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DRIVE-IN SERVICE UNIT FOR BANK TELLERS HAVING
A SERVICE DRAWER ADJUSTABLE AS TO HEIGHT
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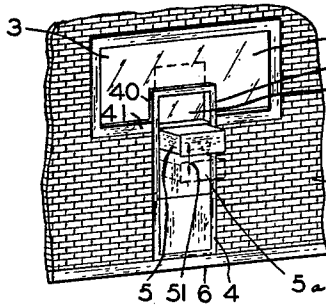


FIG. 1

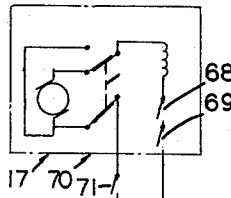


FIG. 8

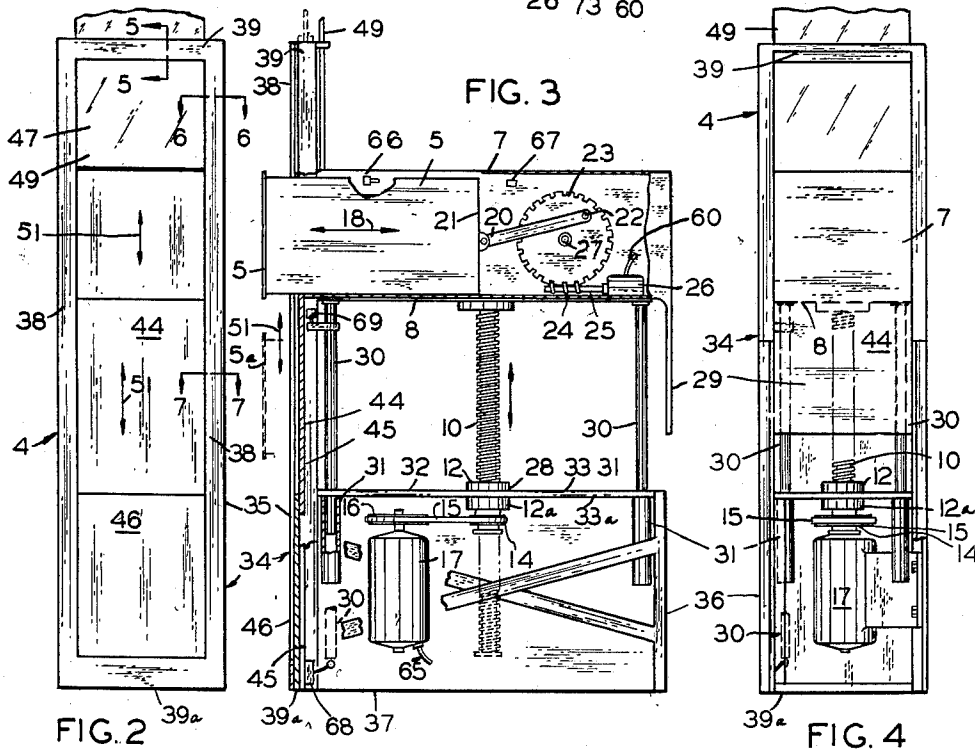
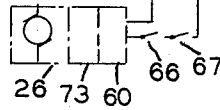


FIG. 2

FIG. 4

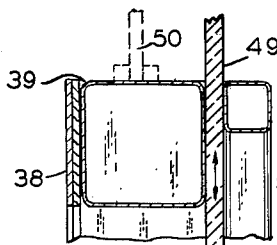


FIG. 5



FIG. 6

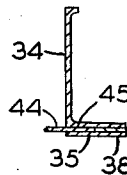


FIG. 7

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DRIVE-IN SERVICE UNIT FOR BANK TELLERS HAVING A SERVICE DRAWER ADJUSTABLE AS TO HEIGHT

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This invention concerns a drive-in service unit by which a teller or clerk may serve persons occupying automotive vehicles with money or other articles incident to the banking business or other businesses wherein numerous papers or items of value are to be deposited, withdrawn or vended.

This type of business activity is sometimes called "drive-in" or curb service banking or vending and is becoming more common due to the wide use of automobiles for transportation and also to difficulties incident to parking the automobile.

