N. DORFMAN.

LOCK.

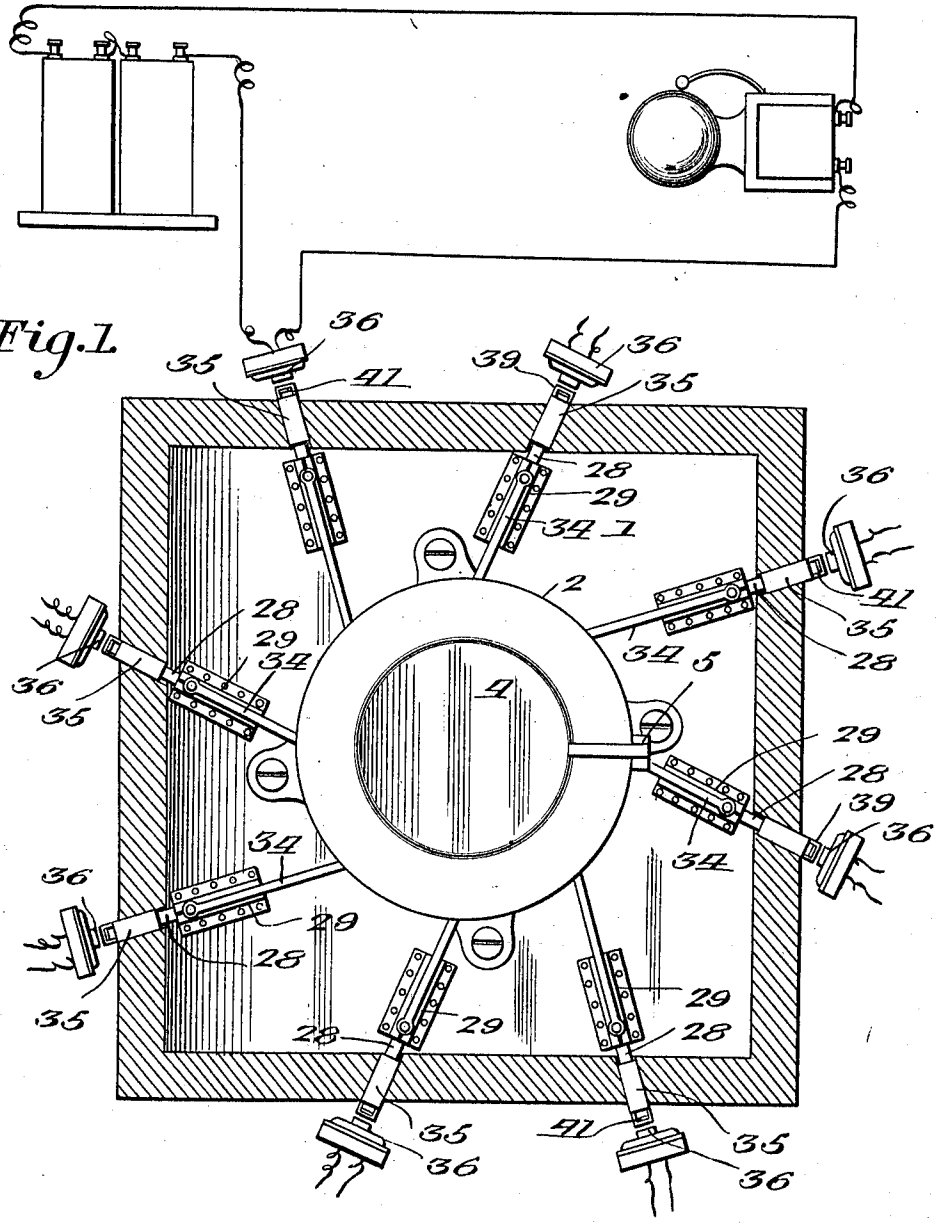
APPLICATION FILED JUNE 4, 1912.

1,051,707.

Patented Jan. 28, 1913.

