

F. W. SCHULTZE.
 LOCK.
 APPLICATION FILED MAY 21, 1909.

954,593.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

FIG. I.

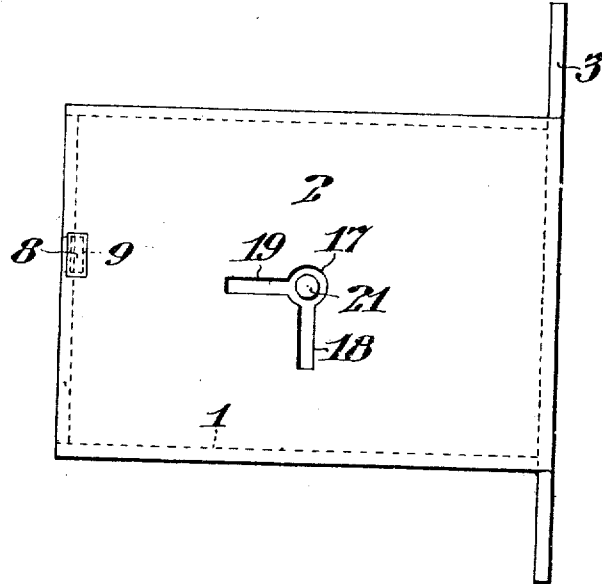
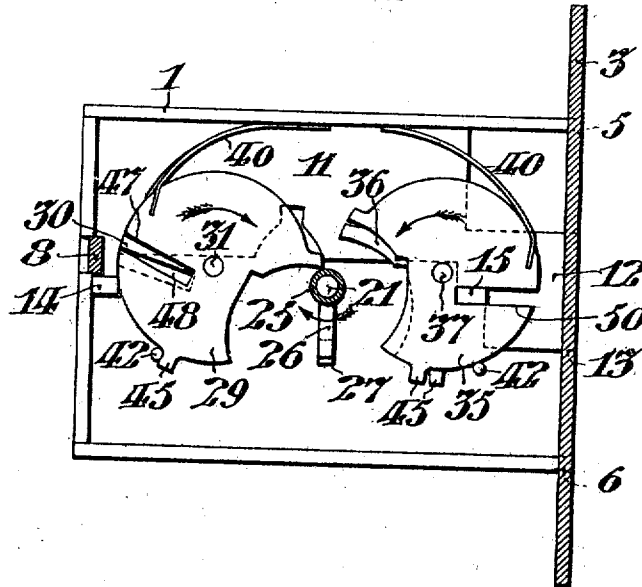


FIG. II.



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INVENTOR:

FREDERICK W. SCHULTZE,
by Arthur C. Lang

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2 SHEETS—SHEET 2.

FIG. III.

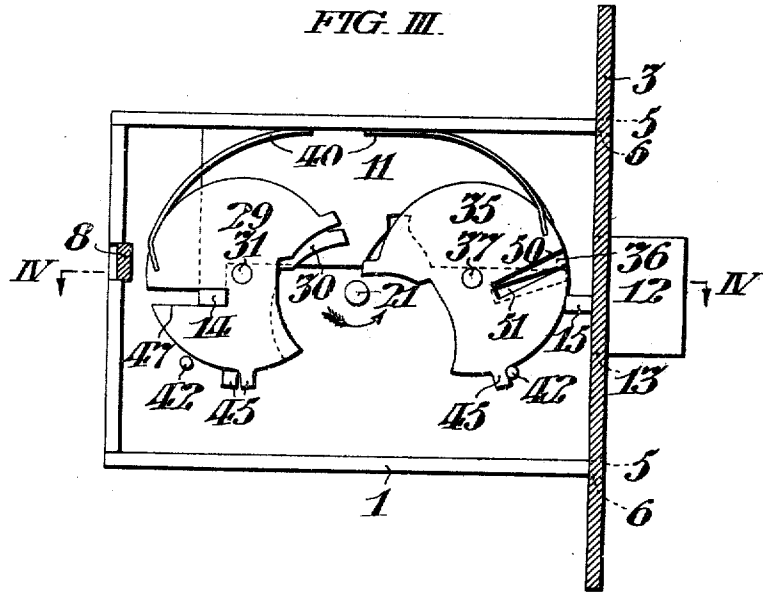


FIG. IV.

