

(No Model.)

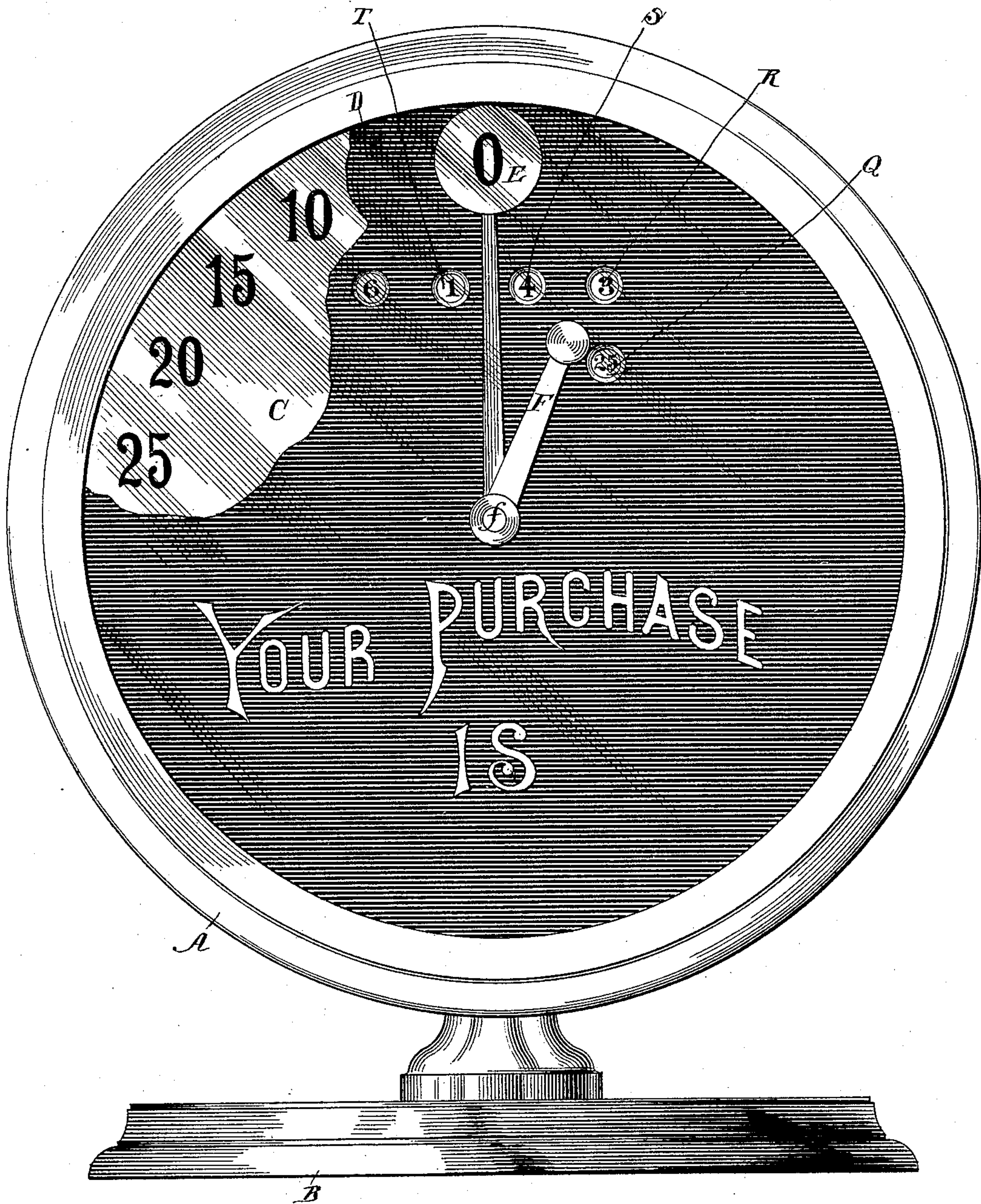
4 Sheets—Sheet 1.

A. I. BLANCHARD.
CASH REGISTER AND INDICATOR.

No. 442,660.

Patented Dec. 16, 1890.

Fig. 1.



Witnesses:
Charles Billon.
Thomson Cross.

Inventor
Allen I. Blanchard
by Beck & Bector
Attorneys.

(No Model.)

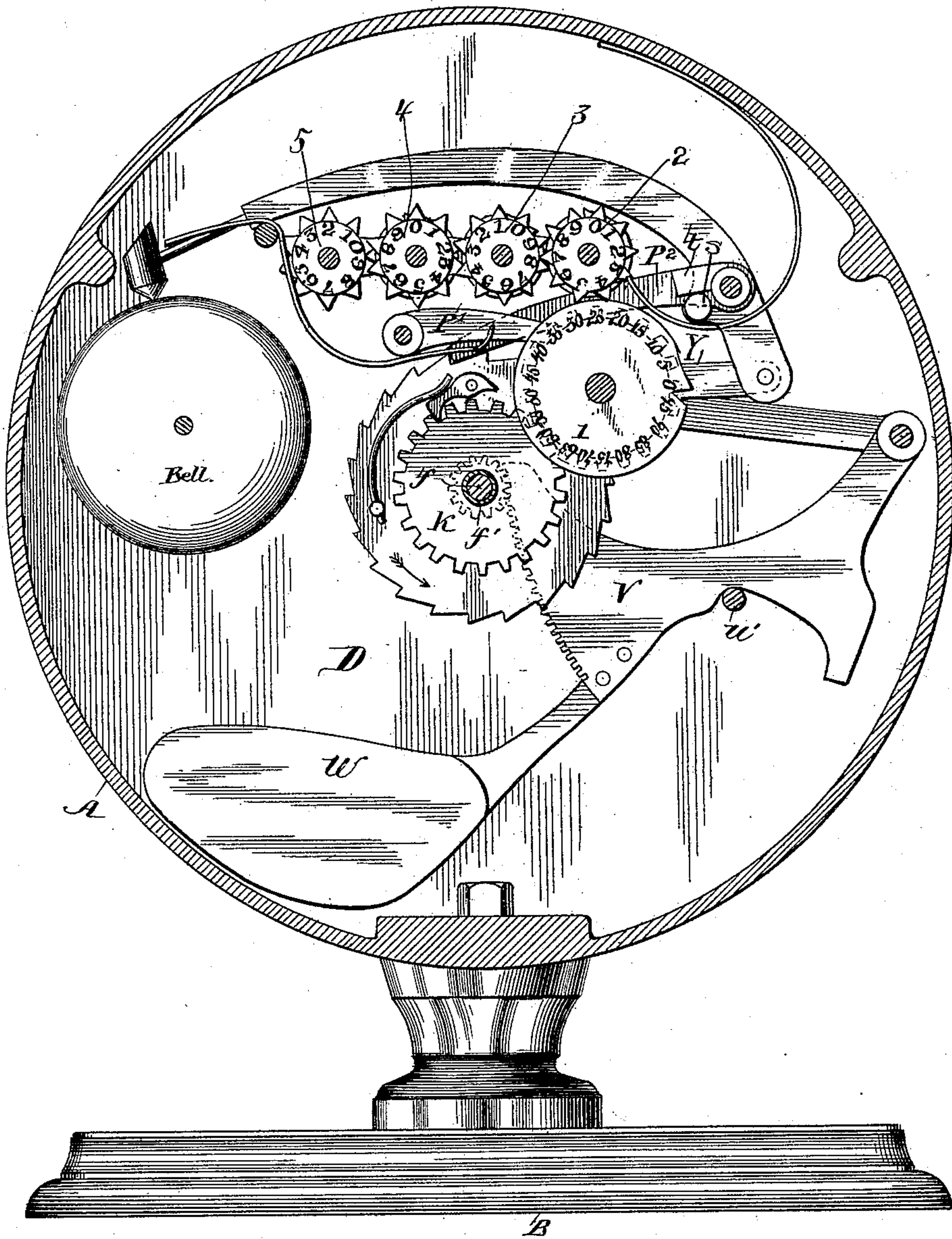
4 Sheets—Sheet 2.

