No. 753,513. PATENTED MAR. 1, 1904.

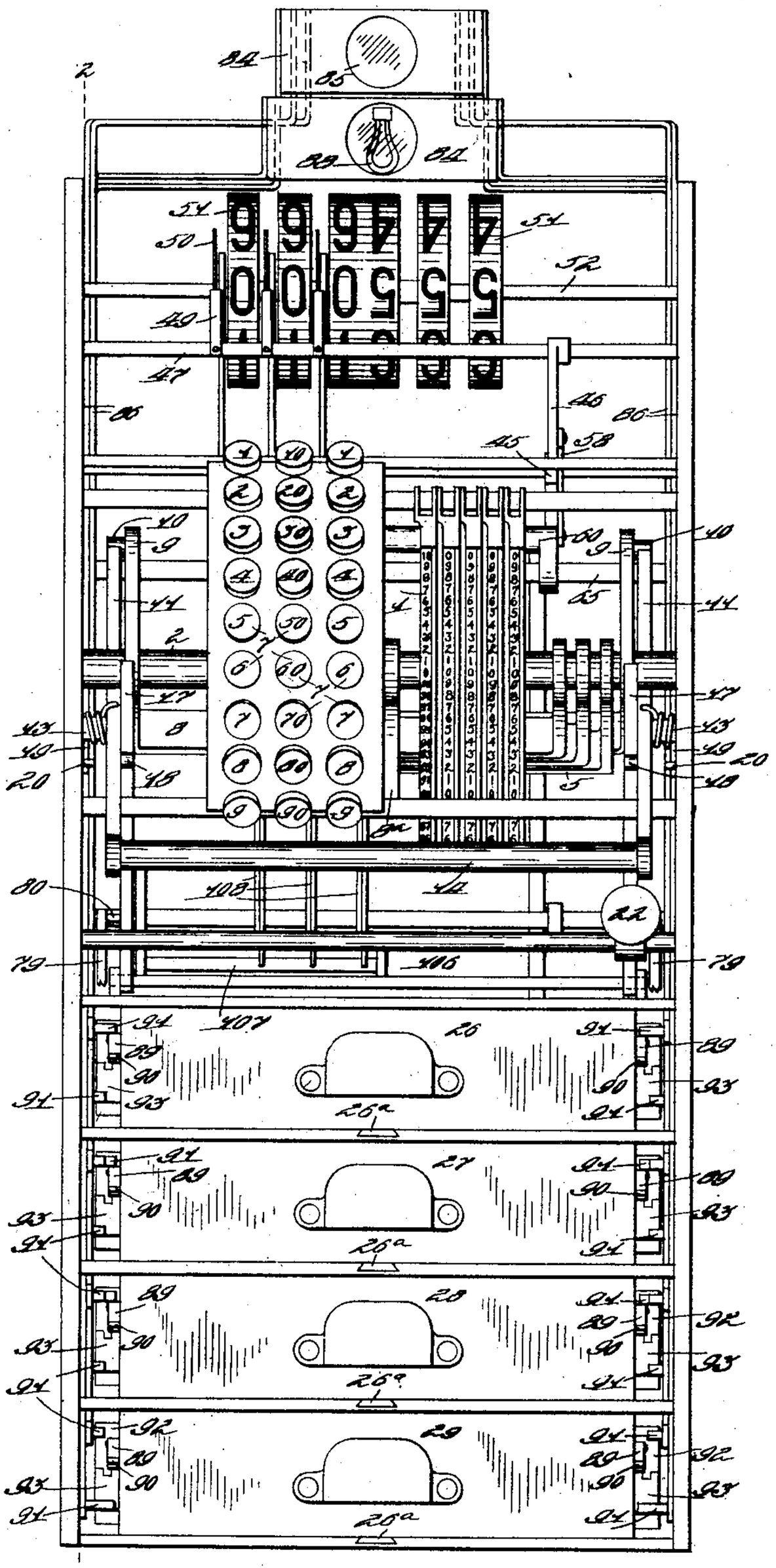
W. H. MUZZY.

CASH REGISTER.

APPLICATION FILED AUG. 15, 1903.

NO MODEL. 4 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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NO MODEL. 4 SHEETS—SHEET 2.

Fig. 2.

