

(Model.)

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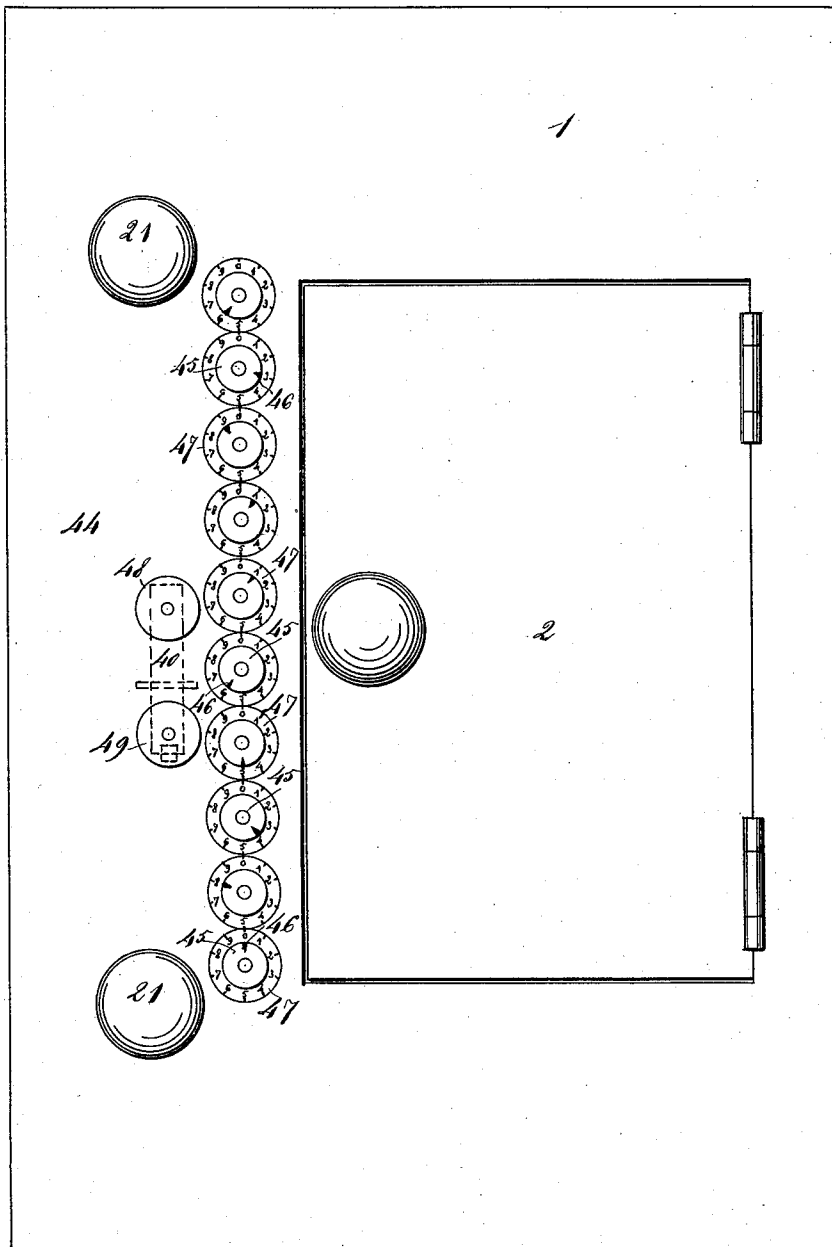
H. STANYNOUGHT.

SAFE LOCK.

No. 376,215.

Patented Jan. 10, 1888.

Fig. 1



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(Model.)

