

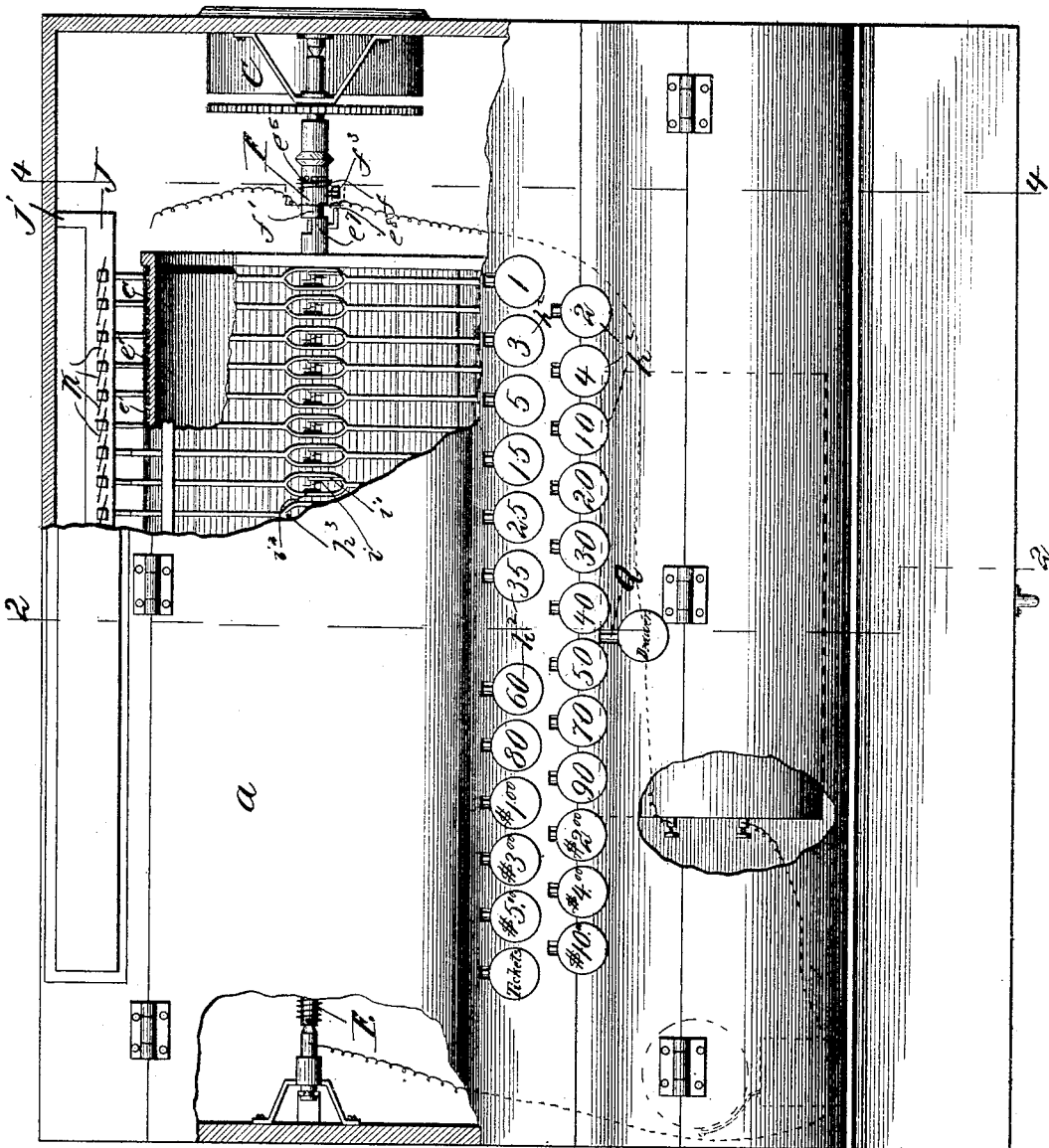
(No Model)

4 Sheets—Sheet 1.

H. R. ADAMS.
CASH REGISTER.

No. 479,776.

Patented Aug. 2, 1892.



Witnesses.

W. C. Corlies
Fredk. N. Miles.

Inventor.

Harvey Raymond Adams.