A. I. BLANCHARD.
CASH REGISTER AND INDICATOR.

No. 442,660.

Patented Dec. 16, 1890.

Fig. 2.



Witnesses:
Charles Billor.
Thomson Cross.

Inventor:
Allen J. Blanchard
by Peck & Rector
Atty's.

(No Model.)

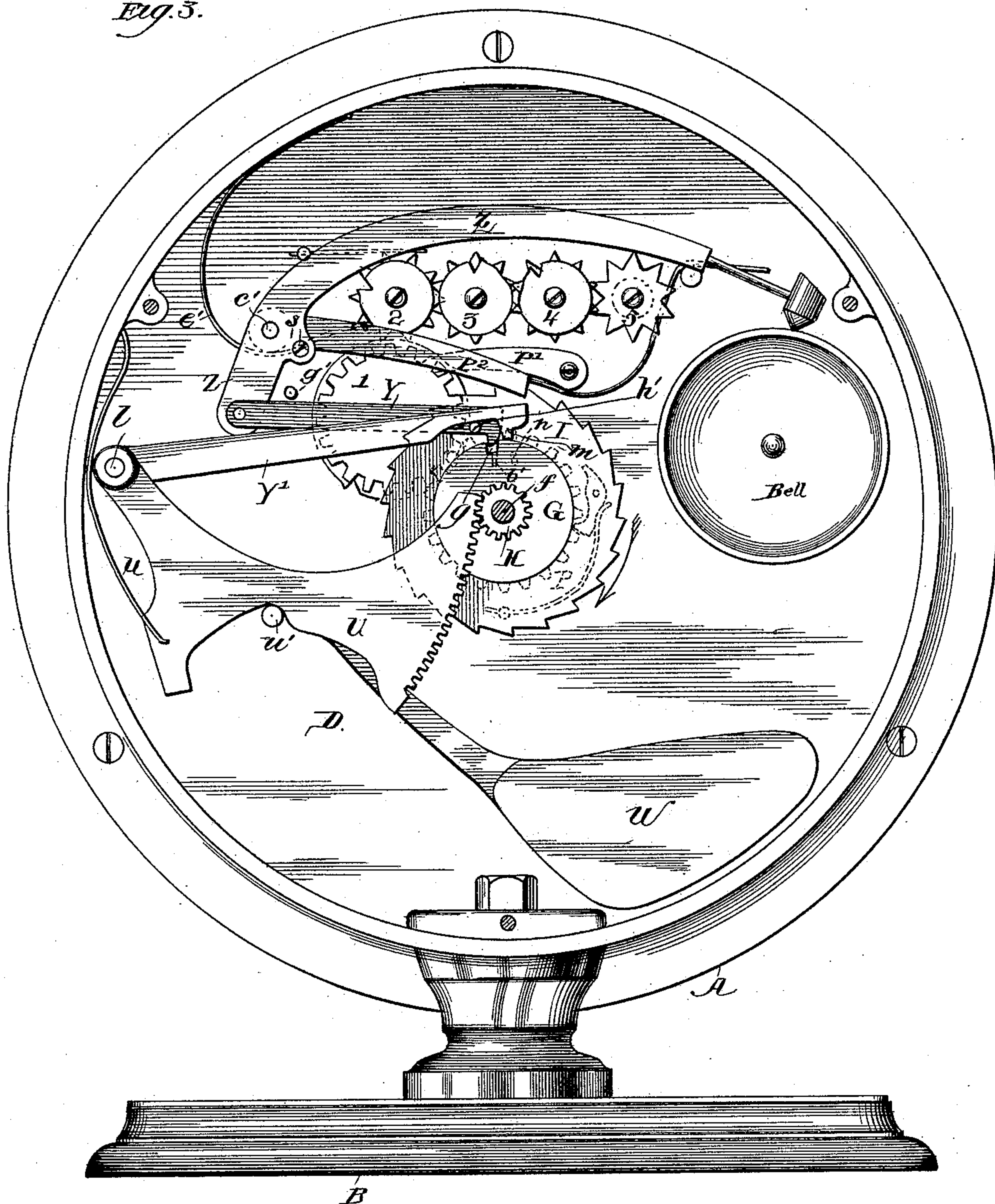
4 Sheets—Sheet 3.

A. I. BLANCHARD.
CASH REGISTER AND INDICATOR.

No. 442,660.

Patented Dec. 16, 1890.

Fig. 3.



Witnesses:

Charles Billon.

J. Thomson Cross.

Inventor:

Allen I. Blanchard

by Pick & Rector

Attorneys.

(No Model.)

4 Sheets—Sheet 4.

A. I. BLANCHARD.
CASH REGISTER AND INDICATOR.

No. 442,660.