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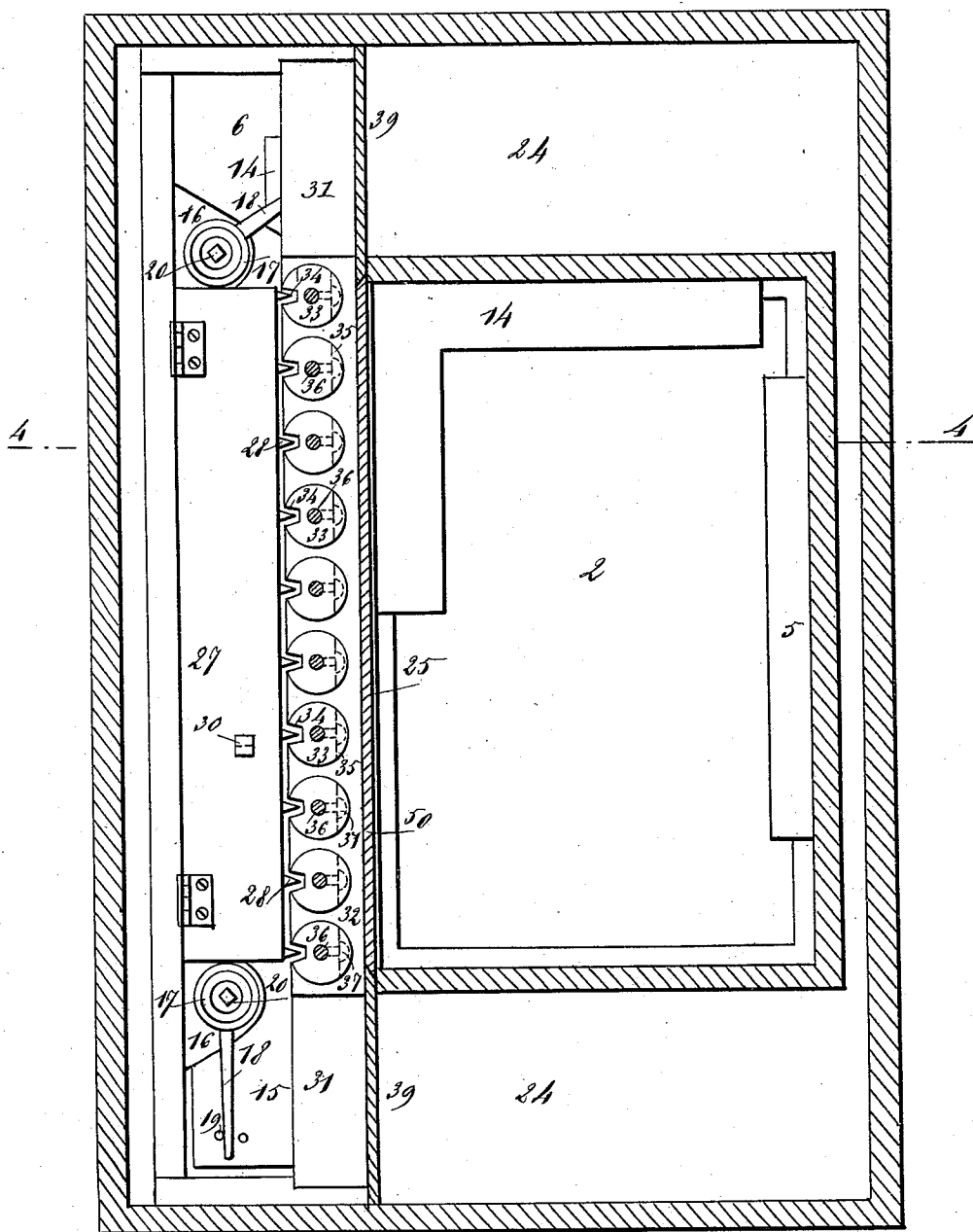
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Fig. 2



