No. 679,250.

Patented July 23, 1901.

D. K. ALLISON.

CASH INDICATOR.

(Application filed Oct. 25, 1900.)

(No Model.)

2 Sheets—Sheet 1.

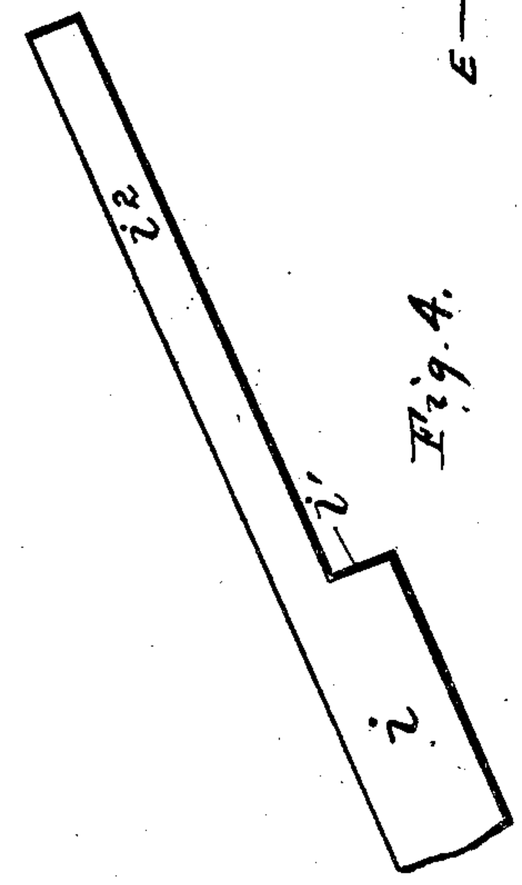

Fig. 4.