Heretofore some attempt has been made to construct and use curb service or drive-in windows to accommodate persons in automobiles but difficulties have been encountered due to the fact that the windows in the automobiles used by the customers to be served are at various heights from the ground, and due to the fact that the height of any of the automobile windows is so low that a teller, working within a teller's box at a counter which is level with the window of the automobile, could not efficiently stand at the counter, and conversely the teller could not work effectively in a sitting position. This situation required the teller to stand at a level below the usual floor in a well formed in the area adjacent to the window. In addition to the inconvenience of standing in a well somewhat below floor level, and having to climb in and out of said well, the teller could not bring the customary cash cart into the well or place it at a height convenient for use. The result of this has been that the teller had to remove the cash boxes and check file from the cart and place them on the counter at the beginning and end of each shift. This situation was awkward, dangerous, and unnecessarily fatiguing on the teller.

Service of the nature herein contemplated includes the provision of a deposit box or drawer for the customer which can be slid outward from the wall of the teller's cage toward a parked automobile so that it will be within easy reach of the customer seated in the automobile where it is parked adjacent said wall. The outward and inward motion of the box can be made by mechanical means but I have found that it is also necessary to adjust the level at which the box operates so that it can be raised or lowered to accommodate persons seated in cars having windows of different heights. At the same time the box or drawer, when it is moved inward toward the teller, should be easily available to the teller standing on the floor of the teller's cage at the counter, and within easy access of the teller's cart.

In view of the foregoing, one of the objects of my invention is to provide a teller's cage with an outward and inwardly moving service box or drawer which can be raised or lowered to the approximate level of the sill of the window of an automobile driven adjacent to the front of the teller's cage;

Another object is to provide a service box, having in and out sliding mechanism, with additional mechanism to raise and lower the level of the drawer when in either the upward extended position, or an inwardly retracted position;

A further object is to provide a mechanical mechanism for raising and lowering the service drawer including the housing in which the service drawer slides inward and outward from the teller's cage;

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Still another object is to provide a plate extending below the housing of an inwardly and outwardly moving service drawer slidable in laterally positioned guides so that the teller's cage is at all times closed and protected below the level of the service box and, at the same time, providing transparent means extending above said housing to protect the teller and keeping the area above the service drawer closed;

Still another object is to provide mechanism for raising and lowering an outwardly and inwardly moving service drawer and means so that the occupant of the teller's cage is at all times protected by protective plates of resistant material.

Another object is to service "drive-in" customers from a drawer separated from the outside by the described mechanism so the teller may stand and work from a comfortable height without fatigue and the necessary danger of a "well."

Another object is to service all transactions from any height vehicle so that the customer may see and verify visually his money counting or other transactions as may be required.

Other objects will appear hereinafter.

I attain the foregoing objects by means of the devices, parts and combinations of parts shown in the accompanying drawings in which—

FIGURE 1 is a perspective view of the outer walls of a drive-in teller's cage embodying my improved type of service drawer;

FIGURE 2 is a front view of the service drawer and its supporting frame drawn on a somewhat enlarged scale;

FIGURE 3 is a side elevational view of the device shown in FIGURE 2 with certain parts broken out to show the interior;

FIGURE 4 is a vertical elevational view of the back of the device shown in FIGURES 2 and 3;

FIGURE 5 is a section of the structure as shown on line 5—5 of FIGURE 2 and drawn on a somewhat further enlarged scale;

FIGURE 6 is a horizontal sectional view of the top portion of the frame structure, taken on line 6—6 of FIGURE 2;

FIGURE 7 is a cross section of the lower part of the front frame, taken on line 7—7 of FIGURE 2; and

FIGURE 8 is an electrical diagram of the controls necessary to operate the service parts of the mechanism. Similar numerals refer to similar parts in the several views.

Referring to FIGURE 1, 2 indicates a portion of the outer wall of a teller's cage. The window 3 opens into a cage or inside service area of a bank or other semi-public building. Within the sill of this window, and extending below it and centrally positioned therein, there is a rectangular frame 4 which encloses the mechanism and parts which operate the in and out and vertically movable service drawer 5.

The drawer 5 slides in and out from a box-like enclosure or cover 7 which has a depending apron 29, at the back to shield the mechanism within the cover. This enclosure is supported by a plate 8 and both are raised and lowered by a screw 10. The screw is raised and lowered by a nut 12 which is revolved by a pulley 14, driven by belt 15, and driving pulley 16 on electric motor 17.

