

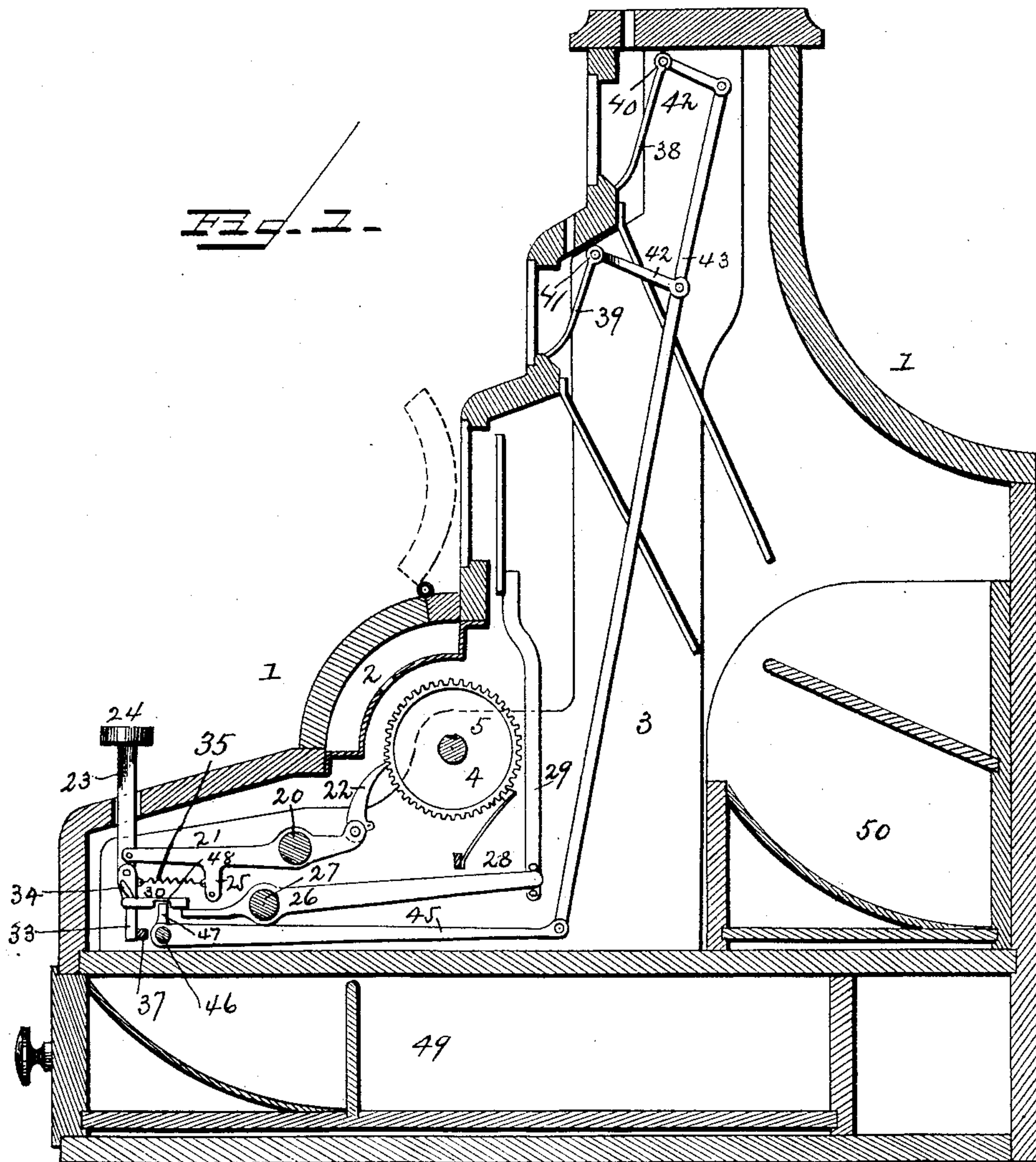
(No Model.)

