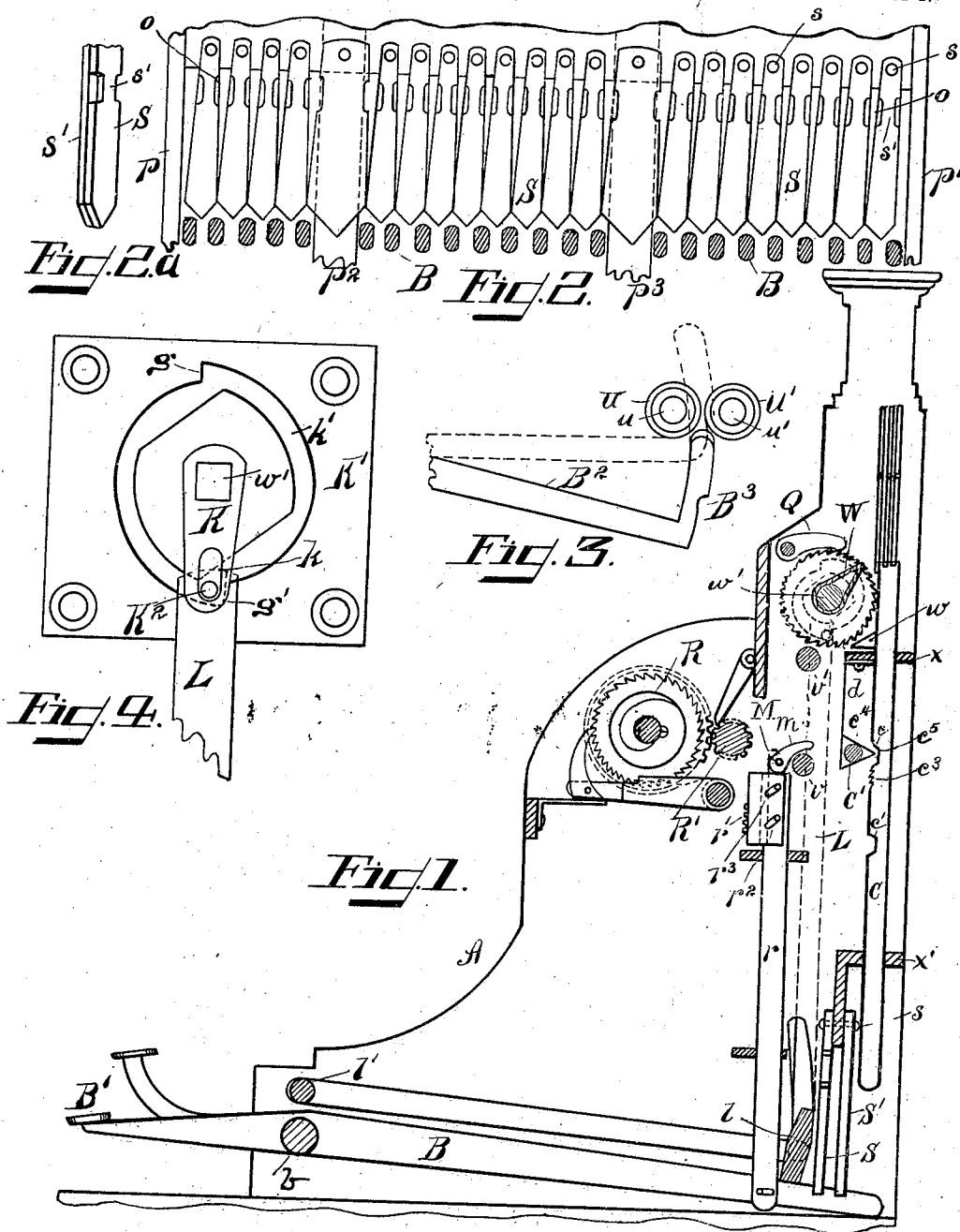


969,113.

F. C. OSBORN.
CASH REGISTER.
APPLICATION FILED MAY 18, 1892.

Patented Aug. 30, 1910.

4 SHEETS—SHEET 1.



WITNESSES
J. Clough.
W. Bradford.

