(No Model.)

2 Sheets—Sheet 1.

W. ZAEHRINGER.

FARE BOX.

No. 322,236. Patented July 14, 1885.

Fig. 1.

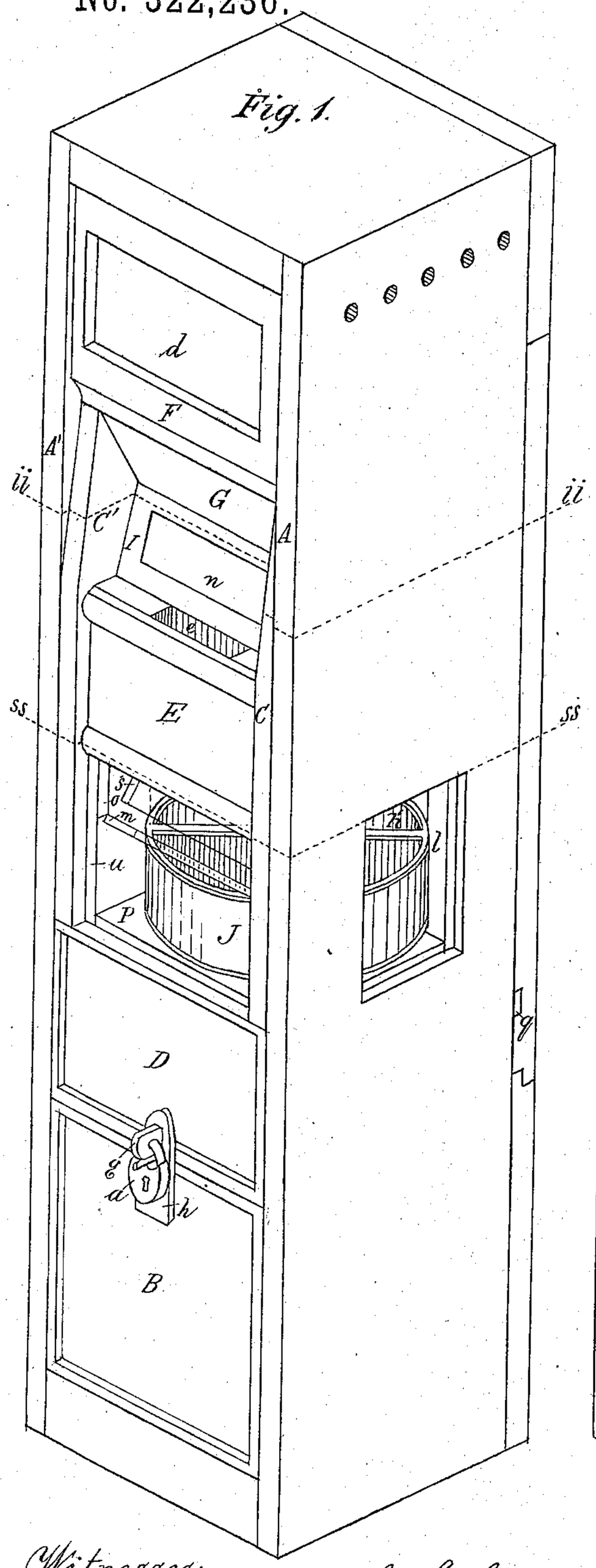
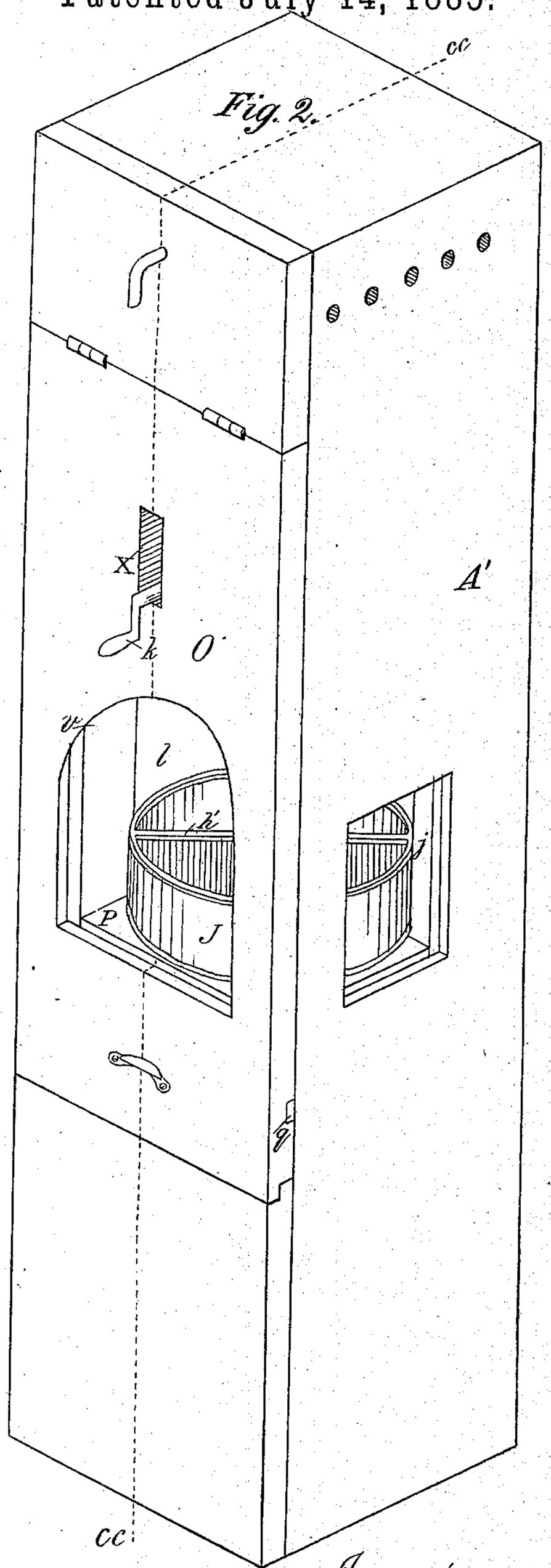


