No. 797,605. PATENTED AUG. 22, 1905.

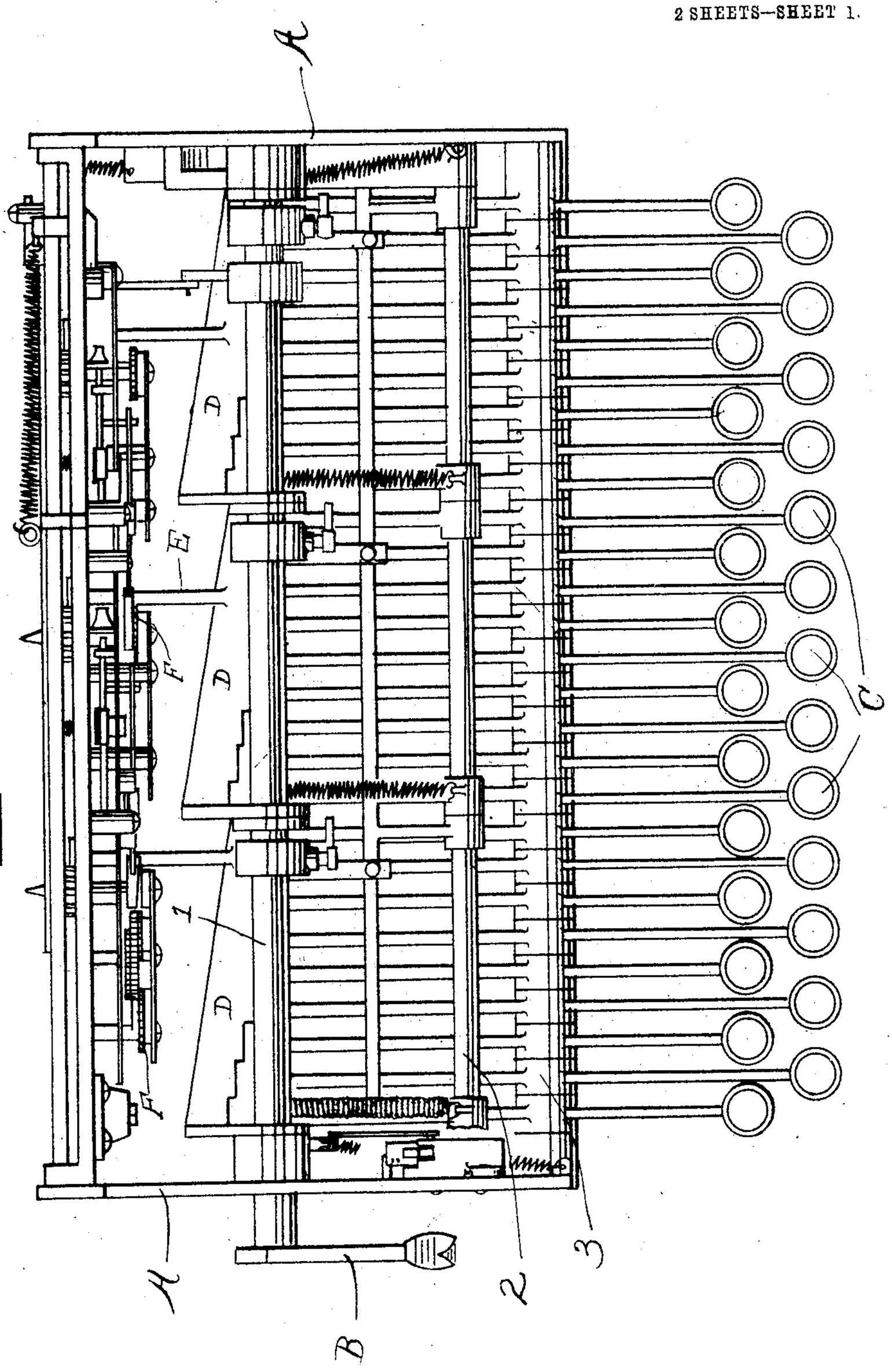
J. PFEIFER.

CASH REGISTER.

APPLICATION FILED MAY 12, 1902.

2 SHEETS—SHEET 1.

Fig 1.



WITNESSES:

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2 SHEETS—SHEET 2.

