(No Model.) 5 Sheets—Sheet 1.

F. J. PATTERSON & C. D. GRIMES.

CASH INDICATOR, REGISTER, AND RECORDER.

No. 414,440. Patented Nov. 5, 1889.

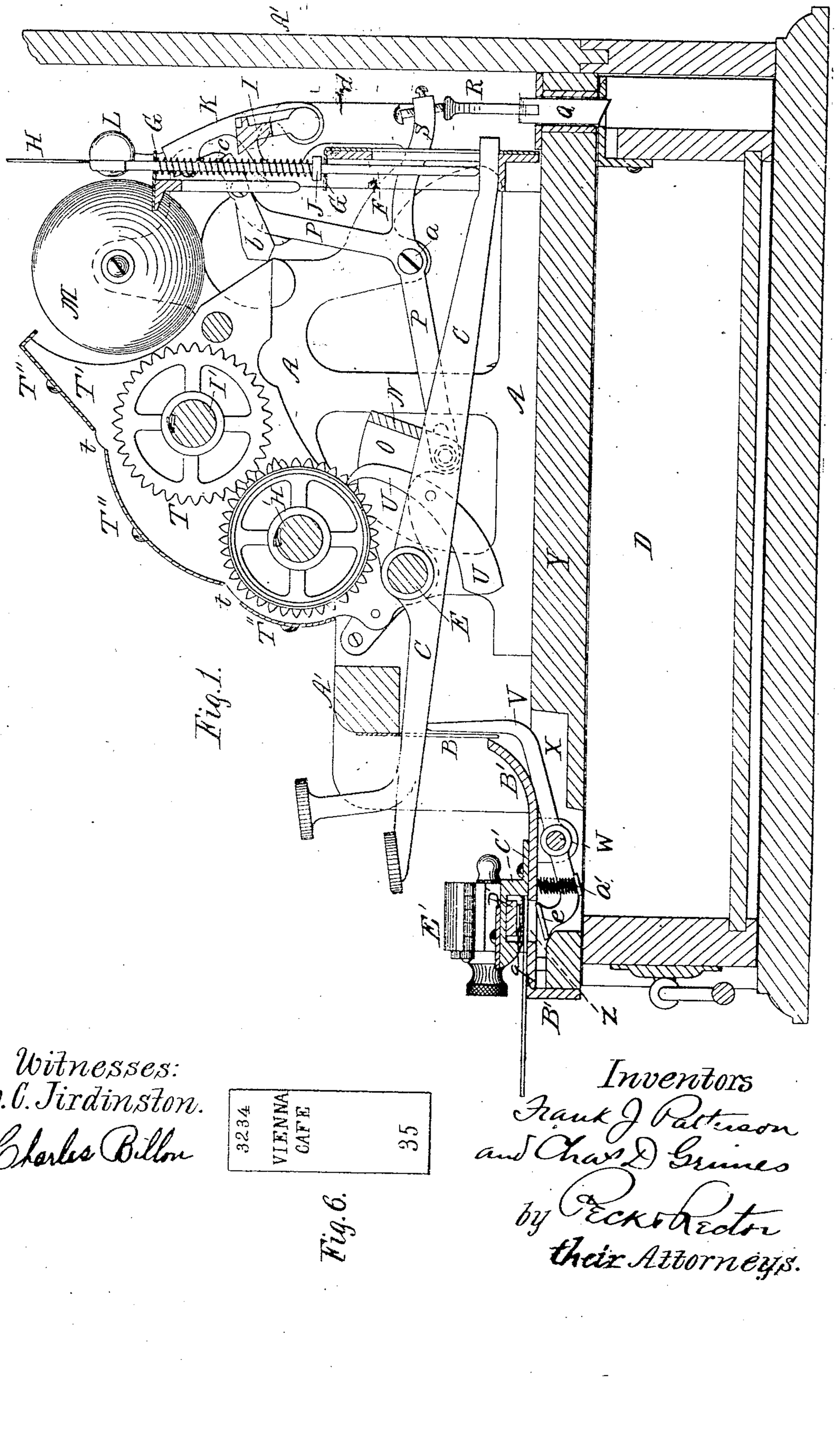

Fig. 1.

Witnesses:
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Charles Billon

Fig. 6.

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(No Model.) 5 Sheets—Sheet 2.