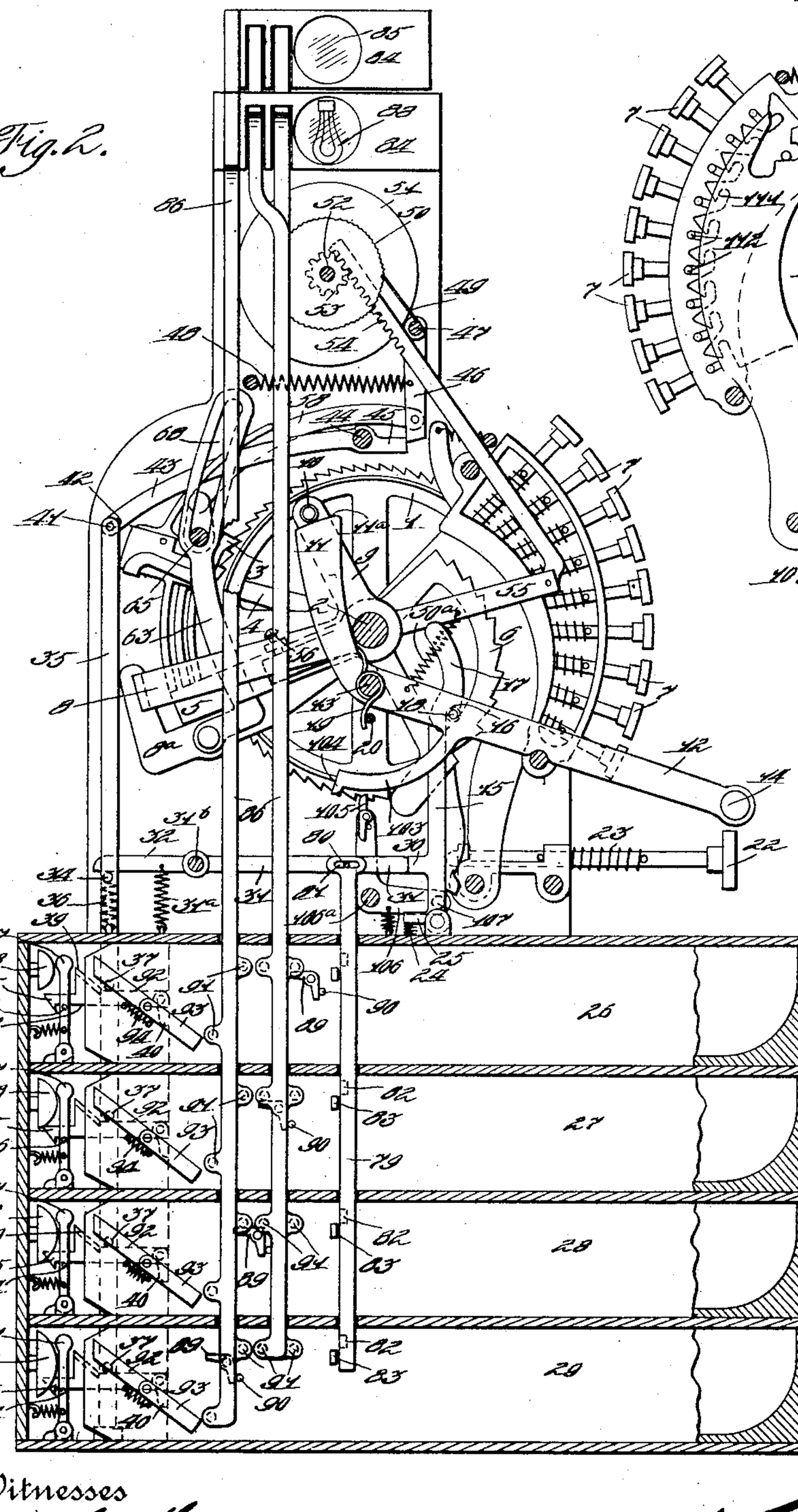

Fig. 3.

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NO MODEL. 4 SHEETS—SHEET 3.

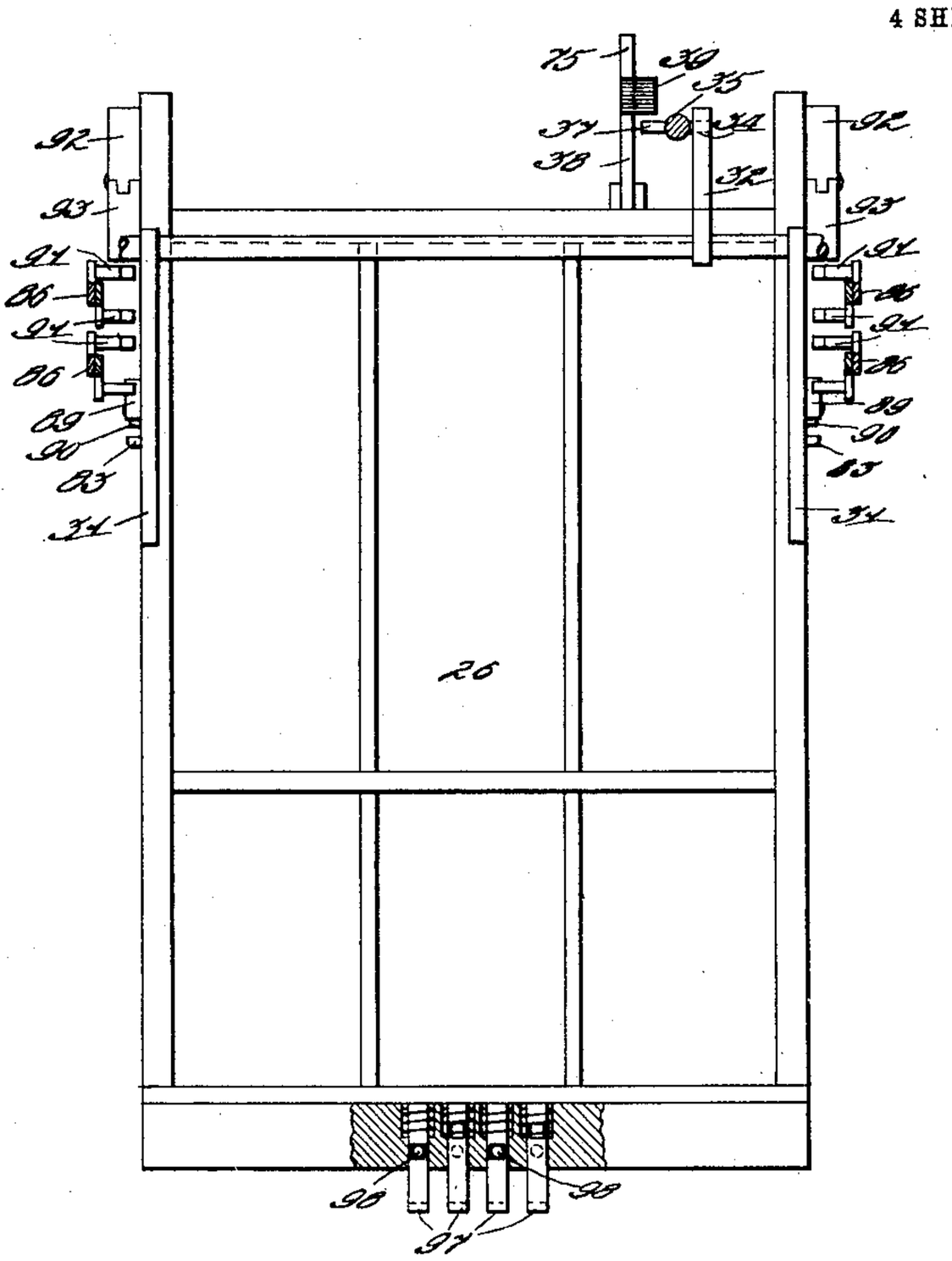

Fig. 4.