Fig. 2.

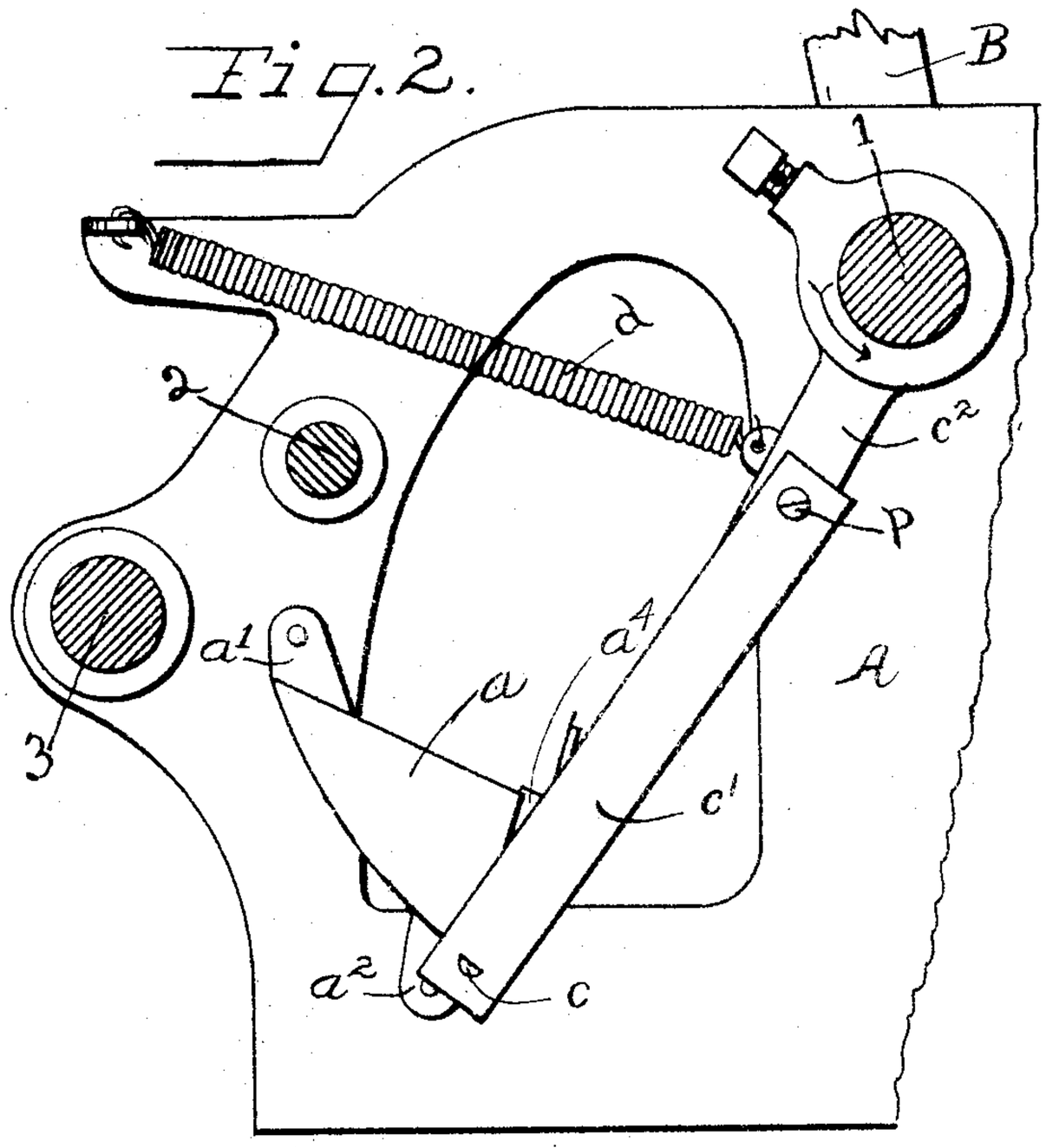


Fig. 4.