The drawer 5 slides in and out of the box-like enclosure 7 as indicated by arrows 18. This sliding motion is mechanically accomplished by a link 20 pivotally attached to the back 21 of drawer 5 and is journaled on crank pin 22 on sector gear wheel 23. This gear wheel is journaled on shaft 27, and is driven by worm 24, operative on shaft 25 of reversible electric motor 26.

While the screw 10 supports the plate 8 which, in turn, supports box 7, this plate is steadied and guided by four slide rods 30 which slide in vertical sleeve bearings 31. These sleeve bearings are attached to a transverse horizontal frame plate 32. Nut 12 is journaled in a hole in plate 32, and has an annular flange 28 at the top which bears on the upper face 33 of plate 32. A collar 12a, attached to the lower part of nut 12, has an upper face which bears on the lower face 33a of plate 32.

The above mechanism and parts are supported in a rectangular framework 34 which includes front vertical members 35, rear vertical members 36, bottom member 37 and front flange-like finish plates 38. The side members as well as top member 39 and bottom member 39a constitute the main frame 4, previously mentioned. This composite framework and frame 4 is set into the wall 2 and extends from a position above the level of the window sill 41 to the ground level 6, and from the outer face of wall 2 to the area in back of the wall.

Within framework 34 and operating in the vertical members 35 the plate 8 supporting the drawer 5 and box 7 operates up and down as indicated by arrows 51 so that drawer 5 may be moved from a lowered position indicated by dotted lines 5a to a raised position as shown by solid lines 5.

Extending downward from horizontal plate 8 and with its lateral edges sliding in grooves 45 in vertical frame members 34, there is a vertical shield plate 44 which closes lower portion of the front area of frame 4. Plate 44 is positioned above the lower closing stationary plate 46, which closes the lower portion of the area enclosed by frame 4. Plate 44 slides in back of plate 46.

Attached to the upper side of box 7 is an upwardly extending plate 49 of "Plexiglas" or other transparent substance. Both plates 44 and 49 are attached to box 7 so that they move up and down with this box. Thus, the area 47 above drawer 5 is always closed by the plate 49 and the area below the drawer is always closed by the plate 44.

Numeral 3 designates a window in wall 2 and 50 indicates the glass in this window. The lower edge of this glass is notched at 52 to accommodate and make room for the upper end portion of frame 4. The edges of the glass of the notch are fitted around the upper portions of frame 4, and "Plexiglas" plate 49 slide in grooves 54 within the upper part of members 34 of frame 4.

Since reversing motor 26 controls the in and out motion of drawer 5 it is provided with a multi-conductor cable 60 which leads to a reversing switch 73. Reversing motor 17 has a multi-conductor cable which leads to a reversing switch 70. Both cables are spliced to include movement limit switches 66 and 67 for drawer 5 and 68 and 69 for supporting plate 8.

In operation, after an automobile has driven along side of wall 2 and is stopped adjacent to drawer 5, motor 17 is operated by switch 70 to attain the correct height for the driver's window of the automobile, thereafter switch 73 is operated to push drawer 5 outward to a convenient lateral distance from the automobile window.

The use of the electrical switching arrangements to move drawer 5 in and out of box 7 and to raise and lower the plate 8 is shown in the electrical diagrammatic form in FIGURE 8. It will be noted that the motor 17 can be driven in either direction by the throw-over switch 70 which changes the polarity of the armature while the direction of electricity through the field is unaltered. The location of the limit switches is indicated in FIGURE 3 and corresponding numbers are shown in the diagram in FIGURE 8. The in and out motion of drawer 5 is produced by the crank action of pin 22 on link 20 and the sector wheel 23 is driven in either direction by the reversible motor 26. The wiring of this motor is the same as motor 17 above mentioned and as shown diagrammatically without details. Note that limit switches

66 and 67 are included in the diagram. Both motors derive power from the same source.

The switching mechanism is preferably contained in a box which can be moved conveniently and is, if desired, positioned remotely from the actual mechanism.

