

(No Model.)

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J. B. NESBIT.

CASH REGISTER AND INDICATOR WITH ELECTRIC ALARM ATTACHMENT.

No. 525,056.

Patented Aug. 28, 1894.

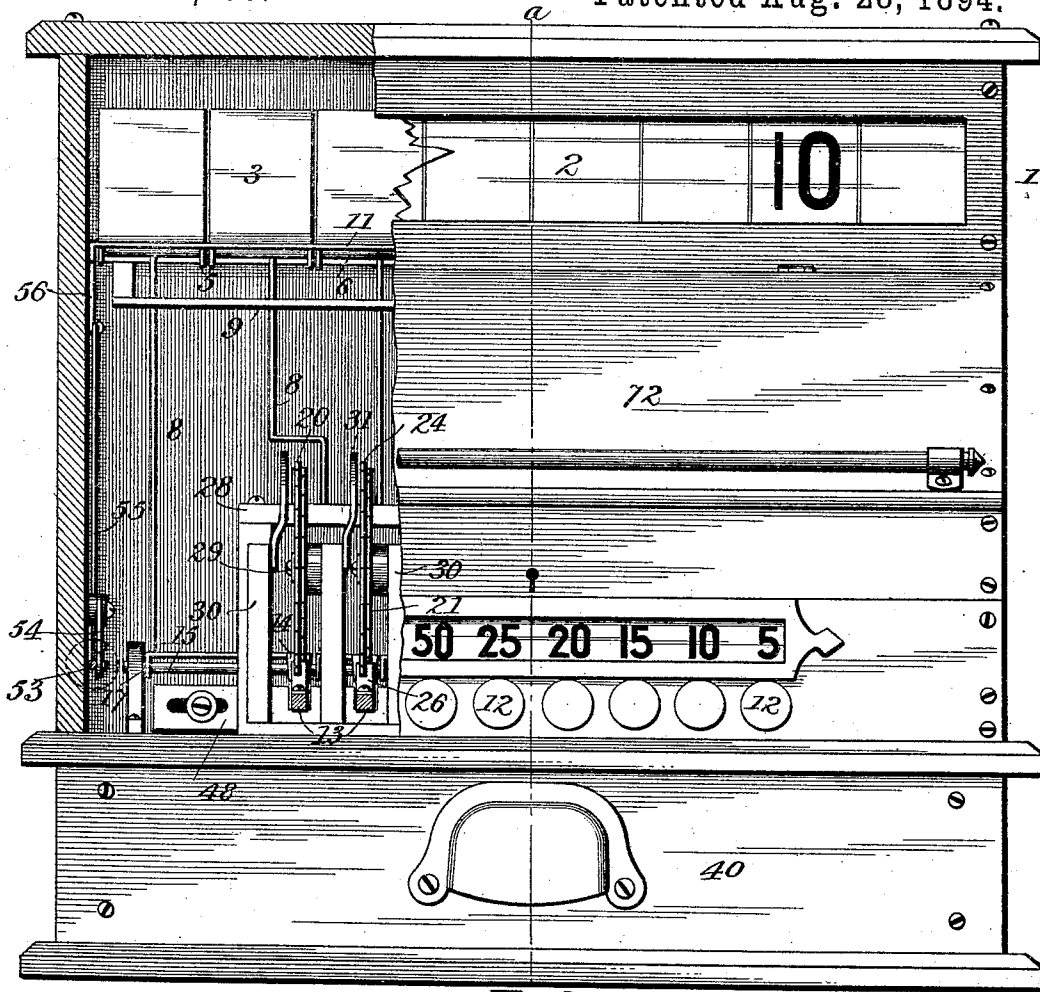
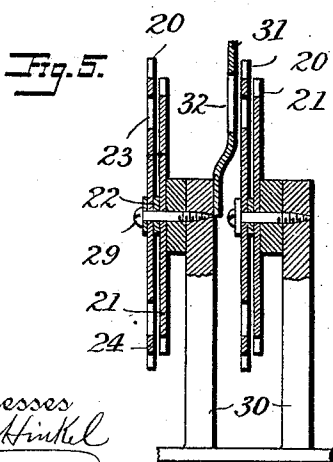
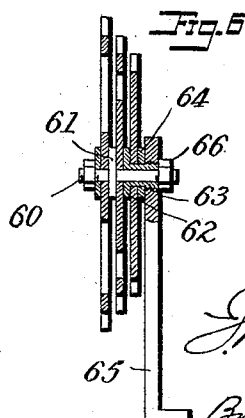


Fig. 1.



