

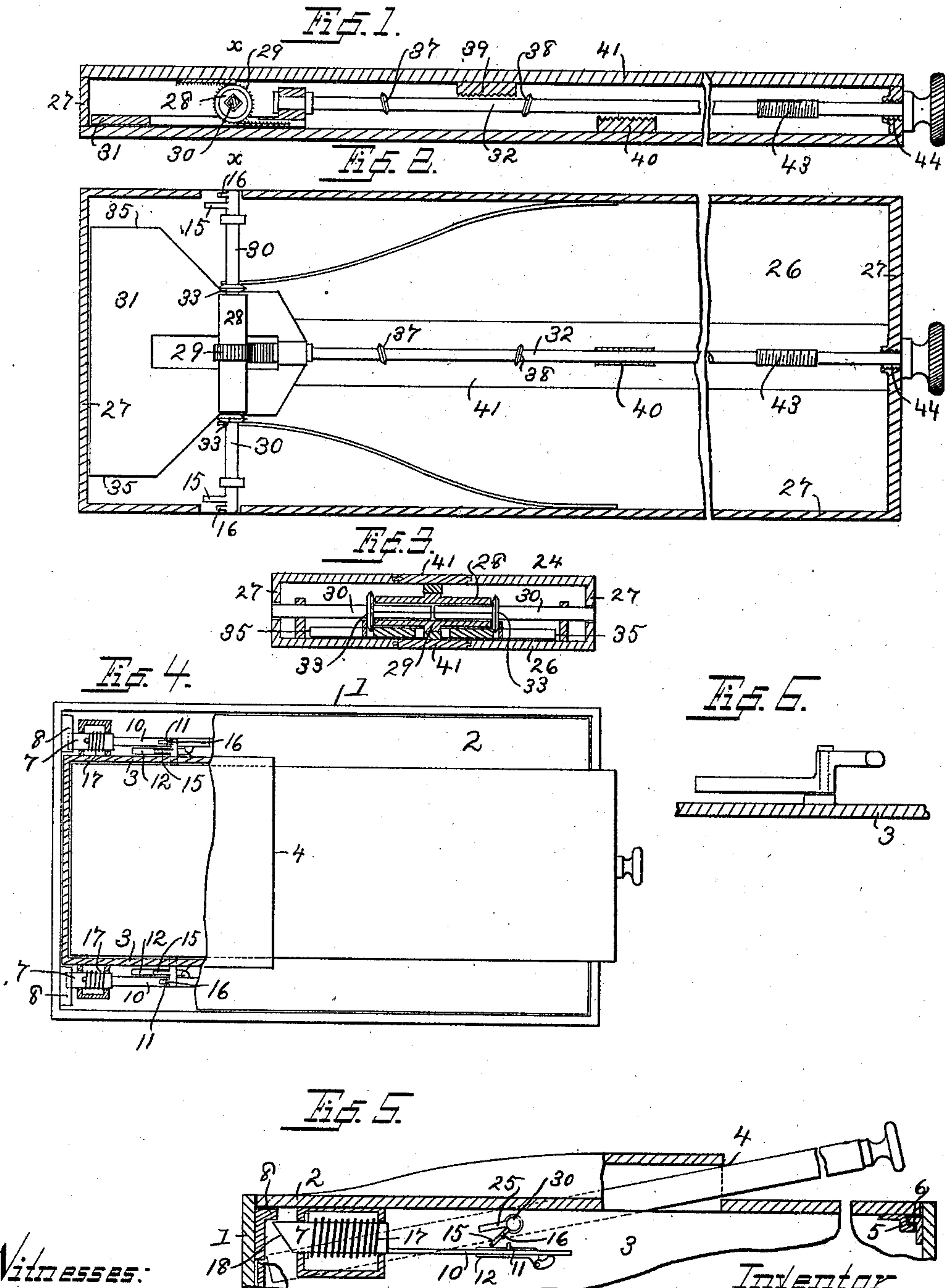
No. 719,239.

PATENTED JAN. 27, 1903.

C. A. LORD.
KEY MECHANISM.

APPLICATION FILED MAR. 15, 1902.

NO MODEL.



Witnesses:
F. A. Old
C. L. Rosch.

