

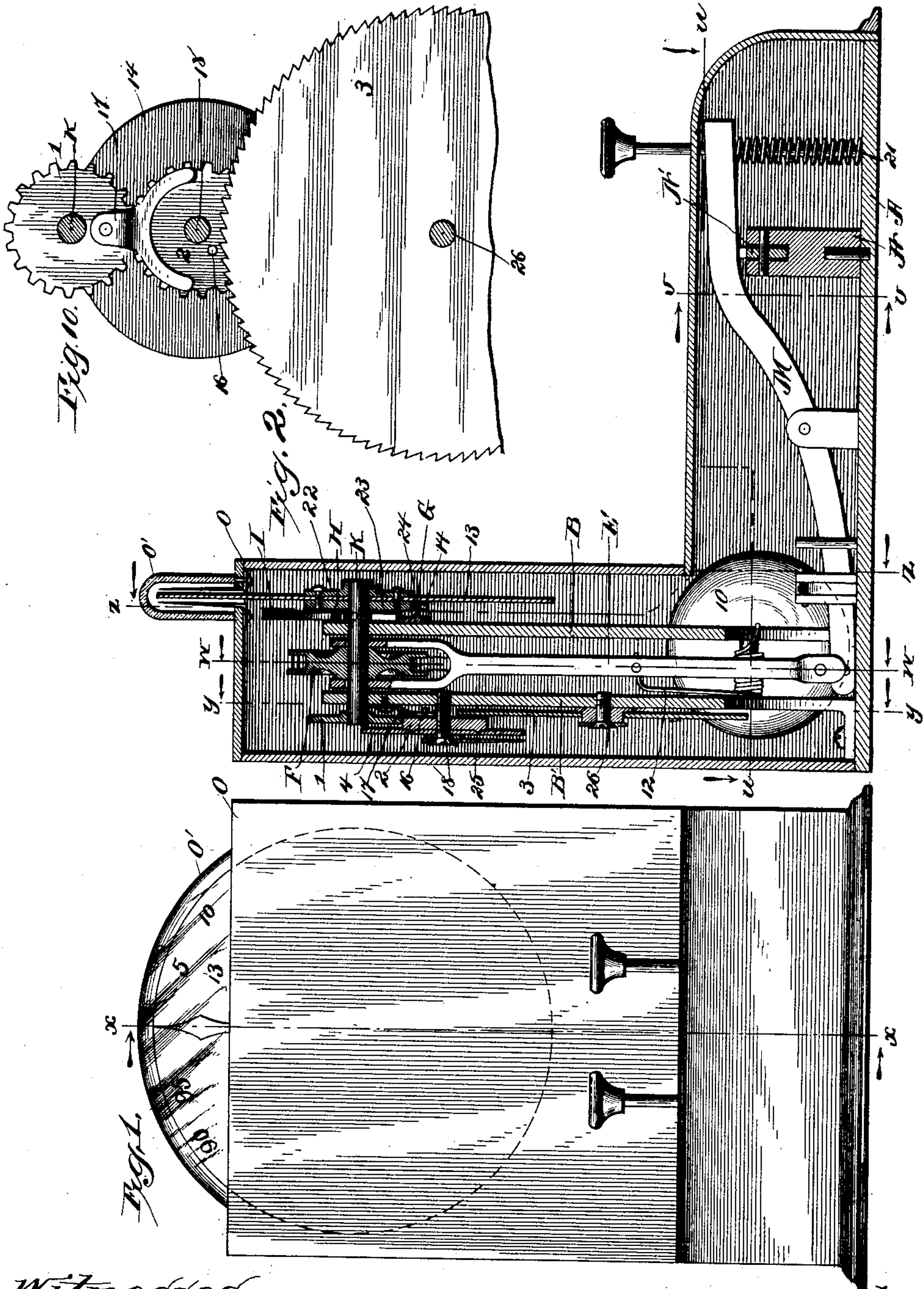
(No Model.)

4 Sheets—Sheet 1.

G. C. HENRY.
CASH REGISTER AND INDICATOR.

No. 465,020.

Patented Dec. 15, 1891.



Witnesses:

Wm. M. Rheem.

E. C. Hartman.

Inventor:

George C. Henry

By Butterworth Hall & Brown

Attys

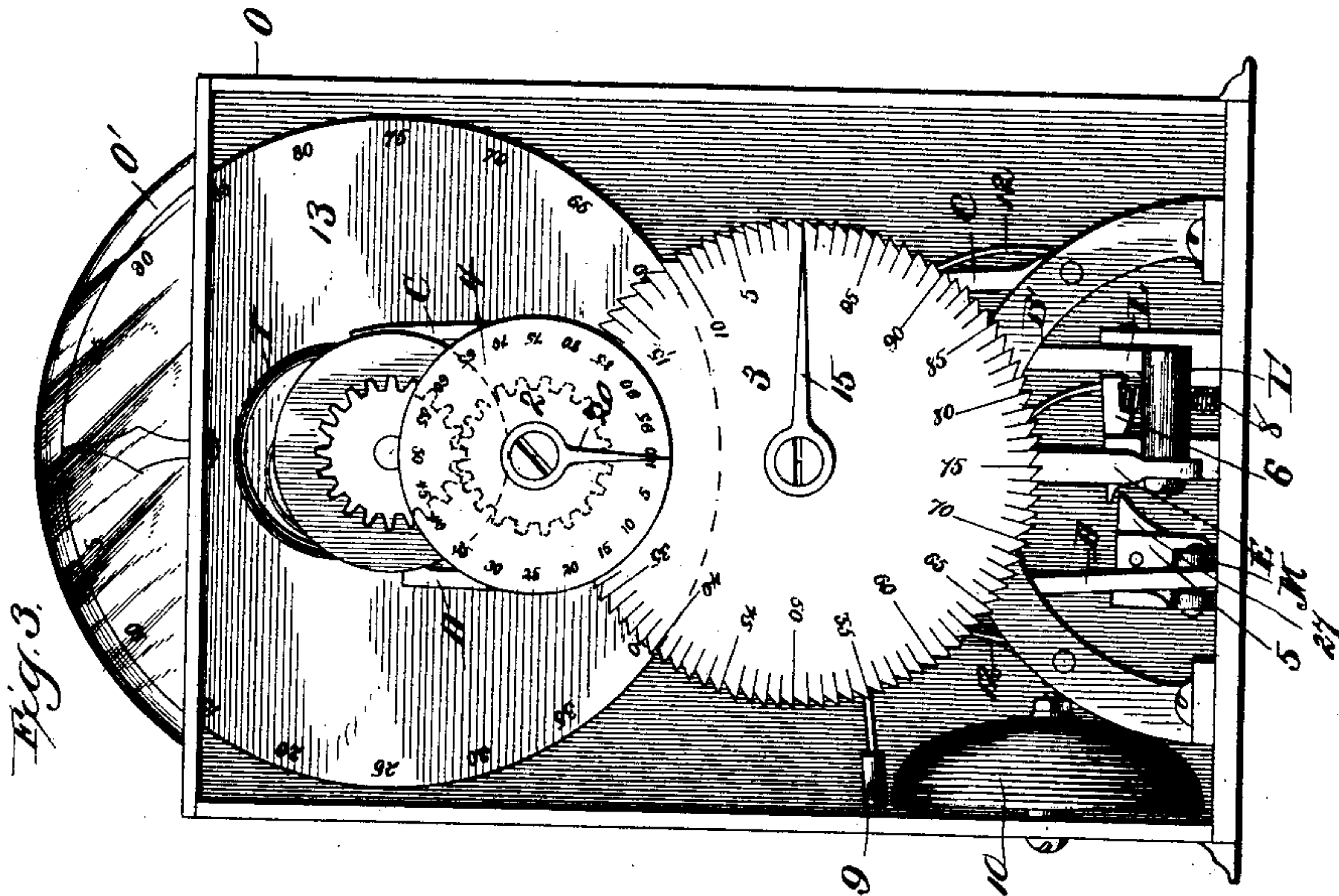
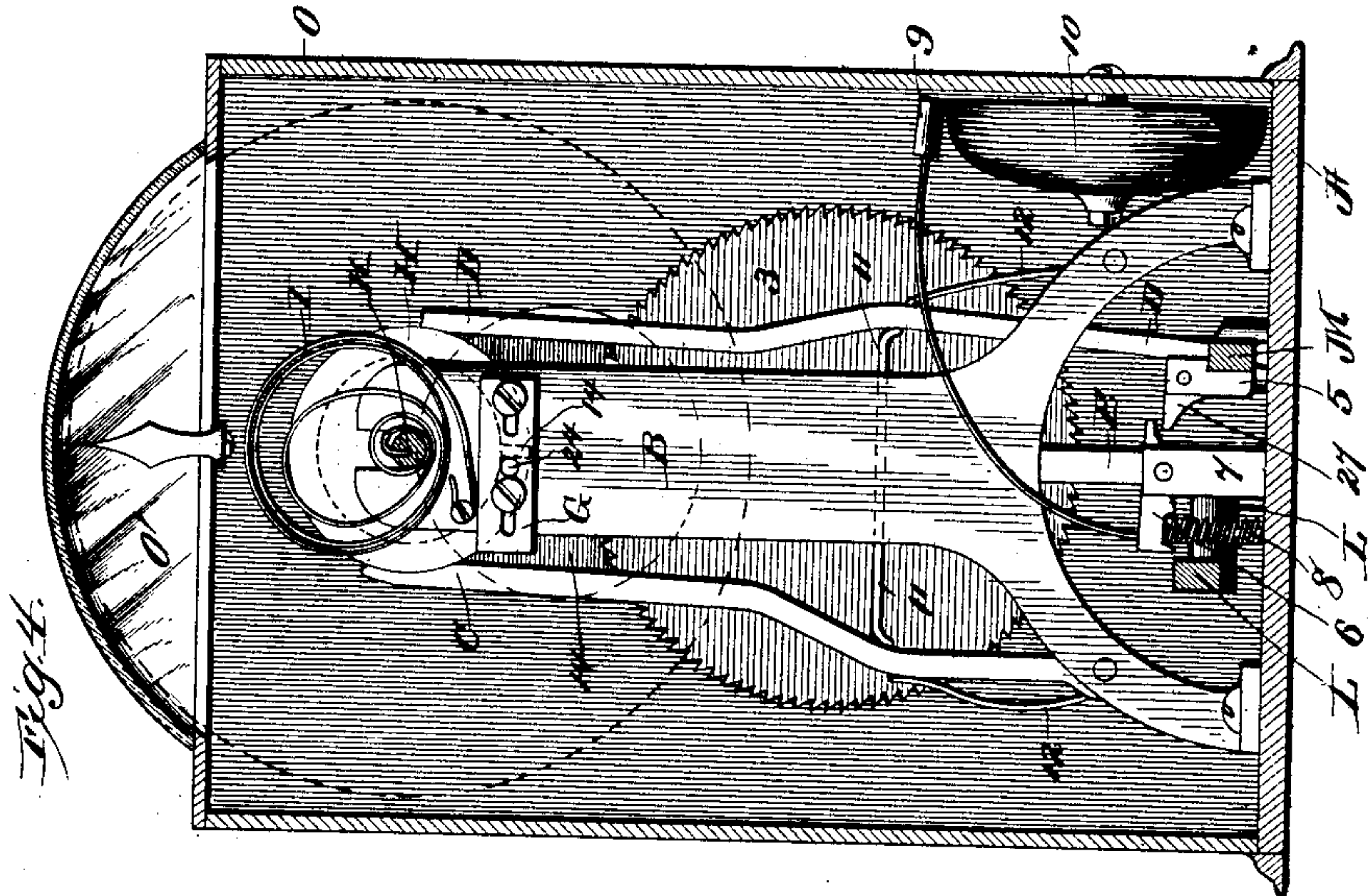
(No Model.)