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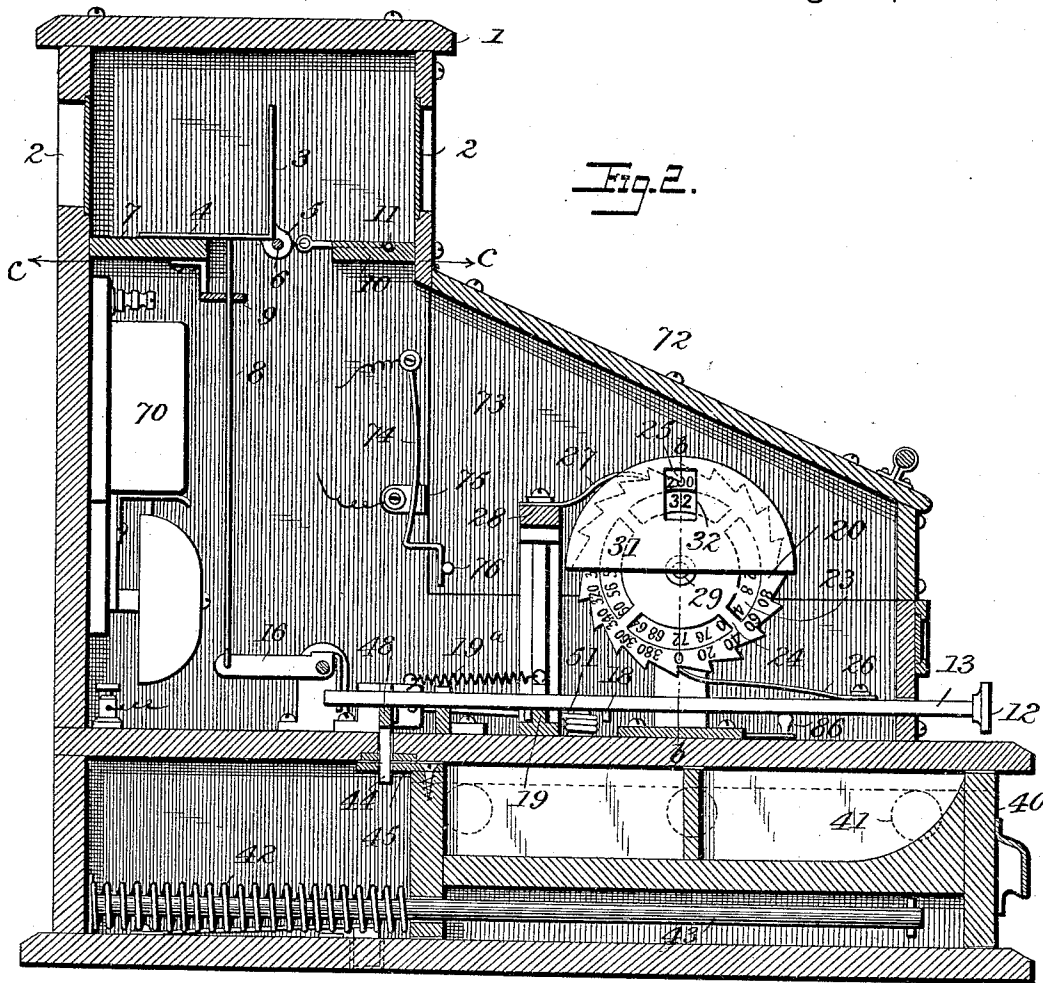


Fig. 7.

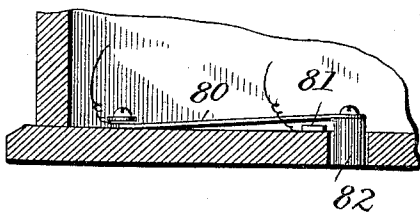


Fig. 8.