By *Columbichne* *Atty.*

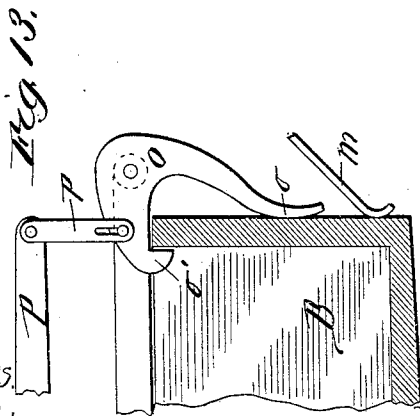
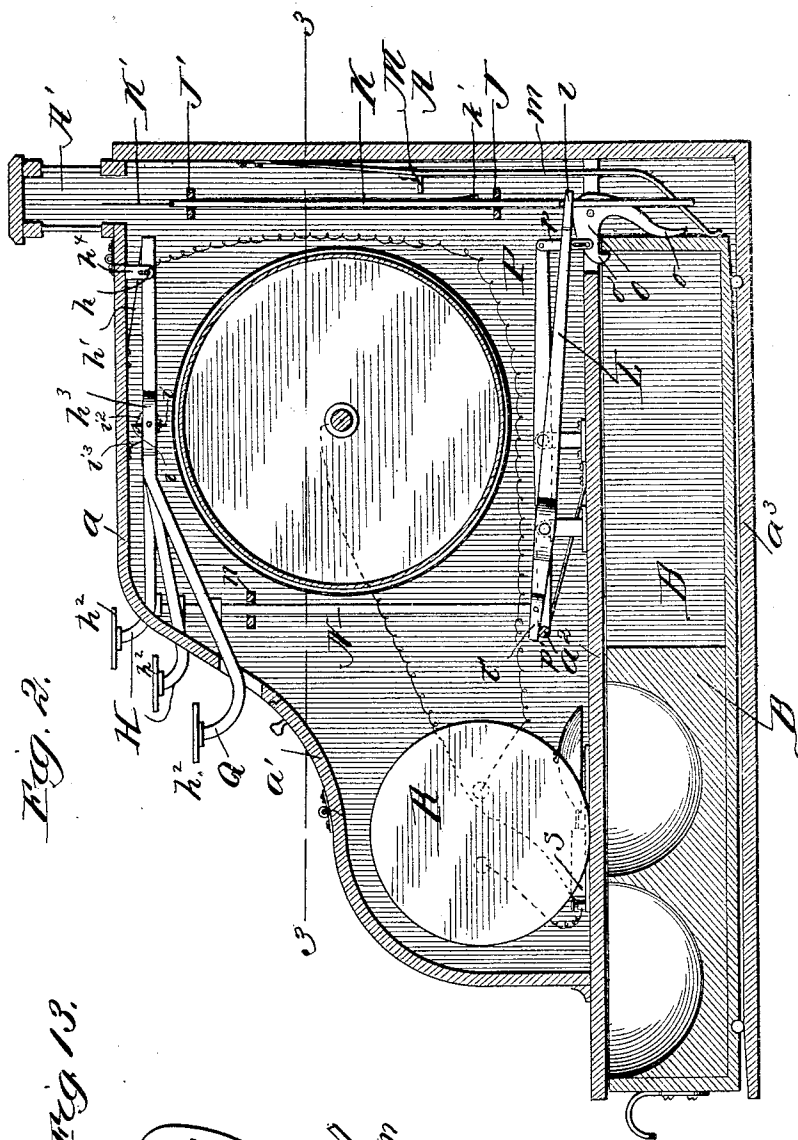
(No Model.)

4 Sheets—Sheet 2.

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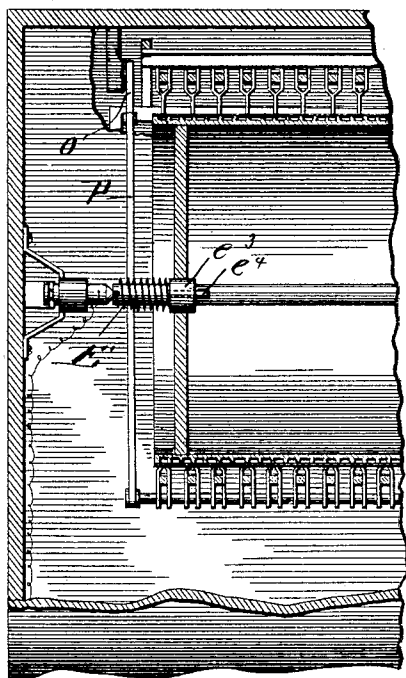


Fig. 3

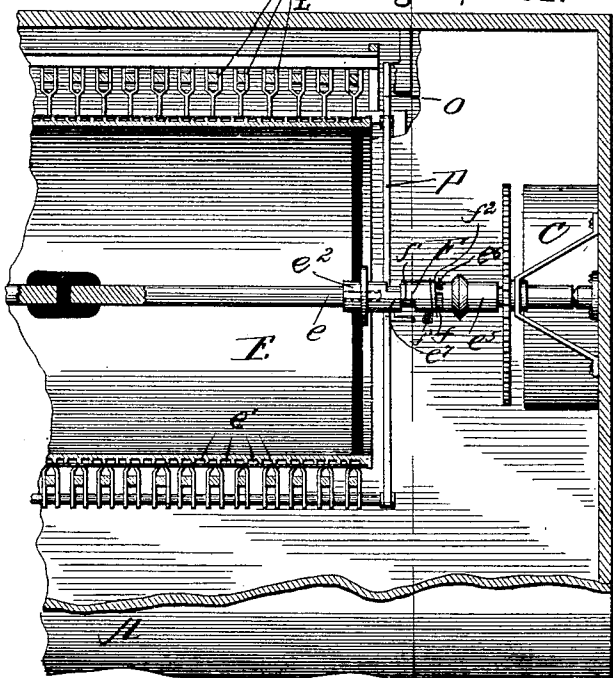


Fig. 4.

