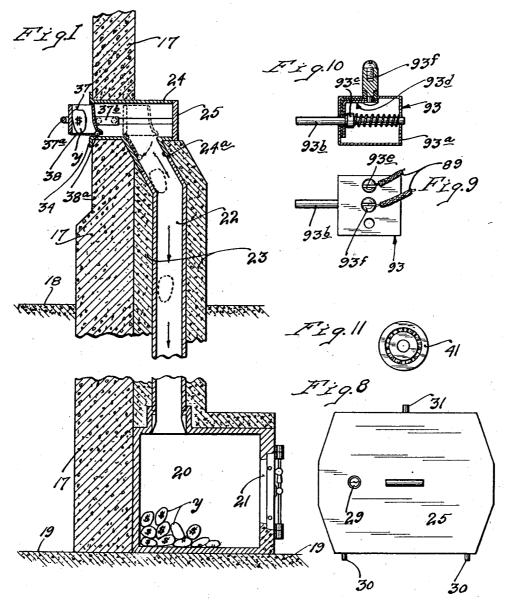
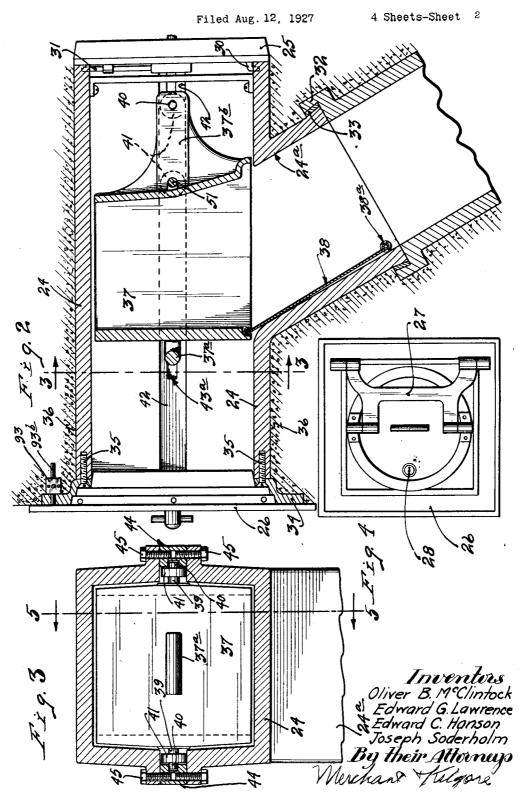
Filed Aug. 12, 1927

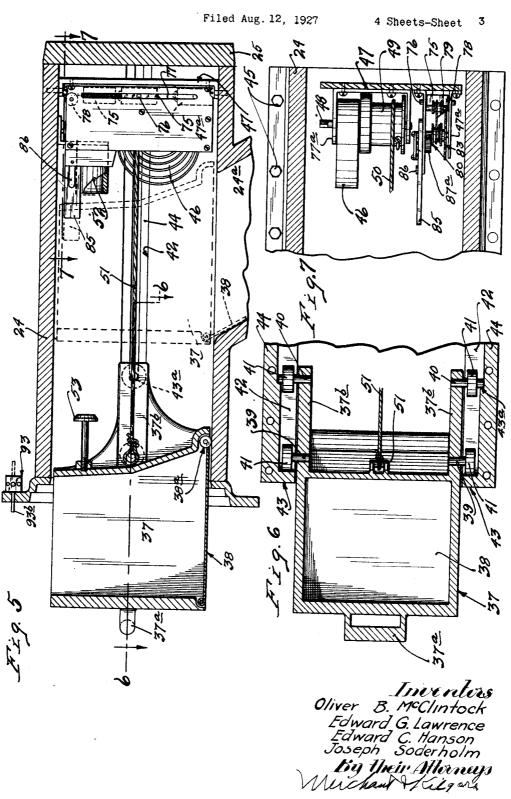
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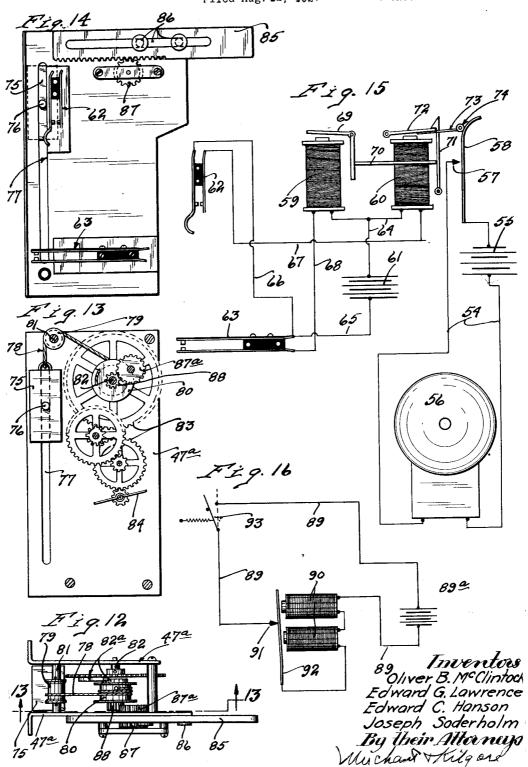
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## UNITED STATES PATENT OFFICE.