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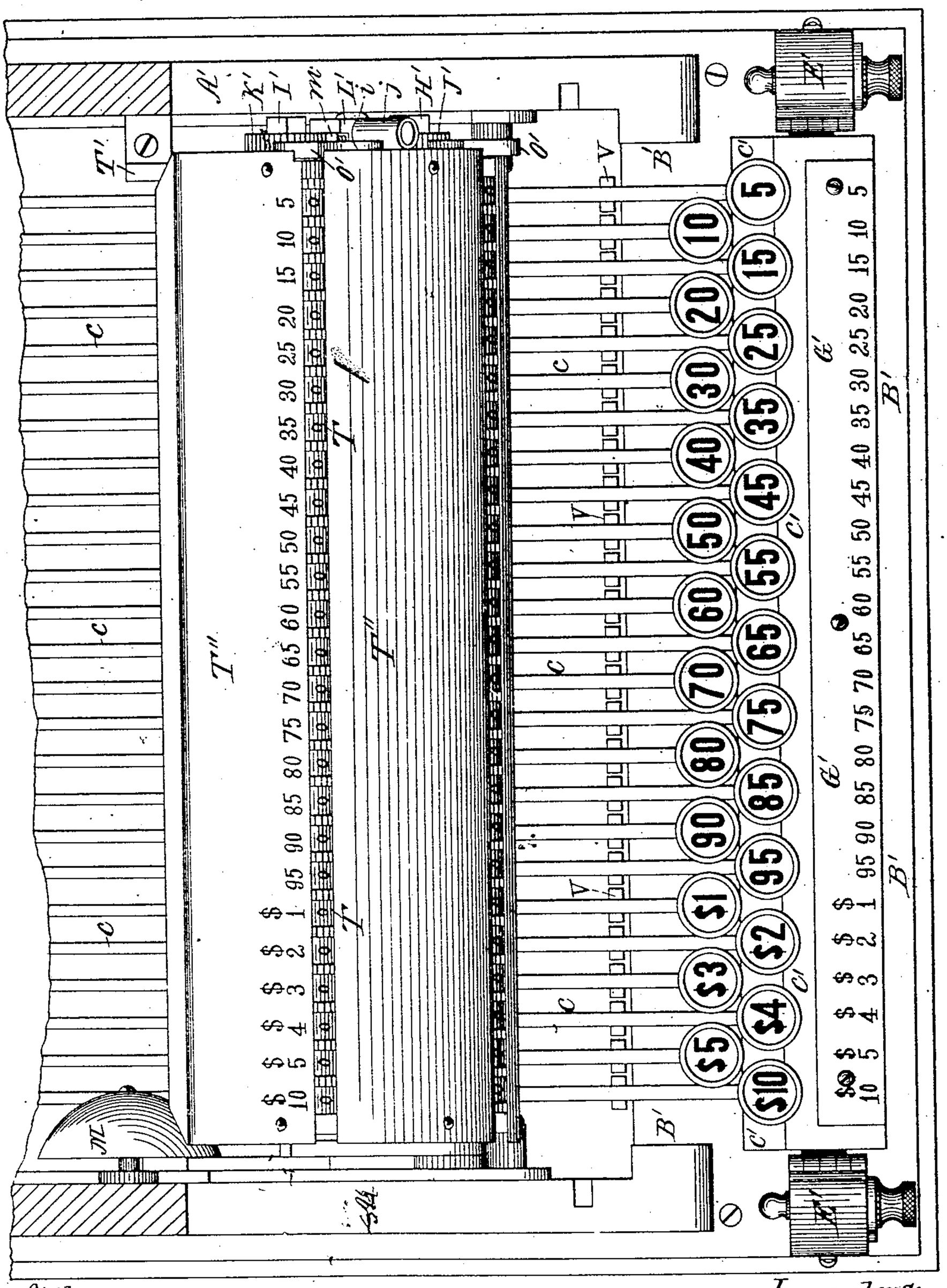

Fig. 2.

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F. J. PATTERSON & C. D. GRIMES.

CASH INDICATOR, REGISTER, AND RECORDER.

