

No. 842,476.

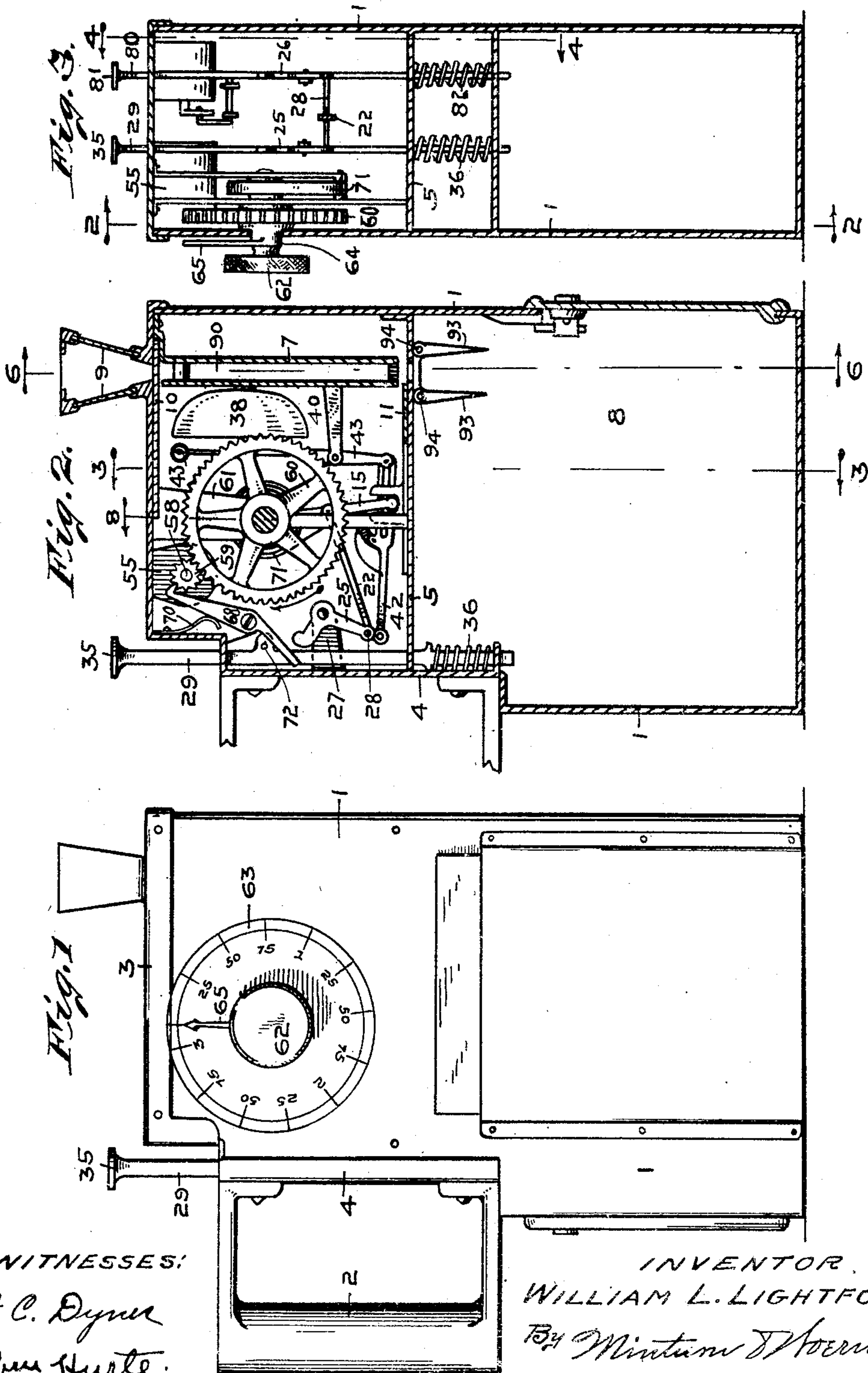
PATENTED JAN. 29, 1907.

W. L. LIGHTFORD.

FARE REGISTER.