4 Sheets—Sheet 2.

G. C. HENRY.
CASH REGISTER AND INDICATOR.

No. 465,020.

Patented Dec. 15, 1891.



Witnesses:

Wm. M. Rheem

C. H. Hurdman

Inventor:

George C. Henry

By Butterworth Hall & Brown

Atty's

(No Model.)

4 Sheets—Sheet 3.

G. C. HENRY.
CASH REGISTER AND INDICATOR.

No. 465,020.

Patented Dec. 15, 1891.

Fig. 6.

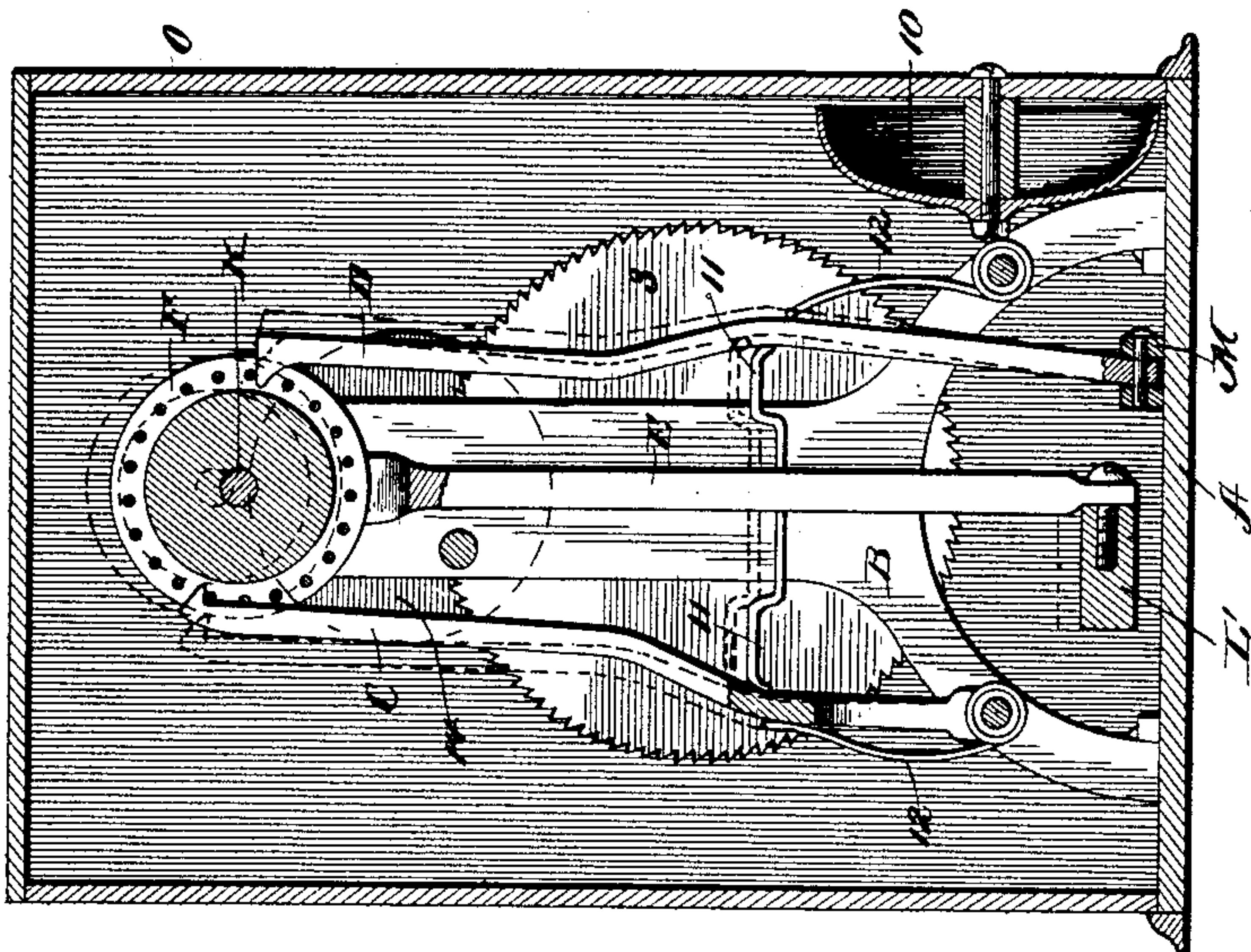
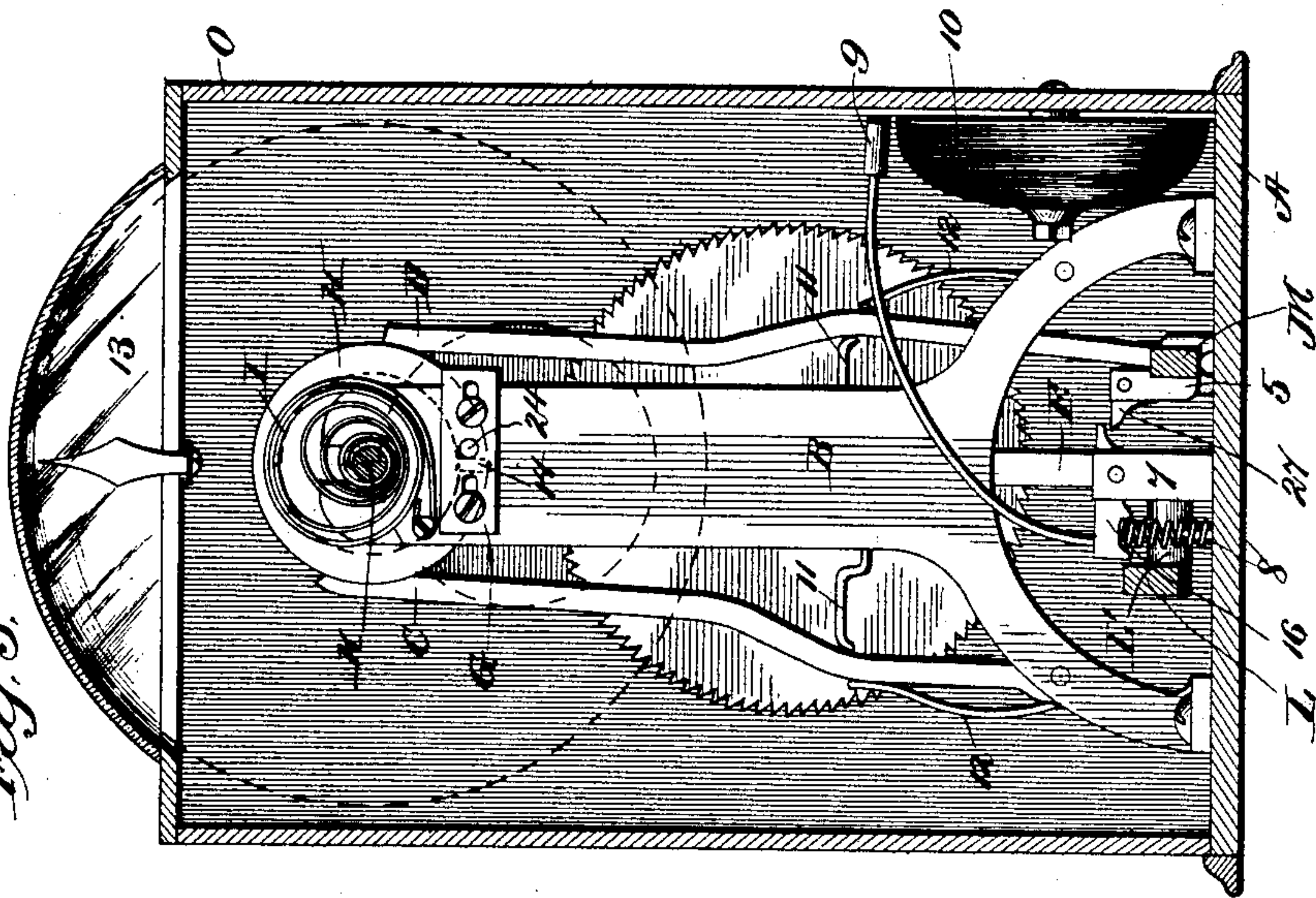