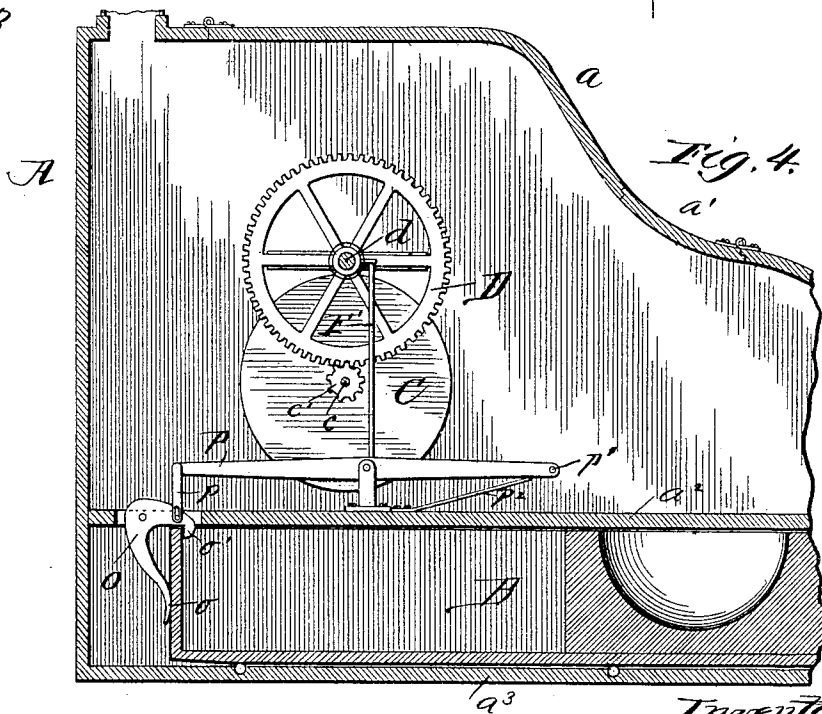


Fig. 5.

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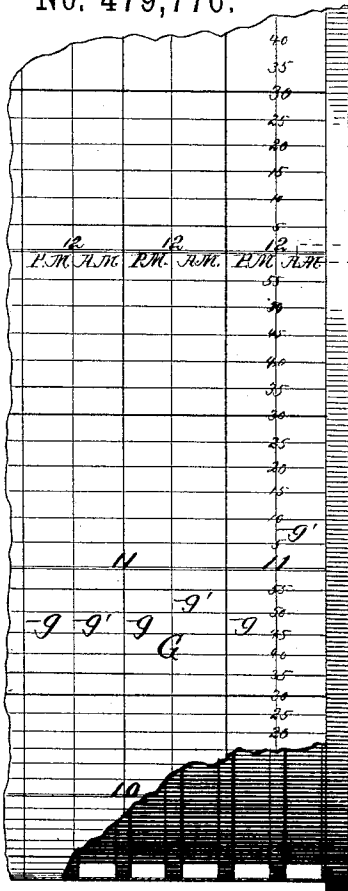


Fig. 5.

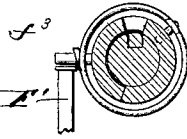
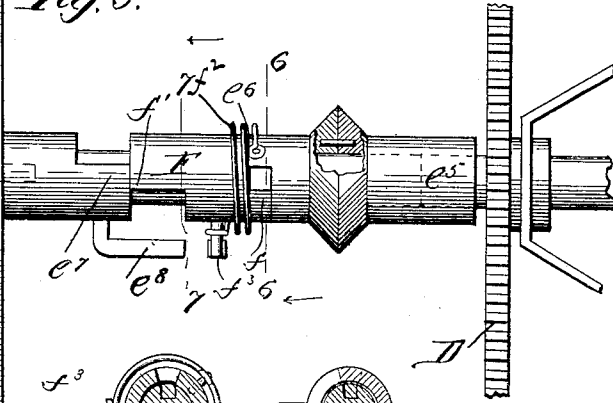


Fig. 6.

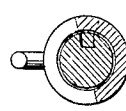


Fig. 7.



Fig. 8.

Fig. 10.

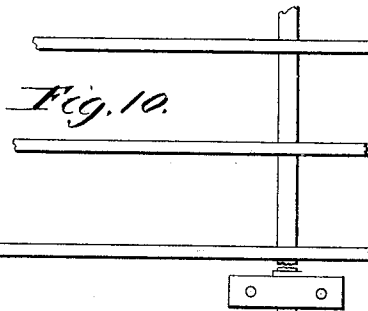


Fig. 11.

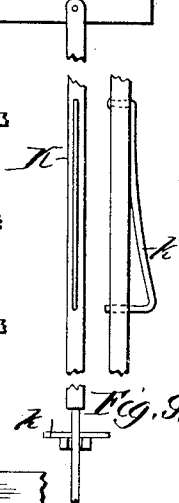
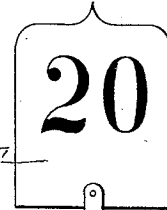
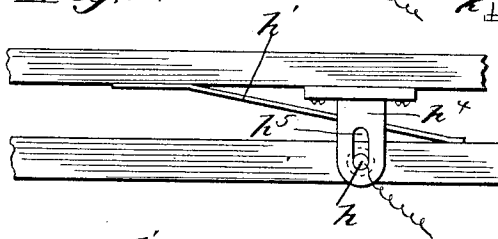


Fig. 9.