APPLICATION FILED FEB. 2, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

J. C. Dyer
Wm. Hurte.

INVENTOR.
WILLIAM L. LIGHTFORD,
By *Wintum J. Hoerner*
ATTORNEYS.

No. 842,476.

PATENTED JAN. 29, 1907.

W. L. LIGHTFORD.
FARE REGISTER.

APPLICATION FILED FEB. 2, 1906.

2 SHEETS—SHEET 2.

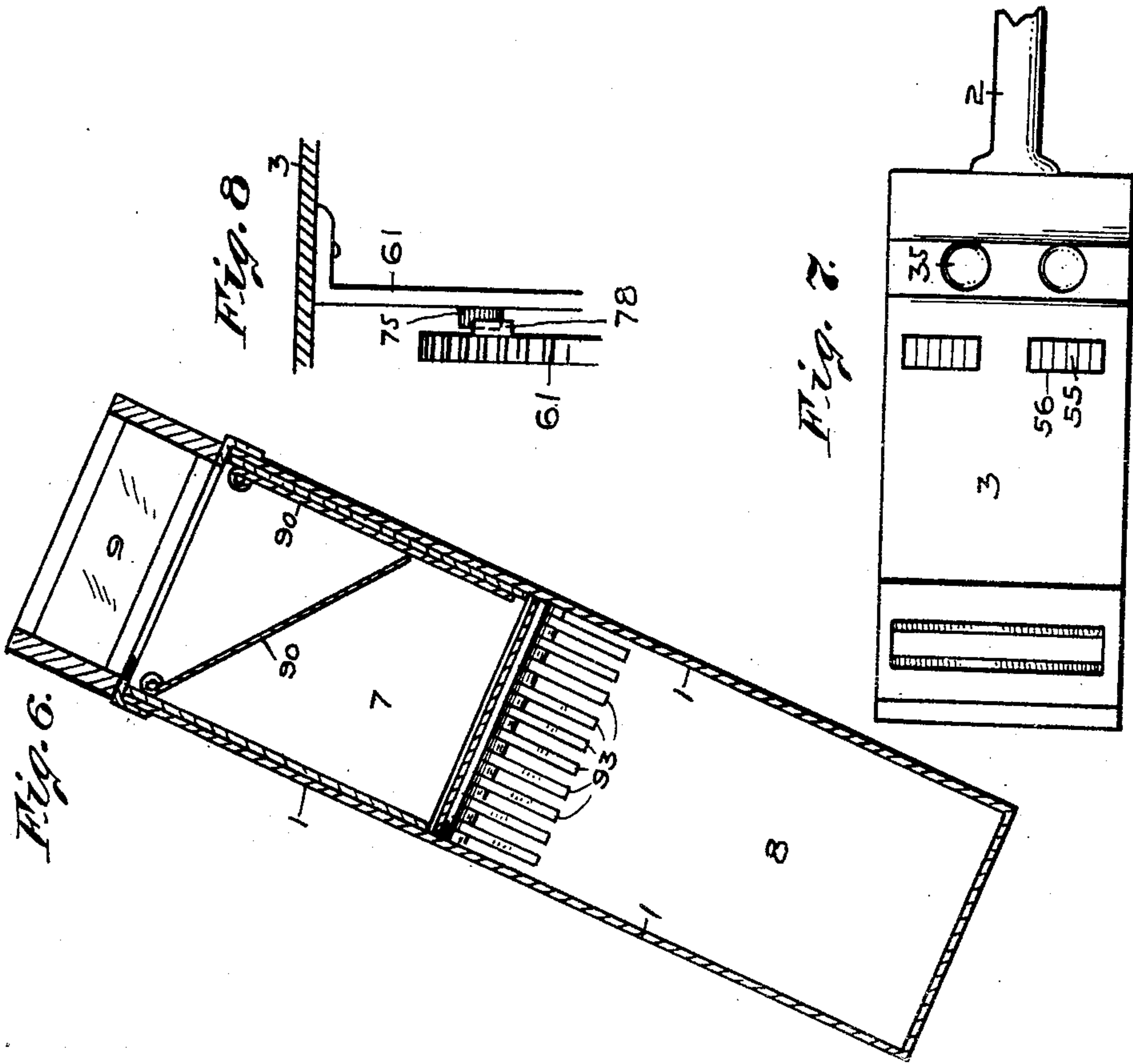


Fig. 7.

