(No Model.) 2 Sheets—Sheet 1.

J. H. VOSS.

CASH ADDING AND DAILY RECEIPTS REGISTERING MECHANISM.

No. 534,184. Patented Feb. 12, 1895.

Fig. 1.

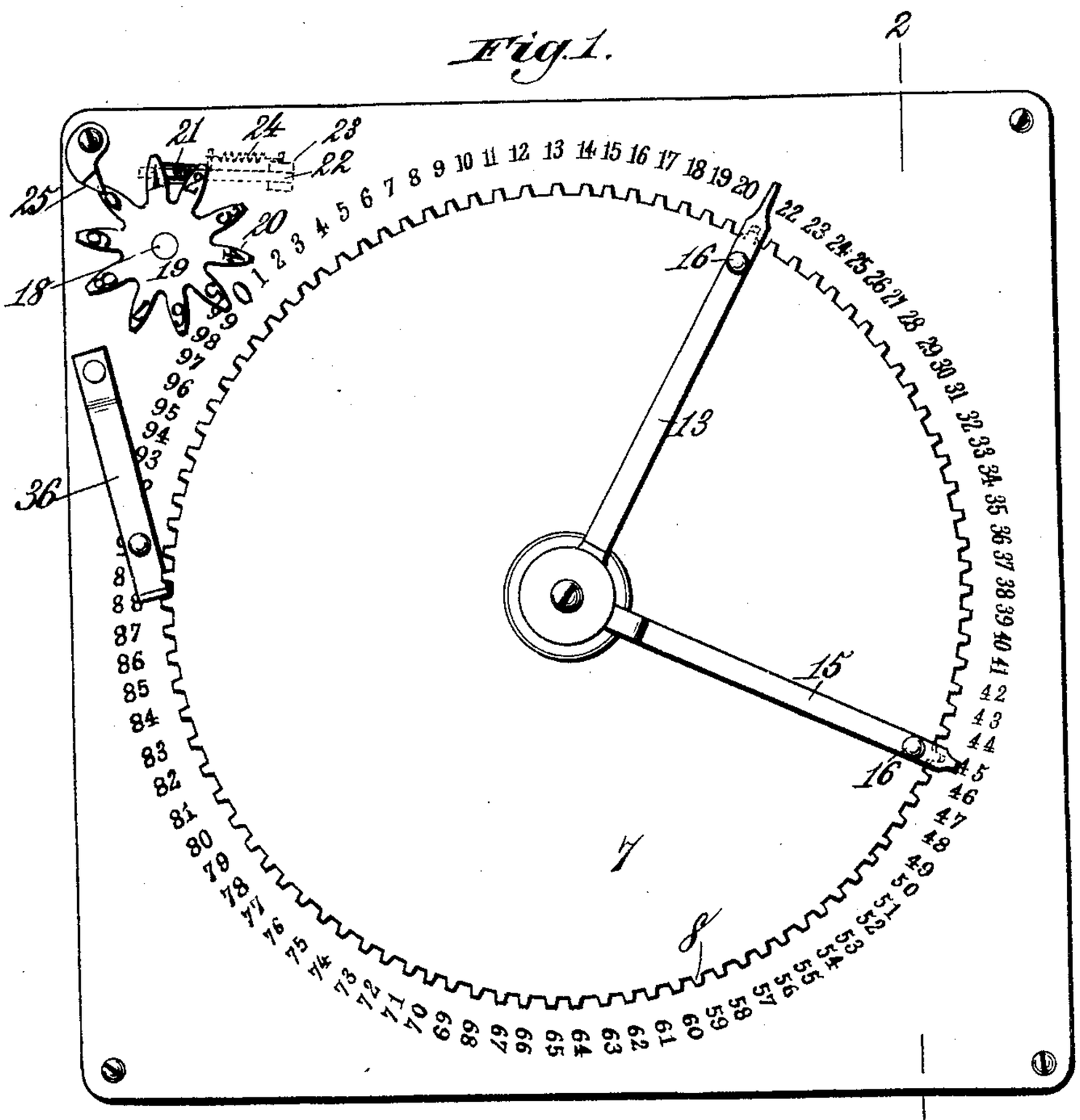
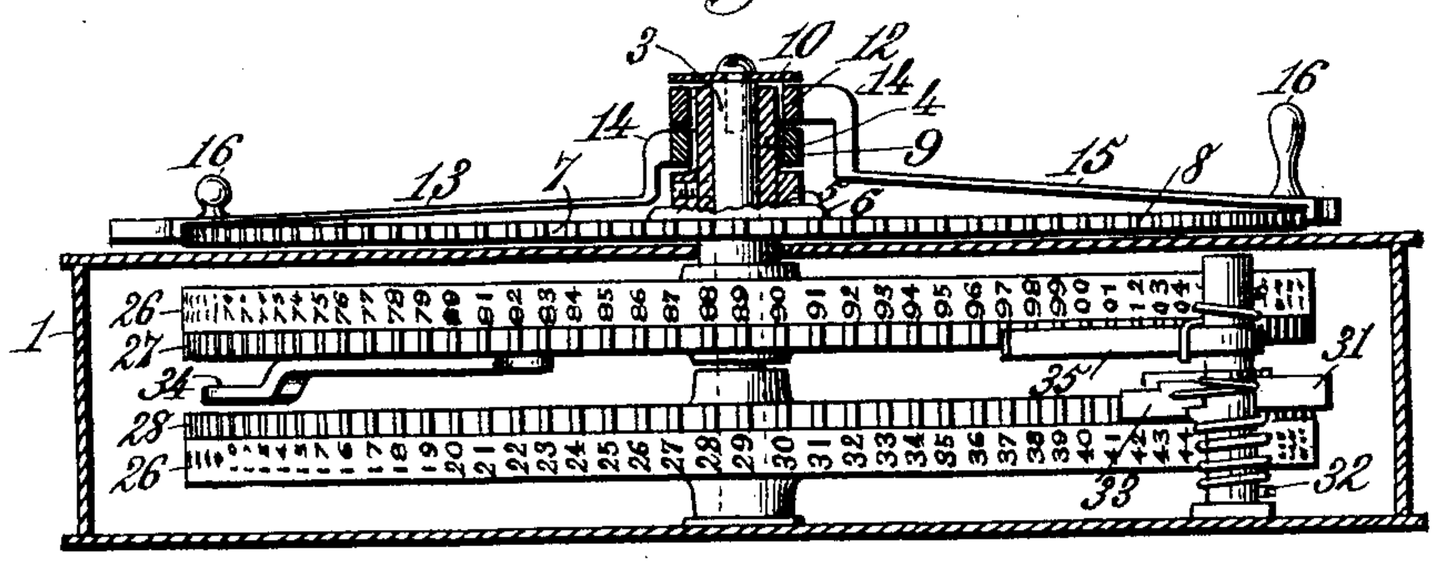


