

No. 778,524.

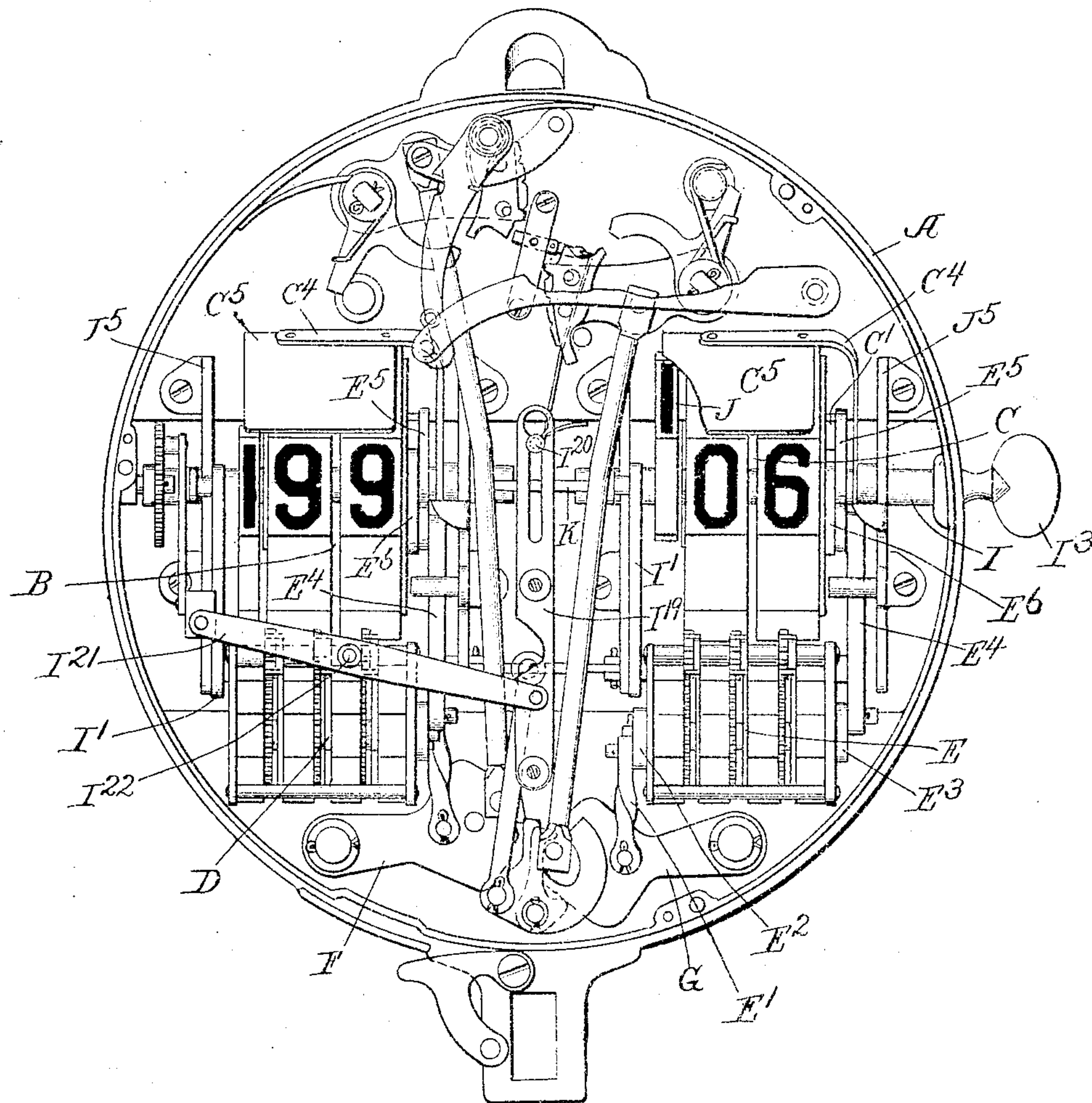
PATENTED DEC. 27, 1904.

