

No. 658,362.

Patented Sept. 25, 1900.

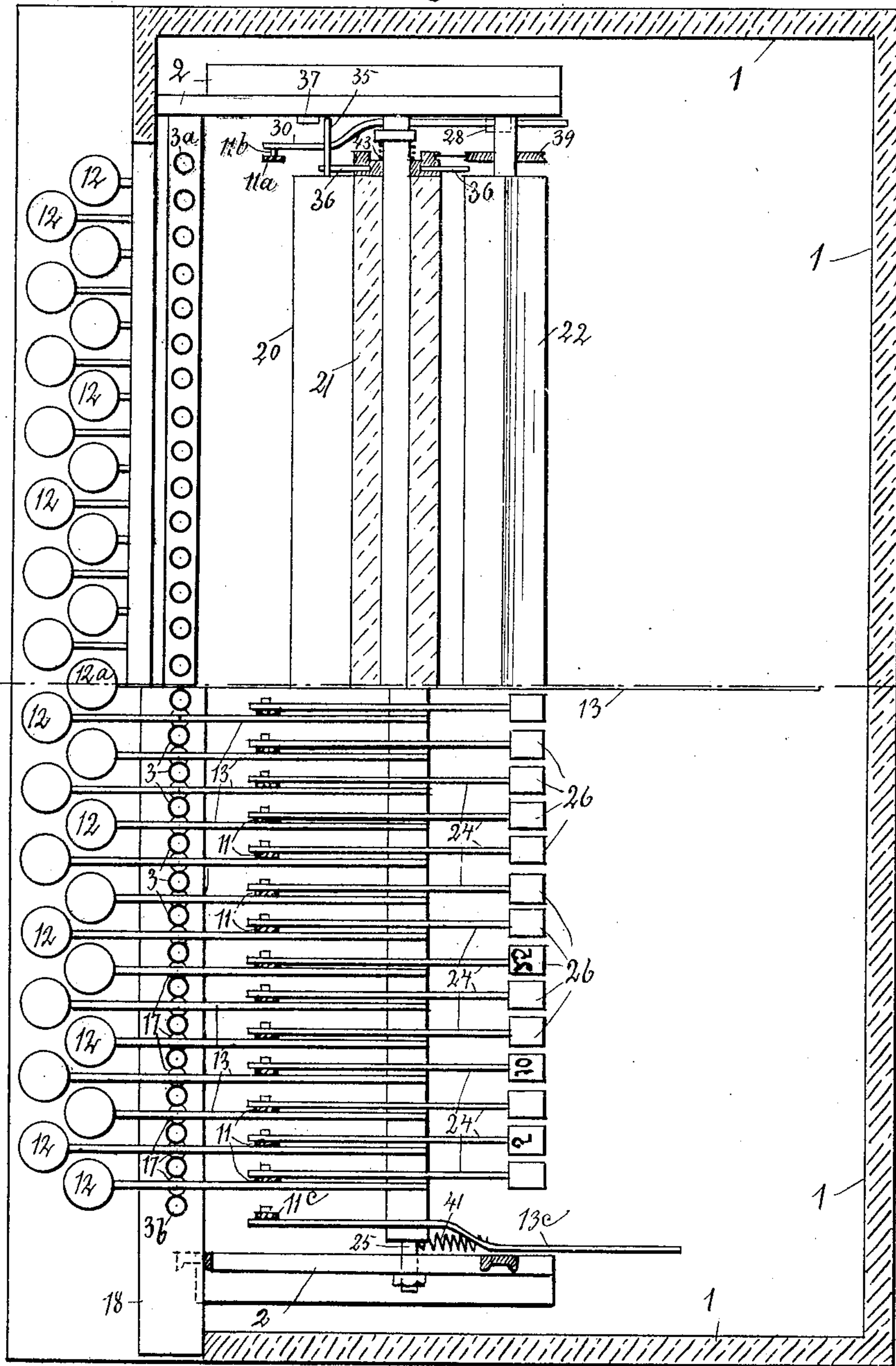
A. FREDERIKSEN.
CASH REGISTER.