Fig. 2.



Witnesses.
Robt Ewett.
G. N. Rea.

Inventor.
Joseph H. Voss.
By James L. Norris.
Atty.

(No Model.) 2 Sheets—Sheet 2.

J. H. VOSS.

CASH ADDING AND DAILY RECEIPTS REGISTERING MECHANISM.

No. 534,184. Patented Feb. 12, 1895.

Fig. 3.

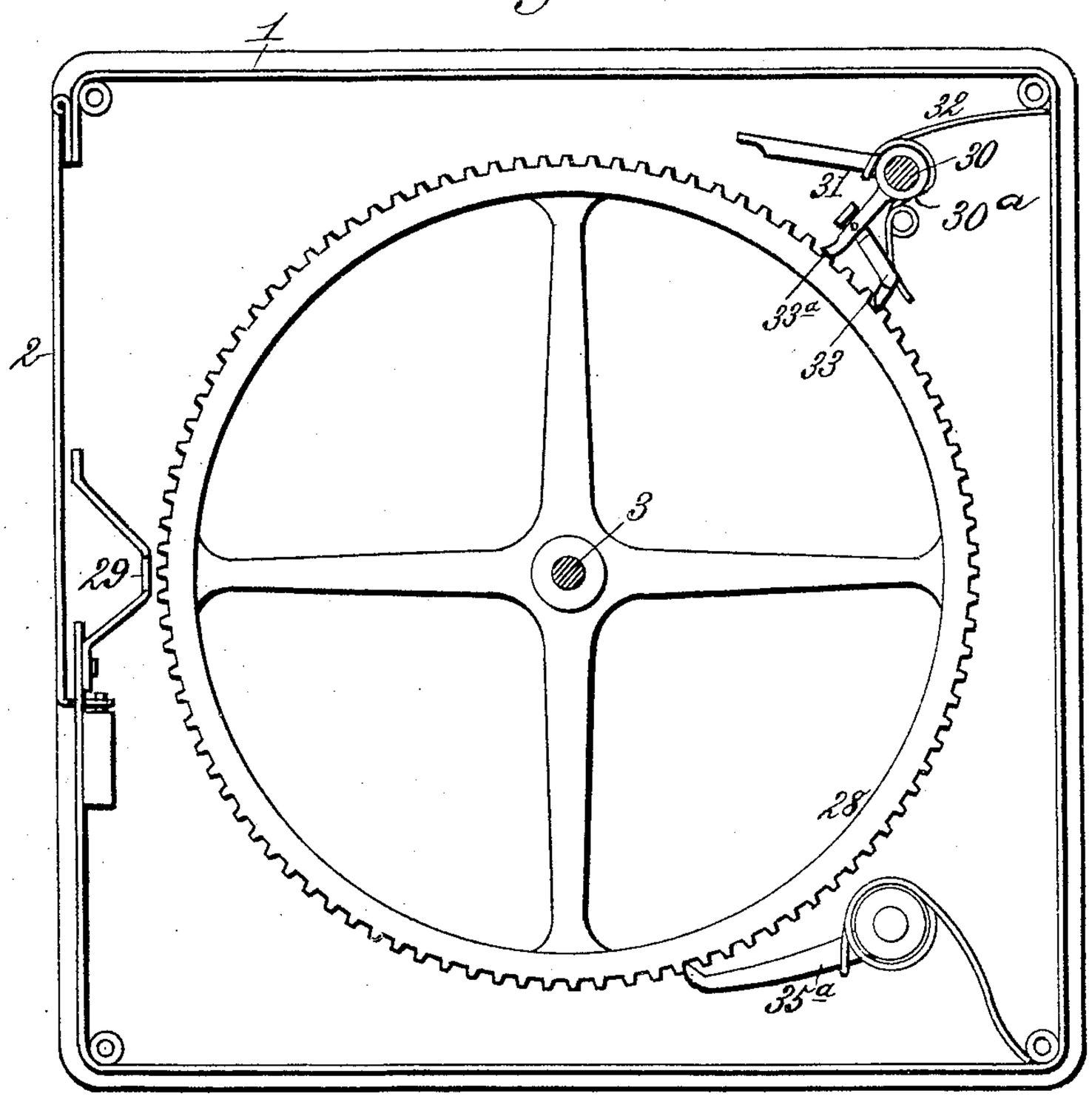
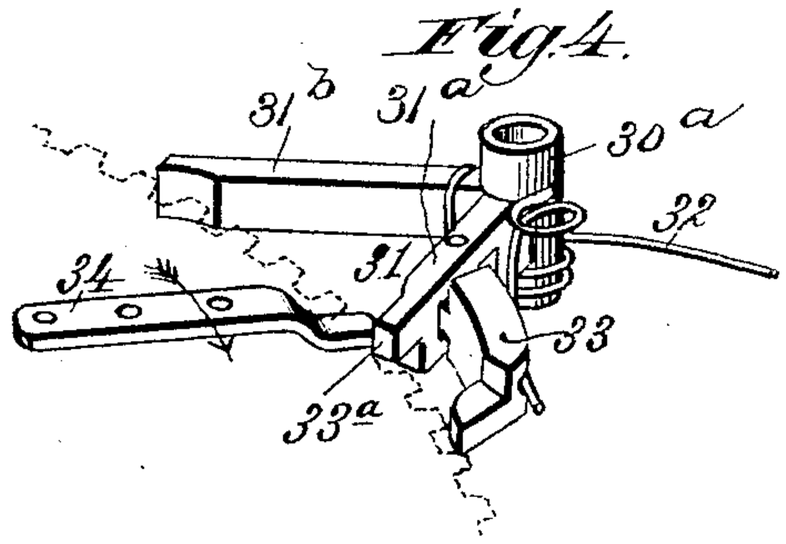


Fig. 4.



