G. W. CLEMENTS.

REGISTERING CAR STEP.

APPLICATION FILED OCT. 25, 1909.

989,764.

Patented Apr. 18, 1911.

3 SHEETS—SHEET 1.

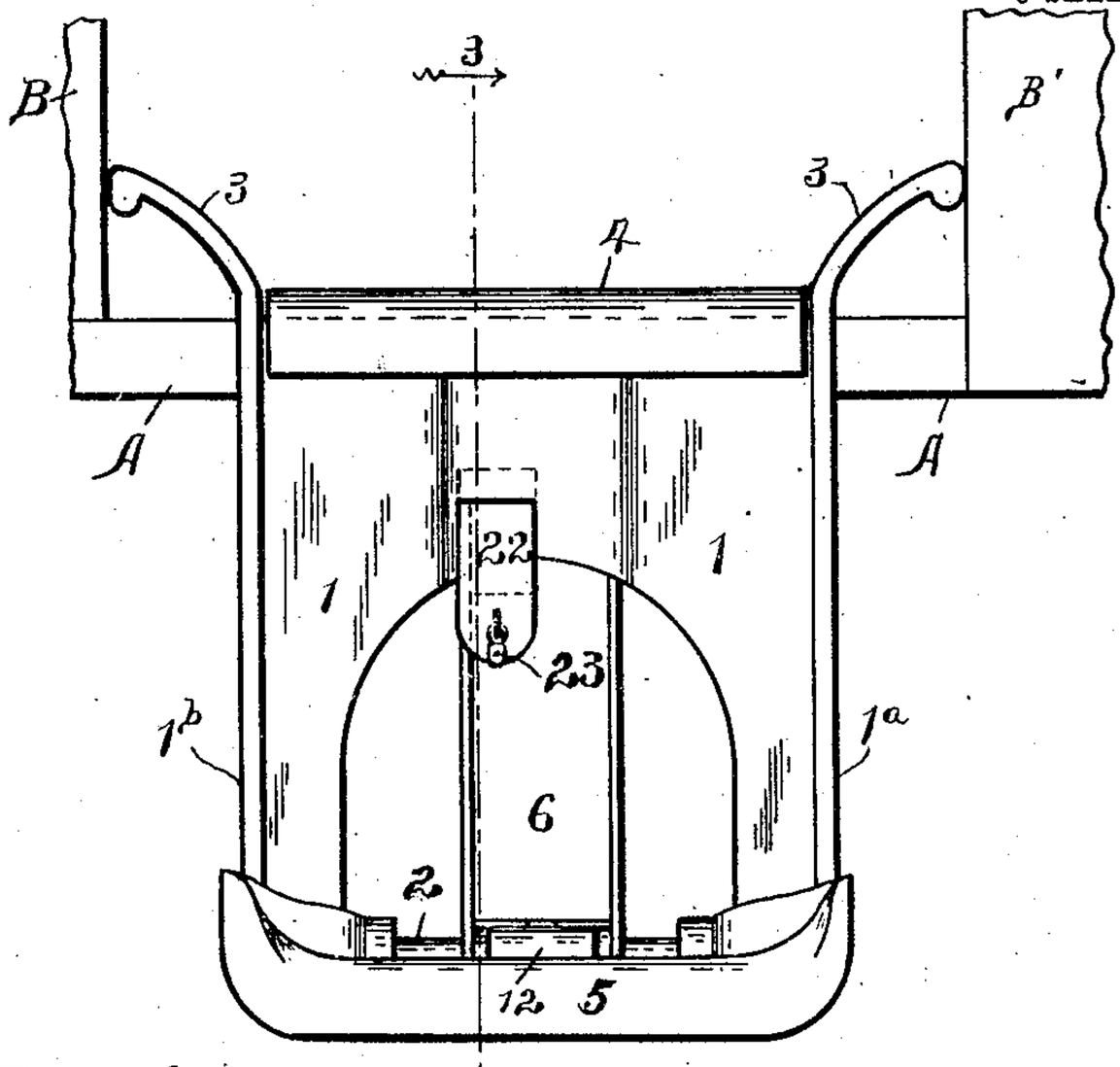

Fig. 1.

