No. 646,564. Patented Apr. 3, 1900.

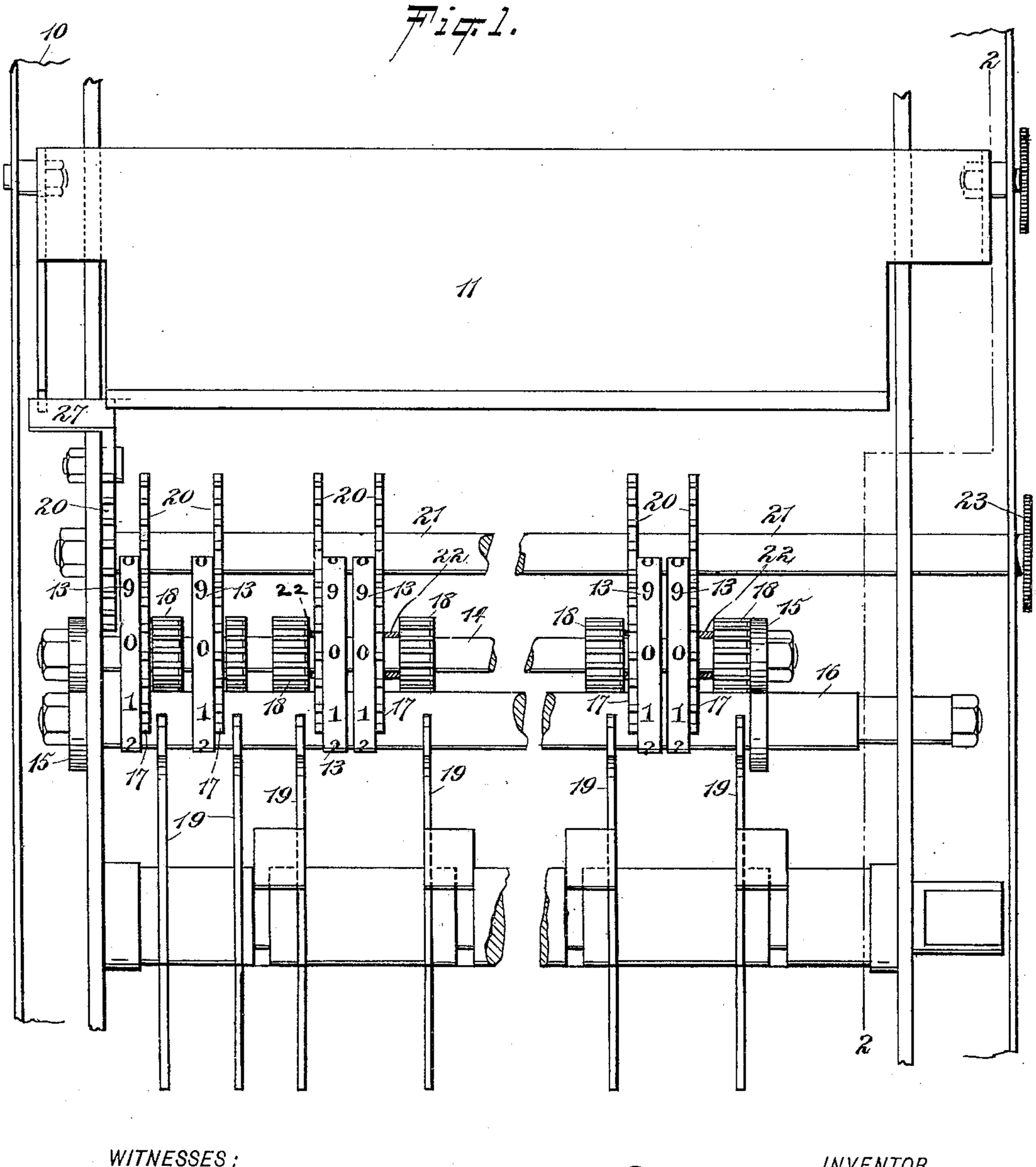
E. F. SPAULDING.

CASH REGISTER.

