(No Model.)

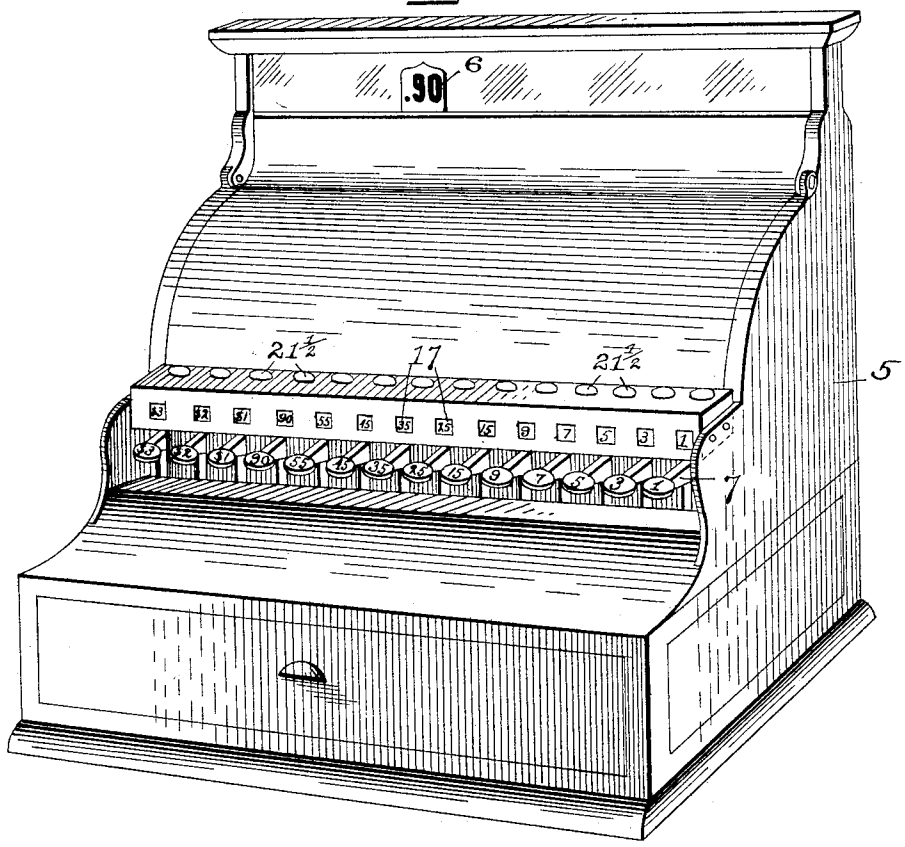
2 Sheets—Sheet 1.

A. MACAULEY.

CASH REGISTER.

No. 589,476. Patented Sept. 7, 1897.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

A. MACAULEY.

CASH REGISTER.

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Fig. 2.