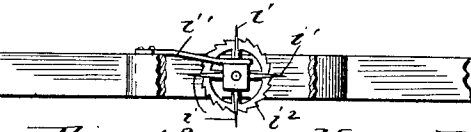
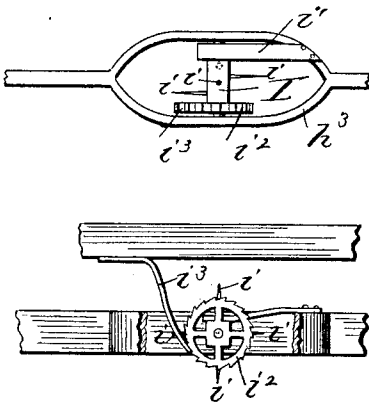


Fig. 12.

Witnesses.

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UNITED STATES PATENT OFFICE.

HARVEY RAYMOND ADAMS, OF MARSEILLES, ILLINOIS.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 479,776, dated August 2, 1892.

Application filed August 24, 1891. Serial No. 403,506. (No model.)

To all whom it may concern:

Be it known that I, HARVEY RAYMOND ADAMS, a citizen of the United States, residing at Marseilles, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Cash-Registers, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

10 Figure 1 represents a plan of a cash-register embodying my improvements with the cover partly broken away at different points; Fig. 2, a vertical section of the same, taken on the line 2 2 of Fig. 1; Fig. 3, a plan section of the same, taken on the line 3 3 of Fig. 2 and broken away centrally; Fig. 4, a detail cross-section taken on the line 4 4 of Fig. 1 and looking in the direction of the arrow; Fig. 5, a detail plan of a portion of the register-cylinder and its driving mechanism; Fig. 6, a detail section taken on the line 6 6 of Fig. 5; Fig. 7, a similar section taken on the line 7 7 of Fig. 5; Fig. 8, a detail plan of tablet-holders detached; Fig. 9, elevations of the same; 15 Fig. 10, a detail plan showing the construction of the registering-levers; Fig. 11, a side elevation of the same; Fig. 12, a detail reverse elevation of the same, partly broken away; and Fig. 13, a detail section showing a portion of Fig. 2.

Figs. 1 to 4, inclusive, are upon one scale. The remaining figures are upon another scale enlarged from the former.

My invention relates to that class of machines now generally known as "cash-registers," and also to that type of registers in which not only are the cash receipts registered, but also are indicated as received from sales during the day.

40 My invention is based upon Letters Patent heretofore granted to me for time-recorders—namely, No. 400,283, dated March 26, 1889, and No. 438,831, dated October 21, 1890; and the invention consists in certain improvements and modifications whereby my said recorder is converted into a cash-register.

I will now describe in detail the construction and operation of an apparatus in which I have embodied my invention in one practical form, and will then designate more definitely in claims the improvements which I believe to be new and wish to secure by Letters Patent.

In the drawings, A represents a case of suitable size and form for inclosing the operating devices of the machine. As shown in the 55 drawings, it is a substantially rectangular case with its back portion somewhat higher than the front, and the front side of the case is inclined downward and outward, being preferably curved on graceful lines, as seen 60 in Fig. 2. The upper and higher portion of the top a of the case is constructed to form a cover, being hinged at its upper and rear edge to a narrow strip extending from end to end of the case, as seen in Fig. 1. This 65 hinged lid includes a portion of the downwardly-curved part of the top, as seen in Fig. 2, and below it is a narrower hinged section a' , which is hinged to the lower part of the front, so as to be turned outward and downward, while the upper section or main portion of the cover may be turned upward. 70 The case is provided with a false bottom a^2 , below which is the cash-drawer B, arranged to slide in and out between the false bottom and true bottom a^3 of the case. It will be understood, of course, that the hinged covers of the case must be provided with locks, so that the interior of the case can be reached only by those holding the keys to the locks. 80

As I retain in this device the idea of time registration, so that not only are the amounts registered, but also the exact times when they are received, I provide a recording-cylinder and clockworks similar to corresponding 85 mechanism in my prior patents, especially Patent No. 438,831. These parts therefore require only brief reference. A clock C is set into one end of the box or casing, and the clock-case extends somewhat within the latter. The minute-hand shaft c is extended inward through the clock-case and is provided at its inner end with a small pinion c' , which engages with a gear-wheel D, arranged just above this pinion and fixed on a shaft d , which 95 is mounted over the clock-case, as shown and described in my said patent, No. 438,831. A recording-cylinder E is mounted on a shaft e . The construction of this cylinder is substantially the same as in my prior patent, No. 100 438,831, and it is insulated in the same way, and its surface is provided with like circumferential grooves e' ; but in the present instance the cylinder is mounted loosely on its