(Application filed Aug. 12, 1899.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1



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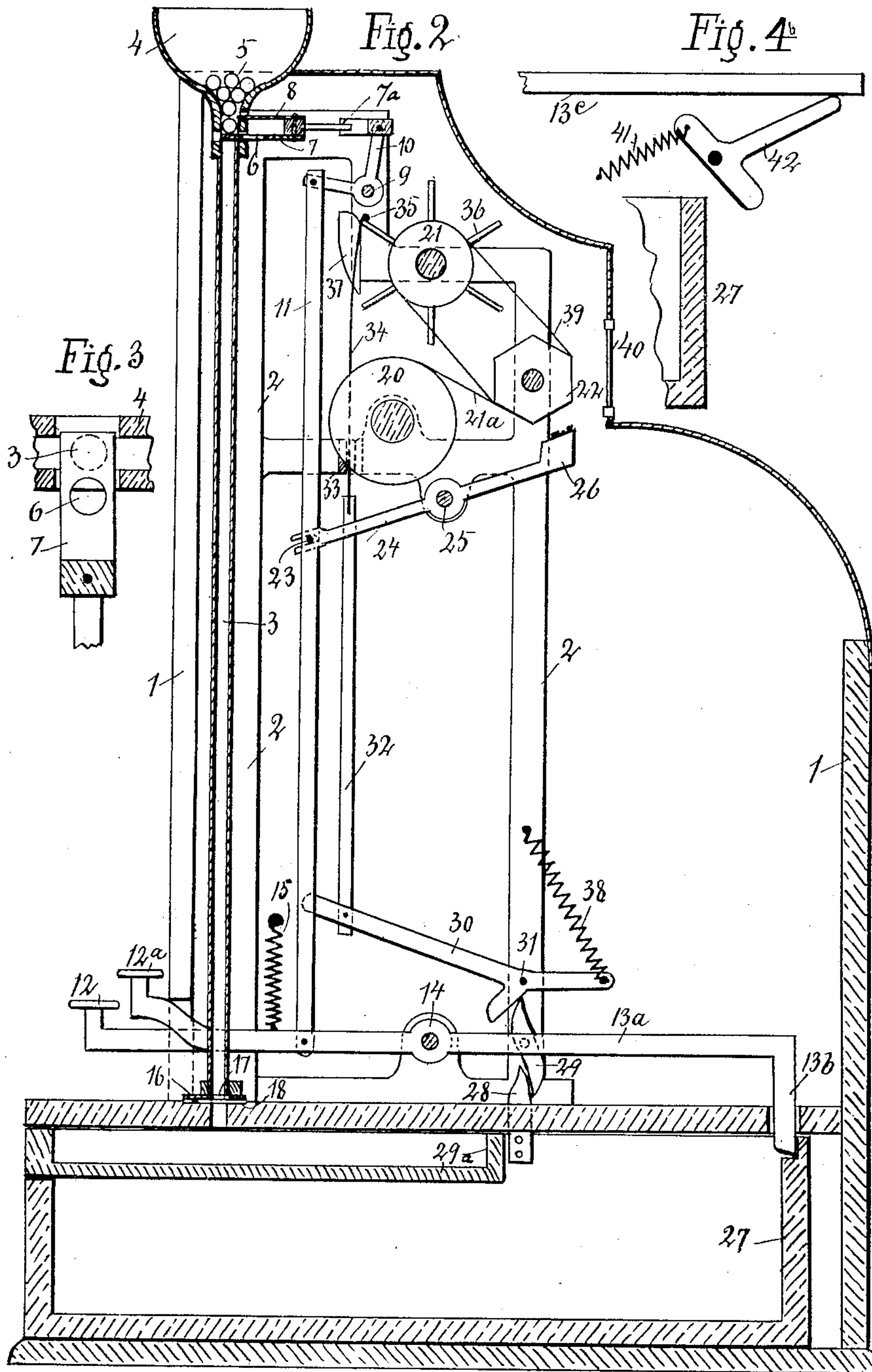
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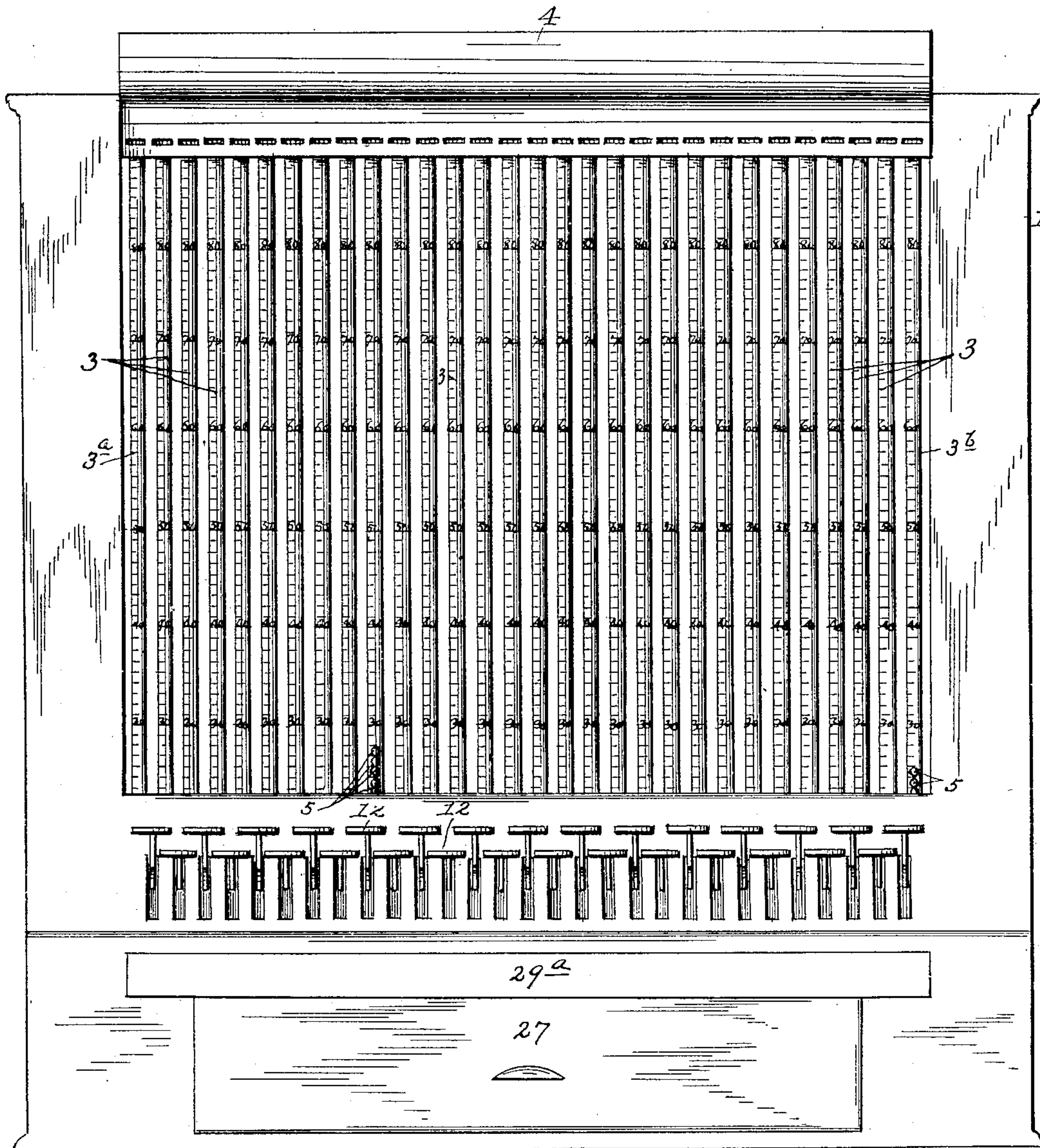
CASH REGISTER.