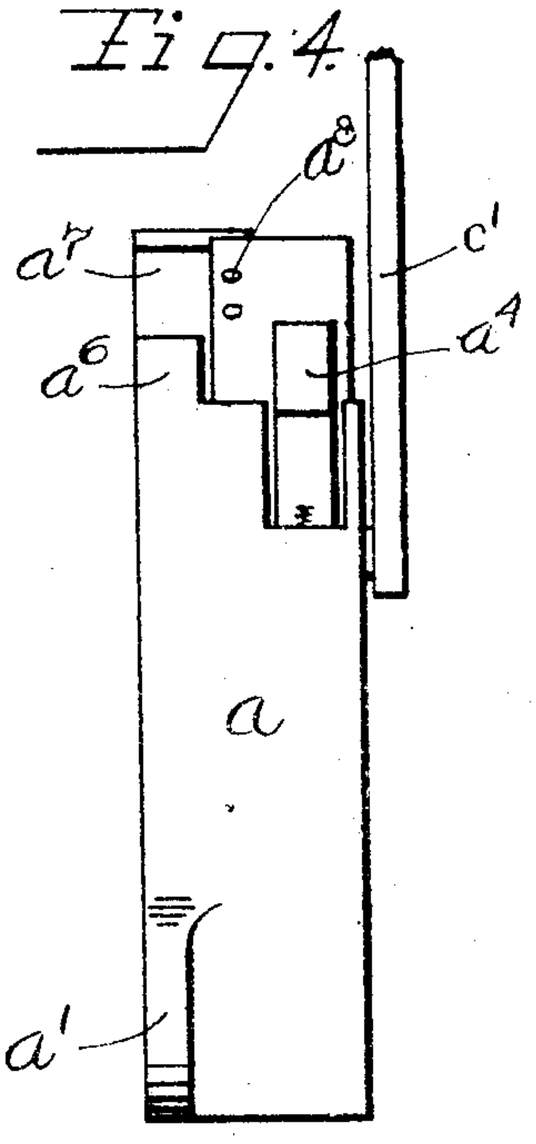
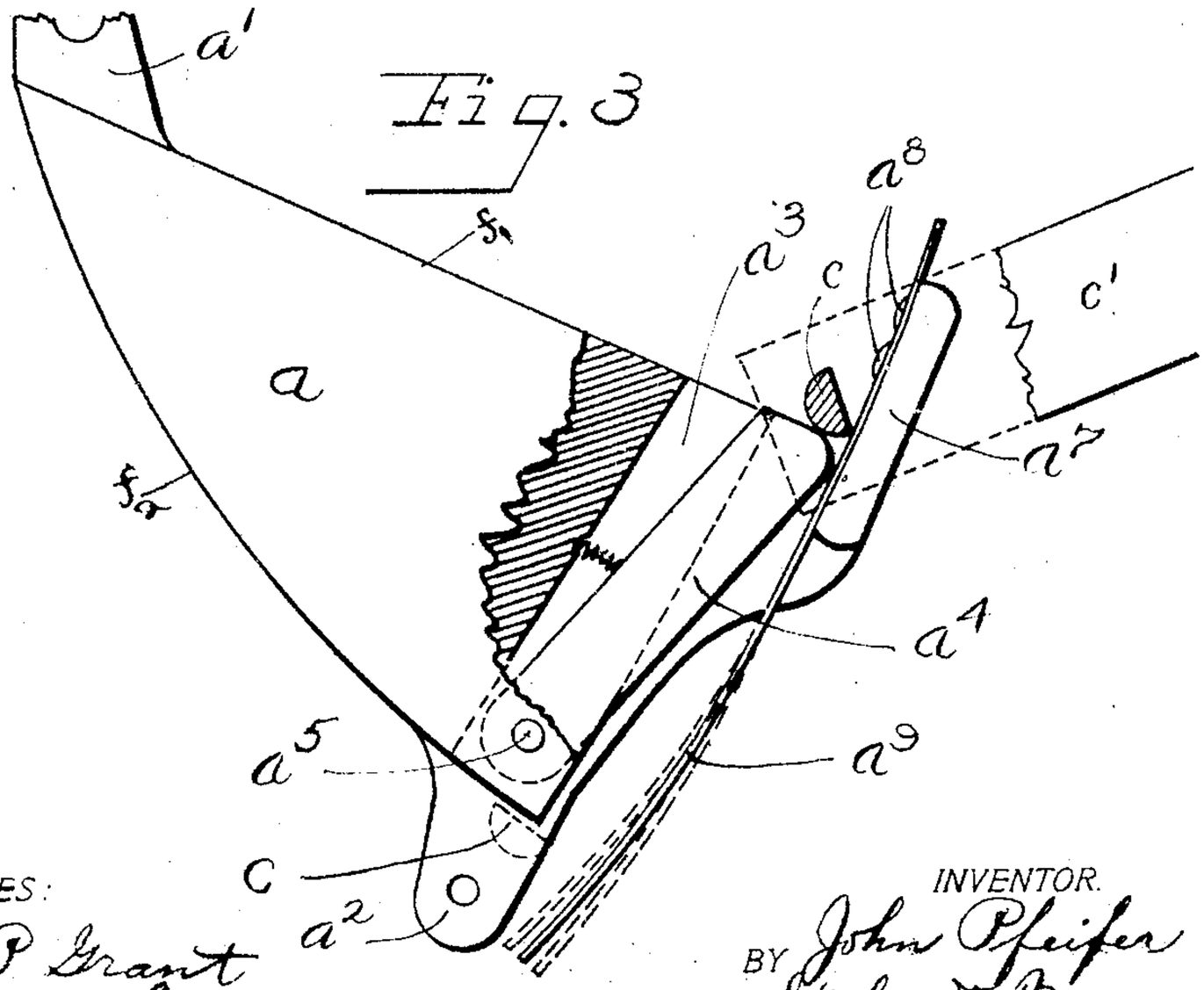


