J. P. CLEAL. CASH REGISTER.

(Application filed May 25, 1900.)

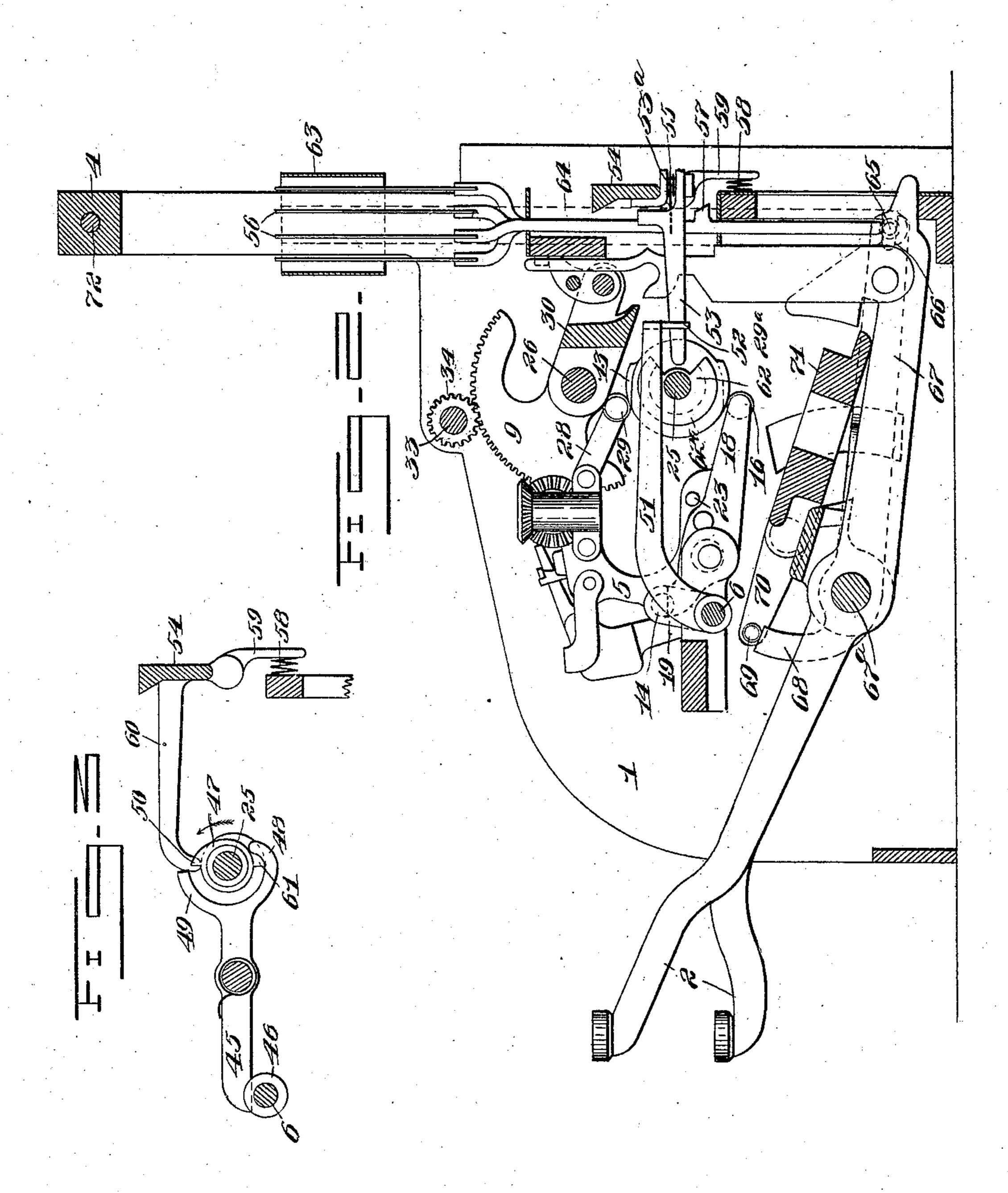
(No Model.) 3 Sheets—Sheet 1. KNII. TIIIII Witnesses

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(No Model.)

