

F. PADUVERI.
STREET CAR REGISTER PROTECTOR.

APPLICATION FILED JUNE 8, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

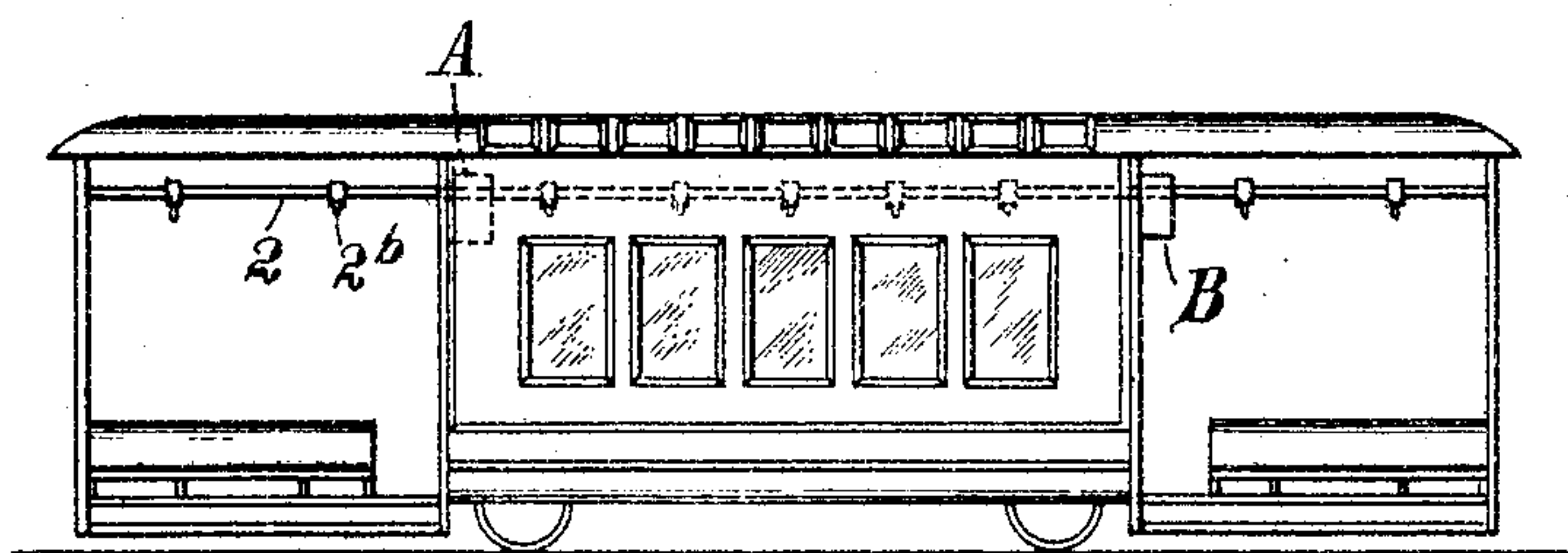
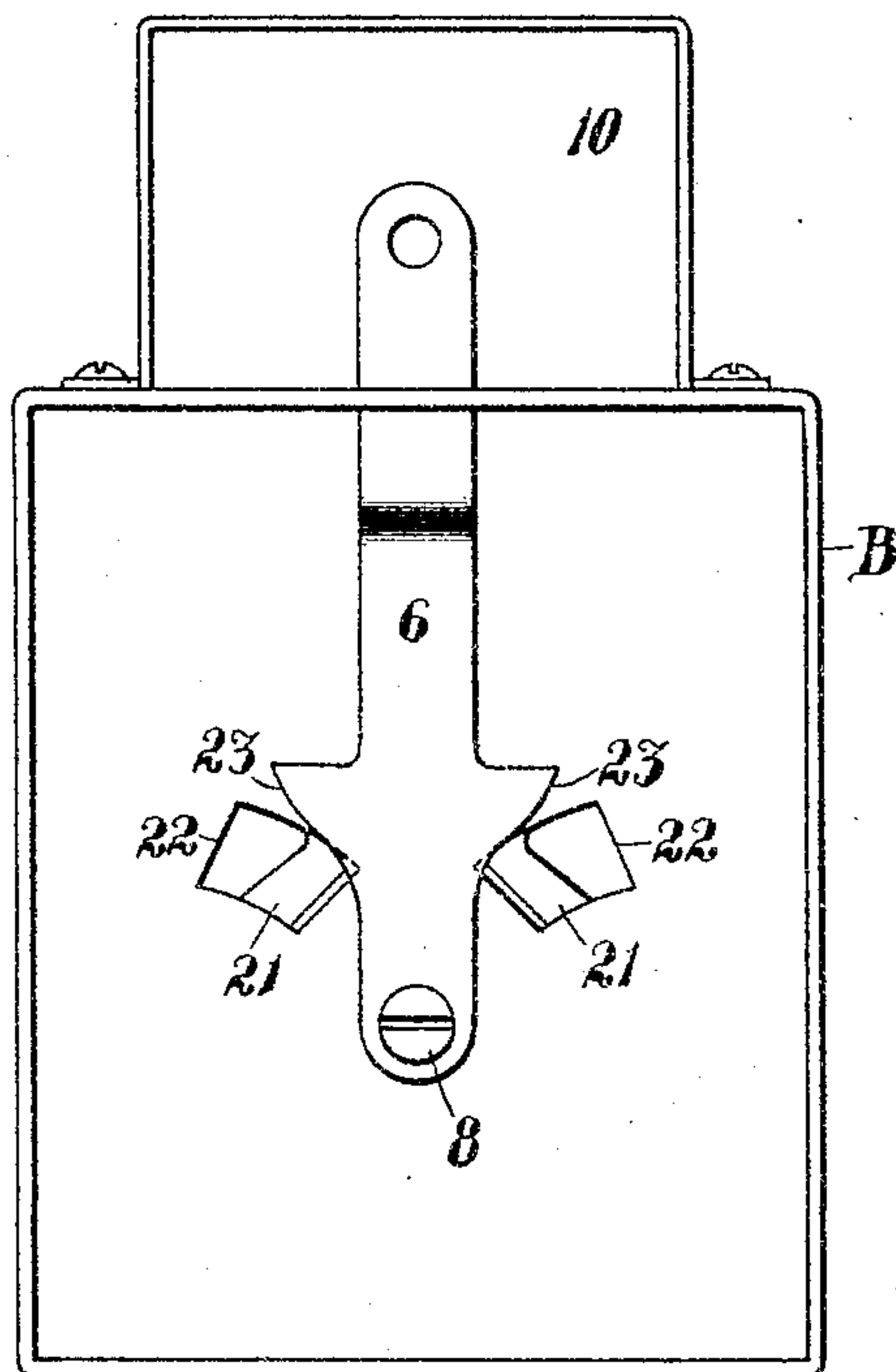