Fig. 3



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UNITED STATES PATENT OFFICE.

JOHN PFEIFER, OF SPRINGFIELD, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CASH-REGISTER.

No. 797,605. Specification of Letters Patent. Patented Aug. 22, 1905.

Application filed May 12, 1902. Serial No. 106,848.

To all whom it may concern:

Be it known that I, JOHN PFEIFER, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification.

My invention relates to improvements in cash registers and indicators; and it relates more particularly to means for preventing the operator from making a quick registration before the parts have become completely settled after the preceding registration, and I have shown my improvement as applied to the type of machine set forth in my Letters Patent No. 579,604, dated March 30, 1897, and No. 673,784, dated May 7, 1901.

Heretofore in cash registers and indicators there has existed the danger of the parts becoming locked on account of the carelessness of an operator in causing one registration to follow another too quickly. My present invention obviates this difficulty by providing means to prevent the main operating mechanism from being operated, or in the type shown the main shaft from being rotated, until the registering and indicating mechanism is free from any vibration of parts, so that the parts will be in proper position for the next registration.

My invention consists in the constructions and combinations of parts hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a plan view of a cash-register to which my device is shown attached at the left-hand side thereof. Fig. 2 is a side view of my device, showing same attached to the side frame of a cash-register. Fig. 3 is a view showing the relative positions of the parts of my device after the operating-lever has been pulled down, but before said lever has been released. Fig. 4 is a top view of my device.

Like parts are represented by similar characters of reference in the several views.

The general construction of the register shown in the drawings, Fig. 1, may be described as follows: The operating parts are preferably supported by a frame A, the sides of which are connected together by rods or shafts 1, 2, and 3, which extend from one side of the frame to the other, the main shaft 1 being adapted to turn in suitable bearings and the shafts 2 and 3 being rigidly supported in said frame. The shaft 1 extends at one end through the side frame and has a lever B on the end thereof and on the outside of said frame A. This lever B is the operating-lever for the machine. Its movement in one direction serves to unlock the keys C, and the depression of the keys unlocks the stepped segments D, which being released upon the return movement of the lever B fall and engage the ends of the keys and through the connecting-bar E operate registering-wheels F the amount represented by the depressed keys.

It will be understood that what I have described thus far is no part of my present invention, but is merely one general form of register to which my invention may be applied, the details of construction of which are more clearly set forth in the aforesaid Letters Patent. I will now proceed to particularly describe the invention to which this application has reference.

