

(No Model.)

3 Sheets—Sheet 1.

J. H. COLEMAN.
FARE BOX.

No. 552,892.

Patented Jan. 14, 1896.

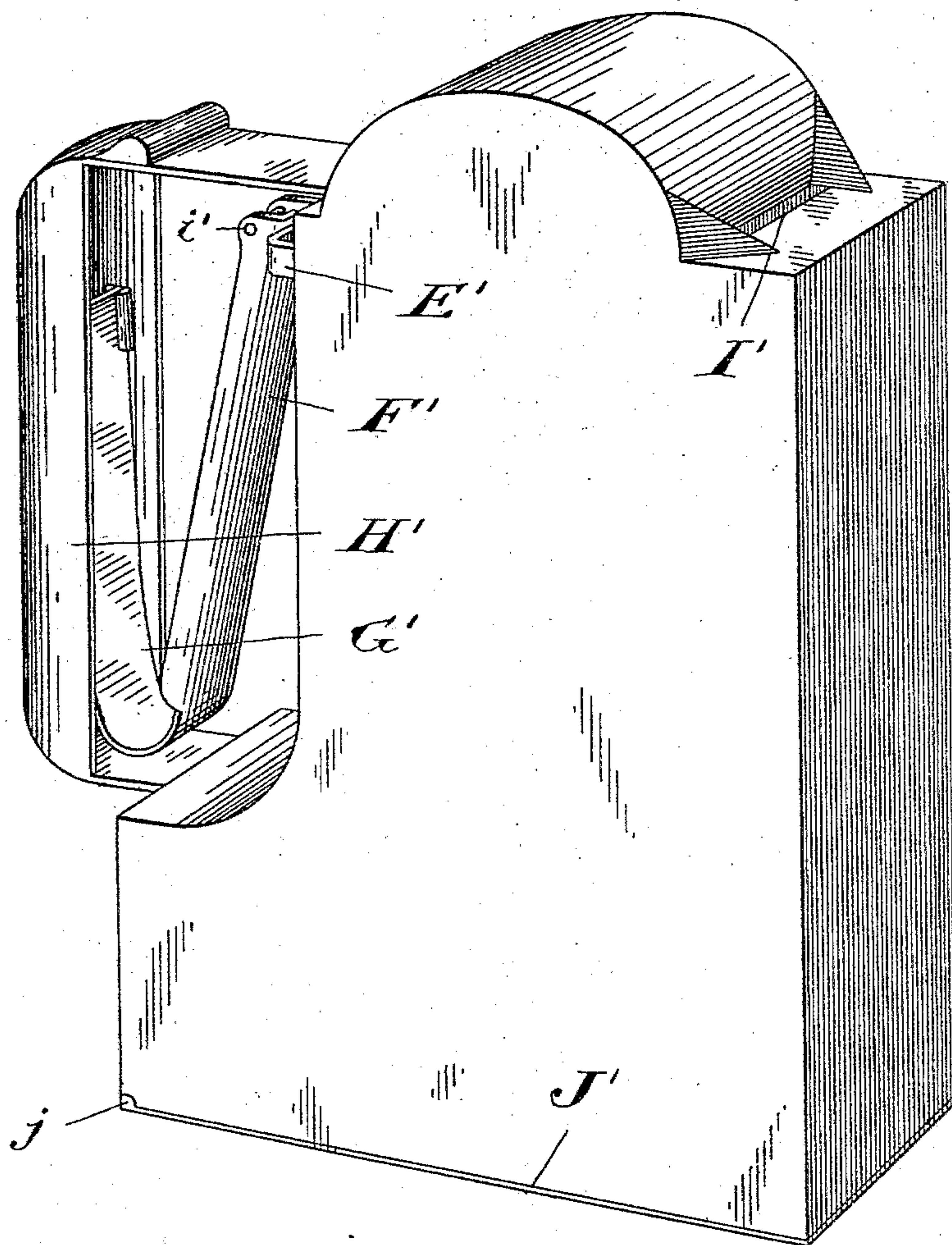


Fig 1

Witnesses

Fred Clarke
G. W. Neff