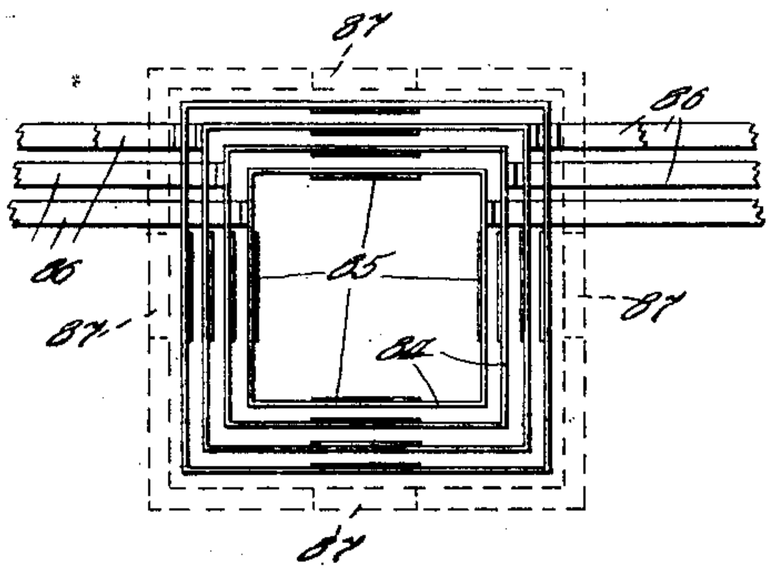

Fig. 5.

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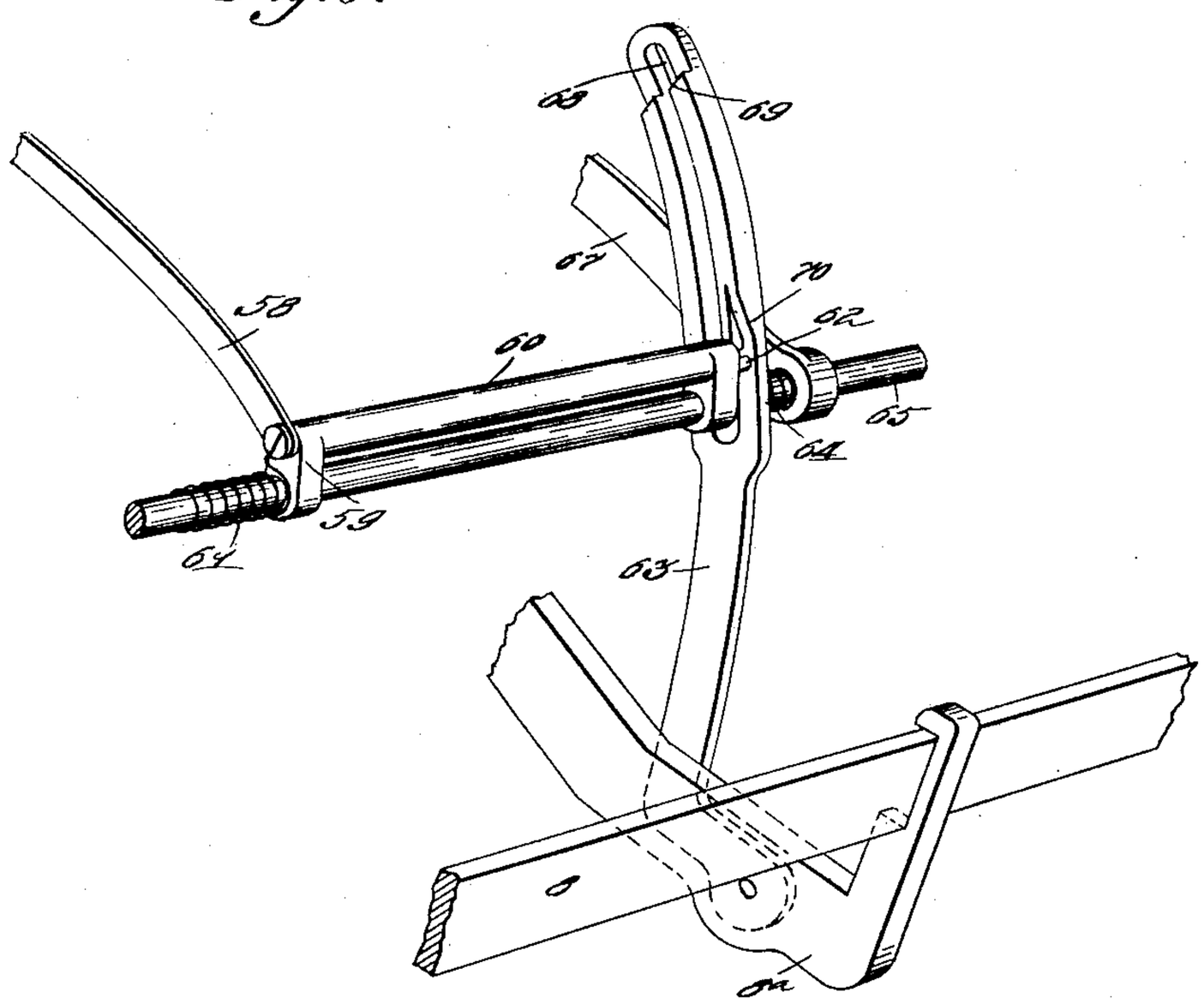
NO MODEL. 4 SHEETS—SHEET 4.

Fig. 6.



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No. 753,513. Patented March 1, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM H. MUZZY, OF DAYTON, OHIO, ASSIGNOR TO NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 753,513, dated March 1, 1904.

Application filed August 15, 1903. Serial No. 169,655. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MUZZY, 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.

This invention relates to improvements in cash-registers, and has more particular relation to improvements in registers of the type patented to Henry S. Hallwood, No. 704,795, dated July 15, 1902.

One of the several objects of the invention is to provide the type of machine mentioned with an improved construction of independent cash safes, drawers, or receptacles for keeping separate the cash of different clerks or departments.

Further objects of the invention will become apparent from the following description of the invention, which latter consists of certain novel constructions, combinations, and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 represents a front elevation of the type of machine mentioned with my improvements applied thereto, the cabinet of the same being removed. Fig. 2 represents a transverse vertical section through the machine on the line 2 2 of Fig. 1. Fig. 3 represents a detail side elevation of one of the key-detents, the coöperating keys, and the release device for said detent, which are operated by the yoke-handle. Fig. 4 represents a detail top plan view, partly in section, of one of the cash-drawers and the coöperating special signal devices. Fig. 5 represents a detail top plan view of the nested special indicators and their supporting rods or bars, and Fig. 6 represents a detail perspective view of the devices for controlling the indicator-locking pawls.

