Jan. 10, 1939. A. S. WHEELBARGER 2,143,292

CASH DRAWER SELECTING MECHANISM

Filed Aug. 28, 1935 3 Sheets-Sheet 1

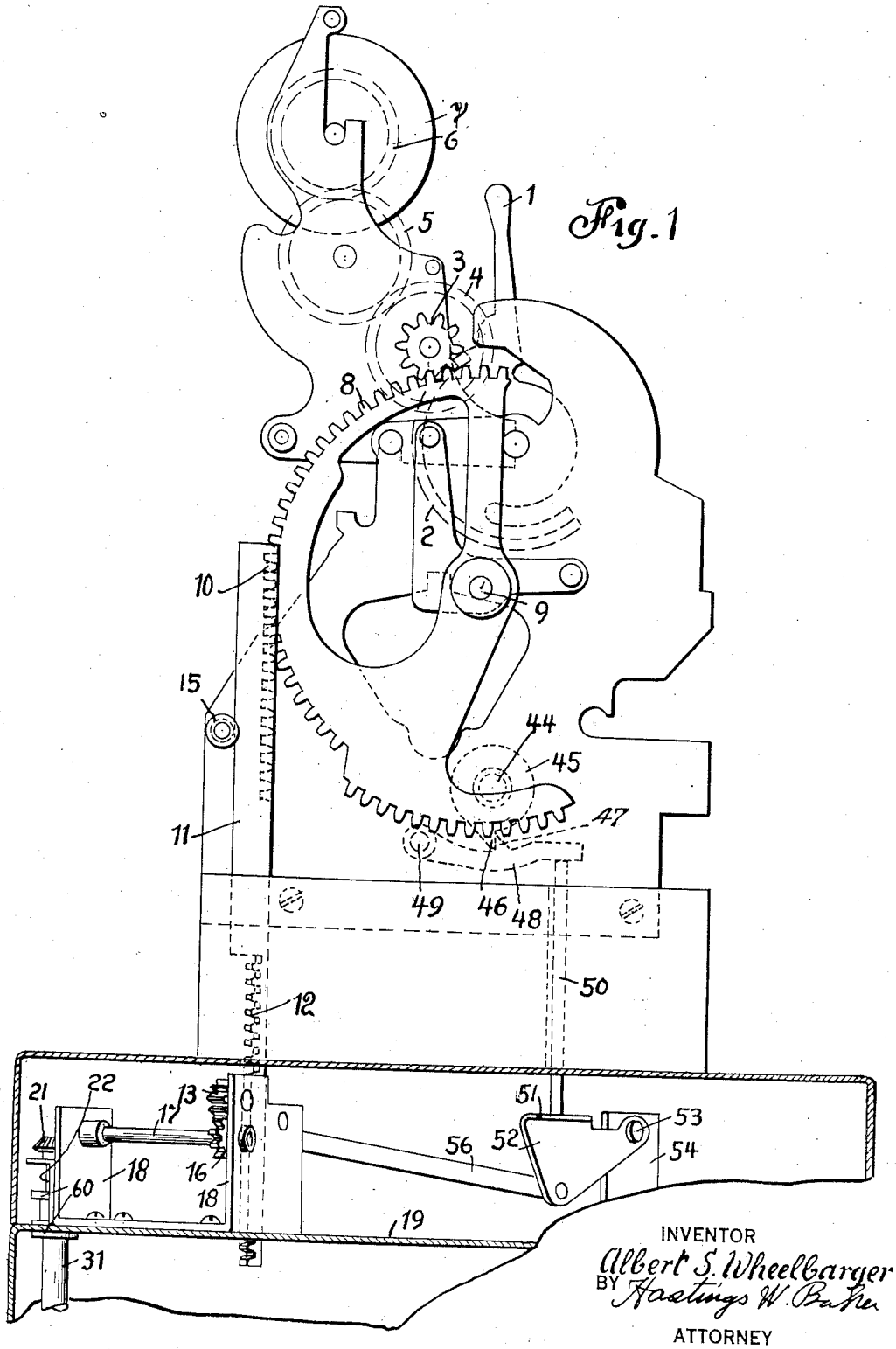


