

E. L. MOONEY.

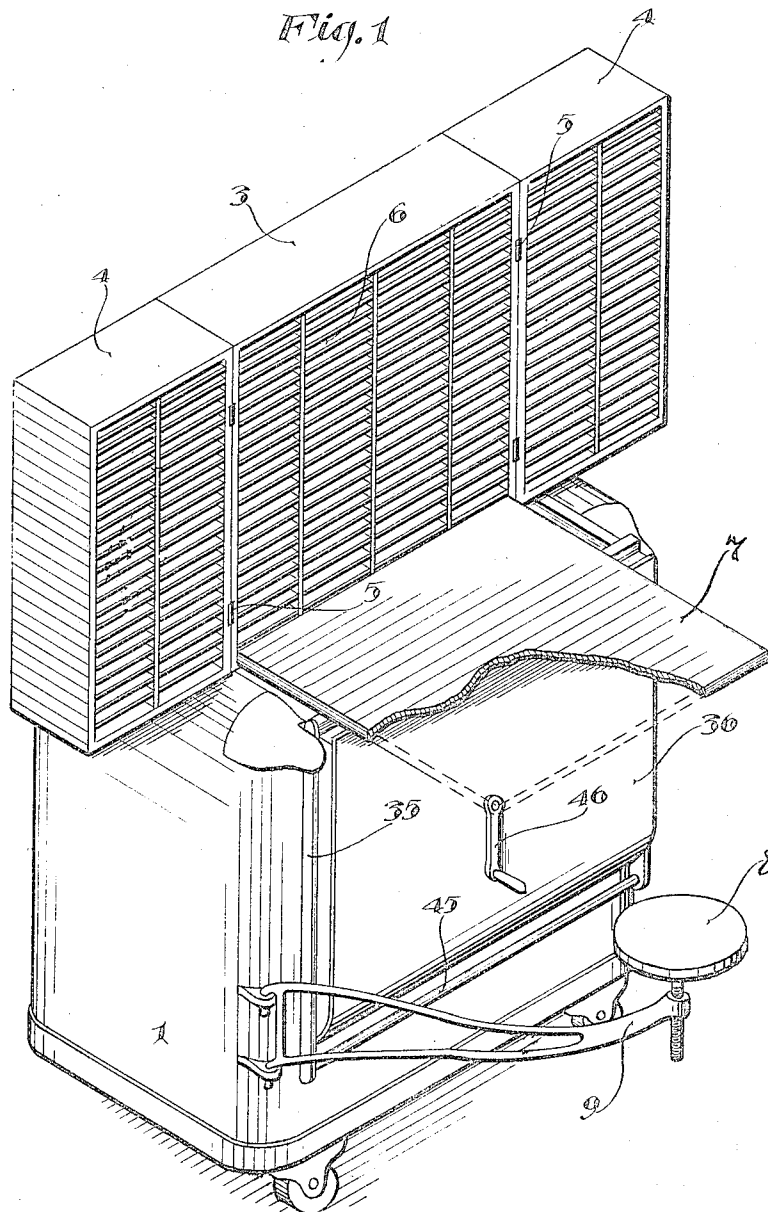
SAFE.

APPLICATION FILED SEPT. 14, 1911.

Patented Nov. 26, 1912.

6 SHEETS-SHEET 1.

1,045,729.