As many of the parts shown in the present drawings are old and well known in the art and are fully shown and described in the aforesaid patent, I will refer to said patent for such detail descriptions of the parts as are not here given. Described in general terms, however, the machine of the type herein shown may be said to comprise a series of registering-wheels 1, mounted upon a central shaft 2 and formed about their peripheries with groups of numerals from 1 to 9. These wheels 1 are arranged to be operated by a series of pawls 3, carried by pivoted levers 4, which are also loosely mounted on the aforesaid shaft 2. The levers 4 are in turn operated by a series of nested auxiliary yokes 5. Each of these yokes carries a step-segment 6, which coöperates with the ends of the shanks of the keys 7, and thus arrests the auxiliary yokes in positions corresponding to the values of the keys depressed. After the auxiliary yokes have been set in the manner above described they are returned to their upper normal positions by a main actuating-yoke 8, which is journaled upon the aforesaid shaft 2 and is connected near its middle to a lever 8^a, which is also pivoted upon the shaft 2 and passes under all of the auxiliary yokes. The main yoke 8 is provided at each end with an upwardly-extending rigid arm 9. Each of these arms, as best shown in Fig. 2, is provided with an antifriction-roller 10, arranged to coöperate with one of two cam-arms 11, secured to the opposite ends of a yoke-frame 12, which is pivoted at each end to the main frame, as at 13. The arms of the yoke-frame 12 project through the front of the cabinet and are connected by a transverse hand-bar 14, whereby said yoke may be operated to raise the main yoke 8 after the same has been released and allowed to drop, as hereinafter described. Each of the cam-arms 11 is so constructed as to raise the arms 9 when the yoke 12 is depressed and then have a certain free movement which is necessary in order to operate the key-detents after the main yoke has been fully elevated and the registration completed. To effect this result, the upper end of each of the arms 11 is formed with a concentric portion 11^a. After the arms 9 have been fully elevated the concentric portions 11^a

simply pass forward under the rollers 10 without further moving the arms 9. This free movement of the yoke 12 is utilized to operate the detents of any of the depressed keys, as hereinafter described. The yoke 12 is latched in its normal position (shown in Fig. 2) by a pivoted latch-lever 15, mounted upon the main frame and provided with a latching-nose 16 and a segmental extension 17. The nose 16 engages a pin 18, mounted on said yoke 12, and thus holds the yoke in its depressed position. When the latch 15 is forced rearward, however, the yoke 12 is released and allowed to pass upward at its forward end. The initial upward movement of the yoke is effected by coil-springs 19, surrounding the pivot-pins of the yoke and engaging with their opposite ends against said yoke and against stationary pins 20, projecting from the side frames. After the yoke 12 has been moved slightly the rollers 10 are no longer supported by the concentric edges 11^a of the arms 11, and the main yoke 8 is therefore released and allowed to descend. As this yoke descends the arms 9 pass rearward, and the rollers 10 by their engagement with the front edges of the arms 11 completely elevate the yoke 12. When the yoke 12 moves upward, the pin 18 moves along the edge of the concentric arm 17, and thus holds the latch 15 in its inoperative position for a purpose to be hereinafter described. After the parts have been positioned as above described the operator depresses the yoke 12 by grasping the bar 14 and forcing the same downward. This depression of the yoke causes the arms 11 to force the rollers 10, with the arms 9, forward and upward, and thus returns the main yoke to its normal position. When the yoke 12 reaches its normal lower position, the latch 15 automatically reengages the pin 18 and secures the yoke in this position. The latch 15 is operated by a push-key 22, suitably mounted in the main frame and provided with a spring 23 for returning it to its normal position after it has been operated. The inner end of the shank of this key engages the forward edge of the latch 15 for forcing the latter rearward. The latch is returned to its normal position when released by a coil-spring 24, intermediate the arm 25, formed on the latch and the main frame. When the machine is in its normal position, (shown in Fig. 2,) it is impossible to operate the key 22 and release the operating-yoke 12, and any operation of the machine is thus prevented. When any one of the cash-drawers 26, 27, 28, or 29 is opened, however, the key 22 is released and upon being operated will move the latch 15 to release the yoke 12. To accomplish this result, the latch-lever 15 is formed with a rearwardly-projecting locking-nose 30. A pivoted lever 31, fast to a transverse shaft 31^b, normally occupies a horizontal position, so that its forward end 32 projects to the rear of the nose 30, and thus prevents the latch 15 being forced rearward. The shaft 31^b is provided with a rearwardly-projecting arm 32, which is normally drawn downward against a pin 34 on a vertically-movable rod 35 by a coil-spring 31^a. For a purpose to be hereinafter described the shaft 31^b is provided with a second arm, similar to the arm 31, but located at the opposite side of the machine, as shown in Fig. 1.

By the above means the elevation of the rod 35 will rock the levers 31; but said rod is allowed to return to its normal position to relatch the indicators independent of the movements of the levers, which must be made subsequent to said relatching of the indicators. This rod is arranged to be elevated by the opening of any one of the cash-drawers and when so elevated rocks the forward end 32 of the lever 31 downward clear of the nose 30 of the latch 15, thus leaving the latter free to be operated. The plunger-rod 35 is automatically drawn downward by a coil-spring 36, which connects it to the main frame and is provided with a series of laterally-projecting pins 37 in proximity to the rear walls of the respective cash-drawers. Each of said cash-drawers is provided at its rear with a pivoted arm 38, formed with a laterally-projecting inclined flange 39 and a stop-arm 40. The arms 40 engage the rear walls of their respective cash-drawers, and thus prevent any downward rocking of the arms 38, but allow said arms to be tilted upward freely. By reference to Fig. 2 it will be seen that the normal relative positions of the pins 37 and the flanges 39 are such that when any one of the cash-drawers is drawn outward its respective flange 39 will engage its pin 37, and thus elevate the rod 35. As the continued outward movement of the cash-drawer will withdraw the flange 39 out of contact with the pin 37 that it is operating, means have been provided for latching the rod 35 in its elevated position. To accomplish this result, the upper end of said rod 35 is provided with a pin 41, which projects into an elongated slot 42, formed in the rear end of a pivoted lever 43. This lever is pivoted, as at 44, so that its front end 45 normally forms a stop for a pendent arm 46, mounted upon a shaft 47 and normally tending to spring rearward because of a coil-spring 48, which connects it to the main frame. The shaft 47 carries a series of spring-pawls 49, which normally engage ratchet-wheels 50, secured to the rotary indicators 51. These indicators are mounted upon a suitable supporting-shaft 52 and are provided, respectively, with pinions 53, which mesh with operating rack-bars 54. The lower ends of these bars are pivotally connected to levers 55, mounted on the shaft 2 and coöperating with bolts 56 on their respective auxiliary yokes, substantially as shown and described in the aforesaid patent.

