United States Patent [19]

Garner

[11] **3,726,472**

[45] **Apr. 10, 1973**

[54] PARKING LOT DEPOSITORY

[76] Inventor: **Kerry E. Garner,** 29 Don Drive, Little Rock, Ark. 72209

[22] Filed: **Oct. 22, 1971**

[21] Appl. No.: **191,652**

[52] **U.S. Cl.** ..... **232/1 R**

[51] **Int. Cl.** **G07b 15/00**

[58] **Field of Search** ..... 232/1 R, 7, 1 D, 232/14, 12, 57, 59, 58, 55; 312/107.5

[56] **References Cited**

UNITED STATES PATENTS

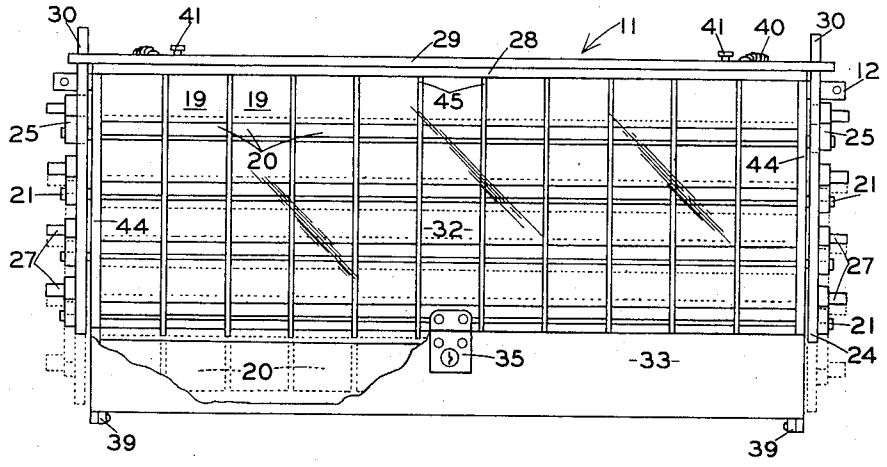
3,542,283	11/1970	Perrill	232/1 R
683,852	10/1901	Ferry	312/107.5
3,005,671	10/1961	Majeski	312/216
368,697	8/1887	Wollensak	312/216
1,047,587	12/1912	Stewart	232/15
3,295,755	1/1967	Gold	232/1 R
3,268,158	8/1966	Abbott	232/1 R
3,181,780	5/1965	Abbott	232/1 R
344,729	6/1886	Dryden	232/57

Primary Examiner—Francis K. Zugel
Attorney—Ralph R. Pittman

[57] **ABSTRACT**

A parking lot fee depository, particularly suitable for use in large parking lots, has an inner currency receiver contained within a strongbox. The inner receiver has a large array of compartments in communication with associated currency-depositing slots in one vertical wall of the strongbox. Swingably mounted floor gates of the compartments are operable between an upper downwardly-sloping currency-retaining position and an additionally downwardly-sloping currency-discharging position from which the currency in all of the compartments is simultaneously emptied into a cash drawer, the sloping floor gate construction enabling the handling of both metal and folded paper currency. Control of the floor gates is effected with actuating mechanisms at each end of the receiver cooperating with a common latch member disposed along the top of the receiver.