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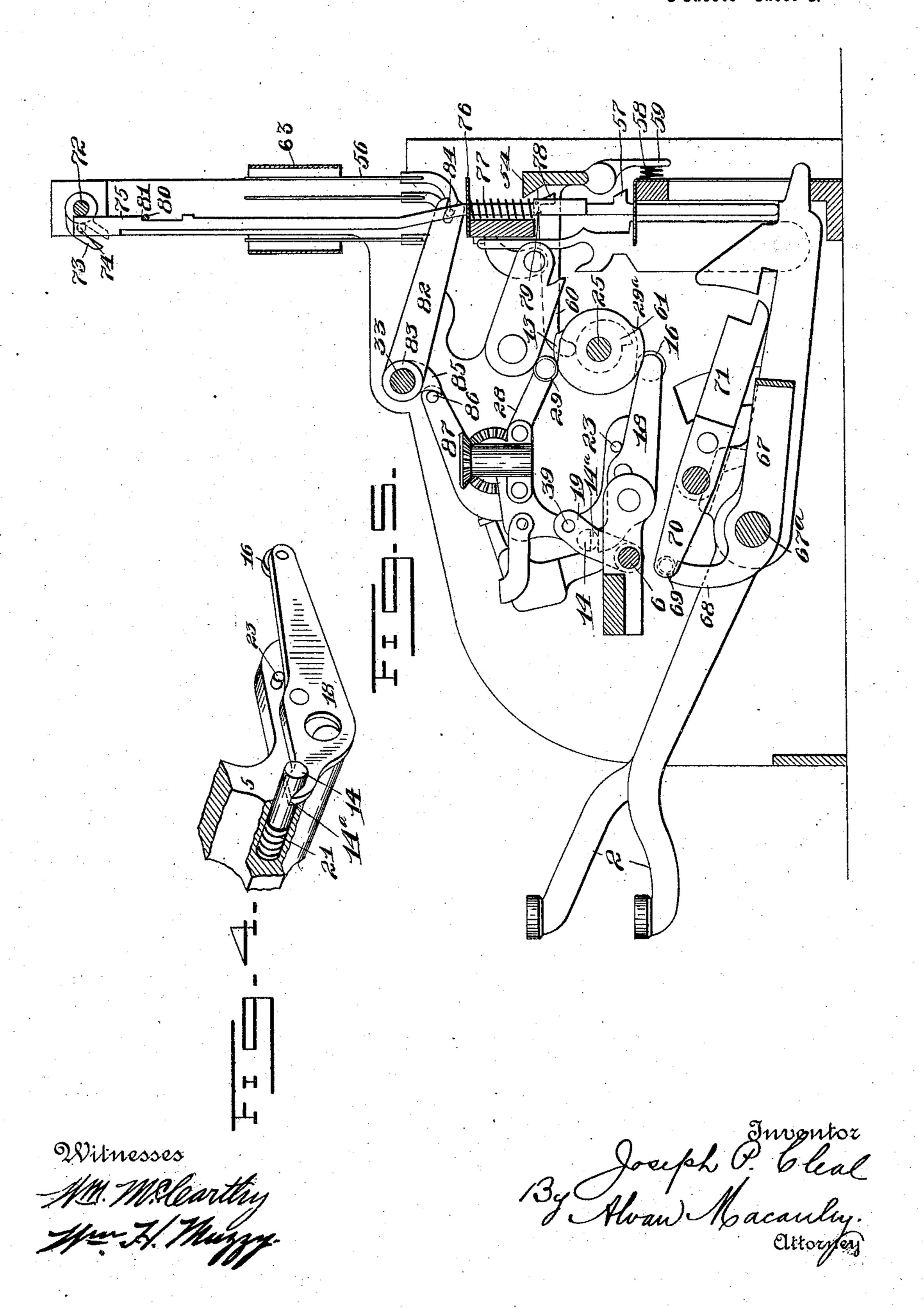
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United States Patent Office.