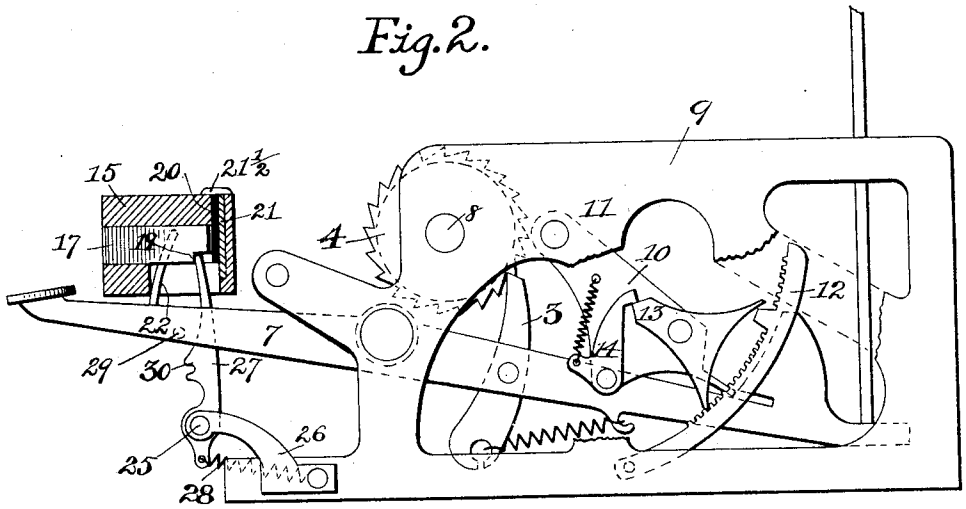


Fig. 3.

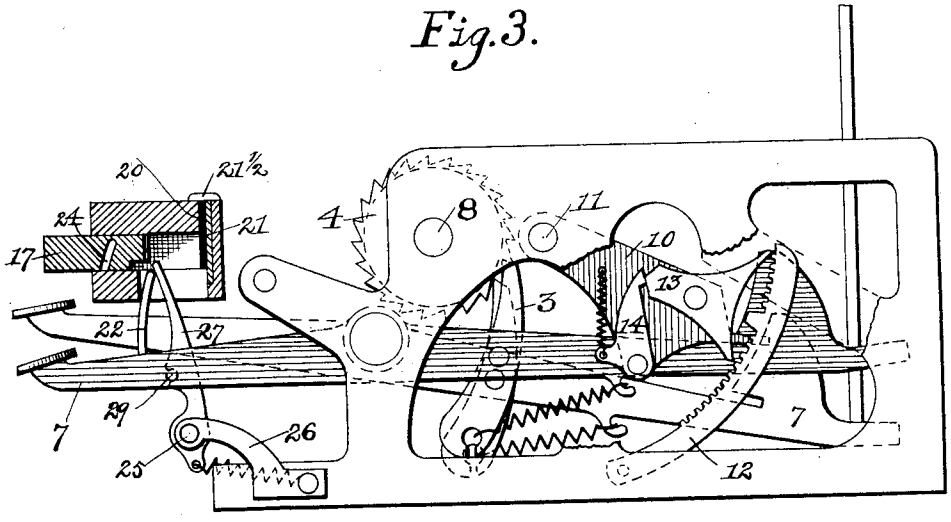
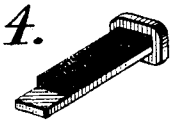


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALVAN MACAULEY, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF SAME PLACE.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 589,476, dated September 7, 1897.

Application filed February 3, 1897. Serial No. 621,732. (No model.)

To all whom it may concern:

Be it known that I, ALVAN MACAULEY, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cash-Registers, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention is particularly adapted for attachment to cash-registers, though it may also be used in connection with any series of keys, whether the keys coöperate with a registering mechanism or not.

It consists of a rack carrying a series of type, which I have arranged to be unlocked and moved forward into position to be grasped by the person operating the machine by means of the registering-keys.

In the drawings, Figure 1 shows a perspective view of an ordinary type of cash-register with my invention applied thereto. Fig. 2 shows a view in elevation of a portion of the interior mechanism of a cash-register such as shown in Fig. 1, my invention being applied thereto and shown in cross-section, the type being in normal position. Fig. 3 shows a view similar to that shown in Fig. 2, but with one of the keys depressed, the type being consequently thrown forward in position to be grasped by the operator.

In the drawings, numeral 5 designates the usual cabinet inclosing the mechanism of the register; 6, an exposed indicator of the usual type; 7, one of the series of keys.

By reference to Figs. 2 and 3 of the drawings it will be seen that the keys are hung upon the key-shaft 8, which is supported at its ends in the side frames 9 of the register. The operating-pawls 3, which are pivoted to the keys, respectively, are arranged to actuate the adding-wheels 4 in the usual manner. The universal bar 10, which extends horizontally above and rests on all the keys, is hung upon pivots 11, turning in the side frames. As illustrated in the drawings, the universal bar is in the form of a key-coupler like that shown in the patent to Boyer and Riggs, No. 422,287, dated February 25, 1890, or like that shown in the patent to F. J. Patterson, No. 437,236, dated September 30, 1890, which latter patent also shows the rack 12, secured to the side frame, and with which coöperates the double-tooth pawl 13, which is controlled by the latch 14.

