

W. I. OHMER & J. L. KIST.
FARE BOX.
APPLICATION FILED OCT. 2, 1913.

Patented June 9, 1914.

2 SHEETS—SHEET 1.

1,099,198.

Fig. 1

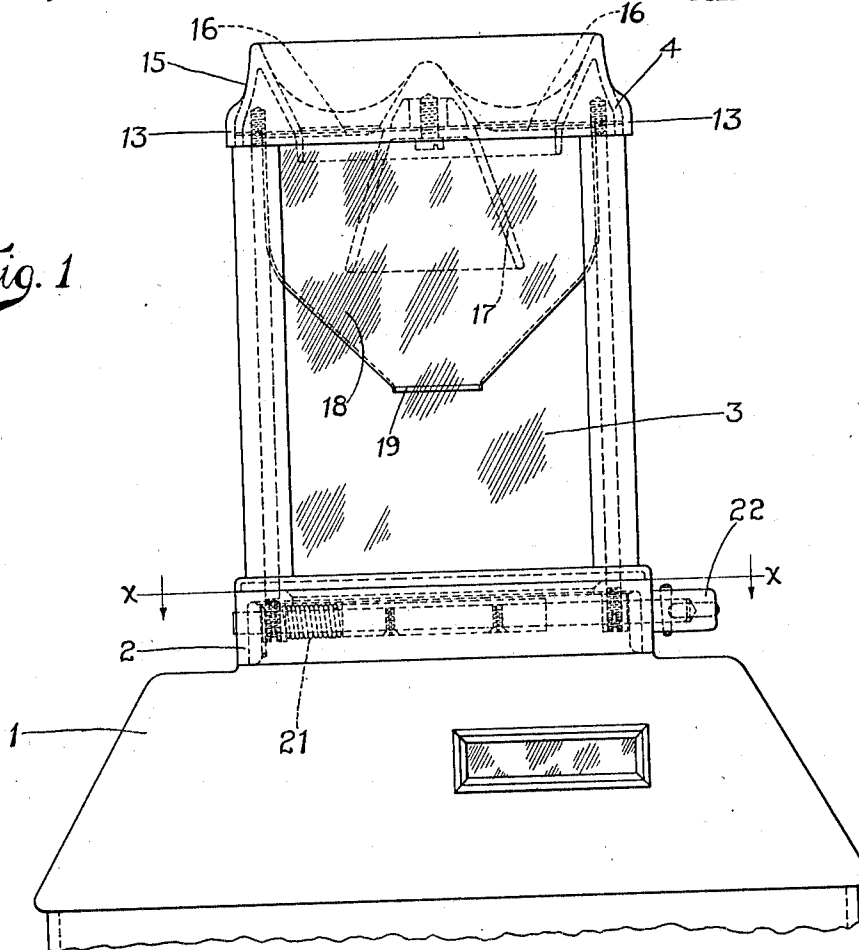
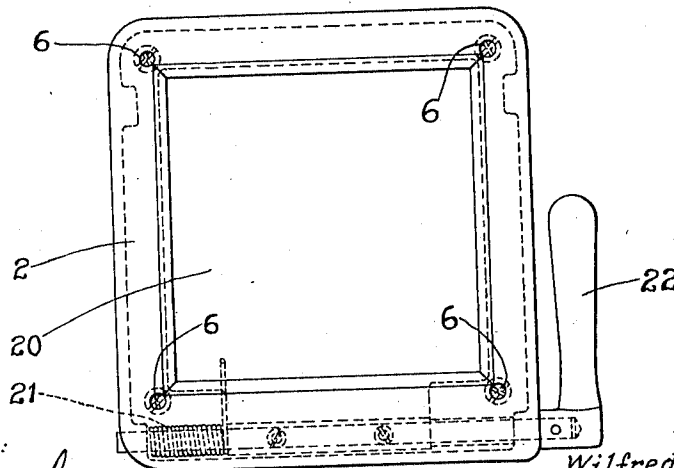