JOSEPH P. CLEAL, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 693,498, dated February 18, 1902.

Application filed May 25, 1900. Serial No. 17,976. (No model.)

To all whom it may concern:

Beit known that I, Joseph P. Cleal, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cash-Registers, of which I declare the following to be a full, clear, and

exact description.

I have illustrated and will describe my invention as applied to a machine substantially the same as shown in the patents to Thomas Carney, No. 588,127, dated August 17, 1897, and No. 536,015, dated March 19, 1895, respectively. My invention, however, is in no manner restricted to use in connection with any particular type of machine, and it may be utilized in cash-registers of widely-different constructions.

The object of my invention is to provide a machine arranged for keeping two records of the same transaction. For example, the machine is specially adapted for use in shoestores, &c., to keep a separate record of the cost and of the selling-price of each article sold. As the particular embodiment of my invention herein shown and described is provided with two totalizing-counters, the proprietor or person in authority in the store is enabled to tell at a glance the total cost of the goods sold and the total money received and to be found in the cash-drawer, and by subtracting the two amounts he can instantly ascertain his profit.

In the accompanying drawings, forming part of this specification, Figure 1 represents a top plan view, partly broken away, of the devices embodying my invention, the cabinet being removed. Fig. 2 represents a vertical transverse section through the same on the line xx of Fig. 1, the cabinet and cash-drawer being omitted. Fig. 3 represents an enlarged detail sectional view of the shift-rod, the locking-lever, and the shifting devices for the indicator-latch frame. Fig. 4 represents an enlarged detail perspective view, partly broken away, of one end of one of the counter-frames

away, of one end of one of the counter-frames and its throwing-lever; and Fig. 5 represents a view similar to Fig. 2, but taken on the line y y of Fig. 1.

In the drawings, 1 represents the frame of the machine; 2, the operating amount-keys;

3 and 3^a, the counters, and 4 the special indicator. In the patents referred to only one counter is employed; but in my improved machine I provide two counters 3 and 3a, which 55 I will term "cost" and "selling" counters, respectively. The arrangement is such that either one or the other of said counters may be operated at will by the same key mechanism. The said counters, each of which is simi- 60 lar in construction and operation to that included in the before-mentioned patents, are mounted in frames 5, which are pivoted on the main frame near the opposite sides of the machine in such manner that they may be 65 oscillated or swung forward to bring the counters into engagement with and to receive motion from the operating segment-racks 7, 8, 9, and 10, 11, and 12. (See Fig. 1.) The three last-mentioned racks receive motion from the 70 operating-keys, as fully described in said patents, while the three former segment-racks are coupled to the said racks 10, 11, and 12 by devices hereinafter more fully described. The oscillating or throwing of the counters into 75 engagement with the segment-racks is accomplished by means of two cams 13, fast upon the rotation-shaft 25 and coöperating, respectively, with antifriction-rollers 16, mounted on the rear ends of throwing-levers 18, which 80 are pivoted on the respective counter-frames. The construction and location of each of these levers is such that the antifrictionroller carried thereby projects into the path and against the periphery of its respective 85 cam when the forward end of the lever is depressed by one of two laterally - extending plungers 14, mounted, respectively, in sockets formed in the frames of the respective counters. Each plunger has a coiled spring 90 21 behind it, which tends to press it out of its socket. It is normally held within its socket, however, by means of an arm 19, hereinafter described. Upon its under side each plunger is provided with a notch 14a, having bevelends 95 and which is of a size to receive the forward end of its throwing-lever 18. The machine is arranged so that one of the counters—in this case the right-hand one, Fig. 1—is normally in condition to be brought into engage- 100 ment with the operating-segments when the value-keys are pressed. The other counter is