It will be seen from the above description that when the parts are in their normal posi-

tion (shown in Fig. 2) the indicators are locked in their set positions by the pawls 49. When the rod 35 is elevated, however, by the opening of one of the cash-drawers, the forward end 45 of the lever 43 is depressed sufficiently to permit the arm 46 to spring rearward over the top of said lever, and thus secure the lever in its rocked position. This movement of the arm 46 disengages all of the pawls from the ratchet-wheels 50, thus allowing the indicators 51 to return to their normal positions by the descent of the rack-bars 54, drawn downward by coil-springs 50[a]. As long as the arm 46 remains in this tripped position the plunger-rod 35 will remain elevated and the key 22 unlatched. When the key 22 is operated, however, the yoke 12 is released and the indicators set to their new positions. As the yoke 12 is depressed toward its normal position the arm 46 is rocked forward at its lower end, thus bringing the pawls 49 into engagement with the ratchet-wheels 50 and locking the indicators in their set positions. It will be understood that during the time the yoke 12 is displaced from its normal position the nose 30 of the latch 15 will be held over the forward end 32 of the lever 31, so that when said lever is released its forward end will engage the under side of the nose 30, ready to spring up back of said nose just as soon as the yoke has returned to its normal position, and the latch 15 is free to pass forward. While the latch 15 is held in its rearward position, as above described, the nose 30 by locking the lever 31 in its depressed position will prevent the opening of any one of the cash-drawers and will not allow the ascent of the locking-rod 79, hereinafter described, until the latch 15 passes forward just as the movement of the yoke 12 is completed. After the lever 31 has assumed its normal position the pins 37 or the rod 35 will have returned to the same horizontal planes in which the flanges 39 operate. When the open cash-drawer is now closed, the rear face of its particular flange 39 will engage its pin 37, and the pawl 38 will thus be elevated as the drawer passes inward until the flange passes free of the pin, when the pawl will drop into its normal position, ready for the succeeding operation.

The rocking of the shaft 47 to latch the indicators and permit the forward end 45 of the lever 43 to pass up to the rear of the arm 46 is accomplished by means of a link 58, which connects the lower end of the arm 46, fast to the shaft, to a crank-arm 59, mounted on a rock-frame 60. This frame is moved in one direction when released by a coil-spring 61, which is connected at one end to said frame and at the other to a shaft 65, as shown in Fig. 6. The frame 60 is provided with a laterally-projecting stud or pin 62. This stud is arranged to form a stop for a pivoted operating-link 63, which is normally forced laterally against said stud by a coil-spring 64, mounted upon the shaft 65 intermediate the link 63 and a supporting-arm 67. The lower end of the link 63 is pivotally connected to the lever 8[a], and its upper end is formed with a curved slot 68, through which the shaft 65 passes. The upper end of the link 63 is formed with an inclined shoulder 69 for operating against this stud 62. When the lever 8[a] descends upon the operation of the machine, the cam-face 70, formed on the link 63, engages the stud 62, and the link is thus forced laterally against the tension of its spring 64. When the link has descended a sufficient distance, it is released by the stud 62, passing above the inclined shoulder 69. When the link is so released, it automatically assumes its normal position with the shoulder 69 under the stud 62. When the link is now elevated, the camming action of the shoulder 69 will force the stud 62 forward until it finally passes into the slot 68. This operation will rock the frame 60 and the shaft 47 and will permit the latch-lever 43 to again engage the arm 46 to hold the indicator-pawls in engagement with the indicator-ratchets. When the link reaches the upper end of its movement, the stud 62 passes free of the wall of the slot 68 and assumes its normal position, (shown in Fig. 6,) ready for the next operation of the machine.

By reference to Fig. 2 of the drawings it will be seen that each of the pawls 38 is provided with a rearwardly-projecting hook-arm 75, which is arranged to coöperate with a pin 76, mounted on a spring-drawn bell-hammer 77. This hammer is so positioned as to be drawn forward by the hook 75 when the cash-drawer is opened and then released by the hook passing free of the pin 76. When the hammer is so released, it springs backward and sounds an alarm upon a bell 78, secured to the rear of the casing. The bells 78 of the different cash-drawers have different tones, whereby the different clerks may know when their particular cash-drawer is being opened.

In addition to the above the lever 31 when rocked, as aforesaid, upon the opening of one of the cash-drawers locks all of the remaining drawers within the casing and also locks the drawer which has been opened against being again moved into the casing to be relatched until the lever 31 has first been returned to its normal position. The devices for accomplishing this result comprise two vertically-movable rods 79, secured to the levers 31 by pins 80, which project into elongated slots 81, formed in the rods. Each of the rods 79 carry a series of laterally-projecting lugs 82, which normally project into horizontal planes immediately above corresponding lugs mounted on the sides of the respective cash-drawers. When any one of the cash-drawers is drawn outward, its respective lug 83 is moved under the companion lug 82 on the rod 79. As the drawer continues its outward movement, however, the rod 79 is depressed, and all the pro-

jections 82 thus move into the paths of the lugs 83. The closed cash-drawers are now locked in their closed positions and the open cash-drawer cannot be returned to its normal position, as its lug 83 will strike its respective lug 82 when the cash-drawer is moved inward. As before explained, the main lever 31 after being rocked is locked in this rocked position by the nose 30 until the main yoke 12 is operated, and it is thus impossible after a cash-drawer has been opened to open any other cash-drawer or close the first-mentioned drawer until the main yoke has first been operated to set the several parts of the machine and then returned to its normal position. The opening of any particular cash-drawer, as before stated, allows all the indicators to return to their "zero-indicating" positions, unlatches the special release-key, and locks all of the remaining drawers. In addition to these results the opening of any one of the drawers sets a special indicator for the clerk to which the drawer belongs. In my present invention I have endeavored to so construct these special indicators 84 that they may be seen from any side of the machine and at a great distance therefrom. For this purpose I employ what may be termed a "color system," in which the different clerks are represented by different colors. These colors are preferably displayed in the form of lights, so that they may be seen from any part of the store and at such distances from the machine as would make other forms of indicators altogether indistinguishable. These indicators each comprise a rectangular frame having four circular openings formed in its respective sides. These openings are covered by colored isinglass, glass, or other colored transparent material. The frames 84 are of different sizes, so that they may be conveniently arranged one within the other, as shown in Fig. 5. These frames are normally held elevated by supporting-rods 86, so that the openings covered by the transparent plates 85 lie above circular indicator-openings 87, formed in the cabinet. A suitable electric or other light 88 is arranged within the cabinet in the same horizontal plane with the openings 87. When any one of the indicators 84 is allowed to descend to its indicating position, its colored plates 85 are brought into the same horizontal plane with the openings 87, and the color signal is thus displayed from all sides of the machine. Any clerk at a distance from the machine upon hearing a bell sounded can immediately determine just which drawer is being opened by observing the color of the light then displayed. These lights can be clearly distinguished at distant points at which the distinguishing tones of the bell would not be perceptible.