(Application filed June 22, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

E. Jos. Belknap.

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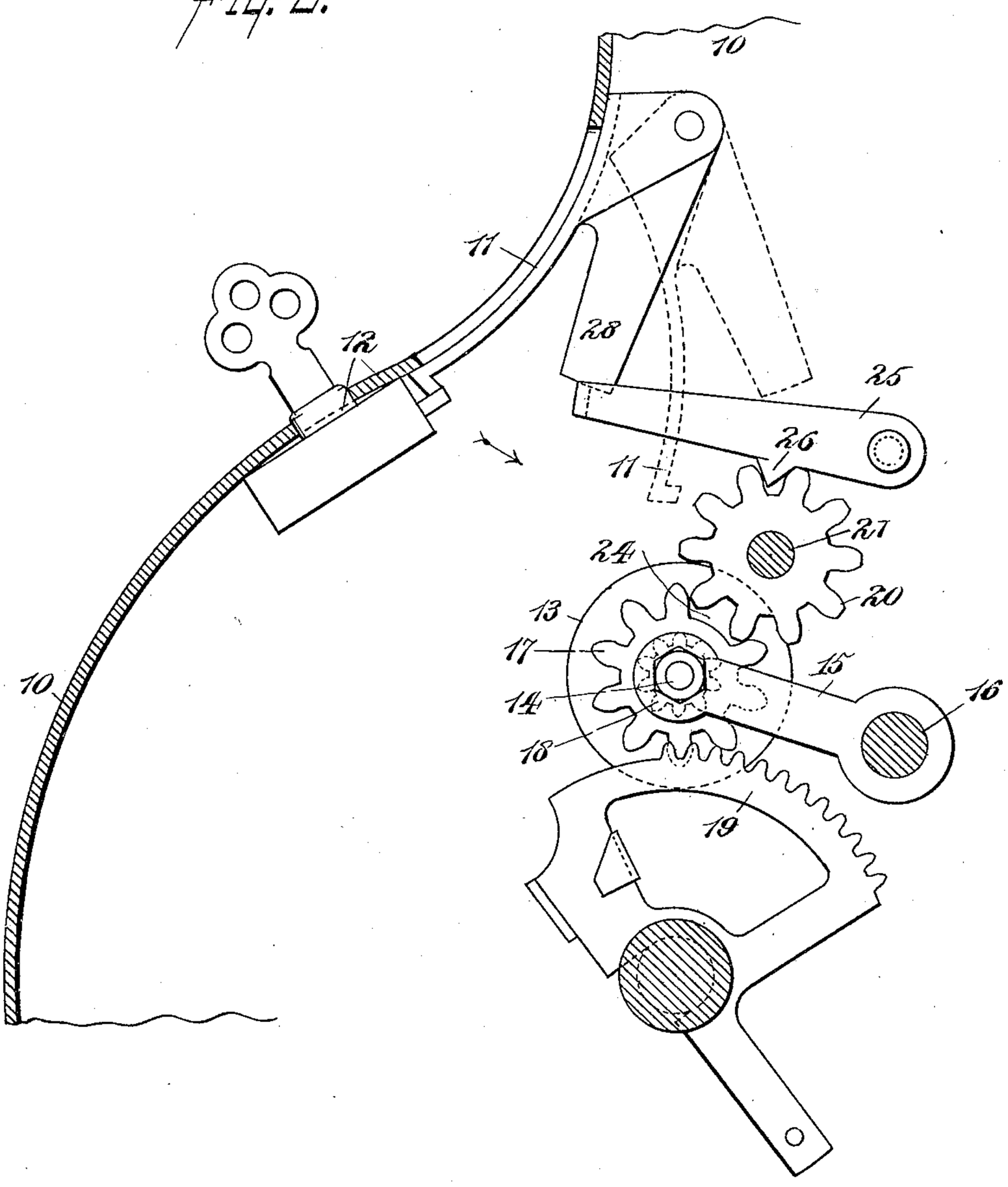
Fig. 2.



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UNITED STATES PATENT OFFICE.

ELIJAH F. SPAULDING, OF BOUND BROOK, NEW JERSEY, ASSIGNOR TO THE IDEAL CASH REGISTER COMPANY, OF SAME PLACE.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 646,564, dated April 3, 1900.

Application filed June 22, 1899. Serial No. 721,410. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH F. SPAULDING, a citizen of the United States, and a resident of Bound Brook, in the county of Somerset and State of New Jersey, have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification.