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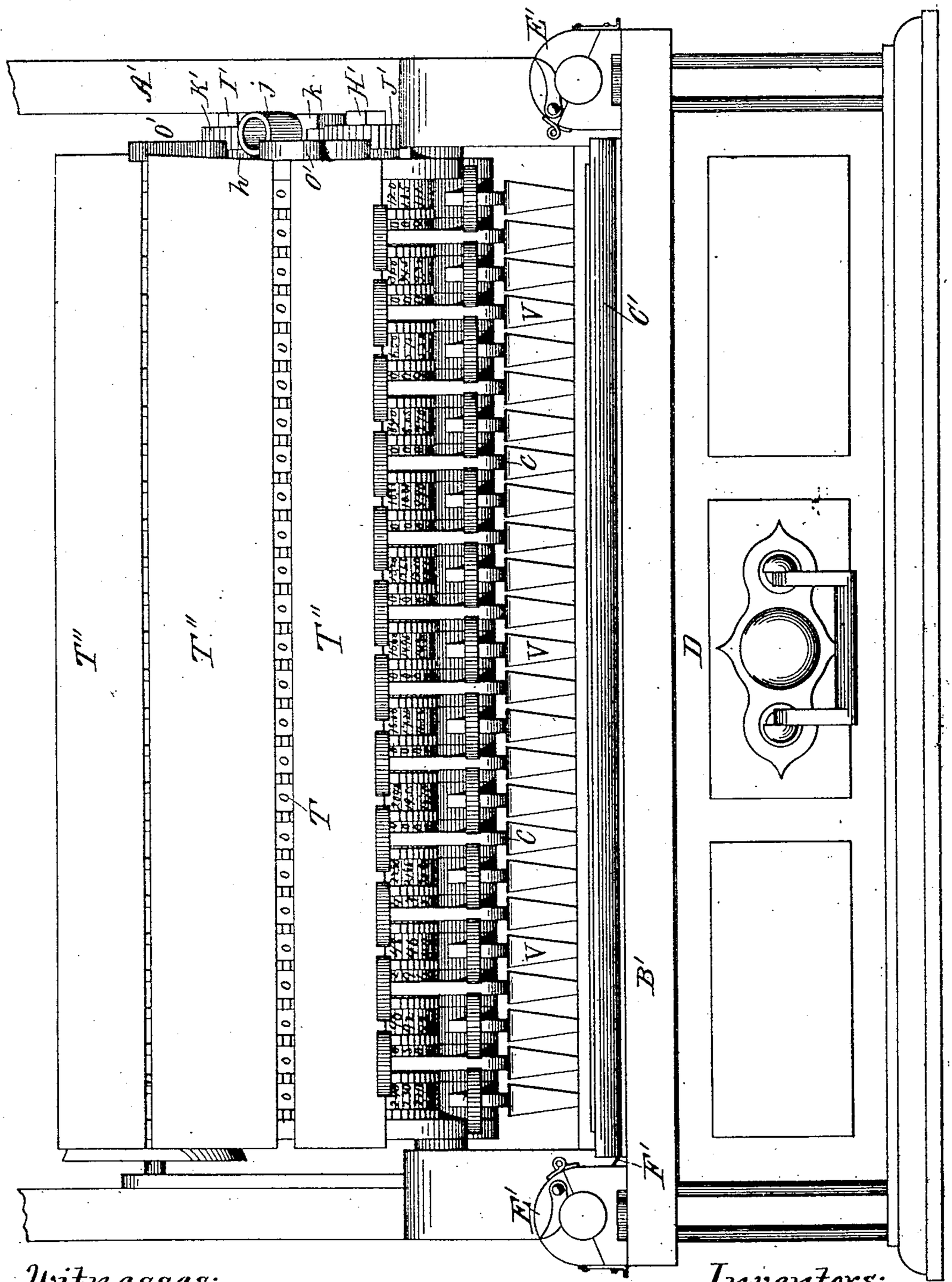

Fig. 3

Witnesses:
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(No Model.) 5 Sheets—Sheet 4

F. J. PATTERSON & C. D. GRIMES.

CASH INDICATOR, REGISTER, AND RECORDER.

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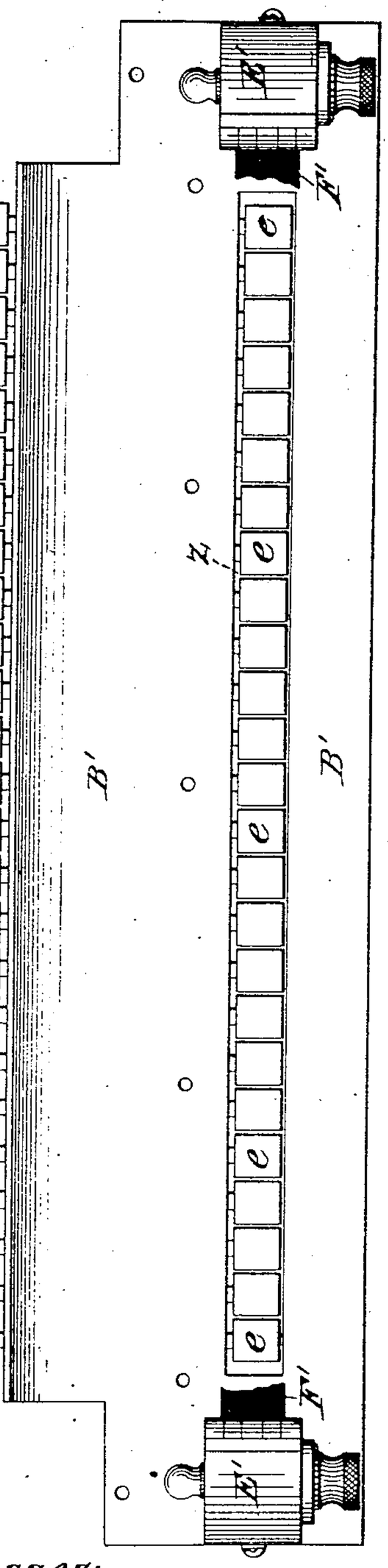

