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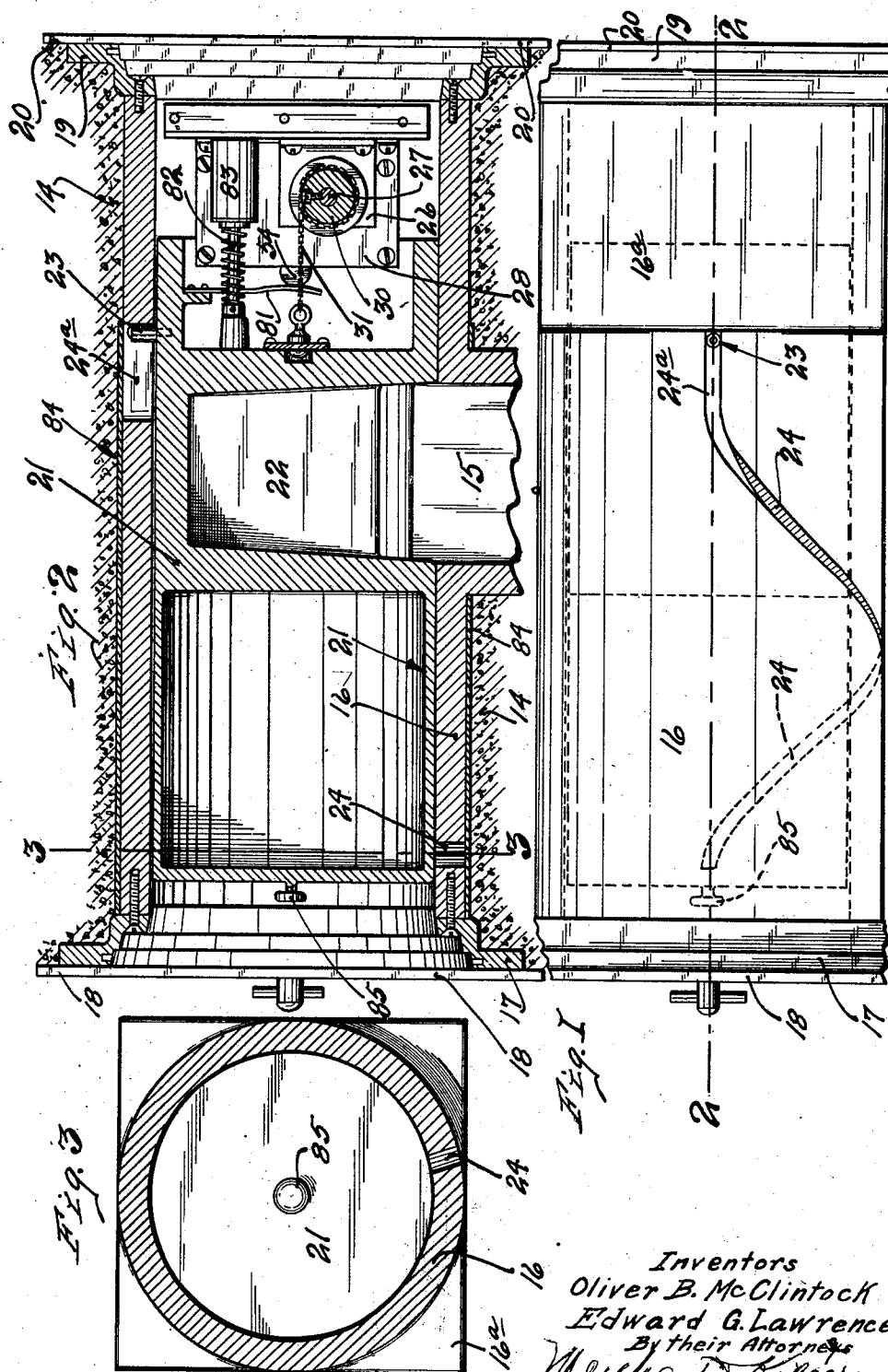
O. B. McCLINTOCK ET AL

1,759,129

AFTER HOUR DEPOSITORY

Filed Feb. 16, 1928

3 Sheets-Sheet 1



Inventors
Oliver B. McClintock
Edward G. Lawrence
By their Attorneys
Merchant Kilgore