The devices last described are well known in the art and form what is known as a "key-arrester," its function being to compel the complete operation of any key that may be started. The patent to Patterson above referred to fully describes this device, so that it is not necessary to elaborate it further in this connection.

The key-coupler, key-arrester, and coöperating devices are all well known in the art and, except in combination with my improvements, form no part of my invention, which consists of the type-rack 15, which is provided with a series of horizontal recesses 16. In each recess is fitted a type-block 17, secured upon the inner end of which is a type-face 18, of rubber or other material. Each type-block may be provided with a shoulder 19, for a purpose to be presently described. When in normal position, the faces of the type are against the ink-pad 20, which is secured to a plate 21, and thus the type are inked. The plates carrying the ink-pads are removable through apertures in the top of the type-rack. The caps 21½, to which the plates are respectively secured, serve to protect the ink-pads from the atmosphere and also as a means for removing the said pads whenever it is desirable to do so.

The number of type employed correspond to the number of keys, and each type is appropriated to the key which is located immediately beneath it. Thus the key which when operated registers ninety cents on the recording apparatus of the register coöperates with the type located immediately above it and which is arranged to print the symbol "90¢" on any object upon which it may be impressed, &c.

Each key carries an upwardly-extending pin 22, which is curved to conform to an arc struck from the center of the key-shaft. The pins respectively extend upwardly through slots 23, which extend from the type-recesses through the bottom of the type-rack, and the upper ends of the curved pins are concealed within correspondingly-shaped recesses 24 in the type-blocks, respectively. Extending

transversely beneath the keys in a direction parallel to the type-rack is a small shaft 25, supported at its ends in brackets 26, secured to the side frames, and pivoted upon said shaft is a series of spring-actuated vertical levers 27, which extend through the slots 23 of the type-rack and are normally held in check against the action of the pull-string 28 by the shoulders 19 of the type-block, against which the upper ends of said lever-arms abut normally, as shown in Fig. 2. Each key is provided with a laterally-extending stud 29, which is arranged, when a key is depressed to its full extent, to engage the detent 30, with which each vertical arm is provided.

It results from the construction above described that normally the type are all locked in position within the type-rack by means of the pins 22, and each type is locked independently by its coöperating key, but when any key is depressed far enough to draw the pin entirely out of its recess in the type-block the said block is released, whereupon the spring-actuated levers 27, being also released, will throw the type forward and partially out of its recess, so that it may be taken out and used by the person operating the machine. When the operated key has descended far enough to release the type-block, the upper end of the spring-pressed arm is thrown forward until stopped by the stud 29, carried by the key. Just as the key reaches the limit of its downward stroke the said stud is engaged by the detent 30, and the key is thus held in its depressed position until it is released, which can only be accomplished by returning the lever 27 to its normal position, and the last-mentioned operation can only be effected by returning the type-block which has been displaced to normal position. When the type-block is replaced, the shoulder 19 engages the upper end of the arm 27 and forces it back until the key is released, whereupon the latter returns to normal position, the pin 22 entering its type-block and locking the same in normal position.

The key-coupler and the key-arrester devices above referred to, and described in the Boyer and Riggs patent, so operate that whenever any key is displaced from normal position it cannot be returned thereto until it has been operated to its full extent, and until it is so returned to normal position all the other keys remain locked, so that when my invention is applied to the construction shown in Figs. 2 and 3 of the drawings if any key be operated and its type-block thrown forward for use all the other keys and type-blocks remain absolutely locked until the first-operated key is released and returned to normal position by replacing its type-block.

