opened without the operation of one of the keys of the register.

6-6-6 are a series of keys pivoted at 7 extending forward through the frame of the machine and provided on their upturned ends

with finger buttons for striking. The interior ends of the levers extend back toward the rear of the machine and are marked 8-8.

9 is a spring secured to the frame of the machine below and to the under side of the key levers on the interior end of the fulcrum 7 so that the interior end of the levers is maintained in a depressed condition as shown in Fig. 1.

10 is a rest consisting of a suitable support bar covered with rubber or other material upon which the ends 8-8 of the key levers rest.

11 and 12 are two bars secured in the sides of the frame of the machine and crossing it from side to side immediately above one another and perforated with a series of holes. Within these holes reciprocate the rods 13-13-13, on the upper ends of which above the plate 12 are the tablets 14-14-14 upon which are painted or stamped in some suitable manner numbers corresponding to the numbers stamped upon the keys 6-6. The rods 13-13-13 are similar in number to the key levers and are each mounted in the same plane as one of the key levers so that the lower end of the rod 13 rests upon the top of the key lever near its extremity 8.

15-15 are two bell crank levers pivoted upon the shaft 16 which is mounted in brackets 17-17 in the back of the machine.

18 is a coil spring coiled upon the shaft 16 and arranged to press the upper end of the bell crank levers 15-15 forward and the lower one down.

19 is a bar secured in the ends of the lower arms of the bell crank levers 15-15, and 20 is a bar secured in the extremities of the upper arms of the said bell crank levers.

21 is a rod connected to the latch 5 and provided with a slotted eye 22 on its upper end which surrounds the bar 19. Said rod 21 when lifted by the bar 19 and the bell crank levers 15-15 will release the catch 4 and the cash drawer 2 and permit it to be driven out by the spring 3.

The normal position of the bell crank levers 15-15 under the influence of the spring 18 is to cause the bar 20 to press upon the back of the vertical rods 13-13. The slotted eye 22

on the upper end of the rod 21 will allow the latch 5 to be pushed up and fall back into the keeper 4 when the cash drawer is closed without moving the bell cranks 15—15.

23—23 are lugs secured to the rods 13—13 and provided on their rear faces with inclined surfaces.

24 is a gong secured to the side of the interior of the box and 25 is a hammer secured to the upper extremity of the bell crank lever 15 and in position to strike the gong when that lever is released and allowed to fly forward.

26—26 are a series of tubes secured to the interior of the box at two points 27 and 28. These tubes are split down the front so that the interior of the tube is visible and may be graduated either on the surface of the tubes or by the location of graduated scales or strips of suitable material between the tubes. The upper ends of the tubes are open and the lower ends are partially closed by means of a stop device 29 which consists of a piece of spring metal bent in the form of a hook and extending across or partially across the bottom of the tube, thus retaining the contents of the tube in position while the stop device is across the lower end of the tube. The stop hook 29 is provided on its lower surface with a projecting lug 30 which engages a lug 31 on the upper surface of the key lever. The motion of the key lever will move the stop device 29 back and forth across the end of the tube 26 and cause it to close or open the same with the motion of the lever. The lower end of the tube 26 is cut away at the back as is shown in Fig. 4 so that the front portion of the tube extends down near to the surface of the key levers. The tubes 26 are filled with balls of any suitable material and of a size about filling the tube, being of uniform size the graduations on the surface of the tubes can be arranged to indicate the number of balls contained in the tube.

The end of the tube 26 cut away to give place for the stop hook 29 forms a bearing stop for the hook 29 and also extends down far enough toward the top of the key lever 6 so as to permit a ball to rest below the stop hook 29 on the top of the key lever and yet be held thereon by the downwardly extending end 32 of the tube 26. It will thus be seen that when the key lever 6 is depressed the ball resting upon the top of the lever will roll down the lever, fall off of it and drop into the box 33 immediately below.

