

**3,390,833**

## DEAL DRAWER

Filed Jan. 9, 1967

4 Sheets-Sheet 1

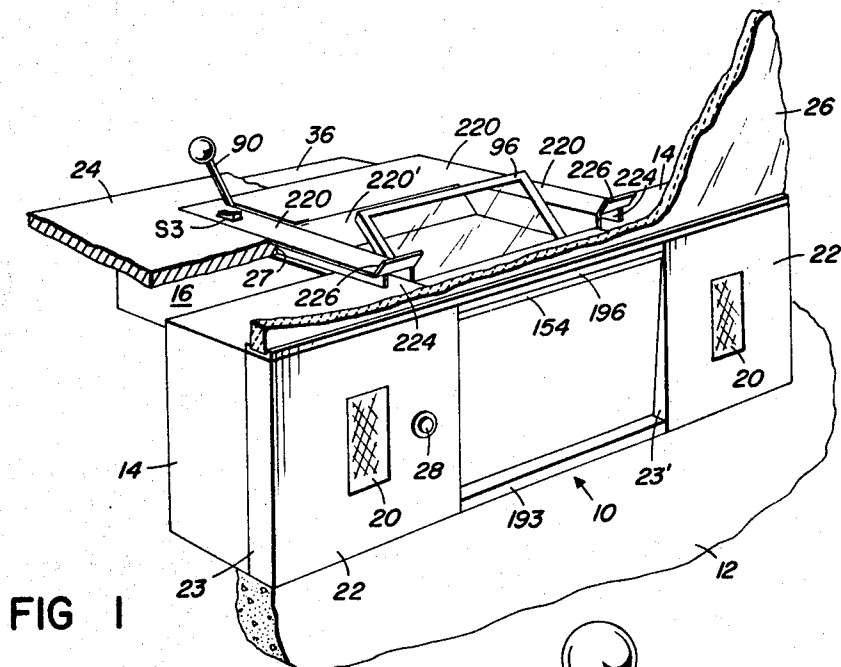


FIG. 1

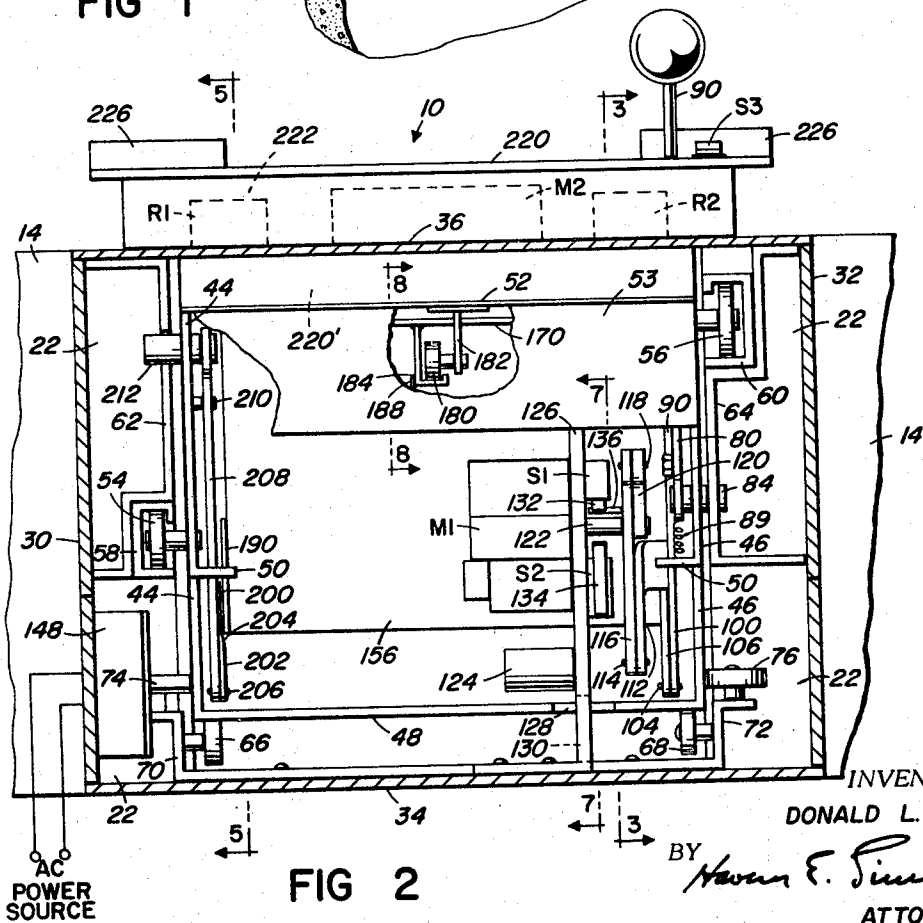


**FIG 2**

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July 2, 1968

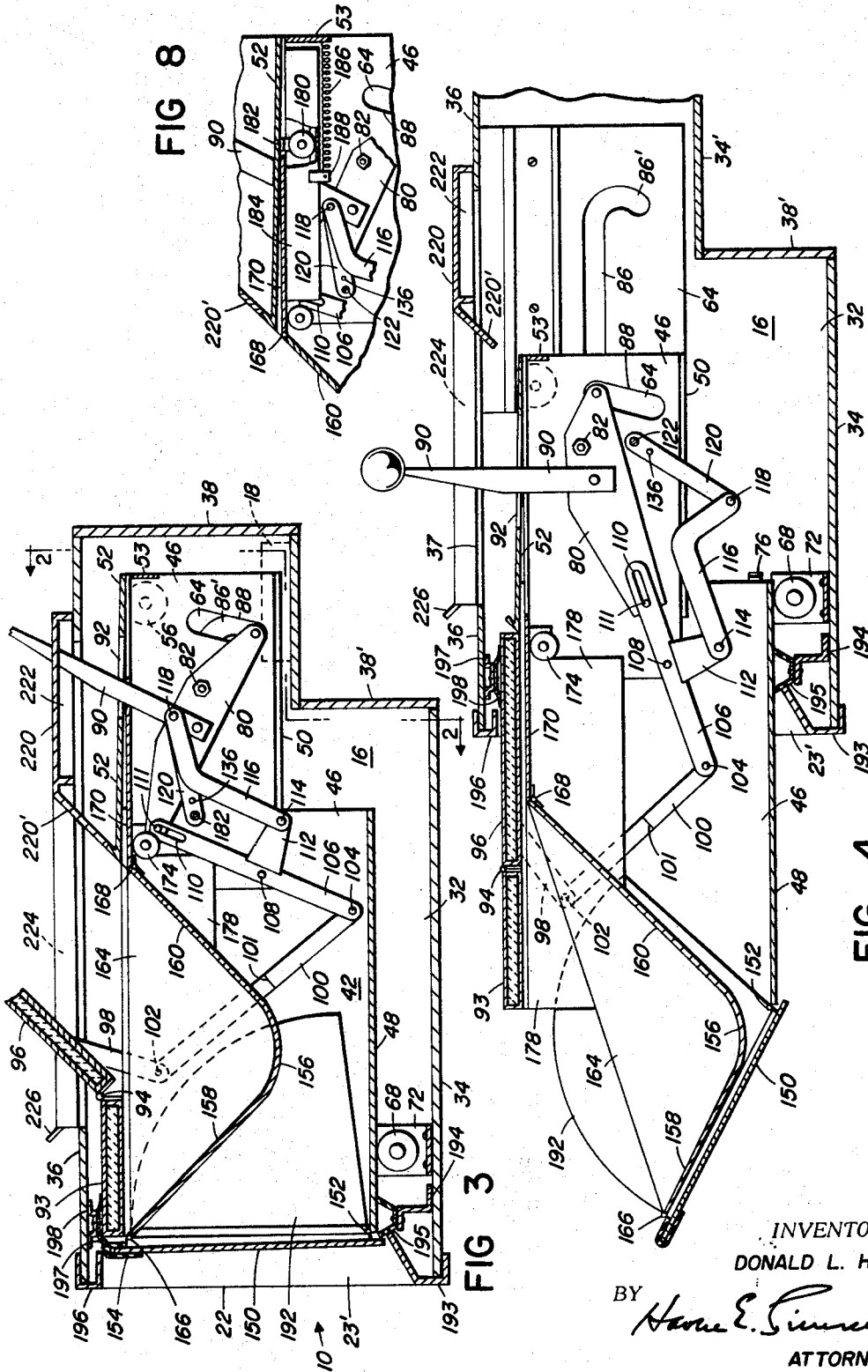