8 Claims, 8 Drawing Figures



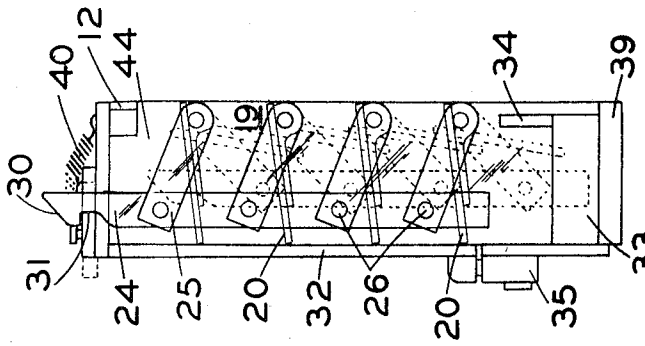


FIG. 3

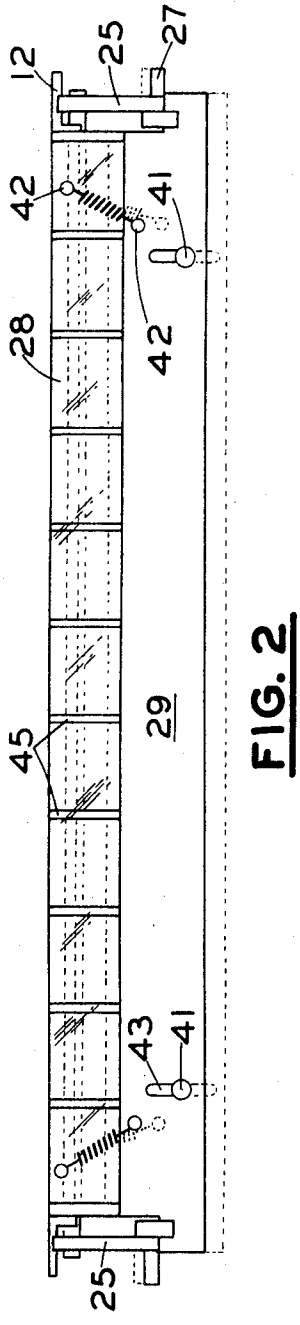


FIG. 2

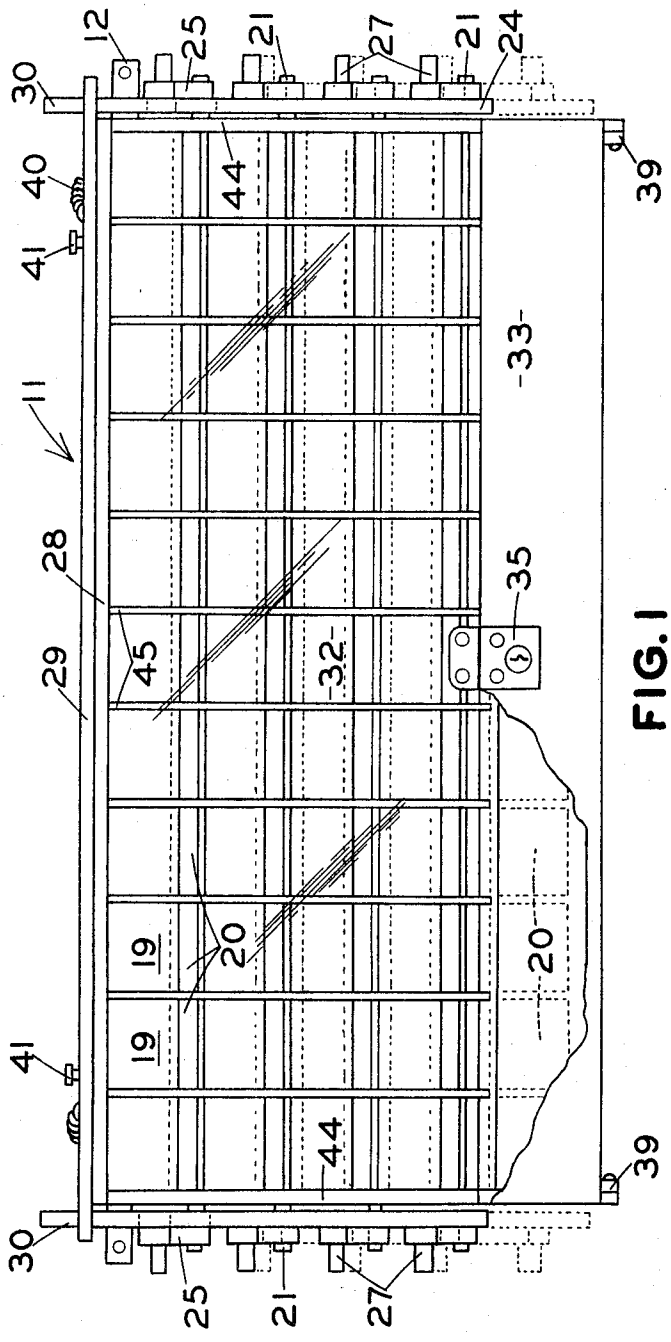


FIG. 1

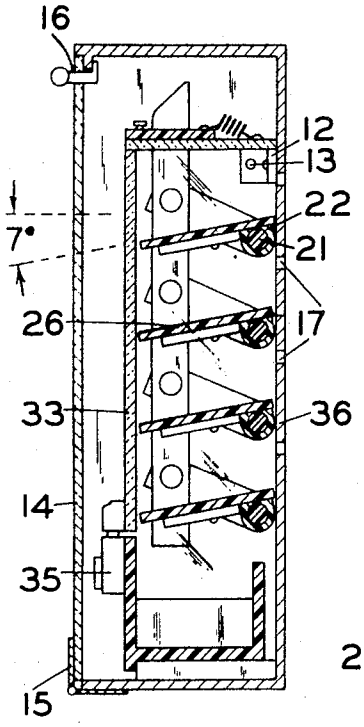


FIG. 5A

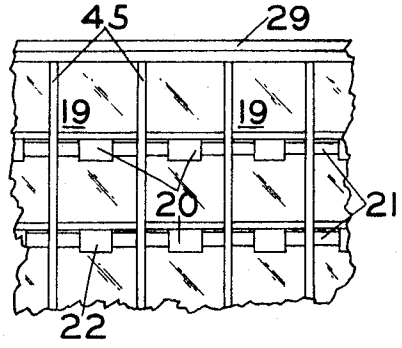


FIG. 6

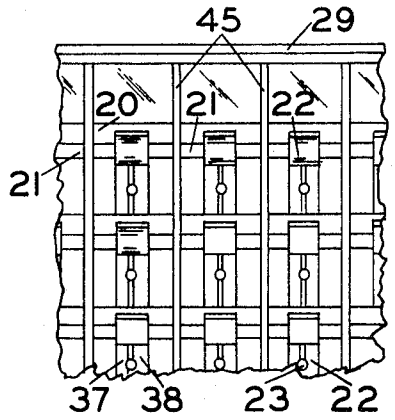


FIG. 7

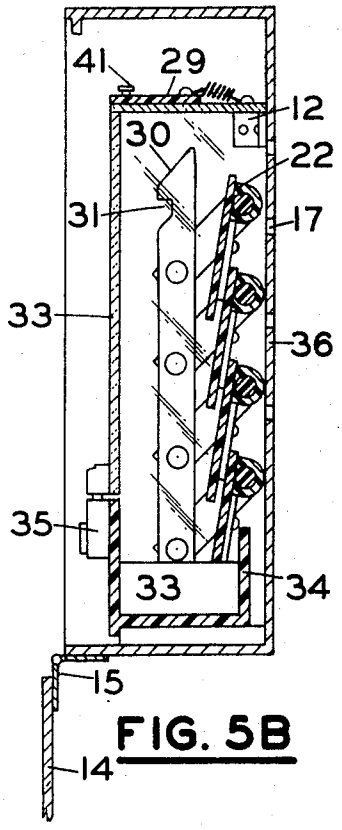


FIG. 5B

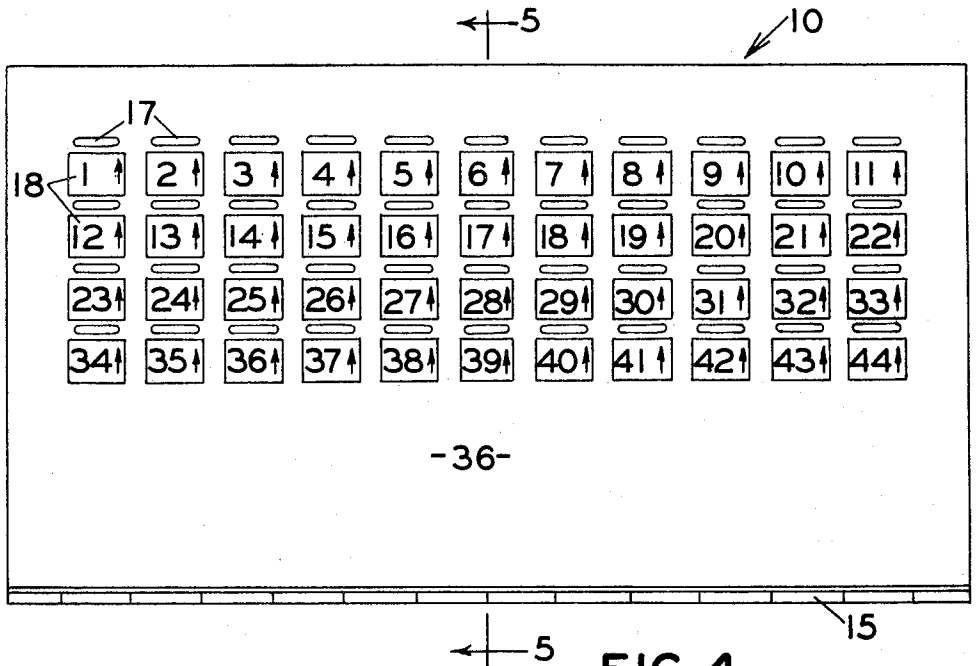


FIG. 4

PARKING LOT DEPOSITORY

BACKGROUND OF THE INVENTION

For use in automobile parking lots not having an attendant continuously available, several slot-deposit types of coin collector boxes are available for receiving parking fees. This invention relates specifically to a parking lot depository embodying a novel construction particularly useful in parking lots having a large number of numbered or otherwise designated parking spaces.

The structure of the present invention also enables the depository to handle paper money in the same way as metallic money; presently available coin boxes being suitable only for handling coins, or requiring an additional and individual container for receiving paper currency.