The indicator-supporting rods 86 project down at the side of the machine beside the respective cash-drawers, as shown in Fig. 2. Each of these rods is normally supported in its upper non-indicating position by a pivoted supporting-pawl 89, mounted upon the side of its respective cash-drawer and prevented from moving in one direction by a stop-pin 90, also mounted on said drawer. Pins 91, projecting laterally from the rods 86, rest upon the horizontal portions of the pawls 89. When a cash-drawer is opened, however, the particular pawl 89 is withdrawn from under its respective pin 91, and the rod 86 previously supported by the pawl is allowed to drop, and thus bring the special clerk's color-indicator into the proper indicating position. The indicator so exposed remains in this exposed position until some one of the cash-drawers is again opened, when it is elevated to its upper indicating position and latched in such a position. This elevating of a depressed indicator is accomplised by flanges 92, mounted upon the sides of the respective cash-drawers, and each comprising an inclined stationary portion and a lower pivoted portion 93, which latter is normally held approximately in alinement with the portion 92 by a spring 94. After any one of the rods 86 has descended, as before described, the continued opening movement of its respective cash-drawer will cause said rod to be again elevated by its laterally-projecting pin 91 contacting with the pawl 93 and the inclined flange 92. As the cash-drawer continues its forward movement, however, the rod is finally released and allowed to again descend. When the cash-drawer is closed, the pivoted portion 93 engages the pin 91 and is elevated thereby until said drawer finally reaches its closed position, when said portion 93 drops into position back of the pin 91. Each of the rods 86 is provided with four of the pins 91, one of which projects into proximity with each of the portions 93 of the several drawers.

It will be seen from the above that after an indicator has been dropped the subsequent opening movement of any drawer will cause its particular pivoted part 93 and flange 92 to engage and elevate the pin 91 of the indicator-rod, and thus elevate the indicator to its normal position. As the rod passes upward its pin 91 causes its respective pawl 89 to rock on its pivot until the pin passes above the pawl, when the latter will again assume its normal position, and thereby form a support for the rod which has been elevated, all of which will be clearly understood by reference to Fig. 2. In order to prevent any interference between the pins 91 and the pawls 89 by the different cash-drawers, I arrange all of these pivoted pawls in different vertical planes, so that any one of the pins 91 cannot become latched upon any pawl 89 except that to which it properly belongs.

Each of the cash-drawers is provided at its forward end with any suitable combination-

lock. In the present instance I have shown a series of spring-drawn apertured key-plates 97. These key-plates 97 project over vertically-movable plungers 98, formed with lower beveled ends, which are normally forced downward into apertures 99, formed in the baseboard of each drawer-housing by means of coil-springs 100, which surrounds said plungers. The construction of the plungers 98 is such that when a cash-drawer is drawn outward the plungers are forced upward. Unless the plates 97 are so manipulated as to position all of the apertures therein directly over the different plungers 98 the cash-drawer cannot be opened, as all of the plungers cannot rise out of the sockets or apertures 99. This form of combination-lock is only one of the many well-known constructions, any one of which may be employed in lieu thereof, if desired. This combination-lock forms the prime safeguard against one clerk opening another clerk's drawer. As the combinations of these locks, however, may be discovered by the different clerks, the remaining safeguards which are applied to this machine become necessary in order to prevent any clerk from opening another clerk's cash drawer or receptacle. If a clerk should attempt (after discovering the combination of the lock) to open the cash-drawer of one of the other clerks, the distinguishing-signal would be sounded, which could be heard by the clerk if he were in proximity to the machine. If the clerk, however, were at some distance from the machine, he would only hear that a bell had been rung, without being able to distinguish the particular tone of the bell. A glance at the color of the light-signal displayed, however, would inform him immediately as to just which cash-drawer was being opened by the clerk operating the machine. If any of the clerks should leave the premises at any time, they can lock their respective cash-drawers absolutely by any suitable form of key-lock applied to the fronts of the same. While a clerk is anywhere within sight or hearing of the machine, there would be no danger of any clerk opening his particular cash-drawer without his being made immediately aware of the fact.

As before stated, the final return movement of the yoke 12 after the main yoke 8 has been returned to its normal position is utilized to release the depressed amount-keys. This result is effected by an arm 103, fast to the main yoke and formed at its lower end with a pendent nose 104. As the yoke approaches its normal position the nose 104 contacts with a pivoted pawl 105, mounted upon the upper arm of a bell-crank lever 106, which is suitably journaled on a transverse shaft 106^a. The pawl is constructed so that it may be moved freely in one direction upon its pivot, but is arrested in the opposite direction by a stop-pin 105^a, mounted upon said bell-crank 106. The bell-crank 106 forms one end of a yoke-frame 107, which projects below all of the key-detents 108, as best shown in Fig. 1. Whenever the bell-crank 106 is rocked in the manner above described, the key-detents 108 are elevated, and their beveled hook projections 111 disengage from the pins 112 of the depressed keys, thus releasing the keys and allowing them to return to their normal positions. The frame 107 is normally drawn into the position shown in Fig. 2 by a coil-spring 109, which connects it to the main frame. When the operating-yoke 12 is moving to its upper position, the nose 104 engages the pawl 105; but the latter simply rocks upon its pivot until the nose has passed free of the same, when the pawl assumes its normal position by gravity.

It will of course be understood that while I have shown only a single counter in the present drawings and no printing mechanism that a plurality of counters may be employed in connection with my present invention as well as a suitable printing mechanism. Should the said counters and printers be so employed, they would be controlled by the cash-drawers, preferably through the medium of the vertically-movable bars 86. I wish it understood that I contemplate using my present improvements in connection with either independent counters or a printing attachment, as otherwise no record is made of the amount of cash that should be found in each drawer. The arrangement and location and mode of operation of the color signals could be changed without in any wise departing from the spirit of the present invention.