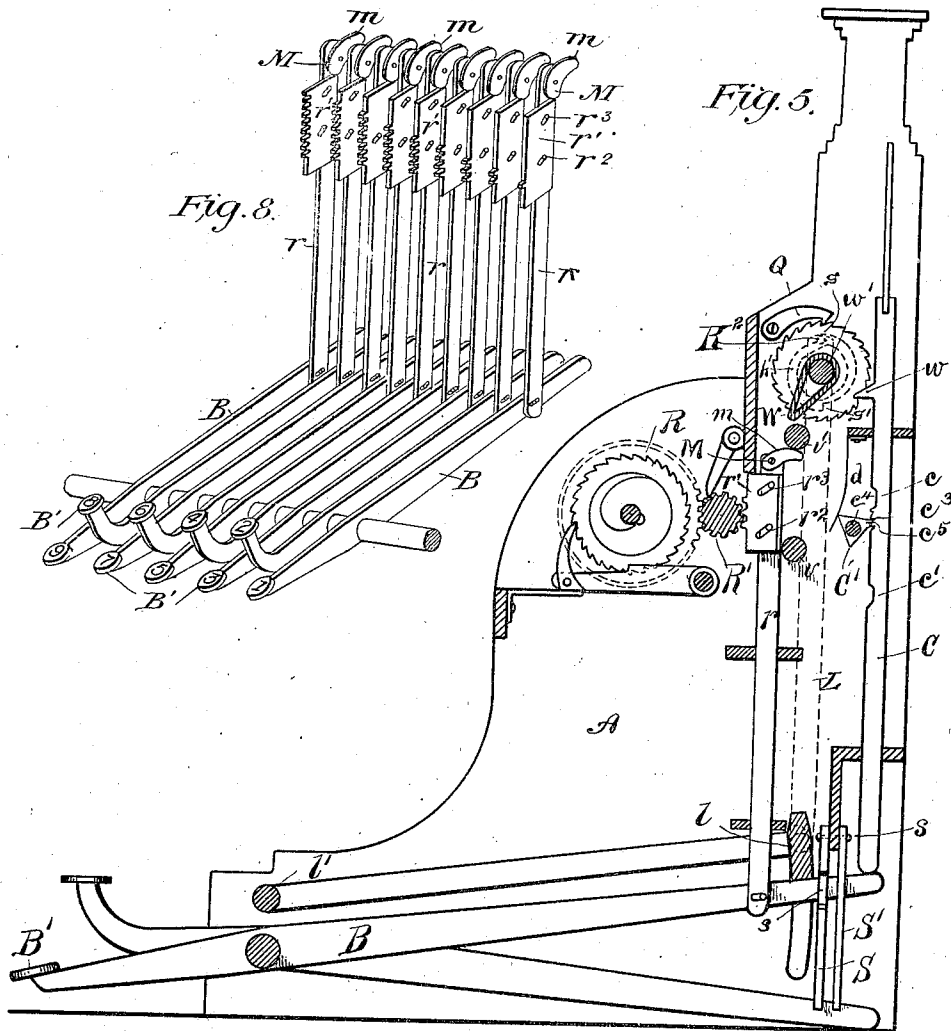
INVENTOR
Francis C. Osborn
by Parker & Osborn
Attorneys.

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4 SHEETS—SHEET 2.



WITNESSES
Francis Clough
D. H. Bradford

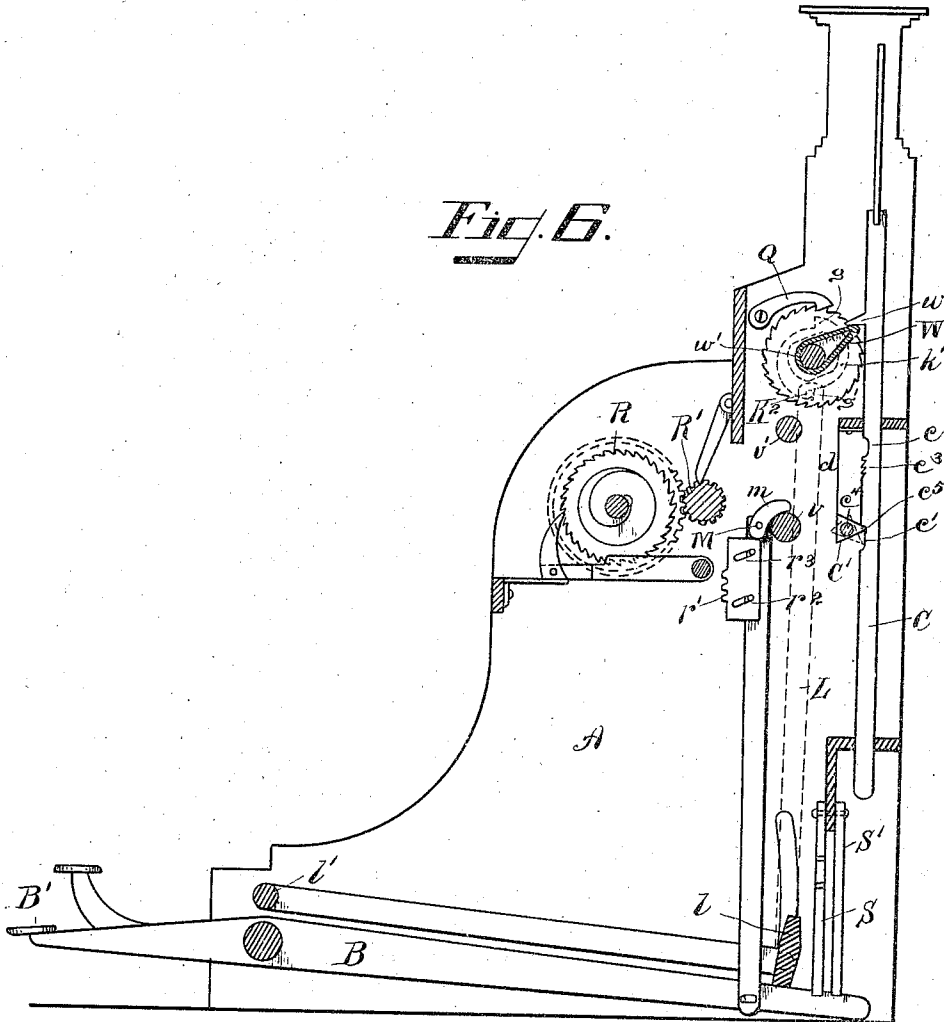
INVENTOR
Francis C. Osborn
by Parker H. Weston
Attorneys.

