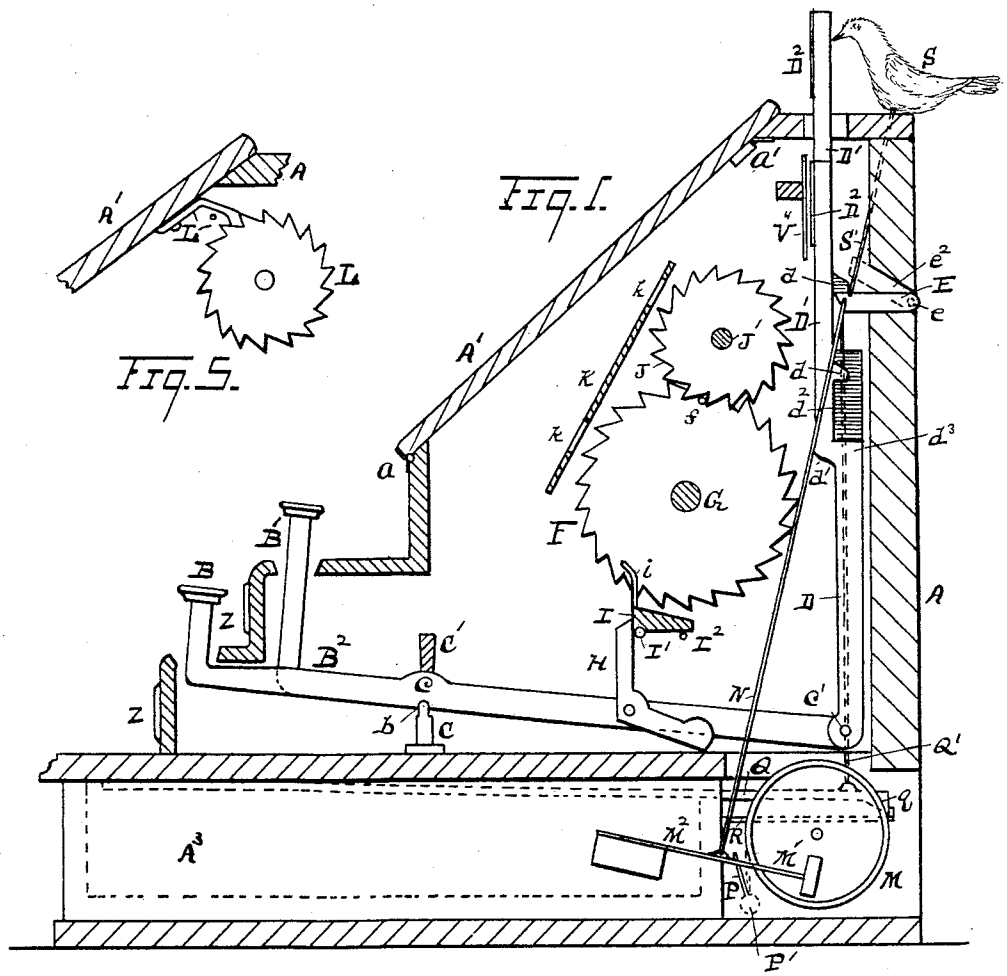
(No Model.) 3 Sheets—Sheet 1.

M. HEINTZ.

CASH REGISTER AND INDICATOR.

No. 479,215. Patented July 19, 1892.



Witnesses
John Schuman.
John F. Miller

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By his Attorney
Newell S. Wright.

(No Model.) 3 Sheets—Sheet 2.