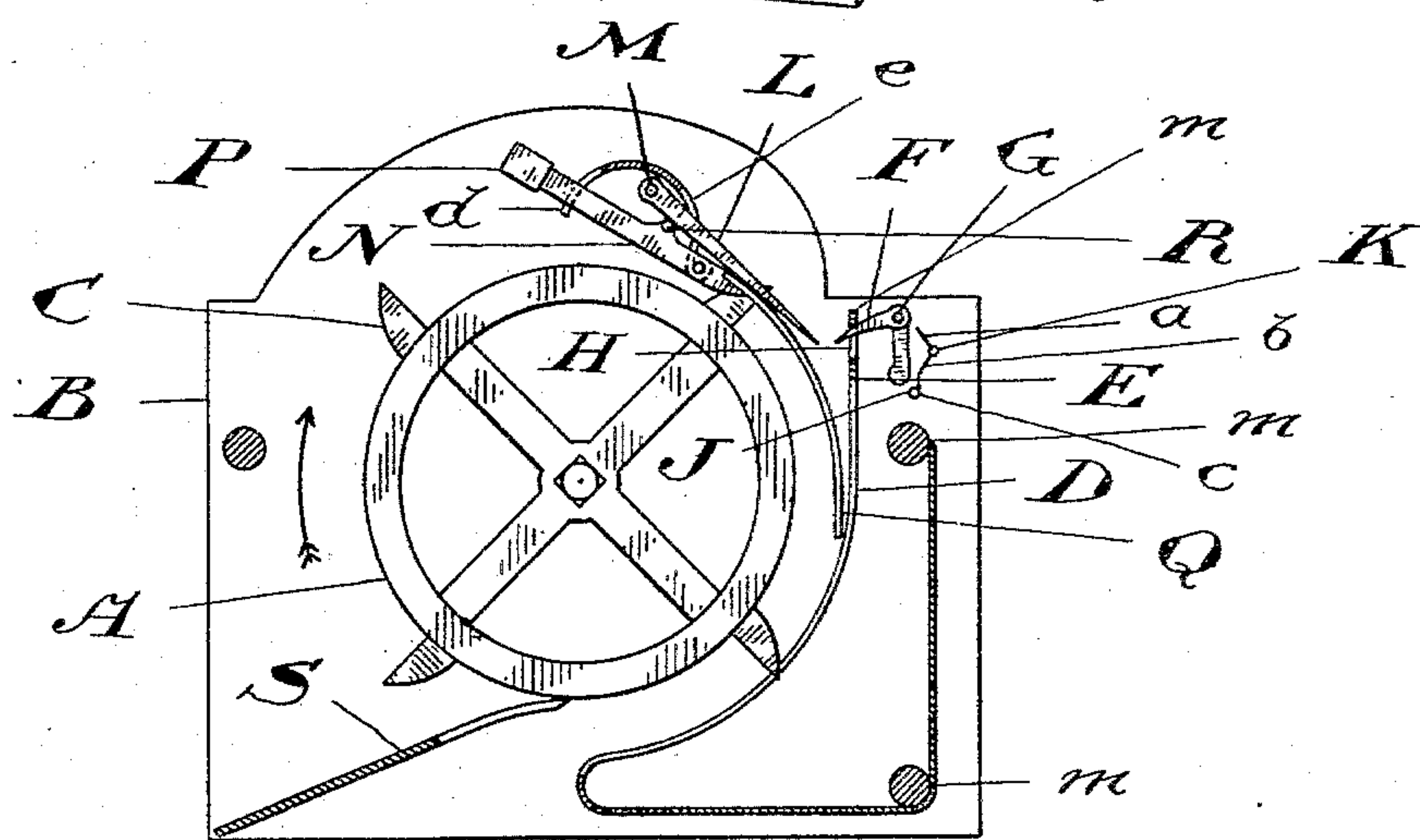
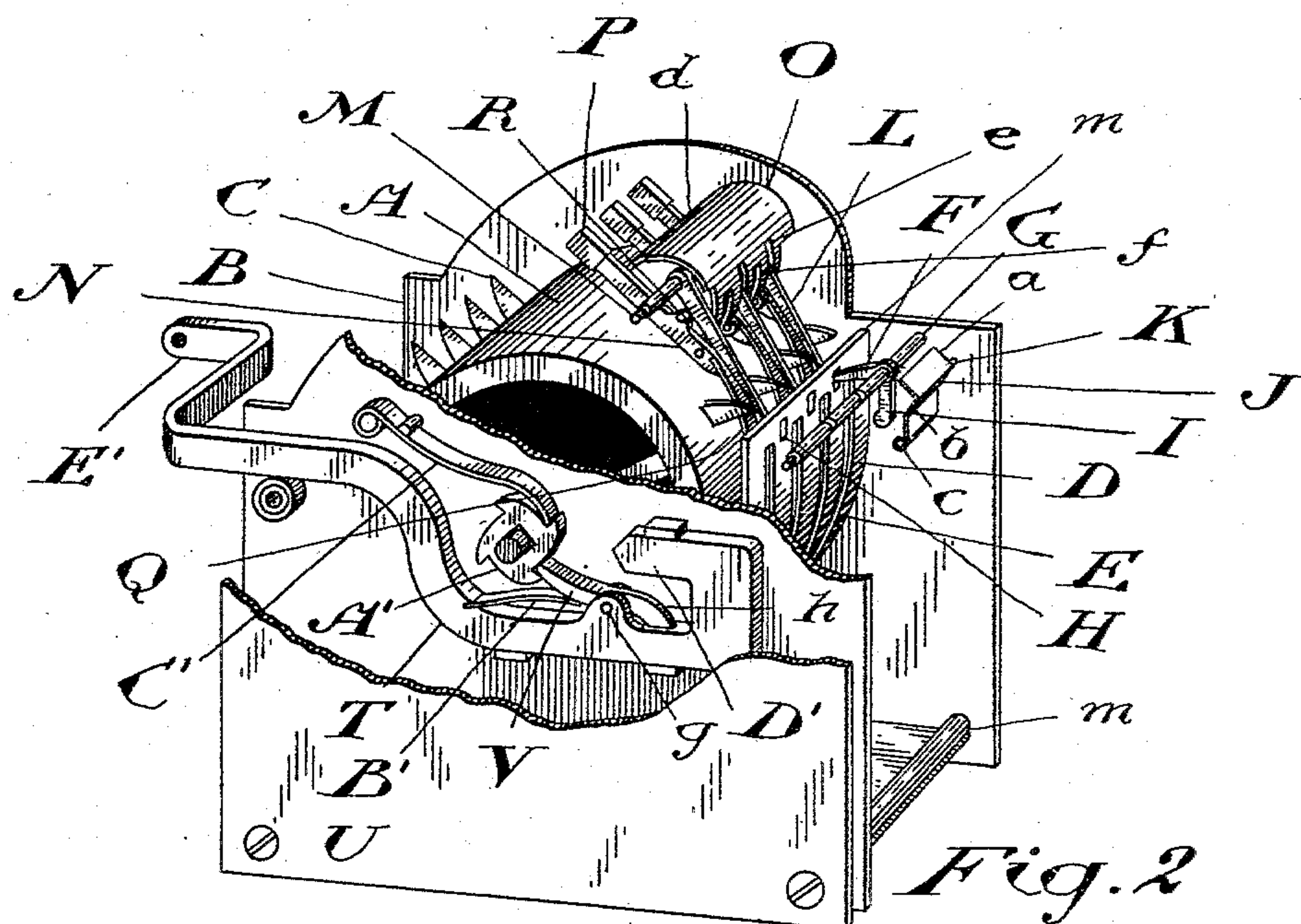
Inventor