Fig. 1

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Fig. 2

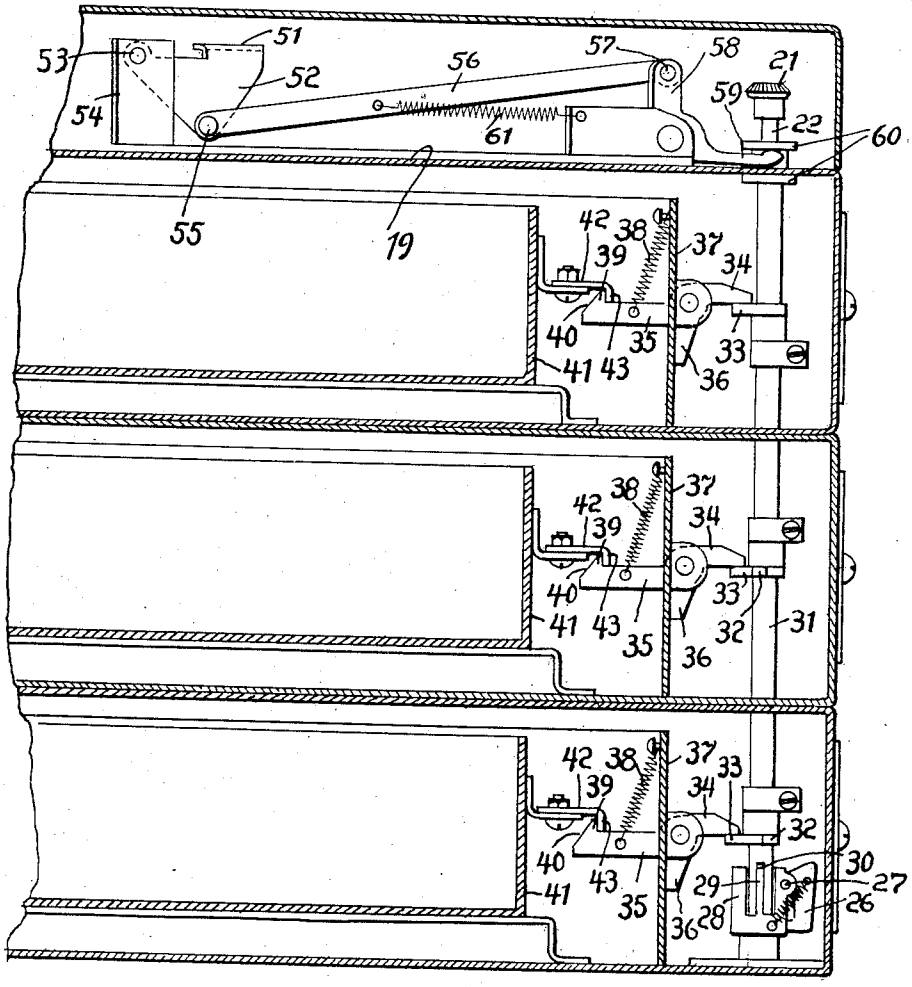
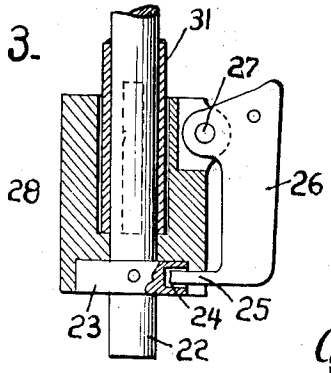


Fig 3.