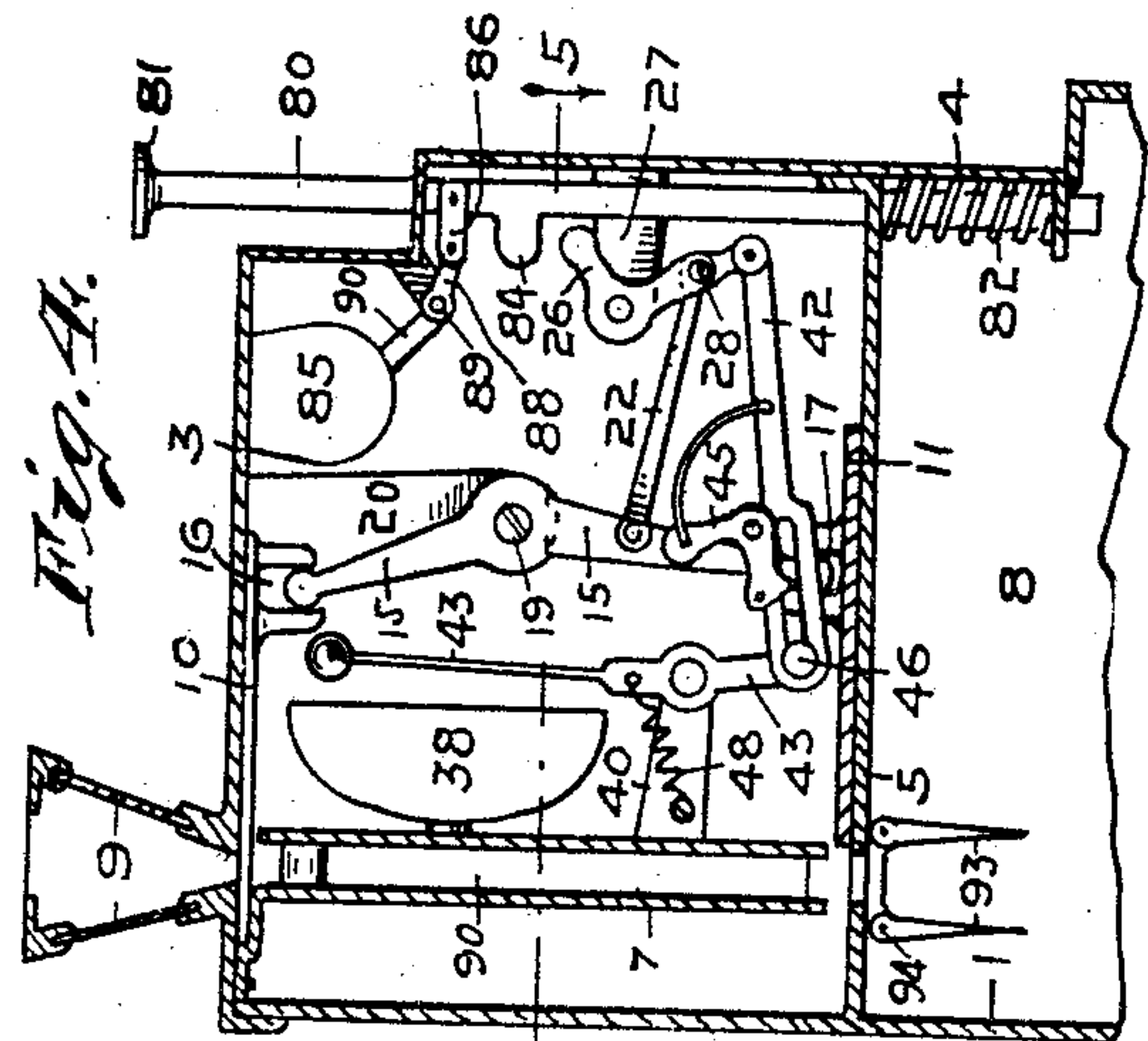
