

W. H. CLARK.

## LOCKING MECHANISM FOR CASH REGISTERS.

APPLICATION FILED SEPT. 25, 1897.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

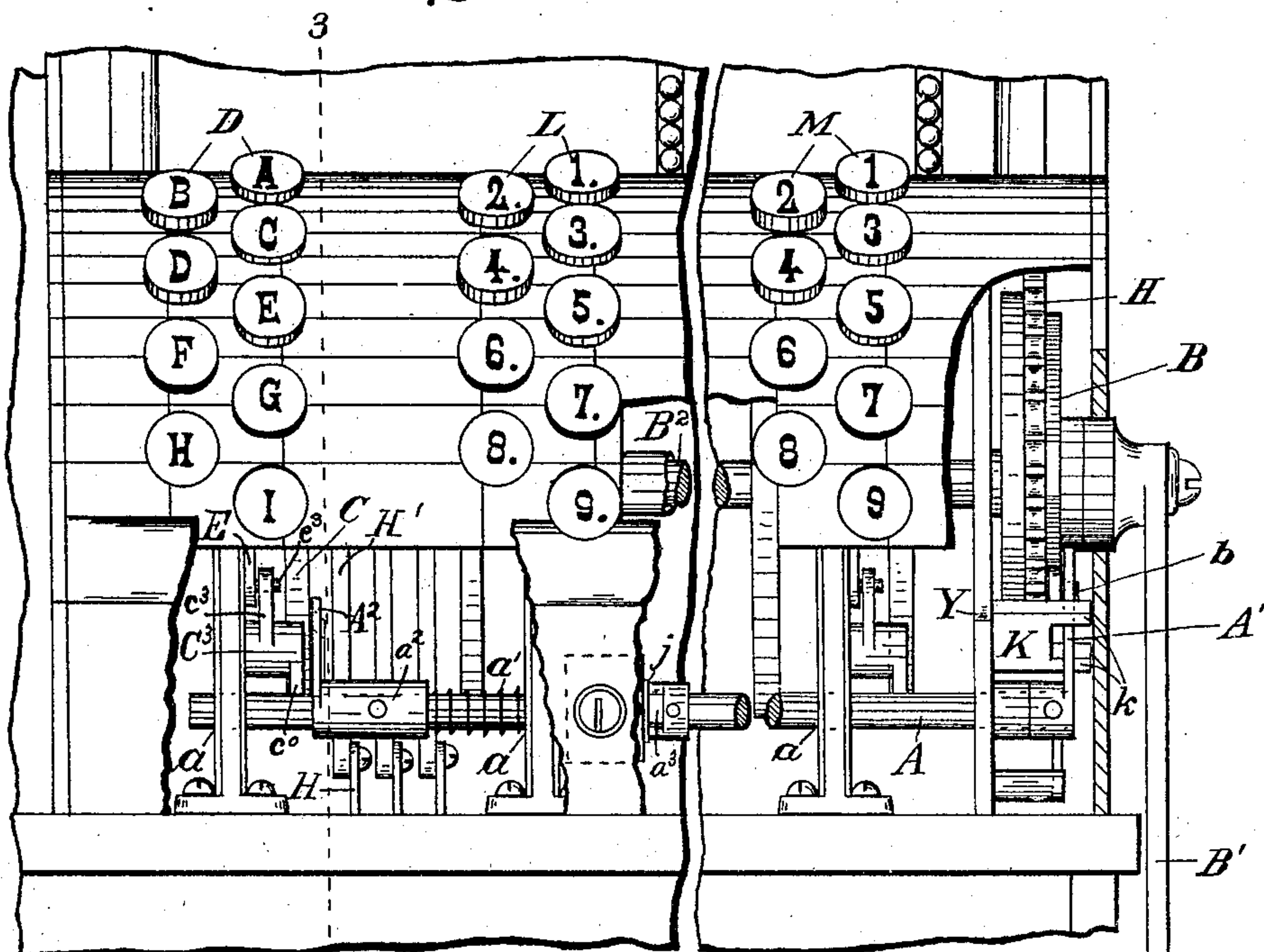
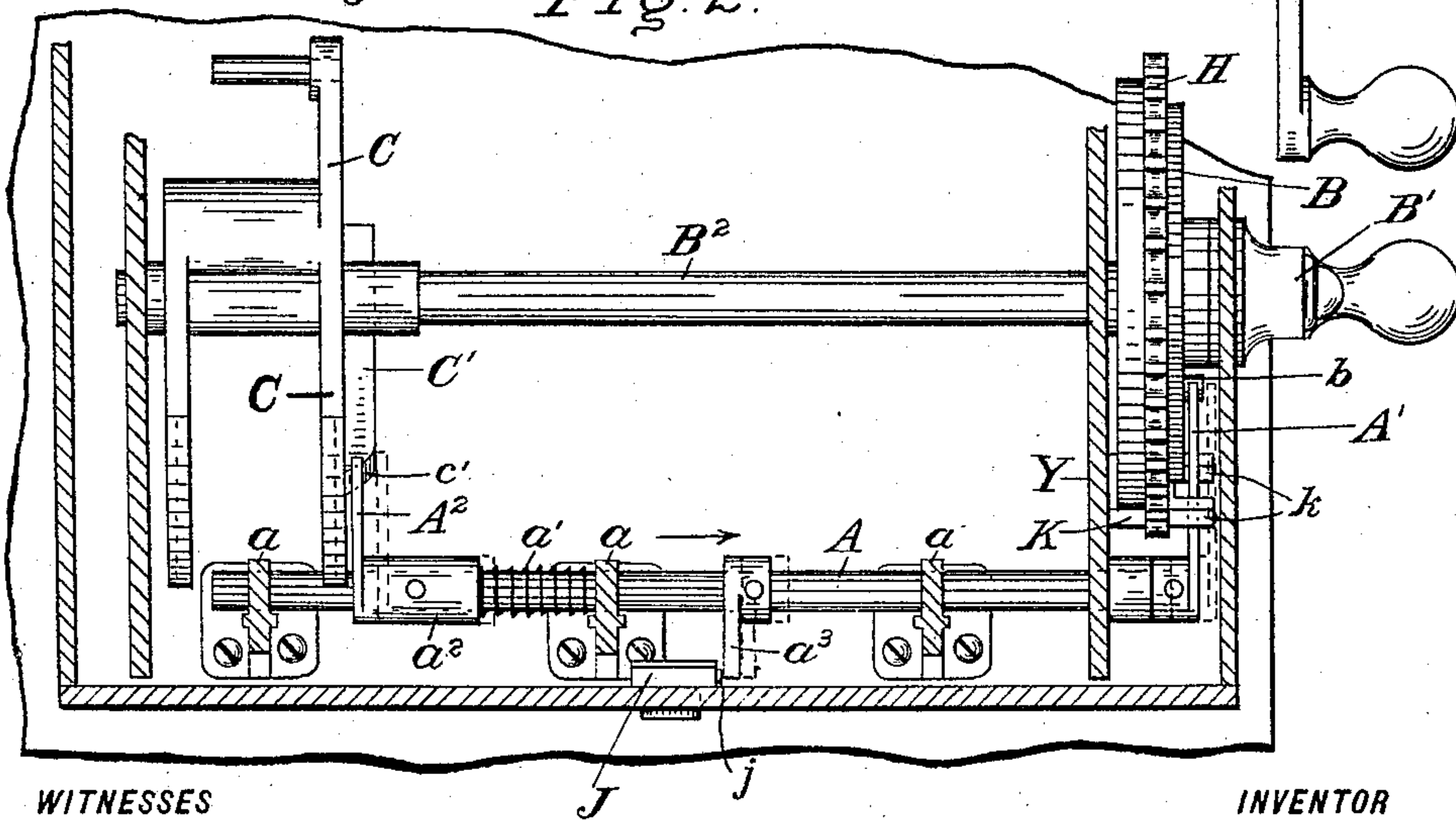