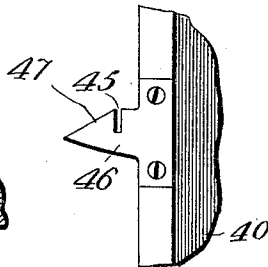
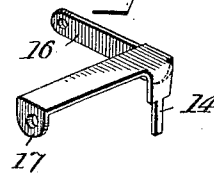


Fig. 9.



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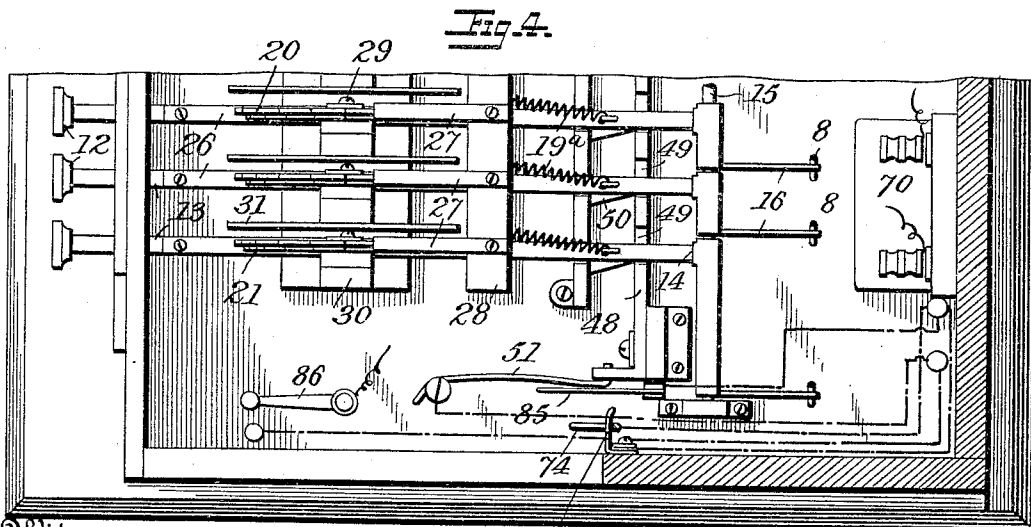
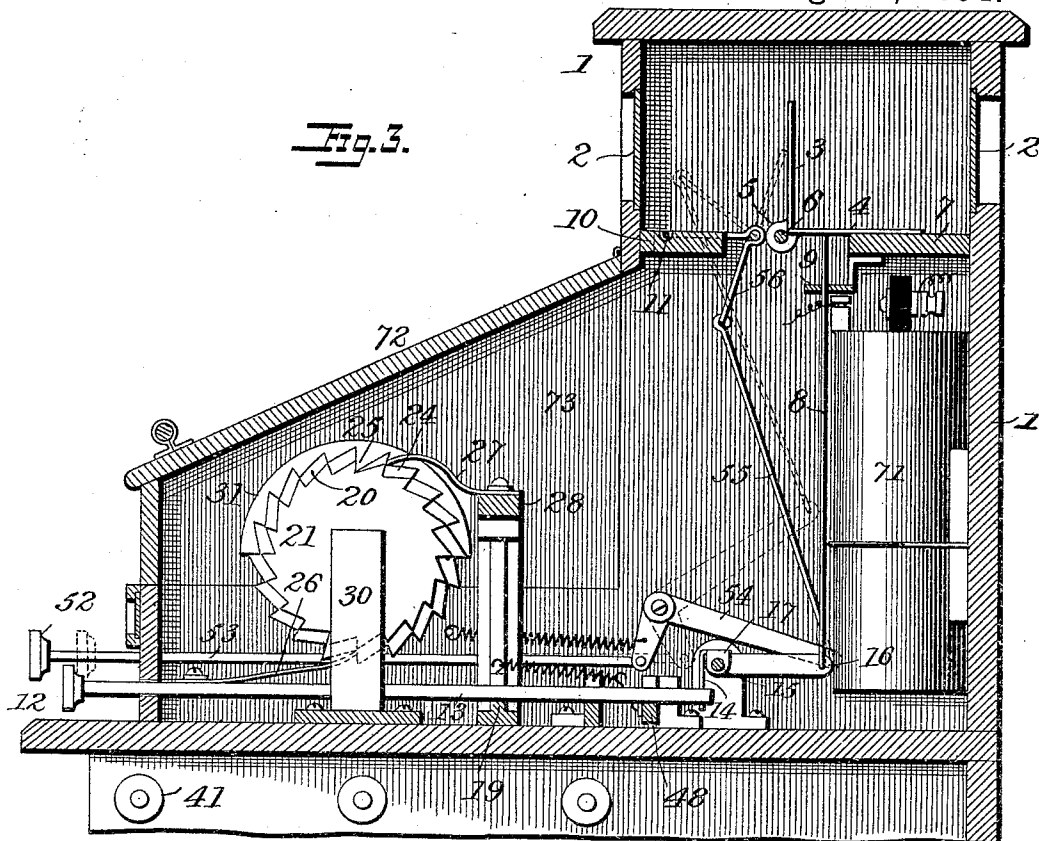
3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