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## AFTER-HOUR DEPOSITORY.

Application filed August 12, 1927. Serial No. 212,539.

Our invention relates to what are gener- the depository and controls a buzzer circuit; ally designated as after hour or night depositories. Devices of this kind are used in connection with banks, safety deposit 5 vaults and the like, to enable depositors, subscribers or other authorized persons to deposit money or other valuables at night or at any other time out of banking or busi- ically operated motor, (to wit: the motor 60 ness hours. In a depository of this char-10 acter, all possible safeguards against theft and fraudulent actions are required and these, as will hereinafter appear, are provided in the preferred form of the device 15 accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a vertical section with some parts 20 broken away, showing the improved depository applied in working position, only one wall of the building to which is applied being illustrated, and some of the parts being diagrammatically shown, details of 25 structure being omitted;

Fig. 2 is an enlarged central vertical secin full and some parts broken away;

Fig. 3 is a transverse vertical section taken on the line 3—3 of Fig. 2;

Fig. 4 is an elevation looking at the outer face of the door that normally closes the outer end of the receiving chute;

Fig. 5 is a view corresponding somewhat to Fig. 2, but in section on the line 5—5 of Fig. 3 and with the receiving drawer or sliding receptacle drawn out and in position to receive a deposit;

the line 6-6 of Fig. 5, some parts being ferably rectangular in cross section and

line 7—7 of Fig. 5, some parts being broken 45 away

Fig. 8 is a detail showing an inner door that is applied to the inner end of the drawer runway, to-wit: The horizontally extended head or receiving portion of the delivery

Fig. 10 is a section on the line 10—10 of

Fig. 11 is a detail in elevation showing one of the ball-bearing rollers or wheels of the drawer or receiving receptacle;

operated by weight or spring), and including a retarding device;

Fig. 13 is a vertical section taken on the line 13—13 of Fig. 12;

Fig. 14 is an elevation of the motor shown 65 hereinafter described and illustrated in the in Figs. 12 and 13 showing also electrical switches controlled by said motor;

Fig. 15 is a diagrammatic view showing the alarm circuits controlled by the switches illustrated in Fig. 14; and

Fig. 16 is a diagrammatic view of the bell circuit controlled by the electrical switches shown in Figs. 2, 5, 9 and 10.

The wall of a bank or other building in which the device is installed is indicated 78 by the numeral 17. The numeral 18 indicates the sidewalk or first floor line, and the numeral 19 the basement floor. In this tion showing the upper or receiving portion illustration, the depository receives the valuof the depository, some parts being shown ables from the exterior of the building at a 80 point above the street or sidewalk line and delivers the same to a receiving vault 20 that is located inside of the building and, as shown, in the basement of the building, although the receiving vault may and some- 85 times will be located at a higher point but always below the receiving point. The receiving vault 20 is shown as provided with a suitable door 21 that is accessible only from the interior of the bank or building.