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4 SHEETS—SHEET 3.



WITNESSES
Francis Clough,
D. A. Bradford

INVENTOR
Francis C. Osborn
by Parker & Burton
Attorneys.

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4 SHEETS—SHEET 4.

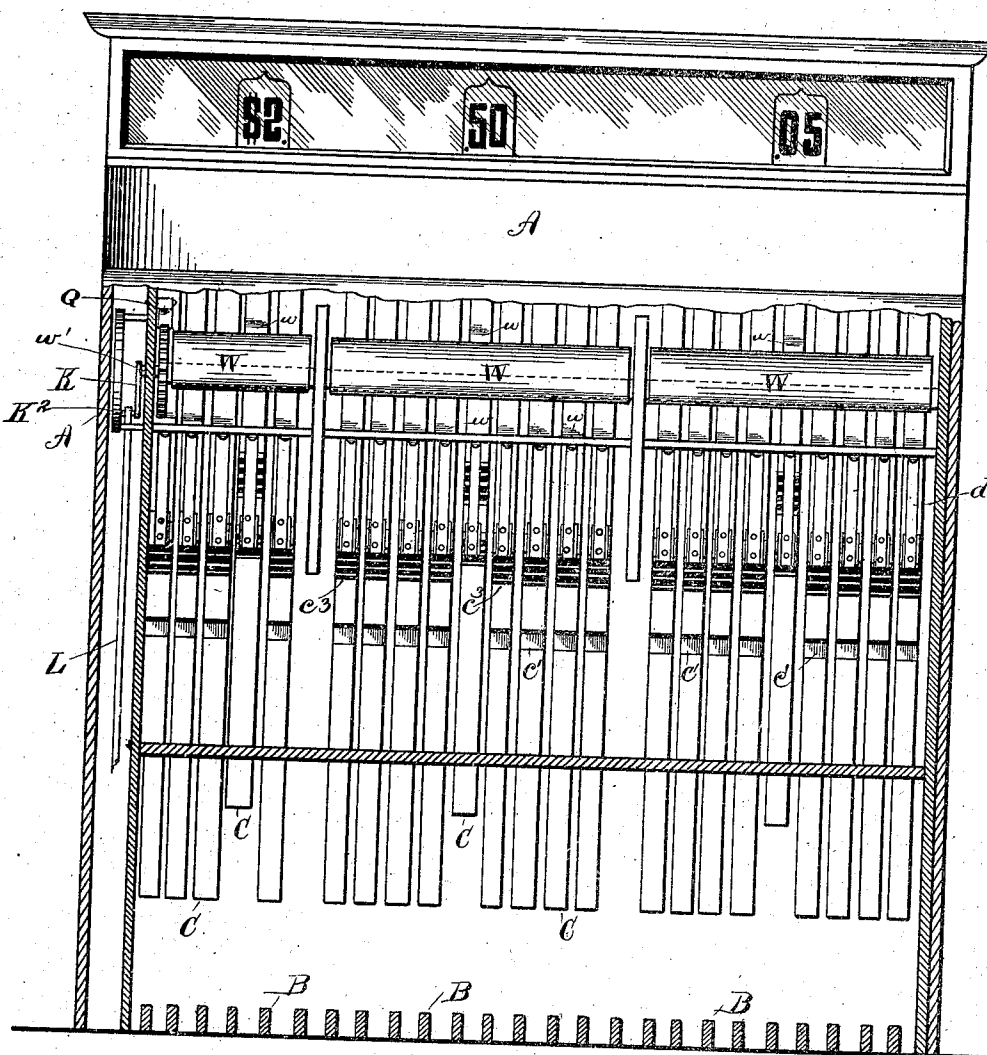


Fig. 7.

WITNESSES
F. C. Osborn
L. W. Bradford

INVENTOR
Francis C. Osborn
by Parker & Burton
Attorneys.

UNITED STATES PATENT OFFICE.

FRANCIS C. OSBORN, OF DETROIT, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO, (INCORPORATED IN 1906.)

CASH-REGISTER.

969,113.

Specification of Letters Patent.

Patented Aug. 30, 1916.

Application filed May 18, 1892. Serial No. 433,483.