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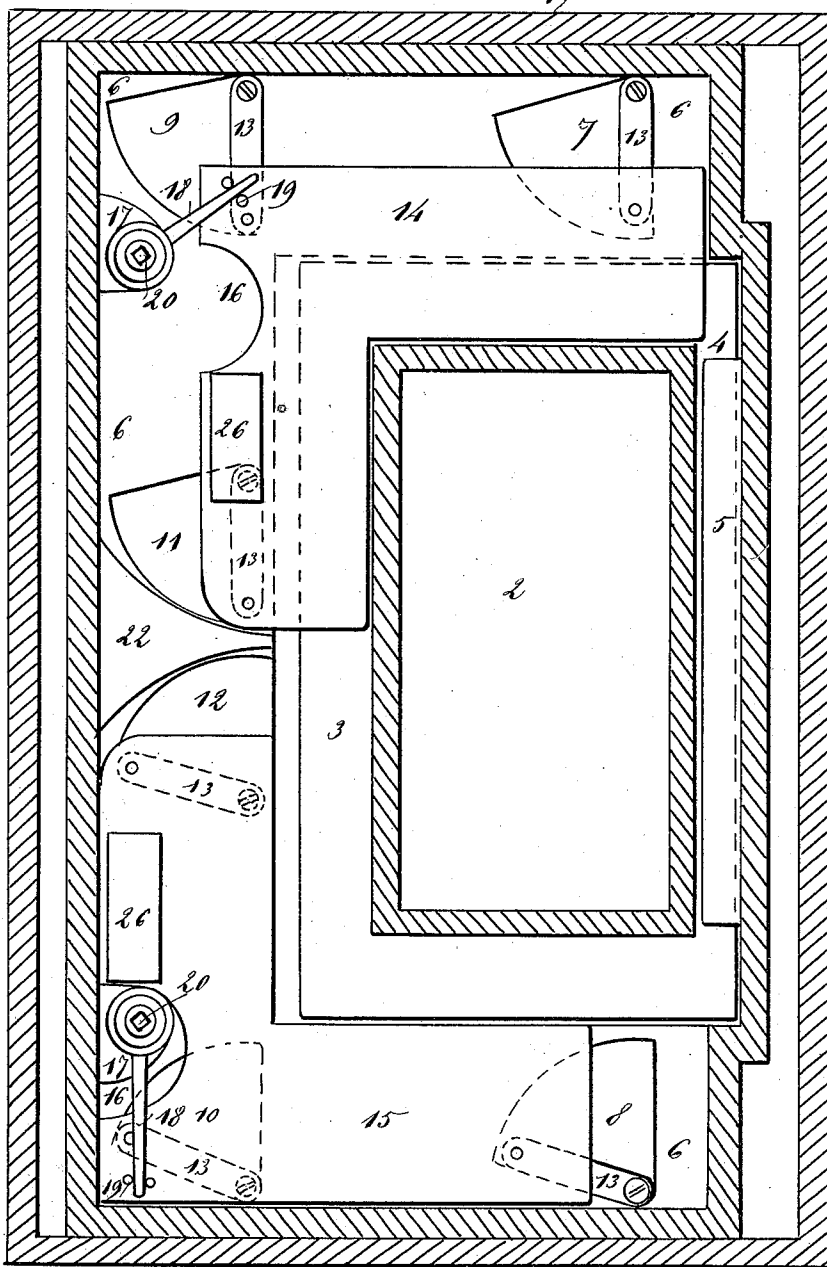
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Fig. 3



