No. 821,210. PATENTED MAY 22, 1906.

V. F. WALLIN.

LOCK.

APPLICATION FILED DEC. 27, 1905.

2 SHEETS—SHEET 1.

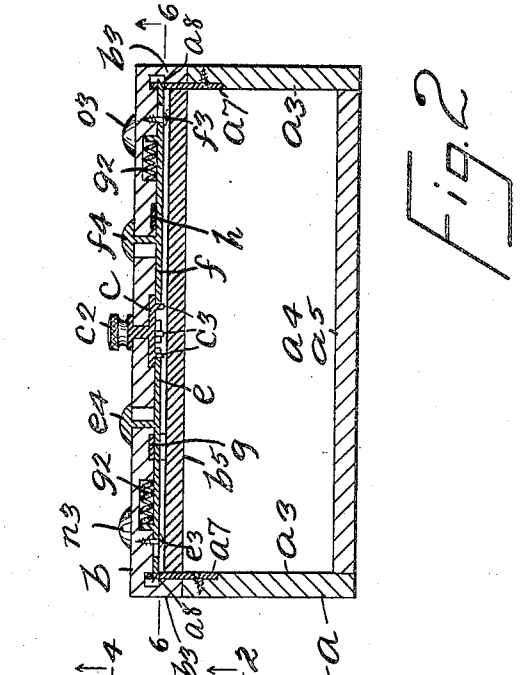

Fig. 2.

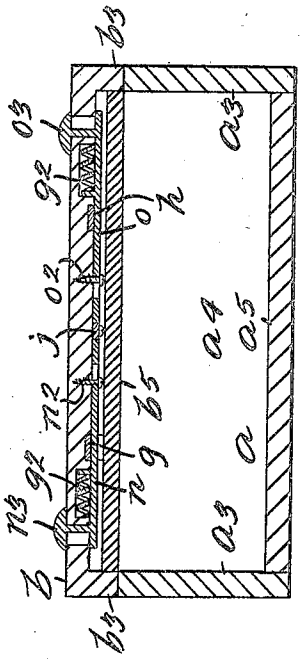

Fig. 4.

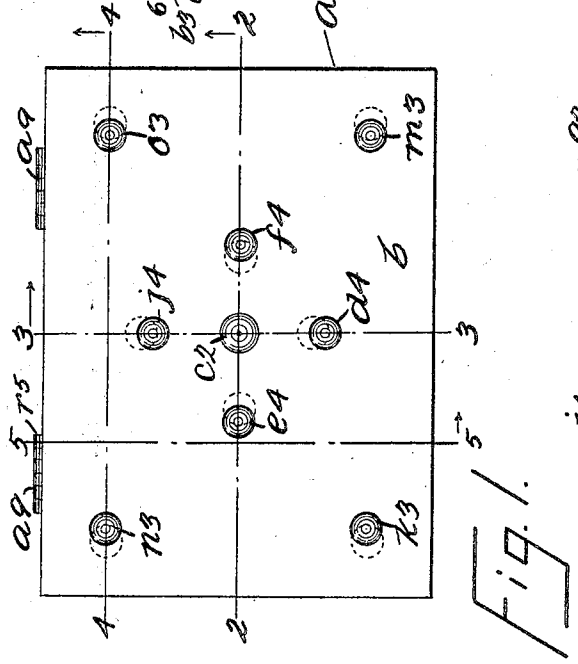

Fig. 1.

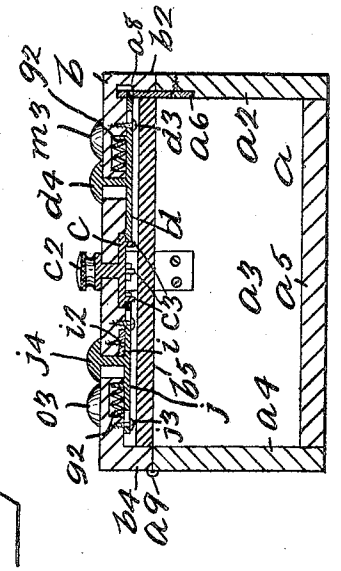

Fig. 3.