Extended upward from the receiving Fig. 6 is a horizontal section taken on vault 20 is a delivery chute 22 that is premade of heavy steel. This chute 22 is ad-Fig. 7 is a horizontal section taken on the visably encased in a reinforced concrete ar- 95 mor 23 which will, in practice, contain also wires of the customary vault-protecting system. The delivery chute 22, at its upper end, is joined to the bottom of a horizontally disposed casing 24 that affords a receiving 100 head to said chute and an enclosed runway for a sliding or drawer-like parcel recep-Fig. 9 is a detail showing an electrical tacle. This head or casing 24, at its inner switch that is operated by the outer door of end, is normally closed by a door 25 and, at

its outer end, by a door 26. These doors wall, is shown as provided with a suitable 25 and 26 may be of any suitable or approv- handle 37° by means of which it may be ed construction. As shown, the outer door 26 is supported from the flanged outer end of the casing 24 by a hinge bracket 27 and will be normally locked in its closed position by a key-actuated lock 28, such as usually employed on vault or safe doors. Keys fitting this lock 28 will be given to the various 10 depositors. The inner door 25 is also preferably secured in its closed position by a key-actuated lock 29, the key to which will be kept by the proper bank official or employee. As shown, said door 25 is provided 15 with depending hook-like bolts 30 and with a lock-actuated bolt 31, which bolts are engageable with detents in the inner end of the position indicated by full lines in Fig. 2 casing 24. In the preferred construction, and by dotted lines in Fig. 5, and in which the chute 22 will be made up of sections, the 20 upper section being connected to an obliquely depending portion 24° of the casing 24 lock ring 33, best shown in Fig. 2. Also, the casing 24, at its outer end, is preferably 25 formed with a detachable flange 34 shown as flange the door-supporting hinge bracket 27 is directly pivoted.

In practice, the wires of the vault-pro-30 tecting system may be interposed in concrete formed on said spacing strips 44. 36 laid around the casing 24, its depending portion 24ª and its flange 34, so that if any one of said parts is displaced, an alarm will

be sounded.

The parcel receptacle 37 is substantially a rectangular structure that freely but quite closely fits within the casing 24 and is primarily open at top and bottom, but is provided with a hinged drop bottom 38. This 46 anchored at one end to a frame 47 rigidly 40 receptacle 37 slides as a drawer within the secured within and at the inner end of the 105 casing 24 and, at its sides, is provided with casing 24. The other end of this spring 46 outstanding studs 39 and 40 on which, respectively, rollers 41 are journaled. These frame 47 and provided with a windlass drum rollers 41 are arranged to run in channellike guideways 42 formed in the sides of the casing 24. Preferably, these rollers 41 are in the form of ball-bearings, as shown in detail in Fig. 11, but, of course, any suitable ward or outward, the spring 46 will be rollers may be provided. By reference par-50 ticularly to Fig. 6, it will be noted that the said receptacle is released, it will be quickly 115 sides of the casing 24, at the outer extremi-returned to its normal or innermost position ties of the channels 42, are provided with by the spring 46. To prevent shocks, due stop flanges 43 against which the front to quick stopping of the parcel receptacle rollers 41 engage when the parcel receptacle at its extreme innermost position, there is 55 37 is drawn outward to its limit; it will also provided a suitable buffer or cushioning de- 120 be noted that the projecting ends of the relatively long rear studs 40 are arranged to engage stop shoulders 43a formed within the channels 42 when the parcel receptacle is 60 drawn out to its limit. These two stop devices afford double security against forcing of the parcel receptacle completely out of cushion rapid movement but will not matethe casing 24 by any person who may at-rially retard a slow movement, such as protempt to maliciously tamper with the de- duced when the parcel receptacle is manually 65 vice. The parcel receptacle 37, on its front drawn outward.

drawn forward or outward. By reference particularly to Figs. 2, 5 and 6, it will be noted that the stude 39 and 40 are directly 70. secured to flanges 37b that are projected rearward from the sides of the parcel re-

ceptacle 37.