The invention relates to improvements in cash-registers; and it consists in the novel mechanism hereinafter described and claimed for setting the registering-wheels to their zero position and for locking the said mechanism against movement, except when a door of the register-casing is in its open position, permitting an inspection of said wheels.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a portion of the interior mechanism of a cash-register, the casing of the register with the exception of the sides thereof and a front hinged door being omitted; and Fig. 2 is a vertical section of same on the dotted line 2 2 of Fig. 1, a portion of the front of the casing being present.

In the drawings, 10 denotes the exterior casing of the register, which casing is of usual construction, with the exception that it is provided with the front hinged door 11, adapted to swing inward to an open position to expose the registering-wheels and to be secured in its closed position by means of a usual lock and key 12, the latter to be carried only by the owner of the register or one having authority to inspect the interior thereof. The door 11 is shown in Fig. 2 in its closed position by solid lines and in its open position by dotted lines.

The registering-wheels numbered 13 are of known form and construction and are mounted upon a shaft 14, supported in the front ends of lever-arms 15, which are carried by the rock-shaft 16 and by means of which the shaft 14 may be given a limited upward and downward movement for the purposes hereinafter described. The shaft 14 is shown in Fig. 2 in its normal upward position.

Upon the shaft 14 adjacent to the registering-wheels 13 are the gear-wheels 17 and pinion-wheels 18, the latter being for engagement with the segmental racks 19, and the gear-wheels 17 being for engagement with the gear-wheels 20, rigidly secured upon the shaft 21. The segmental racks 19 are provided one for each pinion-wheel 18 and registering-wheel 13, and said registering-wheels 13, pinion-wheels 18, and gear-wheels 17 are connected together in sets, so as to revolve together, each set being connected with a short sleeve 22, capable of turning on the shaft 14. The first registering-wheel 13, commencing at the right, looking at Fig. 1, is for units, the next one is for tens of cents, the next one is for dollars, the next one is for tens of dollars, and the two at the left are totalizing-wheels, as usual, and each of the registering-wheels receives proper registering motion from the appropriate rack 19 when the latter is in engagement with and moved against the pinion 18 of the wheel 13 to be rotated. The turning of a pinion 18 results in the rotation of the wheel 13 and gear-wheel 17, connected therewith, the gear-wheel 17 at such time performing no function however.

It is to be understood that in the usual operation of the register the racks 19 are moved to a predetermined position in accordance with the amount to be registered, that then the shaft 14 is moved downward until the pinions 18 pass into engagement with the racks thus set, and that then the racks are returned to their normal position and caused in passing to the same to move against said pinions and rotate the wheels 13, connected therewith, thus effecting the registering. It should be said also that I do not in this application seek to claim the racks 19 and pinions 18 as a part of my invention, this application being more especially confined to the means by which the wheels 13 are restored to their zero position, and the said means comprise the gear-wheels 17, connected with the registering-wheels 13, and the gear-wheels 20, secured on the shaft 21.

The gear-wheels 17 are each minus a tooth, as shown in Fig. 2, and in all other respects correspond with the gear-wheels 20. When the shaft 14 is in its elevated position, (shown in Fig. 2,) the gear-wheels 17 and 20 will be in normal engagement with one another and

at such time if the door 11 is in its open position the turning of the shaft 21 by means of the exposed handle 23, Fig. 1, will result in the rotation of the gear-wheels 17 and registering-wheels 13 until the blanks 24 in said gear-wheels 17 reach the gear-wheels 20, at which time the latter wheels will have no effect upon the gear-wheels 17, and said wheels 17, with their registering-wheels 13, will come to a rest, the wheels 13 then being at their zero position. By reason of the fact that the gear-wheels 17 have the blank spaces 24 each wheel 17 will come to a rest as soon as its space 24 reaches its gear-wheel 20, and the rotation of the shaft 21 may continue until all of the wheels 17 reach their normal at-rest position. Thus, as will frequently be the case, the registering-wheels 13 may one after another reach and stop at their zero position, the rotation of the shaft 21 continuing until all the wheels 13 have reached that position.