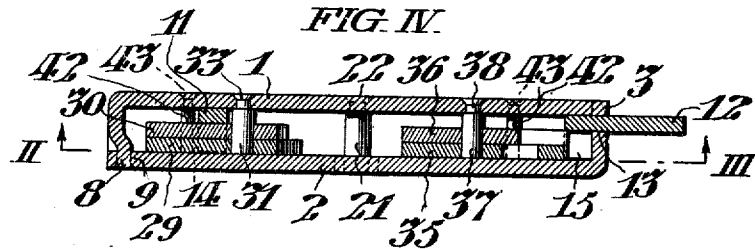


FIG. V.

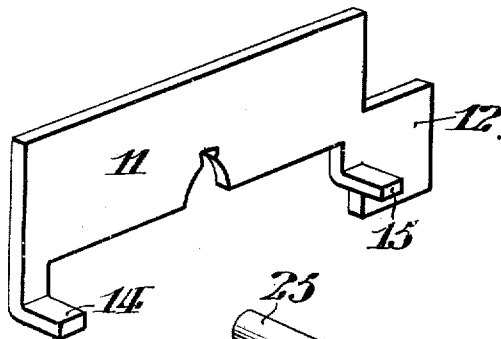
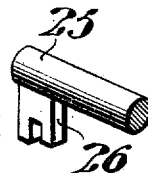


FIG. VI.



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INVENTOR:

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UNITED STATES PATENT OFFICE.

FREDERICK W. SCHULTZE, OF PHILADELPHIA, PENNSYLVANIA.

LOCK.

954,593.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed May 21, 1909. Serial No. 497,413.

To all whom it may concern:

Be it known that I, FREDERICK W. SCHULTZE, of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Locks, whereof the following is a specification, reference being had to the accompanying drawings.

My improvement relates to key locks of the class including rotary tumblers, and it is the object of my invention to provide distinct means for detaining the slide bolt of the lock respectively in locked and unlocked positions so as to prevent the accidental displacement of said bolt from either of said positions.

As hereinafter described the bolt detaining means includes lugs at opposite ends of said bolt respectively arranged to alternately engage rotary tumblers respectively mounted upon separate studs upon opposite sides of the key hole.

My invention includes the various novel features of construction and arrangement hereinafter more definitely specified.

In the drawings:—Figure I is a side elevation of a lock conveniently embodying my improvement. Fig. II is a sectional view of said lock, taken on the line II, III in Fig. IV, showing the slide bolt and rotary tumblers in unlocked position. Fig. III is a sectional view, taken on the line II, III in Fig. IV, showing said slide bolt and tumblers in locked position. Fig. IV is a sectional view, taken on the line IV, IV in Fig. III. Fig. V is a perspective view of the slide bolt indicated in Figs. II to IV inclusive. Fig. VI is a fragmentary perspective view of the key for said lock.

In said figures the lock casing 1, has the side plate 2, flanged to form the face plate 3. Said casing and side plate being each conveniently formed of sheet metal stampings are connected by lugs, the lugs 5 upon said casing 1, extending through the corresponding apertures 6 in said face plate 3, and, the lug 8, on said casing 1, extending through the corresponding aperture 9 in said side plate 2. The slide bolt 11, best shown in Fig. V, has its end 12 extending through the aperture 13 in said face plate 3 for engagement with the strike, and, said bolt has the lugs 14 and 15 respectively extending normal to the plane of said bolt for engage-

ment with the rotary tumblers as herein-after described.