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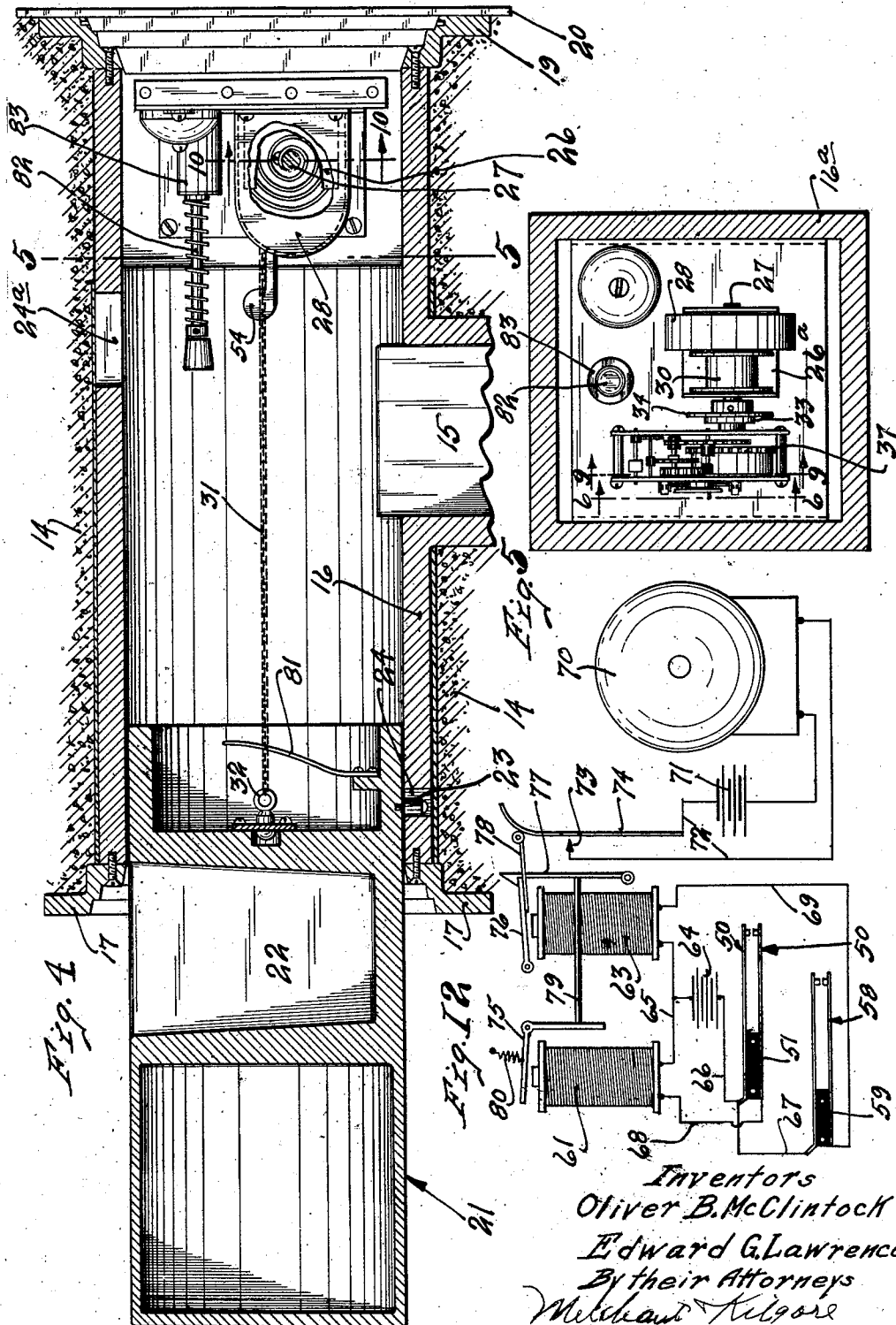
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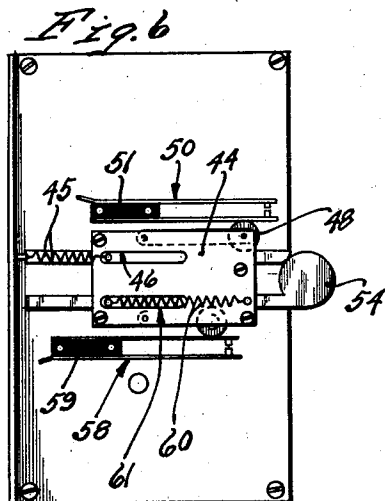
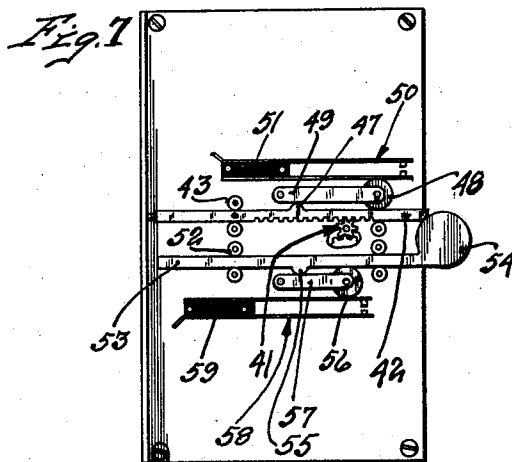