In the drawings, a represents a wedge-shaped cam, the upper side f' of which is straight and the lower side f^2 forms the arc of a circle, which also acts as an abutment. This cam may be attached in any suitable way to the side frame A, it being shown in the drawings attached by ears a' and a^2 to said side frame. The said cam a has a slot a^3 extending the entire length of its inner end, and in this slot a^3 a spring-pressed tongue or pawl a^4 is pivoted at a^5, the tongue being adapted to bear against a resilient plate a^9, hereinafter mentioned. The cam a has an offset a^6 formed at the same end with and in proximity to the slot a^3, and at the end of this offset is an upwardly-extending projection a^7, preferably formed integrally therewith. Attached to this projection a^7 at a^8 is a resilient plate a^9, which extends downwardly to a point beyond the curved side f^2 of the cam a and runs parallel with the slot a^3 of the cam and normally at a very slight distance therefrom for the purpose hereinafter mentioned. This plate is free at its lower end, so as to be adapted to act as a spring and have a vibrating motion when an object of proper weight contacts with it. When the parts are in normal position, a pin or lug c, attached near the end of an oscillating arm or stop member c', is adapted to rest on the lower end of the plate a^9. This pin is preferably flat on one side, as shown in the drawings. I have shown the arm c' pivotally

attached at p to a laterally-extending arm c^2 of a lug or dog rigidly attached to the main shaft of the machine, and this arm c^2 is moved by the shaft when the lever B is operated; but other means may be employed, if desired. The arm c^2 is held in position by a spring d, attached at one end to the side frame of the machine and at the other end to said arm c^2.

The operation of the device is as follows: The arm c^2, by means of the operating-lever or other agency, is adapted to move in the arc of a circle in the neighborhood of forty degrees when the shaft l is oscillated in the direction shown by the arrow in Fig. 2 for the purpose of making a registration, thus drawing the pin attached to the arm c' along the path as determined by the plate a^9 to a position on top of the spring-pressed tongue, as shown in Fig. 3. The tongue a^4 being spring-pressed is pushed back into the slot a^3 during this operation; but when the arm c' reaches the position shown in Fig. 3 the spring-pressed tongue a^4 returns to its normal position against the plate a^9, thus preventing the arm c', with its pin, from returning through the passage by which it came. The lower curved side f^2 of the cam a is formed in the arc of a circle (as before stated) whose center is the pivotal point of the arm c'. The arm c' when the operating-lever is released will be pushed up the inclined path f' of the cam and being adapted to operate in the arc of a circle of a little greater diameter than that of the curved side of the cam will drop from the point of said cam back to its normal position on the resilient plate a^9. The pin c, on account of the force of the fall, rebounds from the resilient plate a^9, thus causing the arm c' to vibrate a number of times in front of the abutting face of the cam. During the travel of the pin c along the curved side f^2 the operating-lever of the machine is obviously locked from further movement and cannot be pulled down, since the pin c would immediately come in contact with the obstructing-face f^2 of the cam a, and, moreover, as long as this vibration of the arm c' continues the operating-lever of the machine cannot be pulled down by reason of the inability of the pin c to enter the narrow passage through which it is adapted to move. The pin is also semicircular in cross-section and only slightly less in diameter than the width of the space between the cam and the resilient plate. Thus it will be seen that the pin cannot enter said passage, but will contact with the abutment until the vibration of the arm c' has entirely ceased.

It will be seen that by means of my invention the different parts of the machine will have had ample time to be completely at rest before the main operating-lever can be pulled down for the purpose of making another registration. All danger of the parts becoming locked from this cause is thus obviated.

It is of course to be understood that my invention is applicable not only for causing a delayed movement at the end of a certain cycle of movements in the operating parts, but also for causing a delayed movement at any desirable point in the stroke of any of these operating parts.

Having thus described my invention, I claim—

1. In a cash-register, the combination with an operating element, of a vibratory stop member coöperating therewith, and means independent of the speed of operation for causing said stop member to vibrate for preventing the operation of said operating element until the vibration ceases.

2. In a cash-register, the combination with a mechanism for operating the parts of said register, of a vibratory auxiliary mechanism connected to said operating mechanism, and means independent of said operating mechanism for causing the vibration of said auxiliary mechanism for preventing the operation of said operating mechanism until said vibration ceases.

3. In a cash-register, the combination with an operating element, of a vibratory stop member carried thereby, and means for vibrating said stop member whereby the operation of the machine is delayed until the vibration ceases.