(Application filed Aug. 12, 1899.)

(No Model.)

3 Sheets—Sheet 3.

FIG. 5.



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UNITED STATES PATENT OFFICE.

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CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 658,362, dated September 25, 1900.

Application filed August 12, 1899. Serial No. 727,081. (No model.)

To all whom it may concern:

Be it known that I, ANTON FREDERIKSEN, a subject of the King of Denmark, and a resident of Copenhagen, Denmark, have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification.

This invention consists in an apparatus which not only checks the amounts placed in the till and registers them on a roller exposed to the customer's view, but also indicates the amounts in such manner that the sum total thereof can be easily calculated. The apparatus will indicate the number of transactions or times the cash-drawer has been pulled out.

The construction of the invention is shown in the accompanying drawings, which form a part of this application, in which—

Figure 1 is a cross-section of the machine shown in Fig. 2 on two different planes. Fig. 2 is a view at one side of the machine, partly in elevation and partly in section; and Figs. 3 and 4 are details. Fig. 5 is a front elevation of the machine.

Referring to the drawings, 1 represents the outer casing, and 2 a framework located within the casing and upon which most of the operative parts of the mechanism are mounted.

For the purposes of description the part of the machine at the right hand of the drawings will be called the "front" and is the side which is exposed to the customer. At the rear of the casing is fitted a row of vertical glass tubes 3, the upper ends of which enter a trough-like receiver 4, which is common to all of the tubes and which is adapted to contain a plurality of metal balls, which serve as tallies. Each tube 3 has its upper end normally covered by a movable plate 7, in which is formed an opening 6, corresponding in size to the diameter of the tube. This plate, together with a similar plate 8 above it, which is not perforated, is secured to a bar 7^a, to one end of which is pivoted one arm of a bell-crank 10, which is pivoted on a rod 9, and has its other end pivotally connected with a perpendicular rod 11, the lower end of which is pivoted to a key-lever 12, the number of rods corresponding to the number of such keys. The latter are pivoted to the frame at 14. By depressing one of these keys the plate 7 is moved, through the action of the key-lever,

bell-crank, rod 11, and bar 7^a, so as to bring the opening 6 over the mouth of the tube, and thus permit one of the metal balls to drop into the latter. At the same time the plate 8 slides across the neck of the receiver 4 and holds back the remaining balls, it being understood that the neck of the receiver is narrowed so that but one ball can enter it at any given point over a tube. When the key is released, the plates 7 and 8 are returned to their normal position by the action of the spiral spring 15, secured to the key-lever.

Each key and its corresponding tube indicate a certain sum, as five cents, ten cents, twenty-five cents, and the like, so that the total number of metal balls in a tube represent the multiple of the sum indicated by the tube. Each tube bears a scale of figures, beginning with a low number at the bottom of the tube and increasing in regular progression, each line or figure representing a metal ball or a certain number of balls, so that when the balls are at a certain height in a tube the total number of balls in the tube will be shown by the figures opposite the top ball. The tubes are closed at their lower ends by a slide 16, in which are openings 17, corresponding in size and number with the tubes, the openings being closed by flap-valves 18. By moving the slide 16 until its openings 17 register with the tubes the balls will fall into the tray 29^a, from which they are removed to the receiver 4 for use again.

The recording mechanism of my invention consists of a roller 20, on which is wound a continuous strip of paper, which is unwound automatically on a second roller 21, the strip of paper first traversing a roller 22, having a series of flat faces. Each of the rods 11 is connected by a pin 23 with one end of a lever 24, which is mounted on a pin 25 and is provided at its opposite end with a type-figure which corresponds with the figure on the key operating the rod 11, that is connected with said lever. As the end of the lever 24 with which the rod 11 is connected is depressed the opposite end is raised until the type strikes the opposite face of the roller 22 or the inked ribbon and the strip of paper which is interposed between said type and the face of the roller, thereby impressing the character on the strip of paper and making

a record of same. The next movement of the roller 22 will bring the character just impressed opposite the glass 40 in the front of the case, where it may be observed by the customer. After having depressed the key 12, representing the amount of the transaction, the key 12^a, which is pivoted at 14 and provided with an extension 13^a and an angular arm 13^b, is depressed, thereby raising the arm 13^b and disengaging it from the rear of the cash-drawer and permitting the latter to be drawn out for the purpose of depositing the cash and taking out the change, if any is required. When the drawer is pushed in and the key 12^a released, the bent or angular arm, being on the longer end of the lever 13^a, will fall into position and lock the drawer. On one of the sides of the drawer is fixed a stop 28, the beveled end of which projects above the upper edge of the drawer and engages on its front edge the lower end of a lever, which is pivoted to the frame 2 and is formed with curved sides terminating in points at each end of the lever. The upper end of the lever bears against the downwardly-projecting arm of a lever 30, which is pivoted at 31 to the frame 2, has its front end held up by a spring 38, and has its rear end pivoted to the lower end of a vertical rod 32, said rear end being held up when the device is at rest by the lever 29 pressing against the short downwardly-projecting arm of the lever 30, above referred to. To the upper end of the rod 32 is secured the lower end of a flat spring 34, the upper end of which terminates in a cross-bar 35, an arm 33, extending from the frame 2 and having a vertical slot in its outer end, serving as a guide for the lower part of said spring. Secured at one end of the roller 21 is a ratchet-wheel having teeth 36, which project opposite the spring 34 and are of sufficient length to be engaged by the cross-bar 35, so that at every depression of the spring the roller 21 will be caused to rotate the length or distance of the stroke of said spring. The cross-bar is held in contact with a tooth 36 during its stroke by a lug 37, which bears against the rear side of said cross-bar until the bar drops below the lower end of the lug, which is pointed, as shown, and on the upstroke of the spring, which takes place when the cash-drawer is closed, the cross-bar travels along the rear side of the lug and over its top until it is in position for the next operation, it being understood that the normal tendency of the spring is in a forward direction or toward the front side of the lug. As an endless band connects the rollers 21 and 22, each movement of the former causes a corresponding movement of the latter, and as the strip of paper which is to be printed on is unwound from the roller 20 it is wound on the roller 21. The latter roller is loosely mounted on its shaft and is secured to the ratchet-wheel by a spring 43 around its shaft bearing against the side of the ratchet-wheel and causing it

to press against the roller. This frictional contact between the roller and the ratchet-wheel increases as the roller increases in circumference by the winding of the paper upon it, and thus tends to retard the rotation of the roller, so that only the same length of paper is carried along over the roller at each movement thereof.