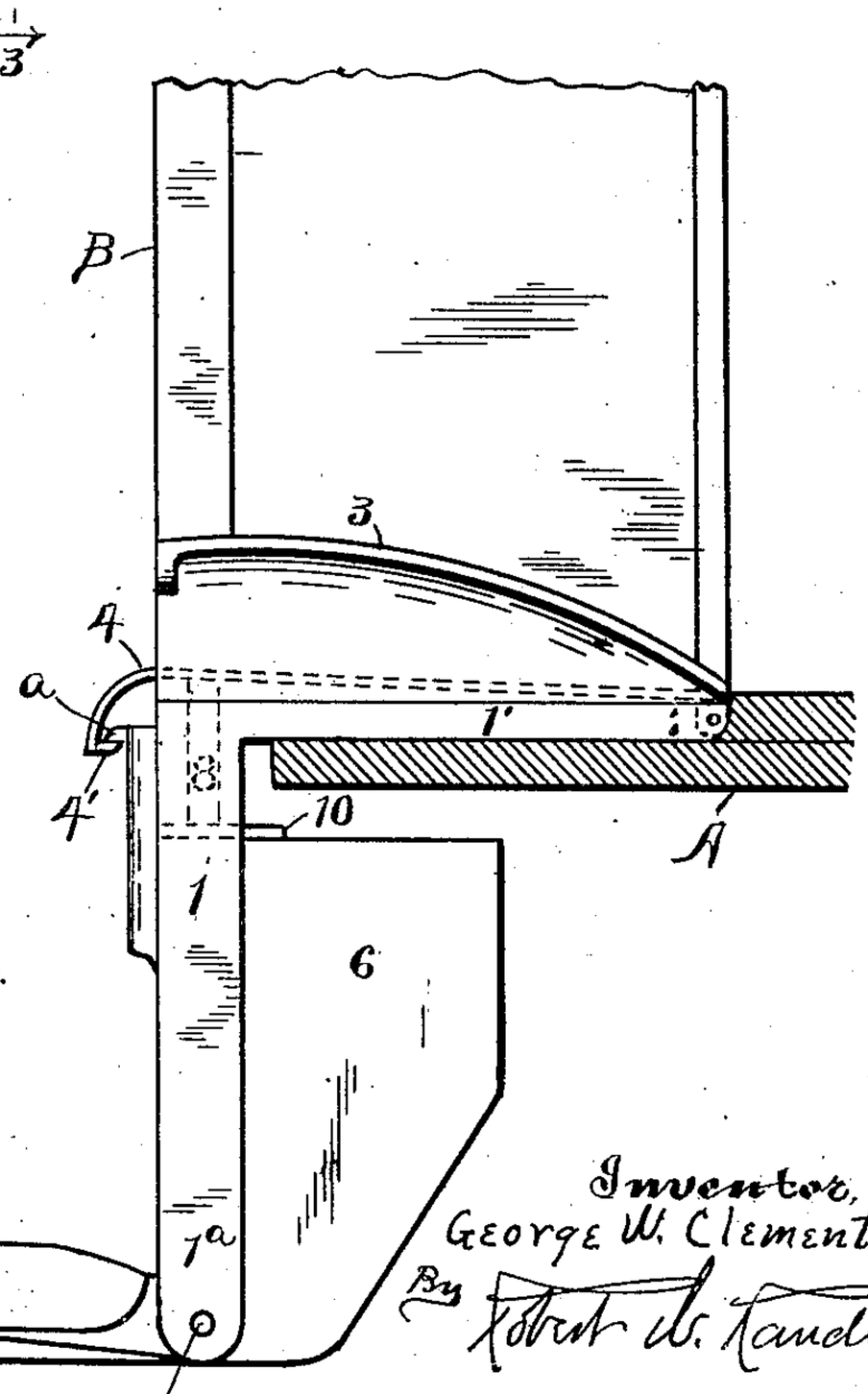

Fig. 2.