Fig. 4.



Witnesses:-

F. G. Fiedner.
J. H. Morse.

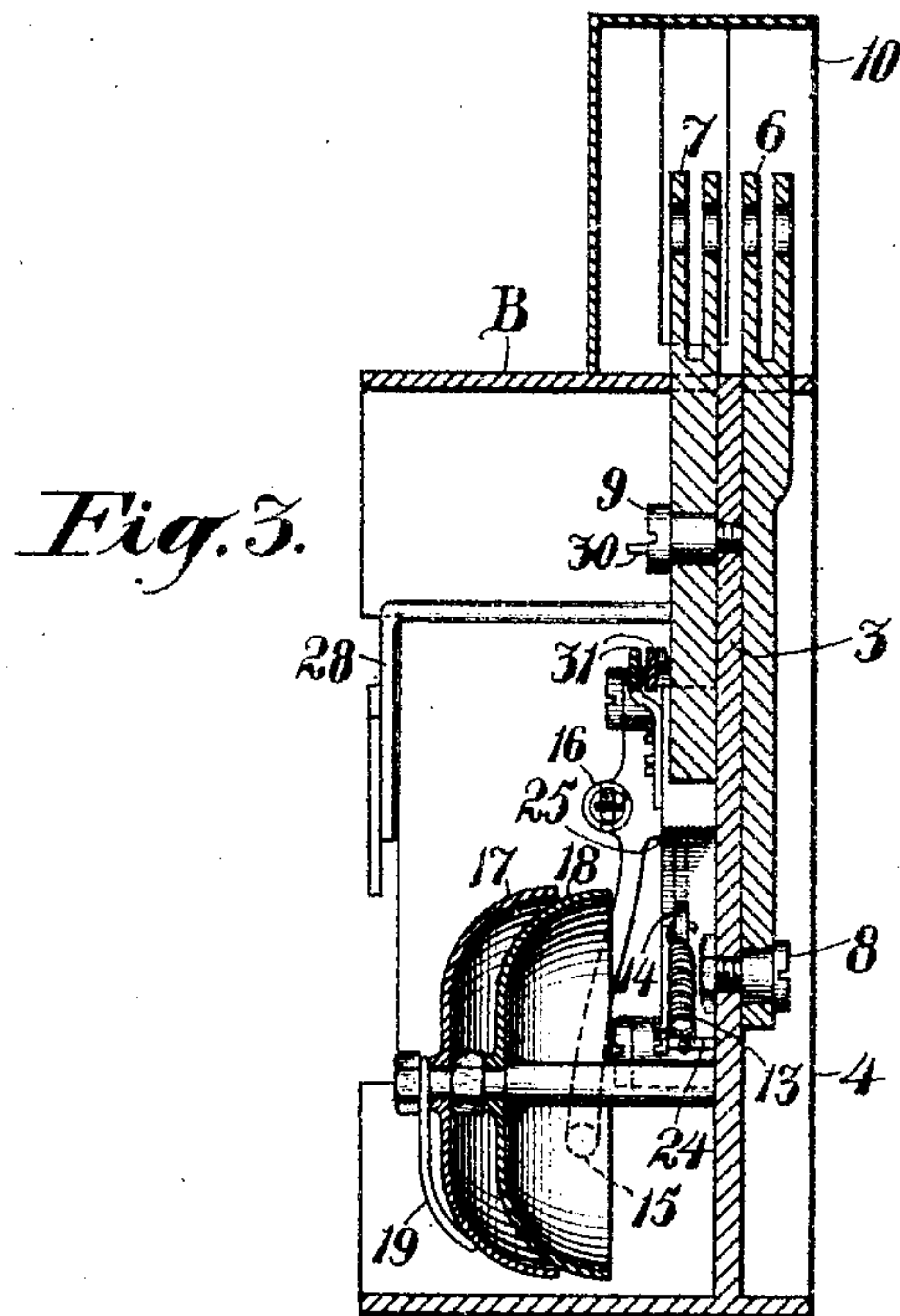
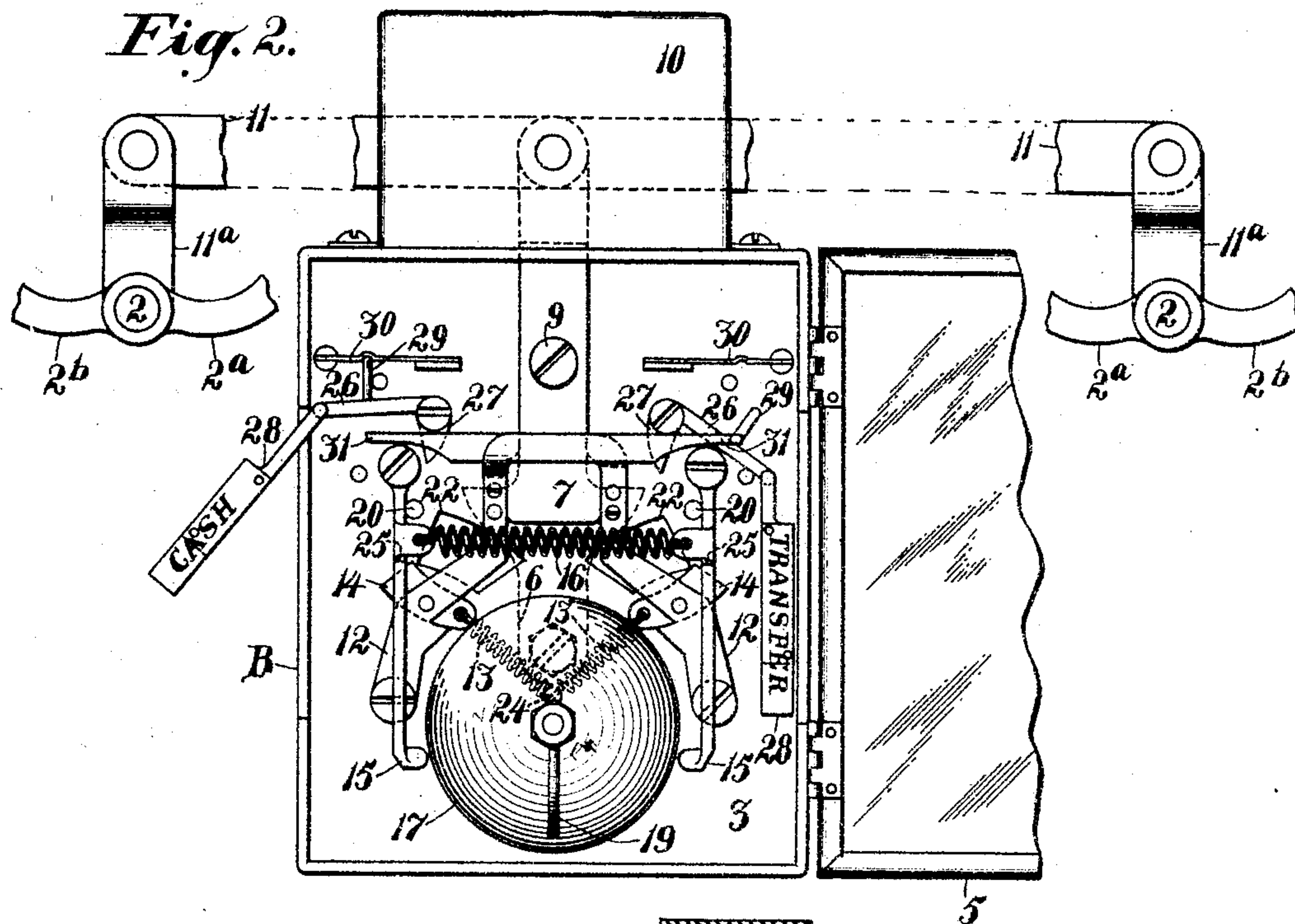
Inventor,