At its free edge, the drop bottom 38 is shown as preferably provided with one or 75 more small anti-friction rolls 38a that run on the bottom of the casing 24 when the parcel receptacle is drawn outward, and thereby hold the drop bottom in a closed position. Normally, the parcel receptacle will 80 be in its innermost position, to wit: in the position, the drop bottom 38 will drop downward and fall against the inclined bottom 85 wall of the casing extension 24a. By refby a double lap joint 32 and a cast-in metal erence to Fig. 3, it will be noted that in this preferred construction, the casing 24 is horizontally split or divided along the line of the centers or the guide channels 42; that 90 secured thereto by screws 35 and to which the sections of said casing are spaced by strips 44; that said sections and strips are rigidly connected by screws 45; and that the stop shoulders 43 and 43a are directly

As an important feature, we provide yielding means for automatically returning the drawer-like parcel receptacle from its outermost position shown in Figs. 5 and 6 back to its normal or innermost position shown 100 by full lines in Fig. 2 and by dotted lines in Fig. 5. The motive power of this yielding device is preferably a strong coiled spring is attached to a shaft 48 journaled in the 49. A cable 50 is anchored to the drum 49 at one end and at its other end is attached 110 at 51 to the rear of the parcel receptacle 37. When the parcel receptacle is drawn forwound under increased tension, and when vice, as shown in the form of a dash-pot 52 secured to the frame 47 and a cooperating dasher head or piston 53 secured to and projecting from the back of said parcel receptacle. The head of the piston 53 quite 125 loosely fits the dash-pot 52 so that it will

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As a safeguard against tampering, there cable 78 which, is shown, runs over a guide are provided, in addition to the customary burglar alarm protection, two signaling schemes or devices, one of which will sound 5 an alarm, if the parcel receptacle be held drawn outward or in a receiving position beyond a predetermined short interval of time, and the other of which, while not acting as a burglar alarm proper, will serve to 10 keep the depositor's attention called to the fact that he is keeping the parcel receptacle held out during a period which, when ended, will result in sounding of an alarm proper. through the automatic action of the first 15 noted circuit. The alarm or first noted device just above indicated is diagrammatically shown in Fig. 15 and the second or buzzer circuit is indicated in Fig. 16. Said alarm device, diagrammatically shown in 20 Fig. 15, includes an alarm circuit proper and an alarm-actuating circuit. Said alarm circuit 54 includes a battery or source of energy 55, an electrically actuated bell 56, a fixed contact 57 and a cooperating movable spring contact 58. The alarm-actuated circuit includes a trip magnet 59, a reset magnet 60, a battery 61, two switches 62 and 63, and circuit wires 64, 65, 66, 67 and 68. The (rip magnet 59 operates on a spring-retracted 30 bell crank lever 69, the depending arm of which, by a rod 70, is connected to a pivoted latch lever 71, the hook-like end of which normally engages a pivoted armature 72 that is subject to the reset magnet 60 and is provided with an extended finger 73, which latter, as shown, is provided with an antifriction roller 74 that operates on the curved end of the movable contact 58 of the alarm circuit proper.

The just above noted switches 62 and 62 are mounted on bearing plates 47° that constitute a part or extension of the frame 47 and they are preferably positioned as best shown in Fig. 14. The switch 62, as will presently appear, operates as a reset switch, while the switch 63 operates as a trip switch. For operating these two switches 62 and 63 in proper order and at proper times, there is provided a yieldingly movable traveling switch closer, (under action of weight or spring), which, normally or when the parcel receptacle is in its retracted or innermost position, is held inactive, but which, when the parcel receptacle is moved forward or 55 drawn outward, will begin a movement which, after a predetermined time, will close the trip switch 63 and cause the alarm to be sounded in a manner which will be presently illustrated in the drawings, is in the form while the other lead 89 is electrically con- 125 stud or projection 76 that works in a vertical through the casing 93°, and has electrical 65 weight 75 is connected to the lower end of a when the plunger 93b is released and permit- 130

sheave 79 and is connected to a small windless drun 80. The sheave 79 is journaled on a red 81 supported by the frame plates 77a, and the windlass drum 80 is connected to a 70 shaft 82 journaled in said frame plates. The shaft 82, through a train of gears 83, is connected to a retarding fan 84, all of which parts are journaled to the frame plates 47°. This train of gears includes a pawl and 75 ratchet device 82a, (see Fig. 12), which permits the windless drum 80 to be rotated in a direction to wind up the cable 78 and raise the weight 75 without driving the train of grars 83. However, under the action of the 80 weight 75, when the latter is released, the train of gears and the retarding fan 84 will retard and make slow the downward movement of said weight.