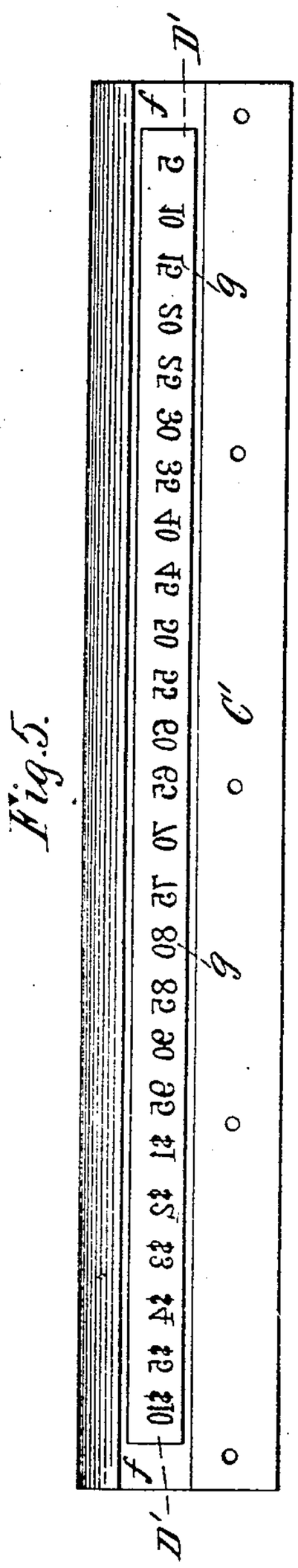

Witnesses:
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(No Model.) 5 Sheets—Sheet 5.

F. J. PATTERSON & C. D. GRIMES.

CASH INDICATOR, REGISTER, AND RECORDER.

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Fig. 7.