Witnesses.
Robert Evarts.
G. N. Rea.

Inventor.
Joseph H. Voss.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

JOSEPH H. VOSS, OF CINCINNATI, OHIO.

CASH-ADDING AND DAILY-RECEIPTS-REGISTERING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 534,184, dated February 12, 1895.

Application filed November 24, 1894. Serial No. 529,878. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. VOSS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Cash-Adding and Daily-Receipts-Registering Mechanism, of which the following is a specification.

My present invention relates to that type of mechanism shown and described in an application for Letters Patent of the United States, patented November 27, 1894, No. 529,980, filed by me upon the 26th day of July, 1894, Serial No. 518,668, and known as a cash adding and daily receipts-registering mechanism.

It is my purpose, in this instance to simplify and improve certain features and parts of said mechanism, whereby the numerical indications shall be more easily and accurately read, and to provide a positive locking-device to engage the cents-gear, when the machine is not in use, or when the actuating arm is retracted for successive action, and by such engagement lock the entire machine.

It is my purpose, also, to provide improved automatic means for preventing accidental displacement of the dollars wheel on the face of the dial, and for marking the indications of said wheel.

It is a further purpose of my invention to provide and combine with the dial gears in the interior of the machine, simple and novel means whereby the revolution of the one shall impart the necessary fractional movement to the other, thus giving the peripheral indications of dollars and cents, my object being to secure the successive rotation of the dollars dial-gear in such manner that each shall be fully produced without the possibility of a movement in excess of that which gives the correct indication; the gear being positively arrested at the instant when its movement is completed.

My invention also includes other improvements all of which will be explained in their order, for which purpose, and to enable others to fully understand and to make and use my invention, I will now proceed to describe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1, is a plan, or face view of an automatic cash-adding and daily receipts registering mechanism, in which my invention is incorporated. Fig. 2, is a transverse section taken upon the line 2—2, Fig. 1. Fig. 3, is a partial plan view, the housing being broken way to show the interior mechanism. Fig. 4, is a detail view showing the devices for transmitting movement from the cents dial gear to the dollars indicating gear.

The reference numeral 1, in said drawings, indicates the casing, or housing of the machine, which is shown as rectangular, though any other form, such as a circular, or polygonal casing, may be used, if preferred. The housing is closed upon all sides to prevent access to its interior by any person except those, or the one, having proper authority to open the casing. Access may be had by means of a door 2, which is locked by a key, or any other suitable means. The construction of the housing is such that it may stand erect, upon one of its flat sides, or may be laid flat. In either position it may, if desired, be fastened in place by screws, or otherwise, either to a wall, or upon a table, desk, or counter.

In the center of the casing, or housing, is arranged a spindle 3, having a support at one end on the plate, or wall, which is parallel with the dial plate, or face plate. In the latter plate a sleeve 4 has bearing and through this sleeve the spindle 3 passes, fitting closely therein but free to turn without obstruction. The end of the sleeve projects through the face-plate and upon it is fixedly mounted a collar 5, having a flange 6, which forms part of a large gear 7, the latter lying close to the face-plate. This gear is provided upon its periphery with one hundred teeth, or cogs 8, which coincide with, or turn within, a concentric series of divisions distinguished by a series of numerals ranging from one to ninety-nine, the space, or division, corresponding to the numeral one hundred being provided with a zero, or cipher. Upon the other end of the sleeve is mounted an annulus 9, which rests against the collar 5, and between said annulus and a head, or washer 10, on the outer end of the spindle, is mounted a second, independent annulus 12, similar to the first. The annulus 9 forms part of an arm 13 which extends radially over the spur-gear 7, and a lit-

tle beyond its periphery, an angular bend 14 being provided in order to bring the arm down close to the surface of the spur-gear. The extremity of this arm is tapered to a point and the portion projecting beyond the edge of the gear 7 is thickened to pass the said edge, and in the thickened portion is formed a recess, or pocket, of such size and shape as to admit one of the teeth of the spur-gear, thereby engaging the latter with the arm 13. The annulus 12 also forms part of an arm 15 of substantially similar construction, save that its tapered extremity is shorter and does not extend as far beyond the edge of the gear 7. Each arm is provided with a knob 16, that upon the arm 13 being comparatively short in order that the arm 15 may be lifted over the same, when necessary, to pass the said arm. The annulus 9 is loose upon the sleeve 4, and the annulus 12 is similarly mounted thereon, each having independent movement.