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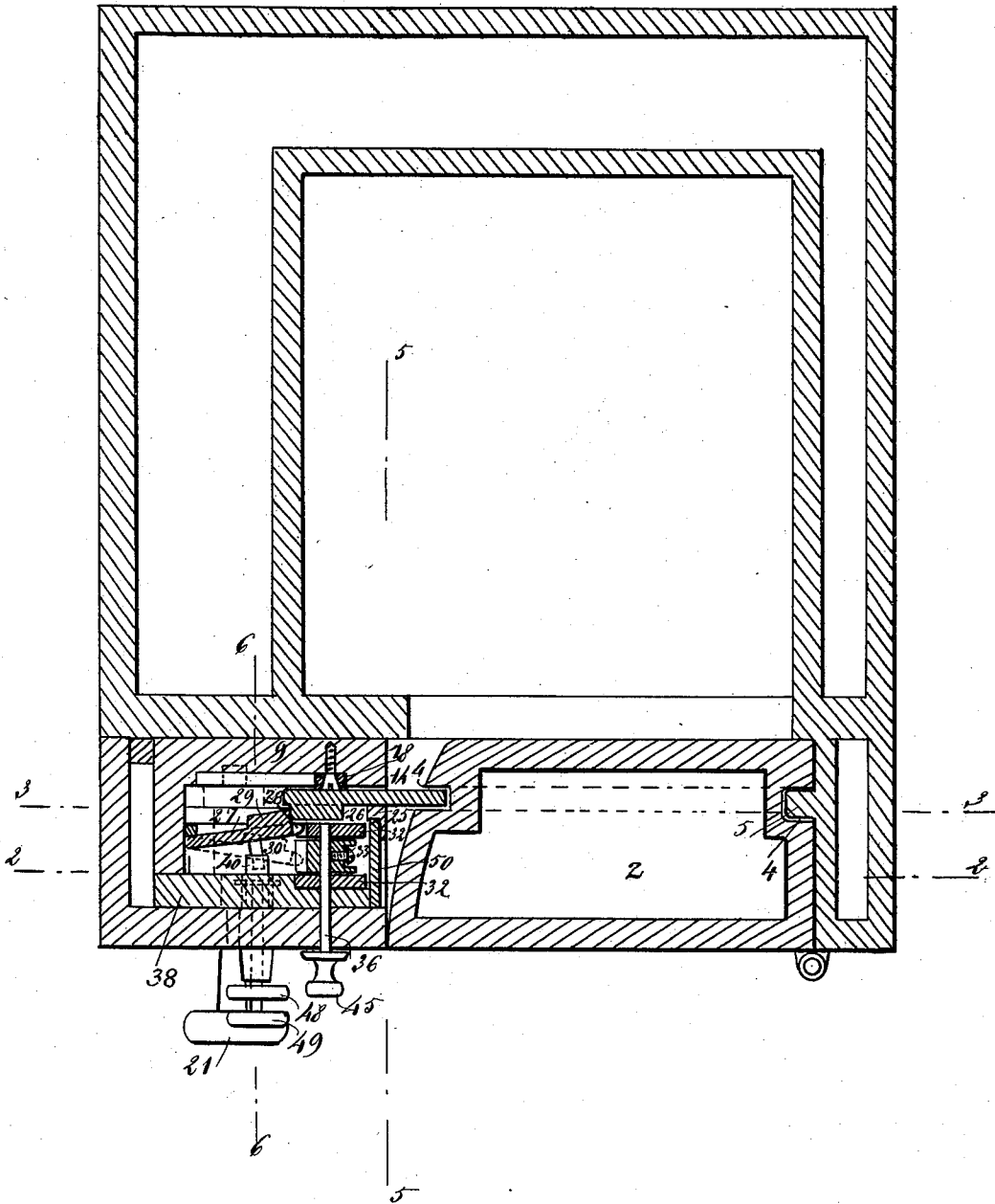
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Fig. A