3 Sheets—Sheet 1.

H. A. BIERLEY.  
CASH REGISTER.

No. 473,723.

Patented Apr. 26, 1892.



WITNESSES:  
*F. L. Ourand*  
*Ernest Jones*

INVENTOR:  
*Henry A. Bierley*  
*J. S. Rogers & Co.*  
Attorneys

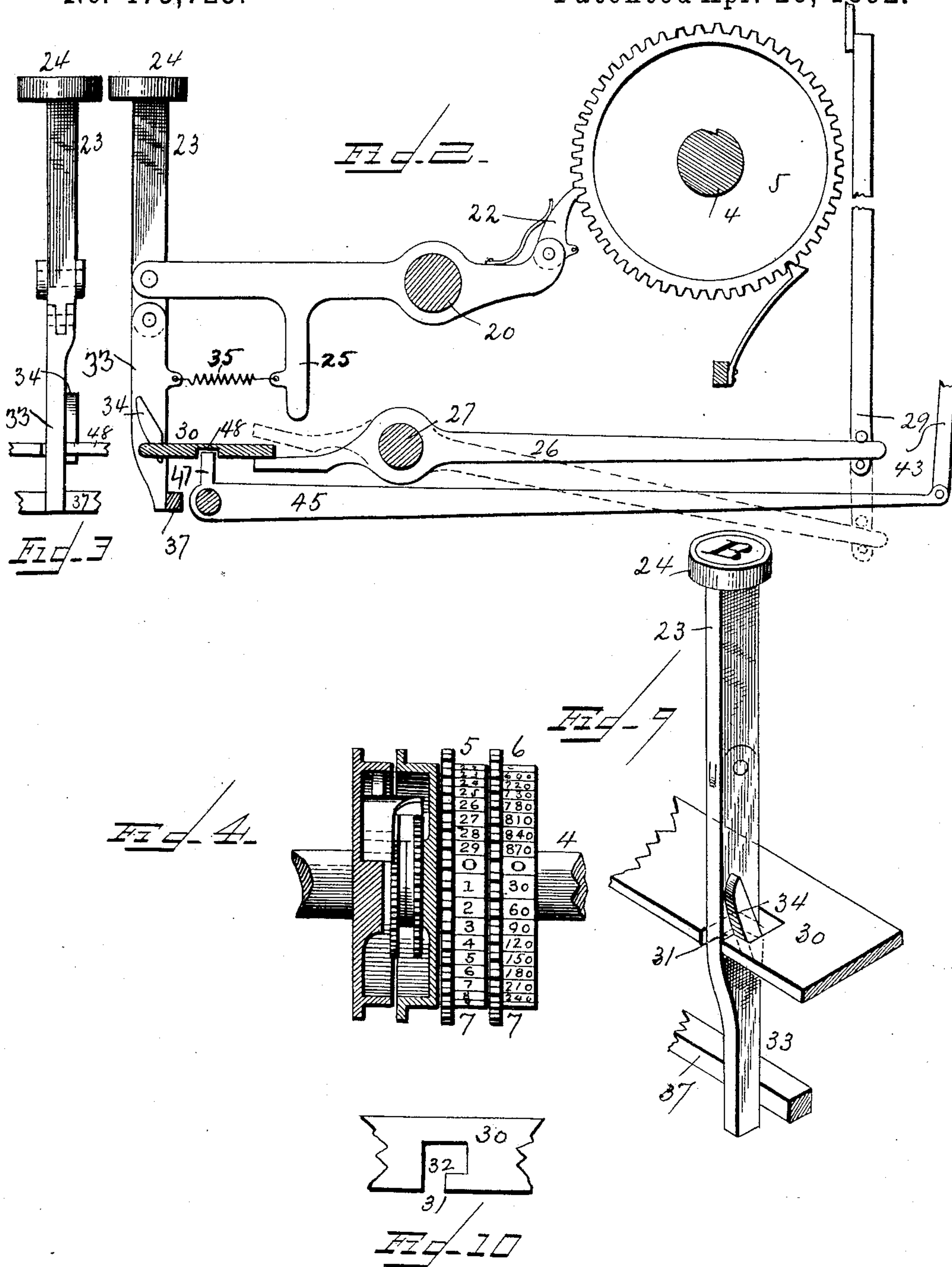
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H. A. BIERLEY.  
CASH REGISTER.