I claim:

1. A drive-in automobile service unit, for moving a service drawer outward and inward from the wall of a teller's cage which is behind a wall adjacent a service area, to an automobile standing in said service area, composed of an inner supporting frame and an outer rectangular frame adapted to be incorporated in the wall of the teller's cage, a horizontal plate slidably supported on said supporting frame, a box-like enclosure supported on said plate, power driven mechanism including mechanical drive means in said supporting frame for raising and lowering said plate, a service drawer slidable inwardly and outwardly from said box-like enclosure, power driven means for sliding said service drawer inwardly and outwardly from said box-like enclosure; said box-like enclosure having a depending shield plate at its forward outer end with its lateral edges sliding in vertical slots in said outer rectangular frame, said box-like enclosure having a transparent shield plate extending upwardly from its top, with its lateral edges slidably engaging in vertical grooves in said outer frame; said rectangular frame having vertical lateral members with grooves on their inner faces to slidably receive the lateral edges of said depending shield plate and transparent shield plate, respectively.

2. In a service drawer for teller clerks operating in and through a wall adjacent a drive-in service area, a main frame, a horizontal supporting plate, means for moving said supporting plate up and down within said frame, a drawer box supported on said horizontal plate, a service drawer slidably retained in said box, mechanism for moving said drawer in and out of said box, a front frame in said wall attached to said main frame having top, bottom, and side members; said side members having grooves on their inner faces, vertically disposed shield plates above and below the front portion of said box having their lateral edges slidably engaging grooves in said front frame.

3. For use in the outer wall of a drive-in teller's cage, an automobile service unit composed of an inner main supporting frame, a rectangular outer frame of rectangularly sectioned members attached to the outer end of said main frame having side, top, and bottom members, with grooves on the inner faces of said side frame members, said grooves being adjacent the outer faces of said wall throughout the lower portion of said side members and set in from the outer face of said wall throughout the upper portions of said side frame members, a box-like enclosure movably supported on said inner main supporting frame, having laterally extending flanges on its lateral edges and a depending plate attached to a lower edge and slidably engaging in the grooves in the lower portion of said rectangular outer frame members, an upstanding plate of transparent material mounted in the outer upper portion of said box-like enclosure having its lateral edges engaging in the grooves in the upper portions of the said side members of said rectangular outer frame; a service drawer slidably operative longitudinally in said box-like enclosure, and a mechanism for raising and lowering said box-like enclosure on said inner frame.

4. For use in the outer wall of a drive-in type teller's cage, an automobile service unit composed of an inner main supporting frame, a rectangular outer frame composed of members having rectangular sections attached to the outer end of said main frame and including side, top, and bottom members, said side members having grooves on the lower and upper portions of their inner faces, the grooves in the lower portions of said side

members being aligned with the plane of the outer face of said wall and the grooves in the upper portion of said side members being spaced inward from the plane of the outer front face of said wall; a box-like enclosure having a front end and a back end movably supported on said inner main supporting frame, having laterally extending flanges on its lateral edges and a depending plate attached to a lower edge, the front of said box-like enclosure having its side edges slidably engaged in the grooves in the lower portion of said rectangular outer frame members, an upstanding plate of transparent material mounted on the top of the outer upper portion of said box-like enclosure, having its lateral edges engaging in the grooves in the upper portions of the said side members of said rectangular outer frame; a service drawer slidably operative longitudinally in said box-like enclosure, and a mechanism for raising and lowering said box-like enclosure on said inner frame.

5. in a drive-in teller's cage, having a wall with an outer face, a transparent window in said wall having a notched lower edge, a sill below said window, and a vertical rectangular opening in said wall extending from ground level upward into said notch; a service unit having a vertical outer rectangular frame fitted into said notch and wall opening having lateral members provided with grooves on their inner faces, a main frame resting on the floor in back of said wall opening and attached to said rectangular frame at the front, having a vertically movable box supporting plate, a box-like enclosure movably supported on said box supporting plate of said main frame and having lateral flanges on its outer front edges and a depending plate with its edges engaging in the grooves in the lateral members of said rectangular frame, and an upstanding transparent plate attached to the outer portion of the top edge portion of said box-like enclosure having its lateral edges slidably engaging in the grooves in the lateral members of said rectangular frame; a service drawer slidably operating, by power means, longitudinally within said box-like enclosure and power driven means for raising and lowering the vertical movable supporting plate of said box-like enclosure.