Fig. 2.



Witnesses:

C. Schüler.

Chas. Howard

Inventor:

Wm Zaehringer

(No Model.) 2 Sheets—Sheet 2.

W. ZAEHRINGER.

FARE BOX.

No. 322,236. Patented July 14, 1885.

Fig. 3.

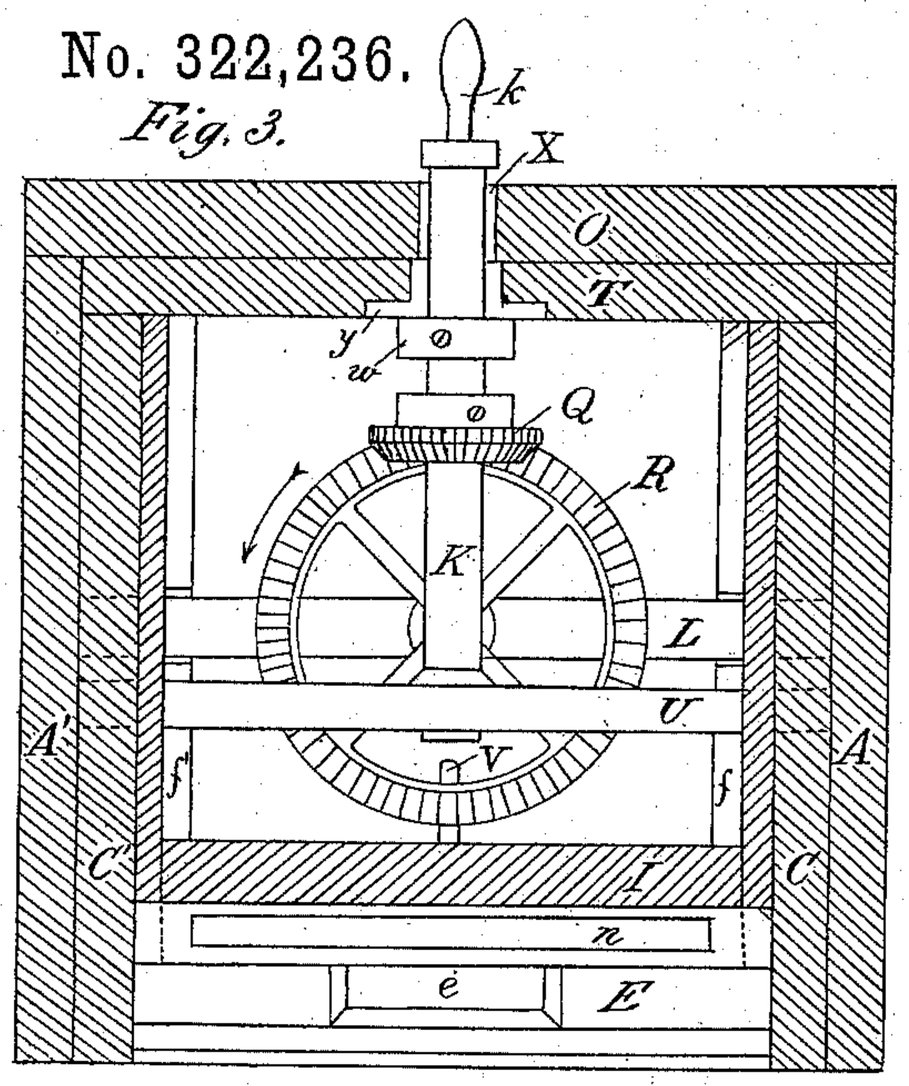


Fig. 6.

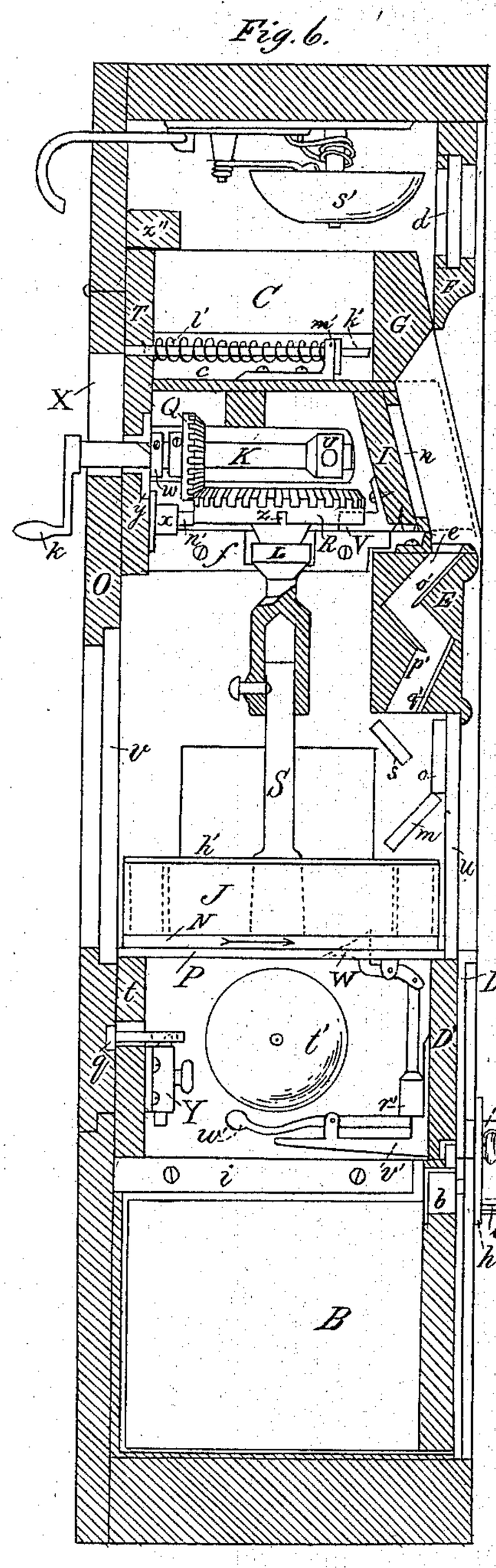


Fig. 5.