A. H. WOODWARD.
SHUTTER MECHANISM FOR REGISTERS.

APPLICATION FILED APR. 23, 1903.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses.

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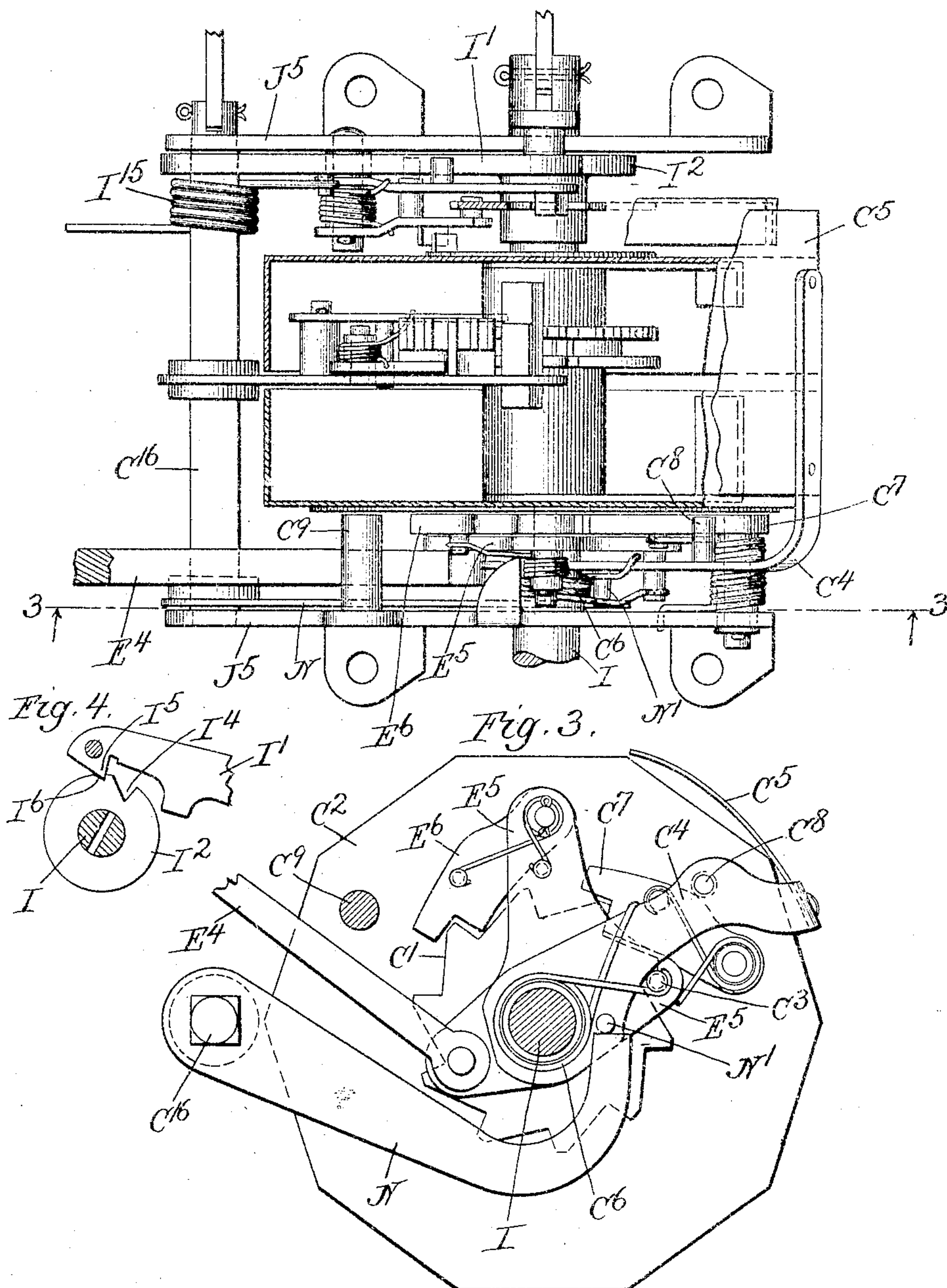
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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SHUTTER MECHANISM FOR REGISTERS.