Patented Dec. 16, 1890.

Fig. 4.

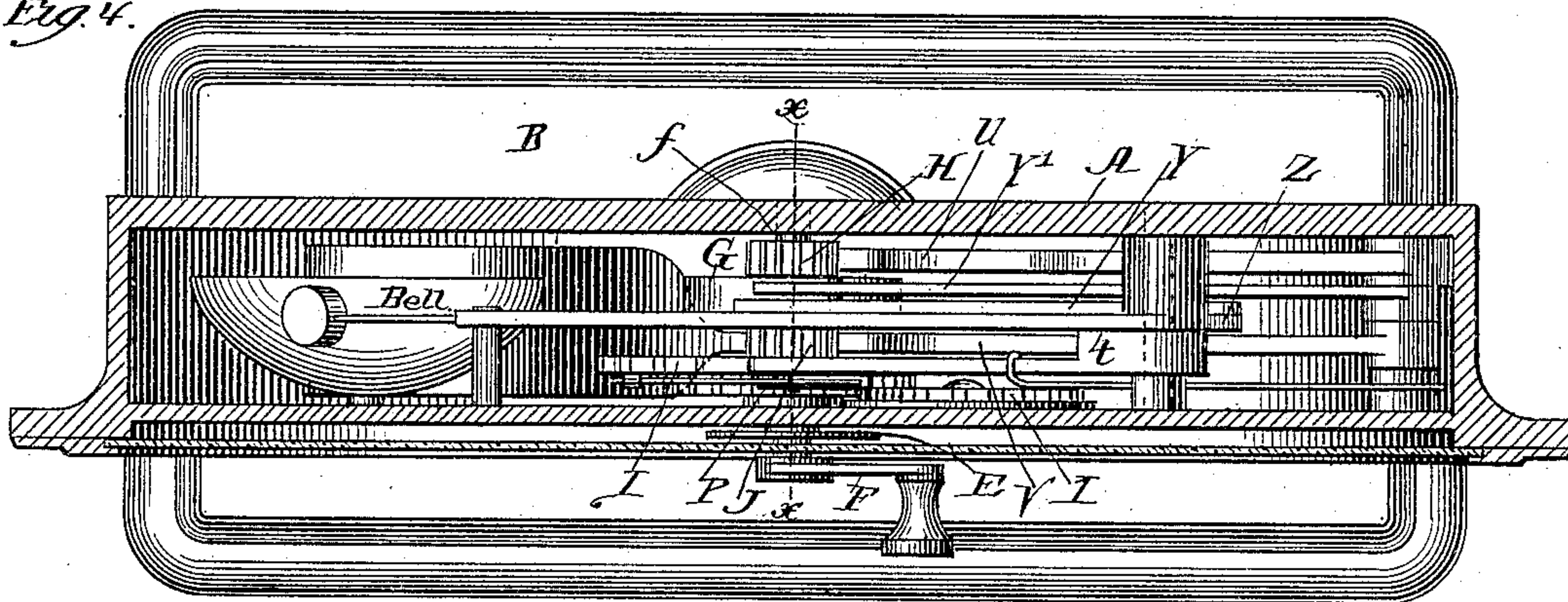


Fig. 5.

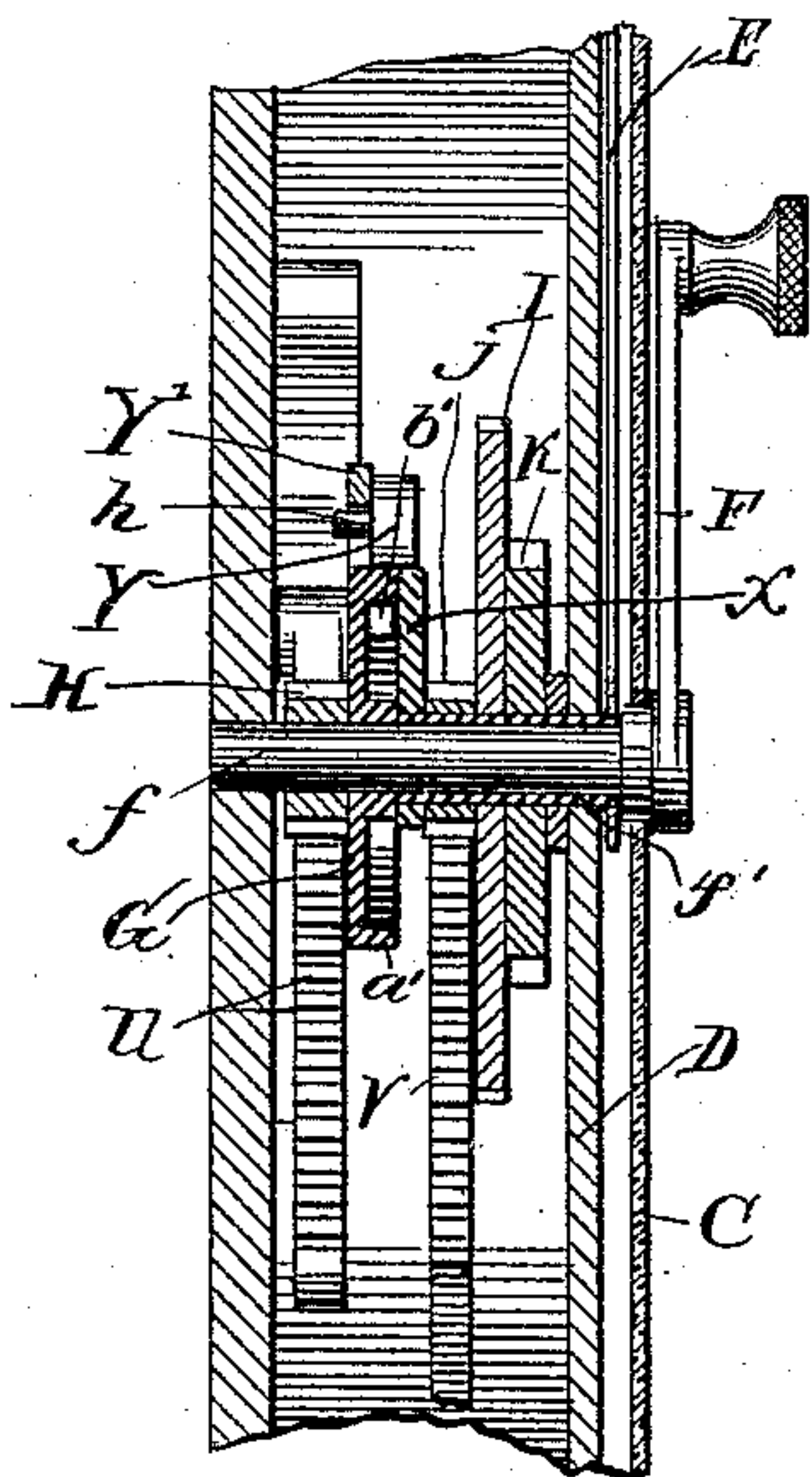


Fig. 6.