Inventor
Charles A. Lord

By Erwin & Wheeler
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES A. LORD, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO LORD
AUXILIARY BANK COMPANY, OF MILWAUKEE, WISCONSIN, A COR-
PORATION OF WISCONSIN.

KEY MECHANISM.

SPECIFICATION forming part of Letters Patent No. 719,239, dated January 27, 1903.

Application filed March 15, 1902. Serial No. 98,293. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. LORD, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Key Mechanism, of which the following is a specification.

My invention relates to improvements in key mechanism, with especial reference to the provision of means for manipulating the locks of portable safety-deposit receptacles of the class shown and described by me in an application for Letters Patent of the United States, Serial No. 98,294, bearing even date herewith, for improvements in such receptacles. My invention is, however, also adapted to be used in any case where it is desired to provide an internal lock which cannot be manipulated or even reached except by a special tool made for that purpose.

The object of my invention is to provide means for operating an internal lock which can only be reached and manipulated by a key mechanism of such expensive construction as to preclude its manufacture for the purpose of any single receptacle, but which can be used by the authorized officials of deposit companies or banks to open any or all of a large number of portable receptacles distributed by them to their customers.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of my improved mechanism. Fig. 2 is a plan view with one of the inclosing plates removed. Fig. 3 is a cross-sectional view drawn on line *x x* of Fig. 1. Fig. 4 is a top view of a receptacle, partially broken away and showing my invention applied thereto. Fig. 5 is a detail side view of the same with the side wall of the receptacle removed, and Fig. 6 is a detail view of the spring-adjusting lever.

Like parts are identified by the same reference characters throughout the several views.

1 is a receptacle; 2, a removable cover therefor.

3 represents walls or guards depending from the cover.

4 is a slot in the cover, adapted to permit the insertion of a tool between the guards 3. 50

5 and 6, respectively, are interlocking catches for securing the cover at one end, and 7 represents spring-actuated latches adapted to engage suitable catches 8 to secure the cover to the receptacle at the other end. 55

The latches 7 and catches 8 are connected, respectively, to the cover and end walls and are located in the spaces between the guards 3 and the side walls of the receptacle. Each of the catches 8 is provided with a rearwardly-projecting spring-arm 10, having a lug 11 thereon, adapted to be engaged by the key to retract the latch, as hereinafter explained. 60

17 represents the latch-actuating springs, and 12 is a lever pivotally secured to each guard 3, with one arm projecting underneath the spring 10 and the other arm extending in an adjacent plane in the path of an auxiliary spring-adjusting wing of the key. The key for each latch is provided with a spring-adjusting wing 15, adapted to bear upon one arm of lever 12 as the key is turned, when the other arm of the lever will engage and lift spring 10 to bring the lug 11 into the path of a latch-retracting wing 16 of the key, when with the continued rotation of the key the latch will be retracted from the catch 8. The ordinary type of self-locking latches are used, the front end being beveled at 18 to provide for the automatic retraction of the latch when the cover is closed. 65 70 75 80

It will be observed that the latches are located within the receptacle at points distant from the slot 4 and are protected by the guards 3 from any ordinary device that might be inserted through the slot. The guards are, however, provided with keyholes 25, through which the keys are manipulated by means of the mechanism hereinafter described, the keys being adjusted with the wings in nearly a horizontal position and passed through the keyholes at right angles to the direction of movement through the slot 4. I do not, however, limit the claims of this application to any specific form of locking mechanism nor to the provision of guards of any specific form, 85 90 95

the claims of this application being limited to the key mechanism, whereby locks of the described class may be operated.

The key-actuating mechanism and keys are mounted between two flat rectangular plates 24 and 26, one of the plates being provided with spacing-ribs or edge walls 27, as shown. A rotary sleeve 28 is provided with an exterior pinion 29 and a longitudinal opening square in cross-section, in which the squared ends of the key-shanks 30 are fitted, as shown in Fig. 3. A wedge-shaped plate 31 is swiveled to an operating-rod 32 and adapted to be drawn thereby between projections 33 on the key-shanks 30, whereby the keys are forced outwardly. When the plate 31 has been drawn between the projections 33 until its straight edges 35 are in engagement therewith, the worm-threads 37 and 38 of the rod 32 are brought into engagement with the racks 39 and 40 of the bars 41, and the screw-threaded portion 43 of the rod is engaged with the threaded aperture 44 in the end wall. The rod 32 may then be rotated to communicate a rotary motion to the keys through the medium of the bars 41, rack-teeth 42, pinion 29, sleeve 28, and the key-shanks. For economy of space the bars 41 are located in the slots in the plates 24 and 26 and supported therein by tongue-and-groove connections. The wedge-plate 31 is slotted at 45 to permit rack-teeth 42 to engage pinion 29. Key-detaching springs 50 are provided with forked ends engaging collars 33 on the key-shanks to withdraw the keys when the wedge-plate is retracted.