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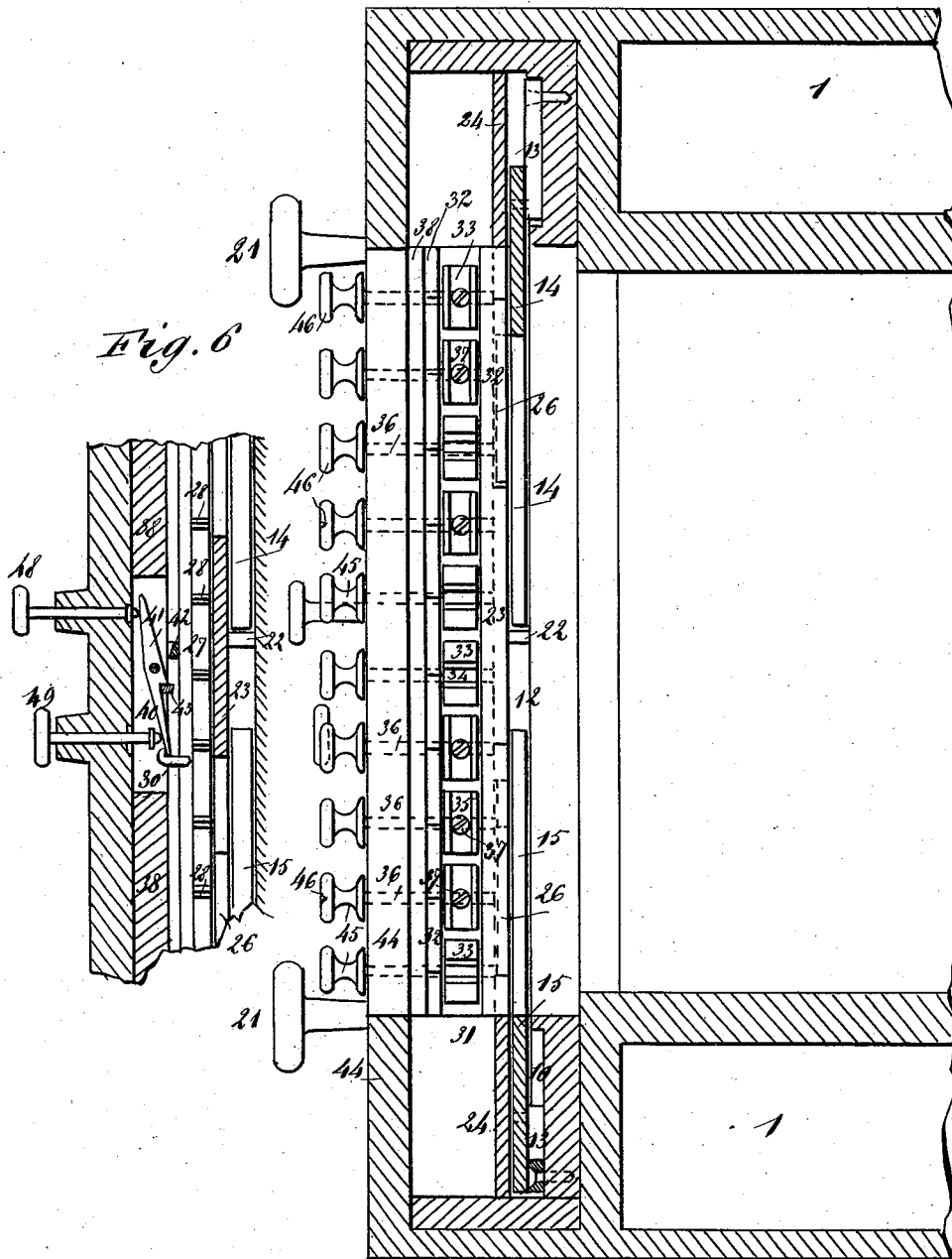
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Fig. 5



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UNITED STATES PATENT OFFICE.

HARRY STANYNOUGHT, OF BROOKLYN, NEW YORK.

SAFE-LOCK.

SPECIFICATION forming part of Letters Patent No. 376,215, dated January 10, 1888.

Application filed July 6, 1887. Serial No. 243,494. (Model.)

To all whom it may concern:

Be it known that I, HARRY STANYNOUGHT, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Safe-Lock, of which the following is a full, clear, and exact description.

My invention relates to an improvement in safe-locks of that class known as "combination-locks," and has for its object to provide a lock adapted to be placed in the body of the safe, and which cannot be reached even though a hole were bored in the door of the safe sufficiently large to admit the entrance of a hand, and wherein the bolts will be so positioned as to render it difficult to insert powder or other explosives into the safe, and wherein, also, the door may be opened with rapidity and ease even in a dim light.

The invention consists in placing the lock away from the door and in the body of the safe, the bolts of the lock having engagement directly with the door; and the invention further consists in the construction and combination of these several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation of a safe having my lock attached. Fig. 2 is a transverse vertical section through line 2 2 of Fig. 4. Fig. 3 is a transverse vertical section at the rear of Fig. 2 and on line 3 3 of Fig. 4. Fig. 4 is a horizontal section on line 4 4 of Fig. 2. Fig. 5 is a vertical longitudinal section on line 5 5 of Fig. 4, the guide-plate being removed from the lock to set the combination; and Fig. 6 is a detail sectional view on line 6 6 of Fig. 4, illustrating the lever controlling the locking-fingers.