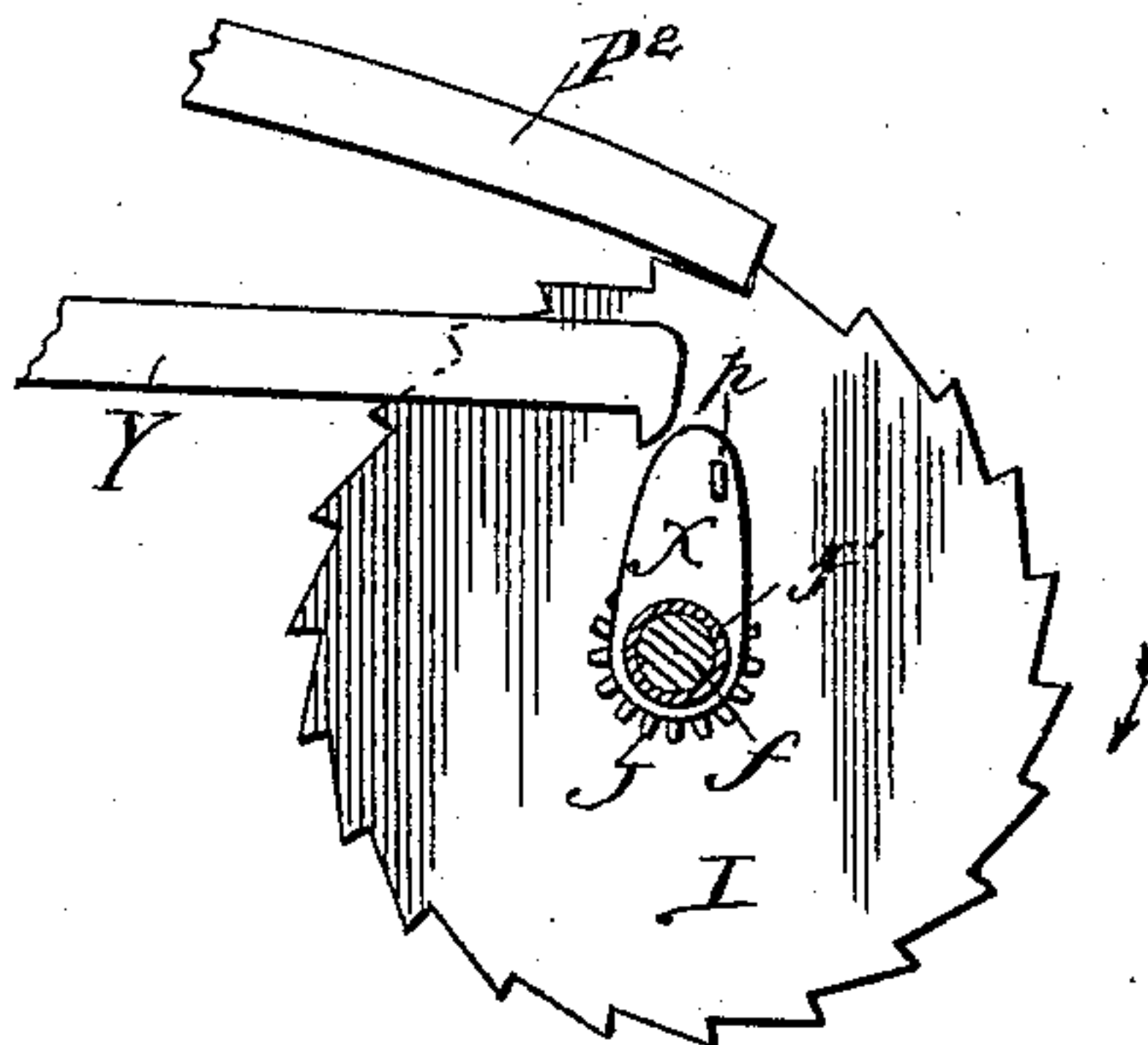
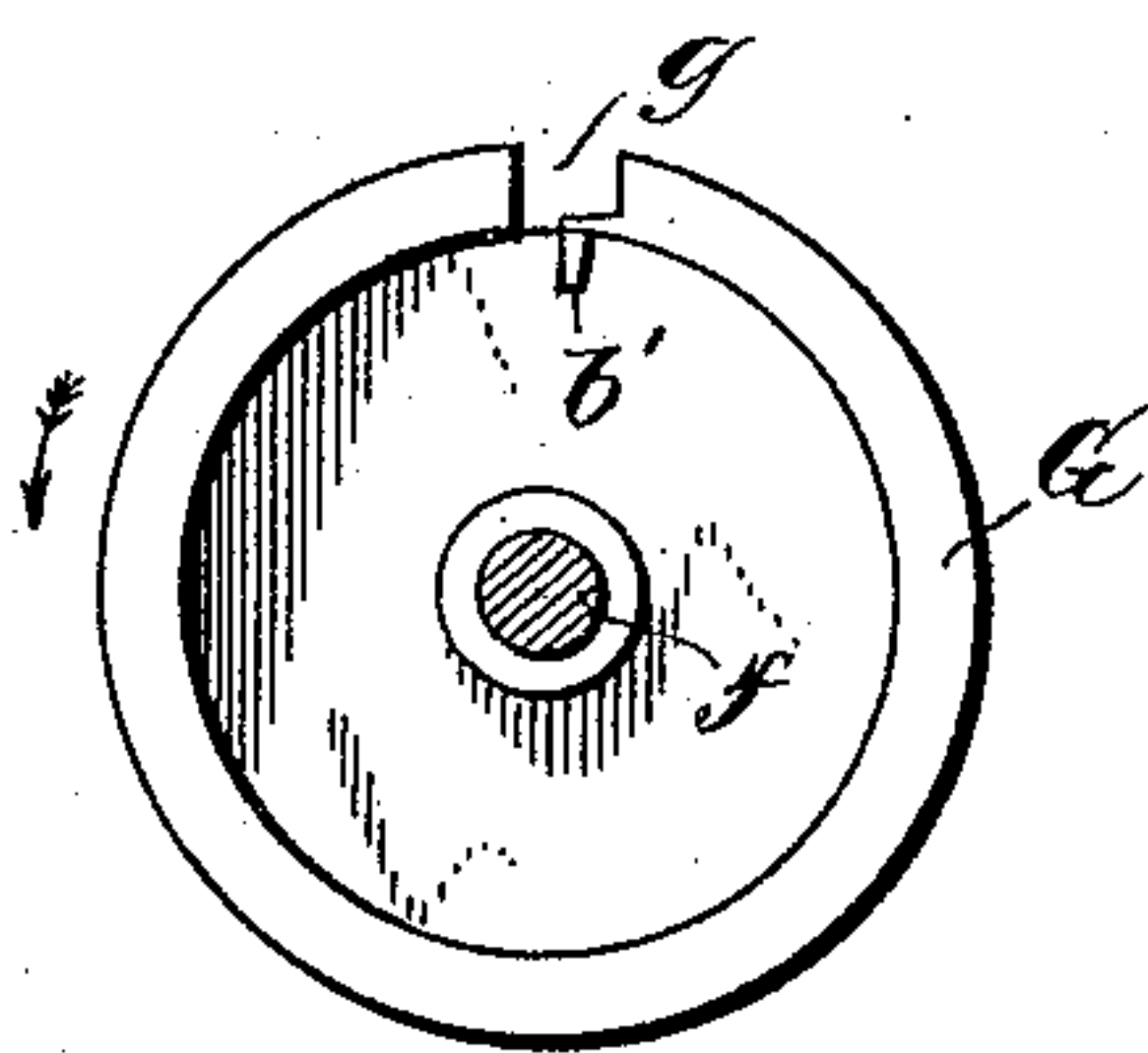