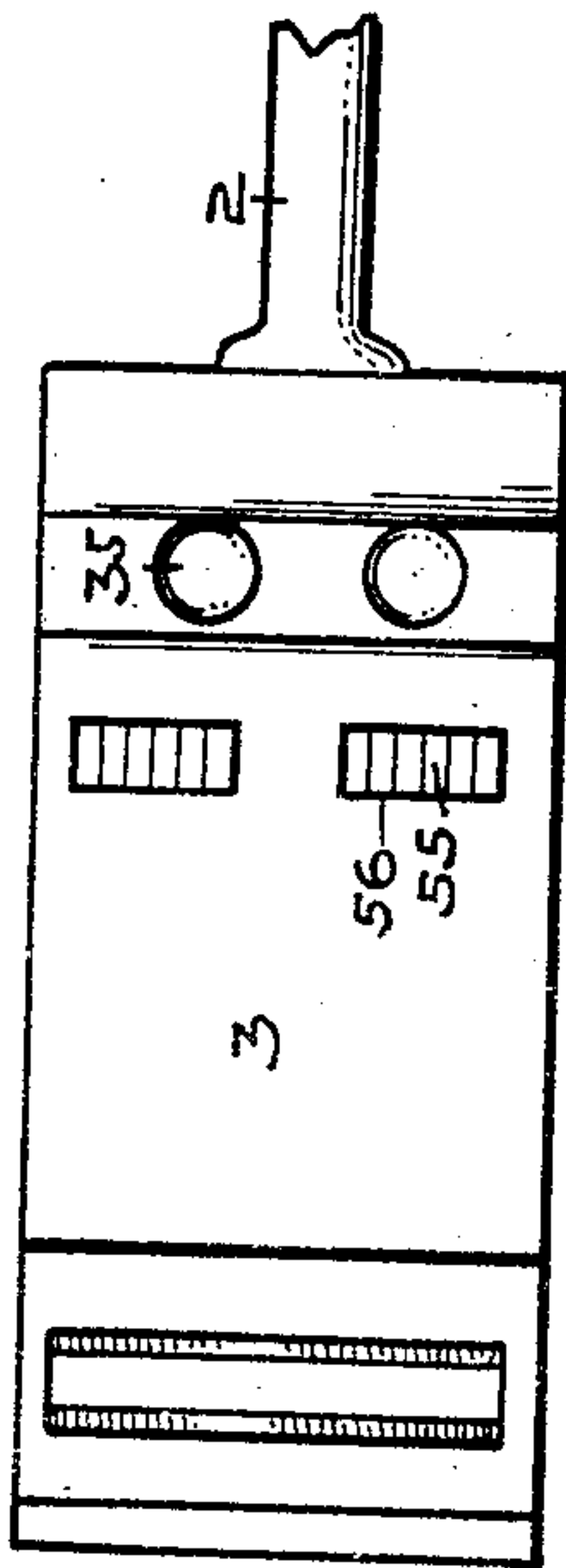