Parking lot collection boxes heretofore, along with other coin handling constructions, embody springs of some sort to hold the usual floor plates, gates or vanes in the closed position; a construction well adapted to small boxes, in which the gates are moved to the open position against the bias of the associated gate-holding spring and only a small number of gates are required. For large parking lots requiring many gates operated by long rocker rods, the spring construction is undesirable because of the large force applied to the movable members during the deformation of the heavy spring or springs necessary to cause gate movement.

SUMMARY OF THE INVENTION

Herein is described a multiple-compartment currency-collecting structure with an inner receiver in which the floor gates of each compartment fall open in unison when released, and in which a right-hand or a left-hand lifting mechanism at the respective ends of the receiver are available to facilitate swinging the floor gates from the open to the closed position, the release member being common to both of the lifting mechanisms.

The opening movement of the floor gates in the present invention is aided by sloping the floor gates in a direction to effect the movement of deposited money to that end of each gate which is farthest removed from its pivotal mounting, thereby enabling the use of the weight of the currency at the most advantageous lever arm to cause rotary opening movement of the gates following their release.

An additional advantageous result is attained by further modifying the floor-gate slope to the inclination necessary to cause folded paper currency to slide along the gate away from the mounting end, it being well known that paper currency deposited on horizontal floor gates is often retained on the upper end of an open gate rather than accompanying the metal coins as they readily slide off of any opening floor gate.

In addition, there is described herein a compartmented depository having swingable floor gates for emptying the compartments into an associated cash drawer, the floor gates cooperating with the cash drawer to preclude either withdrawal or insertion of the cash drawer when the floor gates are in the open or currency-discharging position. This construction assures that a messenger will be unable to withdraw or reinsert the cash drawer unless the floor gates have been lifted to the currency-retaining position.