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normally out of such condition and is only thrown into engagement with its segments when the special key or shifting-rod 40 is pressed before the amount-keys are operated. 5 To this end the forward end of the throwinglever 18 of the right-hand counter normally rests against the under side of its plunger 14 and out of the notch 14a, whereby the roller 16 of such lever normally bears against the 10 periphery of its rotary cam 13. The forward end of the throwing-lever of the left-hand counter normally rests in the notch 14a of its plunger 14, and thereby the roller 16 upon the rear end of said throwing-lever is so low 15 that it is normally not moved when its cam 13 rotates. The upward spring of the throwing-levers is limited by pins 23, which are fastened in the counter-frame. Extending rearwardly from the upper part of each coun-20 ter-frame is a rigid arm 28, provided with an antifriction-roller 29, which rests upon the periphery of one of the two rotary cams 29a, which are mounted on the rotary shaft 25. The purpose of this arm and its coöperating 25 rotary cam is to positively throw the operated counter out of engagement with its segments. This operation occurs, of course, near the latter part of the registering movement of the amount-keys.

The aforesaid racks 7, 8, and 9 and 10, 11, and 12 are coupled together in pairs in the following manner: The racks 7 and 10, which are adapted to operate the units-of-dollarsregistering wheels of the counters, are both 35 keyed or otherwise rigidly secured to the shaft 26, upon which they are mounted, so as to move together, while the racks 8 and 11, which operate the respective tens-of-cents-registering wheels are loose upon the shaft, but are 40 yoked together by a frame 30, (see Fig. 1,) so as to move simultaneously. The racks 9 and 12, which move the five-cent-registering wheels, are mounted loosely upon the said shaft. One of them, however, meshes with a 45 pinion 32, fast upon the coupling-shaft 33. This shaft is suitably journaled in the frame of the machine and is provided with a sec-

ond pinion 34, which meshes with the remaining rack 9 of this set. By this means the segmental racks move in sets, so that either of the counters may be brought into connection therewith.

The plungers 14 are operated by a longitudinally-movable rod 6, provided with a coiled spring 35, which engages a suitable projection of the frame, so as to hold said rod normally in one position. Three arms 19 are mounted on said rod in such positions that two of them will contact with and operate the aforesaid spring-pressed plungers 14 (see Fig. 5) to render them operative or inoperative in connection with the throwing-levers, as aforesaid, and thus cause either one or the other of the counters to be moved into operative position when the machine is actuated. The extreme left-hand arm 19 (better shown in Fig. 1) is similar to the other arms and is pro-

vided with a stud 36, which operates in suitable apertures formed, respectively, in the main frame and in the left-hand counter- 70 frame to prevent rocking of the shaft 6 or accidental movement of said counter-frame. The right-hand counter-frame is in turn locked in retracted position at the proper time by a stud 38, mounted thereon and adapted to en- 75 ter an aperture 39 in its respective arm 19 when said arm is moved toward the same by the longitudinal movement of the rod 6. This movement of the shifting-rod is effected by a shifting-key 40, comprising a slidable rod hav- 80 ing a suitable head and mounted in suitable guides, so that its inner beveled end 41 will contact with the beveled end 42 of the said shifting-rod. The key is normally held in its outer position by a coiled spring 43, inter-85 posed between a washer 44, fast on the keystem and the main frame. When the key is operated to shift the rod 6, the latter does not immediately return upon being relieved of the pressure of the key, but is restrained 90 against the tension of its spring by a latching or locking lever 45, mounted on the main frame and normally spring-pressed against a bevel-ended nut 46, secured upon the left-hand end of said rod. After the front end of the 95 lever has become caught over the nut 46 upon the longitudinal movement of the rod 6 the latter is locked in its left-hand position and is only released by said lever approximately at the end of the operation of the register by 100 a cam 47, fast on the rotation-shaft 25 of the machine and arranged to engage and depress one arm 48 of the inner yoke of said lever, said yoke embracing said cam. The upper arm 49 of said yoke is adapted to lock the 105 rotation-shaft 25, and consequently the entire machine, during the movement of the shifting-rod 6. When the latter is moved, the beveled nut 46 strikes the front end of the lever 45, thereby raising the latter and 110 depressing the locking-arm 49 in front of the shoulder 50, and thereby locking the machine until the beveled nut has passed entirely under the latching-lever 45, whereupon said lever returns to normal position, but upon the 115 right-hand side of the beveled nut, thereby holding the shifting-rod in its operated position until the subsequent operation of the machine, whereupon the rotation-shaft turns, as described, and the lower arm 48 is struck 120 by the cam 47 and depressed, thereby raising its forward end and allowing the shifting-rod 6 to spring back to normal position. In this manner there is provided a cash-register having two totalizing-counters with a 125 single series of amount or value keys and a shifting-key, so that the amount of a transaction may be recorded in either one of the counters at will, and the throwing in of one of the counters automatically throws out the 130 other. The mechanism is such, too, that one of the counters is normally in condition for engagement with the registering mechanism, and to register in this counter it is only nec-