It will be seen that any cash-drawer in the present machine may be opened without first operating the register proper, but that after said cash-drawer is opened it cannot again be closed or any other cash-drawer opened until the release-key 22 has been first operated to release the main operating yoke-handle 12. No clerk would leave the machine in this partly-operated condition, as any other clerk could then have access to the cash-drawer which remained opened.

The light 88 may be of any desired character, but is preferably an electric light. This light may burn constantly or may be switched on and off by the operation of the machine by any suitable form of switch device operated either by the main operating mechanism or the cash-drawers.

In utilizing my improved color system and in order to familiarize the customers with the colors that pertain to the several clerks I contemplate having the clerks wear some color emblem, such as a cap or large colored button. When a clerk goes to the machine to operate the same, the customer will observe whether the colored button worn by the clerk corresponds with the color-signal then displayed. With my improved color-signal device a clerk would be taking a considerable

chance of being discovered if he attempted to open the cash-drawer of any other clerk, as both the proprietor of the store and the remaining clerks naturally glance toward the machine whenever they hear it operated, and it would be impossible for him to gain access to the cash-drawer of any other clerk without displaying the color signal pertaining to the drawer opened.

If so desired, any suitable stop devices may be employed to prevent the simultaneous opening of two or more of the cash-drawers. As such devices between the keys and other parts of registers are old and well known in the art, I have not thought it necessary to show nor describe any particular construction here.

The cash-drawers may be mounted in the casing in any suitable manner, so that they may be readily slid out of and into position again. I preferably, however, provide the bottom of each drawer with a dovetail guiding-flange 26ª, which operates in a similarly-shaped groove formed in the base-board of each drawer. If so desired, the cash-drawers may be provided with opening-springs, whereby they will automatically open when the combination-locks are actuated.

It will also be seen that when a clerk has opened his cash-drawer he destroys the indication of the machine, and he is thus compelled to subsequently operate the machine in order to indicate to the customer the amount of his purchase. The machine is locked until his cash-drawer is opened and the cash-drawer is locked after being opened until the machine is operated, thus providing an effective safeguard and compelling the proper sequence of operation.

I do not care in the present case to limit myself to a series of movable cash-drawers for controlling the parts described, as any suitable forms of cash-safes having movable members for exposing the same may be employed without departing from the present invention.

In the present application of my invention I have shown the special indicators or signals attached directly to the machine; but it will of course be understood that these signals can be located at suitable points distant from the machine or, if desired, at several points in a store and operated by suitable connections with the cash safes or drawers.

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 series of oscillatory elements, of means for limiting the movements of the elements in one direction, devices for moving said elements in the opposite direction, a series of indicators, means connecting the indicators to said elements, a series of cash-safes having movable members, and latching means for the indicators arranged to be operated by the movement of the movable member of the cash-safe.

2. In a cash-register, the combination with a series of oscillatory members, of means for limiting the movements of the members in one direction, devices for moving said members in the opposite direction, a series of indicators, operating means intermediate the indicators and the operating elements, latches for securing the indicators in their set positions whereby the indicators may be held displayed while the operating elements return to their normal positions, a series of cash-safes having movable members, and mechanism operated by the movable members for tripping the indicator-latches.

3. In a cash-register, the combination with an operating mechanism therefor, of means for indicating the amounts to be registered, a series of cash-safes having movable members, and means operated by the movement of said movable members for destroying the indication.

4. In a cash-register, the combination with an operating mechanism, of a series of amount-indicators controlled thereby, a series of cash-safes having movable members, and means operated by the initial movement of any one of said members for obliterating the indication.

5. In a cash-register, the combination with an operating mechanism, of a series of amount-indicators coöperating therewith, latches for securing the indicators in their set positions, a series of cash-safes having movable members, and means operated by said members for tripping the indicator-latches.

6. In a cash-register, the combination with an operating mechanism including a series of oscillatory members, means for limiting the movements of the members in one direction, devices for moving said members in the opposite direction, a series of oscillatory indicators connected to said members, a series of cash-safes having movable members, and means operated by said movable members for allowing the return of the indicators to their zero-indicating positions.

7. In a cash-register, the combination with an operating mechanism, of a series of indicators controlled thereby, a series of cash-safes having movable members, and means operated by said members for allowing the return of the indicators to their zero-indicating positions.

8. In a cash-register, the combination with an operating mechanism, of a series of oscillatory indicators coöperating therewith, means for automatically returning the indicators to their zero-indicating positions when released, a series of cash-safes having movable members, and means for releasing the indicators as a result of the opening of a cash-safe.

9. In a cash-register, the combination with a series of oscillatory elements, of an accounting device, means for limiting the movements of said elements in one direction, a main actuator for returning the elements to their nor-

mal positions, a series of cash-safes having movable members, a lock for the main actuator, and means intermediate the movable parts of the cash-safes and said lock for controlling the latter.

10. In a cash-register, the combination with an operating mechanism including a main actuator, of a series of cash-safes having movable members, a lock for the main actuator, and means operated by the movable members of the cash-safes for controlling said lock.

11. In a cash-register, the combination with an operating mechanism including a main actuator, of a series of cash-drawers, a lock for the main actuator, and means operated by the drawers for controlling the lock.

12. In a cash-register, the combination with an operating mechanism including an actuating-lever, of a lock for said lever, a series of cash-drawers, and means actuated by the opening of any one of the drawers for controlling the lock.

13. In a cash-register, the combination with an operating mechanism, of a series of cash-safes having movable members, and a locking mechanism intermediate the movable members and the operating mechanism whereby the latter is locked until some one of the movable members is operated and said members are locked during the operation of said mechanism.

14. In a cash-register, the combination with an operating mechanism, of a series of cash-safes having movable members, and means for locking all of the movable members in their adjusted conditions during the operation of the operating mechanism.

15. In a cash-register, the combination with an operating mechanism, of a series of cash-safes having movable members, and means for locking said members in their adjusted conditions as long as the operating mechanism remains out of its normal position.

16. In a cash-register, the combination with an operating mechanism having an actuating-lever, of a series of cash-safes having movable members, and means for locking all of the cash-safes in either opened or closed condition during the time that the actuating-lever is displaced from its normal position.

