

(No Model.)

J. J. KENNELLY.
FARE REGISTER.

2 Sheets—Sheet 1.

No. 545,802.

Patented Sept. 3, 1895.

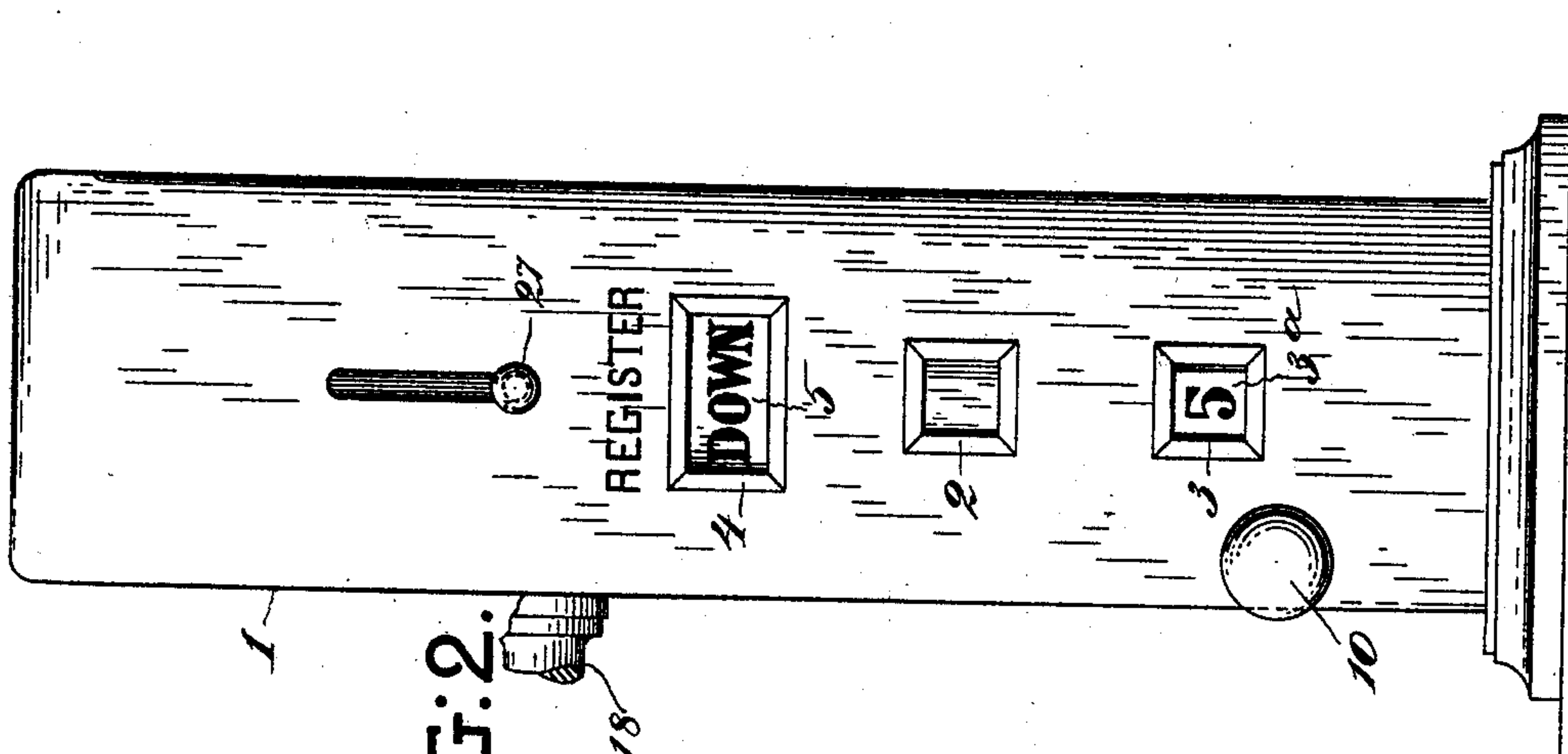


FIG. 2.