Fig. 8

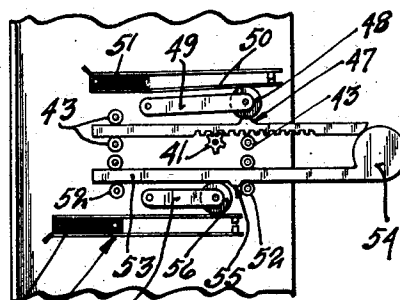
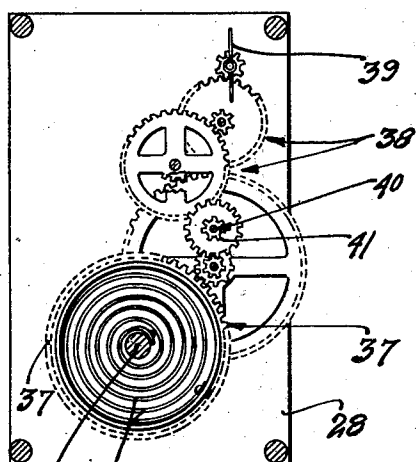
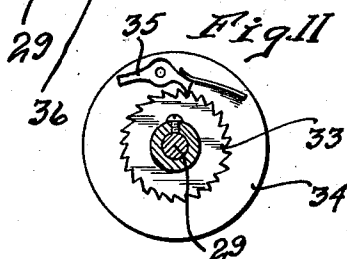
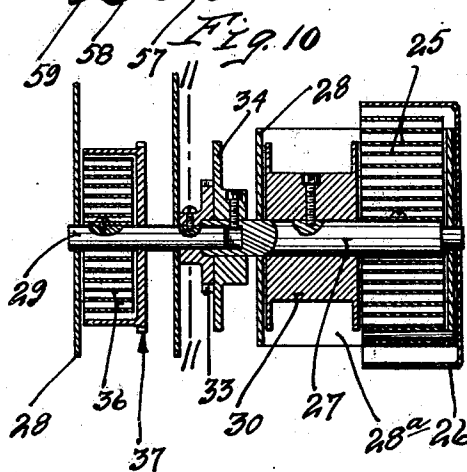


Fig. 9



Inventors
 Oliver B. McClintock
 Edward G. Lawrence
 By their Attorneys
 Marchant & Moore

UNITED STATES PATENT OFFICE

OLIVER B. McCLINTOCK AND EDWARD G. LAWRENCE, OF MINNEAPOLIS, MINNESOTA,
ASSIGNORS TO O. B. McCLINTOCK COMPANY, OF MINNEAPOLIS, MINNESOTA, A COR-
PORATION OF MINNESOTA

AFTER-HOUR DEPOSITORY

Application filed February 16, 1928. Serial No. 254,804.

Our invention relates to means for depositing money or valuable articles in safety deposit vaults and the like from the exterior of a building or structure in which the vault is installed. Devices of this character are quite generally designated as after hour or night depositories and they are used in connection with banks and the like to enable depositors, subscribers or other authorized persons to deposit money or valuables at night or at any other time out of banking or business hours.