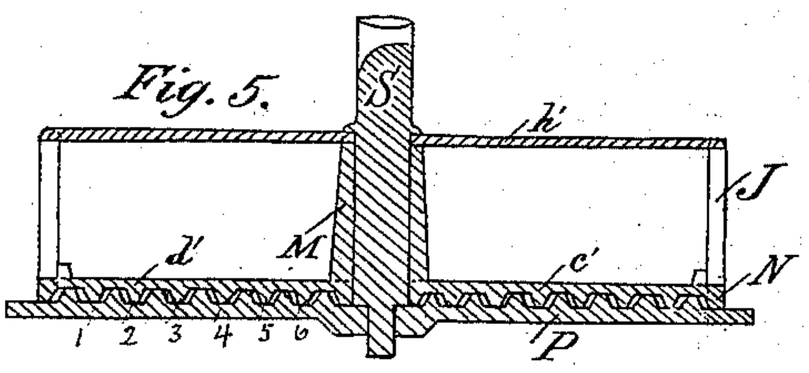
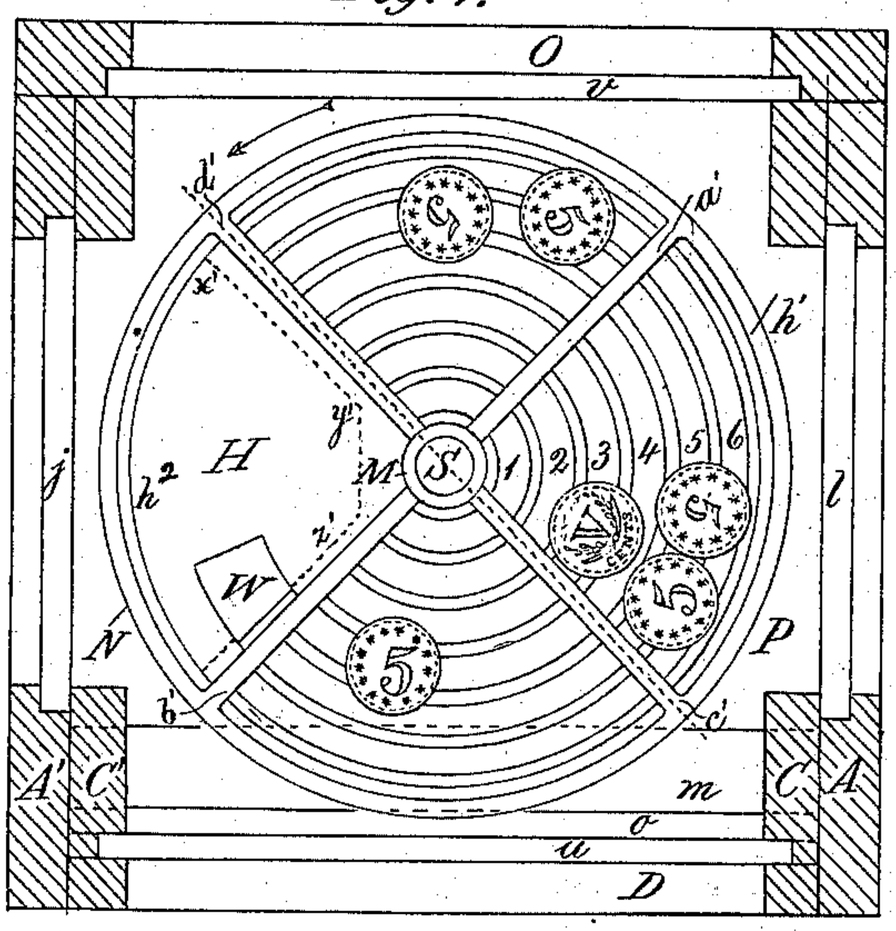


Fig. 4.