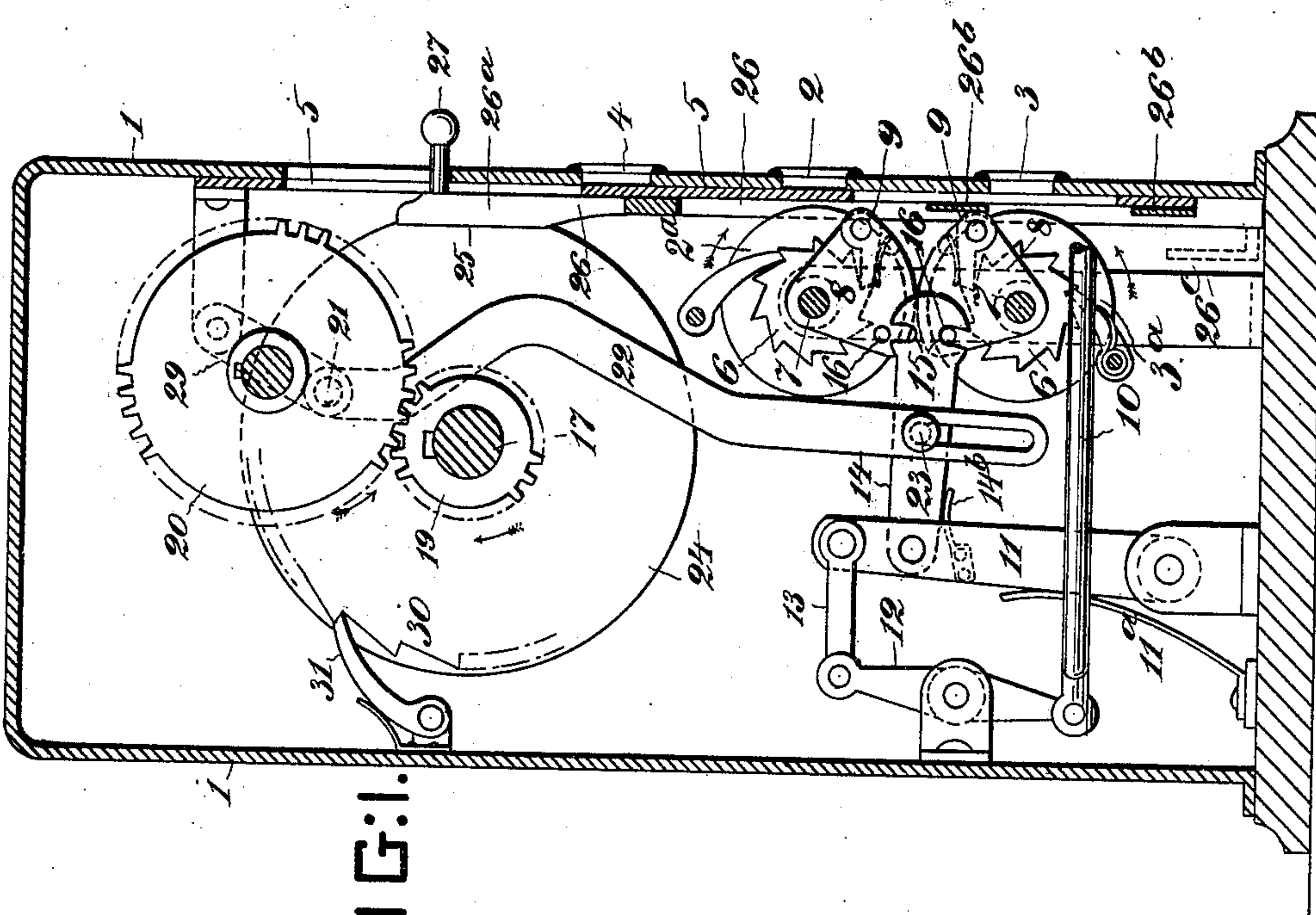


FIG. 1.