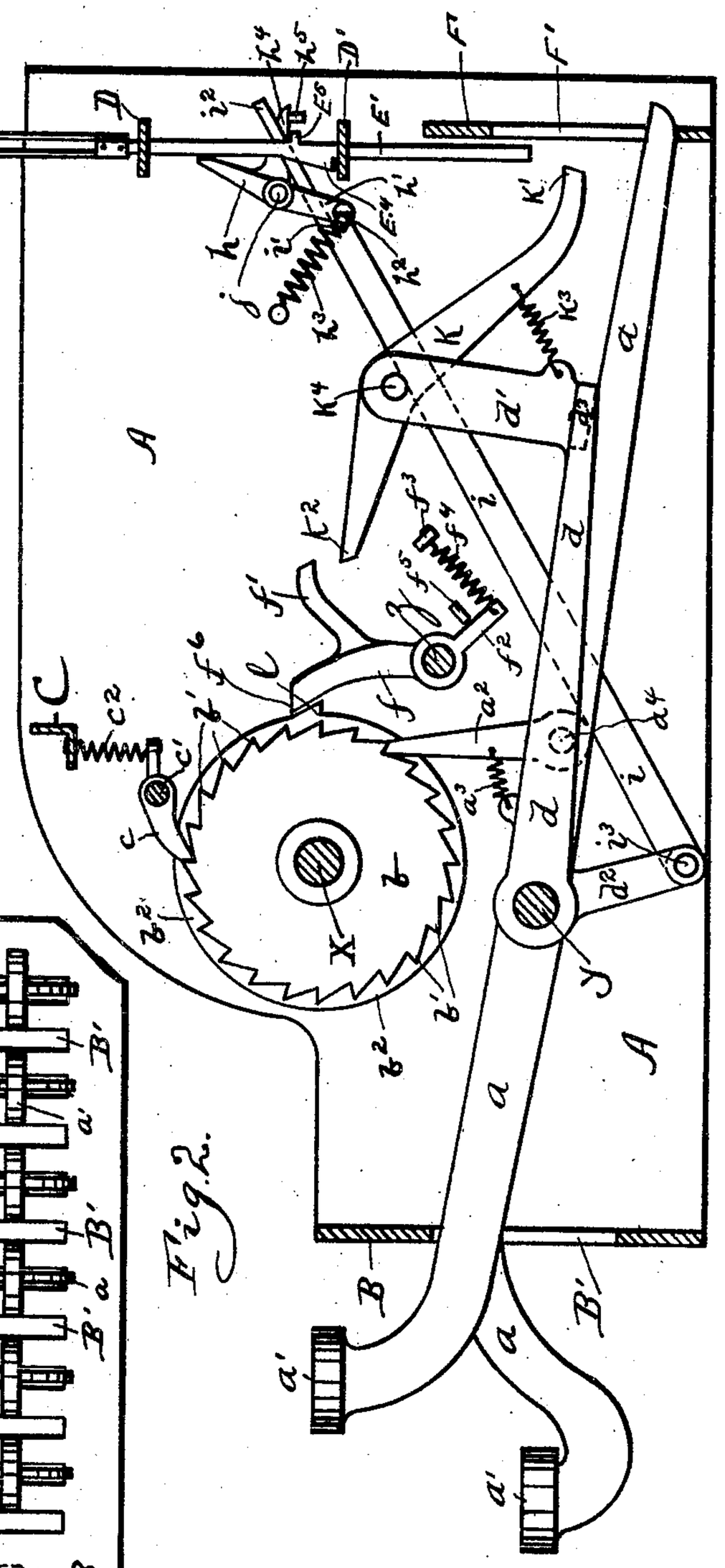

Fig. 1.

Fig. 3.

