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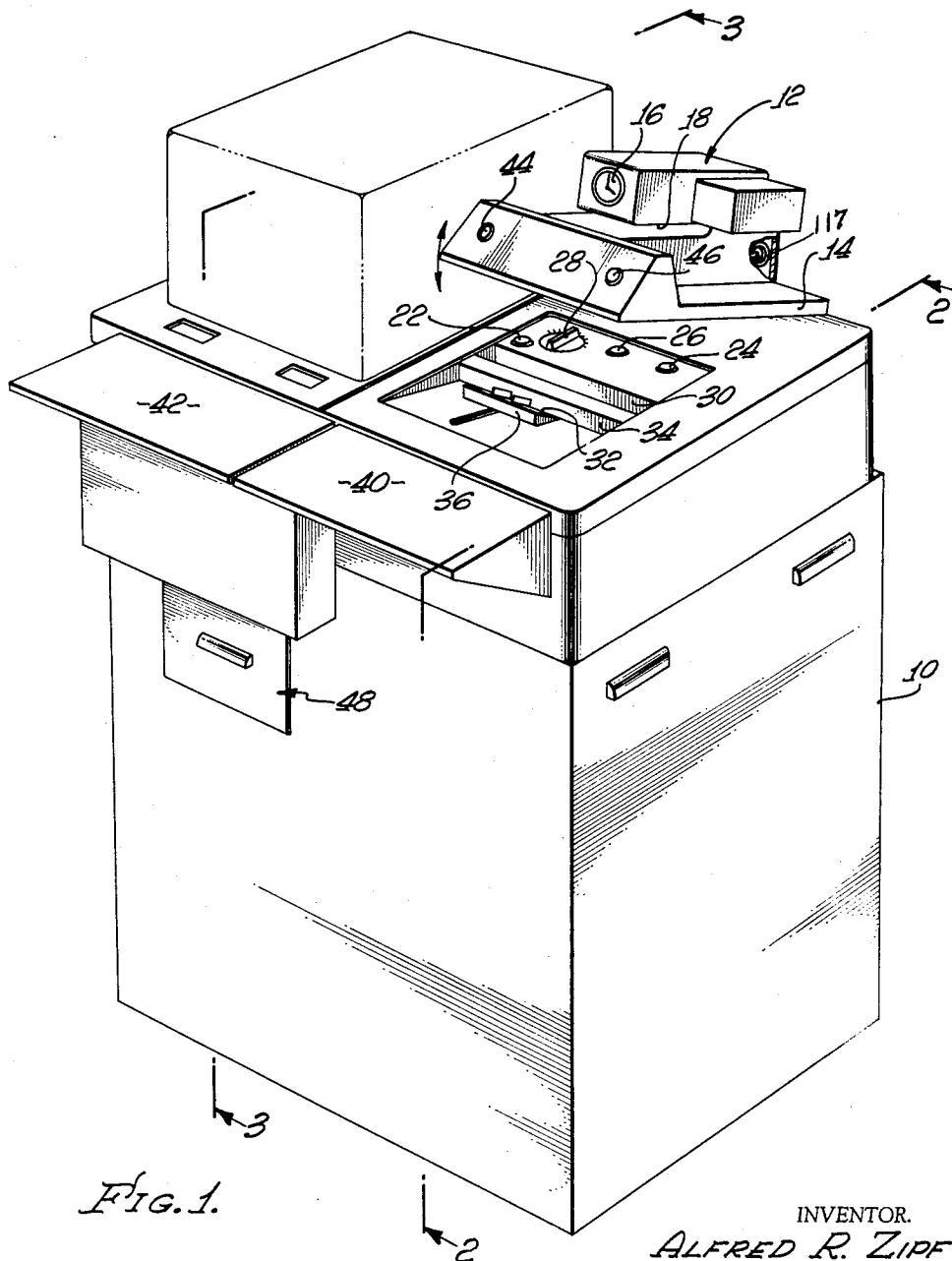
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2,923,587