Fig. 2.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

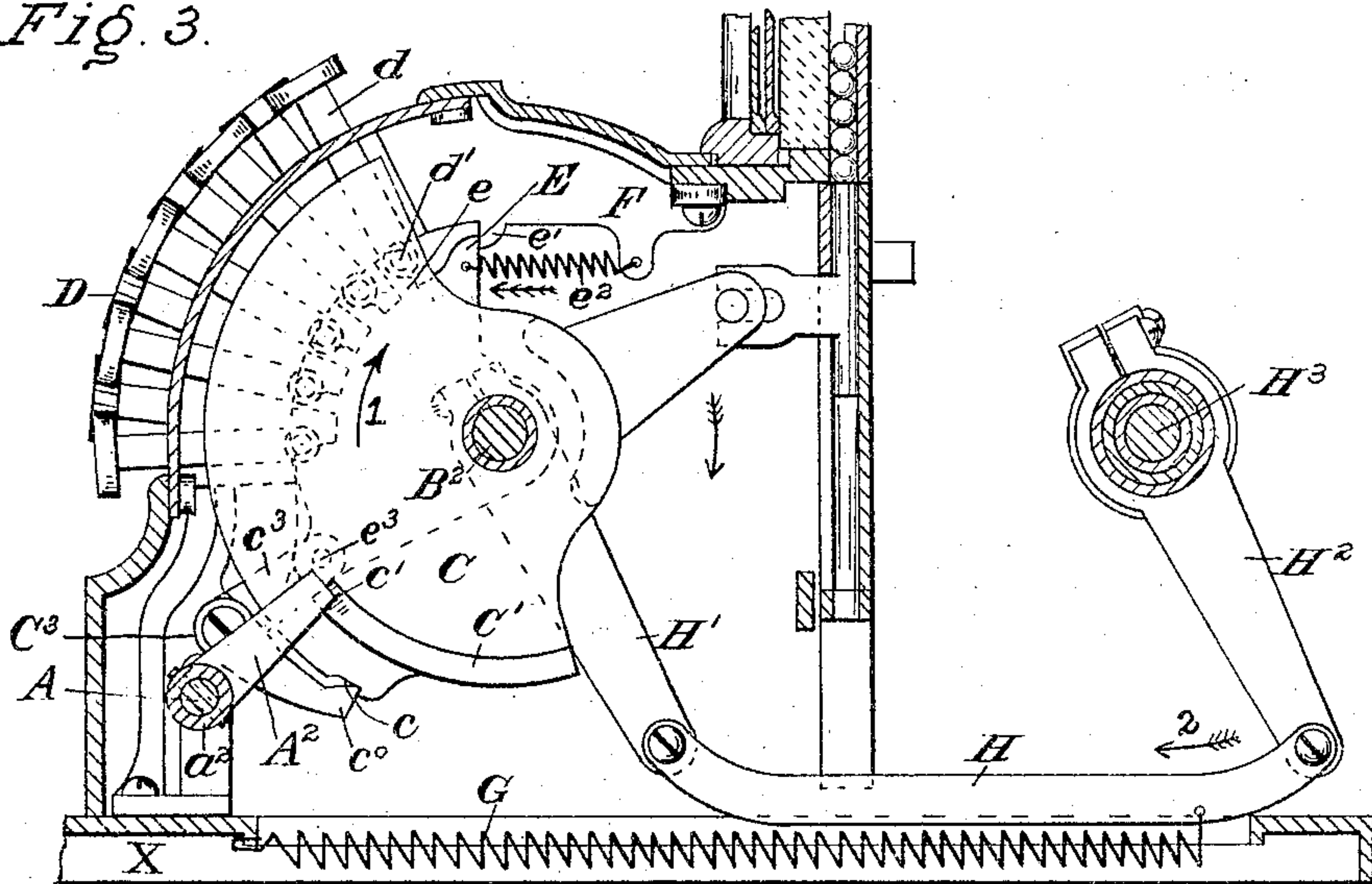
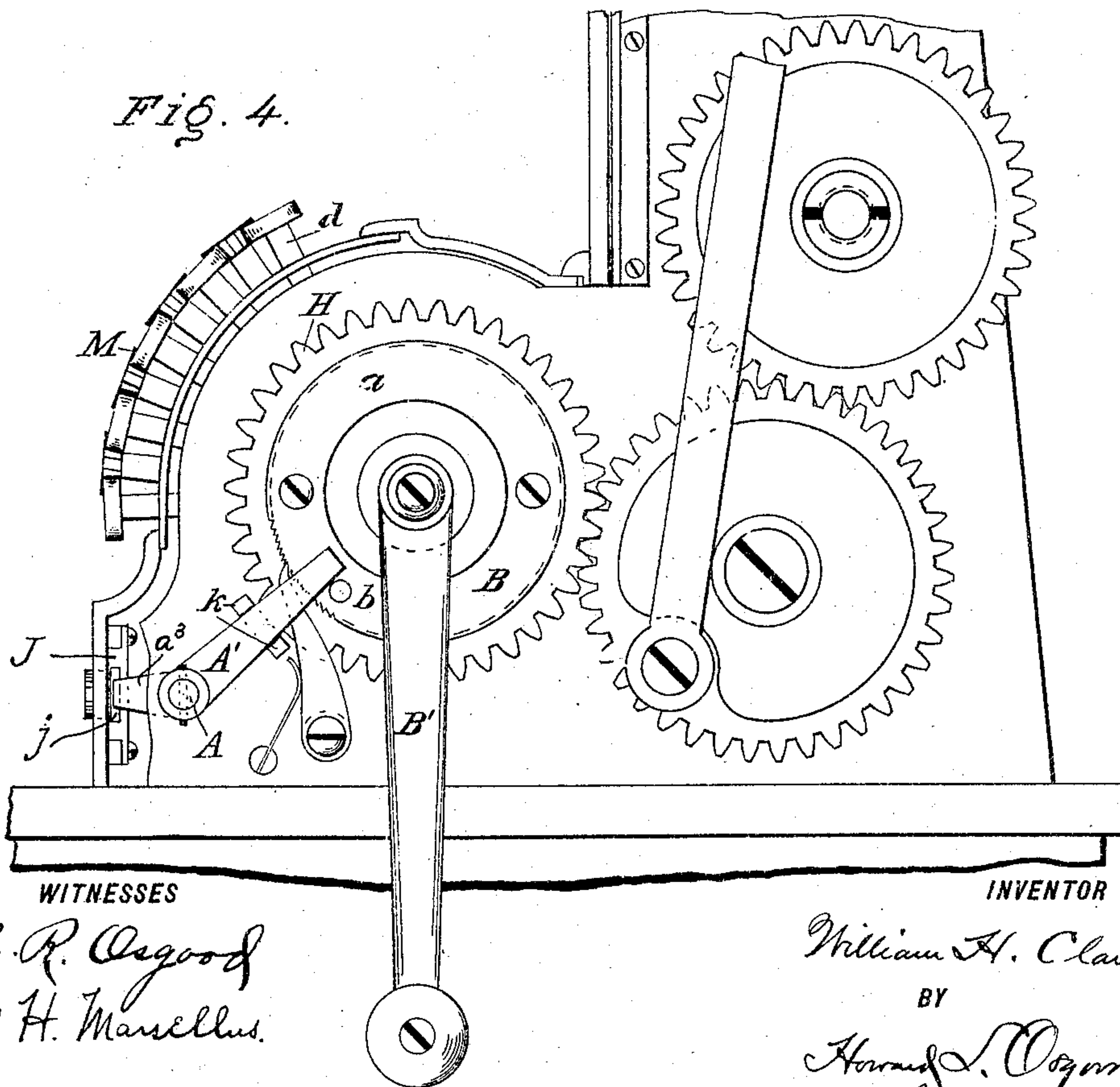