In carrying out the invention the safe 1 is provided with a hinged door, 2, having the upper, lower, and front edges deeply slotted, as at 3, and a shoulder-slot, 4, in the rear edge adapted to receive a bar, 5, attached vertically to the rear jamb, as shown in Figs. 2, 3, and 4. In the front jamb, and likewise in the top and bottom of the door-casing, a recess, 6, is provided, adapted to extend a distance in the body of the safe, as shown in Figs. 2 and 3. In

the rear wall of the recess 6, at the top rear end, a triangular rabbet, 7, is cut, likewise a similar rabbet, 8, in the lower rear end of said recess. At top and bottom of the recess in the same wall, at the angle formed by the union of the vertical and horizontal portions of the same, triangular rabbets 9 and 10 are produced, and at each side the center of the vertical portion of the recess 6. Also, in the rear wall two more adjoining triangular rabbets, 11 and 12, are provided.

At the intersection of the two sides of each rabbet above mentioned one end of arms 13 is pivoted, adapted to move from side to side therein, the other ends of said arms being attached, respectively, to an upper or lower right-angular bolt, 14 and 15, as shown in Fig. 3. The upper angular bolt, 14, when the safe is unlocked, extends nearly from the rear end of the horizontal portion of the recess 6, following the contour thereof to a point above the center of the vertical portion, bolt 15 sustaining the same relative position in the lower part of the said recess 6. Both bolts are adapted to be thrown outward and into the slot 3 of the door when the safe is locked, the upper bolt being illustrated in that position in Figs. 2 and 3. In the vertical members of the bolts 14 and 15—in the upper outer side of the former and the lower outer side of the latter—a semicircular slot, 16, is cut, and within the rear wall of the recess 6, uncovered by said slot, a horizontal post, 17, is pivoted, each post having integral with its lower end an outwardly-extending arm, 18, the unattached end of which is held to play between two pins, 19, attached, respectively, to the face of the bolts 14 and 15 near their outer edges, at the union of the two members, as shown in Fig. 3. Thus when the arms 18 are made to travel in the direction of the door they carry with them the bolts 14 and 15, throwing said bolts independently in the slot 3 of the door and locking the same. The outer end of the posts 17 is reduced and provided with a square aperture, 20, adapted to receive the rectangular shank of a detachable key, 21, inserted therein through a suitable aperture in the body of the safe, the handle of which key is upon the outside, as shown in Figs. 1, 4, and 5.

Centrally and transversely to the rear wall

of the recess 6 a substantially-triangular bar, 22, is secured, as shown in Fig. 3, and upon said bar a guide-plate, 23, is secured of a width slightly less than the depth of the recess and of a length sufficient to project over the contiguous ends of the bolts 14 and 15, to secure the same in place. (Shown in dotted lines, Fig. 5, and in section, Fig. 6.) The horizontal members of the bolts 14 and 15 are retained in position by a plate, 24, secured over the horizontal arms of the recess 6, the said plate abutting against a vertical strip, 25, extending substantially from top to bottom of the safe and constituting a portion of the front jamb. Upon the outer edge of the vertical members of the bolts 14 and 15, near their contiguous ends, stop-plates 26 are attached to their outer face, (shown in Fig. 3,) adapted for use as hereinafter described.

To the outer wall of the vertical portion of the recess 6 a locking-plate, 27, is hinged, to extend rearward at a slight inclination and rest upon the plate 23, which plate is provided in its outer edge with a series of outwardly-extending equidistant fingers, 28, as shown in Figs. 2 and 6, and upon the under side, at each end, with longitudinal blocks 29 near the inner edge, as shown in Fig. 4, the said blocks being adapted to engage the inner edges of the stop-plates 26 when the bolts are thrown back in the recess 6, retaining the same in that position until released, and when the bolts are thrown outward the said blocks 29, engaging the rear edge of the stop-plates, prevent the bolts being withdrawn until permitted to do so in the proper manner.

In the outer face of the hinged locking-plate 27 an outwardly-projecting pin, 30, is secured, provided with a head at right angles thereto, giving said pin the shape of an L, through which pin the hinged plate 27 is manipulated in a manner hereinafter set forth.