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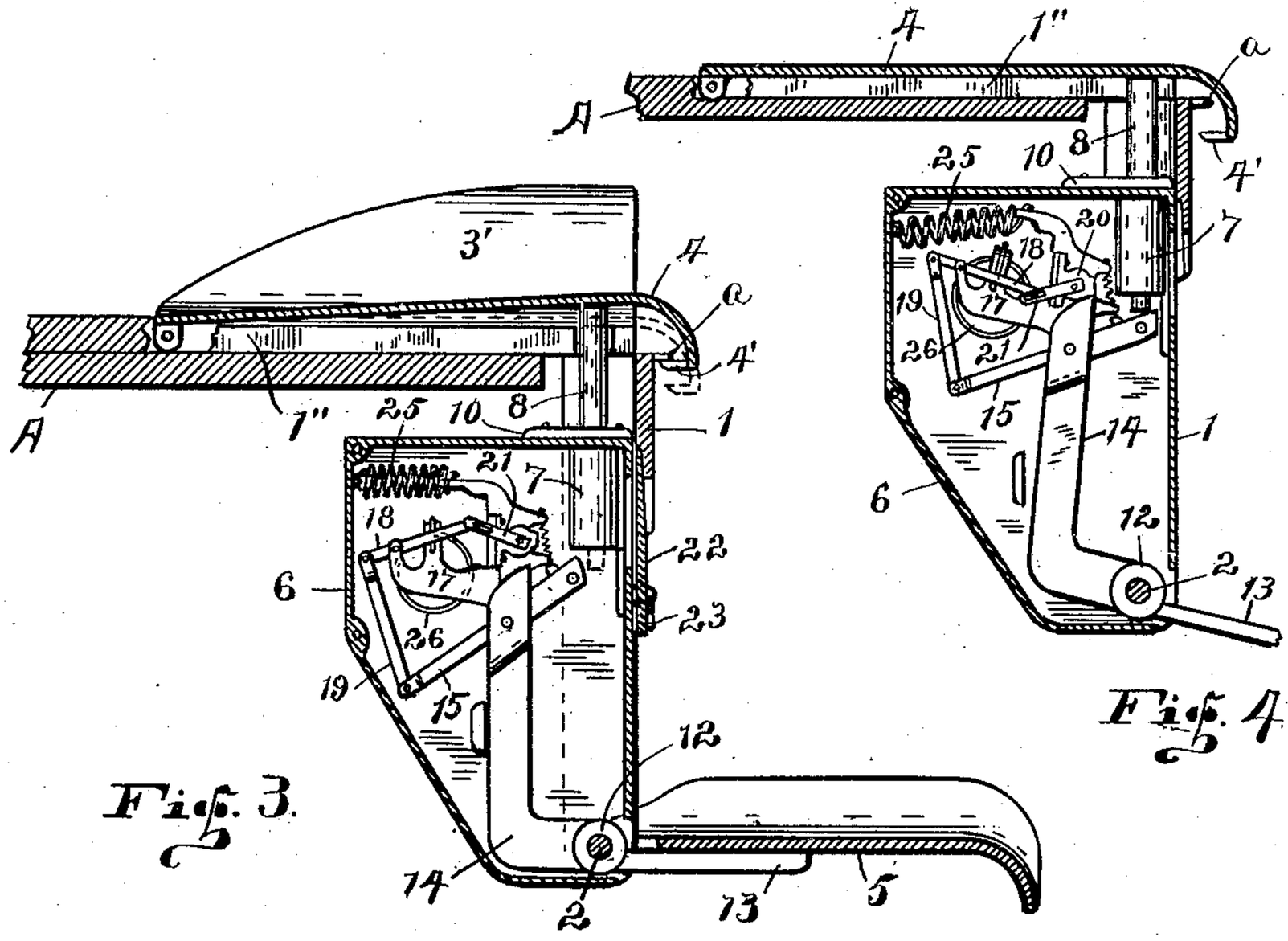

Fig. 3.