J. H. Coleman
by
Ridout & Maybee
Attys

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Witnesses

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3 Sheets—Sheet 3.

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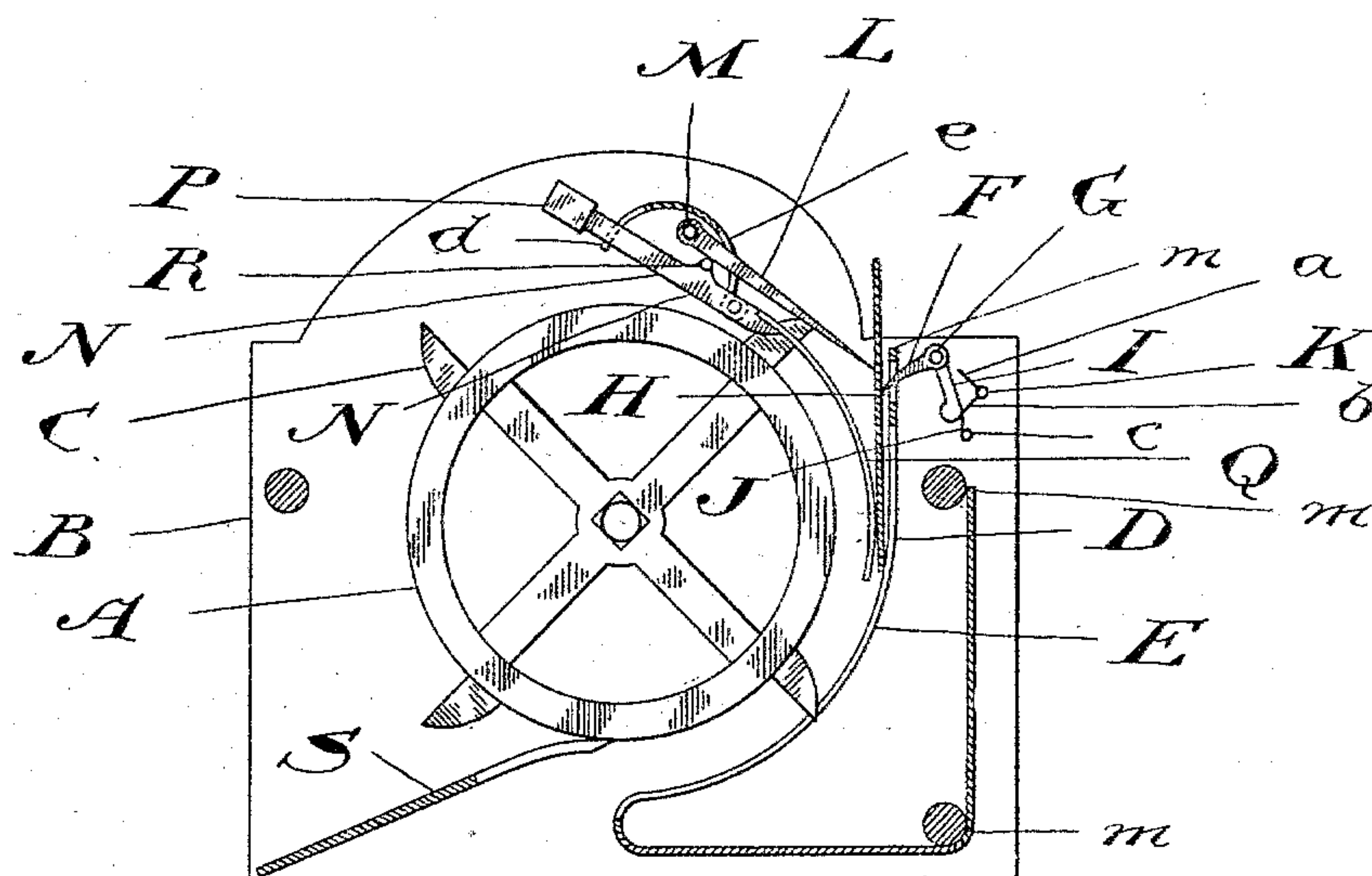


Fig. 4

Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH HENRY COLEMAN, OF TOTTENHAM, CANADA.

FARE-BOX.

SPECIFICATION forming part of Letters Patent No. 552,892, dated January 14, 1896.

Application filed April 10, 1895. Serial No. 545,210. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HENRY COLEMAN, manufacturer, residing at the village of Tottenham, in the county of Simcoe and Province of Ontario, Canada, have invented certain new and useful Improvements in Fare-Boxes, of which the following is a specification.

The object of my invention is to devise a fare-box from which it is impossible to withdraw a fare after it has been inserted in the slot; and it consists, essentially, in arranging needles in the path of the fare which permit of the insertion of the fare but resist its withdrawal and of a toothed drum, by the rotation of which the tickets and cash-fares are swept around a slotted concave into the bottom of the box, the whole being arranged in detail, substantially as hereinafter more specifically described and then definitely claimed.

Figure 1 is a perspective view of a fare-box provided with my invention. Fig. 2 is a perspective detail of the mechanism thereof. Fig. 3 is a cross-section of the same with the parts in their normal position. Fig. 4 is a similar view showing the position of the parts when a ticket is being inserted in the box.