shaft—that is, so that it may slide thereon, though connected so as to turn therewith. As shown in the drawings, this is accomplished by providing the cylinder with sleeve-hubs e^2 and e^3 at the respective ends thereof, which are provided with grooves to receive short splines e^4 on the shaft; but any other device suitable for this purpose may be employed. The cylinder-shaft is connected at one end to the shaft of the gear-wheel D, as in my said former patent, and at the other end is mounted on a bearing attached to the inside of the end of the case, as in said patent. There is, however, at this outer end of the shaft a spring E', which is constructed and applied to exert its force under tension to slide the cylinder along on its shaft toward the clock. This spring may be constructed and arranged in any suitable way for this purpose. In the drawings it is shown as coiled around the end of the shaft, being fastened or otherwise held at its outer end on this shaft, so that it may be compressed and brought under tension by moving the cylinder toward this spring end of its shaft. The flange-sleeve e^5 , fast on the cylinder-shaft and by means of which the latter is connected to the gear-shaft, is provided at its inner end with a clutch-face e^6 . In the drawings this is shown as a half-face—that is, adapted to make a half-joint with a corresponding face; but the particular form of the clutch-face is immaterial. The outer end of the sleeve-hub e^2 is also provided with a similar clutch-face e^7 . A double-faced clutch F is mounted loosely on the cylinder-shaft between these two parts, as seen in Fig. 5. At its outer end it is constructed with a clutch-face f , adapted to engage with the adjoining face on the end of the fixed sleeve, and at its inner end it is provided with a similar face f' , adapted to engage with the adjoining face on the outer end of the sleeve-hub e^2 . A spring f^2 is fastened at one end to the fixed flange-sleeve coiled around the loose clutch-shaft F and at its other end fastened to a pin f^3 , projecting from the surface of the latter. It will be seen that this spring connects the clutch to the fixed sleeve; but the tension of the spring is such that normally it will operate to turn the clutch away from engagement with the sleeve, so that there will be an open space between the front shoulders of these two parts, as seen in Figs. 5 and 6. The projection on this end of the clutch is made somewhat smaller than that on the end of the sleeve. In other words, it does not extend quite half way around the clutch. In this position it is also intended that the arrangement of the parts shall be such that the faces of the cylinder-hub and the clutch shall not be engaged, but the projecting ends of each shall stand abutting against each other. This arrangement is shown in Fig. 5 of the drawings, which is the position of these parts when mounted and ready to commence operation. In this position the spring at the other end of the cylin-

der is compressed and operates to hold the hub e^2 up firmly against the clutch and so all of these parts will revolve together, motion being communicated to them through the gear-wheel D. It is obvious, however, that if the clutch F be held a few moments so as not to turn with the shaft the latter may still move forward until the open space between the fixed sleeve and the clutch heretofore mentioned is closed. This space is intended to be sufficient to permit the movement of the clutch to be arrested long enough to disengage the abutting ends of the clutch and cylinder-hub, when obviously the force of the spring behind the cylinder will move the latter forward, the half-joint on each permitting this movement. I provide a suitable stop to effect this result at each revolution of the shaft, for purposes which will be presently explained. As shown in the drawings, this stop is an upright post F', which is secured at its lower end to the false bottom of the case or any other suitable support, and is extended upward, so that its upper end shall stand in the path of the pin f^3 , as seen in Fig. 4. This post is elastic, so that it may be vibrated sufficiently to disengage it from the pin, and for this purpose a bent arm e^8 is provided on the end of the cylinder-hub, which is of such length that when the latter shoots forward under the impulse of the spring, as already described, it will strike the upper end of the stop-bar and drive it to one side, thereby disengaging it from the clutch-pin and so permitting the clutch to move forward again with the shaft. A record-strip G of suitable material is applied to the surface of this cylinder in the usual way. This strip is divided, as usual, by suitable transverse lines into sections representing hour-spaces, which again are subdivided into half-hour sections and subdivisions of five minutes each, as indicated in Fig. 5 of the drawings. The strip is also divided by circumferential lines g into a series of circumferential sections running around the cylinder, which divisions correspond to the number of indicating-keys provided for the register. These circumferential sections are again subdivided by lines g' , parallel to the lines g and about midway between them and shown in Fig. 5 as finer than the latter. It will be seen then that each hour-space for the respective-keys is divided into two series of five-minute spaces extending alongside each other circumferentially of the cylinder. The strip is divided into twelve hour-spaces, the divisions being indicated by two parallel lines in Fig. 5, while the half-divisions are indicated by full lines parallel with the former. Preferably the construction of the cylinder is such that each key-space of the strip will cover two grooves on the cylinder, thus providing a rib for a central support to the space along its dividing medial line. These spaces are provided to receive indications from the key-levers in succession, one section running around the