Felix Paduveri
By Geo H. Strong atty

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2 SHEETS—SHEET 2.



Witnesses:-

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J. H. Morse

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Felix Paduveri
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UNITED STATES PATENT OFFICE.

FELIX PADUVERI, OF SAN FRANCISCO, CALIFORNIA.

STREET-CAR-REGISTER PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 786,988, dated April 11, 1905.

Application filed June 8, 1904. Serial No. 211,718.

To all whom it may concern:

Be it known that I, FELIX PADUVERI, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Street-Car-Register Protectors, of which the following is a specification.

My invention relates to a device for use on street-cars and the like in conjunction with the regular fare-register to give a signal at that part of the car where the register-signals are not generally heard.

Under the system generally in vogue of mechanically registering "cash fares" and "transfers" the register is located within and at one end of the car and operated by rock-shafts or pull-cords running the length of the car on each side of the register.

Owing to the din of street traffic passengers sitting on the outside of the car are often unable to know whether their fare has been "rung up" correctly or not, even where the conductor has apparently made the proper number of movements of his arm.

The opportunity for embezzlement by dishonest employees is particularly present where long cars are used having a central compartment and outside seats at each end. A rock-shaft which is used to actuate both the cash-fare and transfer mechanism of the register is fifty or sixty feet in length and when operated from the end remote from the register a considerable torsional strain is put upon it, resulting often in a twist of one-half of an inch or more. This twist or spring of the shaft or rod permits the conductor to "lock" his register, as it is called, and is daily taken advantage of in the following manner: By a comparatively slow movement downward of the hand on the rock-shaft handle the dishonest conductor causes a sounding of the register-bell, which, coupled with the movement of his arm, would to the casual observer apparently announce the recordation of one fare, while in fact the visual indicator of the register would show no such record. For instance, the operator is to ring up two or more fares at one time. He pulls down on the rock-shaft

handle, as just described, gives a quick return, and then instantly a second pull movement, which causes the register-bell to ring again, but with the full tone, (which it did not have on the first pull,) and one fare has been recorded. The passengers, however, have heard two bells and have seen two full movements of the conductor's arm. Again, where the cash-fare and transfer mechanisms of the register are operated by a single rock-shaft it is a frequent trick in collecting two cash fares to rock the shaft in one direction to announce a cash fare and then in the other to announce a transfer. Where a passenger is seated on the outside of the car, he sees two movements of the conductor's arm, which would seem to indicate the proper recordation having taken place.

It is the object of my invention to provide a protective device which will be operated simultaneously with the registering mechanisms and announce to the eye and ear the actual record if any be made by the conductor.

It consists of the parts and the construction and operation of parts hereinafter more fully described, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a car, representing the application of my invention. Fig. 2 is a front view of the operating mechanism within my protector, the door being open and partly broken away. Fig. 3 is a vertical cross-section on line *xx*, Fig. 1. Fig. 4 is a back view of the device with the bottom removed, showing the rear operating-lever.

A represents a fare-register located within and at one end of the car above the door and operatable in the usual manner from the rock-shafts 2 by the handles 2^a or 2^b, disposed on opposite sides of each shaft. A shaft 2 is disposed on each side of and extends the length of the car, and the register A is presumed to be of the type wherein the cash-fare mechanism may be operated on the actuation of the shaft in one direction by pulling, for example, on handle 2^a and the transfer mechanism operated when the shaft is turned in the opposite direction by handle 2^b.

B represents my protector located at the opposite end of the car and on the platform side of and above the door and arranged to be operated by the rock-shafts 2 simultaneously
5 with the register A and to announce by both audible and visible signals the recordation of either a cash fare or a transfer.

The protector comprises a casing inclosing the signal mechanism, which is here shown as
10 constructed and operated as follows: The casing is provided with a double-spaced bottom, the inner bottom or partition 3 supporting on its two sides the signal-operating mechanism, while the back 4 and cover 5 of the casing serve
15 to inclose and protect the mechanism.

6 and 7 are two levers by which the signal mechanism is operated from shafts 2. Lever 6 is fulcrumed at 8 on the side of partition 3 adjacent to back 4 and movable in the intervening space, and lever 7 is fulcrumed at 9 on the opposite side of the partition. Both levers extend upwardly in close proximity to each other through the top of the box, and their outer ends are inclosed in a supplemental casing 10, rigid with the main protector-casing. Links 11 extend from the levers through the sides of casing 10 and connect with arms 11^a on the rock-shafts 2 in such manner that lever 6 is oscillated in one direction or the other correspondingly as its shaft 2 is rocked, and lever 7 is oscillated similarly with the other shaft.
30

Pivoted on the inside of the protector casing or box are two levers 12, disposed one on each side of and engaged by lever 7, whereby one of the levers 12 will be moved when lever 7 is oscillated in one direction and the other lever 12 will be moved when lever 7 is oscillated in the other direction. Levers 12 are
40 normally held in engagement with the opposite sides of lever 7 by means of springs 13, which connect to the pivoted pawls 14. One of the latter is carried by each lever 12 and is adapted when its lever 12 is moved outwardly to engage a spring-pressed hammer member 15 and carry it outward and release it just before the lever 12 reaches the end of its stroke.

