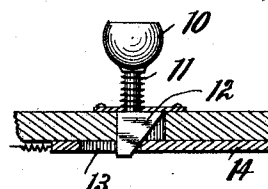
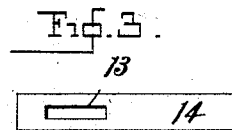
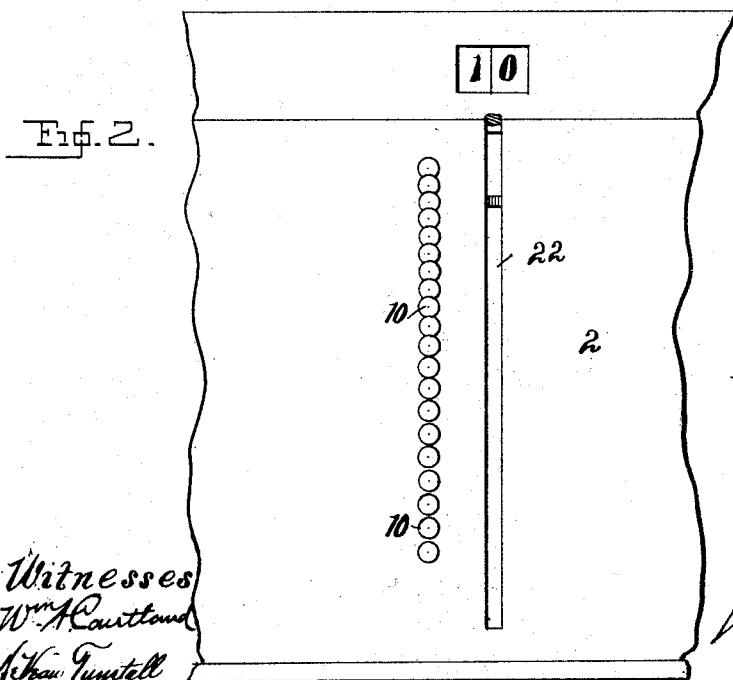
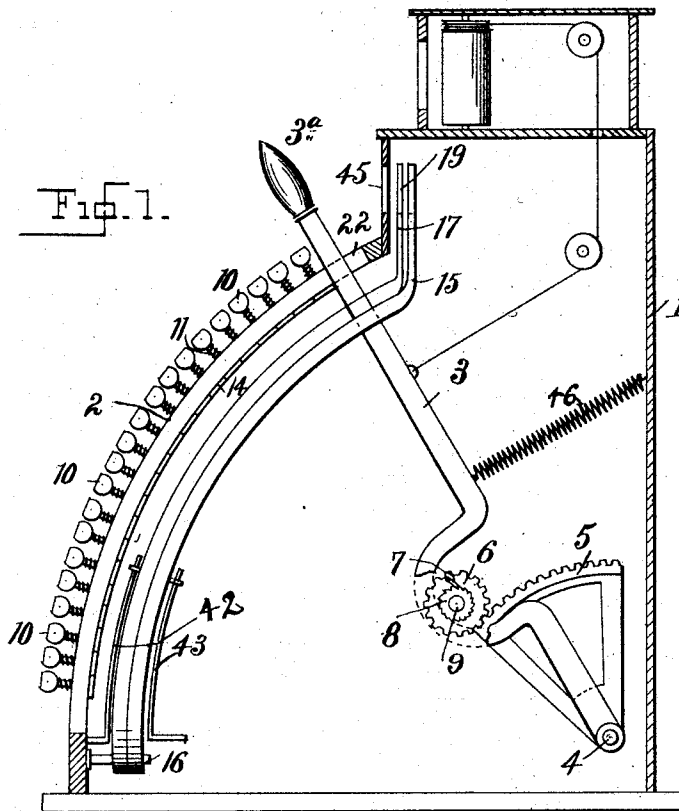


W. F. Z. DESANT.
CASH REGISTER AND INDICATOR.

No. 505,444.

Patented Sept. 26, 1893.