To all whom it may concern:

Be it known that I, FRANCIS C. OSBORN, citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Cash-Registers, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to cash registers, and has for its object improvements in that class of registers in which a printed tablet is brought to a position to be seen by the customer, so that the customer may be able to know that the person operating the register has properly actuated it.

In carrying my invention into effect, I employ a series of vertically movable tablet rods; a corresponding set of keys, key levers or primary actuators, which control the movement of the tablet rods to an intermediate position; that is, a movement toward but not into full indicating position; a secondary actuator which moves the shifted tablet rods to full indicating or exposed position; and a register actuated by devices carried by the key levers, which devices drive the register during a stroke in one direction and become operatively disengaged during the stroke in the opposite direction, said devices being arranged and constructed so that the engagement of the register and an actuating device during the positive or actuating stroke will prevent the overthrow of the register. The secondary actuator which I employ is common to all the tablet rods so that when two or more tablet rods are moved to the intermediate position, the secondary actuator will move them simultaneously to the exposed or indicating position.

In the register to which these improvements are applied I use several sections or banks, of keys; thus the keys pertaining to the tablets which indicate cents are in one section, the keys pertaining to the tablets used to indicate dimes or fractional parts of a dollar are in another section, and the keys pertaining to the tablets used to indicate dollars are in a third section. One key in each section may be in a position with

its inner end raised at the same time that a key in another section is operated to raise a tablet, but two keys cannot be operated in the same section simultaneously; the main object of this is to render it unnecessary to employ in the recording part of the machine a total adding mechanism in which the wheels will carry from one to another while in simultaneous operation.

In the drawings, Figure 1 is a sectional view from front to rear showing one key and the parts operated by it. Fig. 2 is a front elevation of the stops that prevent simultaneous movement of more than a single key in the same section. Fig. 2^a is a perspective of a pair of the stops of Fig. 2, showing the position of the front and rear banks with respect to each other. Fig. 3 shows a form of stops adapted to produce equivalent results. Fig. 4 is a detail of the cam guide used to effect proper movement of the tablet rods. Figs. 5 and 6 show the same parts that are shown in Fig. 1 and indicate the position taken by the parts at different times in the movement of them. Fig. 7 is a rear elevation showing particularly the tablet rods and their location above the keys, and Fig. 8 a perspective view of the rods and graduated racks actuated thereby.

A represents the case of the machine, B is a key lever fulcrumed on the rod *b* and extending through the walls of the case; the end outside of the case is provided with a finger plate B'; the end inside of the case extends under the tablet rods C, and under the stops S S'.

S represents a stop of which there are in the machine a number equal to all the keys. Each stop S hangs from a pin *s* that is supported by the case or a part of the framework; from the same pin *s* depends a second stop S'; the stops are wedge shaped in form and hang from their small end; the large ends occupy the entire space between fixed points, except just sufficient space to permit the passage of one key lever; when one key lever is thrown upward between the stops, the stops and lever fill the entire space between the fixed points. The fixed points for the stops S are the posts or framework P P', shown in Fig. 2. The fixed points for the stops S' are P, P', P² and P³. The posts P² P³ divide the stops S' into three sections, one of which is between the posts

P' P³, a second of which is between the posts P³ P², and a third of which is between the posts P² and P. The stops S of the front rank differ in shape from the rear stops S'; each stop S has a portion cut away from each side, leaving a narrow stem s' and forming an opening o between each two adjacent stops; the opening o is of a size to permit the end of a key lever B to be received within it, and when the end of the key lever B has passed into the opening o and while it is still there, the stops S will swing to one side and permit a second key lever to be thrown up between them; but the rearmost bank of stops S' not being provided with any similar cut away part, a second key lever in the same section cannot be raised. The combined action of the stops thus prevents the lifting of more than one key lever in a section, but allows one key lever in each section to be lifted immediately succeeding the lifting of a key lever in another section, and while the first lifted key lever is still in its elevated position.

The tablet rods C are preferably straight bars working in guides formed in two horizontal plates x and x' the upper one of which, x, supports the tablet rods in the normal or inextensible position by means of lugs w on the tablet rods. Each tablet rod is provided with two wide notches c and c', and a number of small teeth c³ between the two wide notches. The tablet rods are raised slightly by means of the primary actuator, in this case the key lever B, and the tablet rods are held in the intermediate position by triangular-shaped pawls C'. These pawls are pivoted on the pin or rod c⁴, and for each pawl is provided a spring d which tends to hold the pawl in the normal position shown in Fig. 1. In this position the point c⁵ of each pawl stands in the wide notch c of its respective tablet rod. When a tablet rod is raised by its key lever, the lower shoulder formed by the notch c strikes the point of its respective pawl and tilts it into the position shown in Fig. 5, so that the point of the pawl will engage the teeth c³ and in this position the pawl will hold the tablet in the intermediate position, the spring d resting upon one of the points of the triangular pawl as shown. It will be seen that the tablet rod between the teeth c³ and the lower wide notch c' is provided with a smooth surface the object of which is to permit the tablet rod to drop back so that the teeth c³ will engage the pawl in case the tablet rod is overthrown by the key lever. When the tablet rod is raised by the secondary actuator to expose the tablet, the point of the pawl C' will be opposite the wide notch c' and free to resume its normal position as shown in Fig. 6, the tablet being held in the exposed position by the lifting device of the secondary actuator. When the rod of an ex-