Fig. 4.

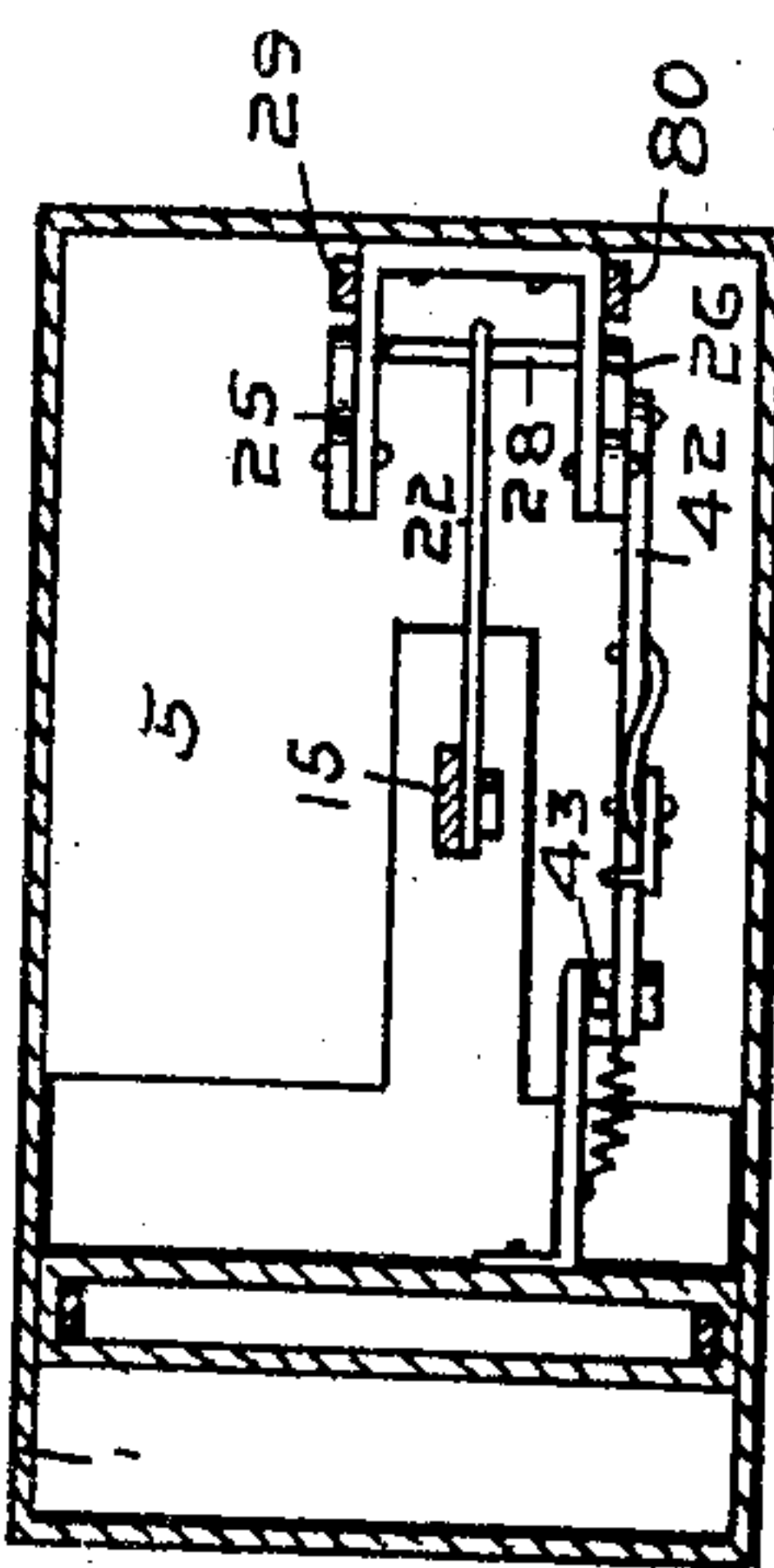


Fig. 5.

WITNESSES:

F. C. Dyer,
Wm. Hurte.

INVENTOR

WILLIAM L. LIGHTFORD,
By Minturn Thorne
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM L. LIGHTFORD, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO JOHN
O. SLOAN, OF INDIANAPOLIS, INDIANA.

FARE-REGISTER.

No. 842,476.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed February 2, 1906. Serial No. 299,124.

To all whom it may concern:

Be it known that I, WILLIAM L. LIGHTFORD, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Fare Registers and Counters, of which the following is a specification:

This invention relates to a fare-register provided with mechanism for the collection and registration of fares received on interurban lines where the fares vary according to the distance traveled, and is also provided with mechanism for the registration of fares which are received when such cars enter cities and are compelled to travel over the right of way of another line holding exclusive privileges on which uniform fares are charged and to whom an accounting is necessary of the number of passengers carried in order that a contractual division of fares can be made.

The object of this invention consists in a neat and convenient fare-register, that is passed by the conductor to the passengers for the depositing of fares therein, which will receive and count fares of any denomination, and which is also arranged to register and count the number of fares collected.