For rotating the drum 80 in a direction to 85 wind up the cable and raise the weight 75 each time that the parcel receptacle 37 is moved from its outward back to its normal or innermost position, there is provided a drum-resetting device which preferably is 90 ms shown in Figs. 5, 7, 12, and 14. This device comprises a rack bar 85 which, by slot and pin connections 86, is slidably connected on one of the frame bars 47a and the teeth of which mesh with a pinion 87. The 95 pinion 87 is journaled to the adjacent frame bar 47" and is connected for common rotation with a twin pinion 87a that meshes with a pinion 88 on the drum shaft 82.

The so-called "buzzer" circuit diagram- 100 unitically illustrated in Fig. 16, in addition to the conducting wires 89, comprises a batthry or source of electrical energy 89a, an electro-magnet 90, a fixed contact 91, a cooperating yieldingly retracted armature-act- 105 ing contact 92, and a switch 93. The magnet 90 and cooperating contacts 91 and 92 conatitute what is generally designated as a "buzzer." The switch diagrammatically iljustrated in Fig. 16, and indicated as an 110 entirety by the numeral 93, is in practice preferably of the form illustrated in Figs. 2, 9 and 10 and comprises as follows:

The numeral 93° indicates a metallic casing that is imbedded in the concrete of the 115 wall 17 adjacent to the flange 34 of the easing 24. Mounted to move endwise in this easing 93° is an outwardly spring-pressed plunger 935 which, when said plunger is released, as shown in Figs. 9 and 10, has 120 electrical contact with the contact plate 93d that is insulated from the casing 93a. One of the circuit leads 89 is electrically conmore fully traced. This switch closer, as nected by a contact post 93° to the casing 93°, of a vertically movable weight 75 mounted nected by a binding post 931 to the contact between the plates 47° and provided with a plate 98°. The plunger 93° is grounded slot 77 formed in one of said plates. The connection with the centact plate 934 only

ted to move into the position shown in Figs. projecting stud 76 afford one form of switch said door engages the outer end of the stud 76, on passing the curved cam-acting 5 that the collar 93° will be out of engagement switch 62, closes said switch, and this closes 70 with the plate 93d and, hence, normally or when said door 26 is closed, the buzzer circuit will be opened and the buzzer will be idle. In Fig. 1, money bags or other valu-

## Operation.

The normal positions of the various movable parts of the system or installation are 15 indicated by full lines in Figs. 2, 13, 14, 15 and 16, and by dotted lines in Figs. 1 and 5. Depositors or persons authorized to make deposits will, as already stated, be furnished with keys that will operate the lock 28 of 20 the outer door 26, and such persons can, of course, at will, open said door. When the door 26 is open, the depositor can reach in and take hold of the handle 27a of the parcel receptacle 37 and may then readily draw the 25 same outward into the receiving position shown by full lines in Figs. 1 and 5 and then may deposit his parcel y in the outwardly drawn receptacle. As soon as the operator releases the parcel receptacle, the 30 latter will be quite rapidly drawn inward and restored to its normal position by the spring 46, the extreme return movement of said receptacle being cushioned by the dash pot 52 and plunger 53. When the parcel 35 receptacle is drawn outward to the receiving position, its bottom 38, as best shown in Fig. 5, will be held in a horizontal or operative position, so that the receptacle will hold the parcel and carry the same inward. When the parcel receptacle approaches its extreme inward movement, the bottom 38, under the action of gravity, drops down against the inclined lower wall of the inclined spoutforming portion 24a and causes the parcel y to be dropped through the chute 22 and into the vault 20.

The above are the major mechanical operations of the system.

Immediately upon opening of the outer 50 door 26, the spring-pressed plunger 93b, operating as already described, closes the buzzer circuit 89 and sets the buzzer 90-91-92 into action, for a purpose already generally indicated and which will be fur-55 ther considered after having described the action of the alarm system illustrated diagrammatically in Fig. 15 and further illustrated in Figs 12, 13 and 14.