cylinder being used for one part of the day and the other section for the other part, or, the cylinder and strip being revolved once in every twelve hours, one division is used for the first twelve hours and the other for the succeeding twelve hours. The strip is arranged upon the cylinder, so that the twelve-hour line will be about on a line with the halving of the sleeve-hub of the cylinder, as seen in Fig. 5, and for convenience the circumferential spaces may be indicated on this line, as indicated in said figure, for the forenoon and afternoon of the day, the spaces nearest the clutch end of the cylinder being preferably indicated for the first part of the day. The key-levers H are pivoted to the under side of the hinged cover a, so that they are entirely supported by said cover, and the cylinder is arranged directly below. These levers correspond in number with the main circumferential divisions of the record-strip on the cylinder. They are pivoted at their rear ends on a shaft h, mounted in short lugs depending from the cover, and over each is a spring h', one end of which is fastened to the cover, while the other end rests upon the rear extremity of the lever, which projects a little behind its pivot, as seen in Fig. 2. These springs operate to hold the levers up, and the latter extend forward, passing through the front of the cover, outside of which they are provided with disks or buttons h², on which are placed the indications which are desired. The front ends of the levers are somewhat differently bent and are of different lengths, so as to provide a two-bank arrangement, as seen in Fig. 1. Each of these levers is constructed with a loop or opening h³ about midway of its length and immediately over the cylinder. This loop is formed by dividing, as it were, the lever, bending out the branches and bringing them together again a little farther along, as seen in Fig. 11. In this loop of each lever is mounted a short square shaft I, extending across from side to side and having a bearing in each branch of the loop, so as to turn freely therein. This shaft is provided with four indicating-points i, one set in each face, but arranged in different planes along the shaft, as seen in Fig. 11. A flat spring i' is fastened at one end to the loop, while its other end projects over the shaft and rests upon it, as seen in Fig. 12. This spring will thus operate as a stop to hold the shaft in position, but at the same time will yield to permit it to be turned. Obviously in its position of rest, as held by its stop-spring, the shaft will always present one of its indicating-points extending directly downward toward the cylinder, and the arrangement of the parts is intended to be such that in this position the point will stand vertically over the cylinder or directly in line with the vertical diameter thereof, as seen in Fig. 2. The length of the shaft occupied by the points is about the same as the width of one of the half-sections of the circumferential divisions of the record-strip, so that the

four points will not quite cover the width of one of these half-sections. On one end of the shaft I is a small ratchet-wheel i², and a spring-pawl i³, fastened to the cover, is arranged to engage with the teeth of this ratchet, as seen in Fig. 11. Now obviously when one of these indicating or key levers is depressed the usual indicating perforation will be made in the strip on the cylinder below by the depending point on the shaft. At the same time, the pawl being held by the cover, the ratchet-wheel passes down by the pawl, and when the lever rises under the influence of its lifting-spring the ratchet-wheel will be turned, thereby turning the shaft, the construction being such as to give the latter a quarter-turn, thus bringing another point into indicating position, but standing in a different plane from that of the point which has just perforated the strip. The lugs h⁴, in which the pivot-shaft h of the levers is mounted, are provided with short vertical slots h⁵, in which the shaft rests, as seen in Fig. 11. This provides for a slight upward movement of the levers that will relieve the pressure on the perforating-points if the keys are pressed down too forcibly, so that injury to the points will be prevented.

In the back part of the case in rear of the cylinder are two bars J and J', the former at the lower part of the case and the latter at the upper part and both fastened to brackets j, which are in turn secured to the back of the case. These bars are arranged one directly above the other and are perforated, so as to serve as supports and guides to a series of tablet-rods K, which are mounted in the perforations of these bars and are free to slide up and down therein. Each of the rods K is provided near its lower end and below the guide-bar J with a short transverse pin k, and a series of levers L is pivoted to the false bottom of the case, the rear end of each being provided with a fork l, adapted to embrace the tablet-rods below the said pins, as seen in Figs. 2 and 9. Obviously the proper vibration of a lever L will raise its corresponding rod K in the guide-bars. Each of the rods K carries a small tablet K' at its upper end, and each tablet bears the mark of the indicating-button belonging to its corresponding lever. These tablets are not arranged squarely across the ends of the rods, but are set at an angle thereto, as seen in Fig. 1, which arrangement permits the adjacent edges of the tablets to be lapped by each other, as seen in said Fig. 1, and yet retain the tablet-rods all in the same plane, thus effecting some saving of space. On the top and at the back of the case there is a small chamber A', opening into the interior of the case back of the cover, as seen in Fig. 2, and the tablets, when elevated by their respective levers, are lifted into this space, which is glazed both at front and rear, if desired, so that the tablet is exposed to view with the mark thereon. At the back of each rod K is a spring k', the upper end of which is fastened to the rod, while the lower end is

bent upward and then inward at a right angle and enters an aperture in the rod, as seen in Fig. 9. It will be seen that this spring is like an ordinary umbrella-spring and stands out somewhat from the rod at its lower end, where it forms a square shoulder, whereby the movement of the rod may be arrested by a suitable stop. At the same time this bent end yields inward readily to any pressure.

At the back of the case in rear of the tablet-rods there is a long spring-bar M, which is arranged to engage with this stop-spring on the tablet-rods whenever they are lifted. This bar is fastened at each end to long springs *m*, the upper ends of which are secured to the back of the case and near the top thereof, from which point they extend downward and forward to the bottom of the case and at their lower ends are bent outward, so that their lower extremities press against the back of the cash-drawer, as seen in Fig. 2. The stop-bar M is fastened to these springs some distance below their fixed upper ends, so as to have some movement out and in as the springs are vibrated, and the bar is of sufficient length to extend along the entire series of tablet-rods, as seen in Fig. 3. The levers L are pivoted at their front ends to the lower ends of upright rods N, which pass up through perforations in a suitable keeper or guide-bar *n*, and at their upper ends are brought up against the under side of the key-levers H, so that the depression of one of these levers will correspondingly vibrate the lever L, to which it is connected, and so lift its corresponding tablet.