I accomplish the objects of my invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved fare-register. Fig. 2 is a vertical sectional view of the register as seen from the dotted line 2 2 in Fig. 3. Fig. 3 is a vertical transverse sectional view of the register as seen from the dotted line 3 3 in Fig. 2. Fig. 4 is a fragmentary detail view of the upper portion of the register in vertical section as seen from the dotted line 4 4 in Fig. 3. Fig. 5 is a horizontal transverse section as seen from the dotted line 5 5 in Fig. 4. Fig. 6 is a vertical transverse section as seen from the dotted line 6 6 in Fig. 2, this figure being tilted to one side in order to show the manner in which the wings in the coin-chute close said chute. Fig. 7 is a top or plan view of the register. Fig. 8 is a fragmentary detail in elevation of the upper end of the pinion and supporting-standard and shows the means for limiting the movement of said pinion.

In the drawings, 1 represents the body of

the fare-register, which is of a convenient shape and size and is provided with a handle 2, by which the same may be carried during the period of time of collecting the fares. The register consists of an inner frame comprising a top 3 and the side wall 4, to which the handle 2 is secured, and of the horizontal partition-wall 5. This inner frame forms a housing for the recording mechanism and is secured to the body 1 in any suitable and convenient manner. The register is provided with a coin-chute 7, which passes from the exterior of the register to and communicates with the coin-chamber 8, which is located in the bottom of the body 1. The coin-chute 7 is secured within the inner frame and has the external mouthpiece that communicates with the upper end of said chute. The mouthpiece is provided with transparent walls 9, so that when the passenger deposits a fare therein its character may be determined by both the conductor and the passenger, and in case the fare so paid is undesirable the register may be inverted and the coin removed before it is permitted to pass into the coin-chute.

The passage of a coin through the coin-chute 7 is controlled by means of the slides 10 and 11. The slide 10 is mounted on the under side of the top 3 and normally stands across the opening in the coin-chute 7, so that the coin deposited in the mouthpiece of the register will temporarily be supported by said slide. When said slide is operated, the coin will drop into the chute 7. The means for actuating said slide will be hereinafter described. The slide 11 is slidably mounted on the horizontal partition-wall 5 and normally stands removed from the coin-chute 7, so as to leave the latter free from obstruction. The slides 10 and 11 are moved in opposite directions, so that when the slide 10 is removed from the opening of the upper end of the coin-chute the slide 11 closes the lower end thereof. This movement of the slides is accomplished by means of a lever 15, which engages the pockets 16 and 17, integrally formed with the slides 10 and 11. The lever 15 is pivoted at 19 to a standard 20, which is secured to the top. The pivot-point of the lever 15 is above its center, so that the lower end of said lever and the slide 11 are moved a greater distance than the upper slide 10, the diversity of movement between the slides

being sufficient to permit the slide 11 to close the coin-chute before the slide 10 opens the upper end of said chute, so that at no time will said chute 7 be free and unobstructed. A lever 22 connects with the lever 15, which extends to and engages the cross-bar 28 that ties the bell-cranks 25 and 26 together. The bell-cranks 25 and 26 are arranged to work in unison and are operated by means of a shoulder 30 on the sliding-bar 29, which engages the upper end of the bell-crank 25. The sliding-bar 29 is provided with a finger-button 35, by which the same is operated, and said bar is held in its raised or normal position by means of a spring 36 at its lower end. Thus it will be seen that when the sliding-bar 29 is depressed the position of the lever 15 and the slides 10 and 11 are changed, permitting a coin previously deposited in the mouthpiece of the register to pass down and lodge on the lower slide 11, from which it passes into the coin-chute when the parts return to normal. When a coin is deposited, an alarm is also sounded, denoting the depositing of a coin, together with the proper acting of the mechanism. This is accomplished by means of a bell 38, suitably located within the inner frame and is provided with a bell-tapping lever 43, which is pivotally mounted on a standard 40, secured to the coin-chute 7. A lever 42 extends from the bell-crank 26 to and engages the lower end of the bell-tapping lever 43. The lower end of the lever 42 is slotted, so that the bell-tapping lever 43 is not affected until the sliding-bar 29 is partially depressed. The lever 42 is also provided with a pawl 45, which engages the pin 46 on the bell-tapping lever 43, moving said lever so that the upper end will be moved away from the bell and at a certain point will release said lever, permitting the latter to be quickly drawn toward and strike the bell under the influence of a spring 48. With the operation of the sliding bar 29, which permits a fare to be deposited as well as sounding a signal to that effect, I also operate a register to count and record the amount of the fare deposited. This is one of the chief features of my invention and will now be described.