Fig. 4

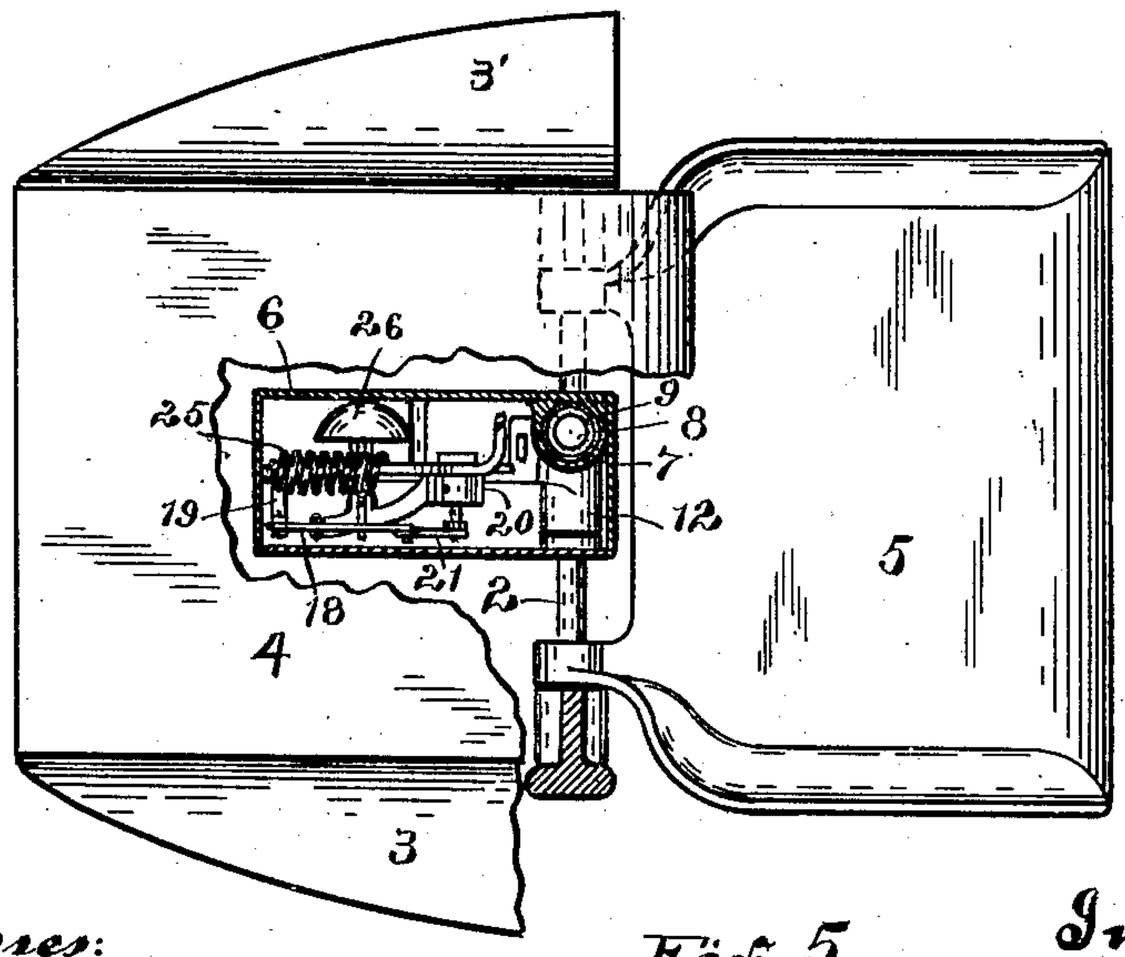

Fig. 5.

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3 SHEETS—SHEET 3.