In the drawings like letters of reference indicate corresponding parts in the various figures.

In Figs. 2, 3, and 4, A is a toothed drum suitably journaled in the frame-pieces B. The teeth C, which are preferably arranged in four sets of four teeth each, are secured to the drum in any suitable manner and have their points projecting sufficiently far to enter the slots D in the concave E, which is shaped as shown and suitably held between the frame-pieces B. As the concave E is made of light spring metal and is only secured to the frame-pieces at the three points marked *m* in the drawings, the liability of choking the box with fares is reduced to a minimum, as the concave will yield so as to permit the drum to sweep them into the bottom of the box.

It will be understood that corrugations in the concave E would answer the purposes of the slots D and would permit of the points of the teeth passing below the general level of the concave.

F are needles pivoted on the bar G. These needles, of which only one is shown in the drawings, have their points normally projecting, as shown, through the slots H in the upper vertical portion of the concave E. These needles are retained in this position by means of the weighted tails I, but are free to rock on the bar G when their points are depressed by a fare entering the box.

J is a lock pivoted, as shown, at K immediately contiguous to the tails of the needles F. This lock is so bent as to form two arms *a* and *b* and a weighted tail *c*. From this construction it follows that if the fare-box be inverted either one or the other of the arms *a* and *b* will come into contact with the weighted tails I of the needles F, and thus retain each needle in its normal position, as seen in Figs. 2 and 3.

L are needles pivoted, as shown, on the bar M.

N are bent levers pivoted on the curved cross-bar O, which is slotted at *d* to form guideways for the weighted tails P of the levers N, slotted at *e* to form guideways for the needles L, and slotted at *f* to permit the teeth C of the drum A to pass the bar. The lower portions Q of these levers N are curved downwardly so as to lie in the path of fares passing between the drum A and the concave E.

R are projections on the levers N, which are in contact with the needles L, as shown. These needles are also normally in contact with the curved portions Q of the levers, so that their points are to one side of the path of fares entering the box. When, however, the fare comes in contact with the curved portions Q of the levers N, the levers are rocked on their pivots and thus raise the needles L through the medium of the projections R, so that the points of the needles are forced into the path of a fare entering the box.

In Fig. 4 a ticket is shown partially inserted in the box. It will be readily seen that with the points of the needles lying against it, as shown, it is quite impossible to remove the ticket without mutilating it so badly as to render it unfit for further use. If a fare is paid in money, it will drop below the needles F and L and coming into contact with the curved

portions Q of the levers N will raise the needles L across the path it has traveled, so that if the box be inverted to shake out the coin both sets of needles are in such position as to prevent it passing out again from the box. When a ticket has been inserted in the box, as shown in Fig. 4, the drum A is rotated in the direction indicated by the arrow in Fig. 3, and the teeth C, entering the ticket, sweep it around the concave E, and thus into the bottom of the box.

S is a slotted stop-plate. (Seen in section in Figs. 3 and 4.) This plate strips off any tickets which may have stuck to the points of the teeth C, and prevents them being carried around by the rotation of the drum.

It will be readily understood that the slots in the concave permit of the teeth C obtaining a firm hold of the tickets inserted in the box, although, as previously stated, corrugations would answer the same purpose, or a plain concave might in many cases suffice.

It will also be readily understood that cash-fares inserted in the box will fall between each set of teeth C, and will be swept around into the box without danger of injury to the points of the teeth.

On reference to Fig. 2 the mechanism of rotating the drum A will be readily understood.

T is a slide suitably supported on the frame-piece B. An outer frame-piece U is shown in the drawings to hold the slide in place; but other means may be adopted if desired.

V is a dog pivoted at g to the slide T. The point of this dog engages with a four-toothed ratchet-wheel A' rigidly secured to the spindle of the drum A. The tail h of the dog V is shaped to come in contact with the upper surface of the slide T, so as to limit the upward motion of the point of the dog.

B' is a spring adapted to normally retain the point of the dog in the position shown in Fig. 2.

C' is a spring-pawl connected to the frame-piece B and engaging with the teeth of the ratchet-wheel A'.