Witnesses:

C. Schüler.

Chas. F. Howard

Inventor:

Wm Zaehringer

UNITED STATES PATENT OFFICE.

WILLIAM ZAEHRINGER, OF NEW ORLEANS, LOUISIANA.

FARE-BOX.

SPECIFICATION forming part of Letters Patent No. 322,236, dated July 14, 1885.

Application filed October 9, 1884. (No model.)

To all whom it may concern:

Be it known that I, WM. ZAEHRINGER, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Fare-Boxes; and I do hereby declare that the following is a full, clear, and correct description of the same, reference being had to the annexed drawings, forming part of this specification.

My invention relates to fare-boxes used in street-cars, but can be used for other purposes where money or other articles of value are deposited and intended to be held temporarily in sight for the purpose of inspection.

The object of my invention is, first, to provide a receiver in a fare-box that will receive, separate, and temporarily expose for inspection a number of fares successively introduced by passengers before they drop into the money-drawer below, thus affording a means to detect counterfeits, incorrect payments, non-payments, and rectifying errors in general; second, a fare-box that may instantly be locked by the driver in charge to prevent payments being made by passengers, whenever occasion may demand; third, a fare-box that is secure against "picking," by methods usually employed, either from the receiving-plate or the money-drawer; fourth, a fare-box strong, compact, and simple in construction, being readily understood and easily operated. These ends are attained with unequaled facility, as will be fully comprehended from the following description and drawings, of which—

Figure 1 is a front and right-hand side view of the box viewed from inside the car. Fig. 2 is a back and side view. Fig. 3 is a cross-section through line *ii ii* of Fig. 1. Fig. 4 is a cross-section through line *ss ss* of Fig. 1. Fig. 5 is a vertical section of Fig. 4 through line *d' c'*. Fig. 6 is a vertical section through line *cc cc* of Fig. 2.

To facilitate the construction as a whole this fare-box is made in two parts, of which A A′ form the sides of the outer casing, having a top, bottom, and part of its back rigidly secured together by dovetailing or otherwise, and C C′ are two boards made similar to each other, joined together by cross-pieces T and *t* in the back and G E D′ in the front. This inside casing contains all the mechanism.

In Fig. 1, B is the money-drawer, secured with a lock, *b*, on the inside and padlock *a* in front. D is a plate of metal, customarily containing the maker's name, date of patent, &c., and is bolted or screwed to the cross-piece D′. *g* is a projecting eyelet secured to or forming part of plate D. *h* is a slotted strip of metal fitting loosely upon the eyelet *g* and under the padlock *a*, thus guarding the hole of the inside lock, *b*. (See Fig. 6.) E is an angular-channeled block of wood secured to the sides C C′, having a strip of metal at its upper surface, in which is an opening, *e*, through which the fares are paid. I is a sliding-drawer, made of wood or other material, having a beveled front in which is incased a plate of glass, *n*, under which may be shown on a slip of paper the word "Push" or words "Pay Here," or words of like significance. The sides of the sliding drawer are parallel to the sides C C′, and supported by horizontal sills *f f* (see Fig. 3) below, and guided by parallel strips *c* above. (See Fig. 6.) G is a cross-piece, of wood, beveled in front and secured to the sides C C′. F is a cross-piece of wood secured to the sides A A′ of the outer casing, and contains a plate of glass, *d*, behind which, as is customary, may be shown a printed slip of paper denoting the price of fare.

In Fig. 2, O is a lid upon the back of the box, having a window of suitable height, with a plate of glass, *v*, to enable the driver to inspect all fares paid, and is made to swing open on hinges when desired to clean the glass inside the box, but cannot be opened unless access is had to the lower interior of the box. *q* is a strengthening-bar of metal fitting inside, across, and into a groove of the lid O, provided at its center with an inward-projecting eyelet, (see Fig. 6,) which receives the spring catch or latch Y, thus securely locking the lid O. X is a slot cut through the lid O to permit it to be opened without removing the crank *k*, it being only necessary to reverse the present position of the handle. Near the top of the back is a rod serving to sound a gong, *s'*, usually employed to call attention to the payment of fares due. Near the bottom of the lid is provided a handle, used to pull open the lid when released from the latch Y.