Fig. 5.



Witnesses:

Wm. M. Rheem.
E. L. Hurdman,

Inventor

George C. Henry
By Puttsworth Hall & Brown
Attys

(No Model.)

4 Sheets—Sheet 4.

G. C. HENRY.
CASH REGISTER AND INDICATOR.

No. 465,020.

Patented Dec. 15, 1891.

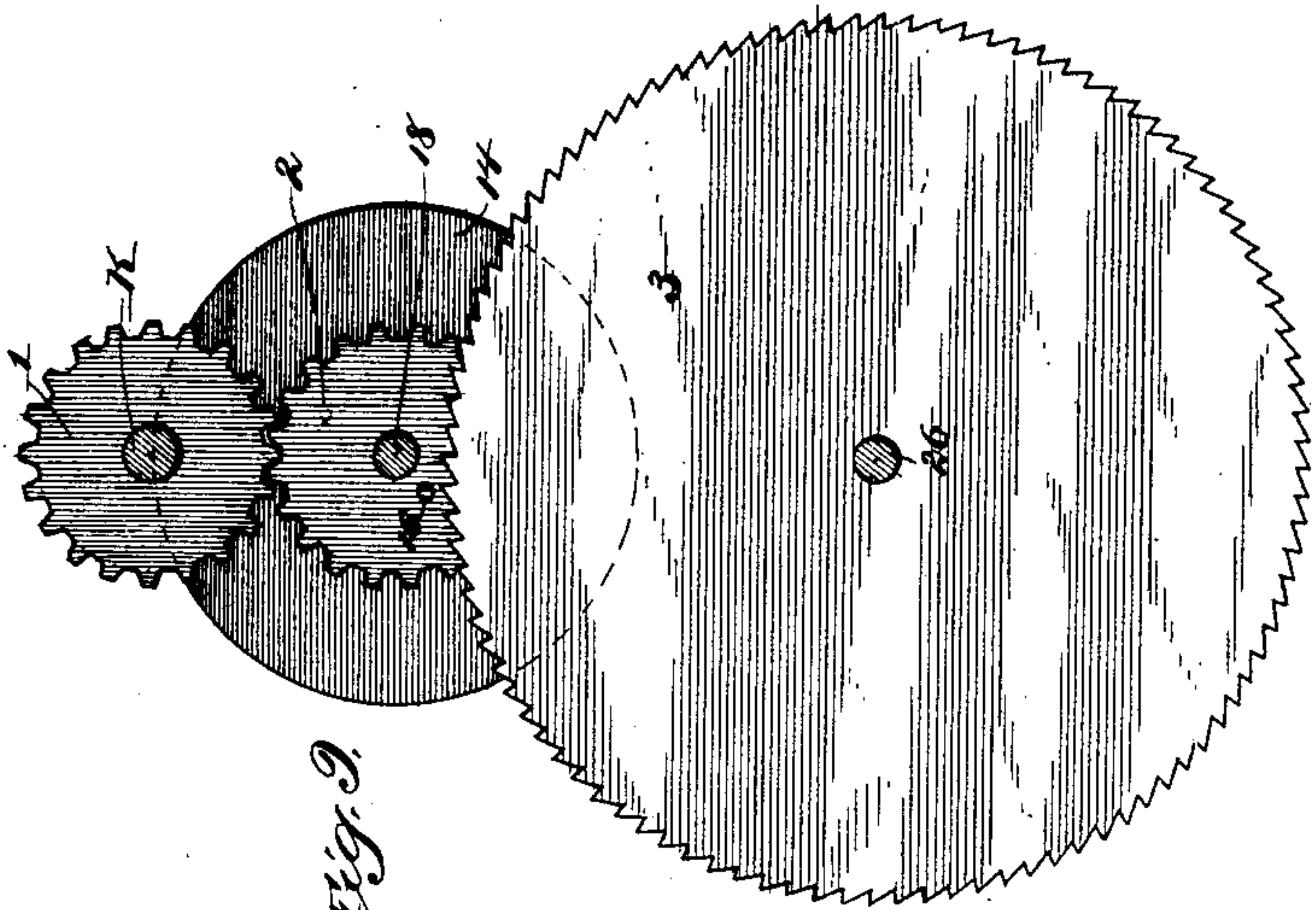
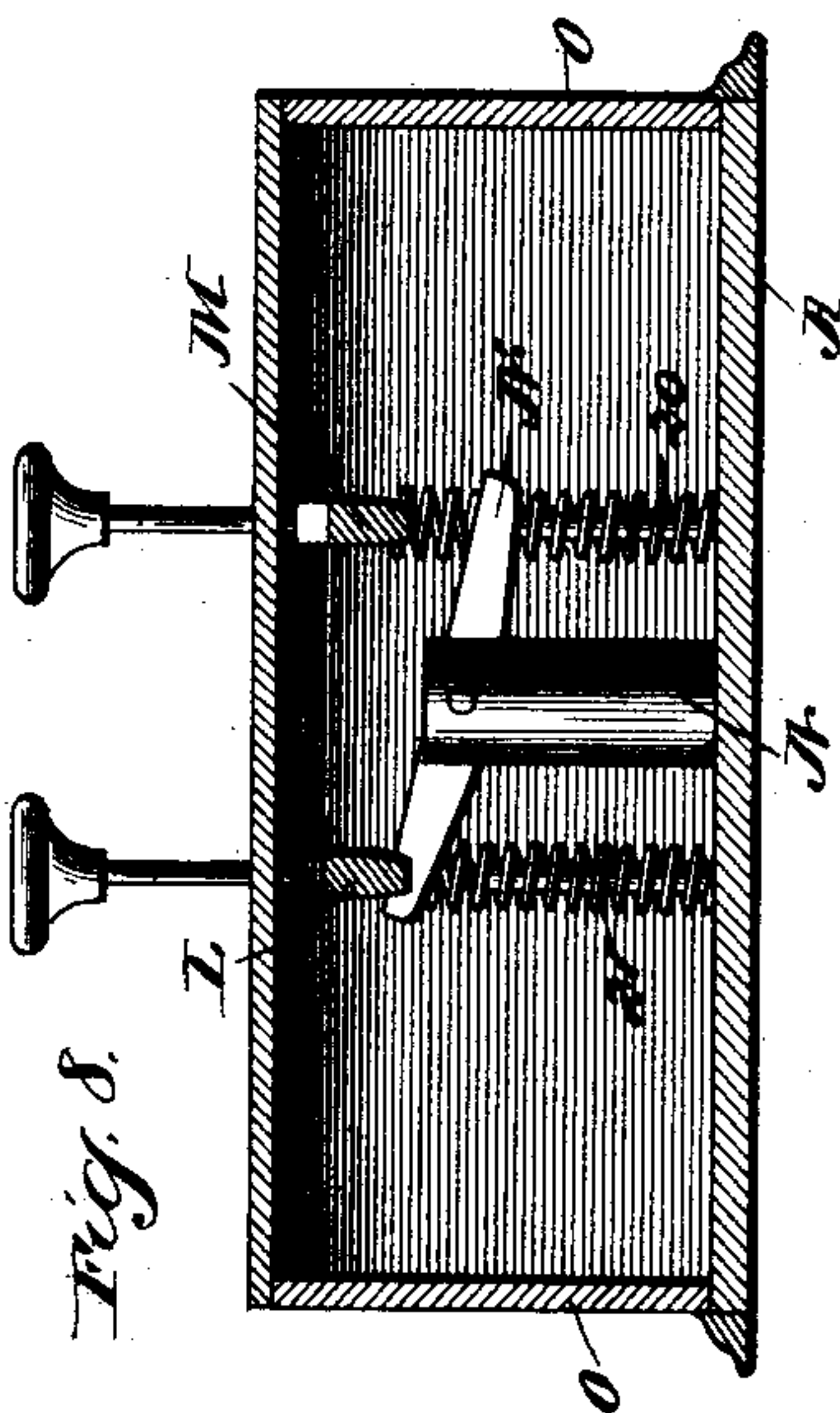
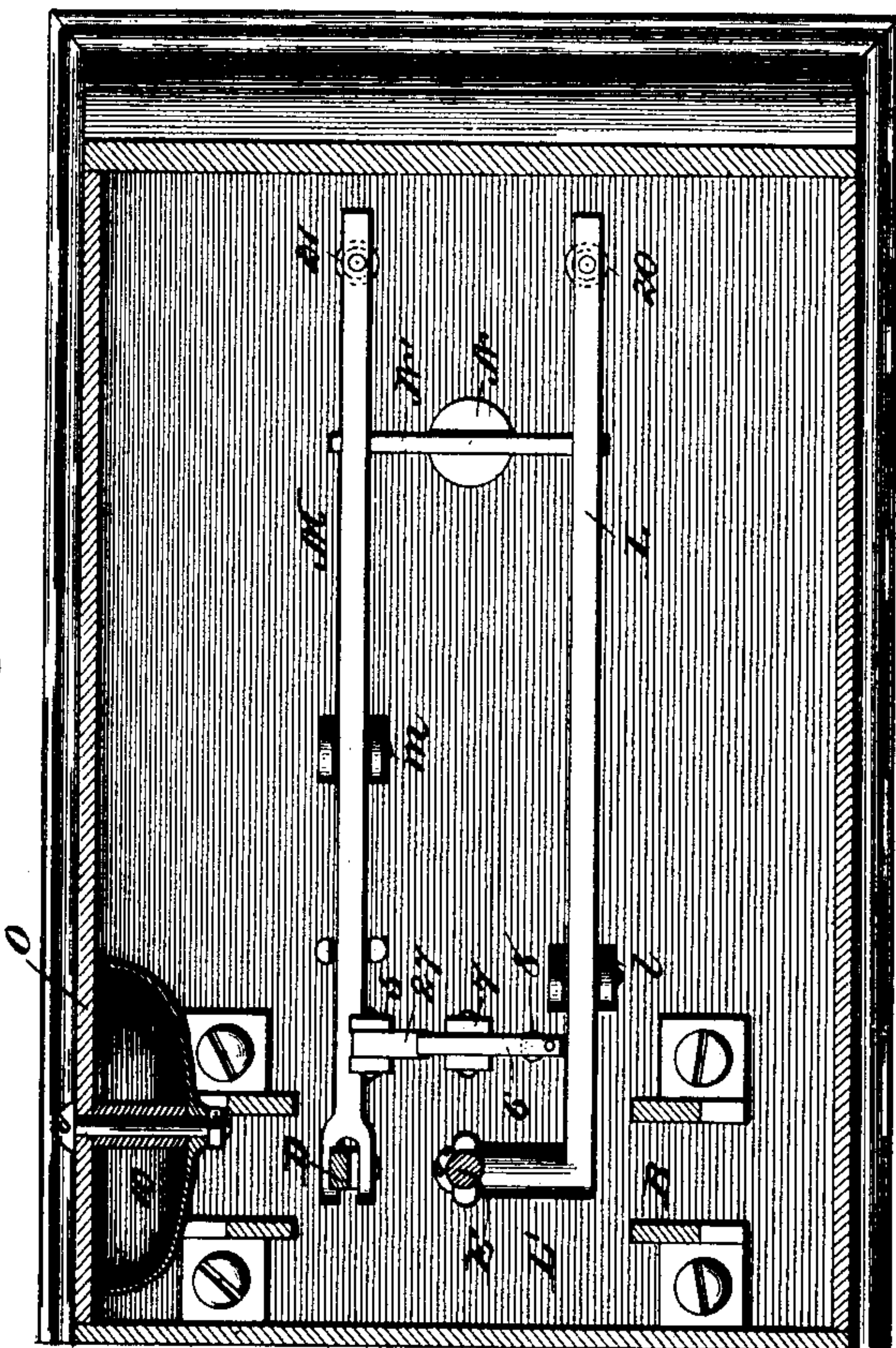