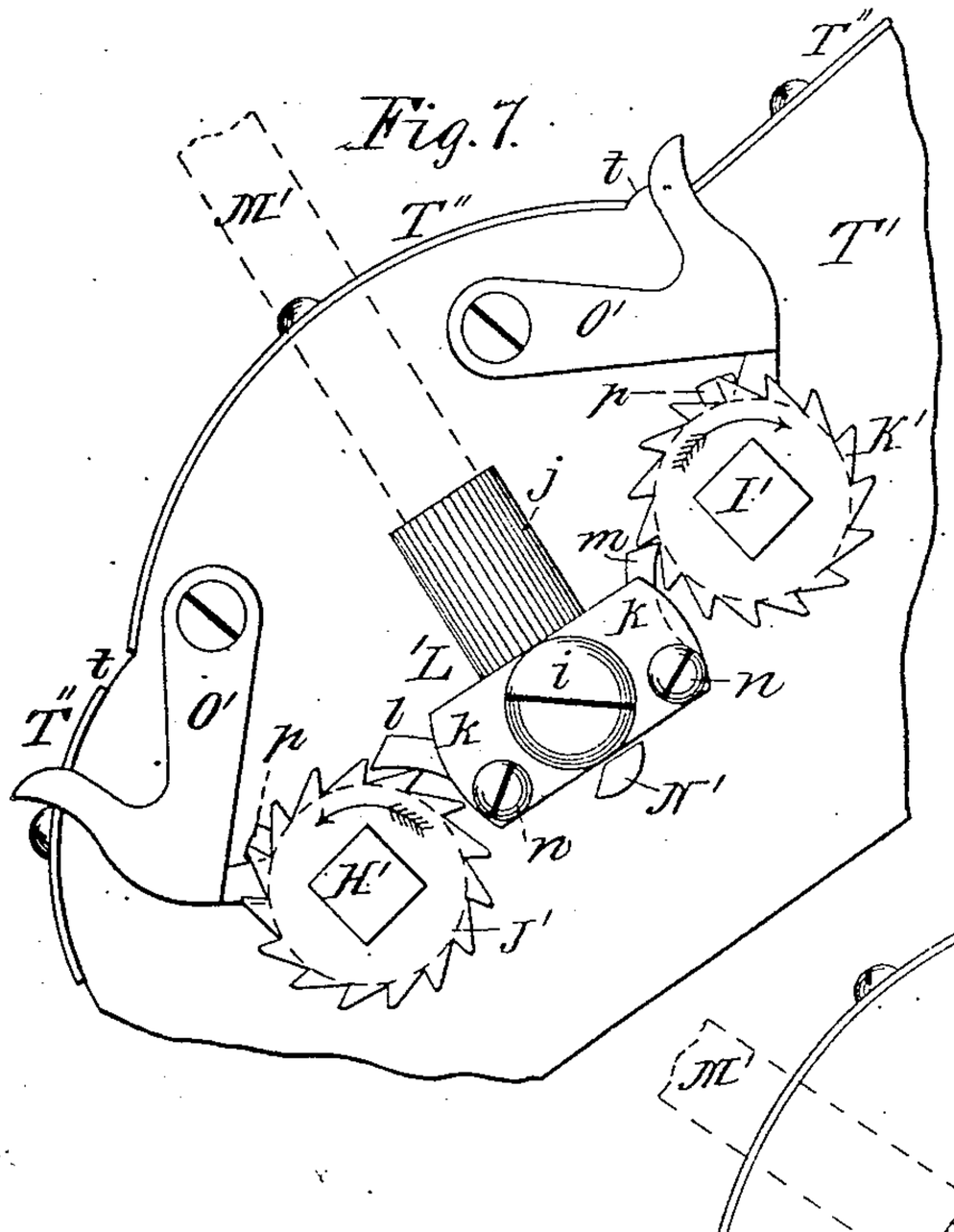


Fig. 9.

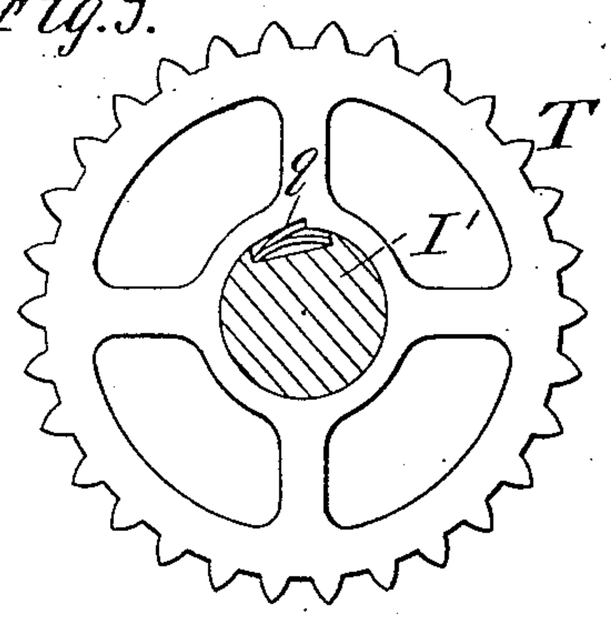
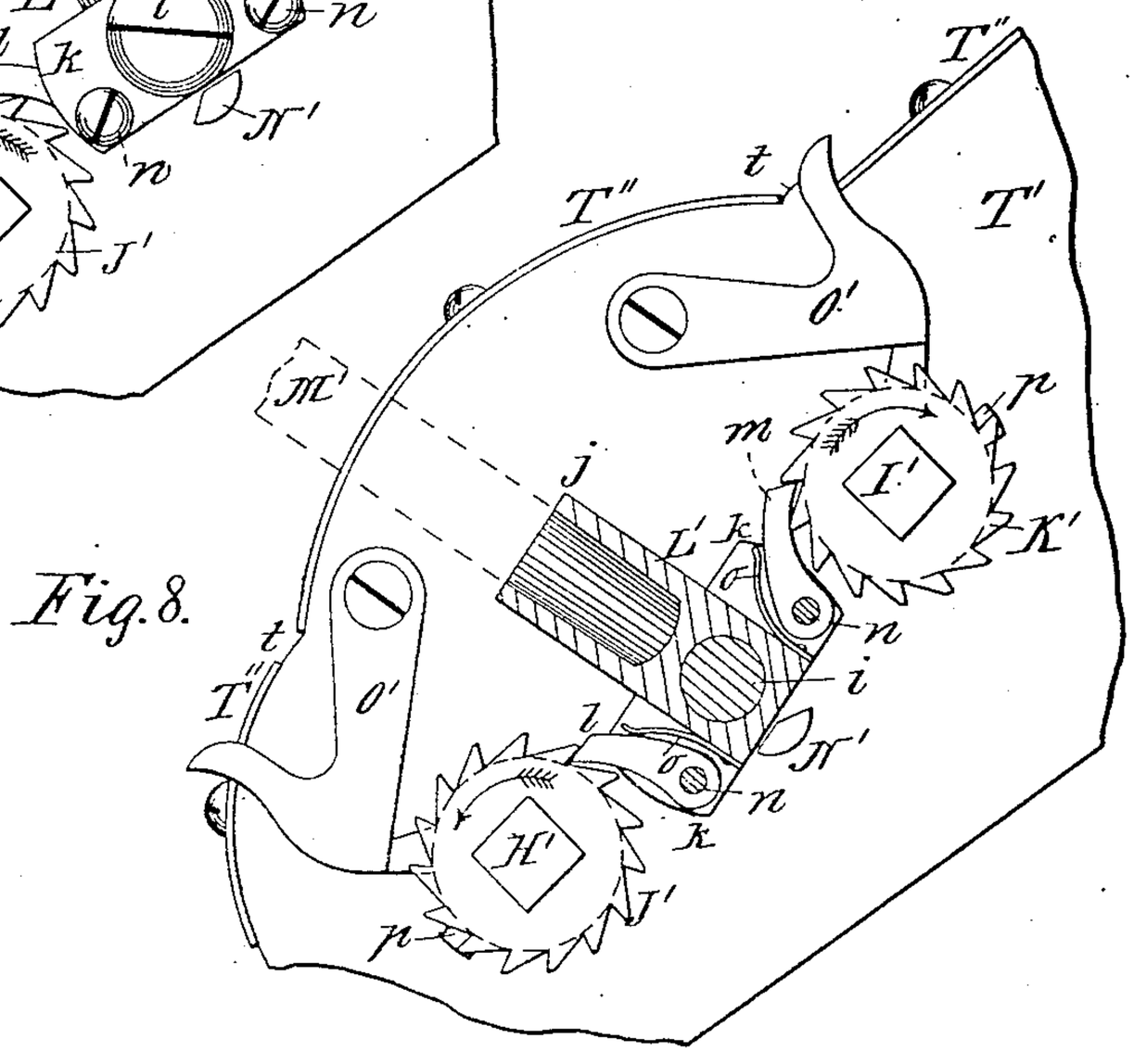