AUTOMATIC RECEIVING TELLER

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3 Sheets-Sheet 1



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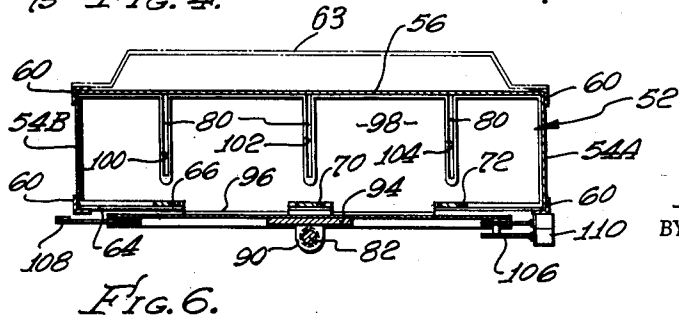
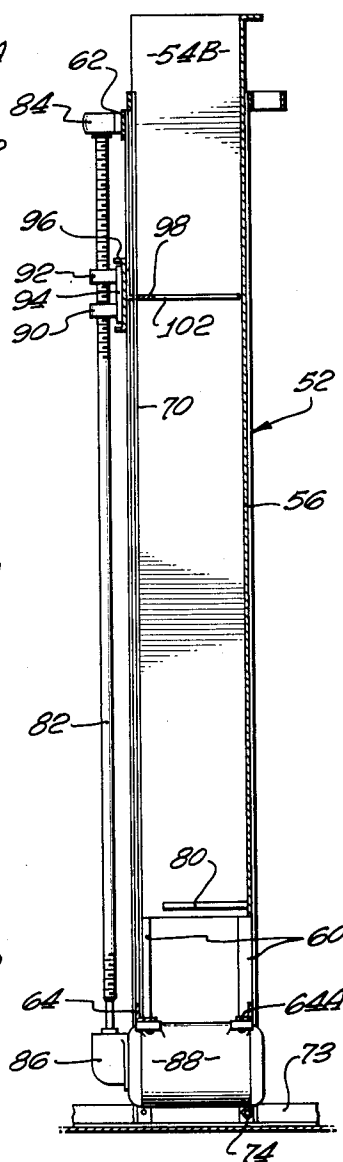
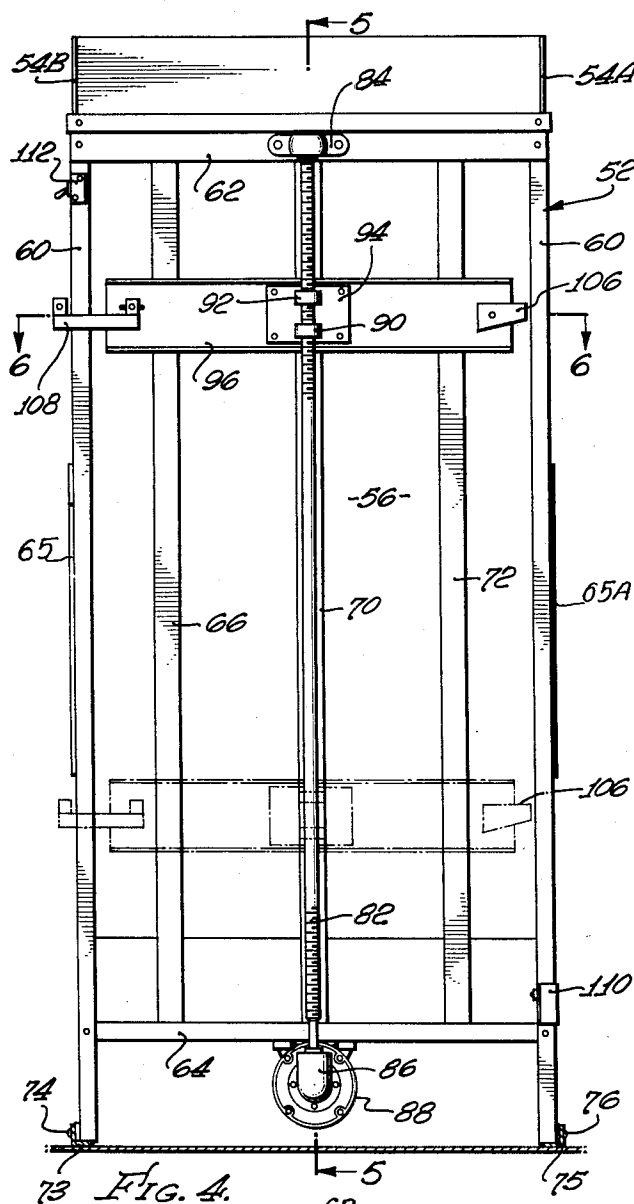
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AUTOMATIC RECEIVING TELLER

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2 Claims. (Cl. 346—22)

This invention relates to an automatic receiving teller suitable for making deposits in a bank.