The invention resides primarily in a novel form and arrangement of the parcel-receiving and depositing means proper but it also includes highly important alarm and safety devices, certain of which are more broadly claimed in a prior application of Oliver B. McClintock, Edward G. Lawrence, Edward C. Hanson and Joseph Soderholm, S. N. 212,539, filed August 12, 1927.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a plan view of the improved device, some parts being broken away;

Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1;

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

Fig. 4 is a view corresponding to Fig. 2 but showing the parcel carrier drawn out into a receding position;

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 4.

Fig. 6 is a detail in side elevation, showing parts shown in the vicinity of the line marked 6—6 of Fig. 5;

Fig. 7 is a view corresponding to Fig. 6, with some parts removed;

Fig. 8 is a view corresponding to Fig. 7 but showing different positions of the parts and some parts being broken away;

Fig. 9 is a section taken on the line 9—9 of Fig. 5;

Fig. 10 is a fragmentary section taken on the line 10—10 of Fig. 4, some parts being removed;

Fig. 11 is a detail in section on the line 11—11 of Fig. 10;

Fig. 12 is a diagrammatic view showing an alarm circuit including a trip magnet, a reset magnet and trip and reset switches, which switches are also shown in Figs. 6, 7 and 8.

The walls of a bank or other building in which the device is installed is indicated by the numeral 14 in Figs. 2 and 4. The numeral 15 indicates a delivery chute which, as shown, is embedded in the wall 14 and which in practice will be extended downward to the receiving vault, not shown, but which may be of any well known or suitable arrangement. The upper end of this chute is joined to and opens into the bottom of a horizontally disposed metal casing 16, the interior of which at least is cylindrical. A metal door flange or frame 17 is rigidly secured to the outer end of the casing 16 and is adapted to be closed by a strong metallic door 18, preferably hinged thereto and arranged to be normally locked into closed position by a suitable lock mechanism, not shown, but the keys to which door lock would be given to depositors. Also, as shown, a metallic door flange or frame 19 is secured to the inner end of the casing 16 and is normally closed by a door 20, the exact structure of which is not important for the purposes of this case.

Mounted to slide and to rotate within the casing 16, is a cylindrical parcel carrier 21 formed with a large pocket or parcel receptacle 22. The pocket 22 extends diametrically of the carrier 21, is closed at its bottom and is open at its top, the top and bottom being here referred to as the position occupied by the pocket when the carrier is drawn out into a parcel-receiving position, as shown in Fig. 4, by reference to which it will be noted that said pocket is located a considerable distance inward of the outer end of said carrier. The carrier 21 is provided with a cam-acting projection, as shown, in the form of a roller-equipped stud 23 that works in a spiral slot or camway 24 formed in the non-rotary or fixed casing 16. For a purpose which will hereinafter appear, the camway 24 has a straight portion 24^a at its

inner end that extends parallel to the axis of the parcel carrier and casing. The cam groove 24 extends through 180 degrees and is so arranged that when the parcel carrier 21 is withdrawn, as shown in Fig. 4, the receiving pocket 22 will be in a vertical position with its top open, but when the carrier is returned to its normal position, shown in Fig. 2, said pocket 22 will be turned upside down and its open side will then be aligned with the delivery tube 15 for the discharge of the contents of the pocket into said chute and from thence into the safety deposit vault proper.

For automatically returning the parcel carrier from its projected position back to its normal position, there is provided a yielding device, the motive power of which is preferably afforded by a quite powerful coiled spring 25 which, at its outer end, is anchored to a casing 26 and, at its inner end, is anchored to a rotary shaft 27. The casing 26 is rigidly secured to a framework made up of a plurality of laterally spaced rigidly connected members 28 and base flanges 28^a, which latter are bolted or otherwise rigidly but detachably secured to the right angular rear end portion 16^a of the casing 16. Shaft 27 is journaled in certain of the frame members 28 and, as shown, is telescoped around the end of a short axially aligned shaft 29 that is journaled in certain other of the frame members 28. Shaft members 27 and 29, in fact, constitute a two-part shaft, the sections of which are rotatable together and the one in respect to the other. Rigidly secured to shaft 27, is a windlass drum or pulley 30. A chain or other flexible cable 31 is anchored to and adapted to be wound upon the drum 30, and its extended end is connected to the inner end of the parcel carrier 21, as shown, by means of an eye-bolt coupling 32. At its inner end, the shaft 29 has a rigidly secured ratchet wheel 33 and rigidly secured to the inner end of the shaft 27, adjacent to said ratchet wheel, is a disc 34 equipped with a spring-pressed driving pawl 35 (see Figs. 10 and 11) that works on the ratchet wheel 33. A coiled spring 36 at its inner end is attached to shaft 29 and at its outer end is attached to an annular flange of a spur gear 37 that is loosely journaled on shaft 29. Gear 37 drives a train of clock gears, indicated as an entirety by the numeral 38. For the purpose of this case, it is only desirable further particularly to note that the movements of this train of gears is retarded by a rotary fan blade 39, such as used in alarm clock mechanisms, and that said train of gears drives an intermediate shaft 40 which at its projecting end is provided with a small spur pinion 41. The entire train of gears is supported by the frame members 28. The pinion 41, although located outside of the plate removed from Fig.