There are two pivoted hammers 15, connected by a spring 16, which tends always to press the hammers inwardly toward each other and the respective cash-fare and transfer bells 17 18, the latter being disposed between and relative to the hammers and supported on a single stud.
50

The cash-fare bell is adapted to give a sharp clear sound when struck, and the transfer-bell is muffled by a contact-piece 19, which causes it to give forth a dull sound, whereby the two bells are easily distinguishable to the
60 car passengers.

The hammers are normally held out of immediate contact with their respective bells by means of stops 20. When a hammer is released by its pawl, the tension of spring 16 and the

spring character of the hammer-arm causes 65 the head to impinge upon the bell to make it ring.

As it is desired that the bells should be rung when either of the shafts 2 are rocked, and since one of these shafts connects with 70 lever 6 and the other with lever 7, the levers 12 are provided with rearward extensions 21, which project through and operate in slots 22 in partition 3 and engage the curved divergent cam-surfaces 23 on opposite sides of lever 6. Hence both the levers 6 and 7 may have the same action upon the hammer-actuating levers 12. 75

It is to be noted that each lever 12 is pivoted oppositely to its relative hammer 15— 80 that is, the hammers are pivoted at their upper ends and above the lower pivoted ends of the levers 12, and the pawls 14 operate intermediate of these pivotal points. The springs 13 have their adjacent ends connected to a rigid point, as 24, and exert a pull on pawls 14 in a direction such that the latter practically do not turn on their pivots when the levers 12 are moved outward. In other words, their ends which engage the projections 25 on 90 the hammers move approximately in the arc of a circle whose center is the pivot of a lever 12. This results in the proper engagement and release of the projections 25. When one of the latter has ridden over its pawl, the 95 hammer flies back and rings the bell. On the return of the lever 12 to its normal position the spring 13 allows the pawl to ride under the projection 25 and engage in front of it again ready for the next actuation of one 100 or the other of the levers 6 7. What is important in this connection is the fact that neither bell can be made to ring without a full actuation of the levers 6 or 7, which in turn require a full actuation of rock-shafts 2. 105 As a full actuation of a rock-shaft 2 will always cause the car-register to record properly, it is seen that if there is one of those protectors placed on the outside of the car, however remote from the main register, and that detection would be imminent if one failed to ring the protector-bells, the opportunities for dishonest practice become reduced to a minimum. However, it is not intended that entire reliance should be placed on the audible signals, and I have provided a semaphore attachment adapted normally to be retracted within the casing, but to be projected therefrom according as it is desired to announce the collection of a cash fare or a transfer. 120

28 represents two bent rocker-arms pivoted to the partition 3 and each having a projection 27 disposed in the path of a lever 12. The outer ends of the arms each carry a semaphore 28, normally pendent and retracted 125 within the casing, but adapted on the engagement of the projections 27 by levers 12 to be projected through slots or notches in the sides

of the casing, one semaphore displaying the word "Cash" or its equivalent, indicative of a cash collection, and the other displaying the word "Transfer."