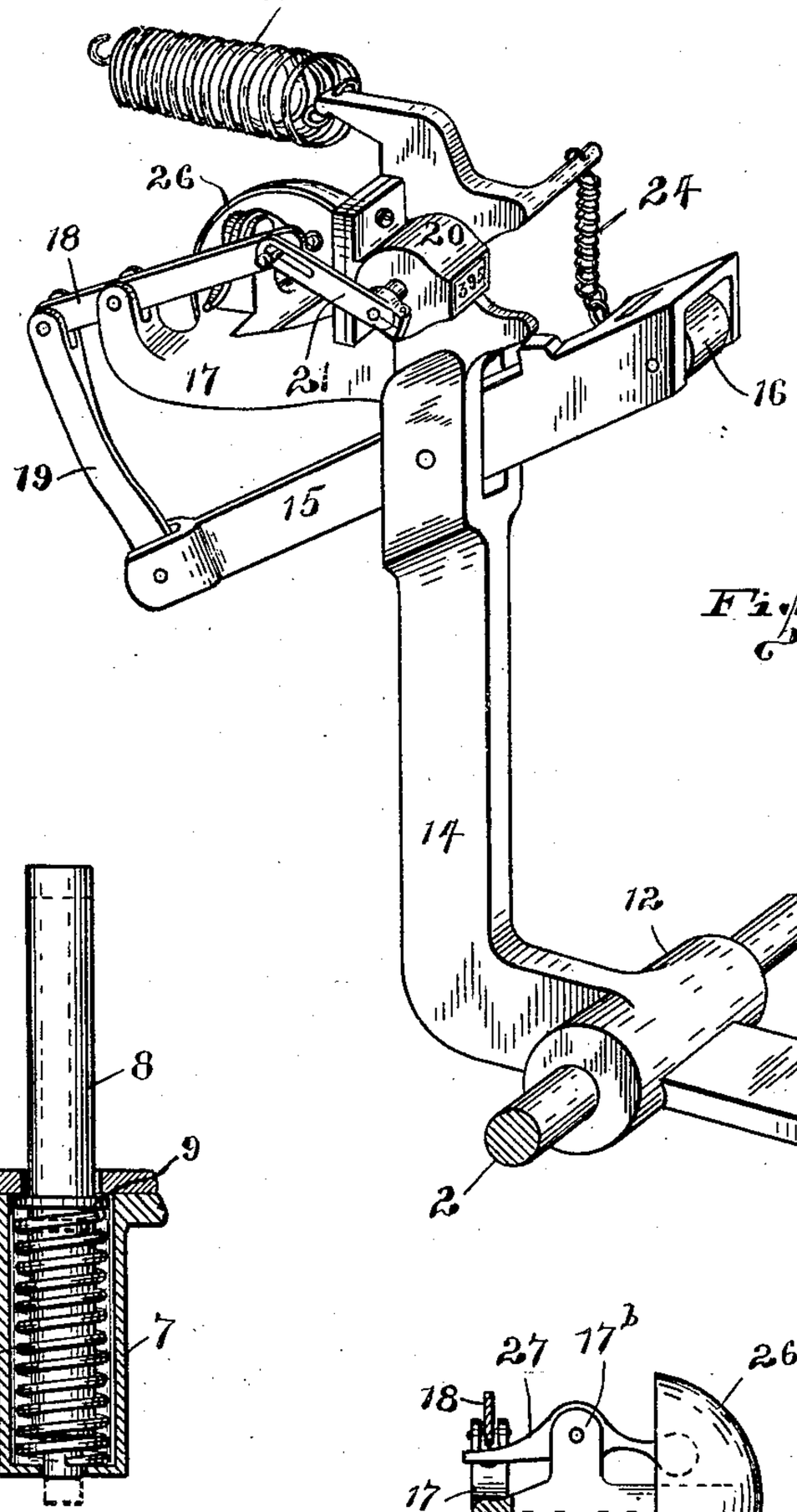

Fig. 6.

Fig. 7.

Fig. 8.

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UNITED STATES PATENT OFFICE.

GEORGE W. CLEMENTS, OF RICHMOND, INDIANA.

REGISTERING CAR-STEP.

989,764. Specification of Letters Patent. Patented Apr. 18, 1911.

Application filed October 25, 1909. Serial No. 524,291.

To all whom it may concern:

Be it known that I, GEORGE W. CLEMENTS, a citizen of the United States, residing at Richmond, in the county of Wayne and State of Indiana, have invented a new and useful Construction which is Denominated a Registering Car-Step, of which the following is a full, clear, and accurate specification and exposition, being such as will enable others to make and use the same with absolute exactitude.

The object of my invention, broadly speaking, is to provide a registering car-step which will be neat and attractive in appearance, strong and durable in construction, easily operated and controlled, which will accomplish the desired results with certainty and precision, and which can be manufactured and sold at a comparatively low price.

The main object of this invention is to provide automatic means for registering the number of persons who pass through a certain aperture or over a certain point as, for instance, a car-door, or other doorway of other vehicles, or of buildings or the like, and over which means the attendant in charge will have no control, but at same time having means whereby an authorized person may ascertain the number of registrations made thereby.

A more particular object of this invention is to provide a car or other step having connected thereto a mechanism for registering the number of persons passing thereover in one direction but which will not register when persons pass thereover in the opposite direction.

Other objects and particular advantages of my invention will be brought out in the course of the following description.