9, is, nevertheless, shown in full for the sake of clearness.

Pinion 41 normally meshes with the teeth of a small rack bar 42 (see particularly Figs. 6, 7 and 8) and is guided by projections 43 on the adjacent frame member 28 and moves inside of a retaining plate 44 secured to the adjacent frame member 28. This bar 42 is normally held in a retracted position toward the left, as shown in Figs. 6 and 7, by a light coiled spring 45 anchored to the frame member 28 and connected to said bar 42 through a slot 46 formed in the retaining plate 44. On its upper edge, bar 42 has a raised cam lug 47 which, when the bar is moved outward, as shown in Fig. 8, engages a roller 48 carried by the end of an arm 49 pivoted to the adjacent frame member 28. Located just above the roller-equipped arm 49, is a trip switch made up of two flexible contact strips 50 secured to an insulating block 51 supported on the adjacent frame member 28.

Located below the rack bar 42 and held for endwise sliding movements by guides 52 on the adjacent frame member 28, is another bar 53 which, as shown, is provided at its outer end with a rounded head 54. On its under side, bar 53 is provided with a cam lug 55 that is engageable with an underlying roller 56 carried by the free end of a short arm 57 pivoted to the adjacent frame member 28. The bar 42 is a trip switch-actuating bar and the bar 53 is a reset switch-operating device. Roller 56 normally loosely rests on the upper strip or arm of a reset switch 58, the lower arm of which is out of electrical contact with said upper arm. The two contact strips or arms of the reset switch are secured to an insulating block 59 applied to the adjacent frame member 28. The bar 53 is under strain to move outward toward the right in respect to Figs. 6, 7 and 8 from the action of a light coiled spring 60 that is anchored to the retaining plate 44 and is connected to the bar 53 through a slot 61 in the plate 44. The normal relative positions of the parts just described, as shown in Figs. 6 and 7, and their actions will be given in the description of the operation.

For co-operation with the trip switch 50, there is provided a trip magnet 62 and for co-operation with the reset switch 58, there is provided a reset magnet 63. The numeral 64 indicates a battery which affords energy for energizing the coils of the magnets 62 and 63 through leads 65, 66, 67, 68 and 69, the arrangement of which will be traced in the description of the operation. The numeral 70 indicates an electro-magnetic gong or alarm connected to a battery or source of electrical energy 71 by leads 72, one of which is connected to a fixed contact 73 and the other of which is connected to an electrical spring contact 74. The trip magnet 62 oper-

ates on one arm of a bell crank lever 75 and the magnet 63 operates on a pivoted armature 76 that is normally held down by a latch 77. Armature 76 has a projecting finger 78, the end of which is preferably roller-equipped and operates on the curved free end of the spring contact 74 and holds the latter out of engagement with contact 73 as long as armature 76 is latched or held in its depressed position by the latch 77. The depending arm of lever 75 is connected to the latch 77 by a link or cross connection 79. Yielding means, such as a light coiled spring 80 yieldingly holds lever 75 and latch 77 in normal positions shown in Fig. 12.