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DEAL DRAWER

Filed Jan. 9, 1967

4 Sheets-Sheet 2



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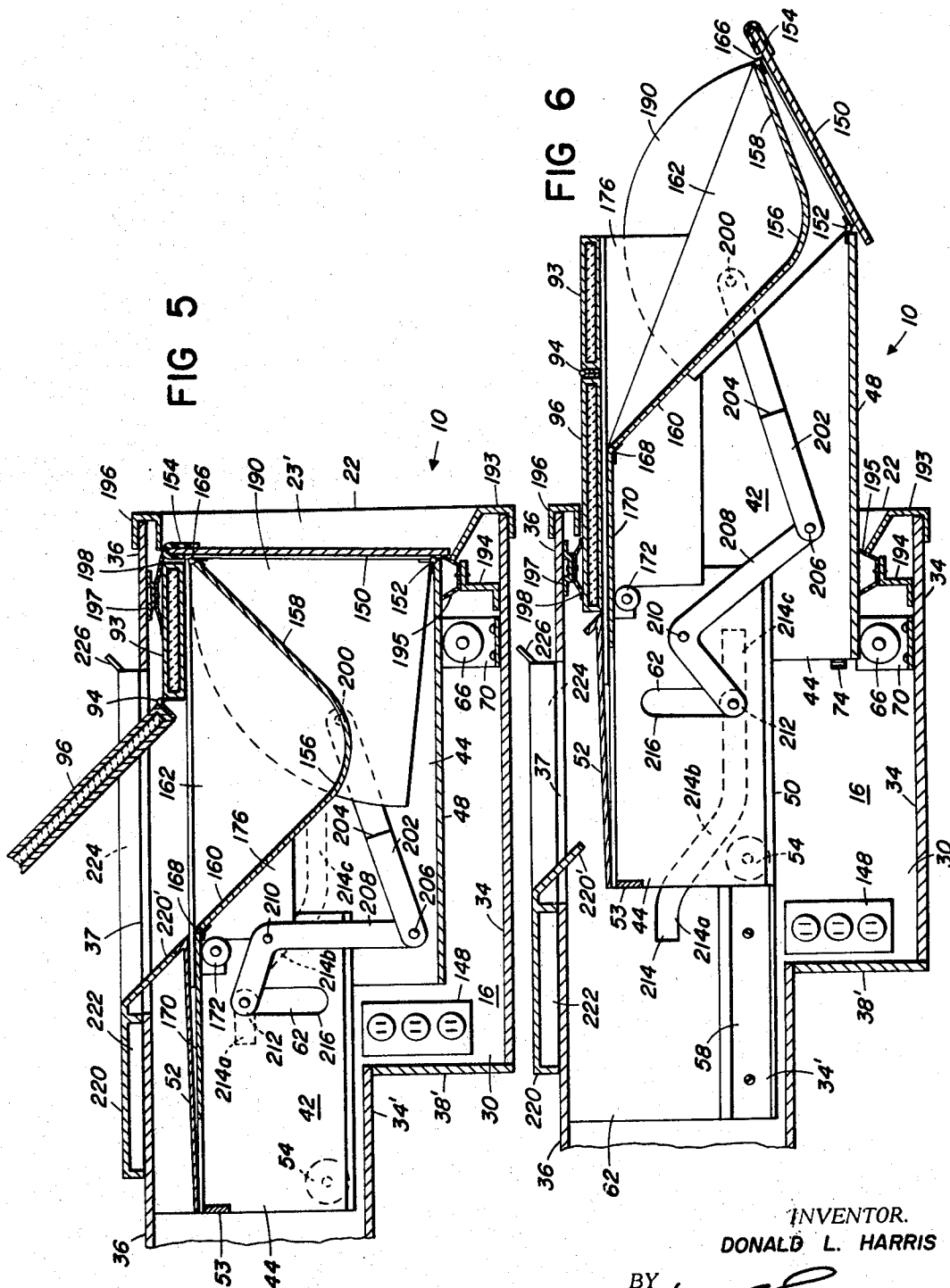
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## DEAL DRAWER