JOSEPH BAILEY NESBIT, OF SUNBURY, PENNSYLVANIA, ASSIGNOR OF
TWO-THIRDS TO PETER P. SMITH AND CHARLES E. HOUSER, OF
SAME PLACE.

CASH REGISTER AND INDICATOR WITH ELECTRIC-ALARM ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 525,056, dated August 28, 1894.

Application filed December 13, 1893. Serial No. 493,564. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BAILEY NESBIT, a citizen of the United States, residing at Sunbury, in the county of Northumberland and State of Pennsylvania, have invented certain new and useful Improvements in Cash Registers and Indicators, of which the following is a specification.

My invention relates to an improved cash register and indicator, in which the principal objects attained are simplicity, and cheapness combined with reliability and durability.

The following is a full, clear and exact description of the invention, reference being had to the accompanying drawings, in which—

Figure 1. is a front view of my improved cash register and indicator. Fig. 2 is a sectional view on the line *a—*a** of Fig. 1 looking toward the right. Fig. 3 is a sectional view on the line *a—*a** of Fig. 1, looking toward the left. Fig. 4 is a partial plan view, the upper part of the machine being broken away. Fig. 5 is a sectional view on the line *b—*b** of Fig. 2. Fig. 6 is a similar view of a modification, and Figs. 7, 8 and 9 are details.

Referring to the drawings, 1 indicates a casing of wood or metal within which the various operating parts of the register are inclosed. At the upper part of the casing are windows 2 2 through which the tablets may be seen from the back and the front of the machine. The tablets consist preferably of rectangular metal plates, bent nearly or quite to a right-angle, thus forming two leaves, 3 4, one of which is marked upon both sides with the amount which the tablet represents, while the other leaf is blank upon both sides. Each of the tablets is provided with a pair of lugs, 5, by which it is pivoted upon a rod 6 running from end to end of the casing. When a tablet is in its normal position, the upper leaf 4 rests upon a support or shelf 7. When it is desired to show the numbered leaf, the tablet is tilted by means of a rod 8 which is guided by a plate 9, said rod being thrown up by means of a key and connections which will be hereinafter described. When the rod 8 is elevated, the numbered leaf 4 is thrown up into the vertical position and the blank leaf 3 falls and rests upon a support or shelf 10.

To restore the tablet to its normal position with the blank leaf vertical, a universal bar or bail 11, which normally lies upon the support 10, is raised by means of suitable connections as shown in the dotted lines in Fig. 3. The bail 11 runs from end to end of the casing, and underlies all of the tablets, and by elevating it any one of the tablets may be restored to its normal position. It will be seen that each leaf of the tablet forms a weight to hold the other leaf in a vertical position, thus dispensing with other means for this purpose. It will be further evident that the leaves of the tablet, especially the blank one, need not be rectangular in form, although for some reasons that form is to be preferred.