My invention finds its greatest utility in restaurants and large establishments, where it is not sufficient to record simply the total of the sales made, but where it is at least highly desirable to retain on separate slips detail statements of each transaction. For example, it can be advantageously employed in an establishment in which a system is used like that described in the patent to J. F. Hicks, No. 500,071, dated June 20, 1893, in which the guest writes upon a card the articles wanted. The card being then taken to the cashier in charge of a register with my invention applied thereto he would press the proper keys to register the cost of the meal, which would release the type-blocks corresponding to the amount registered. The cashier would then pick up the released type-blocks in his fingers and manually print upon the waiter's card the amount of the bill, which would of course necessarily be the same as that registered.

To prevent misuse of the apparatus, I have so devised my invention that none of the keys can be operated until the type-blocks of the key or keys last operated are returned to normal position, as previously described.

When my invention is used in connection with a cash-register, the proprietor of the establishment using it has but to refer to the register to ascertain the total of his sales at any time, and by reference to the waiter's cards he can ascertain all the details in regard to any particular transaction. Moreover, it is impossible for the cashier or other operator to print any amount upon the tickets without previously recording that amount on the adding-wheels of the register, for the reason that he can only release the type by pressing the keys.

I believe I am the first in the art to combine a series of manually-operated printing devices with a series of keys, and as such I do not wish to be limited to the details of construction herein described. The invention is capable of application in many other forms and in connection with other devices than that shown. For example, the registering mechanism is not necessary to its operation, for it may be as well employed in connection with a simple series of key-levers as with the more elaborate devices shown.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a series of keys, of a series of coöperating type-blocks normally locked in position by the keys but so arranged that when one of the keys is operated it will unlock its coöperating type-block.

2. In a device of the class described, the combination with a series of keys, of a series of type-blocks each coöperating with one of the keys of the series, and means controlled by the keys for locking the type in normal position, and for unlocking the type when the keys are operated.

3. In a device of the class described, the combination with a series of keys, of a series of type-blocks coöperating with the keys respectively, and means for locking the type-blocks in normal position when the keys are in normal position and for unlocking any one

of the series of type-blocks when its coöperating key is actuated.

4. The combination with the series of manually-operated type-blocks, of a registering mechanism, and keys controlled by the type-blocks for registering the value of the type-blocks which coöperate with the keys operated upon the registering mechanism.

5. In a device of the class described, the combination with the series of keys, of the type-blocks, means controlled by the keys for normally locking the type-blocks, and for releasing one of the type-blocks when a key is operated, devices for locking the operated key in operated position, and means controlled by the type-block for releasing the operated key.

6. In a device of the class described, the combination with a series of keys, of the type-blocks normally within the type-rack, and means controlled by the keys for ejecting, or partially ejecting, the type-blocks when the keys are operated.

7. In a device of the class described, the combination with the series of keys, of the series of type-blocks, means controlled by any key of the series that may be operated for releasing its coöperating type-block, and devices for locking the operated key out of normal position until its type-block is returned to substantially normal position.

8. In a device of the class described, the combination with a series of keys, of the type-rack carrying the series of type-blocks normally locked in position, means released by the operation of a key for ejecting the coöperating type-block, and devices for automatically relocking the type-block when it is returned to normal position.

9. In a device of the class described, the combination of the series of keys, of the series of type-blocks, pins carried by the keys and arranged to lock the type-blocks when the keys are in normal position, and a series of arms arranged to eject, or partially eject a type-block when its coöperating key is actuated.

10. In a device of the class described, the combination with the series of keys, of the series of type-blocks, a series of pins carried by the keys and arranged to lock the type-blocks in normal position, a series of spring-actuated arms bearing detents and arranged to eject the type-block from normal position when released by the operation of a key, and a series of studs also carried by the keys and arranged to coöperate with the detents in the manner described.

ALVAN MACAULEY.

Witnesses:
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R. T. HOUK.