essary to operate the amount or value keys. When the other counter is to be used, it is first necessary to press the shifting-key, which disturbs the normal condition of the parts so ; that the second counter is brought into condition for engagement with the registering mechanism and the first-mentioned counter is thrown out; also, during the operation of the shifting-key the entire mechanism of the to machine is locked against operation. It will be readily understood that such a machine is

adapted to a wide range of uses.

My present invention has to do particularly with an adaptation of any cash-register for 15 use in special places or in a special manner where it is desired to retain, for example, two records of the same transaction. My invention is especially useful in shoe-stores and the like to record the cost of goods sold upon one 20 counter and their selling price upon the other. As cash-registers are usually placed in a prominent place in the store, it is desirable in registering the cost and selling price that the selling price be displayed to the cus-25 tomer, but that the cost be not shown, and one feature of my invention is directed to this end. It will be readily understood that where my invention is applied to a cash-register which is arranged to print the registra-30 tions serially upon a paper strip the cost and the selling price of every recorded transaction will be shown by such printed strip.

The regular amount or value indicators 56 are substantially as shown and described in 35 the patent heretofore mentioned. Each comprises a stem or rod having a shoulder 57, which is arranged to cooperate with the usual supporting frame or bar 54, which is common to all of the indicator rods and is pivoted at 40 its end to the rear of the indicator-rods and above the shoulder 57. When a key is operated, its indicator is raised, the supportingwing 54 being swung backward to drop the previously-raised indicator to permit the 45 shoulder 57 of the operated indicator to pass and then swung in under said shoulder, so as to retain said indicator in elevated position. The supporting frame or wing is rocked to drop the previously-operated indicator and 50 to engage under the shoulder of the last-operated one by the rigid arm 60, which extends forward with its front end resting upon the rotation-cam 61 upon the shaft 25, Fig. 3, whereby said supporting-frame is swung back-55 wardly and then permitted to swing back to its normal position once during each operation of the machine. The operated indicators are raised and held in elevated position to expose them to the view of onlookers, as 60 above described, however, only when the right-hand counter is being operated—that is, when the selling price of the goods purchased is being registered. When the cost price is being registered, it is desirable to have the 65 indicators not exposed to the view of the customer or bystanders, and to this end the indicators are raised in the usual manner, when