The tablets are operated by means of a series of keys 12 upon push rods 13, which project through the front of the casing. The inner or rear ends of the push rods are connected to the downwardly projecting arms 14 of bell-crank levers which are mounted upon a rod 15. Each of the push rods 13 is provided with pins or shoulders 18 which limit its movement in either direction by abutting against a fixed member 19. The push-rods are held normally in their forward position by means of suitable springs 19^a. The bell-crank levers have rearwardly extending arms 16 to which the lifting rods 8 are connected. While bell-crank levers of any ordinary construction may be used in combination with the other features of my invention, I prefer to use levers such as are illustrated in the drawings see Fig. 9 on account of their cheapness and serviceable character. These bell-cranks are formed of sheet metal, stamped and bent into shape, and are each provided with two separated bearings to insure steadiness of motion. One of these bearings is formed in the lever arm 16, and the other in a parallel lug 17.

The registering devices consist of a series of sets of wheels, each set consisting, as shown, of a larger toothed wheel 20 and a smaller one, 21, arranged adjacent to each other upon the same pivot and separated by a thin washer 22. Upon the exposed face of the larger wheel 20, just inside the teeth, is arranged a series of numbers, one for each tooth, the dif-

ference between two adjacent numbers representing the amount desired to be registered by pushing in the push-rod corresponding to that set of wheels. Upon the larger wheel, 5 corresponding to the twenty cent key, for instance, the figures run from 0 to \$3.80, there being twenty teeth to the wheel, as shown in Fig. 2. Just within the dial above described the larger wheel is cut away, leaving an annular opening 23 through which a second dial 10 upon the small wheel may be viewed. The outer and inner portions of the larger wheel are connected by spokes 24 which are small and do not obstruct the view of the small dial. 15 The smaller wheel is arranged to turn one notch for each complete revolution of the larger wheel, thus registering the number of revolutions of said larger wheel. As for the twenty cent key the larger wheel registers \$1. 20 for each revolution, each of the numbers of the smaller wheel is four greater than the preceding number, thus indicating the number of dollars which have been registered by the larger wheel. Thus the smaller wheel of the 25 twenty cent key registers up to \$80., having twenty teeth, and the two wheels together register up to \$83.80.

The diameter of the smaller register wheel of each set is such that a pawl operating in 30 the teeth of the larger wheel cannot ordinarily engage with the teeth of the smaller wheel. One notch, 25, of the larger wheel, is cut deeper than the rest, and permits the moving pawl to spring into engagement with 35 a tooth of the smaller wheel once in each revolution of the larger wheel. As shown, each set of registering wheels is operated by a spring pawl 26 upon its corresponding push-rod 13. To prevent any accidental backward 40 movement of the wheels, I provide holding pawls 27 attached to a suitable support 28. As shown, each pair of registering wheels is mounted upon a pivot 29, which is fixed upon a support 30.

45 To indicate the particular numbers to be read on each of the registering wheels, I prefer to use opaque shields 31, having openings 32, through which but one number on each dial may be read. Instead of these shields I 50 might of course use simple pointers to indicate the proper numbers upon the dials. The shields 31 are shown as attached to the standards 30.

In the lower part of the casing is a compartment in which a money drawer 40 is arranged 55 to slide, being preferably supported upon anti-friction rollers 41. The drawer is normally forced outward by means of a spiral spring 42 surrounding a guide-rod 43, which is attached to the back of the casing and extends nearly to the front of the drawer. When 60 the drawer is pushed in it is locked automatically by means of a bolt 44 which engages a notch 45 in a plate 46 having a beveled edge 47. The bolt 44 is closed by a spring, and is 65 pressed backward by the beveled edge 47 when the drawer is closed. The drawer is

opened automatically when the change key or any one of the cash-register keys is operated, in the following manner: The bolt 44 70 is attached to a sliding bar 48 and on the upper edge of this bar is a series of rectangular notches 49. The inner ends of the push rods lie normally in these notches, and each rod is provided with a cam projection 50 75 which operates the bar 48 when the push-rod is operated. When the push-rod is released it springs back to its outward position, and the bar 48 is then restored to its normal position by the spring 51, which spring actuates 80 the bolt to lock the drawer.