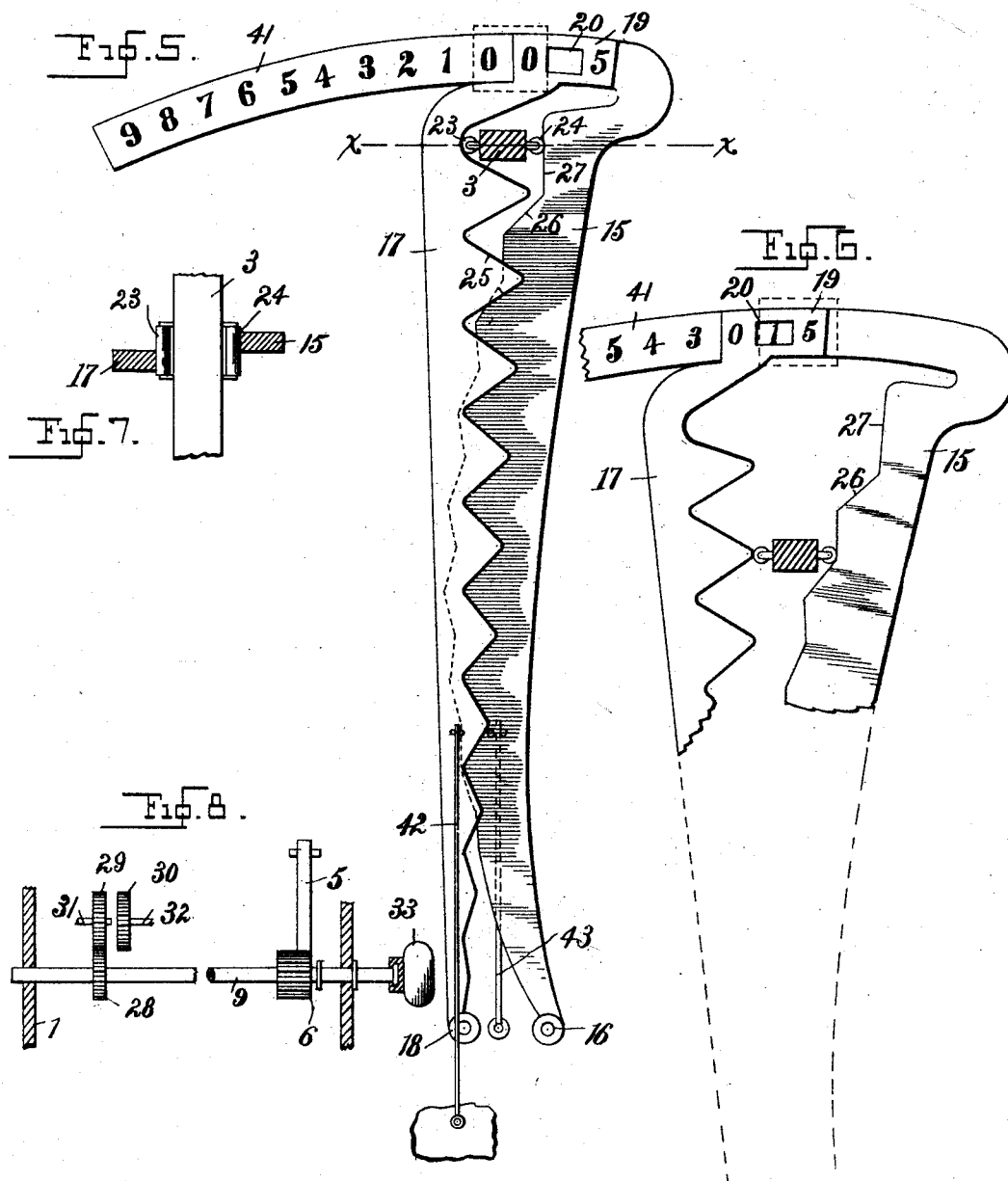
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UNITED STATES PATENT OFFICE.

WILLIAM F. Z. DESANT, OF NEW YORK, N. Y., ASSIGNOR TO THE DESANT
ELECTRIC COMPANY, OF OHIO.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 505,444, dated September 26, 1893.

Application filed October 27, 1892. Serial No. 450,116. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. Z. DESANT, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cash-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.

My invention relates to that class of apparatus known as cash registers by which retail salesmen can register the total amount of their sales for any given period of time and indicate the amount of each purchase to the purchaser. The object is to produce a particularly simple, cheap and compact apparatus of this description.