No. 473,723.

Patented Apr. 26, 1892.



WITNESSES:  
*F. L. Ourand*  
*James H. Jones*

INVENTOR:  
*Henry A. Bierley*  
*By Edwin C. Rogers & Co*  
Attorneys.

(No Model.)

3 Sheets—Sheet 3.

H. A. BIERLEY.  
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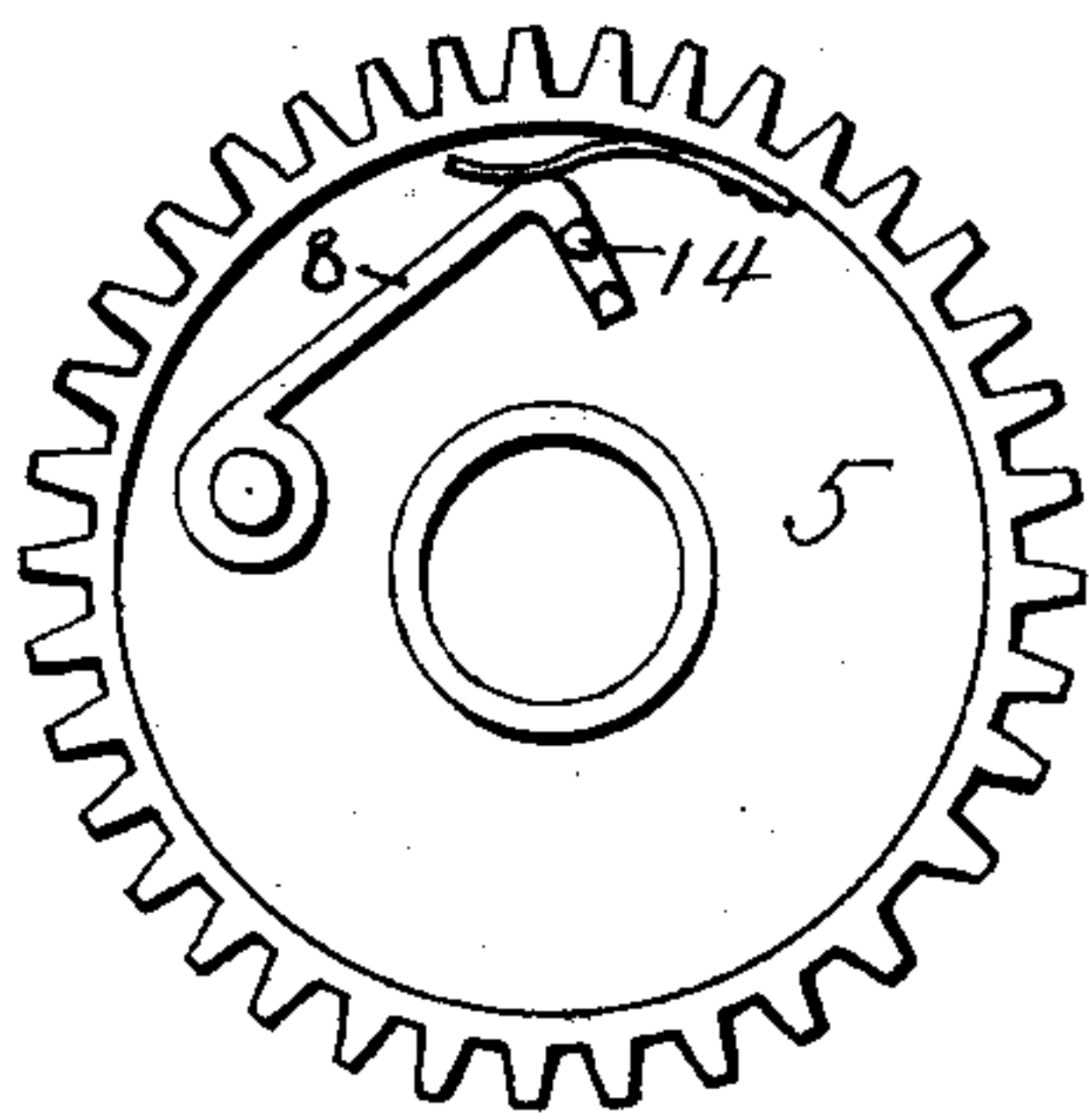


Fig. 6.