Fig. 3 exposes to view a horizontal bevel-gear wheel, R, keyed to the vertical shaft S,

(see Fig. 6,) held by the brace L, whose ends are secured in the sides C C′. U is a brace, whose ends also fit into the sides C C′. K is a horizontal shaft, one end supported by the brace U and its other end running through the bearing *y* in the back piece, T, (see Fig. 6,) thence through the slot X, and provided with a crank, *k*. This shaft has a fixed collar fitting against the brace U, and an adjustable collar, *w*, at its opposite end, which fits against the bearing *y*. At a proper point on this shaft is keyed a vertical bevel-gear wheel, Q, whose teeth fit into the teeth of the wheel R. V is a projecting metallic blade firmly screwed to the bottom of the sliding drawer I, (see Fig. 6,) and plays alternately in and out of the four equidistant slots *z*, cut out of a flange underneath the gear-wheel R. *f f′* are the sills upon which the drawer I slides. *n* is the glass in the beveled front of the drawer I, and E is the channeled block, topped with a strip of metal having an opening, *e*.

Fig. 4 shows the vertical shaft S, having keyed at its lower extremity a metallic frame composed of four equidistant cross-pieces, *a′ b′ c′ d′*, joined centrally to a hub, M, and braced at their extremities by a circular strip, N. (See Figs. 2 and 6.) This frame may be cast in one piece. The under surface of the arms *a′ b′ c′ d′* are serrated. P is a horizontal stationary receiving-plate, having upon its surface at suitable distances apart a series of alternate circular ridges and grooves, 1 2 3 4 5 6. In this plate is formed a hatchway, H, of suitable dimensions. Vertically through the hub M are cut four slots to receive the ends of four strips of glass, corresponding in length to the distance from the hoop J (see Fig. 5) to the side of shaft S. These strips rest upon the arms *a′ b′ c′ d′*, guarded by a frame, *h′*, and form, in conjunction with the hoop J, the walls of the compartments. W is an automatic pawl or stop, having its upper surface beveled, and is pivoted beneath the receiving-plate P, (see Fig. 6,) preventing the frame from moving backward in an opposite direction to that denoted by the arrow at *d′*. *j* and *l* are plates of glass rabbeted in the windows of A A′. *u* is a plate of glass on the front side of the box, rabbeted in the sides C C′, through which passengers may see the fares they pay. *v* is a plate of glass in the back of the box, rabbeted in the lid O, through which the driver sees the fare. The edges of the receiving-plate P fit snugly against the sides and in the angles formed by the glass plates and the boards C C′. The plate P may be screwed down upon the sills of the side windows in C C′, and cross-pieces *t* and D′, which support the plate horizontally. A lamp is intended to be placed upon that side of the box calculated to throw the most light upon the receiving-plate P, which is the right-hand side of Figs. 1 and 4, through the glass *l*. The dotted lines *x′ y′ z′* represent the edges of a beveled block, of wood or metal, *h²*, screwed to the wall C′ at a convenient point below the hatchway H and above the money-drawer B, to prevent the insertion of a hand when the box is forced open for the purpose of abstracting money from said drawer.

Fig. 5 shows, in section, the shaft S, the hub M, two serrated arms, *c′* and *d′*, and a bracing circular strip, N, (see Fig. 6,) at their extremities, upon which is carried the glass hoop J, topped by the guard *h′*. The receiving-plate P has a hole in its center to receive the lower end of shaft S and allow its free turning in the same. Directly between the plate P and the shoulder of the shaft S may be placed a washer of suitable thickness to attain a proper height of the teeth under the arms *a′ b′ c′ d′* from the surface of the grooves upon the receiving-plate.