17. In a cash-register, the combination with an operating mechanism including an actuating-lever, of a series of cash-drawers, a lock for said lever, and means operated by the opening of any one of the cash-drawers for releasing said lock.

18. In a cash-register, the combination with an operating mechanism including an actuating-lever, of a series of cash-drawers, and means for locking the cash-drawers in either opened or closed condition during the time the lever is displaced from its normal position.

19. In a cash-register, the combination with an operating mechanism, of clerks' or department selecting devices, a series of color-signals connected to said devices, a lighting device for illuminating the color-signals whereby they may be seen at a great distance, and means for controlling the operating mechanism from the selecting devices.

20. In a cash-register, the combination with an operating mechanism, of clerks' or department selecting devices, a series of transparent color-signals connected to said devices, a lighting device coöperating with the transparent signals for rendering the colors visible at a great distance, and means for controlling the operating mechanism from the selecting devices.

21. In a cash-register, the combination with an operating mechanism therefor, of a series of independent cash-receptacles, a series of independent color-signals, controlling means connecting the color-signals and the cash-receptacles, and a lighting device for illuminating said signals whereby they may be seen at a great distance.

22. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-safes having movable members, a series of color-signals, means for setting a color-signal corresponding to the safe which is opened, and a lighting device for illuminating the color-signals.

23. In a cash-register, the combination with an operating mechanism therefor, of a series of transparent color-signals, a lighting device for illuminating said signals, a series of independent cash-drawers, and means whereby the signal is set corresponding to the cash-drawer opened.

24. In a cash-register, the combination with an operating mechanism, of a series of cash-drawers, and locking devices for locking the unopened drawers in their closed positions and the opened drawer in its opened position until the operating mechanism has been first operated.

25. In a cash-register, the combination with an operating mechanism, of a series of cash-drawers, means for preventing the operation of the operating mechanism until a cash-drawer is opened, and means for preventing the opening of any other drawer or the closing of the opened drawer until the operating mechanism is actuated.

26. In a cash-register, the combination with an operating mechanism including a plurality of oscillatory registering elements, of a counter, and a hand-lever pivoted eccentric to the operating elements, and means intermediate said lever and the operating elements for moving the latter.

27. In a cash-register, the combination with a series of oscillatory elements, of a main actuator for said elements, a lever pivoted eccentric to the main actuator, and operating devices intermediate the lever and the actuator.

28. In a cash-register, the combination with a series of oscillatory elements, of a counter,

means for limiting the movements of the elements in one direction, a main actuator for the elements journaled concentric therewith, a lever journaled eccentric to said main actuator, and a cam-arm carried by the lever and engaging the main actuator.

29. In a cash-register, the combination with a series of oscillatory elements, of a counter, a main actuator journaled concentric with said elements, an operating-lever journaled eccentric to the main actuator, and an arm intermediate the main actuator and the operating-lever having a cam portion and a concentric portion whereby only a portion of the movement of the lever will be imparted to the main actuator.

30. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-safes having movable members, a lock for the operating mechanism, means for releasing the lock, a latch for holding the releasing means in set position, and devices for operating the releasing means from the movable members of the cash-safes.

31. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-safes, a series of color-signals displayed from all directions, and means for setting the signals according to the cash-safe exposed.

32. In a cash-register, the combination with an operating mechanism therefor, of a cabinet having indicator-openings, a series of transparent color-signals, a series of cash-safes, a lighting device arranged in proximity to indicating-openings, and means for interposing the proper color-signal between the lighting device and the indicator-opening according to the cash-safe exposed.

33. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-drawers, combination-locks for said drawers, and distinctive signals operated by the opening of the drawers.

34. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-safes, combination-locks for the respective safes, and distinctive signal devices operated according to the safe exposed.

35. In a cash-register, the combination with an operating mechanism therefor, of amount-indicators, a series of cash-safes, combination-locks for said safes, and means for destroying the indication upon the opening of any one of the safes.

36. In a cash-register, the combination with an operating mechanism therefor, of a series of amount-indicators, a series of cash-safes, combination-locks for the respective safes, and means for destroying the indication by the opening of any one of the safes.

37. In a cash-register, the combination with an operating mechanism therefor, of a series of amount-indicators, a series of cash-safes, combination-locks for said safes, means for destroying the amount indication upon the opening of any one of the safes, and special signal devices operated by the opening of any one of the safes.

38. In a cash-register, the combination with an operating mechanism therefor, of a series of indicators constructed to automatically return to their zero-indicating positions, latches for holding the indicators in their set positions, a series of cash-safes, and means for tripping said latches upon the opening of any one of the safes.

39. In a cash-register, the combination with an operating mechanism, of a series of keys for controlling the same, detents for the keys, an operating-handle arranged to move the operating mechanism in one direction, a tripping-frame for the key-detents, and means carried by the operating-handle for actuating said tripping-frame.

40. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-drawers, signal devices having pendent operating-rods, and means mounted on the cash-drawers for actuating said rods to set the signals.

41. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-drawers, a series of special signals, and means intermediate the cash-drawers and the signals for setting a signal according to the drawer opened and returning the previously-set signal to its normal position.

42. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-safes, a series of independent special signals, and means actuated by the opening of the cash-safes for setting a signal corresponding to the safe opened and returning any previously-set signal to its normal position.

43. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-drawers, a series of vertically-movable signals, and means mounted on the cash-drawers for supporting the signals in non-signaling positions.

44. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-drawers, a series of signals, means mounted on the cash-drawers for setting the signals to signaling positions, and independent means mounted on the cash-drawers for returning the signals to their normal positions.

45. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-drawers, a series of vertically-movable signals, supporting devices mounted on the cash-drawers for holding the signals in their non-indicating positions, and means operated by the cash-drawers for returning the signals to their non-signaling position.

46. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-drawers, a series of vertically-movable signals, and movable supporting devices mounted on the cash-drawers and normally

supporting the signals in their non-signaling positions.

47. In a cash-register, the combination with an operating mechanism therefor, of series of cash-drawers, a series of signals, means for setting the signals, and means operated by any one of the cash-drawers for returning a set signal to its normal position.

48. In a cash-register, the combination with an operating mechanism therefor, of a series of cash-drawers, a series of special signals for indicating which drawer is opened, means for setting said signals according to the drawer opened, and devices controlled by the cash-drawers for returning the signals to their normal positions.

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

WILLIAM H. MUZZY.

Witnesses:
W. McCarthy,
Wm. O. Henderson.