The sets of registering wheels may be duplicates of each other to facilitate and cheapen their manufacture, the only necessary difference being the marking on the dials, which 85 dials may be formed separately of card-board or celluloid and attached to the wheels. Any number of sets of wheels may be used, depending upon the purposes for which the recorder is to be used. I have shown cash keys 90 ranging from five cents to one dollar, and a change key, each of which keys is provided with a set of registering wheels and a cam for releasing the cash drawer. The denominations of the keys may be marked thereon, 95 or upon a fixed tablet arranged just above the keys upon the front of the case, the latter being the form of marking illustrated. An additional key 52, is provided for operating the bail 11, which restores the tablets to 100 their blank position. As shown, this key is connected to the bail through a push rod 53, elbow lever 54, connecting rod 55 and an elbow lever 56, one arm of the latter lever being part of the bail 11. The key 52 is preferably placed at the left end of the machine, 105 so that it may be operated by the left hand while the right-hand is selecting the cash key. Instead of using two registering wheels I may use three in each set, thus greatly enlarging 110 the registering capacity of the machine, but for all ordinary purposes I find two registering wheels sufficient.

In Fig. 6 I have shown a sectional view of three wheels. The two larger wheels are 115 mounted upon a fixed pivot pin 60, with a fixed washer 61 between them to prevent the movement of one wheel influencing the other. Between the middle wheel and a smaller wheel, is another washer 62, connected to a 120 collar 63, and upon the inside of the smaller wheel is another washer 64 surrounding the collar. The pivot pin 60 passes through the collar 63 and through a standard 65, and is bolted rigidly to the latter by means of a nut 125 66. The three wheels operate exactly as the pairs of wheels previously described; that is, when the larger wheel has made one revolution, the second wheel is advanced one notch, and when the second wheel makes a complete 130 revolution, the third wheel is advanced one notch, the two larger wheels each having deep notches to permit the pawl to drop into engagement with the tooth of the smallest wheel.

For simplicity, effectiveness and economy of construction I employ an electrical alarm, which I arrange so as to indicate when the cash drawer is opened and also when the cover of the machine is lifted or the machine is tampered with in any manner.

Attached to the back of the casing upon the inside I have shown an electric alarm bell 70 and a primary battery cell 71, preferably of the variety known as a "dry cell." Ordinarily it is most convenient to have the bell and battery within the casing but I may, under certain circumstances, locate the battery and bell at any point desired, as, for instance, under the counter or in an adjoining room.

The case of the machine is provided with a lid or cover 72 hinged at its upper edge. As shown, the cover includes portions 73 of the end of the casing. The cover is usually kept locked and need only be opened occasionally to read the register wheels. In order to detect any unauthorized opening of the cover, I arrange an electric switch so that it will close a circuit through the bell automatically when the cover is raised, thus sounding an alarm. As illustrated, the switch consists of a spring contact 74 and a fixed contact 75. The spring is held away from the fixed contact when the cover is closed by a projection 76 upon the lower edge of the cover. When the cover is lifted the circuit is closed and the bell rings.

The wires of another circuit including the bell are carried to the bottom of the case, where one wire is carried to a spring contact 80, while the other is connected to a fixed contact 81. Upon the end of the spring 80 is a button 82 which normally projects through an opening in the bottom of the casing for a short distance below the surface of the bottom. When the machine is set upon a counter or support, the button is pressed in as shown and contact is broken. If the case be raised from its support, the spring 80 immediately closes the contacts and sounds an alarm. In this way the stealing of the machine bodily may be prevented.

The wires of a third circuit, including the bell, are carried to a switch at the end of the rod 48 to indicate when the drawer is unlocked. This switch consists of a fixed contact 85 and a spring contact, which, as shown, is the spring 51 which moves the bar 48.

A fourth switch 86 of ordinary construction may be used to cut out the battery when the machine is not in use.