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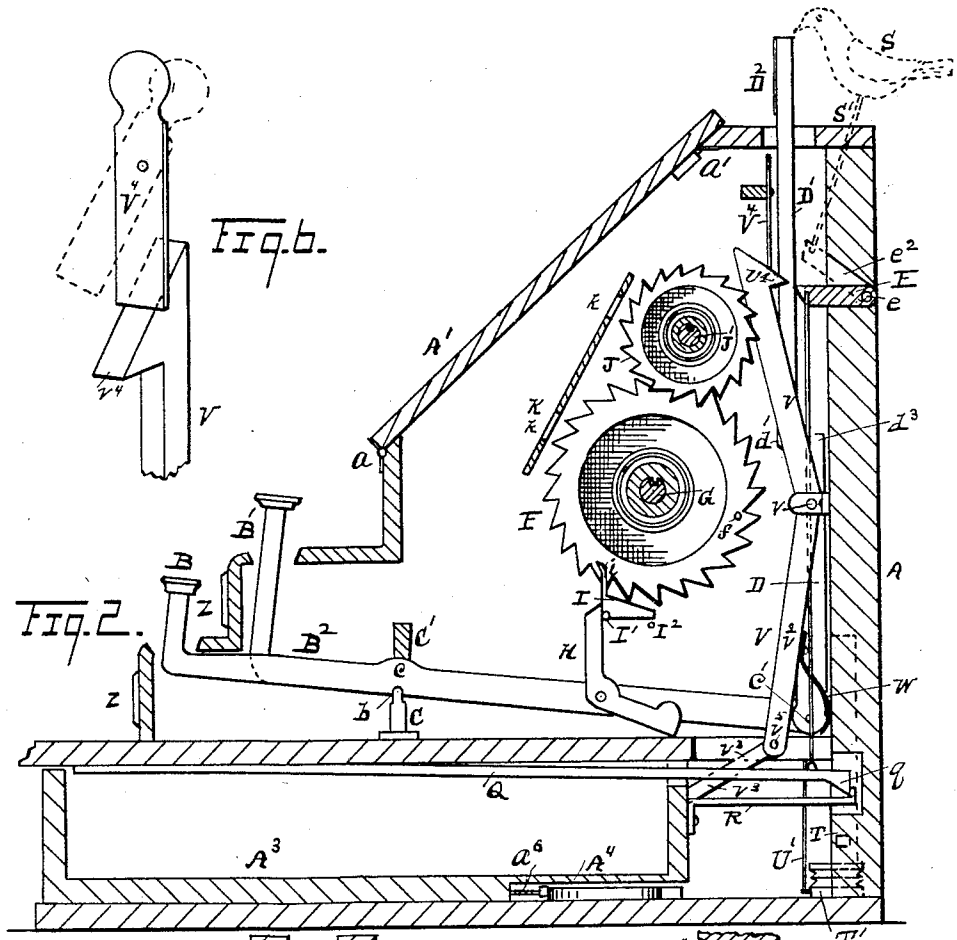

Fig. 6.

Fig. 2.

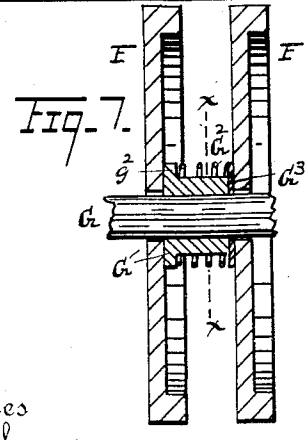

Fig. 7.

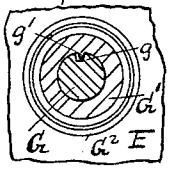

Fig. 8.

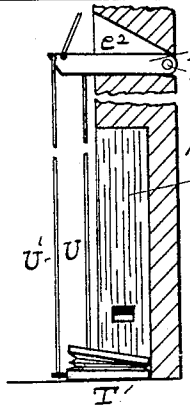

Fig. 10.

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(No Model.) 3 Sheets—Sheet 3.

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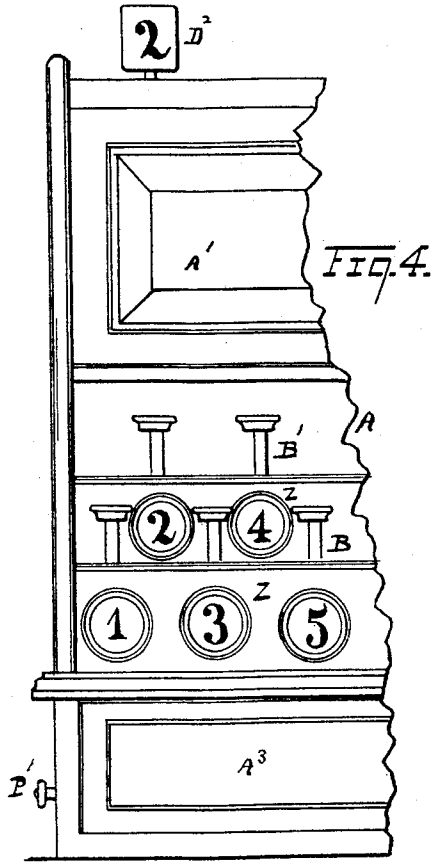

Fig. 4.