Fig. 2.



167



Witnesses:

Wm. M. Rhein,

J. C. Alderman,

Inventor:

George C Henry

By Butterworth Hall Brown

Atty's

UNITED STATES PATENT OFFICE.

GEORGE CHAMBERS HENRY, OF BURLINGTON, IOWA.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 465,020, dated December 15, 1891.

Application filed May 2, 1891. Serial No. 391,419. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CHAMBERS HENRY, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented new and useful Improvements in Cash-Registers, of which the following is a specification.

My invention relates to that class of devices known as "cash-registers;" and its object is to provide a register that will accurately indicate the sum total of the sales or cash received where the article or articles sold have a fixed value, as \$.05, \$.10, \$.15, &c.—for instance, where used in connection with a soda-water fountain. I accomplish these results by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the boxing or casing, including and covering the working parts of my invention. Fig. 2 is a sectional view of my invention upon the lines $x x$ of Fig. 1. Fig. 3 is a posterior elevation of my invention with the rear side of the casing removed. Fig. 4 is a sectional view of my invention upon the lines $z z$ of Fig. 2. Fig. 5 is the same sectional view, except that the slotted plate G is in another position and the spring unwound. Fig. 6 is a sectional view of Fig. 2 upon the line $w w$. Fig. 7 is a horizontal sectional view upon the line $u u$ of Fig. 2. Fig. 8 is an end view of the casing and inclosed devices upon the line $v v$ of Fig. 2. Fig. 9 is a detail view of the posterior gearing and registering disks of my invention, and Fig. 10 is a sectional view of my invention upon the lines $y y$ of Fig. 2.

Like letters and numerals of reference are used to designate similar parts in the several figures of the drawings, in which—

A represents the bed-plate, upon which is located the entire structure of my invention.

O O' represent a casing inclosing the structure of my invention.