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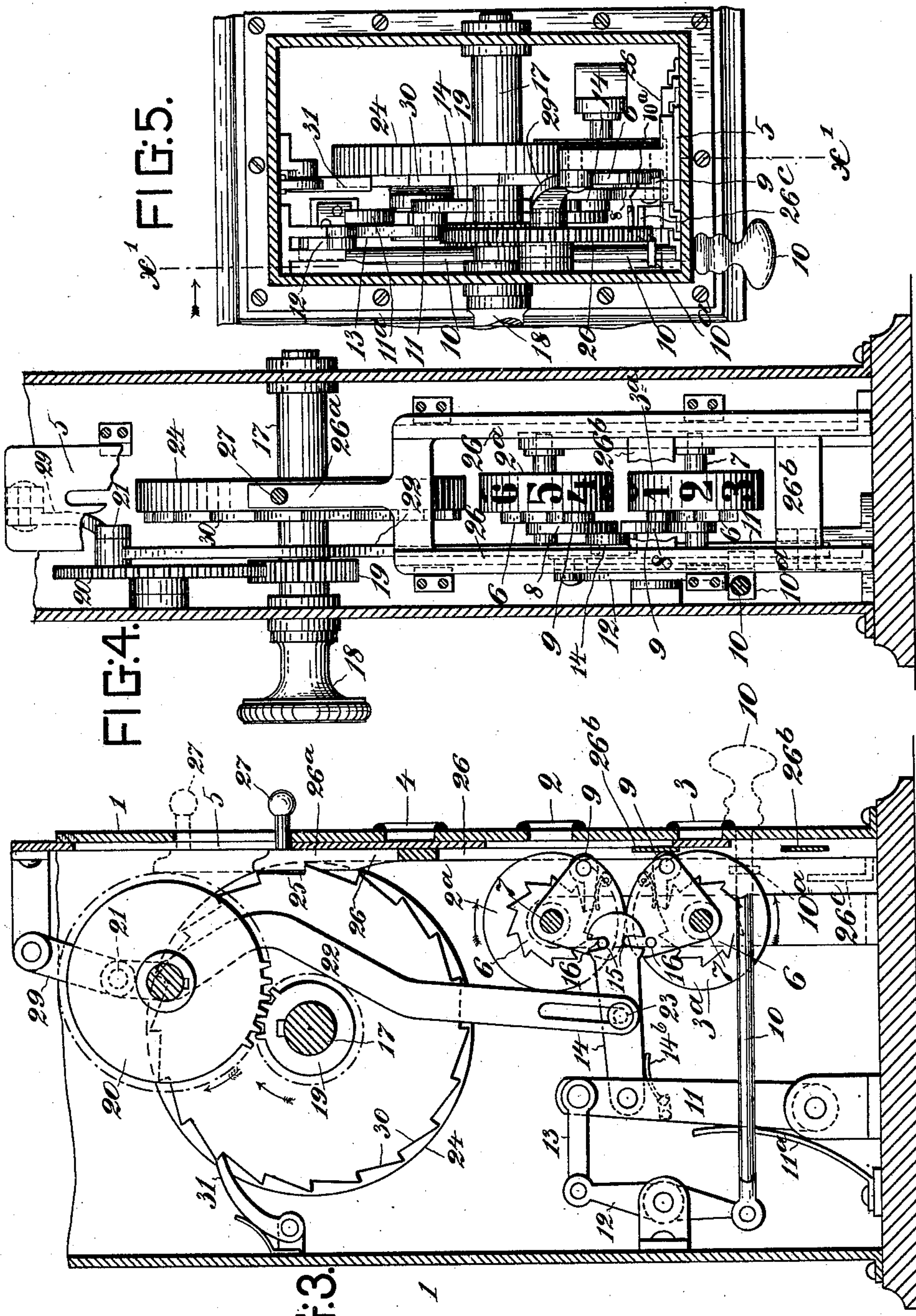
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2 Sheets—Sheet 2.

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FARE REGISTER.

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UNITED STATES PATENT OFFICE.