With the described construction I am enabled to provide a key-operating mechanism for a lock of the described character which can be inserted through an exceedingly narrow slot, the thickness of the key mechanism as actually used being substantially the same as that of the United States coined silver dollar.

With a lock of the described character the expense of constructing keys to reach and unlock them will be so great as to preclude their manufacture for a single receptacle; but as a single key may be constructed and used by a deposit company to unlock all its portable deposit-boxes the proportionate expense is trifling for each.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A key-carrier for internal locks, comprising a suitable support; one or more keys connected therewith; mechanism carried by the support for actuating said keys laterally; and key-rotating mechanism.

2. A key-carrier for internal locks, comprising a suitable support; one or more keys connected therewith; means for moving said key or keys outwardly and inwardly upon said support; and key-rotating mechanism.

3. A key-carrier for internal locks, comprising

a suitable support; one or more keys connected therewith; key-inserting mechanism adapted to actuate said key or keys longitudinally in their shanks; and key-rotating mechanism.

4. A key-carrier for internal locks, comprising a suitable support; one or more keys connected therewith; key-inserting mechanism adapted to actuate said key or keys longitudinally in their shanks; key-rotating mechanism; and connections for operating said mechanism from one end of the support.

5. A key-carrier for internal locks, comprising a suitable support; a key-supporting sleeve; one or more keys mounted to slide therein; a key-inserting device adapted to engage and actuate said key longitudinally; and a key-rotating device.

6. A key-carrier for internal locks, comprising a suitable support; a key-supporting sleeve; one or more keys mounted to slide therein; a wedge for actuating the keys longitudinally; a wedge-operating rod connected therewith, and projecting at one end of the carrier; and key-rotating mechanism connected with said rod.

7. A key-carrier for internal locks, comprising a suitable support; a key-supporting sleeve; one or more keys mounted to slide therein; a wedge for actuating the keys longitudinally; a wedge-operating rod connected therewith, and projecting at one end of the carrier; and key-rotating mechanism connected with said rod; together with key-retracting springs acting in opposition to the wedge.

8. A key-carrier for internal locks, comprising a suitable support; a key-supporting sleeve; one or more keys mounted to slide therein; a wedge for actuating the keys longitudinally at one end of the carrier; and key-rotating mechanism connected with said rod, in combination with an internal lock having a guard provided with a passage for the keys, at an angle to the line of carrier movement.

9. A key-carrier for internal locks, comprising a suitable support; a key-supporting sleeve; one or more keys mounted to slide therein; a pinion connected with said sleeve; rack-bars mounted on the support and arranged to actuate said pinion; a wedge for actuating said keys longitudinally; and an operating-rod adapted to communicate motion to the wedge and rack-bars.

10. A key-carrier for internal locks, comprising a suitable support; a key-holder; one or more keys mounted to slide therein; a wedge-plate adapted to adjust the keys longitudinally of their shanks; a key-rotating device; and an operating-rod adapted to actuate said wedge and to communicate motion to the key-rotating device when the wedge is in an operative position.

11. A key-carrier for internal locks, comprising a suitable support; a key-holder; one

or more keys mounted to slide therein; a device for adjusting the keys at an angle to the longitudinal axis of the carrier; and key-rotating mechanism.

- 5 12. A key-carrier for internal locks, comprising a suitable support; a key-holder; one or more keys mounted to slide therein; a device for adjusting the keys at an angle to the longitudinal axis of the carrier; and key-ro-

tating mechanism, said key-carrier being formed for insertion through a slot in a receptacle having an internal lock.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES A. LORD.

Witnesses:

JAS. B. ERWIN,
LEVERETT C. WHEELER.