the value-keys are operated; but they are constantly covered by the screen or shield 63, and the supporting wing or frame 54 70 is held backward, so that it is not engaged under the shoulders of the indicators, whereby the latter are not held in exposed position, but drop back to normal position, as shown in Fig. 2, as soon as the operated amount or 75 value keys are permitted to return to their normal position. To this end a rigid arm 51 is mounted on the shifting-rod and extends backwardly, its rear end having a downwardly-extending lug 52, Figs. 1 and 2, 80 which is adapted, when the shifting-key is operated, to bear against an arm 53, pivotally mounted on the indicator-supporting frame and to force said frame laterally against the the tension of its spring 55, which surrounds 85 its pivot 53^a. When the amount or value keys are operated without first pressing the shifting-key 40, the arms 51 are simply idle and serve no purpose. The indicators are exposed between registrations and then dropped 90 back to the normal position in the usual manner. When, however, the shifting-key is operated, the arm 53 is swung to the left, as already described, and its front end is brought into the path of a disk-cam 62, mounted on 95 the rotation-shaft. When, thereafter, the value-keys are operated and the rotationshaft turned, the arm 53 is raised, thereby swinging backward the supporting-wing and holding it backward until the operated indi- 100 cator-rods have been raised and returned to normal position. In this manner when an amount is registered in the left-hand, or, as I have termed it, the "cost" counter, the indicators are not held in elevated position, 105 but are raised and immediately returned to normal position. The cam 62 is provided with a flange 62^a, having a cut-away portion, as shown, and thereby the arm 53 is held upon the periphery of the cam 62 during the 110 rotation of the shaft 25 and until the notched portion of the flange reaches said arm 53, whereupon the latter passes through the notched portion and returns to normal position under the impulse of its spring. To 115 hide the indicators during their entire movement while a registration is being made upon the cost-counter, I provide a screen or shield 63, which is rectangular in form and incloses all of the indicators. It is supported on two 120 vertical side arms 64, Fig. 1, and one of which is shown in broken lines in Fig. 2. . Each arm at its lower end has a headed pin 65, which is movable in the slot 66 at the rear end of the horizontal lever 67, which is pivoted upon 125 the key-shaft 67a. The forward end of the lever is curved upward, and its cam end lies just under a stud 69, which is carried by an arm on the forward end 70 of the universal bar or key coupler 71. In this manner at the 130 initial operation of the machine the screen is raised to hide the indicators during their movement to indicating position and remains raised until the coupler has nearly returned

to normal position, the roller 69 meanwhile playing along the edge of the arm 68. When an amount is registered in the selling-price counter, the operated indicators are retained 5 in elevated position and the shield drops back to normal position, leaving the indicators exposed. When a registration is made in the cost-counter, the indicators and the shield rise and return simultaneously, so that to the indicators are never exposed, and as the indicators are not retained in raised position no amount or value indicator shows when the operated keys have returned to normal position. Thus when the cost-counter is being 15 employed, no amount-indicators will be set, but the return of the rod 6 at the end of the operation will return all of the parts to normal position, so that the registration of the selling-price will set the proper amount-in-

20 dicators. To show which of the counters is being employed, I provide the department-indicator 4, which is located above the regular amountindicators and comprises an elongated rec-25 tangular body and a central supporting-rod 72, upon which said indicator is rigidly secured. The opposite ends of this rod are journaled in the side portions of the frame, so as to support the indicator in a horizontal 30 position above the regular tablet-indicators. A slotted arm 73 is rigidly secured to one end of said rod, so as to receive a pin 74, mounted on a vertical slide 75, which in turn is mounted in suitable guides on the main frame. (See 35 Fig. 5.) This slide extends down through the indicator-stem guide-plate 76 and is surrounded by a coiled spring 77, which bears against the under side of said plate at one end and against a pivoted bell-crank pawl 78, 40 mounted on the slide, at its opposite end, so as to normally force the slide downward and the pawl outward at its lower end, the movement of the pawl being limited by a pin 79. The downward movement of the slide is lim-45 ited by a pin 80, mounted on the frame and arranged to engage a shoulder 81, formed on the slide. When the slide 75 is in its upper position and is released by the return of the right-hand counter to disengaged posiso tion and by the rearward swinging of the supporting-frame 54, its spring 77 promptly moves it down to its lower position, thereby turning the rectangular indicator. The slide is raised to its upper position when an amount 55 is registered in the right-hand counter. This is accomplished by means of a bell-crank lever, the sleeve 83 of which is pivoted upon the transverse coupling-shaft 33 and comprises a backwardly-extending arm 82, which 60 is slotted at its rear end to embrace a pin 84, carried by the slide 75, and a short downwardly-extending arm 85, against the front edge of which rests a pin 86, carried by the

right-hand counter-frame. From this con-

counter is locked into engagement with its

65 struction it is evident that whenever the said

registering-segments 10, 11, and 12 the rear arm of the bell-crank is elevated, thereby raising the slide 75 and turning the transaction-indicator, and thereby showing to by- 70 standers in which department the amount is being registered. Any suitable words, such as in the present instance "Cost" and "Selling price," may be painted or otherwise impressed upon the department-indicator.