JOHN J. KENNELLY, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO JOHN B. BENTON, OF SAME PLACE.

FARE-REGISTER.

SPECIFICATION forming part of Letters Patent No. 545,802, dated September 3, 1895.

Application filed November 28, 1894. Serial No. 530,213. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. KENNELLY, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Registering Apparatuses, of which the following is a specification.

My invention relates to the class of registers, such as fare-registers and the like, and the object of the invention is, in part, to provide the apparatus with two registers or registering devices and with means for putting either device, at will, into gear with an operating-lever or pull—as, for example, in registering fares on an up trip and a down trip separately. Other features of the invention relate to automatically-operated slides, such as will be hereinafter described, and also to means for locking the shifting-shaft.

The invention is illustrated in the accompanying drawings, where I have shown it embodied in a simple form of fare-register, which will serve to show how it may practically be applied as well to more complex registering apparatuses.

In the said drawings, Figure 1 is a vertical section of the apparatus, taken substantially in the plane indicated by the line $x'x'$ in Fig. 5. Fig. 2 is a front elevation of the apparatus. Fig. 3 is a section like or similar to Fig. 1, but showing the parts in their other positions. Fig. 4 is a vertical section showing the casing in section and the inclosed mechanism in elevation. Fig. 5 is a plan of the mechanism, the casing being in horizontal section.

1 represents a suitable casing or housing for the mechanism, having in its front two sight-apertures 2 and 3, at which appear, respectively, the numerals on two numeral-bearing registering-wheels 2^a and 3^a, and a sight-aperture 4, at which appears a suitable inscription, as "Up" or "Down," on a slide 5 behind the front plate of the housing. As here shown, the registering apparatus is adapted for separately registering the fares on the "up" trip and the fares on the "down" trip of a street-car—the register-wheel 2^a, for example, registering the "up" fares and the wheel 3^a the "down" fares. These wheels are of the well known kind used in counters and

registers and will need but a brief description. Each has marked on its periphery numerals 1, 2, 3, &c., arranged in arithmetical order, and is provided with a ratchet-wheel 6, having the same number of teeth as the numerals on the wheel. On the shaft 7 of the wheel is loosely mounted a pawl-arm 8, carrying a spring-pawl 9, engaging the teeth of the ratchet-wheel.

10 is the pull for operating the register. This pull is coupled to a rocker 11 through the medium of a lever 12 and link 13; but this lever and link are employed merely to conveniently present the pull at the front of the casing. It is obvious that the pull might as well be coupled to the rocker direct at the point where the link 13 is connected therewith and extend out through the casing at the back. Therefore the lever 12 and link 13 are not essential to the operation of the register.

In order that the pull 10 may be put in connection with either the "up" or "down" registering mechanism at will, I provide the mechanism which will now be described.

To the rocker 11 is pivotally connected an arm 14, the free end of which projects in between the two ratchet-wheels 6, and is provided with two oppositely-arranged notches or recesses 15 in its respective edges, which are adapted, the one to engage with a stud 16 in the pawl-arm of one registering device and the other with a stud 16 in the pawl-arm of the other registering device. Now if this arm 14 be pressed or moved downward, as seen in Fig. 1, the lower notch 15 will engage the stud 16 of the lower registering mechanism, and in that position the operation of the pull 10 will actuate said lower mechanism. On the contrary, if the arm be pressed upward, as seen in Fig. 3, the upper notch 15 will engage the stud 16 of the upper mechanism, and then the pull will operate it and not the lower arm.

In order to move the arm up or down I employ a shifting mechanism which will now be described.