WITNESSES

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2 SHEETS—SHEET 2.

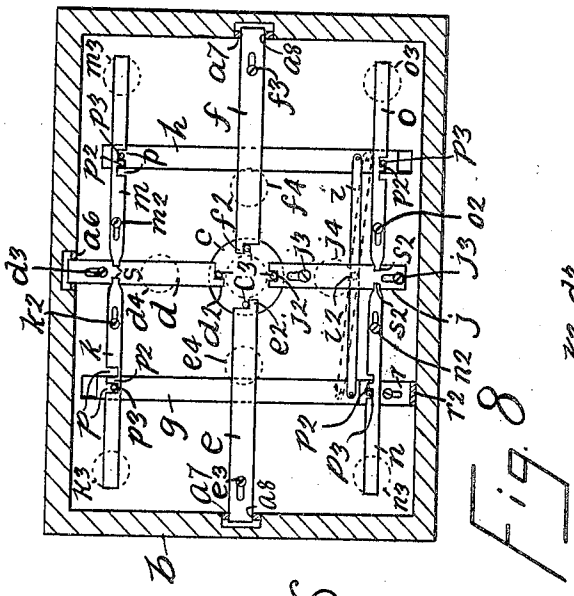

Fig. 6

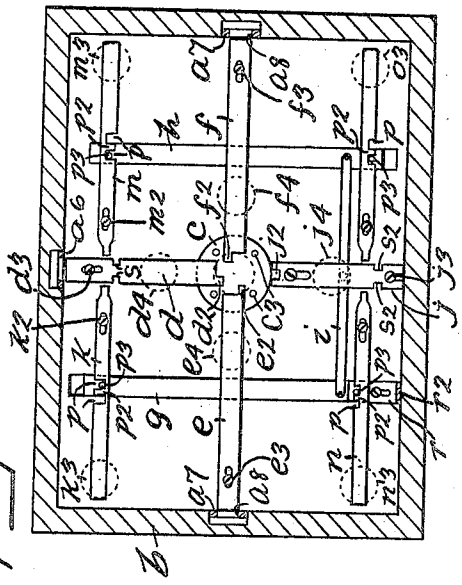

Fig. 8

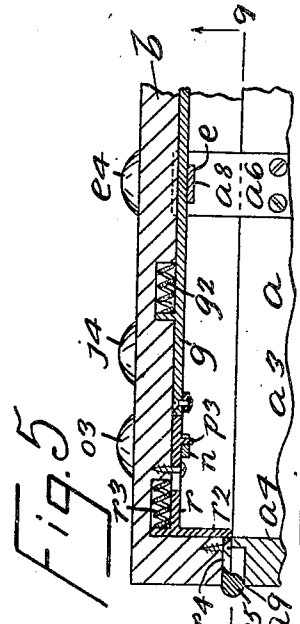

Fig. 5

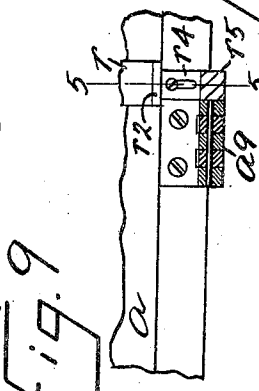

Fig. 9

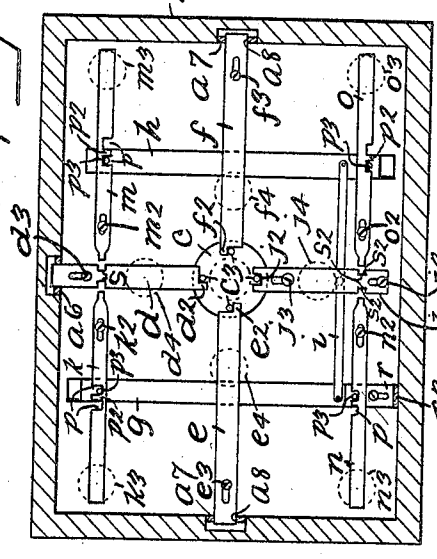

Fig. 7

WITNESSES

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UNITED STATES PATENT OFFICE.

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LOCK.

