J. MORRIS.

SAFETY LOCK MECHANISM.

APPLICATION FILED APR. 16, 1920.

1,366,015.

Patented Jan. 18, 1921.

2 SHEETS—SHEET 1.

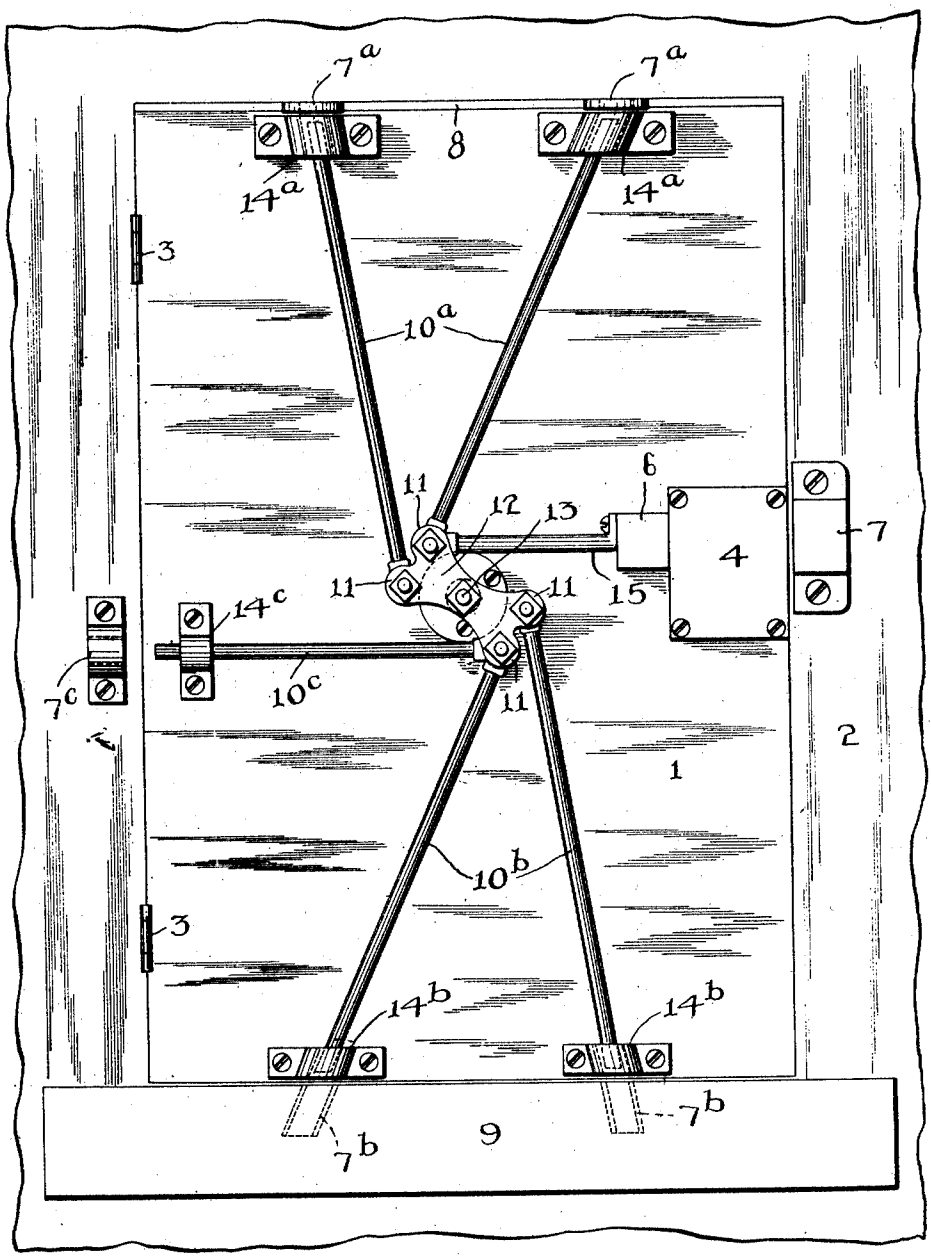


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