Fig. 2



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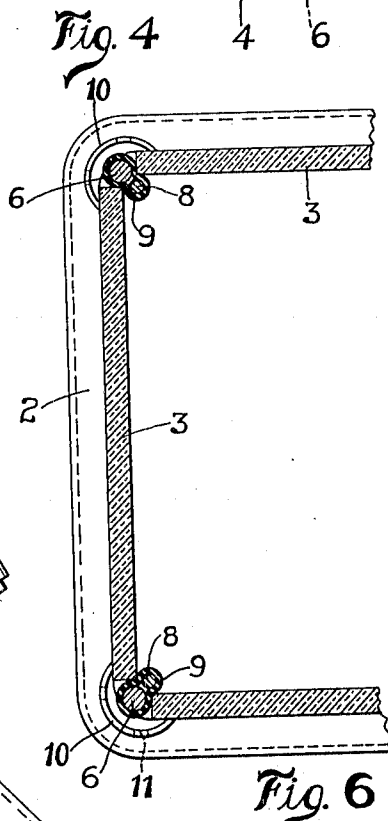
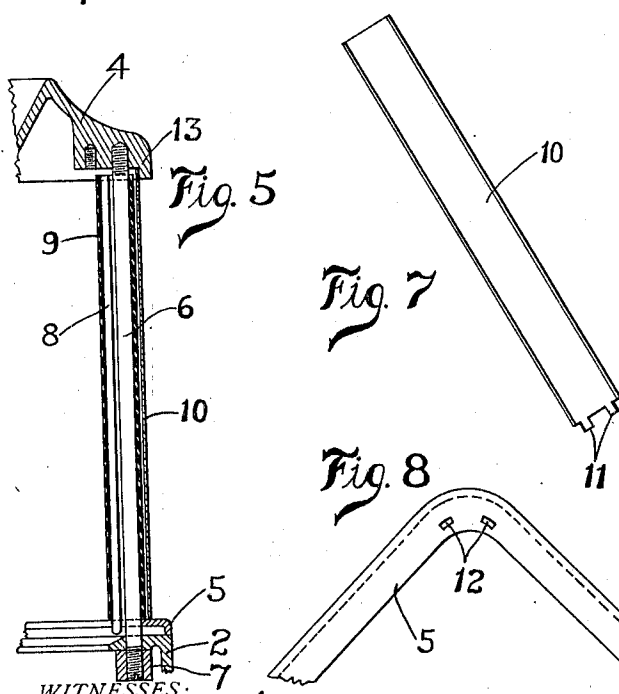
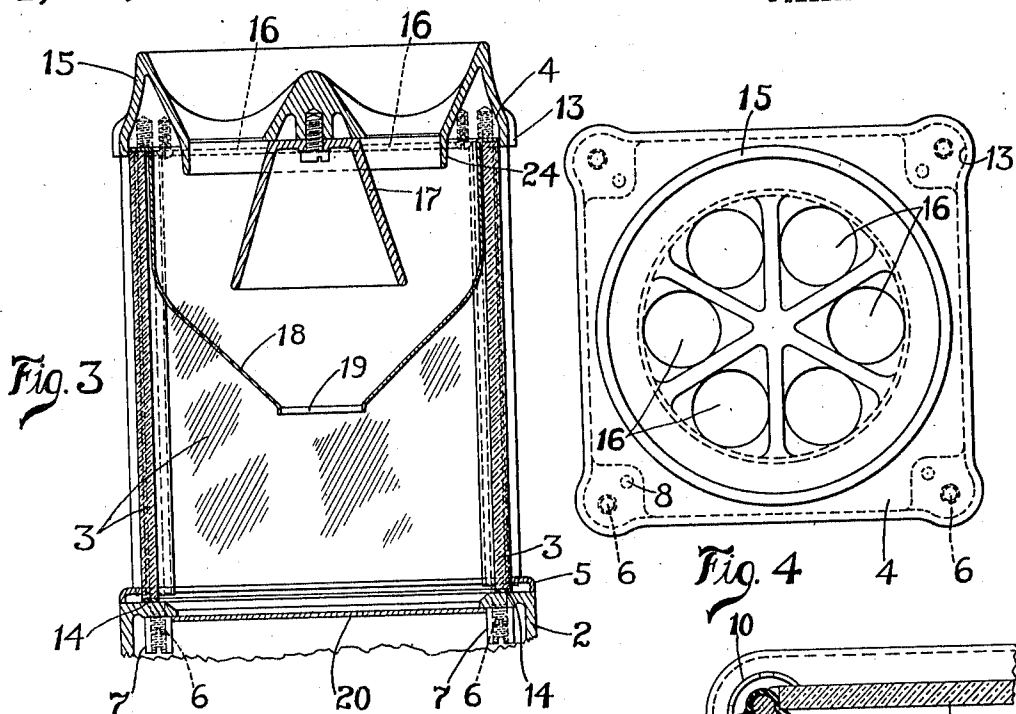
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UNITED STATES PATENT OFFICE.