3 SHEETS—SHEET 1.

Fig. 1



Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

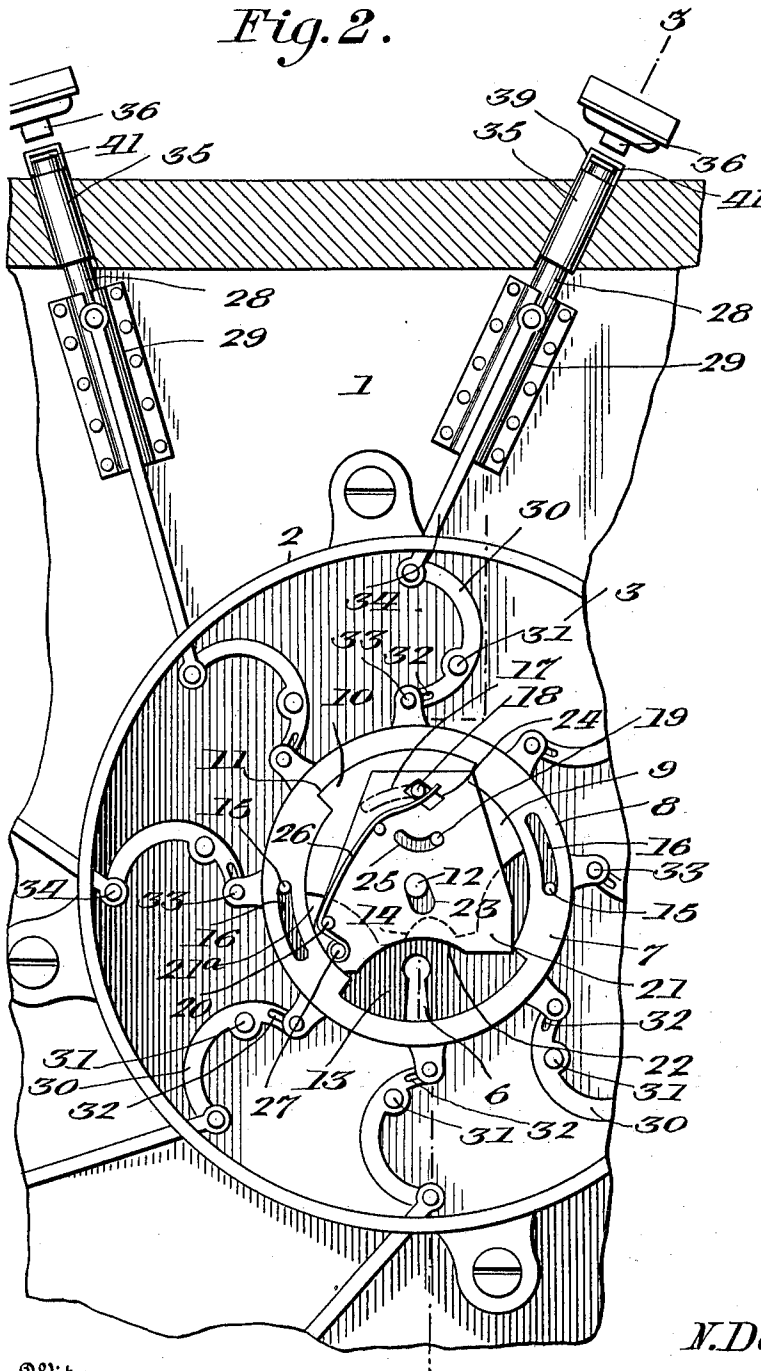
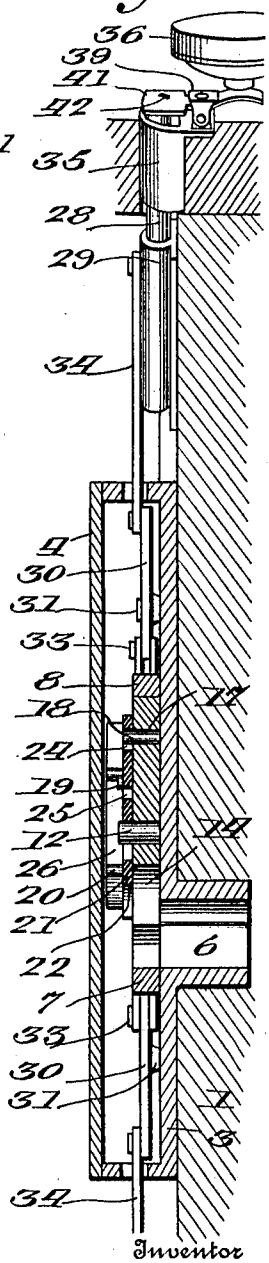