SPECIFICATION forming part of Letters Patent No. 778,524, dated December 27, 1904.

Original application filed September 27, 1901, Serial No. 76,746. Divided and this application filed April 23, 1903. Serial No. 153,905.

To all whom it may concern:

Be it known that I, ARTHUR H. WOODWARD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Shutter Mechanism for Registers, of which the following is a specification:

My invention relates to shutter mechanisms for fare-registers, and has for its object to provide a new and improved mechanism of this description.

My present application is a divisional application taken from an application filed by me September 27, 1901, Serial No. 76,746, to which reference is had for a full explanation of the fare-register mechanism with which the shutter is associated.

My present invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view, with parts omitted, of a register, showing the shutter mechanism in position. Fig. 2 is a plan view of one of the trip-registers with parts broken away, showing the shutter mechanism. Fig. 3 is a section on line 3 3, Fig. 2. Fig. 4 is a view of the cam on the resetting-shaft and its associated lever.

Like letters refer to like parts throughout the several figures.

I have illustrated my invention in connection with fare-registers adapted to register two classes of fares. The register mechanism proper is contained within the case A and comprises two trip-registers B and C and two permanent registers D and E. Two operating-levers F and G are pivotally connected to the register-case and are provided with projecting pins or parts which project beyond the register-case at the back and which are actuated by the mechanism associated with the register-back and illustrated in my prior application. The operating-levers are connected with the mechanism of the register so as to operate such mechanism when moved.

The trip-register B and the permanent register D and associated parts form one mechanism for registering one kind of fares, and the trip-register C and permanent register E and associated parts form another mechanism for registering a different class of fares. The two mechanisms of the register are substantially duplicates, and hence I will only describe one of these in detail, the corresponding parts of the other being similarly lettered.

The permanent register E is connected with the operating-lever G by means of the rod E' and the crank E². This permanent register may be made up in any desired form and usually consists of a series of wheels having numbers on their peripheries and mounted upon a shaft. These wheels represent units, tens, hundreds, &c., and are connected together so that at every complete rotation of a given wheel the adjacent wheel on the left is moved one number. The shaft of the permanent register E is provided at the other end with a crank E³, to which is connected the rod E⁴. As illustrated in Figs. 2 and 3, the rod E⁴ is connected with the movable piece E⁵, mounted upon the trip-register shaft. This piece E⁵ is provided with an actuating-pawl E⁶, which engages a ratchet C', associated with the units numeral-wheel C² of the trip-register. This pawl is provided with a suitable holding-spring, as shown. Mounted upon the trip-register shaft I is an arm C⁴, carrying a blind or shutter C⁵. The dial of the register is provided with an opening, as shown in my prior application, through which the figures of the trip-register show. This shutter or blind is moved up over the opening or up over the numbers on the numeral-wheels each time the trip-register is operated, so as to conceal the figures during the operation, and is moved back again after the fare has been registered. This blind or shutter is provided with a retracting-spring C⁶, which normally holds it in its inoperative position. The spring C⁶ is connected at one end with the

arm of the blind and at the other end with the movable piece E^5 . During the ordinary operation of the register the piece E^5 and the blind and its arm move together, and hence the spring during this operation is substantially inoperative, there being no work done by it.

When the register is reset, the dial is moved up independent of the piece E^5 , as described in my prior application, and the spring then works to move it back to its normal position. It will be seen that by attaching the end of the spring E^6 to the movable piece E^5 instead of a stationary part the work on the spring is very materially reduced, for the register is operated in the ordinary way a large number of times for every time it is reset. This movable piece E^5 is provided with a pin or projection C^3 , which engages the blind-arm C^4 when the rod E^4 is moved so as to actuate the register, thus moving the blind so as to cover the figures exposed through the dial. A holding-pawl C^7 is associated with the ratchet-wheel C^6 , so as to prevent it from being moved backward. This pawl is held by the pin or projection C^8 , carried by the blind-arm C^4 , so that it cannot be disengaged from the teeth of the ratchet-wheel.