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Fig. 4

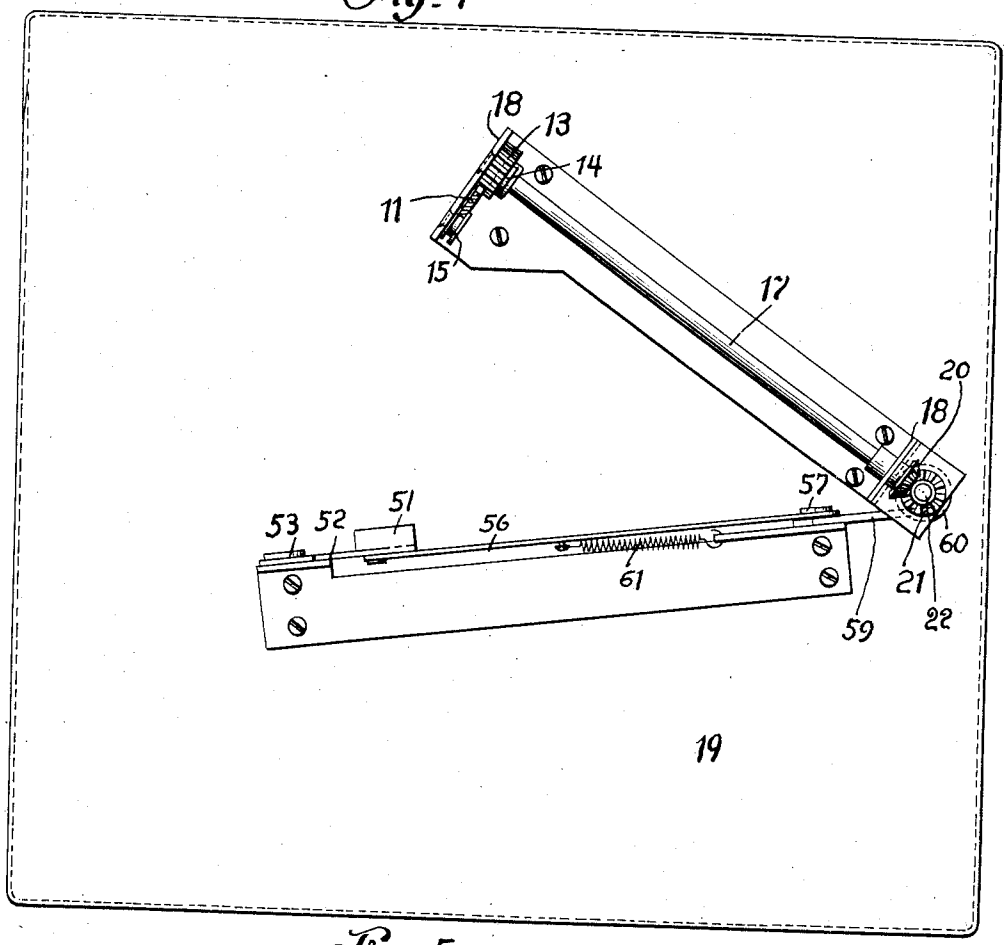
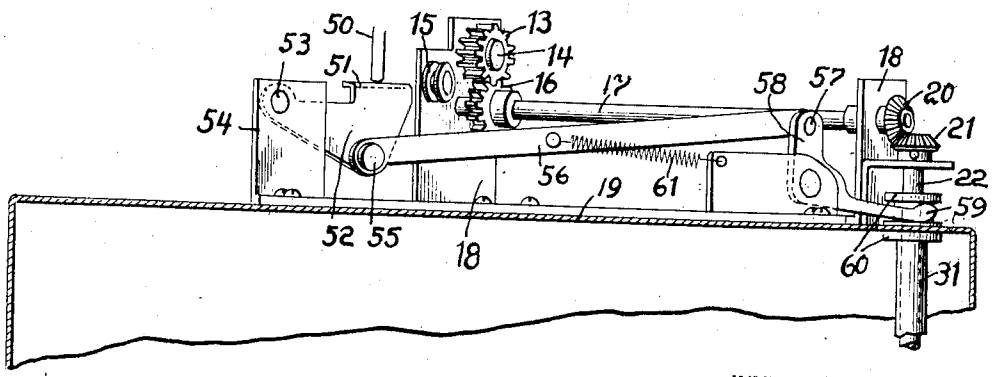


Fig. 5



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CASH DRAWER SELECTING MECHANISM

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Application August 28, 1935, Serial No. 38,246

13 Claims. (Cl. 235—22)

In multiple drawer cash registers it has heretofore been old to press in a clerk's key or rotating clerk's lever to select the drawer to be operated, which drawer is operated when the machine is operated. If, for instance, there are six clerks, a separate drawer being provided for each clerk, and these clerks are designated by the letters A to F inclusive, the drawers are likewise designated by the same letters and when the clerk presses clerk's key A or operates the lever so as to position the indicator corresponding to the position "A" when the machine is operated drawer A will be opened. It is sometimes desirable, however, to use a machine of the above description as a cashier's machine in which all of the drawers may be locked except one and this one may be any one of the drawers. The cashier still desires to register the sales made by the respective clerks but desires to open only the drawer which she has selected, which may or may not be a drawer corresponding to the clerk whose transaction is being registered. Suppose she selects drawer B as the drawer which will always be operated. She would lock all of the other drawers but she would still operate the clerk's lever or key so as to register the sale as being made by the clerk, such as for instance, clerk F. I have provided novel mechanism whereby this result can be accomplished. Other objects and advantages of the invention will appear in the detailed specification and claims which follow.

