# W. UNVERZAGT.

## Lock for Doors.

No. 165,041. Patented June 29, 1875.

Fig: 1.

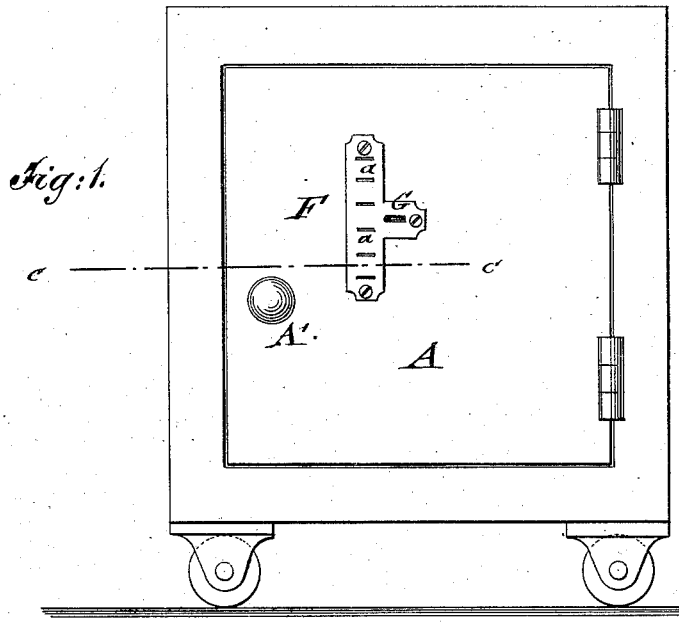



Fig: 4.




Fig: 5.




Fig: 2.

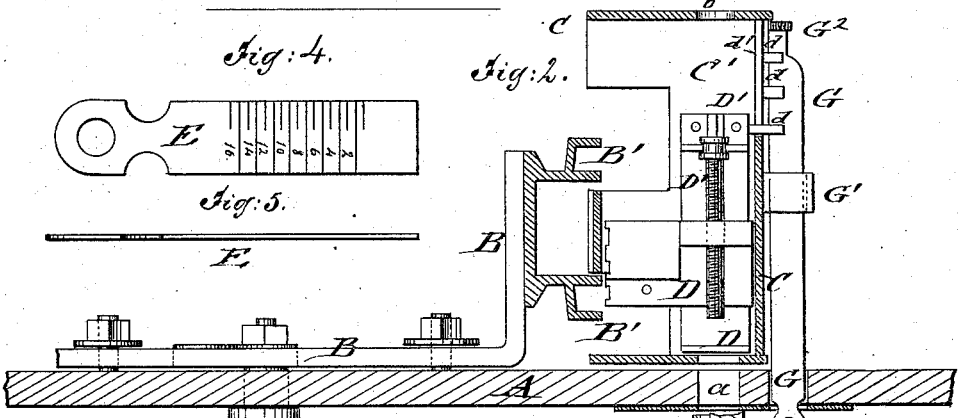
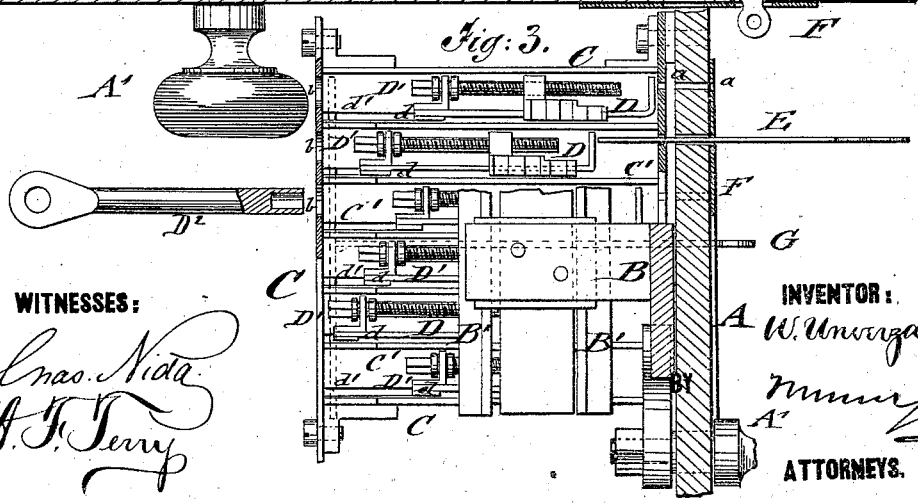



Fig: 3.