A shaft 17 is rotatively mounted in the casing and has on its projecting end a knob 18, or the like, whereby the shaft may be rotated. On the shaft 17 is fixed a toothed wheel 19, which gears with a crank-wheel 20, mounted

rotatively in the casing. The wheel 20 has twice as many teeth as the wheel 19, and, consequently, makes one-half a rotation when the shaft 17 is turned once around. On a stud 21 in the crank-wheel 20 is pivoted a link 22, which extends down to the arm 14, where a stud 23 on the arm engages a slot in the link. The object of the slot is merely to take up the excess of movement of the link over that required in the arm. Now if the parts be in the position seen in Fig. 1 and the shaft 17 be turned once around the crank-wheel 20 will turn half-way around, and in doing so act through the link 22 to raise the arm 14 to the position seen in Fig. 3. The wheel 20 may be set at any convenient point about the wheel 19. Means are provided for locking the shaft 17 against rotation normally, partly in order to hold the crank-wheel firmly in position when set and partly to indicate when the shaft has been turned only once around. Fixed on the shaft 17 is a disk 24, which has a flat face or facet 25, and mounted to play up and down in guides on the front of the casing is a slide 26, the head or upper end 26^a of which is adapted, when the slide is down, to fit up to the facet 25 and prevent the disk and the shaft 17 from being rotated. A stem or knob 27, fixed in the slide and projecting through a slot in the casing, provides a means for lifting the slide and releasing the disk and shaft. At the end of the trip—say the “down” trip—when the parts will be in the position seen in Fig. 1, the conductor or operator lifts the slide 26 by means of the knob 27 and proceeds to turn the shaft 17 by means of the knob on the end thereof. After the shaft 17 is started on its rotation he releases the slide, and the head 26^a will remain supported on the convex face of the disk 24; but when this disk shall have made one complete rotation the slide 26 will fall by gravity and its head will again lock the shaft and disk against rotation. The slide 26 has, by preference, two screen-plates 26^b, so placed that when the slide is elevated these will screen the sight-apertures 2 and 3 and hide the numerals on the peripheries of the registering-wheels. This will compel the lowering of the slide to its locking position, before the registering apparatus can perform its normal functions. It is desirable that when at the end of a trip the pull is disconnected from one registering mechanism and connected with the other the sight-aperture of the disconnected mechanism shall be closed or screened and that of the connected mechanism opened; and it is also desirable that at the same time the proper inscription (in this case the word “up” or “down”) shall be disclosed at the sight-aperture 4. To effect all of this automatically I mount, back of the front plate of the casing in suitable guides, a slide 5 with a suitable aperture to be put into and out of coincidence with the sight-apertures 2 and 3, accordingly as the slide may be elevated or depressed. If elevated, as in Fig.

3, the upper sight-aperture 2 will be opened and the lower aperture 3 screened. It also has marked or painted on it the words “Up” and “Down,” so placed that when the slide is elevated, as in Fig. 3, the word “Up” will appear at the aperture 4, and when depressed, as in Fig. 1, the word “Down” will appear at said aperture, as seen in Fig. 2. This slide 5 is coupled at its upper end by a link 29 to the stud 21 in the crank-wheel, whereby the slide is operated simultaneously with and by said wheel in its rotation. To prevent back rotation of the shaft 17 there may be a ratchet-wheel 30 fixed on the shaft or to the disk 24, as here shown, a pawl 31 being provided to engage the teeth of said ratchet. This ratchet device I do not, however, consider essential.

In the construction shown the pull 10 is drawn out in order to operate the registering mechanism and the parts are retracted by a spring 11^a bearing on the rocker 11. This arrangement is not, however, essential. Also, as here shown, the two numeral-bearing registering-wheels are arranged to rotate in opposite directions, and this will require that the numerals on their faces shall be arranged to run in opposite directions also, as will be well understood by those skilled in the art. I may say, as well, that while I have shown but one numeral-bearing or registering wheel in each registering mechanism there may be several of such wheels arranged abreast and geared together in a well-known manner to provide a means for registering units, tens, hundreds, thousands, &c. Such devices are in common use in counting mechanisms and totalizers for fare-registers and will not require illustration.

In order to lock the pull 10 against being drawn out while the mechanism is being shifted, I prefer to provide the apparatus with the locking mechanism I will now describe.