5 In operation assume handle 2^a on shaft 2 to be the handle which is to be pulled down when a cash fare is to be recorded and handle 2^b the one to be pulled down and rotate its shaft 2 in the opposite direction when a transfer is recorded. An oscillation of handle 2^a will cause bell 17 to ring and "Cash" semaphore 28 to be displayed simultaneously with the recordation in the main register. As it is desired that the "Cash" semaphore should remain displayed so long as cash fares are being rung up or until a transfer is recorded, each semaphore-arm 26 carries a projection 29, which engages a respective spring-keeper 30 when the semaphore is in exposed position. Since a semaphore is only actuated by the adjacent lever 12, which simultaneously rings the bell corresponding to the legend on the exposed semaphore, the latter is designed to be released only when the opposite lever 12 is actuated. Hence it is that each lever 12 carries a crossed arm 31, which engages a spring-keeper 30 to lift it and allow its semaphore to drop. Thus one lever 12 serves to expose one semaphore and to release the other. If, for example, three cash fares were to be rung up consecutively, the first pull on handle 2^a would rock its shaft 2, and through link 11 cause lever 6 or lever 7, according as the shafts may be coupled up, to oscillate to right or left, in the present construction a movement of the top of lever 6 to the left having the same effect on a lever 12 as a movement of the top of lever 7 to the right would have. Assuming that the top of lever 7 is pulled to the right, Fig. 2, then lever 12, at the left, will be moved outward, carrying its respective hammer with it and engaging the projection 29 of the semaphore-arm, simultaneously sounding the "sharp" bell 17, and exposing the "Cash" semaphore. Inasmuch as the hammer has resumed its inner normal position immediately on sounding the bell, lever 7 must be allowed to return to its normal central vertical position before pawl 14 can reengage the sharp-bell hammer. The next two actuations of the same handle 2^a cause bell 17 to ring twice, but the "Cash" semaphore still remains exposed from the first movement, being held up by its keeper 30. This prevents the conductor juggling with the rock-shaft handles, and instead of ringing up three cash fares to ring up two cash fares and one transfer, by pulling down twice and pushing up once on handle 2^a, which sounds three bells in the main register inside. This is a common practice nowadays, and the conductor is thus able while going through the motions of operating the cash-lever the proper number of times really to turn in a certain

number of holdover transfers instead of the amount of cash actually collected. The moment, however, this trick is attempted with my device the "Cash" semaphore falls and the "Transfer" semaphore is exposed, which, taken together with the different audible-signal mechanisms, leads to a quick exposure of the fraud. When a transfer is collected by the conductor, he pulls on handle 2^b to rock its shaft 2 in the opposite direction, which causes levers 6 or 7, as the case may be, to be oscillated, this time moving lever 12 at the right, ringing the dull bell 18 and exposing the "Transfer" semaphore, at the same time releasing the "Cash" semaphore through the engagement of the arm 31 on actuated lever 12 with the keeper 31 at the left.

The outside of cover 5 may bear the further precautionary legend "Cash fares sharp bell" "Transfers dull bell."

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

1. The combination with a main fare-register, of a remotely-situated protector, an actuating rock-shaft common to both, said protector comprising audible and visible signals simultaneously displayed on the actuation of said shaft, said audible signals comprising two bells of different tone quality mounted on the same stud, and means for operating said bells, said means including an operating-lever connected with the rock-shaft, a lever on each side and in the path of the operating-lever, hammers, and means carried by the side levers, to engage the hammers on the operation of a corresponding side lever.

2. The combination with a main fare-register, of a protective device located at a relatively remote point, an actuating rock-shaft common to both, said protective device including two bells of different tone quality, and means by which each of said bells may be actuated by successive oscillations of the rock-shaft, said bell-actuating means including an operating-lever connected with the rock-shaft, a lever on each side and in the path of the operating-lever, hammers, and means, carried by the side levers, to engage the hammers on the operation of a corresponding side lever.

3. The combination with a main fare-register, of a mechanically-operated protective device located at a relatively remote point, actuating means common to both, said protective device including bells of different tone quality, individual hammers, an operating-lever, a lever intermediate said operating-lever and each hammer and a pivoted pawl carried by said intermediate levers engaging the hammers on the actuation of its lever.

4. The combination with a main fare-register of a protective device located at a relatively remote point, said protective device including bells of different-toned quality, sema-

phores, and means for actuating said bells and semaphores correspondingly and simultaneously with the different indicating mechanisms of the register, said actuating means including an operating-lever, a second lever, corresponding to each bell and semaphore, in the path of said operating-lever, hammers, and means carried by the said second levers engaging the hammers and semaphores to operate them.

5. The combination with a main fare-register of a protective device separate therefrom, actuating means common to both, said protective device comprising a closed casing, audible signals, semaphores normally retracted within the casing and means for operating a semaphore and its respective audible signal simultaneously with the corresponding indicating mechanism of the register, said operating means including an operating-lever, and a second lever in the path of a semaphore and in the path of the operating-lever.