WILFRED I. OHMER AND JOSEPH LEO KIST, OF DAYTON, OHIO, ASSIGNORS TO THE
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FARE-BOX.

1,099,198.

Specification of Letters Patent.

Patented June 9, 1914.

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To all whom it may concern:

Be it known that we, WILFRED I. OHMER and JOSEPH LEO KIST, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Fare-Boxes, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to fare boxes such as are commonly used for the collection of fares on street cars and like places and is more particularly concerned with the hopper forming a part of the fare box and comprising a display case in which the fares received are exposed to inspection by the passenger and the conductor.

The object of the invention is to provide a hopper of this kind which will be so constructed that it will be exceedingly difficult, if not impossible, to remove a coin or fare of any kind therefrom after it has once been deposited therein and at the same time provide a box which will be well constructed and of pleasing appearance and will have no movable parts liable to rattle or to become disarranged and interfere with the operation thereof.

A further object of the invention is to provide such a hopper which will be so constructed and which will have the parts connected in such a manner as to effectually prevent vibration of the parts thereof and to produce a strong durable structure.

In the accompanying drawings, Figure 1 is a side elevation of the upper portion of a fare box embodying our invention; Fig. 2 is a plan view of the base with the glass top portion removed; Fig. 3 is a sectional view taken vertically through the hopper; Fig. 4 is a plan view of the hopper top; Fig. 5 is a vertical section of one corner of the hopper showing the connecting devices; Fig. 6 is a horizontal section of one side of the hopper also showing the connecting devices; Fig. 7 is a detail view of one of the corner pieces; and Fig. 8 is a detail view of a portion of the collar forming a part of the base.

In these drawings we have illustrated one embodiment of our invention and have shown the same as forming the upper part of a fare box, the body of which is indicated by the reference numeral 1 in Fig. 1. The hopper comprises a base portion 2 which is firmly

secured to the body of the fare box in any 55
suitable manner. Supported upon the base 2 are the side walls 3 which are preferably of glass or other transparent material, and supported at the upper end of the side walls is a hopper top 4 constructed and arranged 60
to receive the fares and direct them into the hopper proper. The base and the top may be connected and the side walls secured in position in any suitable manner, but in the present drawings we have illustrated one 65
method of accomplishing this which is very effective and produces a strong permanent connection which is without vibration and consequently will not rattle. To accomplish this the base is provided with an upper portion or collar 5 of a width less than the top 70
of the base and adapted to receive within the same the lower ends of the side walls of the hopper and permit the latter to rest upon the upper surface of the base. The base is 75
secured to the top 4 by means of rods 6, the upper ends of which are screw-threaded into the top and the lower ends of which are screw-threaded to receive nuts 7 by means of which the base and the top are drawn to- 80
gether to clamp between them the side walls 3. In order to properly position the side walls at the corner and to prevent the vibration thereof we have arranged a second rod 8 parallel with the first rod and have in- 85
closed both rods within a flexible structure 9 which preferably consists of a piece of ordinary rubber tubing. The second rod 8 is preferably smaller than the connecting rod 6 and is here shown as disconnected from the 90
hopper both at its top and at its bottom, thus leaving it free to move either laterally with relation to the rod 6 or to move bodily toward and away from the same. In assembling the hopper the inner corners of the 95
vertical edges of the glass side walls are placed against the flexible member connecting the two rods and tend to press this material inward between the two rods to form seats in which the corners seat themselves 100
and which serve to position the walls relatively one to the other. The flexible material serves as a cushioning device or packing to prevent vibration and rattling of the parts. To hold the edges of the side walls 105
in engagement with the corner posts corner pieces 10 are clamped between the top of the hopper and the base thereof and are curved

about their longitudinal axes so that their edges will engage the two side walls and retain the same in engagement with said corner posts. As here shown each corner piece 10 has at its lower edge lugs 11 arranged to enter recesses 12 in the collar 5 forming a part of the base. The upper ends of the corner pieces 10 enter sockets 13 formed at the corners of the hopper top 4. A suitable packing may be also placed between the lower edges of the side walls and the base, as indicated at 14.