IN THE DRAWINGS

FIG. 1 is a rear elevational view of the inner currency receiver, the currency-receiving compartments as viewed through the transparent wall being shown in their position vertically above the cash drawer, and the two mechanisms for actuating the floor gates of the compartments appearing at the top and ends of the inner receiver.

FIG. 2 is a plan view of the inner currency receiver.

FIG. 3 is an end elevation of the inner receiver.

FIG. 4 is a front elevation of the strongbox in which the inner currency receiver is contained, showing a plurality of currency-depositing slots each of which is designated by the indicia symbol which refers to a specific space in an associated parking lot.

FIG. 5A is a section along the line 5 — 5 of FIG. 4, in which the swingable floor gates of the compartments are shown in the upper and currency-retaining positions, one of the operating mechanisms being seen through transparent vertical interior and end walls.

FIG. 5B is a similar section showing the floor gates of the compartments in the dropped, currency-discharging positions.

FIG. 6 is a fragmentary front elevation of a portion of the inner currency receiver, showing, through the resPective open sides of several compartments, the floor gate rocker rods and the clips fastening the floor gates to the rods, the cantilever-mounted floor gates being shown in the closed, currency-retaining position.

FIG. 7 is a similar view in which the floor gates are shown in the open, currency-discharging position, and the attachment clips appear in more detail.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The parking lot depository construction disclosed herein includes a compartmented inner currency receiver **11** which is rigidly secured within a containing strongbox **10**, the latter being formed preferably from steel plate.

The inner currency receiver is conveniently constructed from some clear acrylic resin material, such as plexiglas, for the reason that, for optimum usefulness, certain transparent components are essential. FIGS. **1**, **2** and **3** illustrate the inner currency receiver, which is generally rectangular-prism in form, including a pair of upstanding end panels **44**, adhesively joined to the planar top panel **28** and the vertically extending rear window panel **32**. The front side and the under side of the inner receiver are open, and a cash drawer **33** is slidably mounted on the drawer guide-supports **39**, the latter extending transversely across the lower ends of the respective end walls **44**. A key-operated lock **35**, joining the drawer to the rear panel, normally prevents unauthorized access to the cash drawer.

The space directly above the cash drawer is divided into a plurality of distinct vertical channels by the longitudinally spaced, vertically and transversely extending partition panels **45**, the latter being adhesively joined to the top panel **28** and the rear transparent window panel **32**.

A plurality of vertically spaced, horizontally disposed rocker rods **21** extend linearly within the receiver and through openings in the vertical partition panels **45**, projecting outwardly from the respective end walls **44**,

the rods 21 being journaled for rotary movement in each of the members through which they extend.

The floor gates 20, which may be flat plexiglas plates, are rigidly mounted as cantilevers on the rocker rods 21, and extend longitudinally and transversely across the spaces between the partition panels 45, dividing the interior of the currency receiver into a plurality of currency-receiving compartments 19. To enable the handling of folded paper currency mixed with metallic coins, it is essential that the floor gates slope downwardly toward the rear transparent window panel 32. If the floor gate is formed as a smooth-surface acrylic resin plate, the angle of inclination from the horizontal should be not less than seven degrees, as indicated in FIG. 5A.

As shown in detail in FIGS. 6 and 7, each floor gate 20 is rigidly attached to and swingably movable with one of the rocker rods 21 by the resilient plastic clip 22, the front end of the clip being curved to engage the rod circumferentially and the remainder of the clip being bifurcated and extending normally outward from the rod along the bottom of the floor gate, the clip screw 23 passing between the bifurcations 37 and 38 with its head spanning the space between the legs and rigidly securing the floor gate to the rod by tight resilient engagement of the front end portion therewith.

A mechanism for actuating the floor gates 20 of the compartments 19 is disposed along the respective end walls 44 and the top panel 28 of the receiver. Each of the outwardly projecting end portions of the rocker rods 21 extends into and is rigidly secured to one end of a transversely directed connecting link 25, and the other end of the link 25 is pivotally mounted on a pintle 26, each of the latter in turn being rigidly fixed to and extending outwardly from a vertically extending operating integration bar 24.