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4 Sheets-Sheet 3



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DEAL DRAWER

Filed Jan. 9, 1967

4 Sheets-Sheet 4

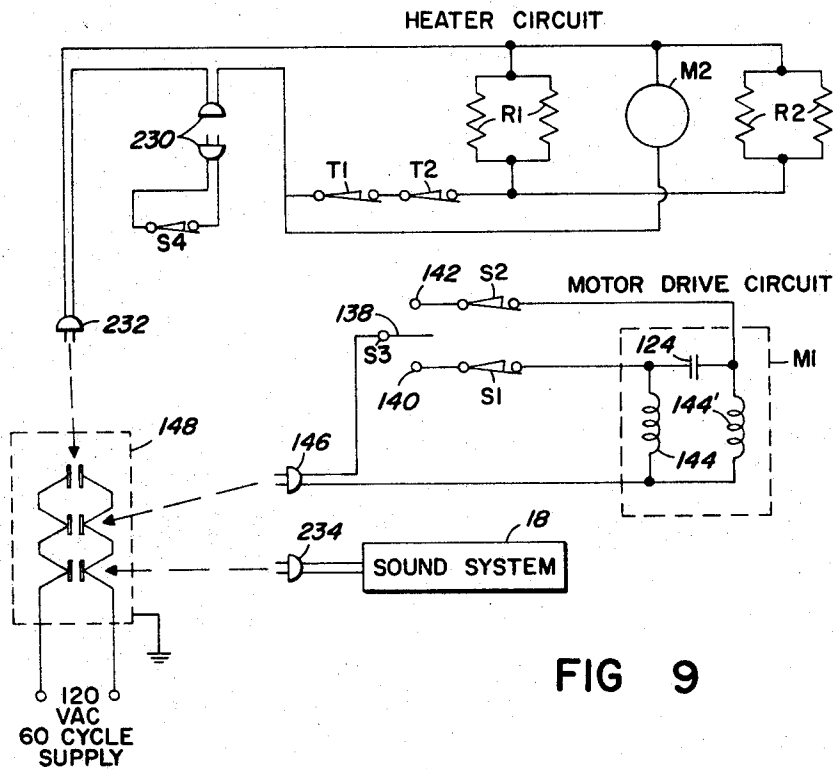


FIG 9

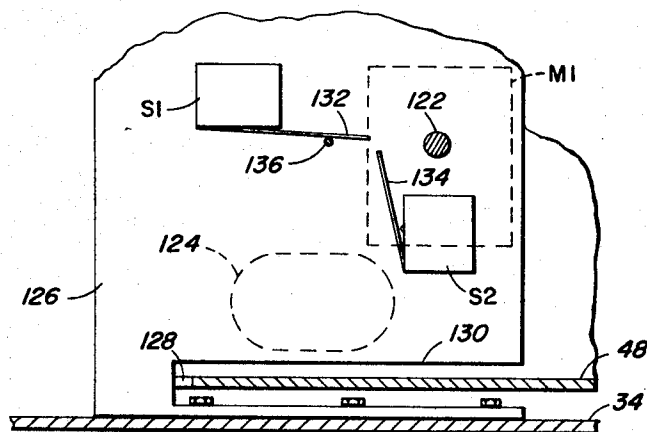


FIG 7

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3,390,833

## DEAL DRAWER

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### ABSTRACT OF THE DISCLOSURE

A deal drawer for drive-up teller windows having a stationary drawer housing, a drawer carrier slidably mounted therein for movement outwardly of the housing and a receptacle or tray hinged to the carrier to tilt outwardly and downwardly therefrom. A first linkage serves to slidably move the carrier and a second linkage concurrently to tilt the tray, all as aforesaid. An upper lid is hinged to the carrier and an outer door is hinged to both the tray and the carrier for access to the latter by the teller and the customer, respectively, the aforesaid first linkage closing the lid and the aforesaid second linkage opening the door upon outward movement of the carrier, and vice versa.