Fig. 7.



Witnesses:

Charles Billon
J. Thomson Cross.

Inventor:

Allen I. Blanchard
by Beck & Rector

Atty.

UNITED STATES PATENT OFFICE.

ALLEN I. BLANCHARD, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 442,660, dated December 16, 1890.

Application filed July 12, 1890. Serial No. 358,541. (No model.)

To all whom it may concern:

Be it known that I, ALLEN I. BLANCHARD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cash Registers and Indicators, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates more particularly to that class of cash registers and indicators which are known as "dial-machines," by reason of the fact that the indications are made by moving a pointer or indicator over a numbered dial.

Its novelty will be herein set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 represents a front elevation of my machine with a portion of the dial-plate broken away. Fig. 2 represents a sectional front elevation just inside the casing, showing the interior mechanism of the machine. Fig. 3 is a rear elevation with the rear side of the casing removed. Fig. 4 is a top plan view with the casing shown in section to expose the interior of the machine. Fig. 5 is a sectional detail taken on the line *xx* of Fig. 4. Fig. 6 is a detail to be referred to hereinafter. Fig. 7 is a side elevation of the recessed disk on the central shaft.

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

The first feature of my invention relates to the indicating mechanism of the machine, which is so constructed that when the indicator is moved to any given point on the dial it will remain there, while the handle by which it is operated returns to normal position. The construction is, further, such that when the handle is again moved forward preparatory to another indication the indicator will be released and returned to zero or normal position. The construction is, further, such that when the indicator is released it must return to zero before another indication can be made. Each of the above features I believe to be separately and broadly new in this class of machines.

A further novel feature of my indicating mechanism, independently of the above, consists in the character of the indicating-dial and the method of exposing the numbers thereon to make the indications.

The working parts of the machine are inclosed in a casing A, mounted on a base-plate B, and are mainly supported by and between its front and rear sides D D'.

The dial of the machine, to be referred to more particularly hereinafter, is shown in the drawings as consisting of a transparent glass plate C, Fig. 1, having a series of numbers arranged around its edge, the numbers preferably corresponding in color to the background formed by the front side of the plate D of the casing, so that they will be almost invisible when looking directly at the front of the machine.

Journaled in the side plates D D' is a central shaft *f*. Secured to the front end of this shaft, outside the dial-plate, is a handle F, by which the shaft may be turned.

Secured to the front end of a sleeve *f'* loose on the shaft *f*, beneath the dial-plate C, is an indicator E, carrying at its outer end a disk contrasting in color with the numbers on the dial-plate, so that when it is moved to a point beneath any one of them the number is brought clearly into view. The shaft *f* and sleeve *f'* are so connected that when the handle F is moved forward it turns the sleeve and moves the indicator; but when it is moved backward it is independent of the sleeve and the indicator remains at the point to which it has been moved.

The connection between the shaft and sleeve in the present instance is as follows: Tight upon the shaft *f*, near its rear end, is a disk G, Figs. 3, 4, and 5, having its inner side recessed out to leave merely an inwardly-projecting flange *a'* around its periphery, while tight upon the rear end of the sleeve *f'*, adjacent the inner recessed side of the disk G, is an arm X, Figs. 5 and 6, having a lateral lug projecting into the recess in the disk and arranged to be engaged by a lug *b'*, projecting inwardly from the disk when the latter is turned in the direction of the arrow. It results from this construction and arrangement

of the parts that when the handle *f* is moved forward and the disk turned in that direction the sleeve *f'* is turned with it and the indicator *E* is moved around the dial; but when
5 the handle and disk are moved in the opposite direction the sleeve and indicator need not turn with them, but may be held at the point to which they have been moved.