Witnesses;
E. C. Skinkle
Geo. H. Hutton

Inventor
Edward L. Mooney
By his Attorneys:
William M. Heskett

E. L. MOONEY,

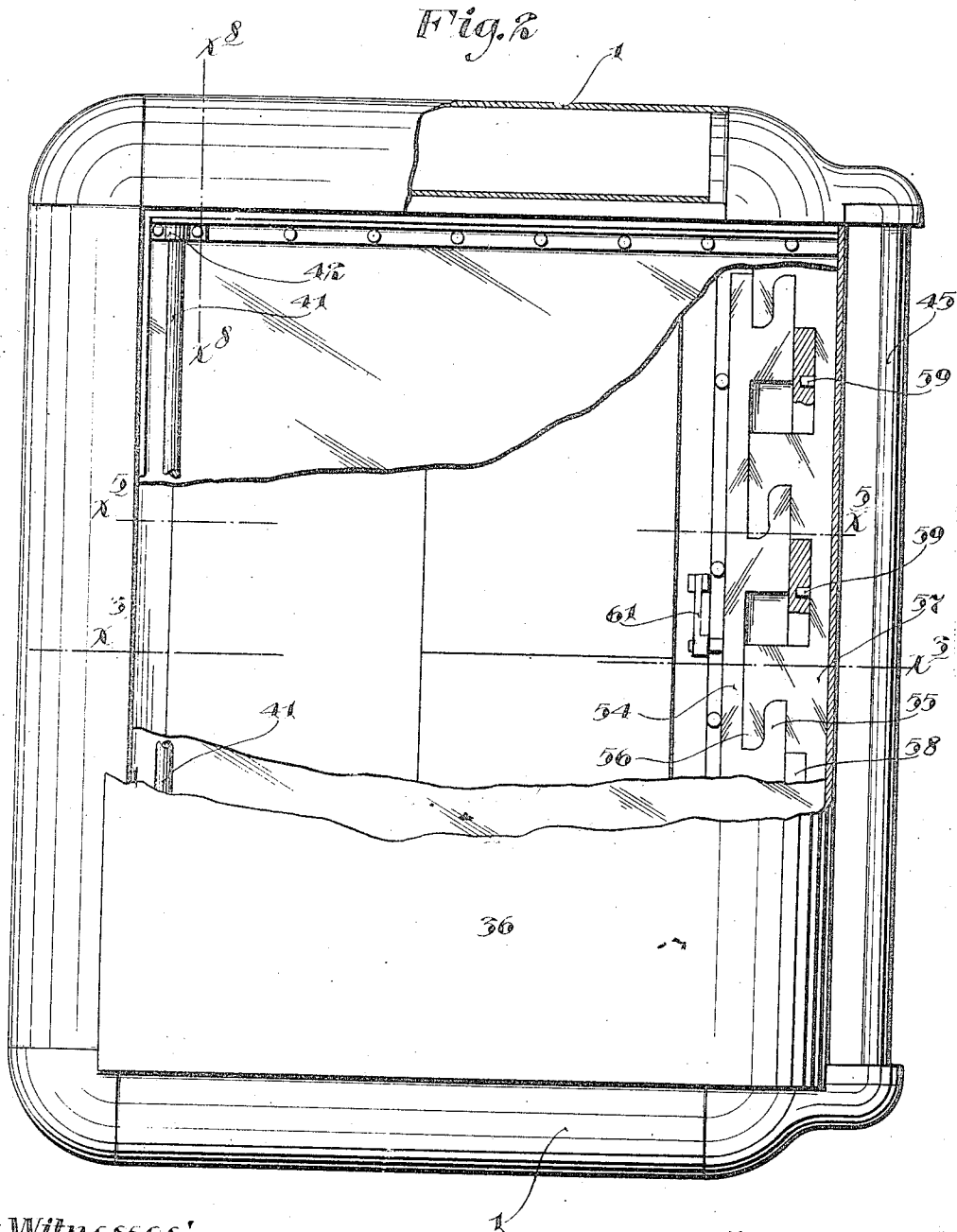
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6 SHEETS-SHEET 2.