6. A protective device including in combination a plurality of bells, actuating-hammers relative to said bells, and an operating-lever by which either of said bells may be sounded, a second lever intermediate of said operating-lever and the hammers and pivoted pawls carried by the second levers to engage the hammers.

7. A protective device comprising bells of different-toned quality, hammers relative to said bells, semaphores corresponding to said bells mounted on rock-arms, an operating-lever, and a second lever in the path of each semaphore and the operating-lever by which each of said bells may be separately sounded and the semaphores corresponding to one or the other of said bells simultaneously displayed.

8. In a protective device, the combination with audible-signal mechanism which includes an operating-lever, of a semaphore-arm, a lever in the path of the semaphore-arm and operatable by the operating-lever, and spring-detent means for holding the semaphore in exposed position.

9. In a protective device, the combination with a casing of audible and visible signal mechanisms and actuating means therefor, said means including opposed spring-pressed hammer members, an intermediate operating-lever and connections including a lever, and a spring-pressed pawl on said lever, between the operating-lever and the signal mechanisms whereby an audible and a corresponding visible signal may be simultaneously given.

10. In a protective device, the combination of two opposed spring-pressed levers, a hammer relative to each lever, a pawl on each lever to engage a hammer, a bell relative to each hammer, a semaphore relative to each bell, said levers each adapted to operate a bell and a corresponding semaphore.

11. In a protective device, the combination of two opposed spring-pressed levers, a hammer relative to each lever and corresponding bells, means for actuating said levers and means including pivoted pawls on the levers to actuate and release said hammers to sound the bells.

12. The combination with two parallel fare-register rock-shafts, of a casing inclosing correlated visible and audible signal mechanisms, said signals being representative of "cash fares" and "transfers," and connections between said several mechanisms and rock-shafts whereby an audible and a visible signal will be given on the oscillation of either of said shafts in one direction and the other audible and visible signal given on the oscillation of either of said shafts in the opposite direction, said visible signals consisting of semaphore-arms normally retracted inside the casing; said connections including an operating-lever, a part operatable by said lever on its actuation in the opposite direction, and projections on said semaphore-arms engageable by said parts to expose the semaphores.

13. The combination with two parallel fare-register rock-shafts, of a casing inclosing correlated visible and audible signal mechanisms, said signals being representative of "cash fares" and "transfers," and connections between said several mechanisms and rock-shafts whereby an audible and a visible signal will be given on the oscillation of either of said shafts in one direction and the other audible and visible signal given on the oscillation of either of said shafts in the opposite direction, spring-detent means for holding said visible signals in exposed position, after the audible signal has sounded, and means for releasing the detent means of one visible signal on the exposure of the other visible signal.

14. A protective device comprising a casing inclosing two operating-levers, two other levers in the path of said operating-levers and arranged each to be operated on the oscillation of either of the operating-levers, two bells of different tone quality, hammers relative to said bells, means carried by said second levers to operate said hammers, and visible-signal mechanism operatable by said other levers.

15. A protective device comprising a casing inclosing two operating-levers, two other levers in the path of said operating-levers and arranged each to be operated on the oscillation of either of the operating-levers, two bells of different tone quality, hammers relative to said bells, means carried by said second levers to operate said hammers, and visible-signal mechanism operatable by said other levers said signal mechanism including semaphore-arms normally disposed in the path of said other levers.

16. A protective device comprising a casing

inclosing two operating-levers, two other le-
vers in the path of said operating-levers and
arranged each to be operated on the oscilla-
tion of either of the operating-levers, two
5 bells of different tone quality, hammers rela-
tive to said bells, means carried by said sec-
ond levers to operate said hammers, and visi-
ble-signal mechanism operatable by said other
levers said signal mechanism including sema-
10 phore-arms normally disposed in the path of

said other levers, spring-detent means to hold
either semaphore in exposed position, and
means for retracting a detained semaphore.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit- 15
nesses.

FELIX PADUVERI.

Witnesses:

HENRY P. TRICOU,
S. H. NOURSE.