Fig. 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## LOCKING MECHANISM FOR CASH-REGISTERS.

SPECIFICATION forming part of Letters Patent No. 773,056, dated October 25, 1904.

Application filed September 25, 1897. Serial No. 653,064. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. CLARK, a citizen of the United States, and a resident of the city of Rochester, in the county of Monroe, in the State of New York, have invented certain new and useful Improvements in Locking Mechanisms for Cash-Registers, of which the following is a specification.

This invention relates to certain new and useful improvements in locking mechanisms for cash-registers; and it consists, substantially, in such features of construction, arrangement, and combinations of parts as are hereinafter set forth.

The invention has reference more particularly to that class of cash-registers in which upon the depression or other manipulation of a key a setting mechanism is actuated representing a value or other characterization of the transaction for the purpose of controlling the subsequent operation of the indicating or the registering mechanism, or both.

Registering-machines of the classes known as "cash-registers" and "computers" are commonly supplied with printing devices whereby a record is produced of each transaction registered by the machine, and in order that the proprietor may be informed of the character of each transaction it is important that a designating-mark may be recorded with the figures showing the amount of the transaction. Such printing devices are so well known that it is deemed unnecessary to illustrate any such device in the accompanying drawings. In many well-known forms of these machines there is a setting mechanism, which among other functions sets the printer, and the printing impression occurs on the subsequent actuation of an operating mechanism, such as a crank-handle and gearing. So in the present device the movement of the movable members or swinging plates C determines the setting of the type in the printer and not only those type corresponding to the keys representing numerals, but also those representing letters or other designating marks, such as "paid out," "paid

in," "charge," "drugs," "cigars," or whatever may be selected as the key sign. In order to control the clerks and to compel them to actuate the special keys characterizing the clerk who conducts the transaction, as by the use of letters, or characterizing the transaction itself, as above explained, the mechanism which actuates the register is locked until the clerk presses an appropriate special key and then only can he operate the machine. It is well known that the clerk usually goes to such a machine having uppermost in his mind the amount of money involved in the transaction which he is conducting. Hence he is apt to forget his duty of recording the characterization of the transaction by pressing the appropriate key. If he actuates the numeral-key alone, he finds that the machine is inoperative and cannot fail to remember that he must also actuate the appropriate special or characterizing key, thus indicating and recording the amount and characterization of the transaction.

The object of this invention is to prevent the actuation or operation of the whole or of certain portions of the cash-register until after the manipulation of special devices or appliances, to simplify the construction, and to render the working or operation of said special devices or appliances more effective in the performance of their particular function.

The invention also has certain other objects in view, substantially as fully appears hereinafter, when taken in connection with the accompanying drawings, in which—

Figure 1 is a front view in front elevation, partly broken away and partly in section, of one form of key mechanism having my improvements embodied therein. Fig. 2 is a top or plan view, also partly in section, parts of the device shown in Fig. 1 being omitted, and thus showing more clearly the construction and arrangement of the particular form of locking device herein set forth. Fig. 3 is a transverse sectional view on the line 3 3 of Fig. 1, partly in elevation; and Fig. 4 is an end elevation showing one form of mechan-



ism for operating or actuating the devices which control and effect the operation of an indicating and registering mechanism.

I have preferred to show my invention in connection with a simple and effective form of key mechanism, such, for instance, as is shown and described in my Letters Patent No. 596,360, dated December 28, 1897. No alteration of this key mechanism is needed for the addition of the mechanism of the present invention.

In the accompanying drawings I have shown two banks L and M of indicating numeral-keys and one bank D of letter-keys, and, as described in the former application referred to, whenever any one of the said keys is depressed the setting mechanism is brought automatically to a position to set the type in the printer and to permit the indicating or registering mechanisms, or both, to be operated to an extent or degree corresponding to the value or character represented by the key depressed. For the purposes above mentioned I employ a locking device for engaging the operating mechanism which actuates the indicating and registering mechanisms and produces the printing impression upon the application of suitable power. As herein shown, the said locking device comprises a longitudinally-movable rod or bar A, supported in suitable bearings, (indicated at *a*,) and provided at its outer end with an arm A', which normally and directly engages a stop-pin *b*, projecting from the side of the disk or ratchet-wheel B, which forms part of the operating mechanism, said mechanism also including a crank B'. Normally the said arm A' engages the pin *b* in the path of the movement of the latter, and consequently whenever it is required to release the locking devices it is necessary that the said longitudinally-movable rod or bar A be moved endwise, so as to carry the arm A' out of the path or plane of movement of said pin *b*. Different means may be used for imparting to the rod the necessary longitudinal movement—as, for instance, a cam or other suitable device, which at the proper time is made to engage the rod at any point within its length. Preferably, however, I employ a swinging plate C, which is provided on its side with a cam C', having a forward inclined end *c'*, which engages with an arm A<sup>2</sup>, carried by a sleeve *a*<sup>2</sup>, secured to the rod or bar A in any suitable manner. As herein shown, Fig. 3, the said plate C is engaged normally by a pawl *c*<sup>0</sup>, resting in a notch *c* in the edge of the plate, so that it becomes necessary as the first operation to release the plate in order to enable the same to be moved or swung so as to effect the proper longitudinal movement of the locking-bar. The release of the plate may be effected in different ways—as, for instance, by means of suitable devices operated by a key; but in the present instance, as in my aforesaid patent, I have shown a bank of keys D, each