Fig. 6 shows, in addition to the elements already described, an open spiral spring, *l′*, fitted upon a rod, *k′*, one end playing in and supported by the metallic stop *m′*, secured to the top of the sliding drawer I, the other end of said rod fitting into the back T. *x* is a casing of metal containing a spring-catch, *n′*, which presses against a flange upon the lower edge of the gear-wheel R. The angular channel in the block E need not be much wider than is required to admit the largest coin intended to be received, and strips of metal *o′ p′ q′* are inserted, against which fall the fares in their downward course, thereby interrupting their speed. These strips are serrated at their projecting edges, so as to frustrate all attempts to "pick" the box by the means usually employed. Immediately under the channel and across the box (see Fig. 1) are placed strips of plate-glass *s o m* at suitable angles, the ends fitting into slots in the walls C C′. These strips tend also to prevent the "picking" process, but are chiefly employed to break the force with which the coins may fall before they reach the receiving-plate P, so that they will not bounce into the wrong compartment. *t′* is a bell placed upon that side of the box opposite to the hatchway. W is the beveled pawl or stop, with its shank pivoted below the plate P, as shown, having a weight, *r′*, pivoted at its other end. *v′* is a bracket secured to the cross-piece D′, and *w′* is a hammer pivoted upon said bracket. *i* is one of two sills on walls A A′, which support the inner casing, C C′, with all its attachments. *z″* is a cross-piece, of wood, rabbeted in the sides A A′. The two casings are fastened together by screws from the outside of A and A′, at convenient points. With the latch Y and the drawer B securely locked it is impossible to reach the money by loosening all accessible screws, and access can only be had with the proper keys or by forcibly breaking some part of the box.

Having described the component parts of my invention, it now remains to explain their use.

Fig. 4 serves to illustrate the manner of receiving and disposing of the fares now visibly resting upon the circular ridges of the receiving-plate P, supposed in this case to have

been deposited by three different persons—say, first, the two nickels by a gentleman, for himself and lady; second, the next three nickels by a gentleman, for himself and his two daughters, and the last nickel by and for a single party. Thus we have, at five cents a fare, six fares visible, deposited in three payments by as many different persons, and resting in three of the four compartments formed by the hub M, arms *a' b' c' d'*, carrying transparent walls, the hoop J, and the surface of plate P. Every time a payment is made it becomes the duty of the driver to give the crank *k* (see Fig. 2) one complete turn, causing the horizontal wheel R, (supplied with sixty teeth,) through the medium of the wheel Q, (with fifteen teeth,) to move only one quarter of a circle, (see Fig. 6,) and the compartments, through the medium of the keyed shaft S, are forced to move a corresponding distance, consequently bringing a new compartment in position underneath the channel in the block E to receive the next payment, and simultaneously emptying the contents of the next succeeding compartment into the hatchway. For example, the last-presented compartment having received a payment, (one nickel,) it is now the duty of the driver to turn the crank once, which will cause a shifting of the whole frame with its four compartments a distance of one full quarter of a circle in the direction of the arrow at *d'*, Fig. 4, forcing the two nickels to glide over the surface of the plate P into the hatchway H and out of sight. The three nickels have now arrived where the two are (or were) and the one where the three are, thus vacating the space upon the plate P immediately underneath the channel, so as to receive the next payment, which may consist of any number of fares in the shape of coins, tickets, or both. In the act of a serrated arm passing over the pawl W, said pawl is depressed until the arm has completed its passage, when the weight *r'* (see Fig. 6) replaces the pawl, effectually preventing a retrograde movement of the frame. The sudden falling of the weight *r'* is utilized to impel the hammer *w'* against the bell *t'*, the sound of which will denote to passengers that a new compartment has been made to present itself for the next payment.

It is obvious that the fares are virtually swept, as it were, over the surface of the circular ridges upon the receiving-plate P, the serrated arms *a' b' c' d'* acting as brooms by their teeth fitting into corresponding grooves, as shown in section in Fig. 5.