At one end of the line of tubes 3 is a tube 3^a and at the opposite end is a tube 3^b, the upper ends of which are connected with the receiver 4 and are provided with slides 7 and 8, the latter being connected with rods 11^a and 11^c, respectively, which are operated by the pulling out and the pushing in of the cash-drawer. As the long end of the lever 30 descends it strikes a pin 11^b of the rod 11^a and depresses the said rod, resulting in the same operation as when the rod 11 is depressed. When the cash-drawer is pushed in, it trips the lower end of a lever 42, thus throwing up the long end of said lever, which is under a rod 13^c, which is pivoted at its opposite end to a vertical rod 11^c, thus depressing said rod and repeating the operation described, by which a metal ball is permitted to fall into the tube 13^b, and thus disclosing the number of times the cash-drawer has been drawn out and pushed in.

In order to indicate the number of transactions, the paper tapes or slips have printed on their margin consecutive numbers in such position that they will be opposite the figures printed on the tapes by the type-keys, as above described.

Having thus described my invention, what I claim as new, and desire to obtain by Letters Patent, is—

1. In a cash-register, a plurality of glass tubes communicating with a receiver common to said tubes and adapted to contain balls, perforated gates between said tubes and receiver, a plurality of key-levers corresponding with said tubes, means for operating said gates from said key-levers, and means whereby the lower ends of said tubes may be simultaneously opened or closed, substantially as set forth.

2. In a cash-register, a plurality of glass tubes communicating with a receiver common to said tubes and adapted to contain balls, each of said tubes having a scale of figures indicated thereon, perforated slides or gates between said receiver and tubes, a plurality of key-levers corresponding with said tubes, means for operating said gates from said levers, and a perforated slide for opening and closing the lower end of said tubes simultaneously, substantially as set forth.

3. In a cash-register, a plurality of glass tubes communicating with a receiver common to said tubes and adapted to contain balls, perforated slides or gates between said receiver and said tubes, a plurality of key-levers corresponding with said tubes, rods pivoted to said key-levers, bell-cranks pivoted to said rods and connected with said slides or

gates, levers bearing printing-types and connected with said rods, whereby the depression of said rods will operate said type-bearing levers, substantially in the manner set forth.

5 4. In a cash-register, a roller containing a band of paper, a platen-roller having a series of flat faces, a third roller adapted to have the band of paper wound thereon, a ratchet-wheel secured to said third roller in a yielding manner, means for operating said platen-roller, means for rotating said ratchet-wheel, consisting of a flat spring having a bar engaging the teeth of said ratchet-wheel, a rod secured to said spring, a lever for depressing
10 said rod, a cash-drawer having a stop secured thereto, a lever bearing against said stop and against the rod-depressing lever and a spring secured to the last-named lever whereby, when the drawer is drawn out said spring will be
20 permitted to depress said lever, substantially in the manner and for the purpose set forth.

5 5. In a cash-register, a roller containing a band of paper, a platen-roller having a series of flat faces, a third roller adapted to have the
25 band of paper wound thereon, a ratchet-wheel yieldingly secured to said roller, means for rotating said ratchet-wheel consisting of a flat spring having a bar engaging the teeth of said wheel, a lug against which said bar bears, a

rod secured to said spring, a lever for depressing said rod, means for operating said lever by the drawing out and pushing in of the cash-drawer, a plurality of key-levers, rods operated by said levers, and type-carrying levers connected with said rods, substantially
30 as set forth. 35

6. In a cash-register, a suitable case, a frame mounted in said case, a plurality of glass tubes arranged in the rear of the case, a receiver communicating with said tubes, perforated slides between said receiver and tubes, a slide for opening and closing the lower ends of said tubes simultaneously metal balls adapted to drop into said tubes, a scale on said tubes, a plurality of key-levers means
40 for operating said slides from said levers, glass tubes at each end of said series of tubes and connected with said receiver, slides for the last-named tubes, a cash-drawer, and means for operating said last-named slides
50 by the drawing out and pushing in of said drawer, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ANTON FREDERIKSEN.

Witnesses:

HANS PEDERSEN,
JULES BLOM.