In the drawings:

Fig. 1 is a side elevational view partly in cross section of a cash register having my invention incorporated therein;

Fig. 2 is a side elevational view partly in cross section of the arrangement of the drawers and the mechanism whereby they are operated;

Fig. 3 is an enlarged detailed view of the coupling mechanism shown at the bottom of the shaft at the right of Fig. 2, which view is partly in cross section;

Fig. 4 is a plan view of the mechanism shown in Fig. 5; and

Fig. 5 is a side elevational view partly in cross section of the mechanism shown at the bottom of Fig. 1.

The clerk's lever or key 1 is provided with a segmental gear 2 which meshes with and drives a pinion 3 which is connected with a pinion 4 which drives a gear 5 which drives a gear 6 connected to the clerk's indicator 7. The pinion 3 also meshes with and drives a segmental gear 8 rotatably mounted on a shaft 9, which segmental gear meshes with and drives a rack 10 on a slide rod 11 which is suitably guided by means of rollers 15 so that its motion is a simple up and down motion. The slide 11 is provided near its lower end with a rack 12 which meshes with and drives a pinion 13 mounted on a stud 14. The pinion 13 meshes with and drives a pinion 16 secured to a shaft 17 mounted in standards 18, which standards are supported by the top 19 of the drawer mechanism. Secured to the shaft 17 is a beveled pinion 20. The pinion 20 meshes with and drives a pinion 21 secured to a shaft 22, which shaft has secured thereto a collar 23 provided with a square socket 24 which as shown in Fig. 3 may receive a finger 25 of an arm 26 pivoted on a pin 27 carried by a collar 28. As shown in Fig. 2 the collar 28 is provided with a prong 29 which is received within a groove 30 in a tube 31 which surrounds the shaft 22. The tube 31 is provided with staggered fingers 32 and with fingers 33, which are in alignment with each other; that is, one is directly below or beneath the other. These fingers normally lie in a plane directly beneath an arm 34 of a lever 35 which has a downwardly projecting arm 36 which may engage the fixed walls 37 behind the cash drawer to act as a stop. These levers 35 are normally pulled upwardly by means of springs 38. The levers 35 are provided with upstanding lugs 39 which at their forward end terminate in cam surfaces 40. The cash drawers 41 each carry a rearwardly extending arm 42 provided with a downwardly extending flange 43. When the drawer is pushed inwardly the flange 43 contacts the cam surface 40 and cams the lever 35 downwardly until the flange 43 passes beyond the lug 39, at which time the spring 38 pulls the lever 35 in a clockwise direction so as to position the lug 39 behind the flange 43 and hold the drawer in its closed position.

The main drive shaft 44 of the machine is provided with a disk 45 which carries a cam 46. As viewed in Fig. 1, this shaft rotates clockwise and when it has practically completed its rotation the cam 46 engages a nose 47 of a lever 48 pivoted on a shaft 49 pressing the said lever downwardly. This lever over-lies a slide rod 50 which in turn over-lies a flange 51 carried by a lever 52 pivoted on a stud 53 carried by a plate 54 mounted on the top 19. When the lever 48 is depressed as above described the rod 50 is depressed, which rotates the lever 52 counterclockwise as viewed in Fig. 1. This lever is provided with a stud 55 secured to a rod 56 which at its other end carries a stud 57 connected to a bell crank lever 58 which has a finger 59 which is received between collars 60 secured to the tube 31.

Let us assume that the first position of the lever 1 is the position in which the lever should be placed to register a sale made by clerk A. When clerk A rotates the segmental gear 8 he raises or lowers the slide rod 11, which rotates the shaft 17 by means of the rack 12 and pinions 13 and 16, which in turn rotates the shaft 22 by means of the pinions 20 and 21. As the shaft 22

is rotated the collar 23 which is secured to the shaft 22 is likewise rotated and the collar 28 is also rotated by means of the finger 25, arm 26, and pin 27. This rotation of the collar 28 rotates the tube 31 by means of the tongue and groove connection 29 and 30. The parts are so arranged that if the top drawer corresponds to clerk A, one of the staggered fingers 32 will be positioned immediately below the arm 34 corresponding to the clerk's drawer A. When the machine is now operated the cam 46 depresses the lever 48, rod 50, and lever 52, thereby pulling the rod 56 against the tension of the spring 61 which rotates the lever 58 in a counter-clockwise direction as viewed in Fig. 5 elevating the tube 31 by means of the finger 59 and the upper collar 60. As the tube 31 is thus elevated the topmost staggered finger 32 engages the topmost arm 34, rotating the upper lever 35 in a counter-clockwise direction as viewed in Fig. 2, thereby removing the lug 39 from contact with the flange 43 so that the drawer is freed and may be opened by the customary drawer operating spring which forms no part of this invention and is not shown. Precisely the same operation would take place if clerk B positioned the lever 1 to a position to indicate B on the indicator 7, in which case the lug 32 corresponding to B clerk would cause drawer B to be opened but would not open any of the other drawers.