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

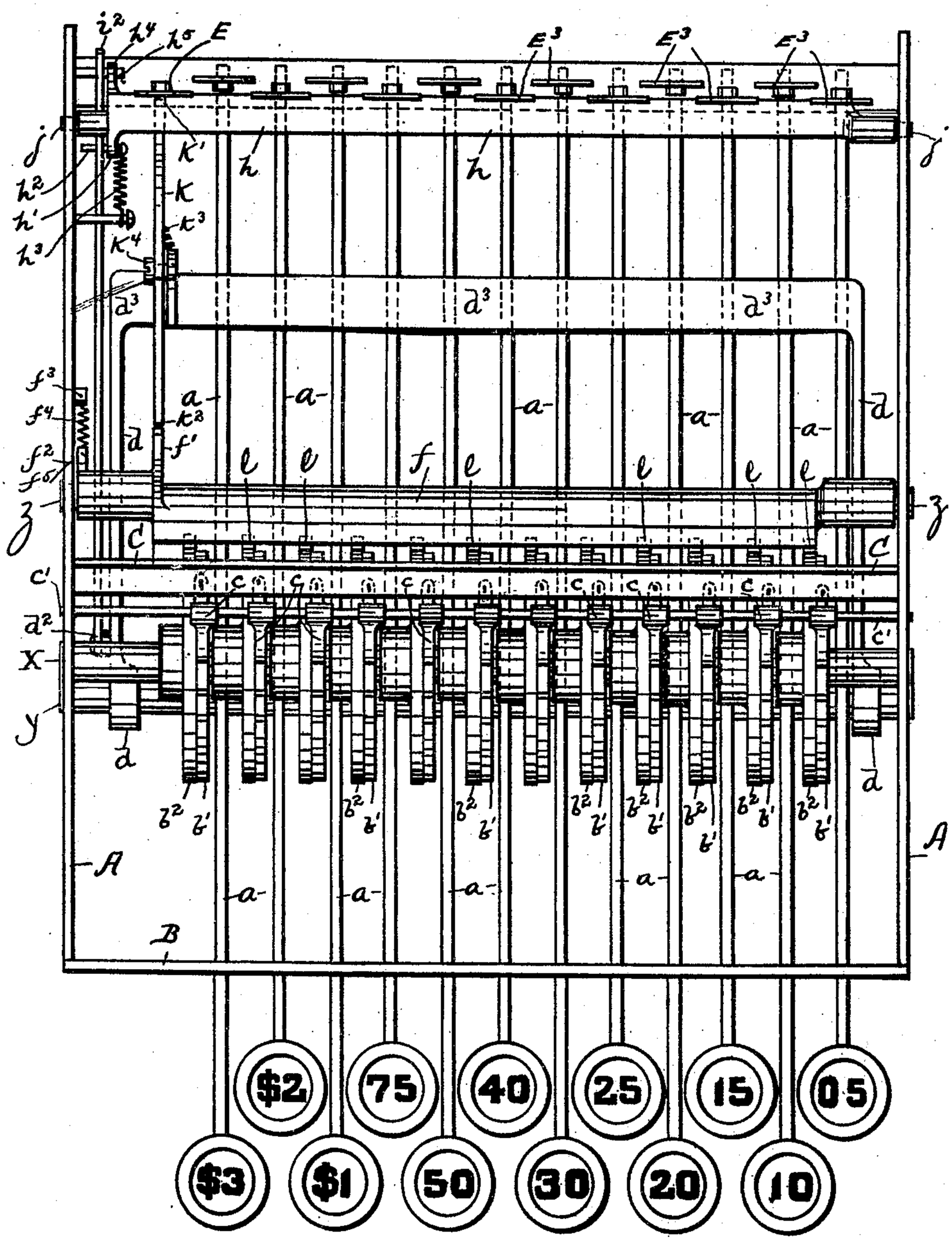

Fig 3.

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UNITED STATES PATENT OFFICE.

DANIEL K. ALLISON, OF TROY, OHIO, ASSIGNOR TO DANIEL K. ALLISON, OF SAME PLACE, AND FRANK A. FOSTER, OF DAYTON, OHIO.

CASH-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 679,250, dated July 23, 1901.

Application filed October 25, 1900. Serial No. 34,239. (No model.)

To all whom it may concern:

Be it known that I, DANIEL K. ALLISON, a citizen of the United States, residing at Troy, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Cash-Indicators; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in cash-indicating machines.

The object of the invention is to provide a machine which has a capacity for indicating the amount of each sale or transaction and in addition thereto a capacity for indicating a prize, cash rebate, or premium at predetermined times.

The principal feature of the invention consists of a special indicator and the mechanism through which said special indicator is actuated from the operating-keys during the regular operations of the machine.

In a detail description of the invention, Figure 1 is a partial sectional side elevation of a machine constructed in accordance with my invention. Fig. 2 is a front elevation showing the indicators, the keys, and the transverse indicator releasing and retaining bar, all other parts being removed. Fig. 3 is a top plan view with part of the mechanism removed. This view shows the position of the keys and their alinement with their respective indicators in the rear, also the position of the special indicator. The bar D is removed from this view. Fig. 4 is a detail of a portion of the bar *i*.

In a detail description of my invention similar reference characters indicate corresponding parts.

The frame of the machine is composed of sides A A and the front plate B, having a series of vertical slots B′. Transverse bars C, D, D′, and F serve in addition to their special functions to connect the two sides A A and to give the frame the necessary strength. Between the two sides A A there are located in parallel relation shafts X, Y, and *c*′. Fulcrumed on the shaft Y and projecting through the slots B′ are a series of operating-keys *a*, which extend approximately the entire length of the machine and project through slots F′ in a transverse plate F, the said slots being similar to those in the front plate B and being wide enough to admit the operating-keys to play loosely therein. These slots serve to guide the rear ends of the operating-keys, and the number of such slots correspond to the number of the operating-keys. The transverse bars D and D′ have a series of rectangular slots or openings, (not shown,) through which the indicator-bars E^2 play up and down freely, and are thus guided in a true and vertical movement. The upper ends of these bars support the indicator-tablets E^3, upon which are indicated the figures representing various amounts, the exposure of each tablet taking place when such tablet is elevated in a manner that is well known. The indicator-bars E^2 normally rest upon or a little above the rear ends of the operating-keys *a* and in line therewith, so that when the operating-keys are pressed down upon their front ends *a*′ by finger-pressure the operating-keys will be raised at their rearward ends, and thus the indicators E^3 will be raised to positions where they can be seen, one indicator being exposed at a time in the usual manner. Suitable mechanism hereinafter described is provided to hold the indicator-tablets E^3 in their elevated position until the next sale is indicated, at which time the indicator-tablet showing the former sale is allowed to fall to its normal or lower position.