The described connection between the shaft
10 *f* and sleeve *f'*, (and thereby between the handle *F* and indicator *E*), through the medium of the disk *G* and arm *X*, is incidental to the construction of my machine in other respects, and I do not wish to be limited to this form
15 of connection between the two. Any suitable connection between the handle and indicator, or between the shaft and sleeve, which will cause the handle to move the indicator forward and permit it to be returned independently of the indicator may be substituted for
20 the one I have described. A dog *P*², engaging a ratchet *I*, tight on the sleeve *f'*, Figs. 2, 3, and 6, arrests the sleeve and indicator at any point to which they may be moved and
25 prevents their return until the dog is disengaged from the ratchet. Suitable means—such as springs or weights—are applied to the shaft *f* and sleeve *f'* for returning the handle *F* and indicator *E* to normal position when
30 released. In the drawings I have illustrated a spring *u*, Fig. 3, applied to the shaft *f* through the medium of a segment *U* and a pinion *H*, tight on the rear end of the shaft, Fig. 3, and have shown a weight *W* applied to the sleeve
35 *f'* through the medium of a similar segment *V* and a pinion *j* tight on the sleeve *f'*, Figs. 2, 4, and 5. The segments *U* *V* are arrested in their downward movement by and in normal position rest upon a stud *u'*, projecting
40 rearwardly from the front side of the casing. This arrangement of weight, spring, segments, and pinions I found convenient for the purpose in constructing my machine; but
45 any other arrangement of springs, weights, or other devices applied to the proper parts for the purpose may be employed.

From the construction thus far described it will be seen that when the handle *F* is moved forward the indicator *E* will move with
50 it, and that when the handle is released it will fly back to normal position under the action of the spring *u*, while the indicator *E*, by reason of the engagement of the dog *P*² with the ratchet *I*, will be retained at the point to which
55 it has been moved. When, therefore, the indicator is moved to any one of the numbers on the dial to make an indication and the handle is released and returned to normal position, the indicator continues to expose or
60 point to that number until released by disengagement of the dog *P*² from the ratchet *I*. This is accomplished upon the next operation of the machine to make another indication in the following manner and by the following
65 means, (see Fig. 3:) The holding-dog *P*² is pivoted at *c'*, and on the same pivot is supported a lever *Z*, to whose lower end is piv-

oted a latch-bar *Y*. The right-hand end of this latch-bar has a pendent hook projection which enters a notch *g* in the periphery of
70 the disk *G* when the latter is in its normal position of rest, as shown in Fig. 3. The lever *Z* is provided near its pivotal point *c'* with a laterally-projecting pin or lug *s*, which extends beneath the dog *P*² or a shoulder *t*
75 thereon, Fig. 2, so that when the lever is rocked on its pivot and the pin lifted it lifts the dog *P*². It results from this construction that when the handle *F* is moved forward and the disk *G* turned in the direction of the ar-
80 row the notch in the disk will pull the latch *Y* and lower end of the lever *Z* to the right, thereby causing the pin *s* to lift the dog *P*² out of engagement with the ratchet *I* and free the latter, which thereupon returns to normal
85 position under the action of the weight *W*, exerted through the segment *V*, pinion *j*, and sleeve *f'*. It will be noticed from Fig. 1 that the handle *F* when in normal position rests a short distance to the right of the indicator
90 *E*, and it will be seen from Fig. 3 that the notch *g* in the disk *G* corresponds to this position of the handle *F*. The purpose of this is to enable the handle *F* to be moved a short
95 distance forward to cause the ratchet to be released and the indicator allowed to return to zero before the lug *b'* on the inner side of the disk *G* engages the lug *p* on the arm *X* to move the indicator forward again.

To insure the complete resetting of the in-
100 dicator after being released, as before explained, and before it is moved forward again, I provide means for preventing the handle *F* turning forward farther than the limited distance necessary to release the indicator until
105 the latter has returned to zero. The means illustrated in the drawings consist of a bar *Y'*, pivoted at *l* and provided near its right-hand end with a pendent projection *m*, normally resting on the periphery of the disk *G*,
110 as shown in Fig. 3. When the disk has been turned forward by the handle far enough to cause the dog *P*² to be disengaged from the ratchet *I* through the medium of the bar *Y'* and lever *Z*, as before explained, the disk is
115 arrested by the lever *Z* striking a stop *g'*, projecting from the casing. Just at this point the notch *g* in the disk is brought beneath the projection *m* on the locking-bar *Y'*, and the projection drops into the notch. This locks
120 the disk and the handle *F* from moving in either direction until the bar *Y'* is again lifted to release them. It is automatically lifted just as the indicator *E* reaches zero. This re-
125 lease is effected by the arm *X*, Fig. 6, which, as before explained, is rigid with the ratchet *I* and indicator and moves with them. The upper end of this arm is rounded to form a cam-surface, and the hook projection on the
130 arm *Y* is sufficiently wide to extend into its path on the inner side of the disk *G*. When, therefore, the ratchet *I* is released, as before explained, and with the indicator is returned to normal position by the weight *W*, the up-

per end of the arm X rides under the hook projection on the latch and lifts it out of the notch in the disk G just as the indicator reaches zero. A pin *h'* projects from the latch-arm Y under the locking-arm Y', so that when the former is lifted by the arm X the latter is lifted also and the disk and handle are entirely released. It will thus be seen that, if the parts are in their normal position of rest (shown in Fig. 3) and the indicator be pointing at some number on the dial representing the last indication, the operation, upon moving the handle F forward to make another indication, will be as follows: The notch in the disk will first pull the latch Y and lower end of the lever Z to the right and lift the dog P² out of engagement with the ratchet I. There they will be arrested and the locking projection on the bar Y' will drop into the notch in the disk and hold the disk from further movement until the indicator has reached zero in its return movement, whereupon the arm X will disengage both the bars Y and Y' from the disk and release the latter. When the arm X reaches this position, its lug *p* is brought into engagement with the lug *b'* on the inner side of the disk G, so that as the latter is turned forward by the further movement of the handle F the arm X, ratchet I, and indicator E are turned with it to make the new indication. The result is that no matter how quickly the handle F is started it can move only the limited distance necessary to release the indicator until after the latter has been completely reset, so that in making a new indication the indicator must always start from zero.

It will appear from the foregoing description that the latch-bar Y alone will arrest the disk G at the releasing-point of the ratchet and indicator and prevent further forward movement of the indicator until reset to zero; but it would not alone prevent the handle being turned forward to the releasing-point and then released and returned so quickly that the dog P² would re-engage the ratchet I before the latter had been completely reset. Thus if the indicator were pointing at "90" the handle might be moved forward and back so quickly that the dog P² would be disengaged from ratchet I, but re-engaged with it so quickly that the indicator would not get back to zero, but be caught at some point between 90 and zero; but the locking-arm Y' not only holds the disk and handle from forward movement, as does the bar Y, but holds them from backward movement also, so that when the handle and disk are moved forward to the releasing-point of the ratchet they are absolutely locked from movement in either direction until the indicator is completely reset and the bars Y Y' are released by the arm X in the manner before explained. The bar Y' is therefore really the lock, the bar Y being a releasing-bar, but also serving to arrest the forward movement of the disk at the releasing-point to insure the projection *m* of

the locking-bar dropping into the notch *g*. It will be understood, however, that the locking-bar Y' may be used in combination with the disk even if an entirely different form of releasing device for the ratchet be employed. It will also be understood that but for the danger of manipulating the machine in the manner above described the locking-bar Y' might be dispensed with and the bar Y be employed as the only lock for the disk. While, therefore, the machine is rendered more perfect by the employment of both bars, yet a part of the advantages of my invention may be obtained by the use of either of them independently.