The arrangement of the stop-bar M and its supporting-springs is such that when the cash-drawer is pushed back in place, as seen in Fig. 2, the bar will be back just out of the path of the springs on the back of the tablet-rods, so that when one of said rods is raised the bar will not engage with the projecting spring thereon; but if the drawer is pulled out slightly the springs *m* move forward at once, thereby carrying the bar M into a position where it will engage with the said springs on the tablet-rods. The springs *m* are pushed back from their normal position by the cash-drawer B when the latter is closed, thereby moving the bar M back from engagement with the springs on the tablet-rods, thus permitting the latter to drop. It will be noticed that any number of tablet-rods may be lifted after the stop-bar has moved forward without moving the latter back, and so several tablets may be raised and held in sight until the cash-drawer is closed, when all will drop at once. Catches O are pivoted to the back part of the false bottom of the case and are arranged to engage with the upper edge of the drawer at each end thereof, as seen in Figs. 3 and 13. Preferably these catches are of bell-crank form, one arm *o* of which depends from the pivot, and so, in connection with the notched arm *o'*, serves as a stop to determine the backward movement of the drawer. When

the catches are lifted, this arm *o*, resting against the back of the drawer, will act to push the drawer forward slightly and so open it automatically. These catches are connected, respectively, to the levers P by a link-rod *p*. The said levers are pivoted to suitable supports on the false bottom of the case and extend forward to a point just a little in advance of the upright rods N and are then connected at their front ends by a bar *p'*. The front ends of the levers L are also provided with forks *l'*, within which the lower ends of the rods N are pivoted, and these forks extend forward just over the connecting-bar *p'*, as seen in Fig. 3. A spring *p*² is arranged underneath the front end of each of the levers P, and these springs operate to hold the front ends of said levers and their connecting-bar up against the front ends of the levers L, as seen in Fig. 2. Obviously, however, the depression of one of the levers L by means of one of the key-levers will also depress the connecting-bar *p'* and so disengage the catches from the cash-drawer at the moment the tablet-rod is lifted, when of course the stop-bar M moves outward, as already explained, and prevents the dropping of the said tablet-rod by engaging with the stop-spring on the back thereof. There is also provided a separate key-lever Q, which is in all respects like the other key-levers, except that it has no connection with any tablet-rod; but its depression simply operates to depress the catch-levers, and so releases the cash-drawer, so that, if desired, the interior of the latter may be reached without making a tablet indication. This lever has its appropriate stops on the indicating-strip, however, and being provided with the perforating devices, the same as the other key-levers, every time the cash-drawer is thus opened an indication will be made upon the strip on the cylinder.

A battery R is arranged within the case and also an electric signaling device S, which parts are connected up with the key-levers and indicating-cylinder, as in my prior patent, No. 438,831, so that the circuit is made and the signal is sounded whenever a key is depressed, the same as in my said patent. These devices constitute no material part of my present invention and require no further description here.

The operation is as follows: The parts being mounted and properly adjusted with reference to the clock, as will be readily understood, the cylinder will be slowly turned by the clockworks, the construction being such that one revolution of the cylinder will be made every twelve hours. Now at the commencement of the operation the cylinder is pressed back on its shaft against the spring at the rear and the indicators of the key-levers all stand over the right-hand divisions of their respective sections on the indicating-slip. A sale and the receipt of cash are indicated at any time by depressing the proper key-lever, whereby a perforation is

made in one of the spaces, into which the indicating-strip is divided, and showing the time, at least within five minutes, when the indication of sale was made. As already explained, the key-levers being provided with several indicating-points set in different planes, four or even more perforations may be made within one of the five-minute spaces without interfering with each other, so that the indicating-perforations are perfectly distinct and there is no possibility of one registering with another. The depression of a key raises a tablet and at the same time releases the cash-drawer, as already explained, and the tablet-rod is stopped from dropping by the movement forward of the spring-bar, as explained. Now if it is desired to operate more than one key at the same time it is obvious that there is no obstacle thereto, for, although the stop-bar M is in its forward position and in the path of the spring on the second tablet-rod, the said spring will yield as it passes said bar, and so the rod is raised, as usual, and is then caught by the bar, the same as the first rod. When the indications are completed, of course the cash-drawer is closed and the stop-bar is pushed back out of engagement with the springs on the tablet-rods and the latter drop down into normal position. It will also be seen that the springs underneath the levers, which operate the cash-drawer catches, serve, also, to throw up the forward ends of the lifting-levers L by means of the connecting-bar running along underneath them, so that the latter are thrown up into place and so carry the tappet-rods N up into operative position automatically when released. Now when the twelve-hour point is about reached the pin on the clutch-sleeve comes into contact with its stop, thereby turning the sleeve, as already explained, until it passes the halving on the hub of the record-cylinder, when the latter, under the impulse of the spring at the outer end, is immediately slid forward on its shaft. The degree of this movement is just sufficient to bring the second or left-hand division of the indicating-sections underneath the respective key-levers, and so the apparatus is then ready to go on properly for another twelve hours. This change, it will be seen, is automatic and the stop to the clutch-pin is displaced automatically, as already explained. The particular mounting of the tablets at an angle to the plane in which the tablet-rods stand permits a compact arrangement of the said rods and tablets within a small space and with the rods all in one plane, which is a desirable arrangement. I thus obtain within a conveniently small space a cash-register in which the registrations are made upon a time-recorder, so that very nearly the exact minute of a recorded sale may be determined, and at the same time I provide an apparatus of this kind, which may be used twenty-four hours without any attention or readjustment, a result which, I believe, has not heretofore been ob-

tained in this kind of register without such an enlargement of the cylinder as to make the machine practically useless in a commercial way.