Banks, like many other commercial organizations serving the public, have periods of peak as well as low activity. Periods of peak activity in a bank are readily recognized by the long lines of depositors waiting to make their transactions, such as deposits, withdrawals, etc. Obviously, it is economically unwise to hire a sufficient number of tellers to rapidly handle the depositors during the peak periods. One attempt at speeding up the operation of making deposits has been to encourage depositors to either mail in their deposits or place them in an envelope and drop this envelope in a suitable receptacle within the bank. Such an arrangement has not met with too great success for one reason which may be psychological in that the depositor has no immediate official confirmation of his deposit from the bank, and, second, the arrangements described are usually limited to checks, and not cash.

An object of the present invention is to provide a novel and useful automatic receiving teller which expedites the making of deposits in a bank.

Another object of the present invention is the provision of a novel and useful automatic receiving teller which instantaneously makes a permanent record of all documents deposited.

Still another object of the present invention is the provision of an automatic receiving teller which provides an authenticated receipt for a deposit.

Yet another object of the present invention is the provision of an automatic receiving teller which receives both checks and currency and preserves them in the order of receipt.

Another object of the present invention is the provision of a novel, useful, and unique automatic receiving teller.

These and other objects of the invention are provided by an arrangement wherein a depositor who has itemized the checks and currency which he desires to deposit on a deposit tag is enabled to make his deposit without waiting further for the services of a human teller. In accordance with this invention, the depositor first prepares a deposit tag in duplicate. On the deposit tag, as is customary, he itemizes the value of the checks and currency which he desires to deposit. Further, in accordance with this invention, there is provided a means for stamping on the deposit tags in duplicate a validation stamp which effectively includes data for identifying the deposit, such as the time, date, transaction number, branch name, etc. The duplicates of the deposit tag are then retained as a receipt by the depositor. The original deposit tag, together with the currency and checks comprising the deposit, are then passed in sequence through a microfilm recorder, which takes a picture of both sides of each of the documents being passed therethrough. Means are provided for safely receiving and holding the deposit tag, the checks, and the currency in the sequence in which

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they are passed through the microfilm recorder. Thereafter, at a suitable time, the holder or deposit-receiving means may be emptied with the sequence of deposits still being preserved. The microfilm can provide an accurate record of any deposit made, should any question arise concerning same.

The novel features that are considered characteristic of this invention are set forth with particularity in the appended claims. The invention itself, both as to its organization and method of operation, as well as additional objects and advantages thereof, will best be understood from the following description when read in connection with the accompanying drawings, in which:

Figure 1 is an isometric view of an embodiment of the invention;

Figure 2 is one side view in section of the embodiment of the invention taken along the lines 2—2 of Figure 1;

Figure 3 is another side view in section taken along the lines 3—3 of the embodiment of the invention shown in Figure 1;

Figure 4 is a view along the lines 4—4 in Figure 2 and shows a back view of the deposit-receiving means used in the embodiment of the invention;

Figure 5 is a view taken along the lines 5—5 in Figure 4 and shows a side view of the deposit-receiving means; and

Figure 6 is a view in elevation taken along the lines 6—6 of Figure 4 and shows details of the elevator plate in the deposit-receiving means.

Reference is now made to Figure 1, which shows an isometric view of an embodiment of the invention. This will include a cabinet 10, which will be made of sufficiently sturdy material to protect the deposits which are made and kept therein. At the top of the cabinet 10, there is mounted a validation-stamping machine 12. This machine is shown mounted on a lid 14, which is pivotally attached to the top of the cabinet 10. The position of the lid 14 and validation machine 12 is lifted from its operative position in order to better expose other apparatus employed in the embodiment of the invention. In operation, the lid will be flat and locked in that position. The validating apparatus is well-known commercially purchasable equipment, which includes a clock 16 to show the time which will be stamped by the validation machine when a deposit tag is inserted in the slot 18. The validation machine will stamp data for identifying the deposit being made, such data being, for example, the date, the time, the transaction number, and the name of the branch bank.

The portion of the apparatus exposed by the lifted lid 14 is a microfilm recorder of a type which includes a mechanism for automatically and singly feeding documents from a stack in sequence through the microfilm recording apparatus which has provisions for recording both sides of these documents as they are passing through. This apparatus is sold, for example, by the Burroughs Corporation and is known as the Burroughs-Bell & Howell Microtwin. The controls exposed by the lifted lid 14 comprise a feed-control switch 22, which can be manually actuated to turn off the operation of the automatic feed control in the event of trouble. A powerline switch 24 is used for turning power on or off. An indicator light 26 indicates readiness for use. A film-speed-setting switch 28 is used to vary light settings for exposure accommodation for films having different film speeds. Also shown is a manual feed throat 30, into which documents may be fed by hand singly, if desired. The manual feed throat, as well as the controls just enumerated, are all covered by the lid 14 when it is in the downward and operating position. There is exposed,

however, the automatic feed throat 32, which is defined by a backstop 34 and a movable stacking member 36.