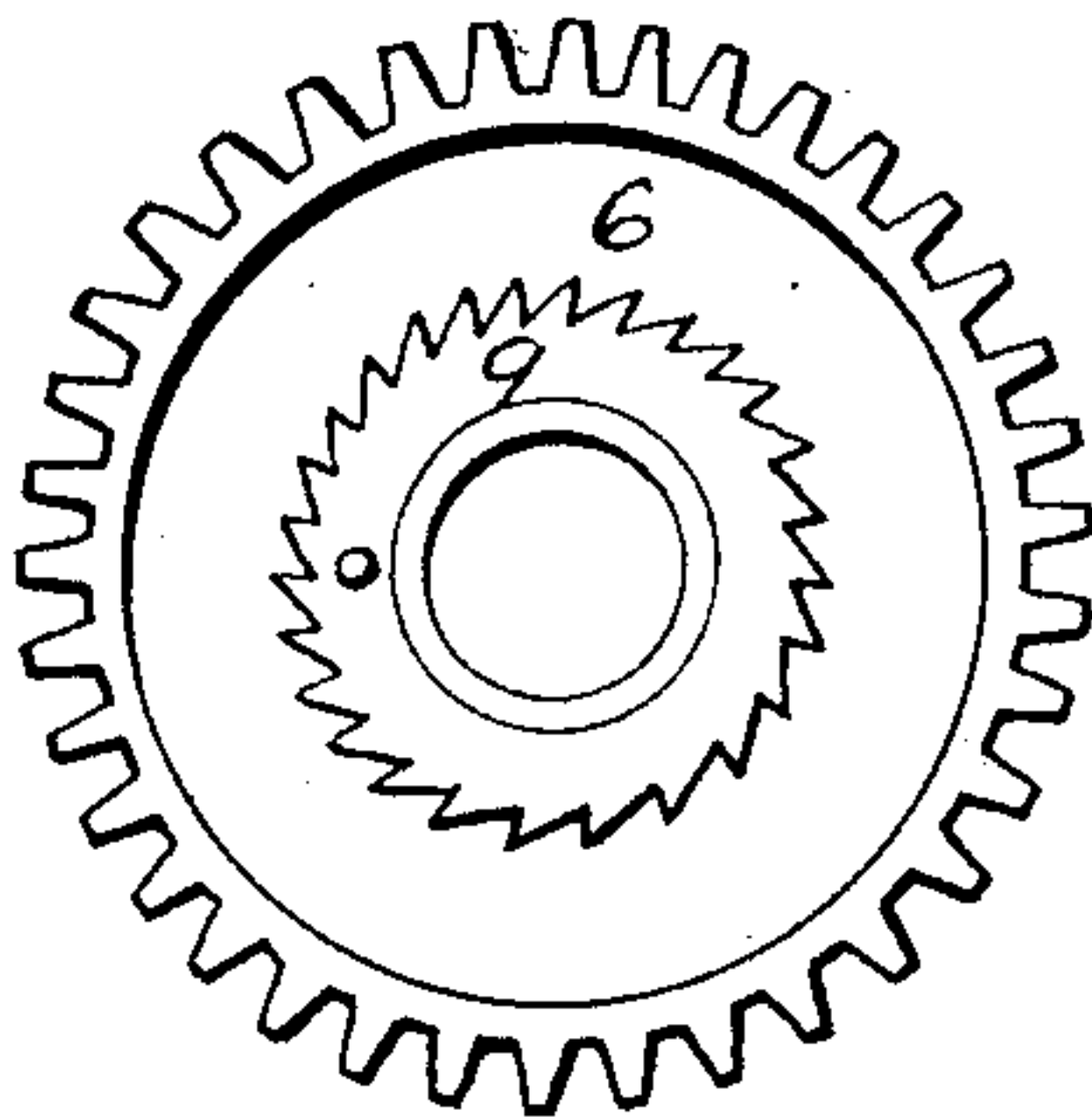


Fig. 5.