When the parcel receptacle 37 is drawn 60 forward or outward, it moves out of engagement with the rack bar 85, thereby releasing the weight 75 and permitting the latter to begin its downward movement, and which downward movement is retarded by the remost position, whereupon the rack bar 85, 65 tarding fan 84. This weight 75 and its under the action of the returned parcel 130

9 and 10. When the outer door 26 is closed, closer, and when they move downward, the plunger 93b and presses the same inward so end of the movable member of the reset the circuit through the reset magnet 60 and causes the same to act on the armatuce 72 but without result, however, inasmuch as said armature is then locked down by the 10 able parcels are indicated by the character y. latch lever 71 and holds the switch of the 75 alarm circuit 54 open.

It is calculated that about two minutes will be sufficient time to enable the depositor, after opening the door 26, to draw out the parcel receptacle, deposit the parcel therein 80 and release said receptacle for automatic return movement and, hence, the clock mechanism or retarding device, which retards the movement of the switch closer, is in this particular instance so timed that 85 a Jittle more than two minutes will be required to cause the stud 76 of the downwardly moving switch closer to come into engagement with the upper member of the trip switch 63. Hence, if the deposit be 90 made and the parcel receptacle be permitted to return to its normal position within the two minute period, then the returning parcel receptacle, by engagement with the rack 84 and operating through the connections de- 95 scribed, will raise or move the switch-closing weight 75 back to its normal position without having permitted the stud 76 to engage or close the trip switch 63. Under upward or return movement of the stud 76, it will, in 100 the above event, again close the trip switch 62 but without any functional action.

If, however, the parcel receptacle be held outward or not permitted to return to its normal position within the assumed limit 105 of two minutes, then the stud 76 will engage the upper member of the trip switch 63 and will close said switch. When the trip switch 63 is closed, the circuit through the trip magnet 59 will be closed and said mag- 110 net will be energized, with a result that the armature 69 will be moved and, through the connection 70, the latch lever 71 will be disengaged from the armature 72, and thereupon, under the tension of the movable 115 spring contact 58, (the upper end of which is rounded or cam-shaped), said armature 72 will be raised and the contact 58 will engage the contact 57, thereby closing the alarm circuit proper 54 and causing the alarm 120 gong 56 to be sounded. Thus, it will be seen that when the trip magnet 58 has been energized by an extreme movement of the switch closer 75-76, the armature 72, subject to the reset magnet 60, will be released and 125 will remain released and the plarm continued to be sounded until the parcel receptacle 37 has been restored to its normal inner-

receptacle and through the connections must close the door in order to cut the buzz- 65 described, will move said switch closer back to its raised or normal position, causing the stud 76 to again engage the curved end of 5 the movable member of the reset switch 62, thereby closing said switch. When the switch 62 is closed, under these conditions just noted, the circuit through the reset magnet 60 will be closed and said reset mag-10 net will be energized and will then draw the armature 72 downward to a position where it will be again engaged and held by a latch lever 71. This return movement of the armature 72 presses the switch contact 15 85 out of engagement with the contact 57 and thereby opens the alarm circuit 54 and stops the alarm.

From the above, it will be evident that the scheme just above described and illus-20 trated diagrammatically in Fig. 15 accomplishes two results, to wit: first, means for sounding an alarm when the parcel receptacle has been held in its outwardly drawn or receiving position beyond a predetermined 25 period of time, and second, means for automatically opening the alarm circuit and setting the device for a repeated alarm action. In the scheme specifically illustrated in said Fig. 15, the opening of the alarm circuit 30 and resetting of the device for repeated action is dependant upon return movement of the parcel receptacle to its normal position, and in this simple diagrammatical illustration, said opening of the alarm circuit and resetting of the device would be accomplished instantly upon return movement of the parcel receptacle. In practice, however, it is proposed to use a more intricate scheme in which, by a clock-actuated or timing 40 mechanism, the opening of the alarm circuit and resetting of the device for repeated action would be delayed for a period of, say, fifteen minutes more or less, even though the parcel receptacle should be restored to nor-45 mal position in less time. For the incorporation of this more elaborate scheme just above indicated, we have, in practice, utilized a system disclosed and claimed in the Lawrence Patent No. 1,629,347, of date May 50 17, 1927, entitled "Alarm system for vaults."