When the trip-register is at rest and in its initial position, the pin C^8 engages the holding-pawl C^7 , thus forcing it toward the ratchet-wheel and, as it were, locking the trip-register against movement. When the trip-register is operated, the blind and its arm, together with the pin C^8 , are moved, and said pin C^8 follows the outline of the holding-pawl C^7 , thereby preventing the too rapid movement of the units-wheel of the trip-register. During this position the pawl E^6 is held in place by the pin C^9 , connected with the holding-frame of the trip-register. (See Fig. 2.)

The trip-register shaft I , or perhaps, more properly speaking, the resetting-shaft I , is provided with a thumb-piece I^3 and is adapted to be turned to reset the mechanism—that is, to bring it back to zero. This shaft I is provided with a disk or cam I^2 (shown in detail in Fig. 4) and provided with the deep notch I^4 and the shallow notch I^5 . A cam-lever I' is associated with the cam I^2 and is provided with the point I^5 , which normally rests in the deep notch I^4 . This cam-lever I' is rigidly connected to the shaft C^{16} , carrying at its other end a curved or bent arm N , which engages a pin N' on the blind-arm. (See Fig. 3.) When the resetting-shaft is rotated, the point of the cam-lever I' rides along the beveled face of the deep notch I^4 and is thus lifted and partially rotates the shaft C^{16} . During the remainder of the period this point rides around the periphery of the cam. The rocking of the shaft C^{16} moves the arm N , and this by

engagement with the pin N' moves the blind or shutter C^5 so as to cover the figures on the number-wheels. The blind stays in this position during the process of resetting, and when the point I^5 again comes opposite the deep notch I^4 it falls therein, thus rocking the shaft C^{16} back to its normal position and moving the arm N back to its normal position. The retracting-spring then moves the blind or shutter C^5 back to its normal position. The shallow notch I^5 simply prevents the resetting mechanism from being turned backward when once started and necessitates the device being moved completely around to the resetting position.

I have described in detail the shutter and its mechanism; but it is of course evident that the parts may be varied in many particulars and in the form, construction, and arrangement without departing from the spirit of my invention, and I therefore do not limit myself to the construction shown.

I claim—

1. A registering mechanism, comprising a blind, a movable piece with which the blind is associated, means for moving said blind and movable piece simultaneously during the process of registering, and a spring for said blind connected with the blind and with said movable piece so as to be inactive during the ordinary process of registration.

2. A registering device, comprising a blind, a retracting-spring therefor attached to a movable part, means for moving the blind and part simultaneously during the registering operation, and means for moving the blind independent of the movable part during the resetting operation.

3. The combination in a registering mechanism of a blind adapted to be moved at each registration and during the resetting operation so as to conceal the figures exposed through the dial, a retracting-spring for said blind adapted to operate to retract the blind after the resetting operation, and means for rendering said spring inactive during the normal operation of the registering mechanism.

4. A registering mechanism, comprising an operating part, a registering part, a resetting mechanism, a blind adapted to be moved to conceal the register-readings during the operation of registering and also during the resetting operation, a retracting-spring for said blind adapted to retract it after the resetting operation, and a connection between said blind and the operating mechanism adapted to retract the blind after each registration without bringing the retracting-spring into operation.

5. A registering device comprising a blind, a movable part to which said blind is attached elastically, said blind and movable part mounted about the same axis, means for moving the

blind and part simultaneously during the registering operation and for moving the blind independent of the movable part during the resetting operation.

- 5 6. A registering device comprising a blind, a movable part associated therewith, a spring connected with the blind and the movable part, means for moving the blind and part simulta-

neously during the registering operation, and means for moving the blind independent of the movable part during the resetting operation.

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Witnesses:

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