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

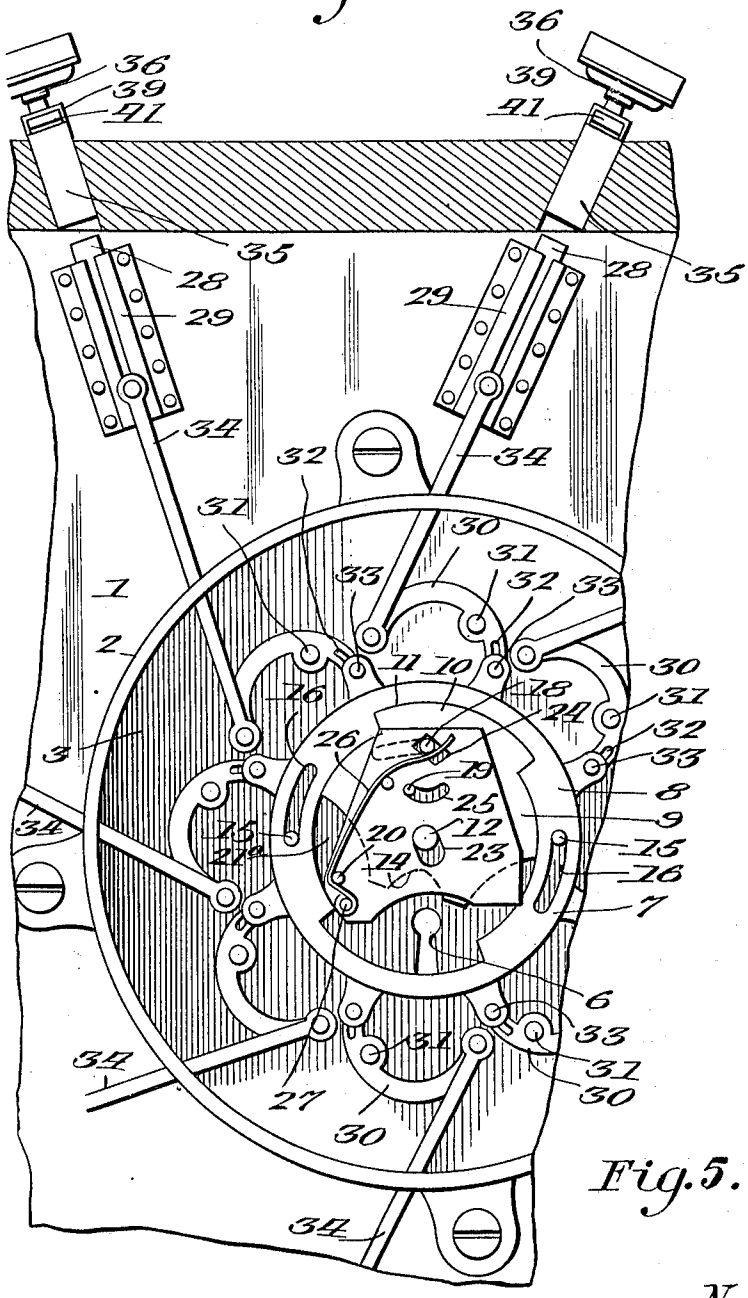

Fig. 5.

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UNITED STATES PATENT OFFICE.

NATHAN DORFMAN, OF CHICAGO, ILLINOIS.

LOCK.

1,051,707. Specification of Letters Patent. Patented Jan. 28, 1913.

Application filed June 4, 1912. Serial No. 701,622.

To all whom it may concern:

Be it known that I, NATHAN DORFMAN, a subject of the Czar of Russia, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Locks, of which the following is a specification.

This invention is an improved lock, which I call a "round locked and alarm lock" and which is adapted to be used on a safe door or a door of any kind, to operate a number of bolts at different points at the sides of the door, the invention consisting in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is an elevation of the inner side of a door provided with a lock constructed in accordance with my invention, the door frame being indicated in section. Fig. 2 is a similar view on a larger scale, showing a portion of the lock, the door and the door frame, the door frame being indicated in section and the cover of the lock being removed so as to disclose the interior mechanism of the lock. Fig. 3 is a sectional view of the same on the plane indicated by the line 3—3 of Fig. 2. Fig. 4 is a view similar to Fig. 2, showing the lock with its parts in unlocked position. Fig. 5 is a detail transverse sectional view of the guide.