Attention is further called to the buzzer circuit illustrated in Fig. 16, and which buzzer, as it will be remembered, will be thrown into action instantly upon opening of the 55 outer door 26. This buzzer will, therefore, means for automatically setting said alarm continue to operate as long as the said door device into action when said parcel recep- 120 26 is open and will be cut out of action only tacle is moved and held away from its diswhen the said door is closed. This buzzer, charging position for a predetermined except for the time of its starting into action, period of time, and resetting means for re-60 has no timed action in respect to the alarm storing said alarm device to normal condidevice and it simply keeps the depositor's tion for repeated action and rendered opera- 125 attention directed to the fact that he is op- tive by the return of said parcel receptacle erating under a limited period of time and to its normal discharging position. that he should close the door and, in fact,

er out of action.

What we claim is:

1. In a depository of the kind described, a delivery chute provided at its receiving end with a transversely extended casing 70 adapted to be projected through a wall, a parcel receptacle slidably mounted in said casing from a position to discharge into said chute into a position to receive a parcel, in combination with a normally restrained 75 alarm device and means for automatically setting the same into action when said receptacle is moved from its normally discharging position for a predetermined period of time.

2. The structure defined in claim 1 in which said alarm device includes an alarm circuit having a normally open switch, an actuating circuit including a normally open trip switch, a magnet and magnet-operated 85 means for closing the switch of said alarm circuit, a switch closer under strain to move and to close said trip switch but normally held from movement when said parcel receptacle is in discharging position, means 90 for retarding the movement of said switch closer when released so that it will cause the closing of the alarm circuit only when said parcel receptacle has been held from its discharging position for a predetermined 95 period of time, and means for restoring said switch closer to normal position when said parcel receptacle is restored to discharging position.

3. In a depository of the kind described, 100 a delivery chute, a parcel receptacle at the receiving end of said chute movable from a position to receive a parcel into a position to discharge the same into said chute, yielding means tending to move said parcel re- 105 ceptacle, a normally restrained alarm device, and means for automatically setting said alarm device into action when said parcel receptacle is moved and held away from its normal discharging position for a predeter- 110 mined period of time.

4. In a depository of the kind described, a delivery chute, a parcel receptacle at the receiving end of said chute movable from a position to receive a parcel into a position 115 to discharge the same into said chute, yielding means tending to move said parcel receptacle, a normally restrained alarm device,

5. In a depository of the kind described.

end with a transversely extended casing receptacle slidably mounted in said casing adapted to project through a wall, a parcel from a position to discharge into said chute 35 receptacle slidably mounted in said casing into a position to receive a parcel, yielding from a position to discharge into said chute means operative to return said parcel recepinto a position to receive a parcel, said casing at its outer end having a normally closed door, yielding means operative to return said parcel receptacle from its receiving 10 position into its normal discharging position, a normally restrained electromagnetic alarm device including a trip switch, a timed switch closer, held retractive and inoperative when said parcel receptacle is in a nor-15 mal discharging position, but released for timed action when said receptacle is moved from normal position and operative on said trip switch to cause the sounding of the alarm when and only when said parcel re-20 ceptacle is held away from its normal dis- combination with electromagnetic resetting charging position for a predetermined period of time.

6. The structure defined in claim 5 in combination with electromagnetic resetting 25 means for restoring said alarm device to normal condition for repeated action and rendered operative by the return movement of said parcel receptacle to its normal discharging position.

7. In a depository of the kind described, a delivery chute provided at its receiving end with a transversely extended casing

a delivery chute provided at its receiving adapted to project through a wall, a parcel tacle from its receiving position into its normal discharging position, a normally restrained electromagnetic alarm device in- 40 cluding a trip switch, a timed switch closer held retracted and inoperative when said parcel receptacle is in a normal discharging position, but released for timed action when said receptacle is moved from normal posi- 45 tion and operative on said trip switch to cause the sounding of the alarm when and only when said parcel receptacle is held away from its normal discharging position

for a predetermined period of time.

8. The structure defined in claim 7 in means for restoring said alarm device to normal condition for repeated action and rendered operative by the return movement 55 of said parcel receptacle to its normal discharging position.

In testimony whereof we affix our signa-

OLIVER B. McCLINTOCK. EDWARD G. LAWRENCE. EDWARD C. HANSON. JOSEPH SODERHOLM.