The device is provided with a suitable disk register 55, which is secured to the under side of the top, the latter being provided with an inspection-aperture 56, (see Fig. 7,) through which the total on the counter may be read. This counter is arranged not to count the number of fares registered, but the amount of fares collected, and is particularly applicable for interurban trains where fares are charged that correspond to the distances traveled by the passengers. The counter 55 is provided with a main shaft 58, which is provided with a pinion 59. A pinion 60, suitably supported by means of a standard 61, meshes with the pinion 59. The pinion

60 may be rotated in the direction indicated by the arrow in Fig. 2 by means of a milled-head thumb-nut 62, which projects out through the side of the body 1. The body 1 is provided with a graduating-scale 63, through which the neck 64 of the thumb-nut 62 projects, and the latter is provided with a pointer 65, which normally stands at zero. As shown in the drawings, the scale 63 is arranged so that a fare of three dollars may be recorded with one rotation of the pinion 60. It will be understood, however, that said scale may be changed so as to include those numbers that are sufficient to register the largest amount of fare likely to be collected from a passenger on the line. When the pinion 60 is rotated, the pinion 59 is also rotated, which in turn rotates the proper disks of the counter 55. Thus it will be seen during this initial movement of the counter it has added and charged the amount registered against the conductor, and it now behooves him to see that the amount of fare registered is deposited. When the pinion 60 has been rotated so that the pointer 65 will point over the amount of fare desired, the parts are prevented from returning to normal by means of a pawl 68, which engages the teeth of the pinion 59. Said pawl is held in contact with said pinion by means of a spring 70. The pinion 60 is provided with a spring 71, one end of which is secured to the hub of said pinion and the other end to the framework of the register. When the pinion is moved so that the pointer 65 will point to the amount of fare desired, and after said amount is deposited by the passenger into the mouthpiece of the register, the sliding bar 29 is depressed, which disengages the pawl 68 from the pinion 59 by means of a transverse pin 72, mounted on said bar. The pinions 59 and 60 being under the influence of the spring 71, the tension of which is increased when the pinion 60 is rotated, are returned to normal by the means of the uncoiling of said spring. The movement of the pinion 60 is limited by means of a shoulder 75, formed on the standard 61 and by means of a corresponding shoulder 78, formed on said pinion.

The description so far has been confined to that mechanism which is employed in registering the various amounts of fares collected on lines of common carriers wherein fares are charged according to the distances traveled by the passengers. The present description will be confined to that portion of the register that is employed by the conductor when collecting uniform fares, which is a common practice where a carrier passes over the right of way of another carrier having exclusive privileges and where a uniform fare is charged.

In providing for the counting and classification of the uniform fares collected I provide mechanism which consists of a secondary sliding bar 80, mounted adjacent to and

parallel with the sliding bar 29. This bar is provided with a finger-button 81, and is held in its raised or normal position by means of a spring 82, coiled around the lower end thereof. The sliding bar 80 is provided with an integrally-formed shoulder 84, which engages and actuates the bell-crank 26, which, as before mentioned in the specification, moves simultaneously with the bell-crank 25 by means of the cross-bar 28. By this construction it will be noted that the sliding-bar 80, through the lever 22 and the vertical lever 15, operates the slides 10 and 11. In other words, it may be stated that the sliding bar 80 operates the slides 10 and 11 through the same mechanism and in the same manner as the sliding bar 29 operates them. When the sliding bar 80 is depressed, the bell 38 is sounded through the same mechanism described for their operation in connection with the sliding bar 29. I also provide a counter 85 to count, in this instance, the number of uniform fares collected. This counter is secured to the top 3 in a manner similar to the counter 55. When the sliding bar 80 is depressed, a shoulder 86, rigidly secured thereto, actuates a crank 88, secured to a rock-shaft 89. The rock-shaft 89 is provided with a crank 90 on the opposite end, which engages and actuates the counter 85 at each depression of said sliding bar 80. The sliding bar 80 is arranged in relation to the counter 85 that at the slightest depression of the former the latter will be operated and thus add a fare, which must be accounted for. This initial movement of the counter takes place in advance to the opening of the coin-chute 10 or, in fact, any of the other mechanism, and the intent of this arrangement is to avoid mistakes and abuses.