D' is a stop formed on the slide T, which is adapted to come in contact with the ratchet-wheel A', and thus prevent it revolving too far when the slide T is operated. The other end E' of the slide T passes through the far end of the box, as shown in Fig. 1, and is suitably bent, so that it may be pivoted to the grip F', as indicated at i'. The lower end of the grip is connected by a flat spring G' to the inside of the handle H'. This spring normally tends to keep the grip F' in the position shown in the drawings. When the handle H' is grasped, suitable pressure on the grip F' moves the slide T till the stop D' comes in contact with the ratchet-wheel A', which has then been moved a quarter-revolution by the action of the dog V. The spring-pawl C' has then engaged with a fresh tooth of the ratchet-wheel A' and holds the drum stationary, when the slide T and the dog V are returned to

their normal position by the release of the grip F', which is operated by the spring G'. This method of operating the drum A by the grip F' is an important part of my invention, as it much simplifies the operation of passing tickets through into the box.

Fig. 1 shows the outside appearance of the box, within the upper end of which the mechanism shown in Figs. 2, 3, and 4 is located.

I' is a slot through which the fares are inserted, which is of course immediately above the passage-way between the drum A and the concave E.

The bottom of the box J' is hinged at j in the ordinary way, and is provided with the usual lock, (not seen in the drawings,) so that the box may be opened for the removal of fares.

Having explained the construction of my invention, I will now briefly describe its operation.

A ticket is inserted through the slot I', and coming into contact with the curved portions Q of the levers N is immediately caught, as previously explained, between the points of the needles F and L, which thus prevent its withdrawal without mutilation. The conductor then compresses the grip F', and the ticket is swept into the bottom of the box by the rotation of the toothed drum A. A cash-fare is passed through in a somewhat similar way, with the exception that the needles, instead of grasping it, merely close the passage-way behind it. The locks J, which prevent the needles F from being withdrawn from operative position by the inversion of the box, afford additional security.

A considerable degree of utility might be obtained by arranging the needles L in a similar manner to the needles F, and such an arrangement I would consider an equivalent for that shown.

The grip F' might also be pivoted to the handle and have a coil-spring arranged behind it as an equivalent for the flat spring shown.

Instead of the pivoted needles F pointed needles having a spring connection with their point of support might be substituted, the spring connection being practically an equivalent for the weighted tails.

What I claim as my invention is—

1. In a fare box, the combination of a concave passageway for fares, means for causing the fares to pass through said concave passageway, one or more needles adapted to permit the passage thereby of fares, and means substantially as described for causing said needles to act against said fares and prevent their withdrawal whether the box be in its normal or inverted position, as set forth.

2. A fare box having a passage way for fares, in combination with one or more pivoted needles having weighted tails adapted to normally retain the points of the needles in the path of fares placed in the box, and pivoted locks to retain the needles in their nor-

mal position when the box is inverted, substantially as and for the purpose specified.

3. A fare box having a passage way for fares, in combination with one or more pivoted needles having weighted tails adapted to normally retain the points of the needles in the path of fares placed in the box, one or more pivoted needles having their points normally out of the path of such fares, and means for automatically bringing the points of the last mentioned needles into the path of or against the fare when the latter is inserted in the box, substantially as and for the purpose specified.

4. In a fare box, a concave and a rotatable toothed drum between which the fares pass, in combination with one or more pivoted needles having weighted tails adapted to normally retain the points of the needles in the path of fares passing between the concave and the drum, substantially as and for the purpose specified.

5. In a fare box, a concave and a rotatable toothed drum between which the fares pass, in combination with one or more pivoted needles having weighted tails adapted to normally retain the points of the needles in the path of fares passing between the concave and the drum, one or more pivoted needles having their points normally out of the path of such fares, and means for automatically bringing the points of the last mentioned needles into the path of or against the fare when the latter is inserted in the box, substantially as and for the purpose specified.

6. In a fare box, a slotted concave and a rotatable toothed drum, the points of the teeth of which enter the slots in the concave, in combination with one or more pivoted needles having weighted tails adapted to normally retain the points of the needles in the path of fares passing between the concave and the drum, substantially as and for the purpose specified.

7. In a fare box, a slotted concave and a rotatable toothed drum, the points of the teeth of which enter the slots in the concave, in combination with one or more pivoted needles having weighted tails adapted to normally retain the points of the needles in the path of fares passing between the concave and the drum, and pivoted locks to retain the needles in their normal position when the box is inverted, substantially as and for the purpose specified.