In order to utilize the invention, a depositor will first fill out a deposit tag in duplicate, itemizing the checks and currency, exactly as is done at present. The duplicate tags are prepared simultaneously using carbon paper in well-known manner. The necessary writing may be done on the desk-type lids 40, 42, which are furnished with the cabinet in which the embodiment of the invention is supported. The duplicate tags are then inserted into the slot 18 for validation. The original tag is then separated from the duplicate, which is retained by the depositor. The checks and currency are then put in the order of itemization, and this stack is inserted between the backing member 34 and the stacking member 32, which is moved to hold the stack in place against the bottom of the automatic feeder throat.

If the apparatus is in condition to receive a deposit, a light 44 will be lit. The depositor then actuates a push-button 46, which will start the automatic feeding apparatus to sequentially pass the deposit slips, checks, and currency through the microfilm recorder. The automatic feed apparatus will continue to function as long as push-button 46 is held until the stack which has been inserted into the automatic feed throat has been passed into the microfilm apparatus. Any coins which it is desired to deposit are placed into a bag provided for the purpose, and a drawer 48 is opened and the bag with the coins is dropped thereinto. The drawer 48, as will be subsequently shown, has a means for preventing the removal of any of the coinage which has been dropped thereinto. Provision is made in the microfilm apparatus of a mask so that any currency which is photographed on both sides has the photograph defaced.

Referring now to Figure 2, there is shown in section a side view of the arrangement for receiving the deposit and preserving the order of the documents deposited. The automatic feeding apparatus in the microfilm recorder includes a plurality of pairs of rollers 49A, 49B, 49C, 49D, shown by dotted lines, for the purpose of guiding a document, such as a check, currency, or a deposit tag, in a path past mirrors suitably positioned so that both sides of the document may be photographed. The details of this arrangement will not be described or shown herein, since the apparatus is commercially purchasable and a description of the details of the apparatus whereby the microfilming of both sides of the document is achieved would merely serve to lengthen this record without contributing to an understanding of the invention. It should suffice here to indicate that a guideplate 50, shown in dotted lines, serves the function of guiding the document, after it has been photographed, into a rectangular tray 52, which serves the function of receiving these documents and holding them in the order in which they are initially deposited.

As may also be seen in Figures 4 and 5, the rectangular tray 52 or deposit-receiving means effectively comprises two side metal plates 54A, 54B and a back metal plate 56. These three metal plates are welded together to form an open tray. The base of the tray is formed by three rods 80. This tray is held in an upright position by means of corner angles 60, with which the removable tray is slidably engaged. The corner angles form a receiving open basket, and extend beyond the metal plates and are used as legs to hold the removable tray high enough above the base of the cabinet to be in position to receive documents from the guide plate 50. The corner angles 60 are maintained in position to receive the tray by lower cross members 64, 64A, to which they are attached, by an upper cross member 62, by a handle 63, and by side members 65, 65A. The open basket structure formed by the four corner angles and its bottom and top cross members and side members is further re-

inforced by three flat elongated members 66, 70, and 72, which are attached to the cross members 62, 64.

The lower ends of the corner members 60 are attached to two brace members 73, 75 fastened to the base of the cabinet by means of two hinges 74, 76. Thereby, open basket structure with the tray is enabled to be tilted toward the rear of the housing as shown by the dashed lines shown in Figure 2. This is the emptying position. Otherwise, the deposit receptacle remains upright for filling in the manner shown by the solid lines in Figure 2.

As may be seen in Figure 5, there are at least three rods 80, which are attached near the lower end of the member 56, forming the bottom of the removable tray. The loading structure for the tray includes a lead screw 82, which, as may be seen in Figures 4 and 5, is rotatably supported at its top end in a bearing attached by a clamp 84 to the cross member 62. At its bottom end, the lead screw 82 is supported in a gear box 86, which is attached to and driven by a motor 88.