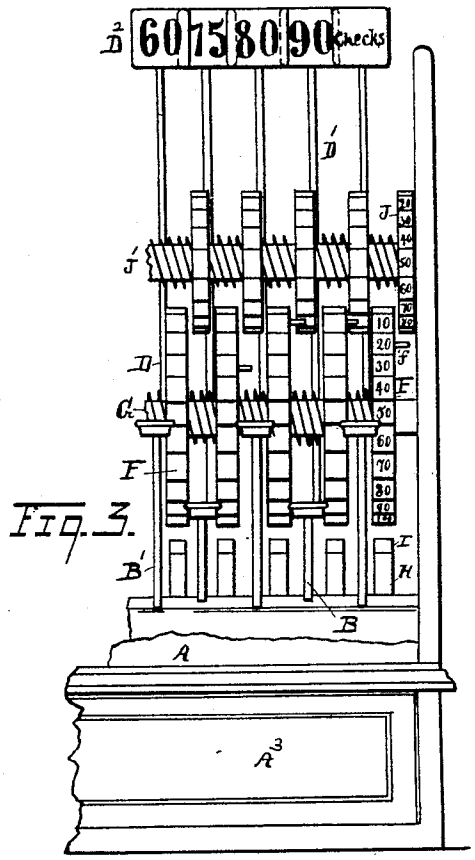

Fig. 3.

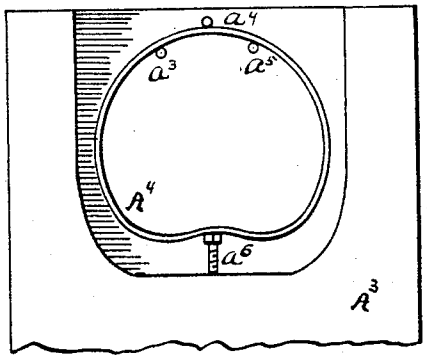

Fig. 9.

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UNITED STATES PATENT OFFICE.

MICHEL HEINTZ, OF DETROIT, MICHIGAN.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 479,215, dated July 19, 1892.

Application filed November 2, 1891. Serial No. 410,637. (No model.)

To all whom it may concern:

Be it known that I, MICHEL HEINTZ, a 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 Indicators; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in cash registers and indicators; and it consists of the mechanism and appliances hereinafter specified and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the interior mechanism, showing the inclosing case in section, the side of the case simply being removed. Fig. 2 is a vertical cross-section through the center of the machine. Fig. 3 is a front elevation of portions of the interior mechanism with the front of the case removed. Fig. 4 is a front elevation of portions of the machine. Fig. 5 is a detail view showing parts in section. Fig. 6 is another detail view of the hook at the upper end of the upright actuating-bar in rear perspective. Fig. 7 is a sectional view showing the construction and arrangement of the registering-wheels. Fig. 8 is a sectional view on the line $x\,x$, Fig. 7. Fig. 9 is an inverted plan view of a portion of the drawer, showing the actuating-spring. Fig. 10 is a view in section showing an enlarged detail view of features forming a part of the cuckoo-actuating mechanism.

I carry out my invention as follows:

In the drawings, A represents the inclosing case of the machine.

A′ is a cover, which may be hinged, as at a, and provided with a lock, as at a'.

B and B′ represent a series of operating-keys, which may be arranged, preferably, as shown in Figs. 1 and 4 for convenience. The series of keys are connected, individually, to operating-levers B^2, which I fulcrum upon an underlying cross-bar C. This may be accomplished by simply recessing the under side of the keys, as indicated at b. A cross-bar C′ is located above the series of levers B^2 to hold said levers down upon the underlying bar C, the levers being arched, preferably, beneath the cross-bar C′, as shown at c, to facilitate the operation of the levers. The rear ends of the operating-levers are jointedly engaged with a series of upright indicator-actuating bars D, as shown at c. Said actuating-bars are provided with a hook, as shown at d, and with an upward extension D′, carrying an indicator D^2. A little below the hook d the bar is preferably set forward, as shown at d', allowing the formation of a recess, as at d^2, below the hook on the rear edge of the bar.