Upon the dial, or face-plate of the housing, and preferably arranged in one of its angles, is a stud 18, its axis, which is parallel with the shaft 3, lying in a line drawn through the latter shaft and cutting the circular series of numerals surrounding the gear 7 upon one side of the zero division. On this stud close to the face plate, is mounted a small gear 19 having elongated teeth 20, somewhat resembling those of a star-wheel. These teeth are ten in number and they are numbered from one up to nine, the tenth tooth being provided with a zero, or cipher.

Through the face plate of the housing, in a suitable opening, projects an oppositely beveled stop 21. This stop forms part of a lever 22 which is pivoted to a bracket 23, inside the casing. A spiral or other suitable spring 24, attached at one end to the lever and at the other end to the bracket 23, normally throws the stop 21 outward, between the teeth of the gear 19. The latter may be turned in either direction, however, by applying a suitable force, the stop 21 being retracted by the pressure of the teeth of the gear upon either of its beveled faces. The location of this gear is, such that, at each revolution of the gear 7 the projecting tapered end of the arm 13 enters between its teeth and turns the gear forward one tenth of a revolution, the movement being completed as the end of the arm 13 reaches the zero space in the series of numbered divisions surrounding the gear 7.

A pointer, or marker 25 is mounted upon the face plate, preferably by means of one of the screws holding the housing together. Said marker consists of an L-shaped bracket, having a small point on its end which is bent, or placed, in parallelism with the face-plate and over, or nearly over, the teeth of the gear 19.

Within the housing 1 are arranged two gears of equal size each being provided with one hundred teeth and each having a flange, or annulus 26, upon which, opposite the teeth of the gear, are placed numerals ranging from one to ninety-nine, inclusive, the latter being followed by a zero, or cipher, which coincides with the one-hundredth tooth. One of these gears, denoted by the numeral 27 is rigidly mounted upon the sleeve 4 and the other 28 upon the shaft 3. The gear 27 will thus move in unison with the spur-gear 7 and the numerals upon its annulus 26 will denote the cents. These numerals will be visible through an opening 29 in the wall of the housing, but this opening is normally closed and concealed by the door, as it is preferable that the gears in the interior should be used as registering gears to give the aggregate amount of sales for a day, or for any stated period.

At each revolution of the cents-dial gear 27, the gear 28, which registers the dollars, must be advanced a single tooth. For this purpose, I mount within the casing a spindle 30, upon which is sleeved a double pawl 31, resembling in its shape a bell-crank lever. A spring 32, coiled on the sleeve 30^a which carries the double pawl, and having one end resting against a rigid part of the housing, (as shown in Fig. 3,) turns the sleeve on the spindle 30 in such direction as to throw the short arm 31^a of the double pawl toward the gear 28. On this arm is pivotally mounted a push-pawl 33, its nose being held by one end of the spring 32 in mesh with the teeth of the gear 28. The long arm 31^b of the double pawl is normally out of mesh with the said teeth, and the pivoted push pawl 33 is allowed sufficient play so that it may remain in mesh with said gear 28 during a limited movement of the arm 31^a, thereby enabling said push-pawl to advance said gear the distance of a single tooth by merely turning the double pawl 31 on the spindle 30.