A frame, 31, consisting of two vertical spaced bars, 32, is made to rest centrally upon the guide-plate 23, the ends of said frame being secured at top and bottom of the safe in any suitable manner, as shown in Fig. 2, the position of the said frame being parallel with the vertical strip 25, and the rear bar, 32, of the frame in contact therewith.

Within the frame 31, opposite the jamb, a series of disks, 33, are pivoted, equaling in number and distance apart the fingers 28 of the locking-plate 27. Each disk 33 is provided upon one side with a transverse peripheral slot, 34, and upon the opposing side with a longitudinal peripheral slot, 35. Said disks are also centrally apertured in alignment with their axes to receive rods 36, retained in position within the said apertures by set-screws 37, entered through the disks to a bearing against the aforesaid rods, as shown in Fig. 5, the purpose of the slots 35 being to serve as a counter-sink, and the purpose of the slots 34 is to receive the fingers of the locking-plate 27, whereby when the proper combination is made the said locking-plate may be elevated. The lower

bar of the disk-carrying frame is transversely notched opposite each finger 28, and the said fingers in their normal position are adapted to rest in said notches.

A metal cap-plate, 38, is made to cover the vertical portion of the recess 6, through which plate the rods 36 are projected, as shown in Figs. 4 and 5. To the inner edge of said plate, at each side of the disks 33, a section of the jamb-plate 39 is attached, adapted to rest in the grooved jamb-strip 25, as shown in Fig. 2, whereby the upper and lower inclosing sides of the vertical portion of the recess 6 are formed. The plate 38, about centrally the same, is provided with a longitudinal recess, 40, and in said recess a lever, 41, is pivoted to have lateral motion at each end, one end of said lever being adapted to engage the projecting surface of the pin 30, attached to the hinged locking-plate 27, the motion in one direction being limited by the bar 42 and in the opposite direction by a similar bar, 43, as illustrated in Fig. 6.

Upon the metal cap-plate 38 the outer casing of the safe 44 is adapted to rest, through which casing the rods 36 also project, being provided upon the outside with attached knobs 45, containing a slot, 46, in the periphery of each, as shown in Fig. 5. Upon the outer casing, 44, surrounding each knob or button 45, figures ranging from 0 to 9 are arranged in a circle, forming a dial, 47, as shown in Fig. 1, and in the casing, in alignment with each end of the lever 40, apertures are provided in which push-pins are inserted, one pin, 48, bearing upon the upper end of the lever and the other pin, 49, upon the lower end of the lever, or that end engaging the pin 30. An aperture is also made in the casing 44 and cap-plate 38 in alignment with the rectangular recess 20 in the pivotal posts 17, into which apertures the keys 21 are inserted to an entrance in the recesses 20, whereby the bolts 14 and 15 are either thrown into or out of the recess 6, as desired. The inner wall of the recess 6 is completed by the insertion of a detachable plate, 50, in the groove of the jamb-strip 25 and between the plates 39, as shown in section in Fig. 2.

To set the combination, the detachable plate 50 is removed and the disks 33 are all turned until the set-screws 37 exactly face the door-opening. This position will cause the slots 34 in the opposite face of the disks to be so situated as that the locking-plate 27 may be lifted, the fingers thereof passing up through said slots, as shown in Fig. 2. The set-screws 37 are now loosened, so that the rods 36 may be turned in the disks, and the knobs 45, attached to said rods, are thereupon turned until the peripheral slot 46 therein is brought in alignment with the figure upon which the combination is to be set, each slot being made to align the same figure or a different one, as desired. For instance, the lower button may be set at 0, the next upon 8, the next upon 4, as shown in Fig. 1, or all may be set upon either one of

said figures. When this is accomplished, the set-screws of the disks are tightened, and the said disks thereby made an integral portion of the rods 36.

5 Presuming the safe to be locked, to open the same the buttons or nob's are each turned to the proper combination. The pin 48 is then pushed in, which raises the locking-plate 27, causing the fingers to be introduced in the various slots 34 of the disk. This movement releases the stop-plates 26 upon the bolts from contact with the blocks 29 upon the locking-plate, the said contact being shown in Fig. 4. The keys 21 may now be introduced in the revolving posts 17 and turned, whereupon the bolts 14 and 15 are drawn back and the door may be opened.