Mounted on shaft X are a series of ratchet-wheels *b*, of which there is one for each of the operating-keys and each of which has a series of ratchet-teeth *b*′. Adjacent to each ratchet-wheel there is a wheel b^2, having a single ratchet-tooth *l* projecting beyond its periphery. These two wheels *b* and b^2 are inseparably connected. Therefore when the ratchet-wheel *b* turns on its axis its respective wheel b^2 also turns the same distance.

To each operating-key *a* a pawl a^2 is pivotally connected at a^4, which pawl engages with the teeth *b*′ on the ratchet-wheel *b*. The pawl a^2 is held against the ratchet-wheel *b* by means of a spring a^3, one end of which is fas-

tened to the pawl a^2 and the other end to the operating-key.

Mounted on the shaft c' are a series of retaining-pawls c, which engage with the teeth b' of the several ratchet-wheels b. These pawls are held in engagement with their respective wheels by springs c^2, one end of each of said springs being connected to a respective pawl and the other end to the transverse bar C. The said pawls serve to prevent the ratchet-wheels from taking backward motion. It will be understood that there is an individual pawl of the above type for each of said ratchet-wheels. Located in the rear of the ratchet-wheels b there is a transverse bar f, pivotally connected with the sides of the machine at z or in any suitable manner. This bar f extends across the machine and has an edge forming an acute angle at f^6, the under face of which angle coincides with one face of the angle of the tooth l on the wheel b^2 when adjacent thereto. The bar f when in a normal position has its angle edge f^6 very close to the peripheries of the wheels b^2, and also at one side near its axis it has a lug f^2, which in normal position rests against a lug f^5 on a side A. The said bar f is held in normal position by means of a spring f^4, one end of which is connected to the lug f^2 and the other end to a lug f^3 on a side A. The lug f^5 prevents the bar f from striking against the peripheries of the wheels b^2. One end of the bar f has a rearwardly-extending arm f', of which further mention will be made.

d designates a U-shaped frame, which is pivoted at both ends on the shaft Y and has its transverse portion or connecting-bar d^3 resting on all the operating-keys, so that when any one of said operating-keys is actuated the frame d will move upwardly the same distance that the operating-key is moved and will fall back to its normal position as soon as the operating-key falls. This frame d is provided with an upwardly-extended bar d' on one side thereof. Connected to this bar d' is an arm K, pivoted thereto at K^4. The arm K is held in its normal position by means of a spring K^3, one end of which is fastened to the arm K and the other end to the bar d'.

At one side of the machine and arranged in line with the indicators hereinbefore described is a special indicator E, on which is exhibited the word "Prize," "Rebate," or "Premium," or some other word or words of similar import. This indicator is not arranged to be operated with any one key exclusively, but is so arranged that when any one of the operating-keys has been operated as often as there are teeth on its respective ratchet-wheel b this special indicator E will be thrown up by the intervening mechanism and will indicate that some prize, premium, or rebate will be given to the purchaser of that sale. At the same time the amount of the sale will be shown by the regular indicator-tablet E^3.

Extending between the sides A A is a horizontal bar h, pivoted thereto at j. This bar h has at one end an arm h' extending downwardly, through which there is a pin h^2, having a head on one end, around which a coil-spring h^3 is fastened. The other end of said spring is fastened to a side A by means of a pin or screw, as shown in Fig. 1. The spring h^3 serves to keep the upper edge of the bar h in close proximity to the indicator-bars E' and E^2. Extending outwardly from the bar h at one end is a projection h^4, which when the bar h is in normal position rests upon the lug h^5, extending from the side A. This lug h^5 and the extension h^4 prevent the bar h from resting against the indicator-bars E' and E^2, while at the same time allowing the said bar h to approach said indicator-bars very closely without danger of resting against them. Extending downwardly from one side of the U-shaped frame d adjacent to its pivotal point is a bar d^2, which operates when the U-shaped frame d is actuated. To this bar d^2, near its extreme end, a bar i is pivoted at i^3. This bar i extends rearwardly and also in an upwardly direction. The rear end thereof has an offset at i', in the rear of which the bar is narrower, as at i^2. This offset i' in its normal position rests in front of the pin h^2, against which the said offset is intended to operate.