Fig. 8.



Witnesses:
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Charles Billon.

Inventors:
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and Chas D Grimes
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their Attorneys.

UNITED STATES PATENT OFFICE.

FRANK J. PATTERSON AND CHARLES D. GRIMES, OF DAYTON, OHIO, ASSIGNORS TO THE NATIONAL CASH REGISTER COMPANY, OF SAME PLACE.

CASH INDICATOR, REGISTER, AND RECORDER.

SPECIFICATION forming part of Letters Patent No. 414,440, dated November 5, 1889.

Application filed March 11, 1889. Serial No. 302,751. (No model.)

To all whom it may concern:

Be it known that we, FRANK J. PATTERSON and CHARLES D. GRIMES, both citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cash Registers and Indicators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to that class of machines in which registering and indicating mechanisms are actuated by a series of numbered operating-keys to register the amounts indicated by said keys and expose the same to view on suitable indicating-tablets, and its novelty will be herein set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional side elevation of a cash register and indicator embodying our invention with a portion of the case or cabinet broken away. Fig. 2 is a plan view of the same with the rear portion of the machine broken away. Fig. 3 is a front elevation of the same with the upper portion of the machine broken away. Fig. 4 is a top plan view of the check-printing attachment with the type-plate removed and the inking-ribbon broken away. Fig. 5 is a bottom plan view of the type-plate. Fig. 6 represents a check for use in connection with the printing attachment. Fig. 7 is an enlarged detail end elevation of the resetting mechanism for the registering-wheels. Fig. 8 is a corresponding view in central section of the dog-carrier. Fig. 9 is an enlarged side elevation of one of the registering-wheels with its shaft in section.

The same letters of reference are used to indicate identical parts in all the figures.

The registering and indicating mechanisms of the machine, of the usual or any suitable construction, are supported in a frame-work A and inclosed in the usual case or cabinet A', having at its upper rear portion a longitudinal glass-covered opening, (not here shown,) through which the indicating-tablets are exposed to view upon operation of the keys, provided at its lower front portion with a slotted plate B, through which project the forward ends of the operating-keys C, and having in its lower portion a compartment in which is fitted the money drawer or till D. The operating-keys C are in this instance shown as pivoted on a horizontal shaft E, extending across the front portion of the machine, and carrying on their rear ends the vertical tablet-rods F, suitably guided in the cross-pieces G, and provided at their upper ends with figured indicating-tablets H.

I is the pivoted tablet-supporting wing actuated, as hereinafter described, to engage the shoulders J on the tablet-rods to hold the latter in their elevated positions, with their tablets exposed to view.

K is an upward extension of the wing I, carrying the hammer L, arranged to strike the gong M. This gong-hammer and the wing I are simultaneously actuated by the operation of any key in the usual manner by the following means:

N is a vibrating frame hung by side arms O on the shaft E and extending across the tops of all the keys C, so as to be lifted by the operation of any one of them.

P is a bell-crank arm pivoted to the frame-work A, as at *a*, having its front end loosely connected by slot and stud to the arm O of the vibrating frame and carrying at its upper rear end a pivoted tripping-dog *b*, arranged to engage a wiper-block *c* on the upward extension K of the wing I. When this bell-crank arm is actuated by the operation of any key, its dog *b* presses back the extension K, and with it the gong-hammer L and the wing I, until, the shoulders J on the tablet-rods having passed above the top of the wing, the dog *b* slips past the wiper-block *c* and a spring *d* resets the wing to cause it to engage the shoulder of the elevated tablet-rod and the hammer to strike the gong.

Q is the drawer-locking bolt arranged in suitable guides at the rear of the machine and actuated to release the drawer upon the operation of any key, through the medium of the pivoted lever R, which is depressed by the rear extension S of the bell-crank arm P in the usual well-known manner.