Since the shaft 21 is to be operated by an exposed knob, (indicated in Fig. 1,) the said shaft should be provided with means for locking it in stationary position except when the door 11 is in its open position, and hence I provide adjacent to one side of the casing of the register the pivoted arm 25, having a tooth to engage one of the gear-wheels 20 and also having at its front end the laterally-turned extension 27, (see Fig. 1,) which when the door 11 is closed is below and engaged by the lower end of the arm 28, rigidly secured to the door 11. When the door 11 is closed, the arm 28 will engage the upper edge of the extension 27 of the arm 25 and bind said arm 25 against the gear-wheel 20, as shown in Fig. 2, and under such condition the shaft 21 and the gear-wheels 20, carried thereby, will be locked against rotation. When, however, the door 11 moves inward to its open position, (shown by dotted lines in Fig. 2,) the arm 25 will be unrestrained, and the shaft 21 may be freely turned by means of its exposed knob. The tooth 26 of the arm 25 is beveled at its opposite sides, as shown in Fig. 2, and hence will not operate to lock the gear-wheel 20 except when said arm 25 is positively held downward by means of the arm 28, connected with the door 11.

The operation of the invention will probably be sufficiently understood from the foregoing description without further detailed explanation. During the ordinary use of the cash-register the door 11 will be locked in its closed position and its arm 28 will act upon the arm 25 to lock the shaft 21 and the gear-wheels carried thereby in rigid position. After the cash-register has been used a proper length of time and the owner desires to inspect the registering-wheels 13 he will unlock the door 11 and allow the latter to swing inward, whereby the registering-wheels 13 become exposed and the shaft 21 and gear-wheels 20 freed. After the proper inspection of the registering-wheels 13 it will be desired to restore said wheels to their zero position, and this is accomplished simply by the manual rotation of the shaft 21 and gear-wheels 20, the latter being rigidly secured on said shaft and engaging the gear-wheels 17, connected with the registering-wheels 13. The rotation of the shaft 21 is continued until all of the registering-wheels 13 have reached their zero position, the blank spaces 24 in said wheels 17 permitting the latter to come to a stop one after another without interfering with the continued rotation of the shaft 21 until all of the registering-wheels 13 have reached their zero position. The numerals on the registering-wheels 13 will be so disposed with respect to the blank spaces 24 in the gear-wheels 17 that said wheels 13 will not reach their zero position until said blank spaces 24 arrive at the gear-wheels 20. The normal position of the registering-wheels 13 and their shaft 14 is that shown in Fig. 2. When it is desired to register, the shaft 14 is moved downward until the pinion-wheels 18 enter into engagement with the racks 19, by which the registering-wheels 13 are turned the proper distance.

The racks 19 are not made any part of the present application, and hence they will be of any suitable form and construction. The present invention is directed to the means presented for restoring the registering-wheels 13 to their zero position and for locking said means against operation except when the door 11 of the register-casing is opened.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a cash-register, the series of registering-wheels 13, the shaft 14 upon which said wheels are revoluble independently of one another, the gear-wheel 17 and pinion-wheel 18 for and connected in a set with each of said registering-wheels, and the segments 19 below said shaft 14 and adapted for engagement with said pinion-wheels 18 when said shaft 14 is lowered for that purpose, the said gear-wheels 17 each having the blank space 24, combined with the shaft 21 parallel with said shaft 14, means for rotating said shaft 21, and the gear-wheels 20 on said shaft 21 and adapted for engagement with said gear-wheels 17 when the shaft 14 is in its upper position free of said segments, whereby upon the rotation of said shaft 21 the registering-wheels may be returned to their zero position; substantially as set forth.

2. In a cash-register, the casing having the door 11, and the series of independently-revoluble registering-wheels provided with the gear-wheels having the blank space, combined with the shaft 21 having the series of gear-wheels 20 adapted to engage with the teeth of the first-mentioned gear-wheels, and locking means intermediate said door and said shaft 21 whereby said shaft 21 is locked against rotation when said door is closed and released when said door is opened; substantially as set forth.

3. In a cash-register, the casing having the

door 11, the arm 28 connected with said door, and the series of independently-revoluble registering-wheels provided with the gear-wheels having the blank space, combined with the shaft 21 having a series of gear-wheels 20 adapted to engage with the teeth of the first-mentioned gear-wheels, and the locking-arm 25 for said shaft 21, the relation of said arm 25 to said arm 28 being such that the latter will lock the former when said door 11 is closed and will release the arm 25 when said door 11 is opened; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 21st day of June, A. D. 1899.

ELIJAH F. SPAULDING.

Witnesses:
CHAS. C. GILL,
E. JOS. BELKNAP.