On the spindle or stem of the pull is a collar 10^a, which serves to limit the extent to which the pull may be drawn out, the collar impinging against the casing when the pull is out to its full extent, and on the slide 26 is fixed a guard 26^c, which, when said slide is elevated, interposes in front of some part of the collar 10^a and serves as a stop to lock the pull against being drawn out. Where the arm 14 moves up and down in a vertical plane I prefer to employ a light spring 14^b to support its weight and hold it normally in a substantially horizontal position; but the mechanism may lie down on its side as well.

I do not limit myself to the particular construction and arrangement of the parts herein shown, as these may be varied to some extent without materially departing from my invention.

I may say that the wheels 19 and 20 are full gears, but I have not shown all of the teeth thereon in Figs. 1 and 3.

Having thus described my invention, I claim—

1. A registering apparatus having two registering devices inclosed in a casing furnished with sight-apertures to disclose the numerals on the respective register wheels, an operating pull common to both registering devices, a shifting mechanism adapted to connect said operating pull with either registering mechanism, at will, and a movable screen for the said sight-apertures, the screen being connected to said shifting mechanism and adapted to be operated thereby, whereby, when a registering mechanism is disconnected from the pull, its sight-aperture will be closed by the screen, substantially as set forth.

2. A registering apparatus having two registering devices comprising each a numeral-bearing wheel and a pawl-and-ratchet mechanism, an operating pull common to both of said registering devices, connecting mechanism between said pull and the registering devices, a shifting mechanism for operating said connecting mechanism, whereby the pull may be coupled to either of said mechanisms at will, and a gravity operated locking device which automatically locks said shifting mechanism after the shift has been effected, substantially as set forth.

3. In a registering apparatus, the combination with the two registering devices comprising each a numeral-bearing wheel, a ratchet-wheel, a pawl-arm provided with a stud 16, and a pawl, of the notched arm 14, pivoted to a rocker, with its notches adapted to engage the studs 16, respectively, the said rocker, 11, a pull connected with the rocker, and a shifting mechanism for putting the arm 14 into connection with one or the other of said studs 16, substantially as set forth.

4. In a registering apparatus, the combination with two registering devices, an operating pull, and operative mechanism between said pull and the registering mechanisms, of a shifting mechanism for putting said pull into connection with one or the other of said registering mechanisms, said shifting mechanism consisting of a shaft 17, a gear 19 on said shaft, a rotatively mounted crank-wheel 20, in gear with and having twice the number of teeth of the wheel 19, and a link 22, coupled at one end to a stud in the crank-

wheel and at the other end to the arm which operates the pawl-arms of the register devices, substantially as set forth.

5. In a registering apparatus having two registering mechanisms operated by one pull, connecting mechanism between the pull and registering devices, and a casing having in it sight-apertures for exposing the numerals on the wheels of the registers, the combination with the shifting mechanism, of the movable locking-slide for the said mechanism adapted to screen the said sight-apertures when the shifting mechanism is unlocked, substantially as set forth.

6. In a registering apparatus, the combination with the casing, provided with sight-apertures 2 and 3, of the shaft 17, in the casing, the faceted disk, 24, on said shaft, and the locking slide, 26, provided with screens 26^b, adapted to screen the sight-apertures 2 and 3 when the slide is in its elevated and unlocking position, substantially as set forth.

7. In a registering apparatus having two registering devices, the combination with the casing, having in it sight-apertures, of the slide 5, adapted to screen said apertures, as set forth, and the shifting mechanism adapted to operate said slide, said mechanism comprising the shaft 17, the gear-wheel 19 thereon and the crank-wheel 20, in gear with the wheel 19, and the link 29, connecting said slide with a stud in the crank-wheel, substantially as set forth.

8. In a registering apparatus, the combination of two registering mechanisms, and a pull common to both for operating them, said pull having a projecting stop 10^a to limit its movement, of the shaft 17, the faceted disk 24 thereon, and the locking slide 26, provided with a guard 26^c, adapted to be interposed in front of the stop 10^a, when said slide is in its elevated or non-locking position, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN J. KENNELLY.

Witnesses:

HENRY CONNETT,
PETER A. ROSS.