T are the register-wheels, supported in the

usual supplemental frame T′ and arranged in two banks, one above the other, those of the lower bank being actuated by the dogs U, pivoted to the keys C, and those of the upper bank being turned by those of the lower bank in the ordinary way.

T″ are the usual covering-plates for the registering-wheels, between which are the reading-openings *t*.

This much of the machine is of the well-known construction, and is here illustrated and described for the purpose of explaining the operation of our present invention as applied thereto.

The first feature of this invention relates to a novel check-printing attachment, illustrated in Figs. 1 to 5.

In the use of machines of this class for certain purposes it is desirable that means be provided for printing on a check or ticket the amount of each key as it is operated, so that at the end of a given time the total amount registered in the machine will correspond with the total amount indicated on a series of checks which have been printed by the operation of the keys. Heretofore, in the provision of means for this purpose, the types have usually been secured directly to the under sides of the front ends of the keys and the inking-ribbon and other parts of the printing mechanism located immediately beneath the keys. This arrangement is objectionable, for the reason, among others, that access to it was somewhat inconvenient, owing to the fact that the check to be printed had to be inserted directly beneath the key and often some distance in rear of its front end, and this inconvenient arrangement was made necessary because the types were secured directly to the keys and the other parts of the mechanism had to be arranged in proper relation thereto.

One of the advantages of our present invention consists in the interposition of pivoted levers or other suitable connecting or actuating devices between the keys and printing mechanism, which enables us to place the latter on the front edge of the base of the cabinet, or in other desirable position out of the way of the front ends of the keys.

As illustrated in the accompanying drawings, Fig. 1, V are a series of levers pivoted on a shaft W, extending across the front portion of the machine, in a recess X in the upper part of the base Y of the case or cabinet. The rear ends of these levers extend back under the operating-keys C, and have their rear ends bent up toward the keys and arranged one immediately beneath each of the keys. The front ends of the levers V are also bent upward, and when the rear ends of the levers are depressed by the operation of the keys their front ends play up through a longitudinal slot Z in a metal supporting-plate B′, secured upon the front upper side of the base-piece Y, and covering the recess or cut-out portion X, and having its rear edge curved upward against the slotted plate B, through which the keys project. The bent-up front ends of the levers V are provided with flat stamping-plates *e*, for a purpose to be presently explained. Suitable springs—in this instance coiled springs *a′*—interposed between the plate B′ and the portion of the levers V in front of their pivotal shaft W, serve to hold the front ends of the levers depressed and their rear ends elevated against the under sides of the keys C, as shown in Fig. 1. Secured upon the plate B′ is a type-supporting plate C′, Fig. 5, having a longitudinal recess *f* on its under side and immediately over the slot Z in the plate B′. In this recess is secured the type-bar D′, bearing a series of type-figures *g*, corresponding to the figures on the key-buttons and arranged in line therewith. Carried on suitable reels E′ is the inking-ribbon F′, extending lengthwise over the slot Z, and immediately beneath the types *g*. Secured upon the upper front side of the plate C′ is an indicating-plate G′, Fig. 2, bearing a series of figures corresponding to and in line with the types *g* and the finger-buttons of the keys. The front side of the plate C′ is curved or beveled inward from its upper to its lower edge to afford a guide for the easy insertion of the checks or tickets to be printed. It results from this construction and arrangement of the parts that upon inserting the end of a check—such as shown in Fig. 6—beneath the plate C′ and inking-ribbon and in line with one of the figures on the plate G′ and then operating the corresponding key C there will be printed on said check a number corresponding to that on the button of the key operated, while at the same time the registering mechanism will be actuated to add that number to the total registry, and the tablet bearing that number will be elevated and held exposed to view.

Our invention is not limited to the particular construction and arrangement of the various parts of the printing mechanism herein shown and described. For instance, the types, instead of being arranged face downward above the inking-ribbon, might be secured each to its corresponding lever V and the checks to be printed be inserted above the inking-ribbon, as will be readily understood. Again, the upper rear ends of the levers V, instead of terminating beneath the keys, might be loosely pivoted or otherwise suitably connected thereto. Again, where lift-keys are employed instead of the pivoted keys, the front ends of the levers V may be bent downward and arranged above the printing mechanism and their rear ends be connected to the keys and actuated by the latter to print the checks in the same way they are printed in our above-described mechanism, as will be readily understood.

If desired, as a substitute for the printing mechanism, the front ends of the levers V might be provided with sharp-faced types

which would stamp the numbers on the checks without the use of any inking-ribbon.