One manner for carrying out the objects of my invention, and that which in practice has been found to be the most desirable and practical, is shown in the accompanying three sheets of drawings, in which—

Figure 1 is a front elevation of a set of car steps connected in position and ready for operation. Fig. 2 is a side elevation of the parts shown in Fig. 1. Fig. 3 is a vertical sectional view, as taken on the line 3—3 of Fig. 1, one side of the mechanism box being removed to show the interior mechanism, which in this view is shown in its normal position. Fig. 4 is substantially the same as that of Fig. 3 except the mechanism is shown in the position it would assume should a person have his weight on the lower step. Fig. 5 is a plan view of the invention, the central portion being broken away to exhibit a plan view of the interior mechanism. Fig. 6 is an enlarged perspective detail showing the essential members of the mechanism. Fig. 7 is a fragmentary detail, partly in section, showing the spring, barrel, and stem by which the upper step is retained in normal position. And Fig. 8 is an enlarged detail view of the bell mechanism.

Similar indices denote like parts throughout the several views.

In order that the construction and the operation of my invention may be more thoroughly understood I will now take up a detail description thereof in which I will set forth the invention as briefly and as comprehensively as I may.

In the drawings the letter A denotes the sill or floor of a car door, and B and B′ denote the sides of the door opening.

Numeral 1 denotes the main casting extending downward from the forward edge and centrally of the sill A. Said casting has a pair of rearwardly extending arms, 1′ and 1″, formed at right-angles thereto, and a pair of downwardly extending arms, 1^a and 1^b, parallel therewith. The arms 1′ and 1″ afford means by which the device is secured to the sill or floor A, they resting on top of said sill or floor. Extending horizontally across and secured in the lower ends of the arms 1^a and 1^b is the stationary shaft 2.

Indices 3—3′ denote the guards which are secured to the upper edge of the arms 1′—1″, respectively, and curve outward and upward to the sides B and B′.

The numeral 4 denotes the step which is pivoted at its rear end to the rear ends of the arms 1′—1″ and then extends forward and curves downward, covering the front edge of the sill A, being provided with a rearwardly extending lug 4′ which is adapted to impinge the lug *a* which projects out from the casting 1, by which it is apparent that the movement of said step is limited: downward by coming into contact with the arms 1′ and 1″; and, upward by the lug 4′ coming into contact with the lug *a*.

Numeral 5 denotes the lower step, same being pivoted on the shaft 2.

Numeral 6 denotes a case, adapted to con-

tain certain of the mechanism which will hereinafter be described the top of said case being located some distance below the underside of the sill A, being secured to the back of the main casting 1, and extending down below and inclosing the central portion of the shaft 2. Extending down into and from the top of said case, at the forward part thereof, is the barrel 7 with its interior opening up through the top of said case, as shown in Fig. 7. A central aperture is formed through the bottom of said barrel. Mounted in said barrel, and extending upward through the top of the case, is the plunger 8, its upper end being adapted to loosely engage the underside of the step 4, its lower end extending through said aperture in the lower end of the barrel. Said lower portion of said plunger being reduced in size forming a shoulder which strikes the bottom of the barrel and limits the movement downward. A collar 9 is secured around said plunger to engage the cap 10 to limit the upward movement of the plunger. A helical spring 11 is located in said barrel, same being coiled around the plunger 8 with its upper end resting against the collar 9 and its lower end resting on the bottom of the barrel. The function of said spring 11 is to normally retain the step 4 up, to normal position, yet allowing it to press the plunger downward in order to accomplish other desideratum hereinafter referred to.

Mounted on the shaft 2 is the hub 12, which is rotative thereon.

Numeral 13 denotes a tongue, formed integral with the hub 12, and extending out forward therefrom, supporting the step 5 in its normal horizontal position, substantially as shown in Fig. 2. Extending back and then upward is the hanger-arm 14, which is also formed integral with the hub 12, and it extends up inside the case 6. Pivoted near the center in the upper portion of the hanger-arm is the lever 15, the forward end of which is in the nature of a head having mounted therein the roller 16 which is adapted to contact with the forward inside edge of the case 6 at a point below the barrel 7, with said head directly below the lower end of the plunger 8 as in Fig. 4.