posed tablet becomes disengaged from the lifting device upon a subsequent operation of the machine, the upper shoulder at the lower wide notch c' will strike the point c⁵ of the pawl when the tablet rod descends and rotate the pawl to the position shown in dotted lines in Fig. 6, so that the pawl will not interfere with the descent of the tablet rod. When such tablet rod is in its normal position the pawl will again be opposite the wide notch c and its spring d will turn the pawl so that its point c⁵ will again stand within the notch c, as in Fig. 1.

The secondary actuator comprises the lifting bar or wing W which engages with the lugs w on the tablet rods; the weight l and the intermediate mechanism comprising link L, crank K, the ratchet wheel and shaft w'. The lifting bar or wing W is rigidly carried by the shaft w' which is journaled in suitable bearings in the side frames of the machine and this shaft is provided with a ratchet wheel with which a pawl Q engages to permit rotation in one direction only. The shaft is also provided with a crank K having a slot k in which works the wrist pin K² projecting laterally through the upper end of the link L. The pin K² also works in two eccentric channels k' having shoulders g and g', as shown in Fig. 4. At the lower end of the link L is a weight l carried by two arms pivoted at l' and which weight extends across the entire series of key levers B.

The operation of the primary and secondary actuators in elevating a tablet rod, is as follows: When the parts are at rest, the tablet rods all down in their concealed position, the pin K² will be at the lower part of the cam track k' resting against the stop g'; when the finger rest B' is pressed downward, the inner end of the key bar B is raised, the link L is raised until the pin K² traversing half of the cam slot k' strikes against the stop g; the tablet rod is also partially raised by the same movement passing up high enough so that the pawl C' catches into the teeth c³ and prevents the tablet rod from dropping again; if now the operative force be removed from the finger plate B', the weight l becomes operative, the link L drops, the pin K² drops out of engagement with the stop g, and the pin K² continues the circuit of the cam slot k' until it strikes against the stop g'. The first movement of the tablet rod lifted the arm w into the path of the rotating wing W, and the rotating wing W is so adjusted that at the moment the pin K² engages the stop g, the wing W is nearing the arm w, as shown in Fig. 3 and as the link L drops, and the crank K completes its revolution under the impelling force of the weighted link L, the wing W lifts the tablet rod completely up. The tablet thus moved to the exposed position.

tion is held in that position by the engagement of the wing *W* and the lug *w* on the tablet rod and will remain in that position until the subsequent depression of a key lever which causes the wing to rotate as above described, whereupon the wing passes from under the lug *w* and the tablet rod will descend, the downward movement of the tablet rod shifting the pawl *C'* as before explained.

In connection with each tablet rod, is a rack adapted to give motion to the register wheel; the rack is on a vertical rod independent of the tablet rod but operated by the same key. At the upper end of the vertically movable rod *r* is a rack *r'* connected to the rod *r* by pins traversing oblique parallel slots in the rack *r'*; above the rack *r'* on the pin *M* is an arm *m*, and across the case behind the rods *r* are two rods *v v'*; the free end of the arm *m* engages when the rod *r* is dropped with the rod *v* and the arm is thrown into a position to hold the rack firmly down upon the pins *r² r³*; the teeth of the rack are also thrown forward to a position to engage with and actuate the pinion *R'* intermediate between the rack and the register wheel *R*. When the rod *r* is lifted in operating the key *B'*, the free end of the arm *m* engages with the rod *v'* and turns the arm to a position to permit the rack *r'* to rise and move backward on the pins *r² r³* and drop with the rod *r* past the pinion *R'* without actuating it in the reverse direction. By locking the rack *r'* to the rod *r*, the rack cannot become disengaged from pinion *R'* until released by arm *m*, and since this release takes place at the end of the upward stroke of rod *r* there can be no overthrow of the register during the positive stroke of the keys. This is of the utmost importance, since if means are not employed for positively locking the keys to the register during the positive stroke, it will be possible by suddenly arresting the depression of a key during the positive stroke to effect an overthrow of the register. Any suitable mechanism may be employed to prevent overthrow at the completion of the positive stroke of the key, such, for example, as by engaging the rack *r'* with the casing, as shown, at the end of the positive stroke. This engagement of a rack which operates a register with a stationary stop at the completion of the positive stroke of a key to prevent overthrow has been suggested in the art. I am not aware, however, that anyone prior to myself has suggested means by which a key can be coupled positively to a register to effect a positive movement thereof without overthrow, or that with such mechanism has been employed a device for preventing overthrow at the completion of the positive stroke.