34 is a stop on the top of the lever adapted to prevent the ball from rolling forward to the slot in the front plate 35 of the machine through which the key levers pass and becoming jammed therein. The ball must roll off the top of the lever when it reaches the stop 34 and fall into the box 33. The box 33 as shown in Fig. 2 may be divided into a series of compartments one corresponding to each tube, so that the balls released from each tube will fall into a particular compartment

provided for it in the drawer; thus the number of balls in each compartment can be used for the purpose of checking the register on the tubes.

36 is a pin passed through a portion of the frame of the machine and entering a hole in the front end of the drawer so as to lock it. This pin is only accessible from the interior of the machine.

It will be noticed from the foregoing description that the ball is dropped with the down stroke of the key but the register is made with the up stroke.

The operation of the device is as follows: When a key lever is depressed a ball is dropped into the drawer and the stop 29 comes forward and closes the end of the tube 26, corresponding to the key operation and prevents the rest of the balls from falling out. The rod 13 does not reach the key so that the dropping of the ball is the only work of the lever during the first portion of its stroke. As the rear end of the key lever rises it will strike the lower end of the tablet rod and lift it, as it rises the lug 23 with its beveled rear surface will press upon the bar 20 and push it back far enough to allow the lug to pass when the bar 20 will fall back below the lug 23 and hold it up so as to expose the tablet 14 in the window 37 on the top of the machine. As the end 8 of the key lever continues to rise it will strike the bar 19 in the lower arm of the bell crank lever 15 and raise it, throw the bar 20 back and release all of the tablets which may be up and allow them to fall except the one corresponding to the key operated. As the bar 19 is raised it will pull up the latch 5, by rod 21 and eye 22, and release the cash drawer which will be forced open by the spring 3. As the key lever descends the bar 20 of the bell crank will fall against the rods 13—13 before the lug 23 reaches it and said lug and its rod and tablet will be sustained by the bar 20 until it is thrown back by the operation of some other key. As the upper arm of bell crank lever 15 comes forward the hammer 25 will strike and ring the gong 24. As the key lever continues to descend the lug 31 will recede and stop 29 be withdrawn from the lower end of the tube 26, permitting one ball to fall upon the lever 6 where it will be held in place by the projecting end 32 of the tube 26. The bars 10 and 11 form the lower and upper stops of the key levers.

My machine is simple in construction and makes a register of each key operated upon the upward movement of the lever.

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

1. In a cash register the combination of a series of key levers, a series of tubes containing counters, one tube located immediately above each lever, each tube provided with a stop on its lower end operated by the key lever and held normally open and a number of counters in each tube falling therein by

gravity, the bottom counter resting upon the key lever in position to be released when the key is operated, the operation of the key releasing the stop and closing the tube.

5 2. In a cash register the combination of a series of key levers, a series of tubes containing counters which fall therein by gravity, one tube located immediately above each lever and a stop, said stop consisting of a
10 spring bent under the tube and engaged by the key lever whereby it is operated to close the tube as the lever descends and open it when it ascends.

15 3. In a cash register the combination of a series of key levers, a series of tubes containing counters which fall therein by gravity, each tube located above one of the keys, each key being provided with a receptacle for a counter and a stop located upon the end
20 of each tube and operated by the key lever to open the tube and discharge a counter into

the receptacle of the key lever on the recoil of the key, substantially as described.

4. In a cash register the combination of a series of keys each provided with a counter 25 receptacle and a series of tubes one located immediately above each key in which are contained a number of counters falling therein by gravity, each tube being provided with a stop adapted to close its lower end, the stop 30 and operated by the key lever to open the tube and discharge a counter into the key receptacle on the recoil of the key, and close the tube on the operation of the key, the key receptacle adapted to discharge its counter upon 35 the operation of the key.

Signed at Baltimore city and State of Maryland this 27th day of November, A. D. 1893.

CHARLES J. CARROLL.

Witnesses:

JOHN L. HEBB,

W. W. SPENCER, Jr.