In the accompanying three sheets of drawings, Figure 1, is a sectional view of a cash register embodying my invention. Fig. 2, is a detail front view showing the indicating apparatus and the slot through which the operating lever works, with one stop in operative position; the advertising apparatus being removed. Figs. 3 and 4, are detail views of the stop mechanism. Fig. 5, is a detail view of the indicating mechanism standing at zero. Fig. 6, is a similar view with the mechanism standing at 15. Fig. 7 is a detail view of a portion of the operating lever and of the cam rollers thereon. Fig. 8, is a detail view of a duplex operating apparatus by which two or more separate adding or registering mechanisms can be operated separately.

Throughout the drawings like reference figures refer to like parts.

1, is the casing of the cash register. 2, is the curved front of said casing.

3, is the operating lever having a handle, 3^a, on its outer end, by which the cash register is to be operated.

4, is the pivot or shaft on which the lever 3 is mounted.

5, is a toothed sector of proper shape and radius which is rigid with the lever 3 and moves with it.

6, is a pinion which meshes with the toothed sector 5 and carries the pawl 7, which engages with the ratchet teeth of the wheel 8, which is fastened upon the operating shaft 9.

10, 10, represent a number of keys by which a series of stops, limiting the extent of motion of the lever 3, is operated. 11, is a spiral spring about the shank of each key. 12, 55 is an inclined surface on the lower portion of the key which operates the sliding stop 14, passing through the slot 13. When one of these keys 10 is pressed down its corresponding stop 14 is forced across the slot 22, as 60 shown in Fig. 2, and the further downward motion of the lever 3 is thereby prevented.

15 and 17, are two radius rods which are pivoted at 16 and 18, upon either side of the operating lever 3. On the faces of these radius rods which are next to the operating lever are formed cams of a shape hereinafter to be described. The cam rollers 23 and 24, 65 mounted on the operating lever 3, bear against these cam faces. Upon the outer end of the radius rod 15 is mounted the arc shaped piece, 41. Upon the outer end of the radius rod 17 is mounted the short arc shaped piece 19. This latter has the figures 0 and 5 stamped or printed thereon and between them the opening or 75 window 20, as shown. The arc shaped piece 41, has a series of figures from 0 to 9 stamped or printed thereon. There being twenty of the stop keys 10, 10, the cam faces of the radius rods 15 and 17, are each divided into 80 twenty separate and corresponding parts. The rod 15 has a series of portions, 27, which are in line with the pivot 16, and are really portions of the sides of angles drawn through the figures 0, 1, 2, 3, &c., on the piece 41. 85 These portions of the faces, 27, are connected by a series of oblique faces, 26. The rod 17, has a series of in and out cams, 25, of diminishing pitch, as shown in Figs. 5 and 6. The extremities of these latter are tangent to lines 90 drawn through the pivot 16, and the figures 0, and 5, on piece 19. Two springs, 42 and 43, hold the radius rods 15 and 17, up against the cam rollers 23 and 24.

The shaft 9, being turned in one direction 95 at each downward stroke of the lever 3, but remaining stationary during all upward strokes of said lever, will evidently operate any adding or registering mechanism of the usual and well-known type to which it is connected. 100 Supposing 28, to be a pinion on said shaft and 29, to be a driving gear wheel of such an add-

ing or registering mechanism, mounted on the shaft 31, it will be readily understood without further illustration or description how the motion is conveyed from the toothed sector 5, to the adding mechanism. If it is desired to keep separate accounts of different lines of goods, or if for any other purpose the operation of two or more separate registering mechanisms is desired, the shaft 9, can be slid endwise by the knob 33, on its outer end and the pinion 28, thrown at will into gear with either the gear-wheel 29, or 30. The gear-wheel 30, being separate from that 29, is mounted on the shaft 32, which operates the second registering mechanism. The pinion 6 has a broad face so that it will remain in mesh with the sector 5, while the shaft 9, is being slid back and forth.