6. For use in the outer wall of a drive-in teller's cage or the like, an automobile service unit comprising an inner main supporting frame, an outer frame attached to the outer end of said main frame, said outer frame incorporated in said wall, a horizontal plate vertically movable in said supporting frame, box-like enclosure means supported on said plate, a service drawer slidable inwardly and outwardly from said enclosure means, means to activate and control the vertical movement of said horizontal plate, means to activate and control the inwardly and outwardly movement of said service drawer, a shield plate extending downwardly from the forward bottom end of said box-like enclosure, a transparent shield plate extending upwardly from the forward top end of said box-like enclosure, said shield plates being vertically movable in said outer frame.

7. A four-way drive-up teller drawer for a wall of a bank building comprising, a frame having base rails to rigidly secure said frame to the floor of a building, upright members rigidly fixed to said rails, and a horizontally disposed plate fixed to the top portions of said upright members, a plurality of guide tubes fixed to and extending downwardly from the bottom surface of said plate, rotatable elevating and lowering nut means journaled on said plate for rotation about a vertical axis, a reversible carriage elevating motor fixed on said frame and connected to rotate said nut means, a vertically reciprocable carriage having a horizontal carriage plate, an elevating screw fixed at its upper end to the underside of said carriage plate extending downwardly therefrom and operatively engaging said nut means, downwardly extending guide rods fixed at their upper ends to the underside of

said carriage plate slidably guided for vertical movement in said guide tubes whereby energizing of said motor causes rotation of said nut and vertical reciprocation of said carriage plate.

8. A four-way drive-up teller drawer for a wall of a bank building comprising, a frame having base rails to rigidly secure said frame to the floor of a building, upright members rigidly fixed to said rails, and a horizontally disposed plate fixed to the top portions of said upright members, a plurality of guide tubes fixed to and extending downwardly from the bottom surface of said plate, rotatable elevating and lowering nut means journaled on said plate for rotation about a vertical axis, a reversible carriage elevating motor fixed on said frame and connected to rotate said nut means, a vertically reciprocable carriage having a horizontal carriage plate, an elevating screw fixed at its upper end to the underside of said carriage plate extending downwardly therefrom and operatively engaging said nut means, downwardly extending guide rods fixed at their upper ends to the underside of said carriage plate slidably guided for vertical movement in said guide tubes whereby energizing of said motor causes rotation of said nut and vertical reciprocation of said carriage plate, a downwardly extending closure plate fixed to the front edge of said carriage plate adapted to travel in vertical movements with said carriage plate behind a vertical opening formed in said wall of the bank building so as to at all times maintain said opening closed for any vertical position of said carriage plate, and a money drawer horizontally movable on said carriage plate into and out of said opening in said building wall.

9. A four-way drive-up teller drawer for a wall of a bank building comprising, a frame having base rails to rigidly secure said frame to the floor of a building, upright members rigidly fixed to said rails, and a horizontally disposed plate fixed to the top portions of said upright members, a plurality of guide tubes fixed to and extending downwardly from the bottom surface of said plate, rotatable elevating and lowering nut means journaled on said plate for rotation about a vertical axis, a reversible carriage elevating motor fixed on said frame and connected to rotate said nut means, a vertically reciprocable carriage having a horizontal carriage plate, an elevating screw fixed at its upper end to the underside of said carriage plate extending downwardly therefrom and operatively engaging said nut means, downwardly extending guide rods fixed at their upper ends to the underside of said carriage plate slidably guided for vertical movement in said guide tubes whereby energizing of said motor causes rotation of said nut and vertical reciprocation of said carriage plate, a downwardly extending closure plate fixed to the front edge of said carriage plate adapted to travel in vertical movements with said carriage plate behind a vertical opening formed in said wall of the bank building so as to at all times maintain said opening closed for any vertical position of said carriage plate, and a money drawer horizontally movable on said carriage plate into and out of said opening in said building wall, a transparent panel fixed to said carriage plate and extending upwardly above said drawer adapted to travel in vertical movement with said carriage plate, drawer and closure plate behind said vertical opening formed in said wall to maintain the view portion of said vertical opening closed for any vertical position of said drawer.

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