The reset switch operating bar 53 is arranged to be forced back to its normal position by a return movement of the parcel carrier from its outer or receding position back to its normal or discharging position. To accomplish this action with a yielding pressure, said parcel carrier (see Fig. 4) is provided with a yielding abutment in the form of a spring arm 81 which, upon return movement of the carrier, engages the head 54 of said bar 53. To quicken the return movement of the carrier 21 under the action of the spring 25, is shown a spring-projected plunger 82 and a co-operating dash pot 83, which latter is secured to the framework 28. The numeral 84 indicates a thin sheet metal jacket placed around the cylindrical portion of the casing 16 to cover the camway 24—24^a, so that concrete or mortar will not run into the camway when the casings are embedded in a concrete wall or the like. The parcel carrier 21, at its front end, is shown as provided with a knob or hand-piece 85 by means of which it may be readily pulled outward.

Operation

In making a deposit, the depositor, by the use of his key, unlocks the outer door 18 and swings the same into an open position. He then reaches into the casing and by taking hold of the knob 85 pulls the parcel carrier 21 outward as far as it will go, to-wit: into the position shown in Fig. 4. The articles to be deposited are then placed in the pocket 22 and as soon as the parcel carrier is then released it will be drawn back into the casing 16. As it is moved backward into the casing, it will be rotated on its axis by the camway 24 acting on the cam pin or projection 23 of the carrier. When the cam projection 23 has reached the straight section 24, the pocket 22 will have been turned completely upside down and as the cam projection 23 moves in the straight camway 24^a, the pocket will be brought into complete registration with the receiving end of the delivery chute 15, thereby insuring delivery of the valuable articles or things into said chute and into the vault or receiving receptacle. Of course, when the parcel carrier is drawn outward, the above

described rotary movement terminating in a limited straight line movement will be reversed. The above described action is that of the parcel carrier itself but its movements control the operation of the alarm device that will be set into action if the parcel carrier be held outward beyond a predetermined short interval of time, which, while ample for making the proper deposit, is not sufficient to permit serious tampering with the device. It is assumed that two minutes will be more than ample for making such a deposit and it will be assumed that this is the limited time that the carrier may be held outward without causing the sounding of the alarm.

Normally, the spring 25 is under considerable tension and this tension will, of course, be increased when the parcel carrier is drawn outward. Normally, the spring 36 will not be under tension or at least not under enough tension to drive the clock mechanism. When, however, the parcel carrier is moved outward, the pulley 30, through the chain 31, will be rotated and the dog 35 then acting on the ratchet wheel 33 will rotate shaft 29 and put spring 36 under such tension that it will operate the clock mechanism and will cause the pinion 41 to move alarm switch operating bar 42 outward to the position shown in Fig. 8 in approximately two minutes from the time that said parcel carrier is given its initial outward movement. Here it should be stated that when bar 42 reaches the position shown in Fig. 8, its cam lug 47 acting on roller 48 closes alarm switch 50, thereby causing trip magnet 62 to be energized. When trip magnet 62 is energized, it operates through armature 75, links 79 and causes latch 77 to release armature 76, and when said armature 76 is released, the spring tension in contact 74 (see Fig. 12) presses the roller-equipped fingers 78 and armature upward so that contact 74 will then spring into engagement with contact 73, and thereby close the alarm circuit and cause the gong 70 to be sounded. The sounding of this alarm will, of course, indicate either that the depository is being tampered with or that the depositor is taking too much time in making his deposit. If the depositor, upon the initial sounding of this alarm, then lets go of the parcel carrier the latter will be immediately returned to its normal inner position and the sounding of the alarm will be automatically stopped.

Each time that the parcel carrier is moved outward the reset switch actuating bar 53, under the action of spring 60, will be quickly thrown outward to the position shown in Fig. 8 and as it thus moves outward, it engages the roller 56 and causes the latter to close the reset switch 58. When reset switch 58 is closed, the reset magnet 63 will be energized and armature 76 will be drawn downward. Under such first actions, armature 76 will al-