At least one of the pintles 26 at each end of the receiver is provided with an outwardly projecting end portion 27, and so forms a finger or handhold for manipulating the associated integration bar. This construction enables the floor gates to be concurrently moved between an upper currency-retaining position, as shown in FIG. 5A, to a dumping or discharging position, as shown in FIG. 5B, in response to the accompanying downward or upward movement of the actuating integration bar 24.

For maintaining the floor gates of each compartment in the upper currency-retaining position, a horizontally positioned latch member 29 rests along a rearward portion of the flat top panel 28, projecting outwardly from the top to provide a cantilever portion disposed in the path of upward movement of the integration bar 24.

As shown in FIG. 2, a pair of guide pins 41 project upwardly from the top 28 through associated linearly spaced, transversely extending guide slots 43 formed in the latch member 29, enabling limited forward and rearward sliding movement of the latch member 29. A pair of helical springs 40, each of which is fastened, by the screws 42, at one end to the latch member 29 and at the other end to the top panel 28, continuously bias the latch member to a forward latching position.

An upward and forwardly sloping portion at the upper end of the operating bar 24 is disposed to engage the respective projecting ends of the latch member 29 and slide the member rearwardly against the bias of the springs 40, and a latching notch 31 is formed just below the inclined upper portion 30 in each of the operating bars 24. When the operating bars are lifted vertically, as the notches 31 reach the elevation of the latch member 29, the springs 40 pull the latch member into the latching notches, holding the bars 24 in their upper position and the associated floor gates 20 of each compartment in the gate-closed, currency-receiving position.

The inner currency receiver 10 is secured within the strongbox 11 by means of the screws 13, which pass through the attaching brackets 12 and respectively into the front wall of the strongbox and a side wall of the inner currency receiver.

As it is oriented within the strongbox, the open side of the inner currency receiver lies along the forward wall 36 of the strongbox, and each of the currency-deposit slots 17 communicates with the interior of one of the currency-receiving compartments 19. Each of the slots is characterized by some suitable indicia, as shown at the numeral 18, which corresponds to the same indicia displayed at a specific parking space. The door 14 forms the rear wall of the strongbox, being attached by the piano hinge 15, and being normally locked in the closed position by the keylock 16.

In operation, a parking lot checker unlocks and opens the strongbox door 14, which action enables a visual inspection through the transparent rear window side panel of the currency which has been deposited in any of the compartments 19, and so determines if the parking fee for any particular occupied space has not been deposited. Depending upon a management decision, the checker may or may not be supplied with a key to unlock the cash drawer.

Several advantages derive from the downward slope of the floor gates from their supports. A correctly inclined floor gate will enable the handling of folded paper money which will not be discharged from a horizontally positioned floor gate because of catching in the opening formed at the hinge end of the gate as it turns away from the associated wall to discharge the collected currency.

The gate-slope feature also assures the sliding movement of the deposited coins and paper money rearwardly along the floor gate to effect an accumulation within that area of the gate which is adjacent to the rear viewing window. The deposited currency is thus positioned for maximum visibility. Further, the weight of the currency is applied at the maximum lever arm of the cantilevered gate to assist in swinging the gate to the open position when released.

To discharge the currency collected in the compartments into the underlying cash drawer, the latch member 29 is manually slid rearwardly to disengagement from the latching notches 31 of the integration bars 24; the latch member is then released and moves back to the latching position under the bias of the latch springs 40. The cooperation among the structural members is such that the weight of every movable member of the structure below the latch member, including the cantilevered floor gates 20, the coupling links 25 and the integrating actuating bar 24 is cumulative to contribute to the downward swing of the floor gates for dumping the currency therefrom and into the cash drawer 33.