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# UNITED STATES PATENT OFFICE.

WILLIAM UNVERZAGT, OF MEMPHIS, TENNESSEE, ASSIGNOR TO HIMSELF AND I. A. CHASE, OF SAME PLACE.

## IMPROVEMENT IN LOCKS FOR DOORS.

Specification forming part of Letters Patent No. **165,041**, dated June 29, 1875; application filed May 22, 1875.

*To all whom it may concern:*

Be it known that I, WILLIAM UNVERZAGT, of Memphis, in the county of Shelby and State of Tennessee, have invented a new and Improved Combination-Lock, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a safe with my improved combination-lock; Fig. 2, a horizontal section of safe door and lock on the line *c c*, Fig. 1, in enlarged scale; Fig. 3, a sectional side view of the lock; and Figs. 4 and 5, top and side view of the graduated key.

Similar letters of reference indicate corresponding parts.

The invention will first be described in connection with drawing, and then pointed out in the claims.

In the drawing, A represents the door of a safe or vault, and B a bolt for locking the same, which is thrown by a door-knob, A′, in the usual manner. The bolt B is bent in backward direction at right angles to its main part, sliding along the door, and is provided at the bent part with projecting tongue-pieces B′ that enter recesses of horizontal guide or partition plate C′ of the tumbler-frame or casing C, which is attached securely to the inside of the door.

A series of sliding tumblers, D, is arranged in the partitions of casing C, the bent-up front plate of each tumbler D, being capable of being brought in contact with a graduated key, E, by key-holes *a* in a face-plate, F, door A, and frame C, so as to be pushed by the key as far back as the depth of the casing will permit.

As many tumblers and corresponding key-holes may be arranged as desired, so that a large number of different combinations may be obtained.

Each tumbler may again be adjusted to varying distance from the safe-door by means of screw-bolts $D^1$, which are set when the door is open by means of a key, $D^2$, introduced through perforations *b* at the rear part of casing C, as shown in Fig. 3. The graduated main key E is inserted at the same time through the front key-hole, and defines by its position the exact point to which each tumbler has to be set.

The tongue-pieces of the main bolt retain during the setting of the front of the tumblers the middle portions of the same, which extend at right angles to the direction of the tumblers into the opening between the tongues.

The edge of the tumbler extensions is notched or recessed, for the purposes of preventing the feeling for them by the bolt when attempts to open the safe are made.

When the tumblers are all set to the required combination by the screw-setting and graduated keys, the bolt is thrown forward for closing the safe, and the tumblers simultaneously carried forward toward the safe-door by a slide-piece, G, that passes through a slot in the door to the outside, being guided in a sleeve or bearing, $G^1$, at the side of casing C.

At the inner end of slide-piece G is applied at right angles thereto, so as to form the letter T therewith, a bar, $G^2$, that slides along the casing C, and is nearly of equal length therewith. Slide-bar $G^2$ acts on projecting pins or lugs *d*, which are applied to the rear ends of tumblers D, and extend through horizontal slots *d′* to the outside of casing C.

The drawing out of the slide-piece changes the position of all the tumblers, so that their recessed extensions form a bar to the tongue-pieces of the bolt, and render the opening of the same impossible, except by setting all the tumblers to the exact position by means of the graduated key, which brings the tumbler-extensions so far back that they enter on the opening of the bolt immediately between the tongues of the same. This is quickly accomplished by carrying the tumblers forward by the slide-piece, introducing the graduated key consecutively into the different front key-holes in the safe-door, and setting each tumbler to its exact place, as given by the number and length to which the key is inserted.

When all the tumblers are set by the graduated key, the extensions fit between the tongues, and the bolt may be thrown without obstruction, and the door opened.

The almost infinite number of combinations

produced by the number of tumblers, and their varying positions in the casing, give the required security against attempts to open the safe, while the lock, being made without springs and revolving parts, may be made of cast and straight pieces, and manufactured at considerably less cost than the complicated and expensive locks at present in use.

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

1. The sliding tumbler, having adjustable front plate to be set to varying distance from safe-door by screw-bolt and set-key, substantially as set forth.

2. The sliding tumblers having side projecting lugs at rear part, in combination with the controlling slide-piece passing to the outside of safe-door for changing position of tumblers, for the purpose set forth.

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