4. In a cash-register, the combination with an operating element, of a stop member cooperating therewith, means for vibrating the latter, and obstructing means coöperating with said stop member to prevent movement of the operating element until the stop member has ceased vibrating.

5. In a cash-register, the combination with an operating element, of a fixed abutment and a resilient abutment arranged in juxtaposition; and a stop member connected with said operating element and arranged to be vibrated by the resilient abutment into and out of cooperative relation with the fixed abutment whereby the operating element is locked until the vibration ceases.

6. In a cash-register, the combination with an operating element, of a movable locking member controlled by the same, means for moving the locking member out of its normal position while the operating element is being actuated and during its initial movement, with provisions for locking said element while the locking member is out of its normal position.

7. In a cash-register, the combination with an operating element, of a stop member, means for moving the stop member away from its normal position and through a constant path of travel, with provisions for locking the operating element at the end of said path of travel and until the stop member has assumed its normal position.

8. In a cash-register, the combination with an operating element, of a stop member, means for moving the stop member away from nor-

mal position, with provisions for locking the operating element after the stop member reaches the end of its movement and until it returns to normal position.

9. In a cash-register, the combination with an operating element, of a stop member cooperating therewith, means for guiding said member over a definite path during a certain portion of the movement of said operating element, and means for moving said stop member away from said definite path, with provisions for locking the operating element from movement while the stop member is returning to said path.

10. In a cash-register, the combination with an operating element, of a stop member carried thereby, means for guiding said stop member over a definite path during a certain portion of the movement of said operating element, and means for moving said stop member away from said definite path, with provisions for locking the operating element from movement while the stop member is returning to said path.

11. In a cash-register, the combination with a series of keys and an operating device therefor, of a stop member coöperating with said operating device, means for guiding said member over a definite path during a certain portion of the movement of said operating element, and means for moving said stop member away from said definite path, with provisions for locking the operating element from movement while the stop member is returning to said path.

12. In a cash-register, the combination with a series of keys and an operating device therefor, of a stop member carried by said operating device, means for guiding said stop member over a definite path during a certain portion of the movement of said operating element, and means for moving said stop member away from said definite path, with provisions for locking the operating element from movement while the stop member is returning to said path.

13. In a cash-register, the combination with an operating element, of a stop member cooperating therewith, an abutment mounted independently of the stop member and arranged to guide the movement of said member during a certain portion of the movement of the operating element; means for causing said stop member to move away from the abutment; with provisions permitting the return of said member to said abutment and for locking the operating element during such return movement.

14. In a cash-register, the combination with an operating element, of a stop member cooperating therewith, a resilient abutment mounted independently of the stop member and arranged to guide the movement of said member during a certain portion of the movement of the operating element; means for causing said stop member to move away from the abutment; with provisions permitting the return of said member to said abutment and also for locking the operating element during such return movement.

15. In a cash-register, the combination with an operating element, of a stop member carried thereby, means for guiding said member over a definite path during a certain portion of the movement of said operating member, means for deflecting said stop member at the end of such portion of movement of said operating element, and means for locking the operating element from movement after such deflection.

16. In a cash-register, the combination with an operating element, of a movable stop member connected therewith; means for guiding said stop member over a definite path during a certain portion of the movement of said operating element; means for preventing the return of said stop member along said path during the continued movement of the operating element and for deflecting the stop member from said path, with provisions allowing it to return to said path after such deflection; and means for locking the operating element from further movement during such return movement of the stop member from its deflected position.

17. In a cash-register, the combination with an operating element, of a movable stop member connected therewith; means for guiding said stop member over a definite path during a certain portion of the movement of said operating element; means for preventing the return of said stop member along said path during the continued movement of the operating element and for deflecting the stop member from said path, with provisions allowing it to return to said path after such deflection; means for locking the operating element from further movement during such return movement of the stop member from its deflected position, and a vibratory member positioned to be struck by said stop member on said return movement.

18. In a cash-register, the combination with an operating element, of a stop member cooperating therewith, means for obstructing said stop member during one portion of its travel to lock the operating element, and vibratory means coöperating with said obstructing means substantially as and for the purpose described.

19. In a cash-register, the combination with an operating element, of a stop member carried thereby, means for obstructing said stop member during a portion of its travel to lock the operating element, and vibratory means coöperating with said obstructing means.