The lowermost row of floor gates is disposed to swing downwardly into the cash drawer, to an elevation below the top of the inner wall **34** of the drawer. With this construction, the floor gates, when in the down, open position, latch the cash drawer both against removal from the inner receiver **11** and against insertion thereinto, this construction assuring that the floor gates will be returned to the currency-retaining position before the depository can be closed and locked.

The incorporation of manipulating mechanisms at each end of the inner currency receiver enables the use of a minimum size of rocker rods, because the torque is applied from each end of the rods, and this construction, together with the embodiment of the single latch member common to both mechanisms, results in a simple, symetrical depository construction particularly suited for use in large parking lots.

What is claimed is:

1. A fee collection depository for large parking lots comprising a rectangular strongbox having a swingably mounted rear access door and an inner currency receiver rigidly fixed within the strongbox, said currency receiver having a flat rectangular top panel, a pair of flat rectangular end wall panels and a transparent flat rectangular rear wall panel joining the top panel to the end wall panels and having its lower edge disposed above the respective lower ends of said end wall panels, a plurality of longitudinally spaced, vertically extending partition panels disposed between and parallel to said end wall panels and dividing the interior into a plurality of channels extending vertically from the top panel to an elevation adjacent to the lower edge of said transparent rear panel, a plurality of reciprocably rockable, vertically spaced, horizontally disposed rocker rods extending longitudinally through and journaled on said partition panels and end walls, each of said rocker rods having an end portion projecting outward from the outer surface of said end wall panels, a coupling link having one end thereof rigidly secured to each end portion and extending transversely along said end wall panels in spaced relationship therewith, an upwardly extending integration bar disposed adjacent to each end wall panel, a plurality of outwardly extending pintles rigidly secured to said integration bar, the other end of each coupling link being pivotally mounted on an associated pintle, a flat floor gate rigidly fastened to each rocker rod within each channel and swingably movable with said rocker arm between an upper currency-retaining position closing said vertical channel to form an array of currency-receiving compartments and a lower currency-discharging position opening said vertical channel for currency movement therealong, a plurality of deposit slots extending through the front wall of said strongbox, each of said slots communicating with one of said currency-receiving compartments, and a single latch member common to both integration bars normally holding said floor gates in the currency-retaining position and operative to release said floor gates for movement to the currency-discharging position in response to a predetermined movement of said latch member, said latch member being disposed for limited slidable transverse movement along the entire length of the top panel and extending longitudinally outward in position to engage both of said integration bars.

2. The depository as claimed in claim **1**, wherein the upper surface of each floor plate lies in a plane sloping downwardly toward the rear transparent panel of the inner currency receiver.

3. The depository in accordance with claim **2**, in which the downward slope of the upper surface of each floor gate is not less than seven degrees from a horizontal plane passing through the upper end of the gate.

4. The depository as claimed in claim **1**, wherein the bottom of the inner currency receiver is in the form of a rearwardly-slidable cash drawer extending below and in position to receive currency falling in said vertical channels.

5. The depository as claimed in claim **4**, in which each of the floor gates attached to the lowermost rocker rod projects into the cash drawer when the floor gates are in the currency-discharging position.

6. The depository according to claim **5**, including a first lock means for locking said cash drawer to the rear transparent panel of the inner currency receiver and a second lock means for locking the swingable access door of the strongbox in the closed position.

7. The depository in accordance with claim **1**, wherein at least one of the pintles at each end of the inner currency receiver is extended outwardly beyond the associated coupling link and form mutually cooperative handholds for lifting the integration bars and concurrently swinging the associated floor gates from the currency-discharging position to the currency-retaining position.

8. The depository as claimed in claim **7**, in which the upper end portion of each integration bar is sloped upwardly and forwardly and has formed therein an inwardly extending latching recess disposed below and adjacent to said sloped portion, the latch member being positioned in the path of upward movement of said integration bar and spring-biased toward the forward edge of said top panel for urging the latch member into the latching recess of each integration bar when said recess is lifted to the elevation of the latch member.

* * * * *