B B' represent two supports parallel to each other and fastened to the bed-plate, as shown, by screws or rivets, these supports carrying various portions of the devices, as shown. B B' are each provided with open slotted bearings, in which is journaled the shaft K, this latter supporting and carrying various gear-wheels and other devices in my invention. The shaft K carries on its central portion a

ratchet-wheel F, which is rigidly affixed thereto. A rod or arm E, pivotally connected at its lower extremity to an arm L' of the lever L, is provided with yoke-shaped arms at its upper extremity having bearings, in which is closely journaled the shaft K.

The interior disk 23 is provided with a pin 14, which engages, as hereinafter explained, with a pin 24, which latter projects from the adjustable plate G. The plate G is provided with two slots, as shown, and is held in position between the support B and the disk 13 and its supporting-disks 22 and 23 by screws which enter the support B, as shown, the plate G and screws holding it being so located as to be out of engagement with any of the parts, except that its pin 24 may engage with the pin 14 of the disk 23.

A spiral spring is interposed between the disk 23 and the support B, its interior end being rigidly attached to the shaft K and its exterior end attached to the support B, so that when the disk 23 upon the shaft K is revolved it winds up the spring, and when the disk is released, as hereinafter explained, the resiliency of the spring restores the disk and the shaft K to their normal positions. The disk 13 is provided upon one or both sides with figures from zero to ninety-five, representing twenty distinct numbers in an arithmetical progression by the difference of five. Upon the opposite end of the shaft K is located a gear-wheel 1, which, when the shaft K is in normal position, engages with another gear-wheel 2, which latter gear-wheel is supported by a screw or rivet 18 inserted into the support B'. Upon this screw or rivet 18 and permanently affixed to the gear-wheel 2 is a disk 4, which rotates with the gear-wheel 2. This disk 4 is provided with a series of numbers from five to a hundred in an arithmetical progression by a difference of five. Exterior to this disk and permanently affixed upon the screw or rivet 18 is a pointer 25. The gear-wheel 2 is held in proper position upon the screw or rivet 18 by a curved bracket 17, which is held permanently to the support B' by a screw, as shown in Figs. 2 and 10. The lower part of this bracket is of annular form, leaving an interior space in which the pin 16, permanently inserted in the gear-wheel 2, can revolve around the screw or rivet 18 and en-

gage with the teeth of the gear-wheel 3, as hereinafter explained. The gear-wheel 3 is supported in its proper position by means of a screw or rivet 26, around which this disk 5 may revolve, and upon the extremity of which disk and permanently fixed to the screw or rivet 26 is a pointer 15. The disk is provided with a hundred teeth, and its exterior surface is provided with figures ranging from 10 zero to one hundred, as shown.

Pivotally connected at one end of the lever M is a drive-pawl D, curved at its central portions, as shown, rising to a point nearly opposite the center of the ratchet-wheel F and engaging with said wheel, so that when 15 elevated it changes the position of the ratchet-wheel F and causes it to rotate the distance required. This drive-pawl D is held in engagement with the ratchet-wheel F by means of a spring 12, which is supported upon 20 a cross-bar held in the legs of the supports B B'. Of course any form of spring and any form of adjustment therefor that will hold the pawl in engagement with the wheel will 25 answer the same function.

On the opposite side of the frame, constituted of the two supports B B' and pivotally held therein by a cross-bar, is the stop-pawl C, engaging the wheel F and preventing that 30 wheel from yielding to the force of the spring I. Rigidly attached to the upright arm or rod E is a cross-bar 11, with its ends bent or beveled so as to press against the interior surfaces of the pawls C and D, which when 35 lifted presses against the narrower curvature of the two pawls, spreads them apart, and frees them from engagement with the ratchet-wheel F. The engagement of the rod or bar C with the wheel F is effected by the spring 40 12; but of course any form of spring and arrangement thereof operating in the same manner would produce the same result.

Attached to one side of the casing is the bell 10. A hammer 9, with a curved handle 45 rigidly affixed to a lever 6, supported in a post 7, is held in normal position by a spring 8. Another lever 27, supported in a post 5, which is rigidly attached to the lever M near its pivoted ends, engages the lever 6 and causes 50 it to operate the hammer 8 whenever the pivoted end of the lever M is lifted.

Between the two levers L and M is located a post N, firmly attached to the bed-plate, which has at its upper extremity a slot containing a lever N'. The bottom of this slot is 55 so constructed that the downward movement of either end of the lever N' is limited, and this limitation of the movement of the lever N' limits the downward stroke of the levers L and M, and consequently limits the 60 upward stroke of the opposite ends of those levers.

The portion O' of the casing is furnished with windows, or may be made entirely of 65 glass, so as to expose the upper portion of the disk 13 and the figures thereon.