The hopper top may be of any suitable construction and in that form here shown it comprises a circular outer wall 15 and an outwardly flared inner wall and is provided with an annular series of openings 16 of such a size as to permit the passage of the largest coin which the fare box is adapted to handle and prevent the entrance of larger coins or large objects which are liable to clog the mechanism. To prevent the removal of coins or other fares after they have once been deposited in the hopper we have provided two deflectors arranged one above the other and having oppositely diverging walls arranged to overlap. In the present instance the upper deflector is rigidly secured to the central portion of the top 4 and is in the form of a truncated cone or bell having its side walls diverging downwardly, as shown at 17. The upper portion of the deflector 17 lies entirely within the circle of openings 16 and it increases in diameter as it extends downward so that the lower portion thereof extends some distance beyond the edges of the several openings and in a position to be engaged by a coin passing through any of these openings. The lower deflector is also shown in the form of a truncated cone 18 but is secured within the hopper in an inverted position and has its downwardly converging walls terminating to form an opening 19 beneath the deflector 17. This opening is of a diameter considerably less than the diameter of the lower portion of the upper deflector and is merely large enough to permit the passage of the largest coin which the fare box is adapted to handle. This lower deflector is preferably supported from the hopper top 4 by extending the side walls thereof upward and securing them between the hopper top and the side walls. When the coin is deposited in the hopper it will engage the outer surface of the upper deflector and be deflected against the inner wall of the lower deflector down which it will slide until it passes through the opening 19 and drops upon the bottom of the hopper which, as is customary in devices of this kind, is in the form of a trap door 20 and is held normally closed by means of a spring 21. A lever 22 is arranged exteriorly of the hopper to enable the operator

to open the trap door 20 and deposit the coins in the body of the fare box which is usually provided with suitable counting mechanism.

The arrangement of the deflectors is such that the coins cannot be removed through the top of the hopper by any of the expedients usually resorted to for that purpose. When a flexible device, such as a piece of wire, is inserted through the top of the hopper, with an adhesive substance on the end thereof, it may be caused to follow the walls of the deflectors, pass through the opening 19 and enter the lower portion of the hopper, but in withdrawing the same it will scrape along the edge of the opening in the lower deflector and any coin or coins which may have adhered thereto will be scraped off. If the fare box be removable and it be attempted to remove the coins by inverting the box, the coins will, of course, roll down on the outside of the converging walls of the lower deflector. If the fare box be manipulated so as to cause a coin to pass through the opening 19 when the box is in an inverted position, the coin will either enter the opening at the lower end of the upper deflector and be retained until the fare box is turned to its proper position when it will again pass through the lower deflector onto the bottom of the hopper, or it will pass between the wall of the deflector 18 and the edge of the deflector 17. To prevent the coin passing out through the openings when it follows along the wall of the deflector 18 we have provided the inner wall of the hopper top with a portion, as shown at 24, which is spaced away from the wall of the deflector 18 and is connected at its outer edge with the outer wall of the hopper top. Thus, if the hopper is inverted any coins which pass along the wall of the deflector 18 will not pass through the opening 16 but will pass on the outside of the inwardly extending portion or guard 24 into the space between this portion and the outer wall of the hopper top where they will be retained until the hopper is returned to its normal position when they will again pass about the deflectors 17 and 18 onto the trap door 20. It will be noted that the portion 24 of the hopper top is also in the shape of the frustum of a cone. Thus, we have two inverted conical members with their walls approximately parallel and a third upright conical member interposed between the two inverted conical members. It will be apparent that the attempt to remove the coins by any of the well known method, either those above mentioned, or similar methods, will be defeated. It will further be apparent that the structure of the box is very strong and is such as to present an attractive appearance. It is especially desirable in a hopper of this kind

that the mechanism should present a good appearance inasmuch as the walls are transparent and any trappy mechanism within the same is visible from the exterior and detracts materially from the desirability of the hopper and the fare box as a whole. Further, it will be apparent that the hopper as a whole is constructed in such a manner as to produce a firm rigid construction free from vibration and such as to present a pleasing appearance.

While we have shown and described one embodiment of our invention it will be understood that this has been chosen for the purposes of illustration only and that we do not desire to be limited to the details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. A hopper of the character described having a top provided with openings, a frusto-conical deflector supported in said hopper beneath said top with its upper end between the openings in said top and having its walls diverging downwardly, a second frusto-conical deflector arranged within said hopper beneath the first-mentioned deflector and having its walls converging downwardly and terminating in an opening beneath the first-mentioned deflector and of less diameter than the lower end of said first-mentioned deflector.