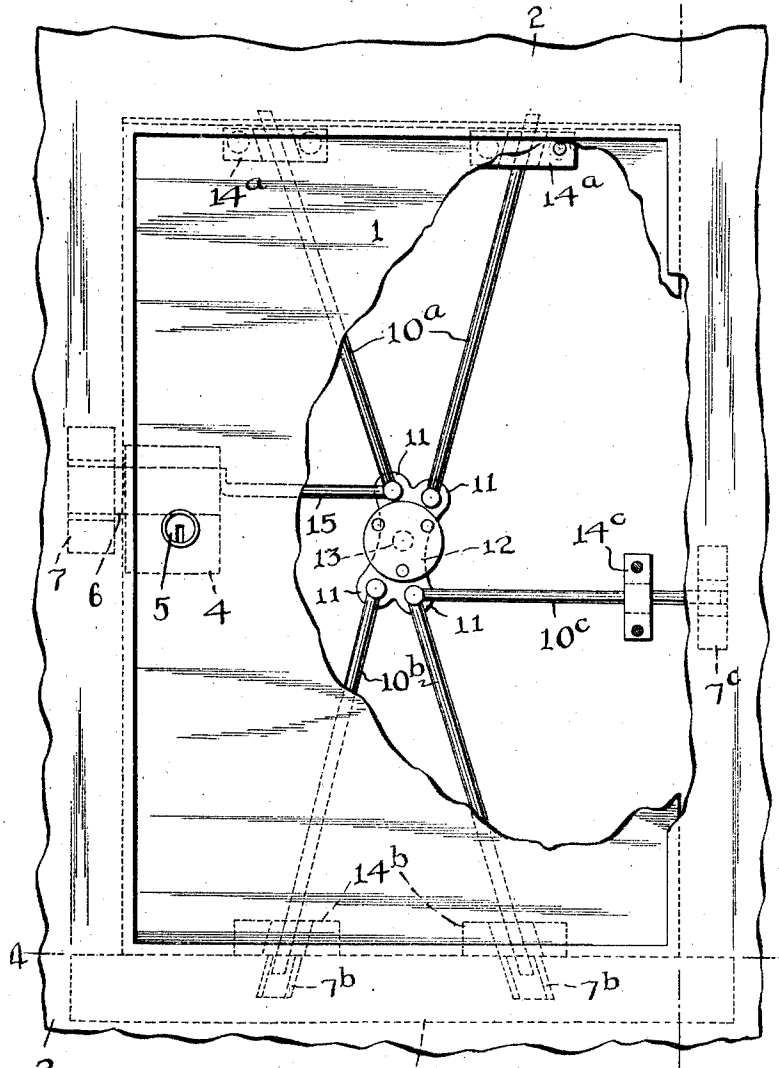
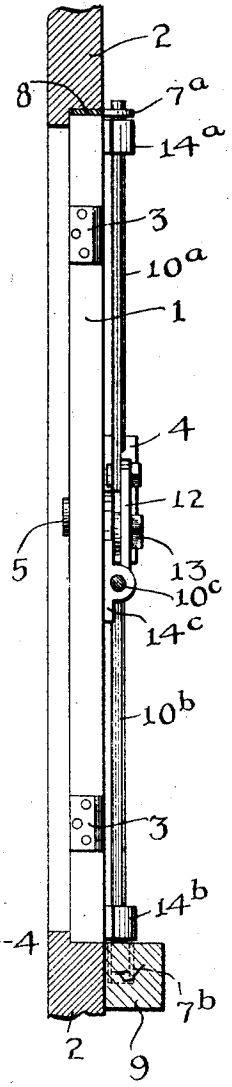


Fig. 3.



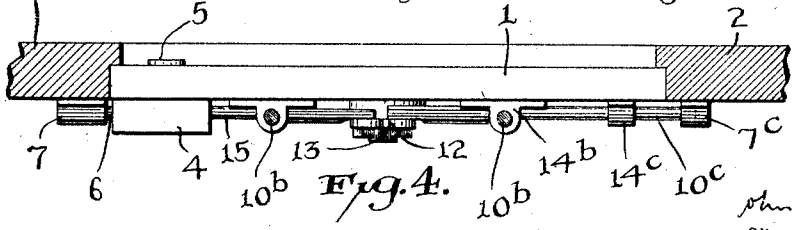


Fig. 4.

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UNITED STATES PATENT OFFICE.