Extending rearward from the arm 14, at a point above the lever 15, is the hanger 17, on the rear upwardly extending end of which is pivoted the link 18. Connecting the rear end of the lever 15 with the rear end of the link 18 is the link 19. Mounted on the upper end of the arm 14 is the cyclometer 20 which is of common construction immaterial to this invention, the same having a slotted arm 21 which on being actuated up and down, at its rear end, will cause the cyclometer to register one number higher on each downward movement. The face of said cyclometer is directed forward, there being a sight aperture formed through the main casting 1, through which the record may be observed. Said aperture is normally closed by the cap 22 which is secured by the lock 23.

The forward end of the lever 15 is retained normally raised by means of the coil-spring 24, which is connected to the head of the lever 15 and to a projection of the upper end of the arm 14, as shown.

Numeral 25 denotes a relatively large coil-spring, one end of which is connected to a finger which extends back from the upper end of the arm 14, and the other end is connected to the rear edge of the inside of the case 6. Said spring 25 normally retains the upper portion of the arm 14 back to its limit, thereby holding the tongue 13 up to its limit, and the latter in turn retains the step 5 up to its normal position.

Referring now particularly to Figs. 6 and 7: Extending out from the side of the hanger 17 is a stem 17^a carrying on its end the bell 26. Extending up from the stem 17^a is a hanger 17^b in which is pivoted the tapper-arm 27, one end of which extends under the link 18 and the other end is adapted to strike the inside of the bell 26.

Operation: Suppose that a car-door, for instance, be provided with my registering device, substantially as that shown in Figs. 1 and 2. Now suppose that a person desires to enter the car, he will, of course, first place his weight on the step 5, which will press down the tongue 13, turning the hub 12, and throwing the upper end of the arm 14 forward against the resiliency of the spring 25, which will throw the roller 16 against the forward edge of the casing 6, as in Fig. 4, thereby bringing the head of the lever 15 directly under the lower end of the plunger 8. Should the person go no farther, but step back off of the step 5 then no register will be made, but should he place his weight on the step 4 then the plunger 8 will be driven down, its lower end impinging the head of the lever 15 and causing the rear end of said lever to be raised, the latter of course raising the link 19 and it in turn lowering the forward end of the link 18, and the latter pressing down the arm 21, thereby actuating the cyclometer and causing it to register one number higher. As the weight is released from the step 5 then the spring 25 will throw the mechanism back to normal position; and the spring 11 will throw the step 4 back to normal position when it is released.

It should be noticed that a person passing from the car will first place his weight on the step 4 which will depress the plunger 8 but as the head of the lever 15 is drawn back from alinement therewith the register will not be actuated, and when his weight is pressed on the step 5 it is apparent that the head of the lever will be drawn back out of

alinement with the plunger 8 and therefore the cyclometer will not be actuated.

It is apparent whenever the cyclometer is actuated that at the same time the link 18 will strike the tapper-arm 27 and cause the tapper to strike the bell 26 thereby giving notice that a fare has been registered.

By means of my invention it will be seen that a conductor will have no control over registering the fares, as this will be done automatically and unconsciously by the passenger as he enters the car, but the conductor may be required to account for each person who enters the car.

I desire it understood that various changes may be made in the details of construction, from that herein shown and described, without sacrificing any of the principles or advantages of the invention which are new and useful, and that the invention may be variously changed to meet varying conditions and to adapt it for use for other purposes than that particularly referred to.

Having now fully shown and described my invention, what I claim and desire to secure by Letters Patent of the United States, is—

1. In a device of the character described, upper and lower steps pivotally mounted independent of each other, a lever operated by one of the steps, a lever pivoted to said first mentioned lever, a plunger operated by said other step, said plunger adapted to engage and operate said second lever when the first mentioned step is depressed before the second mentioned step, and registering means operated when the steps are thus depressed.

2. In a device of the character described, upper and lower steps pivotally mounted independent of each other, an arm operated by the lower step, a lever carried by said arm, said lever adapted to be moved forward when said step is depressed, a plunger operated by the depression of the other step, said plunger adapted to contact with and operate said lever when the lower step is depressed before the upper, registering means controlled by the movement of said lever, and means for restoring the parts to their normal positions.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

GEORGE W. CLEMENTS.

Witnesses:
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