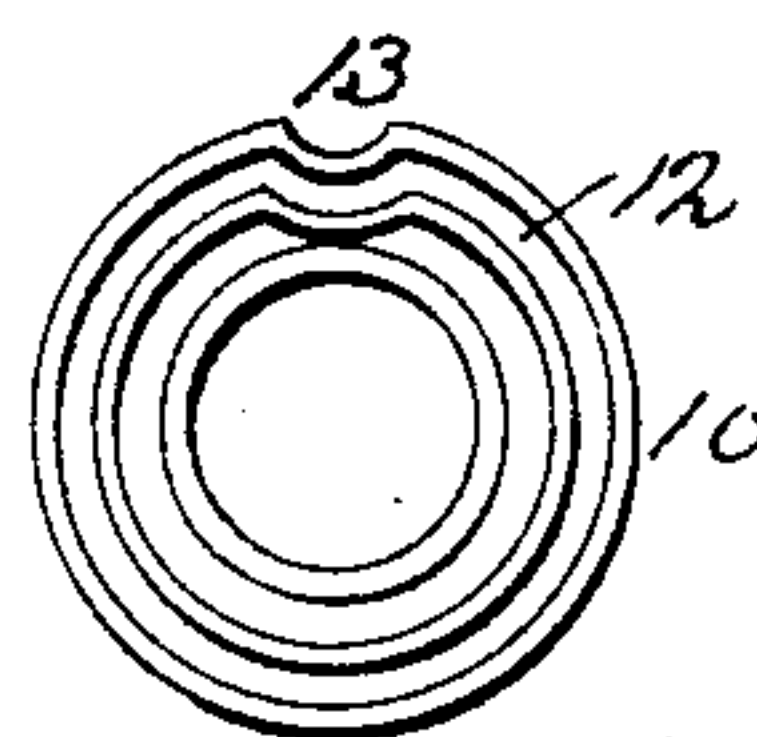
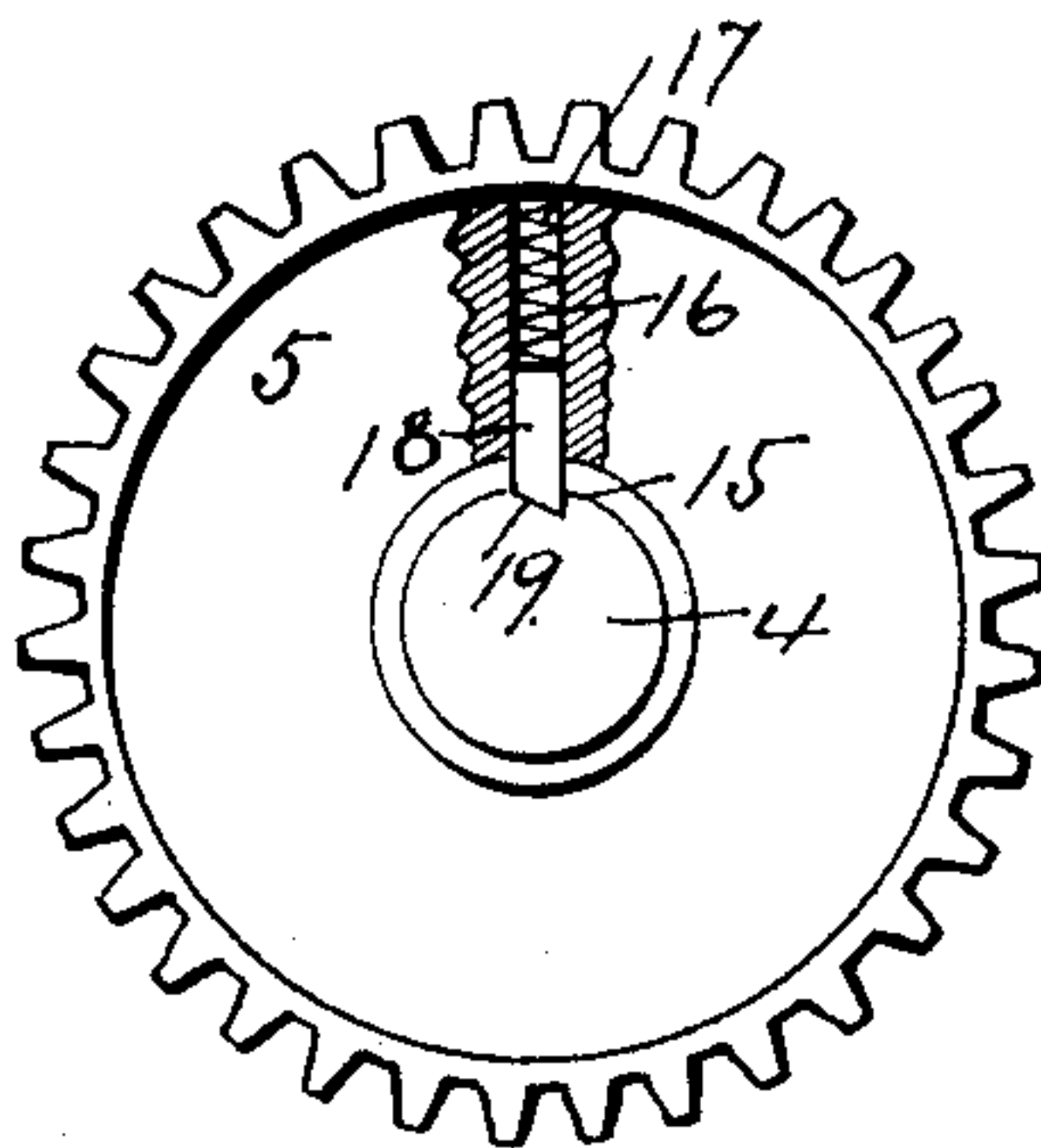


Fig. 7.

Fig. 8.



WITNESSES:  
*F. L. Ouring*  
*Amos Jones*

INVENTOR:  
*Henry A. Bierley*  
*J. S. Cagney & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

HENRY AUGUST BIERLEY, OF LEXINGTON, KENTUCKY.

## CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 473,723, dated April 26, 1892.

Application filed December 14, 1891. Serial No. 415,014. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY AUGUST BIERLEY, a citizen of the United States, and a resident of Lexington, in the county of Fayette and State of Kentucky, have invented certain new and useful Improvements in Cash-Registers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 improvements in cash-registers of that character described and illustrated in Letters Patent granted to me November 3, 1891, No. 462,615, in which a sealed cash drawer or receptacle is provided, inaccessible, except to authorized persons, and an unlocked change-drawer, and suitable shutters for opening and closing the cash-openings operated by depressing the indicating-key, which also register the amount of sales made and actuate display-plates for indicating the sales.