### Background of the invention

The invention concerns a further development of deal drawers of the general type disclosed in U.S. Patent 3,145,918 to Higgins et al. That patent reveals a deal drawer having a stationary drawer housing and a carrier slidably therein, the forward portion of the latter having fixed therein a receptacle or tray for receiving valuables to be transmitted between the bank teller and the customer. The tray opens to the customer by virtue of a hinged, vertical door at the forward end of the carrier and to the teller by virtue of a hinged, horizontal lid at the top of the carrier overlying the tray. A linkage, either hand or power operated, moves the carrier between the customer and teller and at the same time opens the customer door and closes the teller lid, or vice versa, depending upon whether the carrier is moved to the customer or the teller, respectively. To this extent, the present deal drawer is largely conventional, the prior art, including the aforesaid patent, illustrating many structures along these general lines.

Some drive up deal drawers of the prior art have also dealt with the problem presented by the fact that the tray or receptacle for the valuables necessarily requires the customer, to varying extents, to reach down into it owing to the fact the tray requires a front wall of sorts in order securely to contain the valuables. If the customer is seated in a car, especially one lower than the tray, to reach up and then down into the tray is not easy or convenient. Thus some deal drawers have included means by which the entire drawer may be moved vertically in order to accommodate it to the height of a customer's auto, but obviously this requires expensive and elaborate mechanism.

One attempt to deal with this problem in another way is shown in U.S. Patent 3,237,853 to Grosswiller, Jr., in which the tray is provided with a relatively low front wall just to the rear of the front door which closes the opening in the teller's booth when the drawer is fully retracted. The front door in turn is articulated with respect to the tray so that it drops downwardly, largely exposing the interior of the tray as the drawer is extended toward the customer. At the same time, the mechanism is arranged so that the drop of the front door occurs during the initial outward movement of the drawer proper in order that the latter need not be fully extended before there is full access to the tray. This lat-

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ter feature permits some adjustment of the extension of the drawer, with the front door dropped for full access to the tray, in order to accommodate customers in autos at different distances from the teller's window. Such accommodation obviously is not possible if full drop of the front door is delayed until the drawer approaches its maximum extension.

### Summary of the invention

The present invention accomplishes the same end, generally speaking, as the drawer in the Grosswiller, Jr. patent, owing to various modifications to the basic drawer of the Higgins et al. patent. Principally, these modifications include articulating the tray with respect to the drawer carrier and the front door, which in turn is hinged at its lower edge to the lower edge of the drawer carrier, so that upon outward movement of the drawer the tray is tilted somewhat forwardly and downwardly toward the customer in order better to expose its interior. In addition, a separate linkage arrangement is provided so to tilt the tray, being operated by a stationary mounted cam track which engages a follower carried by the linkage so that tilt of the tray occurs in the initial portions of the drawer's outward movement. The upper rear edge of the tray is hinged in turn to a cover plate which, as the tray moves forwardly and tilts downwardly, slides forward in order to hide the portion of the interior of the drawer assembly which would otherwise become exposed to view in the outer positions of the drawer.

The mechanism by which the drawer is propelled back and forth, somewhat similar to that in the Higgins et al. patent, employs a separate linkage arrangement operated by a stationary cam track and a cam follower carried by the linkage, the cam track having a rear portion locking the cam follower and so the drawer in its retracted position. The cam track also operates a hinged lid which overlies the tray and opens when the drawer is in its retracted position so that the teller has access to the tray, the lid being closed by the same linkage upon initial movement of the drawer toward the customer. Both manual and power operation of the drawer are provided. Manually, the drawer is pushed and pulled between its customer and teller positions, respectively, by means of an upright lever projecting above the teller's counter. For powered operation an electric motor drive operates through the same linkage, so that the drawer may be moved back and forth by hand or by power interchangeably without damaging or disconnecting either the manual or power means.

### Description of the drawings

FIGURE 1 is a perspective view of a portion of a drive-up bank teller window showing a deal drawer according to the present invention installed therein, certain parts being broken away for clarity.

FIGURE 2 is a vertical sectional view of the deal drawer itself in its retracted position taken along the line 2—2 of FIGURE 3.

FIGURE 3 is a vertical sectional view taken along the line 3—3 of FIGURE 2, showing the drawer and lid operating linkage.

FIGURE 4 is similar to FIGURE 3 but illustrating the deal drawer in its extended position.

FIGURE 5 is a vertical sectional view taken along the line 5—5 of FIGURE 2 showing the tray operating linkage.

FIGURE 6 is similar to FIGURE 5 but illustrating the deal drawer in its extended position.

FIGURE 7 is a fragmentary vertical sectional view taken along the lines 7—7 of FIGURE 2 showing details of the motor drive.

FIGURE 8 is a fragmentary vertical sectional view taken along the line 8—8 of FIGURE 2.

FIGURE 9 is a schematic illustration of the electrical circuit for the deal drawer.

*Description of a preferred embodiment of the invention*

Turning first to FIGURE 1, the deal drawer assembly, generally indicated at 10, is horizontally disposed in a teller's booth of any suitable nature having an outer opaque wall 12 through which the outer end of the drawer 10 extends. The latter also includes a pair of boxed enclosures 14 laterally mounted at each side of the drawer sleeve or housing 16 and containing the audio members of a sound system, disposed in the rear of housing 16 and diagrammatically indicated at 18 in broken lines in FIGURE 3 only, which open through grilles 20 in a pair of front covers 22 having short side walls 23, 23' enveloping enclosures 14. The drawer assembly 10 is positioned below the teller's counter 24 which extends horizontally inwardly from outer wall 12 and is surrounded in turn at its outer end by a window structure 26 in usual fashion, the top of drawer assembly 10 being exposed through a suitable opening 27 in counter 24. A push button 28 is mounted on the outer face of one of the covers 22 in order for the customer to signal the teller. Other details of the teller's booth and the mounting of drawer assembly 10 therein are conventional and need not be described inasmuch as they play no part in the present invention.