The operation of my invention may be described as follows: The operator seizes the handle 3^a, of the operating lever with one hand and pushes down the key corresponding to the amount which he desires to register with the other hand. If this amount is fifteen cents, the stop corresponding to the 15 key will be slid across the slot 22, as shown in Fig. 2, and when the operating lever is pushed down, it will bring up against that stop. By pushing the lever down against the stop it brings it into the position shown in Fig. 6, and the cam roller 24, forces the radius rod 15, to the right, so that the figure 1, on the arc shaped piece 41, appears before the window 45, in the front of the casing. At the same time, the cam roller 23, having run over one of the cams 25, has forced the radius rod 17, to the left so that the opening 20, comes in front of the figure 1, on the piece 41, and the figure 5, appears at the right through the window 45, causing the machine to indicate the amount fifteen cents. At the same time, the downward motion of the toothed sector 5, has, through intervening mechanism, rotated the shaft 9, and registered the amount 15 on the registering apparatus, not shown. When the lever 3, has been moved to any of the positions to register 10, 20, 30, &c., the cam roller 23, has, at that time entered one of the depressions between the faces 25, the piece 19 has moved to the right and the 0 appears through window 45, to the right of the appropriate figure 1, 2, or 3, which has been brought into view by the motion of the radius rod 15, and arc shaped piece 41. It is evident that, as the lever is forced downward, the rod 15, is given an intermittent motion to the right, while the rod 17, has a vibrating or alternate motion, right and left. When the lever 3, is at rest in its uppermost position the figures 0, 0, show. Whenever it has been forced down far enough to register 5, 15, or any amount ending with five, the roller 23, rests on the extremity of one of the cams 25, and the piece 18, is always in the position to the left and its figure 5, appears as above described and shown in Fig. 6. The spring 46, returns the lever 3, to its uppermost position

when the operator relieves it. The button or knob 33, turns loosely on shaft 9, so that the shaft cannot be rotated thereby but only slid endwise for the purpose described above. It is understood, of course, that various changes could be made in the connecting trains of mechanism between the various elements of my invention, by the substitution of mechanical equivalents for those illustrated and described, which changes would not lift the apparatus outside of the scope of my invention.

The usual accessories of alarm gong and drawer unlocking devices can be attached to my invention in the manner too well understood to need illustration.

Having, therefore, described my invention, what I claim as new, and desire to protect by Letters Patent, is—

1. In a cash register the combination of a casing with a window therein, a radius rod with a cam face formed on one side, and an arc shaped piece upon its outer end, which arc shaped piece has figures stamped thereon which appear at the window as the radius rod moves back and forth; a second radius rod with a cam face formed upon its opposite side, a shorter arc shaped piece upon its outer end, which arc shaped piece has figures stamped thereon and an opening cut therethrough, and which moves back and forth before the first mentioned arc shaped piece; together with an operating lever which projects through the casing and is moved up and down between the two cam faces of the radius rods, substantially as described.

2. In a cash register the combination of a casing with a window therein, a radius rod with a cam face formed on one side, and an arc shaped piece upon its outer end, which arc shaped piece has figures stamped thereon which appear at the window as the radius rod moves back and forth; a second radius rod with a cam face formed upon its opposite side, a shorter arc shaped piece upon its outer end, which arc shaped piece has figures stamped thereon and an opening cut therethrough, and which moves back and forth before the window in the casing and before the first mentioned arc shaped piece; together with an operating lever which projects through the casing and is moved up and down between the two cam faces of the radius rods, and a series of stops for said operating lever, substantially as described.

3. In a cash register, the combination of a casing with a window therein, a radius rod with a cam face formed on one side, and an arc shaped piece upon its outer end which arc shaped piece has figures stamped thereon which appear at the window as the radius rod moves back and forth; a second radius rod with a cam face formed upon its opposite side, a shorter arc shaped piece upon its outer end, which arc shaped piece has figures stamped thereon and an opening cut therethrough, and which moves back and forth be-

fore the first mentioned are shaped piece; together with an operating lever which projects through the casing and is moved up and down between two cam faces of the radius rods, a shaft, ratchet gearing by which motion is communicated to the shaft from the operating lever and adding and registering mechanism actuated by said shaft, substantially as described.

4. In a cash register the combination of the registering mechanism, the lever which operates the same, one or more oscillating radius

rods which have cam faces bearing on said lever and which are vibrated to and fro as the lever moves up and down, and the indicating mechanism operated by said oscillating radius rod or rods, substantially as described.

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

WM. F. Z. DESANT.

Witnesses:

A. P. SMITH,

WARREN W. FOSTER.