For the purposes of this specification a door is indicated at 1. In practice, this may be a safe door or the door of a house, store, warehouse or door of any kind and my improved lock is adapted for use in connection with any kind of a door. On the inner side of the door at the center of the same is a lock case 2 which is circular in form and comprises a base plate 3 which may be attached to the door by any suitable means and a cover 4, the cover being here shown as hinged at one side as at 5. This plate has a key hole 6 and on the inner side of the base plate, and concentric with the case 2 is a bolt actuating element 7 which is here shown as comprising an annular connecting member 8 and a nearly circular key engaging member 9, the said key engaging member being concentrically arranged in the connecting member 8 and detachably secured thereto by means of a segmental projection 10 which fits in a correspondingly shaped recess 11 in one side of the connecting member 8. The pivot for the key engaging member and the connecting member of the bolt actuating member is indicated at 12. The key engaging member only partially fills the connecting member so that a chamber or space 13 is provided between opposing sides of the key engaging member and the connecting member for the operation of the wing or ward of the key. The key engaging member has a notch 14 at one side of the said chamber for engagement by the ward of the key, so that when the key is turned in one direction or the other it correspondingly moves the bolt actuating element and causes the latter to describe a partial revolution. The extent of revoluble or angular movement of the bolt actuating element is controlled by stops 15 which operate in segmental slots 16 with which the connecting member is provided, the said stops projecting from the inner side of the base of the casing. The key engaging member is also provided with a slot 17 in which is a stop 18 which projects from the inner side of the base of the casing. The key engaging member also has a controlling stop 19 which projects therefrom.

A stud 20 projects from the inner side of the base of the lock case and operates in a slot 21^a with which the key engaging member 9 is provided. This stud forms the pivot for a detent plate 21. The said detent plate is here shown as substantially triangular and with a curved recess 22 in its base, the lower side of the base of the detent plate partially covering the chamber formed between the key engaging member and connecting member of the bolt actuating element. This detent plate has a slot 23 to clear the pivot of the bolt actuating element and through which the said pivot projects, and also has a slot 24 to clear the stop 18 and a segmental slot 25 in which the controlling stop 19 operates, the said slot 25 being arranged reversely of the slot 17. A spring 26 bears at an intermediate portion of the stud and has one end connected to a stud 27 which projects from the detent plate and the other end of the said spring bears against the stop 18. The function of this spring is to normally hold the detent plate in place with the controlling stop in one end or the other of the slot 25 so that the detent plate prevents the turning or partial turning of the bolt actuating element except by an appropriate key.

When an appropriate key is placed in the key hole and partly turned, its ward which

engages the recess 14 of the key engaging member also bears against the curved edge of the lower end of the detent plate formed by the recess 22 so that a partial turning of the key raises the detent plate or partly turns it on its pivot at the same time as the key by its engagement with the notch 14 partly turns the bolt actuating element and as the key moves past the center the spring 26 returns the detent plate to its normal position with the controlling stop in the opposite end of the slot 25, as will be understood. The key engaging member being detachable from the connecting member of the bolt actuating element may be constructed for operation and engagement by any kind of key and, hence, my lock may be adapted to be operated by many different forms of key desired by merely changing the key engaging member.

I also provide a suitable number of substantially radial bolts 28 which are arranged in suitable guides 29 at the sides of the door or lock case, as the case may be. Any suitable number of these bolts may be provided according to the size of the lock and the size and nature of the door. I also provide link levers 30 which correspond in number with the bolts. These link levers are arranged in the lock case and are pivotally mounted as at 31, the pivots of the link levers being concentric with the bolt actuating element. Each one of these link levers has a slot 32 near its inner end which is engaged by a cam stud 33 which projects from one side of the connecting member 8 of the bolt actuating element, the outer end of each link lever being connected as at 34 to the inner end of one of the bolts. At the sides of the door opening are keepers 35 which receive the bolts when the latter are projected outwardly by the operation of the bolt actuating element and the link levers. When the bolt actuating element is turned in the reverse direction by the key these bolts are drawn inwardly to disengage the keepers and release the door.

I claim:—

1. In a lock of the class described, the combination of a base, a bolt actuating element pivotally mounted on the base for partial rotation, and having a key engaging notch and also having a controlling stud, a bolt connected to and actuated by said actuating element, a key actuated detent pivotally mounted and having a segmental slot to receive the controlling stud, and a spring to move the detent in one direction when released by the key.

2. In a lock of the class described, the combination of a base, a bolt actuating element pivotally mounted on the base for partial rotation and comprising a connecting member and a key engaging member, a series of bolts, a series of pivotally mounted link levers each having a slot at one end engaged by a pin projecting from the connecting member, the outer end of said link levers being pivotally connected to said bolts, and a spring actuated detent to prevent casual turning of the bolt actuating element.

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

NATHAN DORFMAN.

Witnesses:
SOLOMON TABACHNIK,
HARRY A. POLISHUK.