The next feature of our invention relates to the provision of novel means for turning the registering-wheels back to zero after the amounts registered on them have been noted and it is desired to start the registering anew. This feature is illustrated in Figs. 2, 3, 7, 8, and 9, where the shafts H' I', on which the registering-wheels T are strung, project at one end through the supplemental frame T' and have secured upon their squared ends ratchets J' K', preferably with bosses *h* on their inner faces. Pivoted, as at *i*, between the ratchets is a vibrating dog-carrier L' in the form of a double bell-crank lever whose upper arm *j* is preferably hollow to afford a socket for the end of an operating lever-bar M', (indicated by the dotted lines,) which when not in use may be kept in the till D, and whose projecting arms *k* are slotted to receive dogs *l m*, which are pivoted, as at *n*, between the walls of the slots, and whose outer ends engage with the ratchets J' K', respectively, and are held in contact with said ratchets by springs *o* of any suitable construction.

N' is any suitable stop for limiting the extent of vibration of the dog-carrier.

O' are pivoted gravitating stop-dogs, whose noses rest upon the bosses *h* and engage stop-pins *p*, projecting up from the bosses, when the registering-wheels all show zero through their reading-openings.

As seen in Figs. 1 and 9, the shafts H' I' are recessed to receive dogs *q*, which when the shafts are turned in one direction engage with notches in the bores of the registering-wheels, so as to reset them all by a single rotation of the shafts, but which permit the registering-wheels to be turned in the same direction upon the shafts by the operation of the keys. This feature, however, is old, and forms no part of our present invention, and any other means for causing the shafts to engage with the registering-wheels, when the former are rotated in one direction, and which permit the registering-wheels to be turned in the same direction by the operation of the keys, would answer as well. It results from this construction that upon vibrating the dog-carrier L' on its pivot the dogs cause the rotation of both the shafts H' I' to reset all of the registering-wheels to zero. In action this rotation is alternate, in that while one dog *l* is turning its ratchet the other dog *m* is being drawn back for a fresh engagement with its ratchet. When the pins *p* strike the noses of the locking-dogs O', the operation is stopped, and all the registering-wheels of both banks will be reset to zero.

Having thus fully described our invention, we claim—

1. In a cash register and indicator, the combination, with the operating-keys and registering and indicating mechanism actuated thereby, of a series of types corresponding to the numbers on the key-buttons, and a series of pivoted levers, one for each key and actuated thereby, interposed between said keys and types, substantially as described, whereby upon inserting a check and operating the proper key its number will be registered and indicated and printed or stamped on said check.

2. In a cash register and indicator, the combination, with the operating-keys and registering and indicating mechanism actuated thereby, of a series of levers pivoted in the front portion of the machine, one for each key and actuated thereby, and a series of types at the front ends of said levers and corresponding to the numbers on the key-buttons, substantially as described, whereby upon inserting a check and operating the proper key its number will be registered and indicated and printed or stamped on said check.

3. In a cash register and indicator, the combination, with the operating-keys and registering and indicating mechanism actuated thereby, of a series of pivoted levers whose rear ends extend beneath said keys and are actuated thereby, and a series of types at the front ends of said levers and corresponding with the numbers on the key-buttons, substantially as described, whereby upon inserting a check and operating the proper key its number will be registered and indicated and printed or stamped on said check.

4. In a cash register and indicator, the combination, with the operating-keys and registering and indicating mechanism actuated thereby, of a series of types extending across the front portion of the machine and corresponding to the numbers on the key-buttons, an inking-ribbon for said types, and a series of pivoted levers, one for each key and actuated thereby, interposed between said keys and types, substantially as and for the purpose described.

5. In a cash register and indicator, the combination, with the operating-keys C and registering and indicating mechanism actuated thereby, of the pivoted levers V, the types *g* at the front ends of said levers, and the inking-ribbon F' for said types, substantially as and for the purpose described.

6. In a cash register and indicator, the combination, with the operating-keys, the registering-wheels, the shafts on which they are strung, and means for locking said wheels to the shafts when the latter are rotated in one direction, of ratchets secured upon the ends of said shafts at one side, and an intermediate pivoted dog-carrier provided with dogs engaging said ratchets, whereby upon vibrating said dog-carrier said shafts are rotated and the registering-wheels reset to zero.

7. In a cash register and indicator, the combination, with the operating-keys, the registering-wheels, the shafts on which they are strung, and means for locking said wheels to the shafts when the latter are rotated in one direction, of ratchets secured upon the ends

of said shafts at one side, an intermediate pivoted dog-carrier provided with dogs engaging said ratchets, and stop-dogs arranged to engage projections on said ratchets, whereby upon vibrating said dog-carrier said shafts are rotated and the registering-wheels reset to zero, and the ratchets are arrested by the stop-dogs.

8. In a cash register and indicator, the combination and arrangement, with the operating-keys C, registering-wheels T, the shafts H' I' on which they are strung, and the locking-dogs *q*, of the ratchets J' K, secured upon the ends of said shafts at one side, an intermediate pivoted dog-carrier L', provided with dogs *l m*, engaging said ratchets, the pins *p* upon the ratchets, and the stop-dogs O', substantially as and for the purpose described.

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