In the practical operation of my invention

In the practical operation of my invention the clerk first registers the cost of the goods sold in the cost-counter and then immediately registers the selling price in the other counter. Normally the machine displays in-80 dicators showing the amount of the last-recorded selling price and the department-indicator.

It will readily be understood that my invention would be effective even though the 85 cost-counter were entirely omitted, for when the keys representing the cost amount were pressed, particularly where the machine is provided with a printer, as described in the heretofore-mentioned patents, that amount 90 would be printed upon the detail-strip, and the effect of omitting the cost-counter would therefore simply be that to ascertain the total cost of the goods sold it would be necessary to add up the individual cost amounts 95 as printed upon the detail-strip. It will be understood also that the special indicator 4 may very well be omitted in some machines where the rest of my invention is employed. Indeed a cost and selling price machine would 100 generally be preferred without the special indicator, as most proprietors would not care to make known to their customers the fact that they were registering upon the machine the cost of the article as well as the selling price. 105 On the other hand, there are other uses for the machine which make the special indicator desirable.

The present embodiment of my invention comprises so-called "tablet-indicators," which 110 when a cost transaction is recorded are raised in the usual manner, but are hidden during their movement by the flash. It will readily be understood that I might equally well arrange the machine so that when a cost trans- 115 action (or the like) is recorded the indicators will not be moved at all, but simply remain in their normal position within the case of the machine, or I might use roller or dial or any other style of indicators instead of the tab- 120 let-indicators shown. In such case I should provide the roller or dial indicators with a shutter, as is common in the art, and while a cost transaction is being recorded and until a succeeding registration the shutter would 125 be held in position to hide or cover the indicators.

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

1. In a cash-register, the combination with a counter-operating mechanism, of a plural-

etters

ity of independent counters arranged to cooperate therewith, a series of indicators, and means for preventing the exposure of the indicators when one of said counters is operated.

2. In a cash-register, the combination with a counter-operating mechanism, of a plurality of independent counters arranged to cooperate therewith, a shifting-rod for bringing one or the other of the counters into operative relation with the operating mechanism, a series of indicators and a device controlled by said rod for preventing an exposure of the indicators whenever said rod is adjusted to bring a particular one of the counters into engagement with the operating mechanism.

3. In a cash-register, the combination with a counter-operating mechanism, of a plurality of independent counters arranged to cooperate therewith, shifting devices for bringing one or the other of the counters into operative relation with the operating mechanism, a series of indicators, and means for preventing an exposure of the indicators when a particular one of said counters is brought into operative relation with the operating mechanism.

4. In a cash-register, the combination with a counter-operating mechanism, of a series of indicators, a plurality of independent counters, adjusting means for bringing the desired counter into operative relation with the operating mechanism, devices for retaining the indicators in position to show the amount of the transaction registered and devices operated by the adjusting means for rendering the indicator-retaining means inoperative.

5. In a cash-register, the combination with a counter-operating mechanism, of a series of indicators, a plurality of independent counters arranged to be brought into operative relation with said operating mechanism, means for preventing the exposure of the indicators when a certain one of said counters is operated, and a key for establishing operative connection between the operating mechanism and the desired counter.

6. In a cash-register, the combination with a counter-operating mechanism, of a series of indicators, a plurality of independent counters, means for holding the indicators in exposed positions and devices for rendering said means inoperative when a certain one of said counters is actuated.

7. In a cash-register, the combination with a counter-operating mechanism, of a series of indicators, a normally inoperative counter, means for setting said counter for operation, and devices for preventing a disclosure of the indicators when said counter is operated.

8. In a cash-register, the combination with a counter-operating mechanism, of a series of indicators, a series of keys for operating said indicators, means for setting said counter for operation and devices for preventing a dis-

closure of the indicators when said counter is operated.

9. In a cash-register, the combination with a series of keys, a counter-operating mechan- 70 ism coöperating therewith, a series of indicators also coöperating with said keys, a "cost-counter" and a "selling-price" counter and means for preventing the disclosure of the indicators when the cost-counter is operated.