The present invention is designed as an improvement upon that set forth in the above patent, and relates more particularly to the registering devices and the means for actuating the display-plates which indicate the amount of a sale at the time it is made, although the device is improved in general, whereby it is rendered more efficient when in operation.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a central longitudinal section of a cash-register constructed in accordance with my invention. Fig. 2 is a side view, on an enlarged scale, of one of the indicating-keys and connections. Fig. 3 is a front view of the same. Fig. 4 is a view, partly in section and partly in elevation, of the registering-wheels. Figs. 5 and 6 are detail views of the same. Fig. 7 is a detail view of the disk connected with one of the registering-wheels. Fig. 8 is a side view of one of the registering-wheels, showing the spring-actuated catch. Fig. 9 is a detail perspective view of one of the indicating-keys. Fig. 10 is a plan view of a por-

tion of the plate actuated by the indicating-keys to operate the display-plates.

In the said drawings the reference-numeral 1 designates the casing, which is substantially like that shown in my patent before referred to, with the exception that it has a sight-opening 2, through which the registering-wheels may be inspected.

The numeral 3 denotes a frame, in which is journaled a transverse shaft 4, which carries the registering devices, which consist of a primary wheel 5 and a secondary wheel 6, which are loose upon said shaft. The primary wheel 5 is formed with cogs on its periphery, and is also provided with an annular flange 7, on which is consecutively arranged a series of numbers running from "0" to "29" in the present instance. The secondary wheel is similarly formed; but the numbers thereon are arranged in multiples of thirty in regular arithmetical progression. The number and arrangement of the registering characters may be varied, depending to a great extent upon the size of the wheels. Pivoted to the inner face of the wheel 5 is a pawl 8, which is adapted to engage with a ratchet-wheel 9, secured to or formed with wheel 6. Keyed to the shaft 4 is a disk 10, having a groove 12 in its face, with a depression 13, in which works a pin or stud 14 on the pawl 8. This disk is located intermediate of the wheels 5 and 6, with the groove therein facing the wheel 5. It will be understood that there is one wheel 5 and 6 and a disk for each registering-key, the object of the two wheels being to indicate the number of depressions of each key, so that the aggregate sales may be ascertained. It will also be noted that for each revolution of wheel 5 the secondary wheel 6 will be turned the extent of one number, as will hereinafter more fully appear.

The shaft 4 should be squared at one end to receive a wrench, and in order to enable all the wheels to be turned to zero at the beginning of a day's work the shaft 4 may be provided with a groove 15, extending from end to end thereof, which has one of its sides beveled or inclined at an angle to the axis. (See Fig. 8.) Secured to each of the wheels 5 and 6 is a small tube 16, containing a coiled spring 17 and a catch 18, having a beveled end 19 corresponding with groove 15. By



this construction the wheels can turn freely on the shaft 4 in one direction, as the end of the catch will slide over the beveled side of the groove. The wheels, however, cannot  
 5 turn in the opposite direction, so that when the shaft is rotated in that direction the catches will rotate the wheels so that they can all be turned back to zero.

Pivoted on a transverse shaft 20, secured  
 10 to the frame of the device, are the key-levers 21, being provided at their inner ends with spring-actuated pawls 22, which engage with the cogs on the wheels 5 when a key is depressed, so as to move or rotate the wheels.  
 15 The front or outer ends of the key-levers are pivoted to vertical bars 23, provided with finger-buttons 24. Intermediate of the key-bars 23 and the shaft 20 each lever is provided with a downwardly-depending arm 25, which  
 20 is adapted to strike the end of a lever 26, pivoted on a transverse shaft 27. The opposite end of this lever engages with a stud 28 on a vertical rod 29, which carries at its upper end a display-plate having a number  
 25 thereon corresponding with the number on the finger-button of the key connected therewith. The numeral 30 denotes a transverse plate, the ends of which work in grooves in the frame or in the casing 1. At regular intervals throughout its length this plate is  
 30 formed with a rectangular aperture 31 and an intersecting slot 32. Pivoted to the lower ends of the key-bars are bars 33, having upon one side cams 34, which engage with the aperture in the plate 30, while the edges of the  
 35 bars rest in the slots 32. Springs 35 are connected with downwardly-depending arms 25 and with the pivoted bars 33, the tendency of which is to force the said pivoted arms 33  
 40 and consequently the plate 30 inwardly.