By pressing the push-pin 49 the lock-plate is again carried down to its normal position, whereupon the stop-plates 26 are again engaged by the blocks 29, and unless the push-pin 48 is again manipulated the bolts cannot be thrown forward into the slots of the door.

In locking the safe the parts are manipulated substantially the same, except that the knobs are turned promiscuously after the bolts have been set, in order that the combination may not be detected. It will thus be observed that the keys cannot be turned or the bolts thrown forward or back until the push-pin 48 has been operated. Through the medium of the notch 46 upon the pin heads or knobs 45 the combination may be obtained in a very dim light, as the location of the figures upon the dial 47 becoming by practice familiar to the operator, and having the notch as a guide, he will be enabled to readily bring said notch and any desired figure in proper alignment.

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

1. A safe having its lock and combination contained in the body at one side of the door-opening, the bolts of which lock are arranged to extend bodily from the jamb into the said opening and have engagement with the door, substantially as set forth.

2. The combination, with a safe having a door-opening, and a lock and its combination fitted in said safe at one side of the door-opening, of a door fitted to said opening, provided with slotted edges adapted to receive the bolts of the lock, and means for manipulating said lock, substantially as herein shown and described.

3. The combination, with a safe having a door-opening, and a lock and its combination fitted in the body of the safe at one side of said opening, said lock provided with upper and lower angular bolts, arms carrying posts adapted to reciprocate said bolts, and a hinged locking-plate adapted to secure said bolts in an open or closed position, of a door provided with a slot in the edge adapted to receive said bolts, substantially as shown and described, and for the purposes herein set forth.

4. The combination, with a safe and a lock and its combination fitted in the body of the safe, said lock provided with an upper and lower angular bolt provided with stop-plates upon their outer face and carrying posts adapted to reciprocate said bolts, a hinged locking-plate carrying blocks upon its inner face adapted to engage the stop-plates upon the bolts, and means for manipulating said locking-plate, of a door fitted in said safe, provided with a slot in the edges thereof, substantially as shown and described, and for the purposes herein set forth.

5. The combination, with a safe and a lock and its combination fitted in the body of the safe, said lock provided with an upper and lower angular bolt having stop-plates upon their outer face, arms carrying posts adapted to reciprocate said bolts, a hinged finger carrying locking-plate having blocks upon its inner face adapted to engage said stop-plates, a series of rotary disks slotted to receive the fingers of the locking-plate, and headed pins adjustably attached to said disks, having slots cut in said heads adapted to register with a given figure of the combination, of a door fitted in said safe, provided with slotted edges, substantially as herein shown and described.

6. A safe provided with a lock and its combination within the body, dials upon said body, and knobs revolving upon said dials provided with a notch in their periphery adapted to register with a given number upon said dials, and a door fitted within the safe having a slotted edge adapted to receive the bolts of the aforesaid lock, substantially as shown and described.

7. In a combination-lock, the combination, with a safe and a door fitted thereto having a slotted edge, of the reciprocating angular bolts 14 and 15, adapted to enter the slots in said door, the key-posts 17, having arms 18, adapted to engage pins 19 upon the said bolts, and means for securing the bolts in an unlocked or locked position, substantially as herein shown and described.

8. In a combination-lock, the combination, with a safe and a door fitted thereto having a slotted edge, of the reciprocating angular bolts 14 and 15, adapted to enter the slots in said door, the key-posts 17, having integral arms 18, adapted to engage pins 19 upon said bolts, the hinged finger carrying locking-plate 27, the revoluble disks 33, provided with a transverse peripheral slot, 34, and a longitudinal peripheral slot, 35, and headed pins 36, provided with a notch, 46, in the periphery of said heads, adapted to register with a predetermined figure produced upon the safe-body, all arranged to operate substantially in the manner and for the purposes herein set forth.

HARRY STANYNOUGHT.

Witnesses:

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GEO. D. BETTS.