ways be already held by latch 77 downward far enough to hold alarm contact 74 disengaged from contact 73. Each time that the parcel carrier is returned from its receiving to its normal position bars 53 and 42 will be automatically returned to their normal positions. The initial return movement of bars 53 will cause cam lug 55 operating on roller 56 to again close reset switch 58 and energize reset magnet 63. If, when magnet 63 is thus energized at the time just noted, armature 76 has been released and the alarm sounded then this act of energizing magnet 63 will draw the said armature 76 downward and will thereby open the alarm circuit 74 and stop the alarm and moreover the said alarm will be then again locked in its depressed position by the automatic engagement therewith of latch 77. Usually, however, the deposit will be made in less than the limit of two minutes in which case armature 76 will not be released and the alarm device will not be sounded and under all such ordinary operations, magnet 63 will be energized at times stated, but will perform no operative function because armature 76 will then all the time be held in its latched position by the latch 77. It is, therefore, evident that the function of the reset mechanism is to stop the alarm and set the mechanism for repeated action following any sounding of the alarm. When the parcel carrier is held outward less than two minutes, the bar 42 will be caused to move outward but will not be given sufficient movement to cause its lug 47 to engage the roller 48. Hence trip switch 50 will not be closed and there will be no sounding of an alarm.

When the bar 53 is returned to normal position against the tension of the spring 60 and by the engagement of the yielding abutment spring 81 with head 54, said head 54 will engage the outer end of bar 42 with a cam action that will raise the outer end of said bar 42 and disengage its teeth from pinion 41 so that said bar 42 will be immediately returned to its normal position by the spring 45. In this way pinion 41 is released during each return movement and the spring 36 is allowed to completely run down following each operation so that it will be required to be rewound by the next outward movement of the parcel carrier.

Attention is now called to the fact that the parcel carrier, while operating to reset the alarm devices, does not rotate but is moved on a straight line under the action of the straight inner portion 24^a of spiral camway 24.

What we claim is:—

1. In a depository of the kind described, a casing adapted to be anchored in the wall and provided with a depending delivery chute and a parcel carrier mounted in said casing for endwise sliding and rotary movements and provided with a parcel-receiving

pocket arranged to be turned from an upright exposed position outside of said casing into an inverted position aligned with said delivery chute.

2. In a depository of the kind described, a casing adapted to be anchored in a wall and provided with a cylindrical interior having a depending delivery chute, a cylindrical parcel carrier mounted in said casing and provided with a parcel-receiving pocket opening through one side of its cylindrical surface, and a spiral cam-acting connection between said casing and parcel carrier and operative to turn said carrier from a position in which its pocket will be open at its top when drawn outward of said casing into a position in which said pocket will be inverted and aligned with said delivery chute when said carrier has been moved into said casing.

3. In a depository of the kind described, a casing adapted to be anchored in the wall and provided with a depending delivery chute and a parcel carrier mounted in said casing for endwise sliding and rotary movements and provided with a parcel-receiving pocket arranged to be turned from an upright exposed position outside of said casing into an inverted position aligned with said delivery chute, and a yielding device serving to automatically return said carrier to its normal innermost position.

4. In a depository of the kind described, a casing adapted to be anchored in a wall and provided with a cylindrical interior having a depending delivery chute, a cylindrical parcel carrier mounted in said casing and provided with a parcel-receiving pocket opening through one side of its cylindrical surface, a spiral cam-acting connection between said casing and parcel carrier and operative to turn said carrier from a position in which its pocket will be open at its top when drawn outward of said casing into a position in which said pocket will be inverted and aligned with said delivery chute when said carrier has been moved into said casing, and a yielding device operative to automatically return said carrier from its outer back to its normal innermost position.

5. In a depository of the kind described, a casing adapted to be anchored in a wall and provided with a cylindrical interior having a depending delivery chute, a cylindrical parcel carrier mounted in said casing and provided with a parcel-receiving pocket opening through one side of its cylindrical surface, and a spiral cam-acting connection between said casing and parcel carrier and operative to turn said carrier from a position in which its pocket will be open at its top when drawn outward of said casing into a position in which said pocket will be inverted and aligned with said delivery chute when said carrier has been moved into said casing, said cam-acting connection having a

straight longitudinally acting portion at its inner extremity whereby the initial outward and final return movement of said parcel carrier will be free from rotation.

- 5 6. In a depository of the kind described, a casing adapted to be anchored in the wall and provided with a depending delivery chute and a parcel carrier mounted in said casing for endwise sliding and rotary move-
10 ments and provided with a parcel-receiving pocket arranged to be turned from an upright exposed position outside of said casing into an inverted position aligned with said delivery chute, and a door applied to the
15 outer end of said casing and which when closed cuts off access to said parcel carrier.

In testimony whereof we affix our signatures.

OLIVER B. McCLINTOCK.
EDWARD G. LAWRENCE.

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