No. 821,210. Specification of Letters Patent. Patented May 22, 1906

Application filed December 27, 1905. Serial No. 293,451.

To all whom it may concern:

Be it known that I, VICTOR F. WALLIN, a subject of the Czar of Russia, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Locks, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to locks; and the object thereof is to provide an improved lock which is particularly designed for use in connection with cabinets, boxes, trunks, and the like, but which may be used on doors, if desired, or wherever a lock constructed according to this invention is applicable.

In the accompanying drawings my improved lock is shown applied to an ordinary box having a hinged cover, and the invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a plan view of a box, the cover of which is hinged and provided with my improved lock; Fig. 2, a section on the line 2 2 of Fig. 1; Fig. 3, a section on the line 3 3 of Fig. 1; Fig. 4, a section on the line 4 4 of Fig. 1; Fig. 5, a partial section on the line 5 5 of Fig. 1 and on the line 5 5 of Fig. 9; Fig. 6, a section on the line 6 6 of Fig. 2; Fig. 7, a view similar to Fig. 6, but showing the parts of the lock in a different position; Fig. 8, a view similar to Figs. 6 and 7, but showing the parts of the lock in a different position; and Fig. 9 a sectional view of one of the hinges of the cover of the box and showing the parts adjacent thereto.

In the drawings forming part of this specification I have shown a box comprising a body portion a and cover b. The body portion a comprises a front wall a^2, opposite end walls a^3, a back a^4, and a bottom a^5, and countersunk in and centrally of the inner side of the front wall a^2 is a lock-plate a^6, which projects upwardly into the cover b, and the opposite end walls a^3 are provided with similar lock-plates a^7, and each of the lock-plates a^6 and a^7 is provided near the upper end thereof with a transverse slot a^8.

The cover b is hinged at one side to the body of the box, as shown at a^9, and said cover is provided with a depending front wall b^2 and similar depending end walls b^3 and a back wall b^4, and secured therein or between the front end and back walls thereof is a plate b^5, between which and the top of the cover the principal part of the lock mechanism is placed. On the inner side of the cover b and centrally thereof and countersunk therein is a rotatable disk c, operated by a knob c^2 on the outer side of the cover, and the rotatable disk c is provided with a plurality of pins c^3, which depend or project downwardly therefrom and which are arranged radially of said disk and at a predetermined distance from the center thereof and which are equally spaced and four of which are preferably employed.

Arranged radially of the inner side of the cover b and movable radially with reference to the disk c are three lock-bolts d, e, and f, the first of which, d, extends from said disk toward the free edge or side of the cover, the other two of which, e and f, extend toward the opposite ends of the cover. All of these lock-bolts are adapted at their outer ends to enter the slots or openings a^8 in the corresponding lock-plates a^6 and a^7 at the front and opposite ends of the body portion of the box, and the lock-bolts d, e, and f are provided at their inner ends and at the corresponding corners thereof with projecting fingers d^2, e^2, and f^2, respectively. Arranged transversely of the inner side of the top portion of the cover b and transversely of the lock-bolts e and f are slide-bars g and h, one of which is shown in Fig. 5, and the ends of these bars adjacent to the back of the box are connected by a longitudinally-arranged lever i, which normally ranges parallel with the lock-bolts e and f and is pivoted centrally, as indicated at i^2 in Figs. 3 and 6, and arranged radially with reference to the disk c, and in line with the lock-bolt d is a radially-movable slide j, provided at its inner end with a recess j^2 and at its outer end and also in its inner end portion with longitudinal slots and screws passed therethrough, as shown at j^3, and by which it is connected with the cover, and the slide j covers the pivotal point of the lever i. Arranged near the free side or edge of the cover b and on the inner side thereof and radially of said cover and parallel with the lock-bolts e and f are longitudinally-movable locking-bars k and m, provided, respectively, with longitudinal slots k^2 and m^2, through which are passed screws or pins by which they are secured to the cover b, and arranged near and parallel with the back

side of the cover and with the lock-bolts *e* and *f* are supplemental longitudinally-movable locking-bars *n* and *o*, which are also provided with slots through which are passed screws, as shown at n^2 and o^2. The lock-bolts *d*, *e*, and *f* are also provided with longitudinal slots through which are passed screws or pins, as shown at d^3, e^3, and f^3, and on the top of the cover and arranged near the corners thereof are knobs k^3, m^3, n^3, and o^3, which are connected with the corresponding locking-bars *k*, *m*, *n*, and *o* and by means of which said bars are moved outwardly, as hereinafter described.