In place of the triangular shaped hangers *S* with their cutaway parts forming the

opening *o*, the form of the stop shown in Fig. 3 may be used in which one set of stops consist of a number of disks *U* sliding on a rod *u*, and the second set of stops consist of an equal number of similar disks *U'* sliding on a rod *u'*. The key stem *B²* passes between the rods *u, u'* and between the adjacent stops on the rods. The stem of the key *B²* is cut away at *B³* so that after the stem has been forced between the stops, and while the cut away part *B³* is still between them, a second key may be forced between the stops, but two keys cannot be forced up at the same time. The stops *U U'* in this case have their edges beveled so that the opening at the edges between adjacent stops on the same bar is much greater than is the space between them nearer the bar, and a second key in the same section cannot be forced between the stops, because in the same section there would only be space for the stops belonging to that section and for one key bar. In connection with the disk stops of Fig. 3, the un-cut-away portion of the key bar engages with the section stops *U*, and the cut away portion *B³* engages with the stops *U'* that pass entirely across the case.

What I claim is—

1. In a cash register, the combination with a series of keys and key levers, of a series of pivoted wedge-shaped stops preventing the simultaneous movement of two or more key levers, said stops being provided with recesses which receive the key levers at the completion of their movement in one direction and permit the separation of the stops by the movement of a second key, substantially as set forth.

2. In a cash register, the combination with a series of keys divided into two or more sections or groups, of a stop mechanism for each of said groups, preventing the operation of a second key in that group until the first key has returned to its normal position, and a stop mechanism common to said two or more groups, preventing the simultaneous operation of any two of said keys, but permitting the successive operation of keys of different groups, substantially as set forth.

3. In a cash register, the combination with a series of keys and key levers, divided into two or more sections or groups, of a series of pivoted wedge-shaped stops coöperating with the key levers of each group and preventing the movement of a second key lever of the group until the first key lever has returned to its normal position, and a second series of pivoted wedge-shaped stops coöperating with all the key levers and acting to prevent the simultaneous movement of two or more of such key levers, said second series of stops having recesses which receive the key levers at the end of their movement and permit the movement of a second key lever, substantially as set forth.

4. In a cash register, the combination with the key levers B, divided into sections or groups, of the stops S having recesses s' and cooperating with all the key levers, and a series of stops S' cooperating with the key levers of each group, substantially as and for the purpose set forth. 76
5. In a cash register, the combination with a series of keys arranged in two or more banks or sections, of a stop mechanism arranged to prevent the simultaneous operation of any two keys but permitting the operation of a second key in a different bank before the first key has returned to its normal position and preventing the operation of a second key of the same bank before the first key has returned to its normal position, substantially as set forth. 75
6. In a cash register, the combination with a series of tablet rods, of a series of key levers adapted to move the tablet rods toward but not into indicating position in a direction only substantially vertical, means for holding the tablet rods at the intermediate position, and a second actuator acting on the tablet rods to complete the movement of the tablets to the indicating position, substantially as set forth. 80
7. In a cash register, the combination with a series of tablet rods, of a series of key levers adapted to move the tablet rods toward but not into indicating positions in a direction only substantially vertical, means independent of the key levers for holding the tablet rods at the intermediate position, and a second actuator acting on the tablet rods to complete the movement of the tablets to the indicating position, substantially as set forth. 85
8. In a cash register, the combination with a series of tablet rods, of a series of key levers acting on the tablet rods to move them toward but not into indicating position in a direction only substantially vertical, means independent of the key levers for holding the tablet rods at the intermediate position, and a second actuator acting upon said tablet rods to move them to the indicating position, said second actuator acting to move the tablet rods with the return movement of the key levers, substantially as set forth. 90
9. In a cash register, the combination with a series of tablet rods, of a series of key levers moved in one direction by hand and lifting said tablet rods to an intermediate position, a weight raised by the movement of the key levers and compelling their return movement, and a second actuator for completing the lifting movement of the tablet rods, connected with said weight and operated by the movement thereof, substantially as set forth. 95
10. In a cash register, the combination with tablet rods which are lifted by successive movements to the indicating position, of a pawl holding the tablet rods at the intermediate position by engaging with teeth thereon, turning notches on the opposite sides of said teeth for permitting the reversal of the pawl, and a plain or un-toothed surface between the lower turning notch and the holding teeth to cause the tablet rod to return to the intermediate position if overthrown, substantially as set forth. 100
11. In a cash register, the combination of a series of tablet rods, key levers adapted to engage with said tablet rods and partially lift them, a lifting wing rotated in one direction only and adapted to engage with said tablet rods in their partially elevated position, and means for rotating said wing and thereby completing the elevation of said tablet rods, substantially as set forth. 105
12. In a cash register, the combination of a series of tablet rods, key levers adapted to engage said tablet rods and partially lift them, a lifting wing rotatable in one direction only, a stop causing the rotary action of said wing to intermit, means for bringing the partially lifted tablet rod and the wing into engagement and for rotating said wing and thereby completing the elevation of said tablet rod, substantially as set forth. 110
13. In a cash register, the combination of a series of tablet rods, means for partially lifting them, a lifting wing having intermittent rotary motion, means for engaging the wing with the partially elevated rods, means for partially rotating the wing, and means for stopping the rotary motion of said wing when the tablet is fully elevated, substantially as set forth. 115
14. In a cash register, the combination with a series of tablet rods, a lifting wing having an intermittent rotary movement and adapted to engage with and lift said tablet rods, and a stop adapted to intermit the rotary movement of said wing at each half revolution, substantially as set forth. 120
15. In a cash register, the combination of a tablet rod, a rotating lifting wing, and means for giving intermittent motion to said lifting wing, consisting of an actuating key, a crank, a radially movable crank pin, eccentric guide slots, and a link connecting said key and said crank pin, substantially as set forth. 125
16. In a cash register, the combination of a tablet rod and a rotating lifting wing, a crank actuating said lifting wing, a crank pin radially movable along said crank, means for actuating said crank pin, and eccentric guide slots provided with stops g g', substantially as set forth. 130
17. In a cash indicator, the combination of a series of keys representing different values, a series of tablets indicating corresponding values cooperating with said keys, 130