E denotes an oscillatory cleat or cross-bar preferably having a jointed engagement at its rear edge to the case, as shown at e, the case being recessed to receive the rear edge of the cross-piece and permit its operation, as shown at e^2. The forward edge of said cross-piece is forwardly extended and arranged to be tilted upward when struck from beneath by one of the hooks d, thereby allowing the hook to pass above the forward edge of the cross-piece, and upon which a given hook engages, so as to hold up an actuating-bar and expose its indicator when the finger is removed from the corresponding key until released by the striking of another key. This operation of supporting the actuating-bar and so exposing its indicator corresponding to the last key struck and at the same time dropping the bar and its indicator corresponding to the key previously struck will be apparent. It will be observed that the edge of the recess e^2 underlying the cross-piece forms a normal support therefor and also a stop to limit its downward movement.

As shown in Fig. 1, the cross-piece E (shown in full lines) is supporting one of the hooks d, thereupon exposing its corresponding indicator. It will be seen, however, that when the actuating-bar having its hook below said cross-piece is elevated the top of the hook will strike against the edges of said cross-piece, throwing said cross-piece into the position shown in dotted lines in Fig. 1, thereby releasing the former hook supported thereupon, allowing its corresponding indicator to drop. The upper edge of said hook and the front edge of said cross-piece are preferably correspondingly beveled, as shown, to facilitate this result.

To register each operation of the machine and the corresponding transaction, I provide a series of primary toothed registering-wheels F, mounted upon a shaft G. These wheels are respectively operated by a pawl H, engaged upon each of the operating-levers B^2. From Figs. 1 and 2 it will be evident that when a given key is depressed the opposite extremity of its corresponding lever is elevated, carrying upward the corresponding bar D, also throwing upward the corresponding pawl into engagement with the corresponding registering-wheel and throwing it over the distance of one notch. A guide-bar I is located at the rear of the upper end of the pawl, said guide-bar having a tilting engagement upon a cross-rod I′, a stop I^2 limiting its downward movement. Numerals are on the periphery of the wheels F, as shown. Said wheels are also each provided with a pin *f*. The guide I is also provided with a finger *i*, extended upward alongside the wheel F. It will be seen that as the wheel F revolves the pin *f* will ride over the finger *i*, the guide-bar tilting to let the pin pass thereover. On a reverse movement of the wheel F, however, as shown, when it is desired to set the wheel at zero said finger will effectually limit the reverse movement of the wheel and stop it when the pin *f* strikes thereagainst, which is the zero-point.

J denotes a series of secondary toothed registering-wheels, each numbered on its periphery and arranged to mesh with the pins *f* on the primary wheels F once at every revolution of the primary wheel, so as to be turned one notch upon every revolution of the corresponding wheel F, and thereby register the number of revolutions made by the primary registering-wheel. The wheels J are mounted on a shaft J′. It will be seen that motion is communicated directly to the primary registering-wheels by the operating-levers B^2 by the simple intervention of the pawls H, connected with said levers, motion being also communicated directly from the wheels F to the wheels J.

Heretofore it has been common in this class of machines to number the registering-wheels "1," "2," "3," "4," and so on, necessitating the addition of the figures to ascertain the amount registered. My invention contemplates, however, numbering the teeth of the registering-wheels in such a manner that each successive movement of the wheel will show the amount of the corresponding sale added to the amount previously registered. Thus, for example, the primary wheel F, to register dimes or their equivalent, is numbered "10," "20," "30," "40," and so on, as shown at the right hand in Fig. 3. In like manner the secondary registering-wheels J are numbered so as to show the amount of the transactions recorded thereby, which may be done by a suitable numbering of the teeth of said wheels. Thus, for example, as shown in Fig. 3, at the right hand, the wheel J is shown numbered "20," "30," "40," and so on.