Having now described the construction of my invention, I proceed to describe its mode of operation. The disk 13 having been placed at its normal position, the cipher or the 70 point zero will be at the center and top of the disk. The same will be true of the disk 4, and the disk 3, which is capable of adjustment on its shaft, is adjusted so that the pointer 15 indicates the division at zero. By pressing 75 upon the knob of the lever M the pawl D is lifted, so as to cause the ratchet-wheel F to be rotated one-twentieth part of its circle or to the figure 5, as shown on the disk 13. The opposite pawl C has been forced out of place 80 by a tooth or cog of the wheel F and has re-engaged with another, so as to hold said wheel F in position. This movement is repeated as frequently as desired until the disk 13 has revolved its entire circle, when the pin 85 14 upon its disk 23 has passed around to the opposite side of the pin 24 of the plate G and can proceed no farther. This arrests the movement of the disk 13. This revolution of the shaft K has of course been communi- 90 cated to the gear-wheel 1, and through it to the gear-wheel 2, and by it in turn to the disk 4. The pinion 16 of the gear-wheel 2 has passed around and engages with one of the teeth of the disk 3, causing it to move one 95 point, so that upon the supposition that the figures of the disk 13 represent five cents the movement of one point upon the disk 3 registers one dollar. This completes the operation of the device so far as the registration of 100 twenty points is concerned. It then becomes necessary to restore the device to its original normal position. This is accomplished by pressing upon the knob of the lever L, which operates the rod or arm E. The cross-bar 11 105 spreads the pawls C and D apart, disengaging them from the ratchet-wheel F and shaft K, and all of its attachments are lifted out of engagement with the gear-wheel 2, and the resiliency of the spring I, which has been 110 wound by the revolution of the disk 13, revolves the disk 13 and shaft K and all its attachments back to the point they first started from. Then the same operation begins again 115 until twenty movements are performed, when the disk is again arrested by the engagement of the pin 14 with the pin 24, the lever L moved, releasing the parts, and causing the various parts to be moved to their original position. It will be observed that at each 120 time the lever M is operated it lifts the post 5 and lever 27, so that the latter engages with the point of the lever 6 and causes the spring 8 to be depressed and the hammer 9 to be lifted until the point of the lever 27 passes 125 beyond engagement with the lever 6, when the spring 8 reacts, causing the hammer to strike the bell 10. This necessarily occurs at each movement of the lever M.

The plate G is provided with slots, as al- 130 ready explained, so that it may have some slight movement, and thus break the force of

the reverse movement of the disk 23 and the pin 14, when it is revolved by the operation of the spring I.

From the foregoing description it is evident that various modifications may be made in the construction and arrangement of the several devices constituting my invention without departing from the spirit thereof, and I do not intend to limit myself to the exact and specific construction therein shown.

It is also evident that any sum which is a multiple of five and less than one hundred, or one dollar, can be registered by operating the lever M the requisite number of times, and that the shaft and disk 13 can be returned to their normal positions or the starting-point at each operation of the lever L, instead of waiting until they have completed an entire revolution, and in practical operation this is the more desirable mode of using the registering device.

Having, therefore, described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a cash-register, the combination of a bed-plate, a frame thereon consisting of two supports rigidly held in position and each provided with a slotted bearing, a shaft carrying a ratchet-wheel and a pinion engaging with registering devices, a drive-pawl and a stop-pawl engaging said wheel on opposite sides thereof and means to hold them movably in such engagement, a lever pivotally attached to said bed-plate and operating said drive-pawl, whereby said wheel may be partially revolved in one direction, means for lifting said shaft and the various devices carried thereon, disengaging said pinion and said pawls, and means for restoring them to their normal position and engagements with the other parts, substantially as and for the purpose set forth.

2. In a cash-register, the combination of a bed-plate, a frame thereon consisting of two supports rigidly held in position and each provided with a slotted bearing, a shaft carrying a ratchet-wheel and provided with a disk, a spring and a pinion engaging with registering devices, a rod having two arms provided with closed bearings upon said shaft, and a lever pivotally attached to said bed-plate and connected with said last-named rod, whereby said shaft and its pinion may be lifted out of engagement with said registering devices and it and the various devices supported thereon may be restored to their normal position, all substantially as shown.

3. In a cash-register, the combination of a frame consisting of two parts rigidly supported upon a bed-plate and each part provided with open or slotted bearings, a shaft located in said bearings and carrying rigidly upon it a disk, a ratchet-wheel and a pinion engaging with registering devices, a drive-pawl and a stop-pawl engaging with said

ratchet-wheel on opposite sides thereof, a lever pivotally connected with said bed-plate and operating said drive-pawl, so as to move said wheel and other devices affixed to said shaft through a given portion of a circle, means for arresting said rotation of said shaft and wheel at the completion of one revolution thereof, a rod or bar having two arms with closed bearings upon said shaft and provided with means for disengaging said pawls from said wheel, a lever operating said last-named rod or bar, and means for revolving said wheel and shaft back to its starting-point, all substantially as and for the purpose set forth.

4. In a cash-register, the combination of a shaft carrying a disk, a ratchet-wheel engaging with drive and stop pawls, a pinion engaging with registering devices, a support for said shaft, having slotted or open bearings therefor, a rod having two bearings upon said shaft and provided with means for disengaging said pawls from said wheel, and means for reversing the revolution of said shaft and parts, substantially as and for the purpose set forth.

5. In a cash-register, the combination of a shaft carrying a disk, a ratchet-wheel and a pinion engaging with registering devices, said disk being provided with a projection or pin, and a slotted plate movably attached to said support and provided with a projection or pin to engage the projection or pin of said disk, substantially as and for the purpose set forth.

6. In a cash-register, the combination, with a ratchet-wheel carrying a shaft held in bearings, of a support, a drive-pawl engaging and operating said wheel in one direction, a lever pivotally connected with said drive-pawl and carrying a post and short lever pivotally held therein, and a post rigidly attached to the bed-plate of said machine and holding pivotally a lever provided with an arm and bell-hammer and being supported at one end by a spring, whereby at each operation of said drive-pawl and connecting-lever said arm and bell-hammer are caused to make a stroke upon a bell or other sounding material, substantially as and for the purpose set forth.

7. In a cash-register, the combination, of a shaft carrying a pinion, a support with bearings for said shaft, means for causing said shaft and pinion to make one revolution and then be restored to their starting-points, a gearing engaging with said pinion and held in place by a post or screw, an annular bracket attached to said support, said gearing carrying an index-disk and being provided with a projecting pin, and a second index-disk provided with cogs or teeth in which said pin of said gearing at each revolution of the latter engages, all substantially as shown.

GEORGE CHAMBERS HENRY.

In presence of—

JOHN C. HOPPMAN,
WM. HENDRICKS.