In the form of construction shown the transversely-movable slide-bars *g* and *h* are moved in opposite directions, the slide-bar *g* backwardly and the slide-bar *h* forwardly, by a spring g^2, (shown in Fig. 5,) the said bars being in operative connection by means of the lever *i*, and each of the lock-bolts *d*, *e*, and *f* is normally forced inwardly by a similar spring placed thereunder or between the same and the cover of the box, as shown at g^2 in Figs. 2 and 4, while the slide *j* is moved backwardly by a similar spring, as shown at g^2 in Fig. 3.

The locking-bars *k*, *m*, *n*, and *o* are each provided in their edges and about the center thereof with two notches or recesses *p*, between which is an inwardly-directed tongue p^2, and the slide-bars *g* and *h* are also each provided with a corresponding pin p^3, and the tongues *p* between the notches or recesses *p* of the bars *k*, *m*, *n*, and *o* are all of different lengths.

At the rear end of the transversely-arranged slide-bar *g* is a supplemental slide-bar *r*, having a depending member r^2, as shown in Figs. 5 and 6, and the bar *r* is normally forced outwardly by a spring r^3, and secured to the bottom edge of the back part of the cover is a slide r^4, having a head r^5, which is so formed as to represent a part of one of the hinges a^9.

Arranged concentrically around the central knob c^2, which operates the rotatable disk *c*, are four other knobs d^4, e^4, f^4, and j^4, and these knobs are connected, respectively, with the lock-bolts *d*, *e*, and *f* and with the slide-bar *j*.

In the form of construction shown the lock-bolt *d* is provided at its opposite sides and near its outer end with recesses *s*, adapted to receive the corresponding ends of the bars *k* and *m*, and said ends of said bars are preferably tapered to enter said recesses, and the slide-bar *j* is also provided near its rear end with corresponding recesses s^2, adapted to receive the corresponding ends of the locking-bars *n* and *o*, which are preferably similarly tapered, and it will also be seen that the notches or recesses *p* in the locking-bars *k* and *n* are in the forward edges of said bars, and the tongues p^2 between said notches or recesses project forwardly while the notches or recesses *p* in the locking-bars *m* and *o* are in the rear edges of said bars, while the tongues p^2 project backwardly, this arrangement being adapted in order to facilitate the operation of the said parts, as hereinafter described.

It will also be seen that three of the pins c^3 on the rotary disk *c* and the pins d^2, e^2, and f^2 on the lock-bolts *d*, *e*, and *f* afford means which enable said bolts to engage said locking-disk in the operation of the lock, as hereinafter described, and also permit of the rotation of said disk in one direction in said operation, and one of said pins c^3 operates in the notch or recess j^2 in the end of the slide-bar *j*, whereby said bar is also enabled to engage said disk, as hereinafter described.

In Fig. 6 the parts of the lock are shown in their operative position and the box is locked. In Fig. 7 the parts of the lock are shown in an intermediate unlocking position, and in Fig. 8 the parts of the lock are shown as thrown out of operation by means of the knobs on the cover and the box is ready to be opened.

Suppose the parts to be in the position shown in Fig. 8. It must be understood that the lock-bolts *d*, *e*, and *f* are held in this position by pressure applied to the knobs d^4, e^4, and f^4, as is also the slide-bar *j*, and if it is desired to close and lock the box the cover is closed down and the knobs d^4, e^4, and f^4 are released and the bolts *d*, *e*, and *f* are thrown outwardly by their corresponding springs and engage the lock-plates a^6 and a^7 in the front and end walls of the body portion of the box. At this stage of the proceedings, while the bar *j* is still held at the limit of its backward movement, the disk *c* is rotated to the position shown in Fig. 6, or the locking position, after which the bar *j* is released and immediately assumes the position shown in said figure, and the disk *c* is locked. At this time the slide r^4 is forced inwardly, which operation also forces the bar *g* forwardly and the bar *h* backwardly, and the lock-bars *k*, *m*, *n*, and *o* are forced inwardly by the springs g^2, with which they are provided, into the position shown in Fig. 6, at which time the box is locked.