The more definite construction of the registering-wheels is shown in Figs. 7 and 8, wherein the wheels F are shown having a loose engagement upon the shaft G, a collar G′ being unmovable upon the shaft, the shaft being grooved, as shown at *g*, to receive a feather *g*′. About the collar is a spring G^2, bearing at one end against a washer G^3, located upon the shaft, and at the other end against a shoulder g^2 of the collar. The tension of the spring is regulated so as to prevent the slipping of the wheels backward and yet to permit their being moved by the pawl on the operating-lever B^2. By a suitable key or other means the said wheels can still be turned back, when desired, to bring them to the zero-point.

Beneath the cover A′ is located, preferably, a strip K of sheet metal or other suitable material, slotted, as shown at *k*, to permit the reading of the numbers on the registering-wheels.

The cover may be locked by the proprietor; but to prevent the registering mechanism being tampered with, as should a clerk be disposed to obtain a duplicate key and turn back the registering-wheels, I provide an additional detective registering-wheel L, (shown in Fig. 5,) provided with teeth, which may be properly numbered, the cover being provided with a pawl L′, the construction and arrangement being such that each time the cover is opened and closed will be registered by the wheels L.

A^3 represents a drawer located in the base of the case A.

A^4 is an actuating-spring, which may be let into the bottom of the drawer, as indicated in Fig. 9. As shown therein, the spring consists of an annular ring or circular spring held in place by three pins a^3 a^4 a^5 in the base of the case, as shown in Fig. 2, a set-screw a^6 being employed to regulate the tension of the spring to properly throw the drawer outward when released. When the drawer is closed, the spring is compressed.

M denotes the bell to be sounded when the device is operated.

The bell is sounded in the following manner: M′ is the hammer of the bell. M^2 is its handle, which has a fixed engagement at its outer end. A rod N connects the hammer-handle with the cleat or cross-bar E. It will be seen that whenever the cross-bar E is tilted the hammer will strike the bell on the upward movement thereof and a second time on the downward movement of said cross-bar, giving thus two distinct strokes of the bell at each operation of one of the keys. The sound of the bell, if desired, can be muffled by means of a tongue P, engaged upon a knob P′, by turning which the tongue may be brought into contact with the bell to lessen its sound.

The drawer is locked by means of a spring-bar Q, engaged upon the case above the drawer, said bar having a shoulder *q* at its rear

end, beveled on its front face, as shown in Fig. 2. Upon the rear of the drawer is engaged a hook-bar R, the hooked rear end of which engages the rear end of the spring-bar Q to lock the drawer, said hooked end riding past the beveled face of the shoulder q when the drawer is shoved in and locking behind it.

To open the drawer, a rod Q′ connects the spring-bar Q with the cleat or cross-piece E. It will be evident that when a key is pressed and the bar E tilted upward thereby the bar Q will be lifted out of the way of the hooked bar R, allowing the drawer to be opened.

S denotes the figure of a cuckoo, connected by a rod S′ to the cleat or cross-bar E, and whereby the said figure is obviously raised when the said cleat is tilted upward.

To sound the cuckoo when a key is operated, the device is provided with suitable musical pipes T, which may be let into the case, as shown in Figs. 2 and 10. T′ denotes the bellows for sounding the pipes, the bellows being connected to the cleat or rocking cross-piece E by rods U U′, one in advance of the other, by which the bellows is operated whenever the rocking cross-piece is operated by a key, thereby sounding the notes "cuck-oo," one note being sounded in consequence of the lifting of the rod U in advance of the lifting of the rod U′, located to the rear of the former, and consequently acting to sound the pipe subsequently to the former.

It may often occur that the drawer is open and the party does not want the device to register. Registration may be prevented by the use of a locking-lever V, made in two parts v' v^2, jointedly connected at their adjacent ends, as shown at v, and provided with a foot-piece v^3, extending outward toward the rear end of the drawer and jointedly engaged with the lower end of the lever V, as shown at v^5. The upper end of the lever V is constructed with a hook v^4, analogous to that of the levers D. A spring W bears against the lower end of lever V to force it outward. At the upper end of said lever I pivot upon the case a stop V^4. In its normal position said stop bears upon the upper end of the lever V, preventing it being moved upward. The hook v^4, resting upon the upper edge of the rocking cross-piece E, prevents the tilting thereof when the stop is engaged upon the lever, and in consequence the registering mechanism cannot be operated until the said stop is turned out of the way, as indicated in dotted lines in Fig. 6. When this is done, the forcing inward of the drawer presses upon the foot-piece v^3 and the hook v^4 is thrown away from the cross-piece, allowing the registering mechanism to be operated. Access to the stop v^4 is obtained by opening the cover of the case. It will be seen that the rear point of the actuating-lever D below the recess d^2, as at d^3, is extended rearward beyond the rearward limit of the hook d. This point d^3, striking against the cross-piece E, would throw said cross-piece still more out of the way of the previously-operated hook, if necessary, in order to effect its release.