The numeral 37 denotes a transverse plate secured to the frame of the device for limiting the forward movement of the bars 33.

The cash-openings, which are similar to  
 45 those in my patent before referred to, are provided with transverse shutters 38 and 39, secured to shafts 40 and 41, pivoted in the frame of the apparatus. These shafts are provided with cranks 42, pivoted to a vertical  
 50 bar 43, which in turn is pivoted to a longitudinal lever 45, pivoted or fulcrumed on a transverse shaft 46 and provided with a short vertical arm 47, which engages with a notch 48 in the plate 30.

55 The numeral 49 denotes the change-drawer, which may readily be moved in and out, and 50 designates the sealed or locked cash till or receptacle located within the casing above the change-drawer.

60 The operation is as follows: When a cash payment is made and a key depressed to register the same, the pivoted pawls on the ends of the connected key-lever will move the wheel 5 the extent of one number, thus indicating that one sale equal in value to the  
 65 amount on the finger-button of the key has

been made. At the same time the arm 25 will strike the end of lever 26 and elevating the opposite end thereof, which will cause the display-plate to be also elevated. As the  
 70 arm strikes the lever 26 the plate 30 will be moved outward by the cam 34 engaging with the aperture 31, whereby the end of the lever can clear said plate. As the key-bar continues its movement the cam will become dis-  
 75 engaged from the aperture, so as to allow the said plate to return to normal position, being forced inward by the spring 35 and pivoted bar 33, when it will engage with the lever 26 and keep the display-plate elevated until  
 80 another key is depressed to register another sale. As these movements take place the short arm 47 of lever 45 will be actuated by the plate 30, and by means of the bar and cranks the shutters will be opened to allow  
 85 the cash previously deposited in the cash-openings to drop to the cash-till. Upon the return movement of the plate the shutters will be closed to receive and retain the cash just received, which will remain in sight un-  
 90 til a subsequent sale is made and the shutters again actuated by depressing a key to register such sale. When the wheel has made a complete revolution, the pin on the pawl 8 will engage with the depressed portion 13 of  
 95 the groove 15, causing the pawl to be engaged with the ratchet 9, whereby the wheel 6 is moved one tooth or point, thereby indicating that thirty sales have been registered by wheel 5. The registering-wheels are returned to  
 100 zero by means of the catches 18 and groove 15 in the shaft 4, as before described.

Having thus described my invention, what I claim is—

1. In a cash-register, the combination, with  
 105 the registering-wheels, of the pivoted key-levers having spring-pawls at their inner ends, the key-bars, the downwardly-depending arms formed with said levers, the bars pivoted to the key-bars, provided with cams, the trans-  
 110 verse plate having a rectangular aperture and an intersecting slot, the levers with which said plate and arms are adapted to engage, and the rods carrying the display-plates, substantially as described. 115

2. In a cash-register, the combination, with the casing provided with cash-openings and the shutters secured to pivoted transverse shafts provided with cranks, of the vertical bar connected with said cranks, the lever pivoted to  
 120 said bar and fulcrumed to a transverse shaft, and the short vertical arm engaging with a notch in the sliding plate, actuated by the indicating-keys, substantially as described.

In testimony that I claim the foregoing as  
 125 my own I have hereunto affixed my signature in presence of two witnesses.

HENRY AUGUST BIERLEY.

Witnesses:

T. T. FORMAN,  
 J. M. TANNER.