The motor, as may be seen in Figure 5, is attached to the cross member 64 and to another rear cross member 64A, which extends underneath the plate 56 between the two angles 60 on either side of the plate 56. Thereby, the motor is made to be movable with the rectangular receptacle. As may better be seen in Figure 4, a pair of threaded nuts 90, 92 are attached to a flange 94, which in turn is attached to a bracket 96. This bracket carries an elevator plate 98, the details of which are shown in Figure 6. The elevator plate has three slots therein, respectively 100, 102, 104, to enable it to be moved below the pins 80 when the tray is to be removed from its receiving basket formed by the corner brackets. The bracket 96 carries a first actuating member 106 at one side and a second actuating member 108 on the other side. These members are employed to actuate limit switches, consisting of a microswitch 110 located on the bottom of the desired elevator plate travel, and a toggle switch 112 located at the top of the desired elevator plate travel.

In order to operate this invention, the receiving tray is inserted into the receiving basket, which is then maintained in the upright position shown in Figure 2. The toggle switch 112 is actuated until it is downward, in the position shown in Figure 4. This actuates the motor and the elevator plate, as a result, will be carried upward by the lead screw 82. This continues until the actuating member 108 moves the toggle upward, which cuts off the motor.

Each time a deposit is made, as may better be seen in Figure 2, the bulk of the document which is sliding from the guideplate 50 into the tray 52 will move a microswitch trip member 113, which is pivotably supported at its upper end. The trip member trips a microswitch 115. This energizes motor 88 in a direction to lower the elevator plate one-fourth to three-eighths of an inch. This operation is repeated for each deposit. When the actuating member 106 actuates microswitch 110, the motor is stopped and a "full" light 117 (shown in Figure 1) is lit, indicating this fact. The back of the cabinet can then be opened and the basket and tray tilted back by means of the handle 63, and the tray and its contents can then be removed. The basket can then be loaded with another tray for operation as an automatic receiving teller again.

Figure 3 is a cross section of the embodiment of the invention shown in Figure 1, taken along the lines 3-3. This cross section shows the portion of the embodiment of the invention which is employed for the collection of coins. These are inserted in a paper bag which has marked on the external side the value of the coins, the depositor's name, and other data to associate this bag with the deposit being made of currency and/or checks in the automatic portion of the invention. The bag is then inserted into the drawer 48, which, as shown in

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Figure 3, is pivotally attached to the cabinet 10. The drawer pivots outward a limited amount, whereupon the bag with the coins may be dropped therein. When the drawer is returned to its closed position, the contents of the bag are dropped into a receptacle 116. Besides the dimensions of the opening provided when the drawer 48 is in its most open position, further provision against the insertion of anything for removal of the contents of the receptacle 116 is provided by defining the chute leading to the receptacle 116 by metal plates 118, 120, to the ends of which are attached swinging prongs 122, 124. These prongs mesh when any attempt is made to withdraw an object in an upward direction therebetween and prevent further withdrawal upward of said object. The receptacle 116 is accessible from the opened back of the cabinet for emptying.

Accordingly, there has been described and shown herein an automatic receiving teller which functions to provide a validation to a depositor of the fact of a deposit and further functions to preserve an exact record of the currency and checks which have been deposited. The order of the making of a deposit, which is also important in the checking functions carried out in banking business, is also preserved upon emptying the automatic receiving teller. This invention also eliminates the necessity for human processing in the making of the deposit and can operate to accept deposits more rapidly than the human teller it displaces.

I claim:

1. A teller for automatically receiving and recording the deposit of checks, currency, and the like itemized on a deposit tag comprising a cabinet having a time-stamping means mounted on the top thereof for stamping deposit identification data on a deposit tag, means for holding said deposit tag, checks, and currency in the

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order of itemization mounted on the top of said cabinet, a microfilm recorder mounted in said cabinet and including means for photographing both sides of a document passed therethrough, manually actuated means for removing said deposit tag, checks, and currency singly and in sequence and passing them through said microfilm recorder, and means within said cabinet for receiving and stacking said deposit tag, checks, and currency in the order passed through said microfilm recorder including an open tray into which documents passing through said microfilm recorder are dropped, an open basket for removably holding said tray, a rotatably supported lead screw extending along one side of said basket, a nut threadably engaged with said lead screw, an elevator plate, means for supporting said elevator plate within said tray from said nut, and means for rotating said lead screw to move said elevator plate within said tray each time a deposit is made to enable said deposit to be held in position.

2. A teller as recited in claim 1 wherein there are mounted at a lower portion of said tray a plurality of spaced rods for supporting deposit tags, checks, and currency dropped thereon from said microfilm recorder; said elevator plate has slots therein to enable it to freely pass said plurality of spaced rods, and said open basket has hinge means attached to the base thereof to enable tilting of said basket away from said microfilm recorder to enable removal of said tray.

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