8. In a fare box, the combination of the following elements:—a concave; a rotatable toothed drum; one or more pivoted needles having weighted tails adapted to normally retain the points of the needles in the path of fares passing between the concave and the drum; one or more pivoted needles having their points normally out of the path of such fares and one or more pivoted levers having their ends lying in the path of the fares and adapted to raise the last mentioned needles when a fare presses against the said lever

ends, substantially as and for the purpose specified.

9. In a fare box, the combination of the following elements: a concave; a rotatable toothed drum; one or more pivoted needles having weighted tails adapted to normally retain the points of the needles in the path of fares passing between the concave and the drum; and pivoted locks adapted to retain the needles in their normal position when the box is inverted, substantially as and for the purpose specified.

10. In a device of the class described, the combination of a rotatable toothed drum, a slotted concave, a passage between said toothed drum and concave for the insertion of fares, the teeth of said drum entering the slots of said concave, and a slotted stop plate, substantially as described.

11. In a fare box, the combination of a concave; a suitably journaled toothed drum; a ratchet wheel rigidly connected to the spindle of the said drum; a slide suitably supported; a spring actuated dog pivoted on the said slide; a spring pawl rigidly connected to the box and engaging with the teeth of the ratchet wheel; a grip pivoted at one end to the slide and a spring connection between the said grip and the handle of the box, substantially as and for the purpose specified.

12. In a fare box, the combination of a concave; a suitably journaled toothed drum; a ratchet wheel rigidly connected to the spindle of the said drum; a slide suitably supported; a spring dog pivoted on the said slide; a stop on the slide adapted to come into contact with the ratchet wheel to limit its motion; a spring pawl rigidly connected to the box and engaging with the teeth of the ratchet wheel; a grip pivoted at one end to the slide and a spring connection between the said grip and the handle of the box, substantially as and for the purpose specified.

13. In a fare box, a concave and a rotatable toothed drum, between which the fares pass, in combination with one or more pivoted needles projecting through slots in the said concave, one or more pivoted needles having their points normally out of the path of fares placed in the box, and means for automatically bringing the points of the last mentioned needles into the path of or against the fare when the latter is partially inserted in the box, substantially as and for the purpose specified.

14. In a fare box, the pivoted needles F, having weighted tails I, in combination with the pivoted lock J, provided with the arms a, and b, and the weighted tail c, substantially as and for the purpose specified.

15. In a device of the class described, a rotatable toothed drum and a concave forming a passageway between itself and said rotatable drum for insertion of fares, the said concave being adapted to yield to pressure and return to its former position, thus preventing a liability of a chokeage of fares, in combina-

tion with a pivoted needle or needles arranged in the passageway to prevent the withdrawal of fares, substantially as described.

16. In a device of the class described, a rotatable toothed drum, and a slotted concave forming a passageway between itself and said rotatable drum for the insertion of fares, the teeth of said drum entering the slots of said concave and pushing the fares along said passageway, in combination with a pivoted needle or needles arranged in the passageway to prevent the withdrawal of fares, substantially as described.

17. In a fare box, the pivoted needles L, and the concave E, in combination with the curved cross bar O, slotted at *d*, and *e*, and the levers N pivoted on the said cross-bar and provided with curved portions Q, weighted tails P and projections R, substantially as and for the purpose specified.

18. In a fare box, a slotted concave and a rotatable toothed drum, the points of the teeth of which enter the slots in the concave, in combination with one or more pivoted nee-

dles having weighted tails adapted to normally retain the points of the needles in the path of fares passing between the concave and the drum, and pivoted lugs to retain the needles in their normal position when the box is inverted one or more pivoted needles having their points normally out of the path of such fares, and means for automatically bringing the points of the last mentioned needles into the path of or against the fare when the latter is inserted in the box.

19. A fare-box having a passageway for fares, in combination with one or more pivoted needles adapted to allow of the insertion of fares, and means operated by the passage of the fare for automatically bringing the points of said needles into the path of or against the fare when the latter is inserted in the box, substantially as described.

Toronto, April 5, 1895.

JOSEPH HENRY COLEMAN.

In presence of—

JOHN G. RIDOUT,

FRED CLARKE.