If, however, the proprietor desired to use the cash register as a cashier's machine and wishes for drawer B alone to be opened each time the machine is operated regardless of how the operator may move the lever 1, he would open the back of the machine and rotate the arm 26 in a counter-clockwise direction as viewed in Fig. 3, thereby disengaging the finger 25 from the socket 24 so that the rotary motion of the shaft 22 would not be imparted to the tube 31. He would now position all of the fingers 33 beneath the arms 34, this being possible when it is remembered that all of the fingers 33 are in alignment with each other, and if one is positioned beneath an arm 34 all of the other fingers 33 will be positioned immediately below their respective arms 34. The shaft 22 is under no condition rotated as much as one complete revolution. The operator in positioning the fingers 33 beneath the arms 34 would have moved the sleeve 31 and arm 26 to such a position that the shaft 22 would not rotate the socket 24 into such a position that the arm 26 could again re-enter the socket. The operator is now free to move the lever 1 to indicate any clerk but when she so moves this lever she does not rotate the tube 31. It will be understood that each of the drawers is provided at its front end with the usual key lock, not here shown, and that the operator, when so using the machine, will have locked all the drawers in their closed positions with the exception of the drawer which is to be used. When she now operates the machine the tube 31 will be elevated in precisely the same manner as when the machine was used as a clerk's cash register and all of the levers 35 will be rotated counter-clockwise as viewed in Fig. 2 but only the drawer which is unlocked, of course, can be projected outwardly by means of its spring. It is obvious that it is immaterial which of the drawers the proprietor may select as the cashier's drawer so that this drawer and no other will be opened each time the machine is operated regardless of the position of the lever 1.

I have, therefore, provided a means to convert the cashier's machine into a clerk's machine, or vice versa.

I realize that many changes may be made in my invention without departing from the spirit thereof and I, therefore, desire to claim the same broadly except as I may limit myself in the appended claims.

Having now described my invention, I claim:

1. In a cash register, a series of independent drawers, a latch for each drawer normally holding it in closed position, a tube, staggered fingers on said tube, there being one such finger for each drawer, fingers in alignment carried by said tube, there being one such finger for each drawer, drawer selecting means including a coupling whereby said tube may be rotated so as to position one of the staggered fingers below the latch of the selected drawer, means whereby said tube may be reciprocated so that the selected staggered finger will release the latch of the selected drawer, and means whereby said coupling may be rendered inoperative so that the fingers in alignment may be positioned below all of said latches whereby all of said latches may be released from their respective drawers when the tube is reciprocated.

2. In a cash register, a series of independent drawers, a latch for each drawer normally holding it in closed position, a shaft, means for actuating said shaft, a tube, a coupling connecting said shaft and tube, fingers carried by said tube, means whereby said tube may be reciprocated so that any finger positioned beneath any latch will release the drawer held thereby, and means whereby said coupling may be rendered inoperative.

3. In a cash register, a series of independent drawers, a latch for each drawer normally holding it in closed position, a tube, means carried by said tube to release any one or all of said latches, a shaft, means for actuating said shaft, a coupling normally connecting said tube and shaft, and means whereby said coupling may be rendered inoperative.

4. In a cash register, a series of independent drawers, a latch for each drawer normally holding it in closed position, a tube, means carried by said tube to release any one or all of said latches, a shaft, means for actuating said shaft, a coupling normally connecting said tube and shaft, said coupling including a collar provided with a socket carried by said shaft, a second collar operatively connected to said tube, and an arm carried by said second collar which operatively connects said collars when and only when the arm is in the socket.

5. In a register having a plurality of separately movable drawers, separately operable devices for retaining the respective drawers normally in their closed positions, a tubular member mounted adjacent to said retaining devices for movement about a longitudinal axis, releasing elements carried by said tubular member and movable successively into releasing relation to the respective retaining devices, a shaft extending into said tubular member and normally connected therewith to impart rotary movement thereto, means for rotating said shaft, and means for imparting longitudinal movement to said tubular member with relation to said shaft.

6. In a register having a plurality of separately movable drawers, separately operable devices for retaining the respective drawers normally in their closed positions, a releasing element for each retaining device, an actuating device

to move a selected releasing element into releasing relation to its retaining device, means separate from said actuating device to impart releasing movement to the selected releasing means, and means for preventing the movement of said actuating device from being transmitted to said releasing elements and thereby permitting the selected releasing element to remain in releasing relation to its retaining device irrespective of the movement imparted to the actuating device.