The drawer sleeve or housing 16 (see FIGURES 2-6) is generally rectangular in section and comprises sidewalls 30 and 32, upwardly stepped at their rear ends in order to provide knee-space for the teller when seated, bottom walls 34 and 34' and a top wall 36 having a centrally located opening 37 therein, the rear of housing 16 being closed by removable end plates 38 and 38', the former of which may also carry the controls (not shown) for the sound system and the optional heating and defrosting systems. Within the housing 16 is disposed a generally rectangular drawer carrier 42 having fabricated sidewalls 44 and 46, upwardly stepped at their rear ends similar to sidewalls 30 and 32 of housing 16, and a bottom wall 48 at the lower forward portions of sidewalls 44 and 46, the upper rear stepped portions of the latter having inwardly turned flanges 50 along their lower edges. The rear portion of carrier 42 to just forward of the rear edge of opening 37 in the top wall 36 of housing 16 is covered by a top wall 52 while the rear end is left open for access except for an upper transverse reinforcing bulk-head 53. The carrier 42 is slidably suspended by means of two pairs of drawer-type rollers, one pair 54 and 56 being horizontally pivoted adjacent the bottom and top of the rear ends of sidewalls 44 and 46, respectively. Rollers 54 and 56 operate in a pair of parallel tracks 58 and 60, respectively, horizontally mounted in stepped recesses along the respective bottom and top edges of a pair of fabricated channel shaped brackets 62 and 64. The latter are fixed appropriately to the inner faces of sidewalls 30 and 32, respectively, of housing 16, the inboard faces of their channels being parallel to and closely spaced from the outboard faces of carrier sidewalls 44 and 46. The other pair of rollers, 66 and 68, are horizontally pivoted on inverted L-shaped brackets 70 and 72 fixed to the bottom housing wall 34 adjacent its forward end so that they bear against the lower face of the carrier bottom wall 48 throughout its travel. A pair of guide rollers 74 and 76 are vertically pivoted to the upper horizontal portions of brackets 70 and 72, respectively, so that they bear against the carrier sidewalls 44 and 46.

The carrier 42 is operated by a linkage arrangement now to be described. An elongated, irregularly shaped crank arm 80 is disposed in a rearwardly inclined position (see FIGURE 3) and journaled on a transverse trunnion 82 adjacent the rear end of arm 80 fixed to

the inboard face of carrier sidewall 46. The latter end of arm 80 carries a horizontally pivoted cam follower 84 (see FIGURE 2) extending outboardly through sidewall 46 and engaging a cam track 86 formed in the opposed face of channel bracket 64. The rear end of cam track 86 is hooked at 86', curving first upwardly and rearwardly and then forwardly, the forward remainder thereof following a rectilinear path to the front end of bracket 64. A suitably inclined slot 88 is cut in sidewall 46 in order to permit cam follower 84 to follow the hooked section 86' of cam track 86. Thus initial clockwise rotation, with respect to FIGURE 3, of crank arm 80 to the position shown in FIGURE 4 releases carrier 42 from its locked position at the bottom of the locking section 86' of cam track 86 and permits it thence to be moved forward to its maximum extension from housing 16, suitable stops (not shown) abutting the rear edges of brackets 70 and 72. In order to retain cam follower 84 in its locked position, an extensible spring 89 is secured between the rear end of arm 80 and the adjacent flange 50 of carrier sidewall 46 for reasons hereafter noted. Manual rotation of crank arm 80 and extension of carrier 42 is achieved by means of an upstanding hand lever 90 which is fixed to arm 80 and protrudes through an elongated slot 92 in top wall 52, in order to permit rotation of lever 90 about trunnion 82, and the opening 37 in top wall 36.

The top portion of carrier 42 just forward of the opening 37 in the housing top wall 36, when referring to the retracted position of carrier 42 shown in FIGURE 3, is closed by a fixed, framed transparent top plate 93 extending rearwardly somewhat beyond the rear edge of the forward portion of housing top wall 36. To the rear edge of top plate 93 is hinged at 94 the forward edge of an upwardly opening framed teller lid 96, identical in structure to top plate 93, which when closed extends rearwardly to the forward edge of top wall 52. From one side edge of teller lid 96 an arm 98 is fixed thereto and inclines downwardly and forwardly therefrom just inboard of carrier sidewall 46. A link 100, slightly cranked inboardly at its mid-portion 101, is horizontally pivoted at 102 to the lower end of arm 98 and inclines downwardly and rearwardly therefrom. The lower end of link 100 in turn is horizontally pivoted at 104 to the lower forward end of an upwardly and rearwardly inclined (with respect to FIGURE 3) rock arm 106 horizontally pivoted at 108 at its mid-section to the inboard face of carrier sidewall 46. The upper end of arm 106 is provided with a longitudinally extending lost-motion slot 110 which slidably engages a pin 111 transversely disposed in the forward end of arm 80. The lengths of arms 98 and 106, link 100 and the lost-motion slot 110 are so arranged that when arm 80 is in the position shown in FIGURE 3, the lid 96 is maintained in its open position owing to the counterbalancing provided by spring 89, but as arm 80 is rotated counterclockwise clear of the locking section 86' of cam track 86, the teller lid 96 is closed before any substantial forward motion of carrier 42 occurs, thus preventing any interference between the lid 96 and the forward portion of housing top wall 36 as carrier 42 is extended.