of which is provided with a stem *d*, working in a suitable supporting-bracket upon the base of the machine. The inner end of each stem *d* is provided with a lateral pin or projection *d'*, which engages a cam projection *e*, formed in the rounded edge of one or two movable plates E, which have an independent and simultaneous movement on the axis B<sup>2</sup> of the swinging plate C. One of said movable plates E is normally held against a lug *e'* upon the supporting-bracket F by means of a spring *e*<sup>2</sup>, and a pin *e*<sup>3</sup> on the said plate E engages at its lower end an arm *e*<sup>3</sup> of a bell-crank lever C<sup>3</sup>, of which the pawl *c*<sup>0</sup> is the other arm. When a key-stem is depressed, its pin *d'*, pressing on the cam *e*, shifts the bell-crank lever C<sup>3</sup> and disengages the pawl *c*<sup>0</sup> from the notch in the swinging plate C, thus leaving the plate free to swing. As soon as this movement is effected the swinging plate C is operated to move upwardly in the direction of the arrow marked 1 in Fig. 3 to the extent permitted by the particular key depressed, and in this movement of the swinging plate the cam C' thereon is carried around in such manner as to exert a pressure upon the arm A<sup>2</sup>, carried by the longitudinally-movable rod or bar A, and consequently the latter bar is moved endwise in the direction of the arrow shown in Fig. 2 to an extent sufficient to release the operating-handle.

The rod or bar A and its arms A' and A<sup>2</sup> are mechanically only a single bar which is moved by the cam C' on the swinging plate C transversely to the plane of movement of said plate upon the operation of any of the key-stems *d* to release the handle or motor by moving out of the path of motion of the pin *b*. The operating devices by suitable connections restore the parts to their original positions, and both the swinging plate C and the operating mechanism devices will again become engaged and locked as before, and thus are in readiness for the next operation. As a means for restoring the longitudinally-movable rod to its original position I employ a mechanism which normally tends to move the rod in the opposite direction to the motion thereof caused by the cam C'. In the present embodiment of my invention it is a suitable spring *a'*, exerting a pressure between the sleeve *a*<sup>2</sup> on the rod A and a stationary part of the machine. In order to throw the swinging plate C upward, as well as to give said plate a normal tendency to move in an upward direction, I employ a coiled spring G, attached to the frame X of the machine and attached also to a link H, pivoted to an arm H', connected to the plate C and to a parallel arm H<sup>2</sup>, which latter is of substantially the same length as the arm H' and swings on a shaft H<sup>3</sup>, parallel to the axis of movement of the swinging plate C. The spring G is attached to the link H at a point distant from



its attachment with the frame X and tends to pull the link and swing the arm H', and with it the plate C, in the direction of the arrows 1 and 2 in Fig. 3. The spring G is normally thus under tension, and therefore as soon as the swinging plate is released the action of the spring is to cause the plate to be carried upwardly in an obvious manner. Each one of the keys is intended to permit a different degree of upward movement of the said swinging plate C by a suitable stop mechanism, as shown in the aforesaid patent, and said keys may bear different characterizing marks to indicate the origin or character of the different transactions made by the salesman. I have not considered it necessary to show or describe particular devices for stopping the plate C at different points in its swing, according to the value or designation of the operated key, for many such devices are well known to those skilled in this art. It is obvious that instead of resorting to the use of the said swinging plate I may effect the engagement and release of the locking device for the operating mechanism by the direct action of the keys themselves; but for various reasons the use of the plate C is preferred, inasmuch as the same may be made to constitute a part of the setting mechanism, which, as before stated, must be released in the first instance before the actuating devices of the cash-register can be operated.