While it is of great importance to provide a register that will insure a safe and accurate method for the collection and registration of fares, it is of equal importance to provide mechanism that will prevent the money collected from being surreptitiously removed from the register. With the foregoing object in view I provide the coin-chute 7 with a plurality of wings 90, which are pivotally secured therein and near the top of said chute. These wings will drop to the lower side of the chute when the register is tilted or inverted, thereby closing the opening in the chute and prevent the coin from being worked out through same. I also provide the register with a secondary precautionary means, which consists of a series of fingers 93, mounted in a pivotal manner on a rod 94 on each side and parallel with the discharge end of the coin-chute 7. The fingers 93 are staggered with relation to the fingers on the opposite side of the coin-chute, and when the register is tilted or inverted the fingers will lap each other as they fall across and close the opening leading into the coin-chute 7. The

movement of the fingers 93, it will be noted, is in a right-angle direction with relation to the movement of the wings 90, mounted within the chute. Thus it will be seen that equipping a register with these safety devices 70 coin cannot be removed through the coin-chute 7, no matter into what direction the register is tilted or inverted.

Having thus fully described my said invention, what I desire to secure by Letters Patent of the United States is—

1. A fare-register comprising a coin-receptacle, a coin-chute leading to said receptacle, safety-slide means adapted to move transversely across said chute, means for operating said safety-slide means in opposite directions, a counter, a counter-setting means for said counter, retaining means for holding the parts after the counter is set, means to release said setting means, and means for restoring all the parts, excepting the counter, to normal.

2. A fare-register comprising a coin-receptacle, a coin-chute leading to said receptacle, a plurality of slides for opening and closing the coin-chute, a lever engaging the slides, a vertical sliding bar for operating the slides, means for connecting the lever and vertical sliding bar together, a counter, a counter-setting means for setting the counter, stop means for holding the setting means in given positions, an operating slide-bar extending to the exterior for releasing the stop means, and a restoring means for restoring the parts to normal.

3. A fare-register comprising a coin-receptacle, a coin-chute leading to and communicating with said receptacle, slides movably mounted in the register and adapted to close and open the coin-chute, a counter, means extending externally of the register for setting said counter, a stop device for holding the parts when the counter is set, and a single operating means extending externally of the register for moving both slides and for releasing the counter-setting mechanism.

4. A fare-register comprising a coin-receptacle, a coin-chute leading to and communicating with said receptacle, slides movably mounted in the register and adapted to close and open the coin-chute, a counter, means extending externally of the register for setting said counter, a stop device for holding the parts when the counter is set, a single operating means extending externally of the register for moving both slides and for releasing the counter-setting mechanism, and restoring means to restore the parts to normal.

5. A fare-register comprising a coin-receptacle, a coin-chute leading to and communicating with said receptacle, slides movably mounted in the register and adapted to close and open the coin-chute, a counter, means extending externally of the register for set-

ting said counter, a stop device for holding the parts when the counter is set, a single operating means extending externally of the register for moving both slides and for releasing the counter-setting mechanism, restoring means to restore the parts to normal, a bell, a bell-striking mechanism, and a single operating means extending externally of the register for actuating said bell-striking mechanism.

6. A fare-register comprising a coin-receptacle, a coin-chute leading to and communicating with said receptacle, slides movably mounted in the register and adapted to close and open the coin-chute, a counter, means extending externally of the register for set-

ting said counter, a stop device for holding the parts when the counter is set, a bell, a bell-striking mechanism, a single operating means extending externally of the register for moving both slides, releasing the counter-setting mechanism and actuating the bell-striking mechanism, and restoring means for restoring the parts to normal.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 26th day of January, A. D. 1906.

WM. L. LIGHTFORD. [L. S.]

Witnesses:

F. W. WOERNER,
L. HELMUTH.