Having described the various parts of the machine, I will now describe its operation.

In order to indicate the amount of the sale made, the proper key or operating-keys are pressed downwardly. At the same time this key or keys so pressed will throw up their respective indicators E^3 and show the amount of the sale made. The indicator-bars are provided with projections E^4 and stops E^5. When the indicators are pressed upwardly, the projections E^4 rise above the bar h, and each indicator is held thereby. The stops E^5 prevent the indicator-bars from rising too high. When one indicator is elevated and another is about to be raised, the U-shaped frame d, being actuated with each operating-key, operates, and thus oscillates its downwardly-projecting bar d^2 rearwardly and carries the bar i also rearwardly. In this operation the offset i' presses against the pin h^2, which sends the bar h away from the indicator-bars sufficiently to allow the said indicator-bars to fall by gravity. In this operation the pin h^2 travels in a circle and is so placed that as the bar i moves rearwardly its rearward end i^2 also travels in a circle until its end strikes the lug h^5. This circular motion is now arrested, and the lug h^5 compels the end i^2 to travel in a straight line. As the pin h^2 travels in a circle and as the bar i at this point travels in a straight line, the offset i' cannot continue to press against the pin h^2, but jumps off this pin, and in the remaining movement of the bar i the wider part of the bar passes loosely over the pin h^2 without producing any effect on the bar h. While

the offset i' is pressing against the pin h^2 the bar h is retreating from the indicator-bars, and as soon as the offset i' jumps off the pin h^2 the spring h^3 pulls the bar h back to its normal position. When one of the operating-keys is pressed, its respective pawl a^2 actuates its corresponding ratchet-wheel b and moves it one tooth at each separate operation. This wheel b carries with it an adjoining wheel b^2, as hereinbefore stated. When any operating-key a has been operated as often as there are teeth in the ratchet-wheel b, its respective wheel b^2 is moved one revolution, and the single tooth l on the wheel b^2 at the completion of one operation of the operating-key to each revolution of the ratchet-wheel b rests adjacent to the edge f^6 of the bar f in the relative position shown in Fig. 1. After any wheel b^2 has assumed this relative position with respect to its tooth l and the edge f^6 the next operation of its corresponding operating-key a will, by means of its respective pawl a^2, push the bar f rearwardly on its axis z. In the same operation the operating-key a has elevated its corresponding indicator E^3. Also in the same operation the U-shaped frame d has been elevated by the operating-key. The arm K in its normal position is so arranged that its end K^2 will merely pass the projecting arm f' of the bar f and its other end K' will merely pass the special indicator-bar E', being in alinement with both the arm f' and the indicator-bar E'. In its normal position the end K^2 of the arm K is placed some distance below the arm f' and the other end K' is also placed about the same distance below the lower end of the special indicator-bar E'. In the process of lowering the operating-key when the corresponding wheel b^2 has previously assumed the position shown in Fig. 1 the bar f will be pushed rearwardly and simultaneously the U-shaped frame d will be elevated and will carry with it the arm K, and as the arm K is being elevated its forward end K^2 will be arrested by the arm f' of the bar f. This will prevent the forward end K^2 from rising farther, and as the U-shaped frame d is still rising the arm K will oscillate on its axis K^4 and its rearward end K' will engage the lower end of the special indicator-bar E', and thus raise this indicator-bar until the projection E^4 is above the top edge of the bar h, when it will be held in its elevated position in a manner readily understood.

It will be observed that the indicator-bar E' is somewhat shorter than the other indicator-bars E^2. It will thus be seen that it requires a number of operations of any one operating-key to turn its corresponding ratchet-wheel b one revolution and that the special indicator E' will be elevated only upon each complete rotation of any one of the wheels b.