The position of the sliding drawer I in Figs. 1, 3, and 6 is the one occupied when pushed inward by the hand of a passenger in the act of paying fare, thereby exposing the opening *e* for that purpose. When in this position the crank *k* cannot be turned, (see Fig. 6,) being checked by the blade V, fitting into one of the four slots *z* cut in the flange of the wheel R. Immediately when the hand is removed the spring *l'* forces the drawer I outward as far as the stop *m'* will admit, and assumes the position shown by the dotted lines, effectually covering the opening *e*. The drawer, in the latter position, clears the blade V from the slot referred to, and permits the free turning of the crank and dependent parts.

During the process of turning the crank no fare can be paid, as the attempt to push the drawer I inward, will bring the point of the blade V in contact with the solid surface between two slots, *z*, of the flange on the wheel R. As soon as the crank completes a revolution another slot will have presented itself opposite to the point of the blade, and the drawer may then be pushed inward to pay fare.

The functions of the spring-catch *n'* in the casing *x* are twofold: first, to alternately play into the slots *z*, thereby holding the wheel R in steady position for the entrance of the blade V in an opposite slot; and, second, to prevent the crank *k* from being turned in the wrong direction.

To lock the box so that no fares can be paid, it is only necessary to reverse the position of the handle on the crank, or, in other words, turn the crank half way round, when the drawer I cannot be pushed inward to expose the opening *e*. To unlock the same, the crank may now be turned backward, (not having completed a revolution,) and the drawer may be operated to introduce fares.

It must now be apparent that when a payment is made it first falls into the compartment now occupied by the nickel; with one turn of the crank it is swept by the left-hand serrated arm upon the space now occupied by the three nickels; a second turn sweeps it upon the space now occupied by the two nickels, and a third turn of the crank will sweep it into the hatchway and out of sight.

The successive changes of position which the fares are forced to assume, afford ample time and opportunity to the driver and passengers for inspecting the same and rectifying errors.

For the purpose of identifying the precise compartment into which a passenger has deposited a payment, numbers 1, 2, 3, 4, or letters A, B, C, D, may be conspicuously attached to the sides of the hub or at a convenient height upon the vertical shaft S.

The shaft S is preferably made in two parts (see Fig. 6) to secure the proper relative position between the wheel R and compartmented frame.

Instead of the strips of glass used to form transparent walls upon the arms *a' b' c' d'*, perforated plates of metal may be substituted. The hoop J may also be made of perforated metal, gauze, or other equivalent.

The revolving frame, if divided into more or less compartments, requires no material change of elements to carry out its functions.

The receiving-plate P may be made in one or more parts, and of one or more kinds of metal.

The elements of my invention may be applied to ordinary forms of existing fare-boxes with obvious economy.

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

1. In combination with a horizontal stationary fare-receiving plate P, having a series of grooves in its upper surface, a partitioned frame consisting of a hub, M, having wall-supporting and serrated arms *a' b' c' d'*, brace N, hoop J, and guard *h'*, adapted to revolve horizontally in the grooves of the said plate P, and conjointly keeping a number of fares separated and in view for inspection until they are pushed or swept into the hatchway H, dropping out of sight into the money-drawer below.

2. In combination with the horizontal stationary fare-receiving-plate P and horizontal revolving frame, (hub M, arms *a' b' c' d'*, brace N, hoop J, and guard *h'*,) a vertical shaft, S, keyed to said frame, supported by a brace, L, carrying a flanged and slotted gear-wheel, R, operated by the gear-wheel Q, keyed to shaft K, supported by the brace U and bearing *y*, and operating-crank *k* on said shaft K, substantially as set forth.

3. In combination with the flanged and slotted gear-wheel R, and gear-wheel Q, journaled and having a crank, a sliding drawer, I, having a fixed blade, V, which, when fitting into the slots *z* of said gear-wheel R, prevents the crank *k* from being turned, and which, when freed from said slots *z*, prevents the drawer I from being pushed inward, so that no payment can be made through the opening *e* while the crank *k* is being operated by the driver, substantially as set forth.

In testimony whereof I have hereunto signed my name.

WM. ZAEHRINGER.

Witnesses:
C. SCHÜLER,
CHAS. J. TROUARD.