On the gear 27 is rigidly mounted a wiper arm 34 projecting beyond the periphery of said gear, its point being in position to engage a tooth, or projection 33^a on the end of the short arm 31^a of the double pawl. This tooth 33^a projects sufficiently over the teeth of the gear 28 to lie in the path of the end of the wiper arm, but the nose of the push-pawl 33 is cut away, as shown in Fig. 4, to permit the wiper-arm to pass it without engagement. When the wiper-arm 34 engages the tooth 33^a, the sleeve 30^a is turned on the spindle 30, the short arm of the double pawl is vibrated in the direction shown by the arrow in Fig. 4, and the gear 28 is turned a single tooth, the end of the long arm 31^b of the double pawl being brought against its teeth at the instant the movement is completed. The action of the parts is so timed that the movement of the gear 28 over a space of one tooth is completed at the same time that the gear 27 completes its revolution and brings the zero indication on its annulus 26 into sight through the opening 29. When the wiper arm 34 passes off the tooth 33^a the spring 32 returns the double pawl 31 to its normal position, the nose of the push-pawl 33 riding over the tooth

of the gear 28 and dropping behind it, ready for the next operation.

The gear 27 is held by a spring-pawl 35 having a nose of such form that it can be drawn out of the teeth by giving sufficient impulse to the gear.

The dollars-gear 28 may be still further protected against displacement by a spring pawl 35ª.

The manner of using the apparatus and the various advantages attained by it are substantially the same as those set forth in my former application for Letters Patent, filed July 26, 1894, Serial No. 518,668, patented November 27, 1894, No. 529,980, and need not be recapitulated.

The external cents-gear is locked by a positive, pivoted stop 36, mounted on the dial or face-plate.

I make no claim to the double-beveled stop 21 separately from the mechanism with which it is combined, as snap-pawls of this character are well-known in other structures.

What I claim is—

1. In mechanism of the type described the construction with housed registering gears, of a gear arranged outside to indicate any number of cents less than one dollar, a smaller, independent external gear to indicate the dollars, a double beveled spring-actuated stop projecting through an opening in the housing and lying between the teeth of the dollars-indicating gear, and two independent arms, loose upon the axis of the outer cents-gear the end of one of said arms being detachably engaged with the teeth of the gear and its point extended to catch the teeth of the external dollars-gear, substantially as described.

2. The combination with a housing containing registering gears, of an external gear indicating any number of cents less than one dollar, a small, external, independent gear having long teeth and arranged near, but not in mesh with the cents-gear, its teeth being provided with numerals to denote the dollars from one to nine inclusive with a zero tooth for the tenth, a marker beneath which the numbered teeth move, a spring-actuated, double beveled stop projecting through an opening in the face-plate and between the teeth, and two independent arms loosely mounted on and radiating from the axis of the cents-gear, their ends being adapted to detachably engage the teeth of the cents-gear and one of said arms having an extended point which meshes with the teeth of the dollars-gear at each revolution of the cents-gear, substantially as described.

3. The combination with an external cents gear having one hundred teeth corresponding with a circular series of consecutive numerals, of an external dollars-gear having ten long teeth provided upon their external faces with numerals from one to nine, inclusive, and a zero upon the tenth tooth, a double beveled, spring actuated stop projecting through an opening in a housing on which said gears are mounted, and lying between the teeth of the dollars-gear, two gears of the same diameter arranged in the housing, one indicating the cents and rigidly mounted on the shaft of the external cents-gear and the other indicating dollars and mounted on a sleeve loose on said shaft, each gear having an annulus displaying consecutive numerals from one to ninety-nine followed by a zero, a spring-turned pawl sleeved on a spindle and having a push-pawl pivoted on one arm and pressed into mesh with the teeth of the dollars-gear and a wiper arm carried by the cents-gear and adapted to engage a point or tooth, on the arm carrying the push-pawl, substantially as described.

4. The combination with an external cents-gear and an independent dollars-gear having ten numbered teeth, of a double beveled, spring-thrown stop projecting through the wall of the housing, an interior cents-gear turning with the external cents-gear and having a co-incident axis, a spring-turned double-armed pawl sleeved on a spindle one arm being normally in mesh with the dollars-gear, a wiper-arm on the cents-gear adapted to engage a tooth on the double pawl and actuate a spring thrown push-pawl on one arm of the double pawl, by which the dollars-gear is advanced until arrested by the other arm of the double pawl, and independent external arms loose on the axis of the cents-gear, their ends detachably engaging the teeth of said gear, and one of said arms being extended to engage the teeth of the external dollars-gear at each revolution, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

JOSEPH H. VOSS. [L. S.]

Witnesses:

ARNOLD SPEISER,

LOUIS SCHIMPF.