a horizontal shaft carrying a ratchet wheel, a dog coöperating with said wheel to permit of the rotation of said shaft in one direction only, a weighted reciprocating bar moved in one direction by said keys, and connections between said weighted bar and said shaft whereby the raising of said weighted bar causes the partial rotation of said shaft, the weight of said bar being sufficient to complete the rotation of said shaft, and the operation of the connected parts after the movement of said key, substantially as set forth.

18. In a cash register, the combination with a series of keys representing different values, a series of tablets indicating corresponding values coöperating with said keys, a registering mechanism, a series of pivoted bars carried by the keys and each arranged to actuate the registering mechanism an amount corresponding to the value of its key, a horizontal shaft carrying a ratchet wheel, a dog coöperating with said wheel to permit rotation of said shaft in one direction only, a weighted reciprocating bar moved in one direction by said keys, and connections between said weighted bar and said shaft whereby the reciprocations of said weighted bar causes the rotation of said shaft, all combined and operating so that the operation of any key moves its indicating tablet and operates the registering member the required amount, substantially as set forth.

19. In a cash indicator, the combination with a series of indicating tablets representing different values, a series of keys for directly lifting said tablets toward but not into indicating position in a direction only substantially vertical, a rotary bar coöperating with any lifted tablets to carry them into indicating position, and a motor controlled by said keys for operating said rotary bar, substantially as set forth.

20. In a cash indicator, the combination with a series of indicators, a series of keys for adjusting said indicators vertically toward but not into indicating position, a rotary member coöperating with any adjusted indicators to carry them vertically to indicating position, and a motor controlled by said keys for operating said rotary member.

21. In a cash register, the combination with a series of indicators having vertically movable stems, of a series of keys for giving said stems a slight vertical movement, and a rotary actuating member arranged to engage and fully elevate such indicator stems as have been partly elevated.

22. In a cash register, the combination with a series of indicators, of a series of keys for adjusting the indicators toward indicating position, a rotary member coöperating with any adjusted indicator to carry

it to its indicating position, and means operated by the keys for actuating said rotary member.

23. In a cash register, the combination with a series of indicators, of a series of keys arranged to move said indicators toward indicating position, a movable member common to said keys, and a rotary member operated from the movable member and arranged to complete the movement of the said indicators to their indicating position.

24. In a cash register, the combination with a register actuating pinion, of a moving bar, a rack carried by said bar and engaging the pinion and movable on said bar laterally away from the pinion, and a cam carried by said bar and engaging fixed points on the framework for moving the rack into engagement with the pinion, substantially as set forth.

25. In a cash register, the combination with an actuating pinion, of an operating bar, a rack carried by said bar for engaging said pinion and movable laterally on the bar by means of pins and diagonal slots, and a cam carried by the bar and engaging fixed points on the frame work to permit the movement of the rack out of engagement with the pinion, substantially as set forth.

26. In a cash register, the combination with a register actuating pinion, of a moving bar, a rack carried by said bar and engaging said pinion and movable on said bar laterally away from said pinion, a locking mechanism between said bar and said rack for locking said rack in its position of engagement with said pinion, and a fixed projection upon the framework of the machine arranged to move said locking mechanism out of locking position, substantially as set forth.

27. In a cash register, the combination of a series of keys representing different values, with a registering member, a bar mounted on each key and adapted to engage the registering member to actuate it according to the value of the key, a cam on each of said bars, and a fixed rod common to all of said bars and coöperating with the cams on said bars to effect a positive engagement of said bars with said registering mechanism, substantially as set forth.

28. In a key-operated cash register, the combination with the registering mechanism, of a bar connected to and moved by the key and adapted to operate said registering mechanism, and a cam operating to cause the positive engagement of said bar with the registering mechanism, substantially as set forth.

29. In a key-operated cash register, the combination with a registering mechanism, of a series of bars moved by the keys and adapted to operate said registering mechanism, means for bringing said bars

and registering mechanism into operative engagement during the depression of the keys, and means for operatively disengaging said bars and registering mechanism on the return movement of the keys, substantially as set forth.