While I have illustrated and described suitable specific means for releasing the indicator upon a second forward movement of the operating-handle, I wish it understood that my invention is not limited to such devices, but contemplates, broadly, the combination in machines of this class of an indicator and an operating-handle which automatically releases the indicator when moved forward to make a second indication. The same is true of the devices for arresting the movement of the operating-handle upon the release of the indicator and preventing further movement of it until the indicator has been reset to zero, for this feature of my invention contemplates, broadly, the combination in machines of this class of an indicator, an operating-handle which releases the indicator when moved forward to make a second indication, and any suitable latch or locking device which arrests the handle and prevents it moving the indicator forward again until it has first been reset to zero.

It will be understood that the purpose of the sleeve *f'* is to secure together the indicator E, ratchet I, pinion *j*, and arm X and afford a bearing for them on the shaft *f*, and that it might be dispensed with and the parts secured directly to each other. In such case the pinion K could be mounted loosely on the hub of the ratchet I and the indicator be secured to the front end of the hub.

The machine is provided with a registering mechanism which preserves a record of all the indications and adds them into one common total. This mechanism may be of any usual or suitable construction, that which I have shown consisting of a train of wheels 1, 2, 3, 4, and 5. The primary wheel 1 bears on its face twenty numbers, from 0 to 95, inclusive, in multiples of five, representing cents, while each of the others bears a series of numbers, from 0 to 9, inclusive, in multiples of one, representing dollars, and tens, hundreds, and thousands of dollars, respectively. Each wheel is arranged to be turned one number at each complete revolution of its immediately-preceding wheel. The primary wheel 1 is actuated by a pinion K, Fig. 2, loose on the sleeve *f'*, adjacent to the ratchet I and connected to the latter by a pawl P, which locks the two together on the forward movement

of the ratchet, but allows the pinion to remain stationary while the ratchet travels in the reverse direction as the indicator is reset to zero. The pinion K has twenty-two teeth, while the pinion of the primary wheel 1, with which it meshes, has only twenty. The two extra teeth in the former are to compensate for the lost motion of the handle F in effecting the release of the indicator at the beginning of its movement, so that the primary registering-wheel will be turned a complete revolution by less than a complete revolution of the ratchet I and pinion K. Thus the turning of the indicator to the dollar-mark on the dial will effect a complete revolution of the primary registering-wheel to register one dollar, while the pinion K and ratchet I will have turned two teeth less than a complete revolution.

A series of openings Q R S T in the front plate of the casing permit the totals on the registering-wheels to be read. If not desired to expose the registers, or where a glass dial is not employed, the registering-wheel may be so arranged that the registry can only be read by gaining access to the interior of the machine, for which purpose a door in the casing may be provided.

From the fact that, as before explained, the indicator must be reset to zero at the beginning of each operation before it can be moved forward again, it will be seen that it is impossible to make a false registration and at the same time make a correct indication. Inasmuch as the indicator starts at zero every time, it must necessarily register the exact amount of the indication.

The machine is provided with an alarm which is sounded every time an indication is made. As shown in the drawings, a hammer secured to one end of the lever Z is arranged to strike a bell every time the hooked link Y is released after being pulled to the right by the notch in the disk G. A spring e' , bearing on the dog P², presses the latter against the ratchet I, and also resets the link Y and lever Z, and causes the bell-hammer to strike the bell.

While I have shown and described a novel dial and indicator for my machine, this feature of my invention is independent of the construction of the machine in other respects, and any usual or suitable dial and indicator—such, for instance, as an ordinary clock-face dial with a pointer moving on it—may be substituted for them.

As illustrated in the drawings, the transparent dial-plate bears dark figures, and the front plate of the casing forms a dark background to render them invisible, while a white indicator is employed to bring them into view; but this arrangement may be reversed, the figures and background being made white and the indicator dark, without departing from this feature of my invention. Again, while it is preferable to employ a transparent dial-plate, yet an opaque one, corresponding

in color to the background and having figures cut in it, might be employed, in which event when the indicator was moved beneath any number it would bring it clearly into view in the color of the indicator.

Having thus fully described my invention, I claim—

1. In a cash register and indicator, the combination of a numbered dial, a backwardly and forwardly movable indicator, and an operating-handle movable forwardly with the indicator and backwardly independently of it, substantially as and for the purpose described.

2. In a cash register and indicator, the combination of a numbered dial, an indicator, an operating-handle movable forwardly with and backwardly independently of the indicator, means for retaining the indicator at any point to which it is moved, and an automatic release for the indicator, operated by a second forward movement of the operating-handle, substantially as described.

3. In a cash register and indicator, the combination of a numbered dial, an indicator, an operating-handle movable forwardly with and backwardly independently of the indicator, and a lock for the handle, automatically released at the resetting of the indicator, substantially as and for the purpose described.

4. In a cash register and indicator, the combination of a numbered dial, an indicator, means for retaining it at any point to which it is moved, a release for the indicator, an operating-handle movable forwardly with and backwardly independently of the indicator, and a lock for the handle, automatically released at the resetting of the indicator, substantially as and for the purpose described.

5. In a cash-indicator, the combination of a numbered dial, an indicator movable thereover, an operating-handle movable forwardly with and backwardly independently of the indicator, means for retaining the indicator at any point to which it is moved, an automatic release for the indicator, operated by a second forward movement of the operating-handle, and means for preventing a second forward movement of the indicator until it has been first reset to zero, substantially as described.

6. In a cash register and indicator, the combination of a numbered dial, an indicator movable thereover to indicate different amounts, a handle for moving the indicator forward and movable backwardly independently of it, means for automatically returning the handle to normal position when released, an automatic release for the indicator, operated on again starting the handle forward, and means for automatically returning the indicator to zero when released, substantially as described.