As shown in Fig. 1; said side plate 2 has the key hole 17 with radial slots 18 and 19 extending respectively parallel with said face plate 3 and at right angles thereto. The key pintle 21 is conveniently riveted in rigid relation with the casing 1 as indicated at 22 in Fig. IV, and extends in concentric relation with said key hole 17 as indicated in Fig. I. The key includes the barrel 25 fitted on said pintle and the bit 26 arranged to cooperate with the rotary tumblers 29 and 30 which are mounted on the stud 31 which is rigidly connected with the casing 1, conveniently by riveting as indicated at 33 in Fig. IV, and, said key bit is also arranged to cooperate with the rotary tumblers 35 and 36 which are mounted on the stud 37, which is rigidly connected with the casing 1, conveniently by riveting as indicated at 38 in Fig. IV. Each of said tumblers 29, 30, 35 and 36 being provided with a spring 40 which bears at its outer end upon the wall of the casing 1. The construction and arrangement is such that said springs tend to turn said tumblers upon their axes in the direction of the arrows shown in Fig. II. When said tumblers are free to be turned by said springs their rotary movement in the direction of said arrows is limited by the studs 42 which are rigidly connected with the casing 1, conveniently by riveting, as indicated at 43 in Fig. IV; said studs 42 being encountered by the stop lugs 45 projecting from the respective tumblers. Said tumblers 29 and 30 have respective slots 47 and 48 adapted to receive the lug 14 carried by the slide bolt 11 to permit the movement of said bolt from the position shown in Fig. II to the position shown in Fig. III. Said tumblers 35 and 36 have respective slots 50 and 51 adapted to receive the lug 15 carried by the slide bolt 11 to permit the movement of said bolt from the position shown in Fig. III to the position shown in Fig. II. It may be observed that in the unlocked position of said slide bolt 11 shown in Fig. II, it is prevented from accidental movement by the tumblers 29 and 30 which present their unslotted peripheries in opposition to the bolt lug 14 and, in the locked position of said slide bolt 11 shown

in Fig. III, it is prevented from accidental movement by the tumblers 35 and 36 which present their unslotted peripheries in opposition to the bolt lug 15. Therefore, said slide bolt 11 is thus positively detained against accidental movement both in its locked and unlocked positions.

Said lock is operated as follows:—The key being inserted as shown in Fig. II and turned in the direction of the arrow; the tumblers 29 and 30 are thereby turned to present their slots 47 and 48 in registry with each other and in the path of the lug 14 on the slide bolt. Said bolt being engaged by the key during its continued rotary movement is then shifted so as to engage said lug 14 with said tumblers 29 and 30 as shown in Fig. III, wherein said slide bolt is in unlocked position. In passing to said position the lug 15 carried by the slide bolt is disengaged from the tumblers 35 and 36 and the latter are turned automatically by their springs 40 to present the unslotted portions of their peripheries in opposition to said lug 15 and thus positively prevent accidental unlocking movement of said slide bolt 11, except by the use of said key.

The unlocking movement is effected by turning the key in the direction of the arrow shown in Fig. III and thereby turning the tumblers 35 and 36 to present their slots 50 and 51 in registry with each other and in alinement with the path of movement of said lug 15. The continued movement of said key causes said slide bolt to be shifted to the unlocked position shown in Fig. II, in which accidental locking movement is prevented by the unslotted portions of the peripheries of the tumblers 29 and 30 presented in opposition to the lug 14.

I do not desire to limit myself to the precise details of construction and arrangement above described, as various modifications may be made therein without departing from the essential features of my invention as defined in the appended claims.

I claim:—

1. In a key lock, the combination with a slide bolt; of distinct means arranged to respectively detain said bolt in locked and

unlocked position; including respective rotary tumblers arranged to alternately engage said bolt.

2. In a key lock, the combination with a slide bolt; of distinct means arranged to respectively detain said bolt in locked and unlocked position; including distinct projections carried by said slide bolt; and, rotary tumblers having slots arranged to respectively engage said projections in alternation.

3. In a key lock, the combination with a slide bolt; of distinct means arranged to respectively detain said bolt in locked and unlocked position; including projections on said slide bolt at opposite ends thereof; rotary tumblers, having slots arranged to register with the path of said projections, and, springs upon the respective tumblers tending to turn them with their slots out of registry.

4. In a key lock, the combination with a casing having a key pintle in rigid relation therewith; of studs rigidly extending in said casing parallel with said pintle; a slide bolt arranged to reciprocate in said casing, transversely with respect to said pintle and studs, and having lugs projecting parallel with said pintle and studs at respectively opposite ends of said bolt; rotary tumblers mounted upon the respective studs and having slots arranged to register with the path of said bolt lugs; and, springs arranged to normally turn said tumblers with their slots out of registry; whereby, said slide bolt is detained in unlocked position by one set of tumblers and detained in locked position by the other set of tumblers.

5. In a key lock, the combination with a slide bolt arranged to be shifted by a key; of a rotary tumbler arranged to detain said bolt in unlocked position; and, a rotary tumbler arranged to detain said bolt in locked position.

In testimony whereof I have hereunto signed my name at Philadelphia, Pennsylvania, this 29th day of April, 1909;

FREDERICK W. SCHULTZE.

Witnesses:

ARTHUR E. PAIGE,
CATHARINE C. CASSIDY.