20. In a cash-register, the combination with an operating element, of a stop member cooperating therewith, means for constraining said stop member to follow a prescribed path

of movement during one portion of its travel whereby to lock said operating element in a certain part of such path until said constraining means and said stop member have been automatically brought out of coöperative relation with each other.

21. In a cash-register, the combination with an operating element, of a stop member carried thereby, means for partially obstructing said stop member during a portion of its travel until said obstructing means and said stop device have been automatically brought out of cooperative relation with each other.

22. In a cash-register, the combination with an operating element, of a stop member coöperating therewith, means for causing said stop member to move over different paths during divided portions of movement of said operating element, and means for obstructing the continued movement of said operating element while the stop member is moving from one path to the other.

23. In a cash-register, the combination with an operating element, of a stop member carried thereby, means for causing said stop member to move over different paths during divided portions of movement of said operating element, and means for obstructing the continued movement of said operating element while the stop member is moving from one path to the other.

24. In a cash-register, the combination with a series of keys and an operating member therefor, of a stop member carried by said operating member, means for causing said stop member to move over different paths during divided portions of movement of said operating element, and means for obstructing the continued movement of said operating element while the stop member is moving from one path to the other.

25. In a cash-register, the combination with a series of keys and an operating device therefor, of a movable member carried by said operating device and formed with a stop-lug, means for causing said stop-lug to move over different paths during divided portions of movement of said operating device, and means for obstructing the continued movement of the operating device until the stop-lug has moved from one path to the other.

26. In a cash-register, the combination with an operating element, of a stop member carried thereby, a fixed abutment positioned to form a path of travel for said stop member during a portion of the stroke of said operating member and discontinued to allow said stop member to automatically move to a new path of travel; and obstructing means to prevent further movement of the operating element until said stop member has reached its new path of travel.

27. In a cash-register, the combination with a series of keys and an operating device, of a movable member carried by said operating device and formed with a stop-lug, a fixed abutment formed with three faces, with provisions for causing the travel of said lug along two of these faces and for allowing said lug to move automatically over the third face, said third face being so positioned as to lock the operating device from further movement while the lug is moving over this face.

28. In a cash-register, the combination with an operating element; of a movable member carrying a stop-lug; a fixed abutment arranged to cause said lug to travel different paths during divided movements of the operating element, the lug being automatically movable from one path to the other, and means for locking the operating element from movement during such automatic movement of the lug.

29. In a cash-register, the combination with an operating element, of a stop member, obstructing means coöperating with said stop member to prevent movement of the operating element, and means operating independently of the rapidity of movement of said operating element for delaying the freeing of said stop member from said obstructing means.

30. In a cash-register, the combination with an operating element, of a stop member, obstructing means coöperating with said stop member to prevent movement of the operating element, and resilient means for causing the alternate engagement and disengagement of said stop member and said obstructing means.

31. In a cash-register, the combination with an operating element, of a stop member cooperating therewith, means for partially obstructing the latter during one portion of its movement in a normal operation of the machine whereby the operating element is locked from further movement, and provisions existing whereby said stop member automatically moves to unobstructed position.

32. In a cash-register, the combination with an operating element, of a stop member carried thereby, means for partially obstructing the latter during a portion of its movement in a normal operation of the machine whereby the operating element is locked from further movement, and provisions existing whereby said stop member automatically moves to unobstructed position.

33. In a cash-register, the combination with an operating element, of a movable stop member carried thereby and normally standing in unobstructed position, means for constraining said stop member to follow a prescribed path of movement at a certain point in the cycle of movement of the operating element, with provisions existing by virtue of which the stop member automatically regains an unobstructed position whereby the operating ele-

ment is temporarily locked from further movement during this automatic movement of the stop member.

34. In a cash-register, the combination with an operating element, of a movable stop member carried thereby, means for constraining said stop member to follow a prescribed path of movement at a certain point in the cycle movement of the operating element, whereby the operating element is temporarily locked from further movement and is then automatically released.

In testimony whereof I have hereunto set my hand this 30th day of April, A. D. 1902.

JOHN PFEIFER.

Witnesses:

MARTIN V. BOYER,

B. L. BOYER.