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SAFETY LOCK MECHANISM.

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To all whom it may concern:

Be it known that I, JOHN MORRIS, a citizen of the United States, residing in the city and State of New York, have invented a new and useful Improvement in a Safety Lock Mechanism, of which the following is a specification.

The invention is a safety locking mechanism for doors, lids and like closures; and the object is to provide means of such nature that a single operation locks or unlocks the door at a number of points, thereby not only greatly strengthening the door against forcing, but also materially increasing the security in event of an attempt to free the door by cutting, because of the existence of a plurality of locking members in unknown locations, all of which would have to be cut. The invention therefore involves the combination on the door of an ordinary or suitable lock, with its bolt, and a number of bars on the back or in the interior of the door projectable in different directions at various points around the edges, and all connected with the lock so as to operate therewith. Other aspects of the invention will be apparent to those skilled in the art.

In the accompanying drawings forming a part hereof:

Figure 1 is a rear or inner view of a door in its frame, showing a preferred illustrative embodiment of the invention in the unlocked condition;

Fig. 2 is a view on a smaller scale, looking at the outer side, showing the locked condition, a portion of the door being broken away to show parts behind; and

Figs. 3 and 4 are sections, respectively, on the lines 3—3 and 4—4 of Fig. 2.

The drawing represents a door 1, its frame 2, and hinges 3 by which the door is swung at one side. These may be of any suitable description. A complete lock of the cylinder or similar type is indicated at 4 on the portion of the door remote from the hinge. The construction of this lock is not shown as such matters are well understood; 5 is the rotary cylinder or barrel containing the key slot and held immovable by tumblers in the absence of the key, and 6 is the bolt operated from the cylinder.

The bolt 6 enters a keeper 7 in or on the opposed portion of the door-frame. Other keepers 7^a, 7^a, 7^b, 7^b and 7^c are located at distributed points around the door opening. The number, position and form of these keepers may vary. Two are shown at top and two at bottom, or what correspond to these locations, and one at the hinge side. The keepers 7^a are perforated lugs projecting from an elongated metal plate 8 secured to an edge face of the door opening; the keepers 7^b are metal bushings inserted in a beam 9; and the keeper 7^c is a socket projecting from a screw-hole base adapted to be secured to the inner face of the frame.

The additional keepers, whatever their form and arrangement, coöperate with a corresponding number of additional locking members, which are connected with the primary lock, and the form and arrangement of which also may be varied. In the particular preferred embodiment, rods or bars 10^a, 10^a, 10^b, 10^b and 10^c radiate from the approximate middle of the back of the door to various points at the top, bottom and hinge edge regions of the door. Here, when the lock 4 is unlocked, their ends are withdrawn within the boundary of the door, and when the lock is locked their ends are projected into the keepers. Their inner ends are pivoted to perforated lugs 11 on a turning plate 12, which is mounted at its center upon a pivot 13 on the door. The lugs 11 are disposed at the proper points about the center 13 to secure the desired endwise throw of the bars upon limited turning of the plate, which constitutes in effect a multiple crank-arm. The bars are guided and laterally supported at their outer ends in keepers 14^a, 14^a, 14^b, 14^b and 14^c on the door. Each bar may be pivoted to a separate lug, or as shown two of the bars may be connected to a common lug.

In the illustrated construction one of the lugs 11 also pivotally receives the end of a rod or link 15, which is secured to the rear end or a rear extension of the bolt 6 of the key-operated lock. Common operating means are thus provided for connecting the various bars with the lock for actuation therewith.

The mechanism instead of being exposed on the inner or rear face of the door could of course be inclosed. From the outside the door appears to be equipped merely with the usual lock and there is nothing to indicate the presence or location of the reinforcing and extra-locking bars.

What is claimed as new is:

1. The combination on a door, of a lock at one point, a plurality of bars radiating in

different directions to lock the door to the frame at a number of other points, a turning plate to which the inner ends of said bars are connected, and a connection between said turning plate and the lock.

2. The combination with a door and a doorframe having a plurality of keepers at different points around the door opening, of a lock on the door adjacent one edge having a bolt to coöperate with one of said keepers, a plurality of radiating bars movable in different directions on the door to coöperate with the other keepers and a central turning connection between the bars and lock.

JOHN MORRIS.