Powered operation of the carrier 42, which is optional but often preferred, is achieved through an inboardly offset tang 112 depending from rock arm 106 just below its pivot 108. To the lower end of tang 112 is horizontally pivoted at 114 the forward end of a downwardly cranked link 116 whose other end is horizontally pivoted at 118 to the lower end of an inclined motor arm 120 fixed at its other end to the outboard end of the transverse horizontal shaft 122 of a reversible electric motor M1. The latter includes an integral reduction gear box and is of the low torque type so that it may be halted or even driven by shaft 122 without damage. Motor M1 and its starting capacitor 124 are mounted on the inboard face of an L-shaped bracket 126, shaft 122 extending therethrough to arm 120, fixed to housing bottom wall 34 and extend-

ing upwardly into the open rear of carrier 42 by virtue of a forwardly extending slot 128 in the rear edge of carrier bottom wall 48 and a cooperating rearwardly extending slot 130 in the forward upstanding edge of bracket 126, slots 128 and 130 accommodating movement of carrier 42 relative to bracket 126. The outboard face of bracket 126 carries a pair of limit, normally closed micro-switches S1 and S2 disposed so that the actuating arm 132 of S1 opens the latter upon contacting a transverse pin 136 extending inboardly from arm 120 closely adjacent shaft 122 when carrier 42 is moved to its retracted position, and the actuating arm 134 of S2 opens the latter upon contacting pin 136 upon completion of rotation of arm 120 on shaft 122 when carrier 42 reaches its extended position.

Motor M1 is manually controlled through a single pole, double throw three-position switch S3 whose switch member 138 is movable between two contacts 140 and 142 in series, respectively, with S1 and S2. The latter, in turn, are wired in parallel to the two windings 144, 144' in motor M1, all as indicated in FIGURE 9. Switch member 138 incorporates a snap action so that when moved to contact 140 it remains closed therewith, and a momentary action, requiring continuing pressure to maintain contact, when moved to contact 142 for reasons which will appear. Switch member 138, in turn, is wired in series with a suitable plug 146 which is removably connected to a triple outlet 148 disposed against the lower rear portion of housing sidewall 30 and permanently wired into a power supply source. Accordingly, when carrier 42 is in its retracted position, motor M1 is inactive because switch member 138 is either in its centered position or, if closed with contact 140, S1 is open owing to pin 136 as shown in FIGURE 7. When switch member 138 is held closed with contact 142, motor M1 is energized, since S2 is closed, rotating shaft 122 and arm 120 clockwise (with respect to FIGURE 3). Crank link 116 and tang 112 thereby rotate rock arm 106 about its pivot 108 closing teller lid 96 and rotating arm 80 about its pivot 82 by virtue of lost-motion slot 110 and pin 111, thus freeing cam follower 84 from the rear locking section 86' of cam track 86. Thereafter, continued rotation of arm 120 moves carrier 42 and its aforesaid linkage forward as a unit to its extended position as shown in FIGURE 4, whereupon S2 is opened by pin 136 and motor M1 deenergized. Carrier 42 may be readily halted at any intermediate position simply by releasing switch member 138, thus returning it to its centered position. Closing switch member 138 with contact 140 reverses the above sequence at any forward position of carrier 42 and retracts the latter, opens lid 98 and locks follower 84 in the locking section 86' of cam track 86, whereupon S1 opens and motor M1 is again deenergized. Note that throughout powered operation of carrier 42 in either direction, its progress can be easily halted by hand lever 90 or by some obstruction in front of carrier 42 without damage to either owing to the nature of motor M1.

The valuable receptacle or tray and its operating mechanism will now be described. A door plate 150, somewhat wider than carrier 42, is horizontally hinged at 152 to the forward edge of carrier bottom wall 48 so that door 150 opens outwardly and downwardly therefrom to expose the interior of the forward end of carrier 42. Door 150 is extended downwardly somewhat from hinge 152 toward housing bottom wall 34 and is provided along its top edge with a suitable protective bumper strip 154. Just to the rear of door 150 and within the forward end of carrier 42 is disposed the receptacle or tray 156, somewhat narrower than door 150, having gently sloping front and rear walls 158 and 160, respectively, and flat side or end walls 162 and 164. When carrier 42 is in its retracted position, the forward portion of tray 156 is overlaid by top plate 93 while the rear wall 160 of tray 156 terminates at the forward edge of carrier top wall 52, thus rendering tray 156 accessible through teller lid 98.

The upper edge of tray front wall 158 is horizontally hinged at 166 to the rear face of door 150 just below bumper 154 and the upper edge of tray rear wall 160 is horizontally hinged at 168 to the forward edge of a sliding cover plate 170 horizontally disposed upon a pair of rollers 172 and 174 just below the forward edge of carrier top wall 52. Rollers 172 and 174 are horizontally pivoted at the upper rear corners of the inboard faces of a pair of rectangular side plates 176 and 178 secured to and slightly spaced from the inboard faces of the upper forward portions of carrier sidewalls 44 and 46, respectively, plates 176 and 178 extending forward to the front end of carrier 42 with arm 98 and the forward cranked portion of link 100 lying between carrier sidewall 46 and side plate 178. Movement of cover plate 170 is further guided by a roller 180 centrally disposed between carrier sidewalls 44 and 46 and horizontally pivoted to a T-shaped bracket 182 depending from carrier top wall 52 just behind cover plate 170. Roller 180 engages a forwardly extending guide track 184 fixed to the underside of cover plate 170 (see FIGURES 2 and 8), and an extensible spring 186 is secured between a depending tang 188 on track 84 and the bulk-head 53 of carrier 42 in order to counterbalance the weight of door 150.