It will be understood that the box is actually locked when the bar *j* assumes the position shown in Fig. 7, and if one be acquainted with the lock he will understand that the parts may be left in this position and the box may be quickly opened by simply forcing the bar *j* backwardly and rotating the disk *c* and forcing the lock-bolts *d*, *e*, and *f* inwardly; but the complete locking of the box is accomplished in the manner above described and by means of the slide r^4.

In opening the box after it has been fully locked in the manner above described the slide r^4 is pushed inwardly slightly, and this moves the bar *g* forwardly and the bar *h*

backwardly until the pin p of the locking-bar m is drawn out of the outer notch or recess in said bar, at which time the said bar is drawn outwardly by means of the knob m^3 until the pin p^3 will enter the inner notch or recess, when the slide r^4 is released, and the locking-bar m is then in the position shown in Fig. 7. This operation is repeated in connection with the locking-bars k, n, and o and in the order named until all of said locking-bars are in the position shown in Fig. 7, at which time the bar j is moved backwardly by means of its knob j^4, while the disk c is partially rotated, and the lock-bolts d, e, and f are moved inwardly by means of pressure applied to the corresponding knobs d^4, e^4, and f^4 and the box may be opened.

In the accompanying drawings I have shown the slide-bars g and h formed separately; but it will be apparent that these bars may be formed integrally, if desired, and various changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Although I have shown my invention applied to a box having a hinged cover, it will be apparent that the same may be applied to other articles or devices having a hinged or swinging member and a stationary member with which said hinged or swinging member is connected.

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

1. In a lock, a stationary member, a swinging member hinged to the stationary member, a rotary disk mounted centrally of the inner side of the swinging member and operated by a knob on the outer side of said member, lock-bolts arranged radially of the rotary disk and longitudinally of the swinging member and transversely and forwardly of said swinging member, the inner ends of said lock-bolts being adapted to engage the rotary disk and the outer ends thereof being adapted to engage parts secured to the stationary member, a slide-bar arranged radially of said disk and rearwardly thereof and the inner end of which is adapted to engage said disk, and means for operating said lock-bolts and slide-bar, substantially as shown and described.

2. In a lock, a stationary member, a swinging member hinged thereto, a rotary disk mounted centrally of the inner side of the swinging member, three radially-arranged locking-bars movable toward and from said disk and adapted at their inner ends to engage said disk and at their outer ends to engage parts secured to the stationary member, a slide-bar arranged radially and rearwardly of said disk and adapted to engage said disk at its inner end, slide-bars mounted transversely of the swinging member and on the opposite sides of the rotary disk, sliding locking-bars mounted longitudinally of the swinging member and forwardly and backwardly of said disk and two of which are adapted at their inner ends to engage one of the lock-bolts and the other two of which are adapted to engage the first-named slide-bar, and means for operating said bars, substantially as shown and described.

3. In a lock, a stationary member, a swinging member hinged to the stationary member, a rotary disk mounted centrally of the inner side of the stationary member, three lock-bolts arranged radially of said disk and one of which is arranged forwardly thereof and the other two laterally thereto, said bolts being also adapted at their inner ends to engage said rotary disk and at their outer ends to engage parts secured to the stationary member, a slide-bar mounted radially and rearwardly of the rotary disk and adapted at its inner end to engage said disk, and means for operating said parts, substantially as shown and described.

4. In a lock, a stationary member, a swinging member hinged to the stationary member, locking devices mounted on the inner side of the swinging member, a slide secured to the swinging member adjacent to one of the hinges thereof, knobs mounted on the outer side of the swinging member, and means whereby the locking devices may be operated by said knobs and said slide, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 23d day of December, 1905.

VICTOR F. WALLIN.

Witnesses:
F. A. STEWART,
C. E. MULREANY.