It is often desirable that the locking devices be capable of disengagement temporarily or permanently from the operating mechanism, and for this purpose I employ in the casing of the machine a suitable lock J, having a bolt *j*, which when projected by means of a suitable key is forced against an arm *a*<sup>3</sup> on the rod or bar A, and thus holds the arm A' out of the path of the pin *b* until the bolt or lock is withdrawn. Some means are necessary for preserving the direct longitudinal movement of the said locking rod or bar, and for this purpose I employ a guide or keeper K, which guides the locking-arm A' on the end of the bar A and prevents the rod from turning. When the said bar A is held in its normal position by the action of its spring *a*', the said locking-arm maintains its locking engagement and prevents any movement of the operating mechanism until the rod or bar has been forced outwardly into the position shown in dotted lines in Fig. 2. The said guide or keeper K is fastened to a side frame Y and has parallel arms *k*, between which the locking-arm A' of the rod A is guided, so that any strain exerted on the mechanism in an attempt to turn the operating-handle B' will be borne by the said guide or keeper, particularly because it is near to the pin *b*. In this way the operating mechanism is not liable to disarrangement and true and perfect work or operation thereof is practically assured. It will be seen that the arms

*k* of the said guide or keeper are of length sufficient to permit the maximum movement of the locking rod or bar, while still guiding the arm A' between them. In this way even when the locking-arm on the bar has been disengaged from the stop on the wheel B the direct movement of the locking arm or bar is still preserved, and no turning thereof can take place which would be apt to render the locking device ineffective for the purpose for which it is used.

The locking device is connected only with the bank D of special keys; but the numeral-banks L and M are ineffective for indicating, printing, or registering in a cash-register of the class described until one of the keys in the bank D has been operated.

It will be understood that various modifications can be made in the construction of the several parts herein described, and in this respect I do not wish to be understood as limiting myself to the precise details herein set forth.

Several of the parts shown in the drawings form no part of the present invention and are fully illustrated and described in my aforesaid patent, to which reference is made for a detail description of said parts.

What I claim is—

1. In a cash-register, the combination with an operating mechanism, of a key, a register-setting member actuated upon the operation of said key, a stop on the operating mechanism and a movable bar actuated by said movable member to be moved into and out of the path of the stop.

2. In a cash-register, the combination with an operating mechanism, of a key, a movable member, means for engaging and releasing said movable member, and a longitudinally-movable rod engaging said operating mechanism and actuated by the movable member to release said operating mechanism upon the operation of the key.

3. In a cash-register, the combination with an operating mechanism, of a swinging plate normally tending to move in one direction, a key, means coöperating with said key for engaging and releasing said plate, and a longitudinally-movable rod directly engaging said mechanism and actuated upon the release of said swinging plate to release the operating mechanism.

4. In a cash-register, the combination with an operating mechanism, of a key, a swinging plate provided with a cam and normally tending to move in one direction, means for engaging and releasing said swinging plate, and a longitudinally-movable rod directly engaging the operating mechanism and actuated by said cam to release said mechanism.

5. In a cash-register, the combination with an operating mechanism, of a series of keys, a swinging plate provided with a cam and arranged to be released by said keys, means for



moving the plate when released, and a longitudinally-movable rod or bar directly engaging said operating mechanism and actuated upon the movement of said swinging plate to  
5 release said operating mechanism.

6. In a cash-register, the combination with an operating mechanism, of a swinging plate normally engaged in a locked position, a key, means for releasing said plate upon the ma-  
10 nipulation of said key and a longitudinally-movable bar directly engaging the operating mechanism and actuated upon the release of the swinging plate to release said operating mechanism.

15 7. In a cash-register, the combination with an operating mechanism, of a key; a movable register-setting member actuated upon the operation of the key; a stop connected to the operating mechanism; a movable bar provided  
20 with an arm engaging said stop; and means for imparting movement to the bar from said movable member.

8. In a cash-register, the combination with an operating mechanism, of a key, a movable  
25 member, a longitudinally-movable locking-bar for said mechanism actuated by said movable member and means for normally retaining said bar in locking position independently of said movable member.