It will be observed from Fig. 4 that the numerals Z for the stops are placed, preferably, on the front face of the case. In such a position they can be readily seen by the customer, as well as by the operator.

What I claim as my invention is—

1. In a cash register and indicator, a series of primary registering-wheels F, each provided with a pin f, a series of secondary registering-wheels operated at each revolution of the primary wheels, respectively, operating-levers B^2, provided with operating-keys, a pawl engaged with each of said levers extending adjacent to the corresponding primary wheel to operate the wheel, a tilting guide-bar I, extending transverse said wheels and levers, provided with fingers i, extending adjacent to the faces of the primary wheels, respectively, and a stop I^2 to limit the movement of the guide-bar in one direction, the construction and arrangement being such that the finger and guide-bar will be tripped by the pin f as the adjacent wheel F rotates in one direction and will limit the reverse rotation of said wheel, substantially as described.

2. In a cash register and indicator, a series of registering-wheels mounted loosely upon a shaft, means for operating said wheels, stationary collars located upon said shaft between adjacent wheels, and springs located between pairs of adjacent wheels, each spring exerting its tension upon one of said wheels, substantially as and for the purpose described.

3. In a cash register and indicator, the combination, with a case provided with a recess e^2, of operating-levers B^2, upright bars D, jointedly engaged with the levers B^2, respectively, and a rocking cross-piece E, having one edge thereof extending into the recess of the case, said upright bars each provided with a device to engage the cross-piece when projected upward thereabove, the edge of the recess in the case below the cross-piece forming a stop and a normal support for the cross-piece, substantially as described.

4. In a cash register and indicator, the combination, with a case provided with a recess e^2, of operating-levers B^2, upright bars D, jointedly engaged with the levers, respectively, each provided with a hook d and indicator D^2, and a rocking cross-piece E to engage said hooks when projected upward, said cross-piece having one edge thereof extending into the recess of the case, the edge of the case below the cross-piece forming a stop and normally supporting said cross-bar, substantially as described.

5. In a cash register and indicator, the combination, with a case provided with a recess e^2, of operating-levers B^2, upright bars D, jointedly connected with said levers, respectively, each provided with a hook d and indicator D^2, a rocking cross-piece E to engage said hooks when projected upward, said cross-piece having one edge thereof extending into

the recess of the case and common to all said upright bars, the construction and arrangement being such that the cross-piece will hold the last indicator manipulated exposed and drop it at the next subsequent manipulation of the operating-levers, substantially as described.

6. In a cash register and indicator, the combination, with an inclosing case, of a drawer, registering mechanism, operating-levers B^2, upright bars D, a lever V, provided with a foot v^3, a rocking cross-piece to engage said upright bars and the lever V, and a pivoted stop V^4 to bear upon the lever V and to be moved out of the way thereof when desired, substantially as and for the purpose described.

7. In a cash register and indicator, the combination of an operating-lever B^2, an upright bar D, jointedly connected with the lever and having a hook *d*, a rocking cross-piece E, operated by said bar, a cuckoo figure connected with the cross-piece, a pipe for each key to sound cuckoo notes, and a bellows to actuate said pipes, said bellows connected with said cross-piece, substantially as set forth.

8. In a cash register and indicator, the combination, with a case provided with a recess e^2, of an operating-lever B^2, an upright actuating-bar D, and rocking cross-piece E, having one edge engaged in said recess, said bar D provided with a hook *d*, projecting rearward of the adjacent portion of the bar, said bar at a little distance below the hook projecting rearwardly of the rear face of the hook, the edge of the recess underlying the cross-piece forming a stop and normal support for said cross-piece, substantially as set forth.

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

MICHEL HEINTZ.

Witnesses:
CHARLES CEGQIN,
LEO TAUBE.