7. In a cash register and indicator, the combination of a numbered dial, an indicator movable thereover to indicate different amounts, a handle for moving the indicator forward

and movable backwardly independently of it, means for retaining the indicator at any point to which it is moved, springs or weights for returning the handle and indicator to normal position, an automatic release for the indicator, operated upon again moving the handle forward, and means for automatically locking the handle after the indicator is released until it reaches normal position, and then automatically unlocking it, substantially as described.

8. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, an indicator loose on the shaft, and a connection between the shaft and indicator by which the handle turns the indicator in a forward direction, but not in a backward one, substantially as and for the purpose described.

9. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, an indicator and a ratchet movable together on the shaft, a pawl engaging the ratchet for holding the indicator at any point to which it is moved, and a connection between the ratchet and shaft by which the latter turns the ratchet and indicator in a forward direction and moves independently of them in the reverse direction, substantially as and for the purpose described.

10. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, a ratchet and an indicator movable together on the shaft, a pawl engaging the ratchet, a connection between the ratchet and shaft by which the latter turns the ratchet and indicator in a forward but not in a backward direction, and a trip for disengaging the pawl from the ratchet at the beginning of the forward movement of the operating-handle, substantially as and for the purpose described.

11. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, an indicator loose on the shaft, a connection between the shaft and indicator by which the handle turns the indicator in a forward but not in a backward direction, and a lock applied to the shaft for locking the handle during the resetting of the indicator, substantially as described.

12. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, a ratchet and an indicator movable together on the shaft, a pawl engaging the ratchet for retaining the indicator at any point to which it is moved, a connection between the ratchet and shaft by which the latter turns the shaft and indicator in a forward but not in a backward direction, a trip for disengaging the ratchet and pawl to permit the indicator and ratchet to be reset, means for resetting the ratchet, and a lock for the shaft and handle, released by the resetting of the ratchet and

indicator, substantially as and for the purpose described.

13. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, a ratchet and an indicator movable together on the shaft, a connection between the ratchet and shaft by which the latter turns the ratchet and indicator in a forward direction, a pawl engaging the ratchet, a trip operating automatically to disengage the pawl from the ratchet upon the forward movement of the handle, means for resetting the shaft and ratchet, and a lock for the shaft and handle, released by the resetting of the ratchet and indicator, substantially as and for the purpose described.

14. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, a ratchet and an indicator movable together on the shaft, a connection between the ratchet and shaft by which the latter turns the ratchet and indicator in a forward direction, a pawl engaging the ratchet, a trip for disengaging the pawl from the ratchet, means for resetting the ratchet and indicator, a locking-disk secured to the central shaft, a locking device engaging it upon the forward movement of the operating-handle to lock the shaft and handle during the resetting of the ratchet and indicator, and a trip for disengaging the locking device at the resetting of the ratchet and indicator, substantially as and for the purpose described.

15. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, an indicator loose on the shaft, a connection between the shaft and indicator by which the handle turns the indicator in a forward and not in a backward direction, a pinion, a connection between said pinion and operating-handle by which the handle turns the pinion in a forward direction, but moves backwardly independently of it, and a registering-wheel driven by the pinion, substantially as described.

16. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, an indicator and a ratchet movable together on the shaft, a pinion loosely mounted beside the ratchet, a ratchet-and-pawl connection between them, a train of registering-wheels actuated by said pinion, a connection between the ratchet and shaft by which the latter turns the ratchet and indicator in a forward direction, a pawl engaging the ratchet, and a trip for disengaging the pawl from the ratchet at the beginning of the forward movement of the operating-handle, substantially as and for the purpose described.

17. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, a sleeve loose upon the shaft, an indicator carried by the sleeve, and a connection between

the sleeve and shaft by which the latter turns the sleeve and indicator in a forward direction, but moves backwardly independently of them, substantially as described.

5 18. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, a sleeve loose upon the shaft, an indicator and a ratchet carried by the sleeve, a pawl engaging the ratchet, and a connection between the
10 sleeve and shaft, whereby when the handle is moved forward the indicator is moved with it and is retained at the point to which it is moved when the handle is moved backward
15 again, substantially as described.

19. In a cash register and indicator, the combination of a numbered dial, an oscillatory shaft, an operating-handle secured thereto, a sleeve loose on the shaft, an indicator and a
20 ratchet carried by the sleeve, a pawl engaging the ratchet, a connection between the sleeve and shaft by which the latter turns the sleeve and indicator in a forward direction, but moves backward independently of
25 them, and a trip for the pawl, operated at a second forward movement of the operating-handle to release the indicator, substantially as described.

20. In a cash register and indicator, the combination of a numbered dial, an oscillatory
30 shaft, an operating-handle secured thereto, a sleeve loose on the shaft, an indicator and a ratchet carried by the sleeve, a pawl engaging the ratchet, a connection between the sleeve and shaft by which the latter turns the sleeve and indicator in a forward direction, but moves backward independently of
35 them, a trip for the pawl operated at a second forward movement of the operating-handle, and a lock for preventing forward movement
40

of the handle during the resetting of the indicator, substantially as described.

21. In a cash register and indicator, the combination of the numbered dial C, central shaft *f*, handle F, the disk G, having the notch *g*,
45 the indicator E, ratchet I, holding-dog P², latch-bar Y, and lever Z, substantially as and for the purpose described.

22. In a cash register and indicator, the combination of the numbered dial C, central shaft
50 *f*, handle F, the disk G, having the notch *g* and lug *b'*, latch-bar Y, ratchet I, dog P², indicator E, and arm X, provided with lug *p*, substantially as and for the purpose described.

23. In a cash register and indicator, the combination of the numbered dial C, central shaft
55 *f*, handle F, the disk G, having the notch *g* and lug *b'*, latches Y and Y', ratchet I, dog P², indicator E, and arm X, provided with lug *p*, substantially as and for the purpose described.
60

24. In a cash-indicator, the combination of an indicator-plate bearing a series of numbers a background corresponding in color with the numbers, and an indicator movable
65 between the background and numbers and contrasting in color to them, substantially as and for the purpose described.

25. In a cash-indicator, the combination of a transparent indicator-plate bearing a series
70 of numbers, a background corresponding in color to the numbers, and an indicator movable between the background and numbers and contrasting in color to them, substantially as and for the purpose described.

ALLEN I. BLANCHARD.

Witnesses:

JOHN P. ELDRED,

FRANK. H. BARMM.