Accordingly, as door 150 is opened on its hinge 152, tray 156 is tilted forwardly and downwardly about its hinges 166 and 168 with respect to the forward end of carrier 42, rendering the interior of tray 156 more accessible to the customer. At the same time, cover plate 170 is slid forwardly on its rollers 172, 174 and 180 to cover the portion of the interior of carrier 42 beneath teller lid 98 between the upper edge of tray rear wall 160 and the forward edge of carrier top wall 52 which would otherwise be visible through teller lid 98 (see FIGURES 3-6). Concurrently therewith side plates 176 and 178 prevent access to the interior of carrier 42 over and around the end walls 162 and 164 of tray 156. In order to protect the interior of carrier 42 from the wind, a pair of arcuate shields 190 and 192 are vertically secured to door 150 just outboard of tray end walls 162 and 164, respectively, so that they emerge with door 150 and tray 156 from the spaces between carrier sidewalls 44 and 46 and side plates 176 and 178, respectively. The remaining gaps between housing sidewalls 30 and 32 and the ends of door 150, in turn, are closed by the inboard edges of front covers 22, their sidewalls 23' closely abutting the ends of door 150 when carrier 42 is retracted, suitable weatherstripping (not shown) being provided between carrier sidewalls 44 and 46 and the inner portions of sidewalls 23' behind door 150. The space between housing and carrier bottom walls 34 and 48 is partially sealed by a capping 193 fitted over the forward end of bottom wall 34 having an upper inclined portion extending closely adjacent the lower edge of door 150. Just to the rear of capping 193 a Z-shaped bracket 194 mounted to bottom wall 34 supports a strip of suitable weatherstripping 195 in contact with bottom wall 48 and against which door 150 abuts when closed. Likewise, the space between top plate 93 and housing top wall 36 is sealed by a capping 196 just to the rear of which is a hat-section bracket 197 carrying a strip of suitable weatherstripping 198 in contact with top plate 93 and against which door 150 abuts when closed.

A kind of "slave" linkage, as shown in FIGURES 5 and 6, operates door 150, tray 156 and cover plate 170 upon movement of carrier 42. To the outboard face of shield 190 is horizontally pivoted at 200 the forward end of a link 202 slightly inboardly cranked at 204 at its mid-portion. To the rear of link 202 is horizontally pivoted at 206 the lower end of a crank arm 208 horizontally pivoted in turn at 210 at its crank elbow to the carrier sidewall 44. The rear end of crank arm 208 is provided with a rotatable cam follower 212 which extends outboardly through carrier sidewall 44 and engages a cam track 214 formed in the opposed face of channel bracket

62. Cam track 214 comprises two offset horizontally extending portions, a short upper rear section 214a and a longer lower forward section 214c, both parallel to the direction of movement of carrier 42 and connected by an intermediate S-shaped section 214b. Link 202, arm 208, their pivots 200, 206 and 210, and cam track 214 are all so arranged that, after closure of teller lid 98 by crank arm 80, the initial forward movement of carrier 42 will cause cam track section 214b to rotate cam follower 212 and arm 208 counterclockwise (with respect to FIGURES 5 and 6) about pivot 210, a vertical slot 216 in carrier sidewall 44 accommodating the vertical component of cam follower 212's movement along cam track section 214b. Accordingly, door 150 and tray 156 are swung outwardly, the cam track section 214c maintaining door 150 and tray 156 in their latter position during the remaining outward movement of carrier 42. Thus, movement of carrier 42, by either hand lever 90 or motor M1, between its retracted and extended positions will produce a concurrent opening and closing of door 150 accompanied by tilting of tray 156 and movement of cover plate 170 in the manners described.

It is also preferable in many instances to provide deal drawer 10 with a heating and defrosting system. For this purpose, housing top wall 36 is surmounted by and forms a part of a U-shaped duct arrangement fitted in the countertop opening 27 and surrounding the rear and side edges of housing top wall opening 37, the top walls 220 of the ducts being flush with the top surface of counter 24 (see FIGURE 1). The duct arrangement includes a transverse rear duct 222 having a forwardly extending portion 220' of its top wall 220 which slopes downwardly to closely adjacent the forward edge of top wall 52 when carrier 42 is in its retracted position (see FIGURES 2, 3 and 5). A pair of ducts 224 are laterally fed at their rear ends from duct 222 and extend forwardly along the sides of counter opening 27 and teller lid 98, opening just rearward of window 26 and provided with deflectors 226 for directing warm air against the latter. The heating circuit (see FIGURE 9) includes two pairs of heater elements R1 and R2 wired in parallel with respect to each other through a pair of series related, thermo overload switches T1 and T2 having successively increased circuit opening temperatures. A blower motor and fan M2 is wired in parallel with R1 and R2 on one side and in shunt with T1 and T2 on the other so as to be operative even when T1 or T2 is open. Motor and fan M2 and heater elements R1 and R2 are contained within the transverse rear duct 222 as diagrammatically indicated in FIGURE 2, the fan drawing upwardly through a suitable opening (not shown) in housing top wall 36. An activating switch S4, which may be mounted on end plate 38, is detachably wired at 230 in series with the power supply lines to R1, R2 and M2, the latter lines terminating in a plug 232 removably connected to outlet 148. The sound system 18 is also preferably removably connected to outlet 148 by means of a plug 234.