10. In a cash-register, the combination with a counter-operating mechanism, of a normally inoperative "cost-counter" and a normally operative "selling-price" counter, a series of amount-indicators, means for rendering the 80 cost-counter operative and the "selling-price" counter inoperative and devices controlled by said means for preventing an exposure of the indicators.

11. In a cash-register, the combination with '85 a counter-operating mechanism, of a series of independent counters mounted on movable frames and arranged respectively to be thrown into connection with the operating mechanism, a key for adjusting said counters for operation as above, a series of indicators, and means set by the operation of the key for preventing an exposure of the indicators.

12. In a cash-register, the combination with a counter-operating mechanism, of a plurality 95 of independent counters arranged to coöperate therewith, a series of indicators, a series of keys for moving said indicators, indicator-holding means arranged to coöperate with the indicators only when one of the counters is being operated and means arranged to hide the indicators while being set.

13. In a cash-register, the combination with a counter-operating mechanism, of a series of independent counters, a series of indicators, 105 means for holding the indicators in set positions, shifting devices for the counters, mechanism operated by said devices for rendering the indicator-holding means inoperative, and a movable flash arranged to hide the indicators while being set.

14. In a cash-register, the combination with a series of keys, of a series of indicators, a flash for said indicators and means intermediate the keys and flash whereby the latter is fully 115 and positively raised upon the initial movement of any one of the keys and positively locked in such raised position until the final movement of the key.

15. In a cash-register, the combination with 120 a series of keys, of a series of indicators, a flash for said indicators, and means intermediate the keys and the flash whereby the latter is fully and positively raised upon the initial movement of any one of the keys and lowered 125 by the final movement of said key; said flash remaining stationary during the intermediate movements of the keys.

16. In a cash-register, the combination with a counter-operating mechanism, of a plurality 130 of independent counters arranged to cooperate therewith, a series of indicators and means

for exposing the indicators when one of said counters is operated, but not when the other

is operated.

17. In a cash-register, the combination with an operating mechanism and a counter cooperating therewith at will, of a series of indicators and means for preventing the exposure of the indicators when said counter is operated.

18. In a cash-register, the combination with a series of keys, of a series of indicators, a movable member common to said keys, a flash for the indicators, operating cam-levers for the flash and devices carried by the common member and engaging said levers.

19. In a cash-register, the combination with a series of keys, of a series of indicators arranged normally to be exposed by said keys, a special key, and means for preventing the exposure of the indicators when the special

key is operated.

20. In a cash-register, the combination with a counter-operating mechanism, of a plurality of independent counters, a shifting device for said counters, a series of indicators, an indicator-latch, a movable operating-bar mounted on said latch, devices for operating said bar to rock the latch and means mounted on the shifting device for adjusting said bar.

21. In a cash-register, the combination with a counter-operating mechanism, of a plurality of independent counters, a shifting device for said counters, a series of indicators, an indicator-latch, a movable operating-bar mounted on said latch, a cam for operating said bar to

rock the latch and an arm mounted on the shifting device for adjusting said bar to engagement with the cam.

22. In a cash-register, the combination with a counter-operating mechanism, of a plurality 40 of independent counters, a shifting device for said counters, a series of indicators, an indicator-latch, means operated by the shifting device for setting the latch for a special operation and devices for releasing said means 45 and allowing them to return to normal position after the operation of the machine.

23. In a cash-register, the combination with a series of amount or value keys, a counter-operating mechanism and a series of indica-50 tors actuated by the keys, of a plurality of independent counters coöperating with the counter-operating mechanism, means for exposing the amount-indicators of the recorded transaction when one of the counters is operated but not when the other counter is operated.

24. In a cash-register, the combination with a counter-operating mechanism, of a series of indicators, a normally inoperative counter, 60 means for setting said counter so that it will be operated by the operating mechanism and devices for hiding the indicators when said counter is operated.

In testimony whereof I affix my signature 65

in the presence of two witnesses.

JOSEPH P. CLEAL.

Witnesses:

WM. MCCARTHY, IRA BERKSTRESSER.