7. In a register having a plurality of separately movable drawers, separately operable devices for retaining the respective drawers normally in their closed positions, a releasing element for each retaining device, an actuating device to move a selected releasing element into releasing relation to its retaining device, means separate from said actuating device to impart releasing movement to the selected releasing means, and a coupling device comprising cooperating parts connected respectively with said releasing elements and said actuating device, one of said parts being movable to interrupt the connection between said actuating device and said releasing elements and permit the selected releasing element to remain in releasing relation to its retaining device irrespective of the movement imparted to said actuating device.

8. In a register having a plurality of separately movable drawers, separately operable devices for retaining the respective drawers normally in their closed positions, a tubular member mounted adjacent to said retaining devices for movement about a longitudinal axis, releasing elements carried by said tubular member and movable successively into releasing relation to the respective retaining devices, a shaft extending into said tubular member and normally connected therewith to impart rotary movement thereto, means for rotating said shaft, means for imparting longitudinal movement to said tubular member with relation to said shaft, and means for disconnecting said shaft from said tubular member to permit a selected releasing element to remain in releasing relation to its retaining device during the rotation of said shaft.

9. In a register comprising setting mechanism, operating mechanism, and a plurality of separately movable drawers, separately operable devices to normally retain the respective drawers in their closed positions, a rotatable shaft mounted adjacent to said retaining devices, releasing elements connected with said shaft for rotation thereby into operative relation to the respective retaining devices and for axial movement with relation thereto, means controlled by said setting mechanism for rotating said shaft, and means controlled by said operating mechanism for imparting axial movement to said releasing element with relation to said shaft.

10. In a register comprising setting mechanism, operating mechanism, and a plurality of separately movable drawers, separately operable devices to normally retain the respective drawers in their closed positions, a rotatable shaft mounted adjacent to said retaining devices, releasing elements connected with said shaft for rotation thereby into operative relation to the respective retaining devices and for axial movement with relation thereto, means controlled by said setting mechanism for rotating said shaft, means controlled by said operating mechanism for imparting axial movement to said releasing element with relation to said shaft, and means for disconnecting said shaft from said releasing elements.

11. In a register comprising setting mechanism, operating mechanism, and a plurality of separately movable drawers, separately operable devices to normally retain the respective drawers in their closed positions, a rotatable shaft mounted adjacent to said retaining devices, a member mounted on said shaft for movement lengthwise thereof and normally connected with said shaft for rotation therewith, releasing elements carried by said member and arranged to be moved successively into releasing relation to the respective retaining devices by the rotation of said member, means actuated by said setting mechanism to rotate said shaft and move one of said releasing elements into releasing relation to the corresponding retaining device, and means actuated by said operating mechanism to move said member lengthwise of said shaft and actuate said retaining device.

12. In a register comprising setting mechanism, operating mechanism, and a plurality of separately movable drawers, separately operable devices to normally retain the respective drawers in their closed positions, a rotatable shaft mounted adjacent to said retaining devices, means controlled by said setting mechanism for rotating said shaft, a member mounted on said shaft for movement lengthwise thereof, means for connecting said member with said shaft for rotation therewith and for disconnecting the same from said shaft to permit the latter to rotate with relation thereto, releasing elements carried by said members and movable into releasing relation to the respective retaining devices by the rotation of said member, and means controlled by said operating mechanism to move said member lengthwise of said shaft both when it is connected with said shaft and when it is disconnected therefrom.

13. In a register comprising a setting mechanism, operating mechanism, and a plurality of separately movable drawers, separately operable devices to normally retain the respective drawers in their closed positions, a rotatable shaft mounted adjacent to said retaining devices, means controlled by said setting mechanism for rotating said shaft, a member mounted on said shaft for movement lengthwise thereof, means for connecting said member with said shaft for rotation therewith and for disconnecting the same from said shaft to permit the latter to rotate with relation thereto, two groups of releasing elements carried by said member, the elements of one group being arranged to be moved successively into releasing relation to the respective retaining devices when said member rotates with said shaft, and the elements of the other group being arranged to be moved simultaneously into releasing relation to the respective retaining devices while said member is disconnected from said shaft, and means controlled by said operating mechanism to move said member lengthwise of said shaft both when it is connected with said shaft and when it is disconnected therefrom.

ALBERT S. WHEELBARGER.