The operation of my invention will be fully understood from the foregoing description and need only be briefly related. The blank leaves of the tablets are normally exposed. When a sale is to be recorded of say twenty cents, the twenty-cent key is pushed in, the effect of which is to register the amount upon the register wheels, to sound an alarm and unlock the drawer, which springs open automatically, and to tilt the tablet so as to throw up the leaf having the number 20 marked on it, which number is exposed to view upon the

front and back of the machine. The numbered tablet should remain until the succeeding sale is made, when the key 52 is first pressed in to throw up the bail 11 and restore the twenty-cent tablet to its normal position. Immediately after this is done the proper cash key is pressed in and the tablet corresponding to the next sale is exposed.

Whenever it is desired to ascertain the total amount of sales, the lid 72 is unlocked and lifted so as to expose the figures upon the dials. The sum of the figures exposed upon the dials is the total amount of sales since the machine was last set at zero. A reading may be taken for each day and the sum for the preceding day subtracted therefrom will give the amount of sales for the day.

When it is desired to set the machine back to zero, it may be done in a few moments by simply moving the register wheels backward by means of a small hook or by the fingers.

In the foregoing specification I have described the preferred form of my invention. It will be evident, however, that various alterations in the details of construction may be made without departing from the spirit of the invention, and therefore I do not care to limit my claims to the precise construction and arrangement of parts shown and described.

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

1. In a machine of the class described, the tablet consisting of two connected leaves arranged substantially at right angles and pivoted at the joining angle, in combination with fixed stops arranged to permit either leaf to be held in a vertical position by the weight of the other leaf, and means for tilting the tablet in either direction, as set forth.

2. In a machine of the class described, the tablet consisting of a rectangular plate bent substantially at right angles to form two rectangular leaves, and provided with two depending perforated lugs or bearings, said tablet being arranged so that when either leaf is vertical the other will be substantially horizontal, in combination with means for tilting the tablet in either direction, as set forth.

3. In a machine of the class described, a row of tablets each consisting of two connected leaves arranged substantially at right angles to each other, said tablets being provided with bearings at their adjoining angles, in combination with fixed stops for holding either leaf of each tablet vertical, the other leaf acting as a weight for this purpose, as set forth.

4. In a machine of the class described, a row of tablets, each consisting of two connected leaves arranged substantially at right angles and pivoted at the adjoining angle, in combination with supports in front and in the rear of the tablets upon which either leaf of a tablet may rest when the attached leaf is vertical, and means for tilting the tablet to

bring either leaf to the vertical position, as set forth.

5 In a machine of the class described, the combination with a set of toothed register wheels, a spring pawl upon the upper side of
10 said rod and engaging with the lower edges of said wheels, a bell-crank lever having a downwardly extending arm engaging with
15 the rear end of the push-rod and a horizontal arm, a tilting tablet and fixed stops therefor, said tablet being held in either of two positions by gravity and a vertical rod connected with said horizontal arm for tilting the tablet, as set forth.

6. In a machine of the class described the combination with a bell-crank lever consisting of a plate of sheet metal cut and bent, substantially as described, to form two separated bearings, and two arms, of a pivot rod
20 passing through said bearings, a horizontal push rod connected to one arm, and a vertical tablet operating rod connected to the other arm, as set forth.

25 7. In a machine of the class described, the combination with the case and an electric battery within the case, of an electric alarm bell, a circuit for said bell, a switch in said

circuit, means for holding said switch open when the case is resting upon a counter or support and for automatically closing the switch when the case is raised, as set forth.

8. In a machine of the class described, the combination with the case of an electric battery and alarm bell within the case, a circuit for said bell, a switch in said circuit normally closed by a spring, a button connected to said spring and normally projecting from the bottom of the case, said switch being opened when the button is pressed inward by contact with the support for the case, as set forth.

9. In a machine of the class described, the combination with the keys, the push-rods, and the cash drawer having a notched bar 48 and tongue 44 adapted to lock the drawer, of an electric alarm bell, a circuit for said bell and a switch in the circuit having a fixed contact, and a movable contact connected with and arranged to be operated by the bar 48, substantially as set forth.

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

JOSEPH BAILEY NESBIT.

Witnesses:

C. E. HOUSER,

P. P. SMITH.