2. A hopper of the character described having a top provided with an annular series of openings arranged about the center thereof, a deflector in the form of a truncated cone arranged within said hopper and having its smaller end secured to the center of said top within said annular series of openings, a second deflector also in the form of a truncated cone mounted within said hopper in an inverted position beneath the first-mentioned deflector and having an opening beneath said first-mentioned deflector and of less diameter than the open bottom of said first-mentioned deflector.

3. A hopper of the character described having a top provided with an annular series of openings arranged about the center thereof, a deflector in the form of a truncated cone arranged within said hopper and having its smaller end secured to the center of said top within said annular series of openings and having its lower end open, a second deflector also in the form of a truncated cone mounted within said hopper in an inverted position beneath the first-mentioned deflector and having an opening beneath said first-mentioned deflector and of less diameter than the open bottom of said first-mentioned deflector, said last-mentioned deflector being secured to said top of said

hopper on the inside of said annular series of openings.

4. A hopper of the class described comprising a base, a top, side walls, corner posts to connect said base to said top and confine the side walls between the same, a rod extending parallel with each corner post, a casing of flexible material connecting the rod with said post and forming seats to receive the corners of the side walls, and means to retain said corners in engagement with said seats.

5. A hopper of the class described comprising a base, a top, side walls, corner posts to connect said base to said top and confine the side walls between the same, a rod extending parallel with each corner post, a rubber casing inclosing both said rod and said corner post and forming seats on the opposite sides of said post to receive the adjacent corners of said side walls, and means to retain said side walls with their corners in engagement with said seats.

6. A hopper of the class described comprising a base, a top, side walls, corner posts to connect said base to said top and confine the side walls between the same, a rod extending parallel with each corner post, a casing of flexible material connecting the rod with said post and forming seats to receive the corners of the side walls, and a corner piece confined between said base and said top and having its longitudinal edges arranged to engage respectively the side walls on the opposite sides of said corner posts.

7. A hopper of the class described comprising a base, a top, side walls, corner posts to connect said base to said top and confine the side walls between the same, a rod extending parallel with each corner post, a casing of flexible material connecting the rod with said post and forming seats to receive the corners of the side walls, and a corner piece confined between said base and said top and having its longitudinal edges arranged to engage respectively the side walls on the opposite sides of said corner posts, said base and said top having recesses to receive the adjacent portions of said corner piece and hold the same in engagement with said side walls.

8. A hopper of the character described having a top provided with a plurality of openings arranged about the center thereof, of a deflector secured to the center of said top within the hopper and having downwardly diverging walls, a second deflector arranged within said hopper beneath the first-mentioned deflector and having downwardly converging walls terminating in an opening beneath the first-mentioned deflector, and a guard member arranged about said openings and spaced away from the wall of the last-mentioned deflector.

9. A hopper of the character described comprising a deflector having downwardly flared walls, and a second deflector having downwardly converging walls, said second deflector being arranged beneath the first-mentioned deflector and having a discharge opening arranged centrally of said first-mentioned deflector and of a diameter less than the diameter of the lower portion of said first-mentioned deflector, and a guard secured to the top of said hopper and comprising a portion extending about the first-mentioned deflector and spaced away from the wall of the second deflector.

10. A hopper of the character described comprising a top having an inwardly extending portion provided with an opening, a deflector supported centrally of said inwardly extending portion and having downwardly diverging walls, a second deflector supported within said hopper beneath the first-mentioned deflector and having downwardly converging walls terminating in an opening beneath the first-mentioned deflector, said last-mentioned deflector having its walls extending upwardly about the inwardly extending portion of said hopper top and spaced away therefrom.

11. A hopper of the character described

comprising a hopper top having an outer wall and an outwardly flared inner wall secured at its upper edge to said outer wall, a deflector supported centrally of said inner wall, a second deflector arranged beneath the first-mentioned deflector and having its upper edges extending above the lower end of said inner wall and spaced away therefrom to permit the passage of coins between said walls.

12. In a device of the character described, a casing, two frusto-conical members mounted within said casing in inverted positions and spaced apart, the upper member forming the top of the casing and constituting a coin receiver, and a third frusto-conical member mounted within said casing in an upright position between the first-mentioned frusto-conical members, with its upper end arranged centrally of the upper one of said first-mentioned members.

In testimony whereof, we affix our signatures in presence of two witnesses.

WILFRED I. OHMER.
JOSEPH LEO KIST.

Witnesses:

F. W. SCHAEFER,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."