30 9. In a cash-register, the combination with an operating mechanism, of a key, a movable member provided with a cam, a longitudinally-movable rod directly engaging said operating  
35 mechanism and actuated by said cam to release the operating mechanism upon the operation of the movable member and means for retaining said bar in inoperative position.

10. In a cash-register, the combination with an operating mechanism, of a key, a longi-  
40 tudinally-movable rod provided with an arm engaging the operating mechanism, means for actuating the rod to release the operating mechanism and means embracing said arm for holding the same in the proper relation to the  
45 operating mechanism.

11. In a cash-register, the combination with a series of keys, of a swinging register-setting plate normally tending to move from normal position, a latch for said plate arranged  
50 to be operated by the keys, an operating mechanism, a latch for the said mechanism and means carried by the swinging register-setting plate for operating the latter latch.

12. In a cash-register, the combination with  
55 a series of keys, of a movable register-setting member normally tending to move from normal position a latch for said member arranged to be operated by the keys, a cam carried by said register-setting member, an oper-  
60 ating mechanism, a latch for said mechanism and connecting means for operating the latter latch through the medium of the cam.

13. In a cash-register, the combination with a series of keys, of a movable register-setting  
65 member normally tending to move from nor-

mal position, a latch for holding said member in normal position arranged to be operated by the keys, an operating mechanism, a latch for said mechanism and means carried by the  
movable register-setting member for operat- 70 ing the latter latch.

14. In a cash-register, the combination with a series of keys, of a swinging register-setting plate, a spring tending to normally draw the  
plate from normal position, a latch for the 75 plate arranged to be tripped by the keys, an operating mechanism and a latch for the said mechanism arranged to be operated by said plate.

15. In a cash-register, the combination with  
80 a series of keys, of an operating-handle, a latch for said handle, means intermediate the keys and said latch whereby the latter is tripped upon the operation of a key, and de-  
85 vices for permanently holding the said means in such position as to hold the latch tripped.

16. In a cash-register, the combination with a series of keys, of an operating device, a latch  
for said device, means intermediate the keys 90 and said latch whereby the latter is tripped upon the operation of a key, devices for automatically returning said means to normal position upon each operation of the machine and a lock for locking said means permanently  
95 in its latch-tripping position so that the machine may be operated without first depressing one of the special keys.

17. In a cash-register, the combination with a series of keys, of a movable member released  
by the keys, an operating mechanism, a latch 100 for said mechanism, means connected to the latch and operated by the movable member, and a lock for holding said means out of operative position.

18. In a cash-register, the combination with  
105 a series of amount-keys, of a series of special keys, an operating device, a latch for said device, means released by the special keys for tripping said latch, and a lock for locking said  
110 means in such position that the latch is held in its tripped position so that the machine may be operated without first depressing one of the special keys.

19. In a cash-register, the combination with  
115 a series of keys, of a register-setting member, an operating mechanism, a latch for said mechanism, a rod for operating said latch arranged to be actuated by the setting member, and means for locking the rod to hold the latch  
120 out of operative position.

20. In a cash-register, the combination with a series of keys, of a register-setting member,  
an operating mechanism, a latch for said mech- 125 anism arranged to be operated by said setting member, and means for permanently locking the latch out of operative position.

21. In a cash-register the combination with an operating mechanism including a crank-  
handle, of a differentially-movable register- 130 setting member, a series of keys arranged to



release and subsequently arrest the register-setting member, a lock for the crank-handle, and means for operating said lock controlled by said differentially-movable setting member.

22. In a cash-register the combination with an operating mechanism including a crank-handle, of a differentially-movable register-setting member, a latch for said member, a series of keys arranged to operate said latch and arrest the member according to the value of the key operated and a latch for the operating-handle controlled by the movable register-setting member.

23. In a cash-register the combination of

an operating mechanism including a rotary crank-handle, a differentially-movable register-setting member spring-driven from its normal position, a latch for holding said member in its normal position, a movable member for operating said latch, a series of keys arranged when operated to actuate said latter member and to also arrest the register-setting member and a latch for the rotary handle controlled by the register-setting member.

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Witnesses:

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