30. In a cash register, the combination with a register mechanism, of a key lever, a device moved by said key lever for operating said register on the depression of the key lever, means for operatively locking said device to the register mechanism actuated thereby, to prevent overthrow of the register, and means for unlocking said device on the return stroke of the key lever so as not to actuate the register during the return stroke of said key lever, substantially as set forth.

31. In a cash register, the combination of a series of key levers representing different values, a register, and devices between said register and key levers for automatically locking the key levers to the register at the beginning of its movement and for keeping the lever and register locked together during the positive stroke of the lever, whereby overthrow of the register is prevented, and for giving varying degrees of movement to the register according to the value of the key levers substantially as set forth.

32. In a cash register, the combination with a series of key levers representing different values, a register, a series of graduated actuating devices interposed between the key levers and the register, and means for locking the actuating device of each key lever to the register at the beginning of movement of the latter and for keeping the lever and register locked together during the positive stroke of the lever, whereby overthrow of the register is prevented, substantially as set forth.

33. In a cash register, the combination with a series of key levers representing different values, a register, a series of graduated actuating devices pivoted to the key levers and interposed between them and the register, and means for locking the actuating device of each key lever to the register at the beginning of movement of the latter, and for keeping the lever and register locked together during the positive stroke of the lever, whereby overthrow of the register is prevented, substantially as set forth.

34. In a cash register, the combination with a series of key levers representing different values, a register, a series of graduated actuating devices interposed between the key levers and the register, means for locking the actuating device of each key lever to the register at the beginning of movement of the latter, and for keeping the lever and register locked together during the positive stroke of the lever, whereby overthrow of the register is prevented, and means for

automatically rendering the actuating device of each key lever inoperative in connection with the register subsequent to the operative stroke of a key lever, substantially as set forth.

35. In a cash register, the combination with a registering wheel and an actuating device therefor, of means mounted on said actuating device for automatically locking the same to said registering wheel during the registering movement.

36. In a cash register, the combination with a registering wheel and an actuating device therefor, of means mounted on said actuating device for locking the same to said registering wheel during the registering movement, and means independent of said actuating device for acting upon said locking means to control the locking effectiveness thereof.

37. In a cash register, the combination with a registering wheel and an actuating device therefor, of means mounted on said actuating device for locking the same to said registering wheel during the registering movement, and means independent of said actuating device for operating said locking means to lock the actuating device to the registering wheel during the movement of registration, and unlock the actuating device to permit it to ride free of the registering wheel during the non-registering movement of the actuating device.

38. In a cash register, the combination with a registering wheel and a reciprocatory registering element therefor, of a movable register engaging device carried by said reciprocatory element for engaging said registering wheel, and locking means also mounted upon said reciprocatory element in proximity to said engaging device for locking the latter to said registering wheel.

39. In a cash register, the combination with a registering wheel and a reciprocatory registering element therefor, of a movable register engaging device carried by said reciprocatory element for engaging said registering wheel, locking means also mounted upon said reciprocatory element in proximity to said engaging device for locking the latter to said registering wheel, and means independent of said reciprocatory element for operating said locking means to control the locking effectiveness thereof.

40. In a cash register, the combination with a registering wheel and a reciprocatory registering element therefor, of a movable register engaging device carried by said reciprocatory element for engaging said registering wheel, locking means also mounted upon said reciprocatory element in proximity to said engaging device for locking the latter to said registering wheel, and means independent of said reciprocatory element for operating said locking means to lock said

engaging device to said registering wheel during the registering movement in one direction of reciprocation of said element, and unlocking said engaging device from said wheel prior to the reverse movement of reciprocation of said element.

41. In a cash register, the combination with a registering wheel and a reciprocatory registering element therefor, of a movable register engaging device carried by said reciprocatory element for engaging said registering wheel, and means mounted on said reciprocatory element for operating upon said engaging device to lock the same to said registering wheel during the registering movement of reciprocation and for blocking said engaging device from overthrow movement at the end of such registering movement.

42. In a cash register, the combination with registering devices, of actuating devices for same, register engaging elements carried on said actuating devices, arms mounted on said actuating devices for locking said engaging elements to said register-

ing devices, means for causing said arms to move to locking and unlocking position, and a stationary element for preventing disengagement of said register engaging devices from the registering devices until the actuating devices begin their return strokes.

43. In a cash register, the combination with registering wheels, of driving elements therefor, register wheel engaging elements carried by said driving elements, arms mounted on said driving elements positioned to lock said engaging elements to said wheels, relatively stationary means for moving said arms to locking and unlocking position, and a stationary device positioned to prevent disengagement of the engaging elements from the register wheels until the actuating devices begin their return strokes.

In testimony whereof, I sign this specification in the presence of two witnesses.

FRANCIS C. OSBORN.

Witnesses:

EFFIE I. CROFT,

CHARLES E. BURTON.