It will be understood from the explanation above that the circumferential divisions of the indicating-strip correspond, respectively, to the indicating levers and keys, so that every perforation in one of these spaces indicates the receipt of the amount marked on the corresponding key, and of course the entire amount is found by making the sum of the perforations in any one space the multiple of the amount indicated on the corresponding key. For convenience these spaces on the indicating-strip may be marked at some convenient place with the marks on the keys to which they correspond, as this will aid in calculating the entire amount indicated on the strip at the end of the day.

It will be seen that in many instances this register may be used for two days without resetting. This will be possible in all cases where the business day is not over twelve hours in length, for at the close of the first day the machine may be stopped and set in operation again at the commencement of the next day. In this case the marks designating the subdivision of the spaces might be changed for convenience to indicate different days.

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

1. In a cash-register, a recording-cylinder mounted on the shaft by which it is turned and movable lengthwise thereon, in combination with clockwork whereby said shaft is rotated, a recording-strip upon said cylinder, spaced to correspond with the indicating-keys, each of said spaces being subdivided circumferentially, and change mechanism whereby at the end of one revolution the said cylinder is released and slipped forward on its shaft half the distance of one of said spaces, thereby adjusting it for operation during another revolution, substantially as described.

2. In a cash-register, the recording-cylinder E, movable lengthwise on its shaft *e* and provided at its inner end with a halved sleeve-hub *e*², in combination with the sleeve-clutch F, mounted loosely on the cylinder-shaft and notched at each end, as described, the fixed sleeve *e*³ on the cylinder-shaft, also halved at its inner end, the clutch-spring *f*², a stop to arrest the rotation of the clutch at the end of each revolution of the shaft, and a spring E', adapted to slide the cylinder forward on its shaft when released from the clutch, substantially as described.

3. In a cash-register, a recording-cylinder E, adapted to slide on its shaft *e*, in combination with the spring E', arranged to slide the cylinder on its shaft, the sleeve-clutch F, notched as described and provided with a pin *f*³, the cylinder-hub *e*² and fixed sleeve *e*³, notched as described, the clutch-spring *f*², the yield-

ing stop F' , the stop - removing arm e^8 , and clockworks applied to rotate said cylinder-shaft, substantially as described.

4. In a cash-register, a recording-cylinder, 5
in combination with the clockwork for rotating the same, a recording-strip applied to said cylinder and divided to indicate hours and subdivisions thereon, and a series of indicating-levers, each provided with a series of movable 10
indicating-points arranged in different vertical planes and adjustable to operate separately and in succession, substantially as described.

5. In a cash-register, a recording-cylinder, 15
in combination with a suitably-spaced recording-strip applied thereto, key-levers H , short shafts I , mounted thereon and provided with indicating - points i , arranged circumferentially around said shaft and in different vertical 20
planes, and a device for giving the said shaft a turn at each operation of the lever to change the position of the said points, substantially as described.

6. In a cash-register, a recording-machine, 25
in combination with key-levers H , constructed with loops h^3 , square shafts I , mounted in said loops and provided with indicating-points i , arranged one on each face of the shaft but in 30
different vertical planes, the holding-spring i' , the ratchet-wheel i^2 , fixed on the shaft, and a spring-pawl i^3 , adapted to engage with said ratchet-wheel to turn the shaft upon the upward movement of the lever after depression, 35
substantially as described.

7. In a cash-register, the case lid or cover 35
 α , in combination with the key-levers H , pivoted thereto in slotted lugs h^4 , the springs h' ,

the perforating-points mounted on the levers, and the recording-cylinder E , arranged below the levers, substantially as described. 40

8. In a cash-register, a series of vertically-sliding tablet-rods provided with yielding stops or springs, in combination with mechanism whereby said rods are lifted by the depression of the key-levers, a stop-bar mounted 45
on vibrating springs, a cash-box arranged to press back said springs to hold the said bar out of engagement with the stops on the rods when the drawer is closed, and mechanism whereby the drawer is released by the de- 50
pression of any one of the keys, thereby releasing the said springs from tension and swinging the stop-bar into operative position, substantially as described.

9. In a cash-register, the suspension-springs 55
 m , with their free ends arranged behind the cash-drawer, in combination with a stop-bar M , mounted on said springs, the sliding tablet-rods K , provided with stop-springs k' , adapted to yield as they pass the said bar 60
when the rods are raised, and a sliding cash-drawer B , arranged to move the suspension-springs backward to carry the stop-bar out of working position when closed and to permit the 65
springs to move forward, bringing the bar into working position when opened, whereby two or more tablet-rods may be lifted without closing the drawer and all will be released together whenever the latter is closed, substantially as described.

HARVEY RAYMOND ADAMS.

Witnesses:

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