Though the invention has been described in terms of a preferred embodiment, that being the best mode contemplated for carrying out the invention, it is not so limited. Instead, the following claims should be read as encompassing all modifications and adaptations of the invention falling within the spirit and scope thereof.

I claim:

1. In a deal drawer assembly for bank teller windows, including a drawer housing and a drawer carrier spaced within and carried by said housing for sliding movement between positions in which said carrier is either retracted within or extended from said housing, said carrier having a forward portion spaced forwardly of said housing when said carrier is in its extended position, a top opening in said carrier for access to said forward carrier portion and a top opening in said housing for access to said forward carrier portion through said carrier top opening when said carrier is in its retracted position, and a door

effective to close the forward end of said forward carrier portion when in said retracted position, said door being pivoted to said carrier to open outwardly and downwardly to expose the interior of said forward carrier portion, the improvement comprising: an upwardly opening receptacle tray disposed within said forward carrier portion and movable therewith between said retracted and extended positions, the interior of said tray being accessible through said top openings of said housing and said carrier when in said retracted position, said tray having a front wall pivoted to said door above the pivot of the latter to said carrier, said tray and its door pivot being effective to tilt said tray forwardly and downwardly relative to said carrier when said door is opened as aforesaid; first means effective to move said carrier between said retracted and extended positions; and second means operative upon movement of said carrier toward its extended position to open said door and tilt said tray as aforesaid and to close said door and restore said tray upon movement of said carrier to its retracted position.

2. The combination of claim 1 wherein said first means includes a first linkage carried by said drawer carrier and a first cam track carried by said drawer housing, said cam track having a rectilinear forward portion parallel to said carrier movement and a rear hooked locking portion, said linkage including an elongated crank arm pivoted intermediate its ends to said carrier transversely of the direction of movement of the latter, one end of said arm being provided with a cam follower engaging and following said cam track when said arm is first rotated about said pivot and said carrier is thereafter moved from its retracted to its extended position.

3. The combination of claim 2 wherein said carrier includes a horizontal lid pivoted along a forward edge to said carrier to open upwardly and effective when closed to close said carrier top opening; and a second linkage operatively connected to said lid and said crank arm effective to positively maintain said lid in its open position when said carrier is in its retracted position and to close said lid upon rotation of said arm along said locking cam track portion when said carrier is moved to its extended position.

4. The combination of claim 3 wherein said drawer housing includes reversible power means carried by said housing having a drive shaft; and a third linkage operatively connected to said shaft and to the other end of said crank arm effective first to cause said rotation thereof and thereafter movement of said carrier from its retracted to its extended position.

5. The combination of claim 4 wherein said second means is separate from said first means and includes a fourth linkage carried by said drawer carrier and a second cam track carried by said drawer housing, said linkage being operatively connected to said cam track and to said tray.

6. The combination of claim 5 wherein said fourth linkage and second cam track are effective to open said drawer and tilt said tray as aforesaid during the initial portion of the movement of said carrier from its retracted toward its extended position.

7. The combination of claim 1 wherein said second means is separate from said first means and includes a first linkage carried by said drawer carrier and a first cam track carried by said drawer housing, said linkage being operatively connected to said tray and including a cam follower operatively associated with said cam track, said cam track and linkage being effective to open said door and tilt said tray as aforesaid during the initial portion of the movement of said carrier from its retracted toward its extended position.

8. The combination of claim 7 wherein said tray includes a rear wall pivoted adjacent the forward edge of a rearwardly extending cover plate, said plate being disposed to the rear of said carrier top opening when

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said carrier is in its retracted position and effective to move slidably forward when said door is opened and said tray is tilted upon movement of said carrier toward its extended position as aforesaid, said cover plate when in its forward position covering the portion of said carrier top opening rearward of the rear wall of said tray.

9. The combination of claim 8 wherein said first means includes a second linkage carried by said drawer carrier and a second cam track carried by said drawer housing, said second cam track having a rectilinear forward portion parallel to said carrier movement and a rear hooked locking portion, said linkage including an elongated crank arm pivoted intermediate its ends to said carrier transversely of the direction of movement of the latter, one end of said arm being provided with a cam follower engaging and following said cam track when said arm is first rotated about said pivot and said carrier is thereafter moved from its retracted to its extended position; a transparent horizontal lid pivoted along a forward edge to said carrier to open upwardly and effective when closed to close said carrier top opening; and a third linkage operatively connected to said lid and said crank arm effective to maintain said lid in its open position when said carrier is in its retracted position and to close said lid upon rotation of said arm along said locking cam track portion when said carrier is moved to its extended position.

10. The combination of claim 9 wherein said crank arm is provided with an upstanding manually operated lever extending above said drawer housing, a forwardly directed effort upon said lever being effective first to rotate said arm as aforesaid and thereafter to move said carrier to its extended position.

11. The combination of claim 10 wherein said drawer

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housing includes a reversible electric motor carried by said housing having a drive shaft; and a fourth linkage operatively connected to said shaft and to the other end of said crank arm effective first to cause said rotation thereof and thereafter movement of said carrier from its retracted to its extended position.

12. The combination of claim 11 wherein an electrical control circuit is provided for said motor, said circuit including first switch means in series with said motor having a pair of first and second alternate contacts and a circuit closing and opening member, said member having a normally circuit open position with respect to both of said contacts and a biased circuit closed position with respect to the second only of said contacts, said first and second contacts being connected in parallel with respect to each other to said motor for operation thereof to move said carrier to its extended and retracted positions, respectively; first and second normally closed limit switch means in series with said first and second contacts, respectively, and said motor; and means operable when said carrier is in its extended and retracted positions to open said first and second limit switch means, respectively.

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