I do not desire to limit myself to the precise construction herein shown and described. On the contrary, I desire to claim, broadly, means for accomplishing the results hereinbefore described.

Having described my invention, I claim—

1. In a cash-indicator, the combination with a series of operating-keys, and a series of individual sales-indicators actuated by said operating-keys, of a special visible indicator common to all of said operating-keys and adapted to be actuated by any one of said operating-keys at predetermined times and simultaneously with the actuation of a respective sale-indicator.

2. In a cash-indicator, the combination with a series of operating-keys, and a series of individual sales-indicators actuated by said operating-keys, of a special visible indicator, and mechanism actuated by any one of the operating-keys at predetermined times to elevate said special indicator.

3. In a cash-indicator, the combination with a series of operating-keys, and a series of sales-indicators operated by said operating-keys, of a special indicator, an oscillating frame common to all of said operating-keys and adapted to be operated by any one of said operating-keys, and an oscillating arm supported on said frame and adapted to elevate said special indicator at predetermined times.

4. In a cash-indicator, the combination with a series of operating-keys, a series of sales-indicators, and a series of ratchet-wheels actuated by said operating-keys, of a special visible indicator denoting a prize, premium or other rebate, and mechanism actuated by the ratchet-wheels and the operating-keys for elevating said special indicator at predetermined times.

5. In a cash-indicator, the combination with a series of operating-keys, a series of ratchet-wheels and a series of individual sales-indicators actuated by said operating-keys, of a special indicator common to all of said operating-keys, an oscillating bar adapted to be actuated by said ratchet-wheels at predetermined times, and mechanism actuated by any one of the operating-keys and adapted to engage with said oscillating bar and with the special indicator to elevate the latter at predetermined times.

6. In a cash-indicator, the combination with a series of operating-keys, a series of ratchet-wheels and a series of sales-indicators actuated by said operating-keys, of a special indicator, a pivotal frame common to all of said operating-keys, a pivotal arm carried on said frame and adapted to engage the special indicator at predetermined times, and an oscillating bar actuated by said ratchet-wheels and adapted to be moved into a position to effect an operative relation between the said pivotal arm and the special indicator.

7. In a cash-indicator, the combination with a series of operating-keys, a series of ratchet-wheels and a series of sales-indicators operated by said operating-keys, of a special indicator, a pivotal frame actuated by any one of

the operating-keys, a pivotal arm supported on said frame, an oscillating bar adapted to be actuated upon each complete rotation of any one of the ratchet-wheels to engage with the pivotal arm to bring about an operative relation between said pivotal arm and the special indicator.

8. In a cash-indicator, the combination with a series of operating-keys, a series of ratchet-wheels and a series of sales-indicators actuated by said operating-keys, of a special indicator denoting a prize, premium or other item of reward, mechanism interposed between the operating-keys and said special indicator, said mechanism being actuated upon each movement of an operating-key, and an oscillating bar actuated by any one of the ratchet-wheels at predetermined times to effect an operative relation between said mechanism and the special indicator.

9. In a cash-indicator, the combination with a series of operating-keys, a series of ratchet-wheels and a series of sales-indicators operated by said operating-keys, of a special indicator, an oscillating bar arranged to be moved upon its pivot upon each complete rotation of any one of said ratchet-wheels, a pivotal arm arranged to engage said special indicator to elevate it upon each movement of said oscillating bar, and a pivotal frame supporting said arm and actuated by any one of said operating-keys.

10. In a cash-indicator, the combination with a series of operating-keys, a series of ratchet-wheels and a series of sales-indicators operated by said operating-keys, of a special indicator, an oscillating bar arranged to be moved upon its pivot upon each complete rotation of any one of said ratchet-wheels, a pivotal arm arranged to engage said special indicator to elevate it upon each movement of said oscillating bar, and a pivotal frame supporting said arm and actuated by any one of said operating-keys, and means for retaining and releasing the indicators.

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

DANIEL K. ALLISON.

Witnesses:
R. J. McCARTY,
C. THEOBALD.