Witnesses:
E. C. Shinkle
Geo. Knutson

Inventor:
Edward L. Mooney
By his Attorneys:
William M. McHard

E. L. MOONEY.

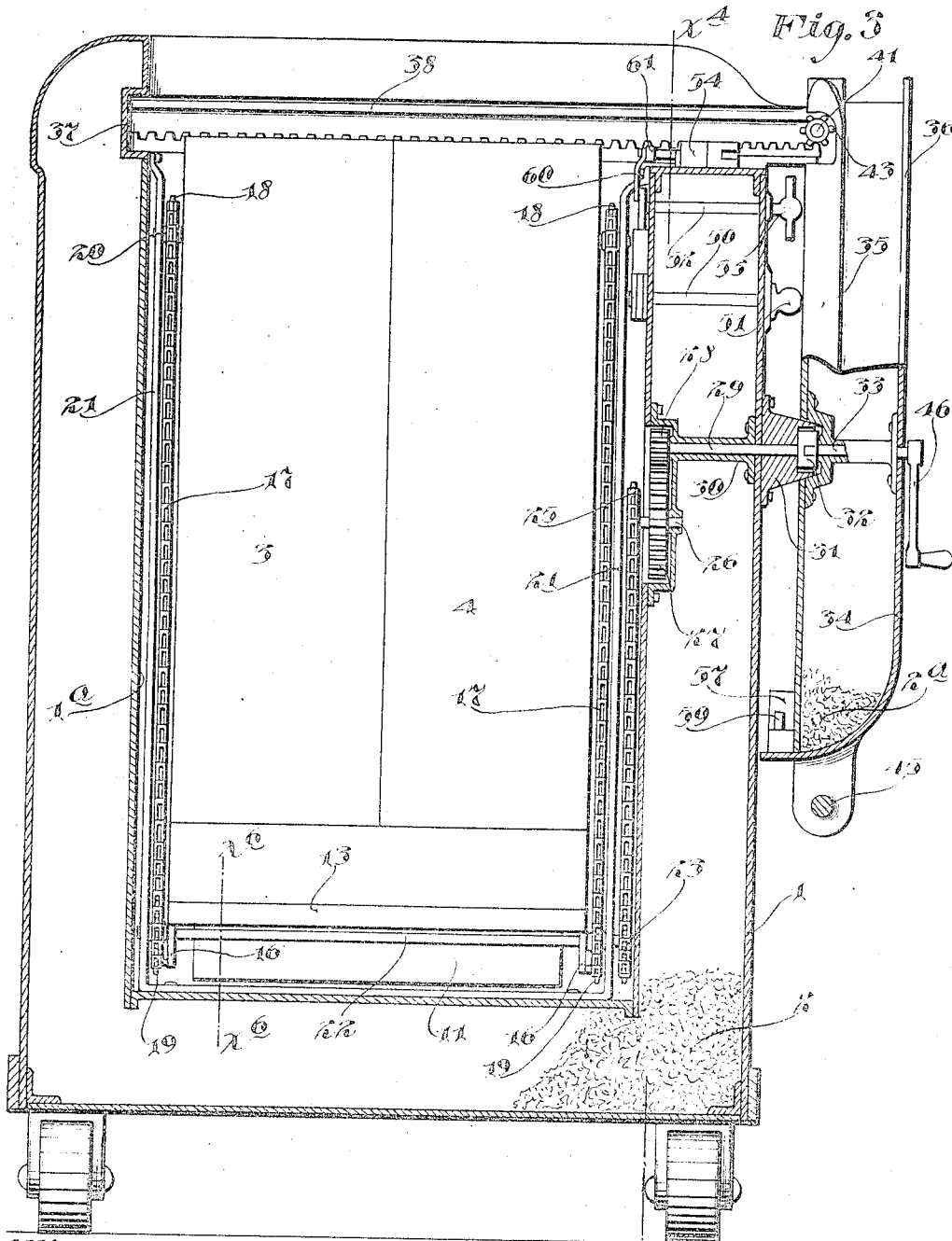
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6 SHEETS—SHEET 3.

1,045,729.



Witnesses:

E. C. Skinkle

Geo. Knutson

Inventor:

Edward L. Mooney

By his Attorneys:

William M. Mendenhall

E. L. MOONEY.

SAFE.

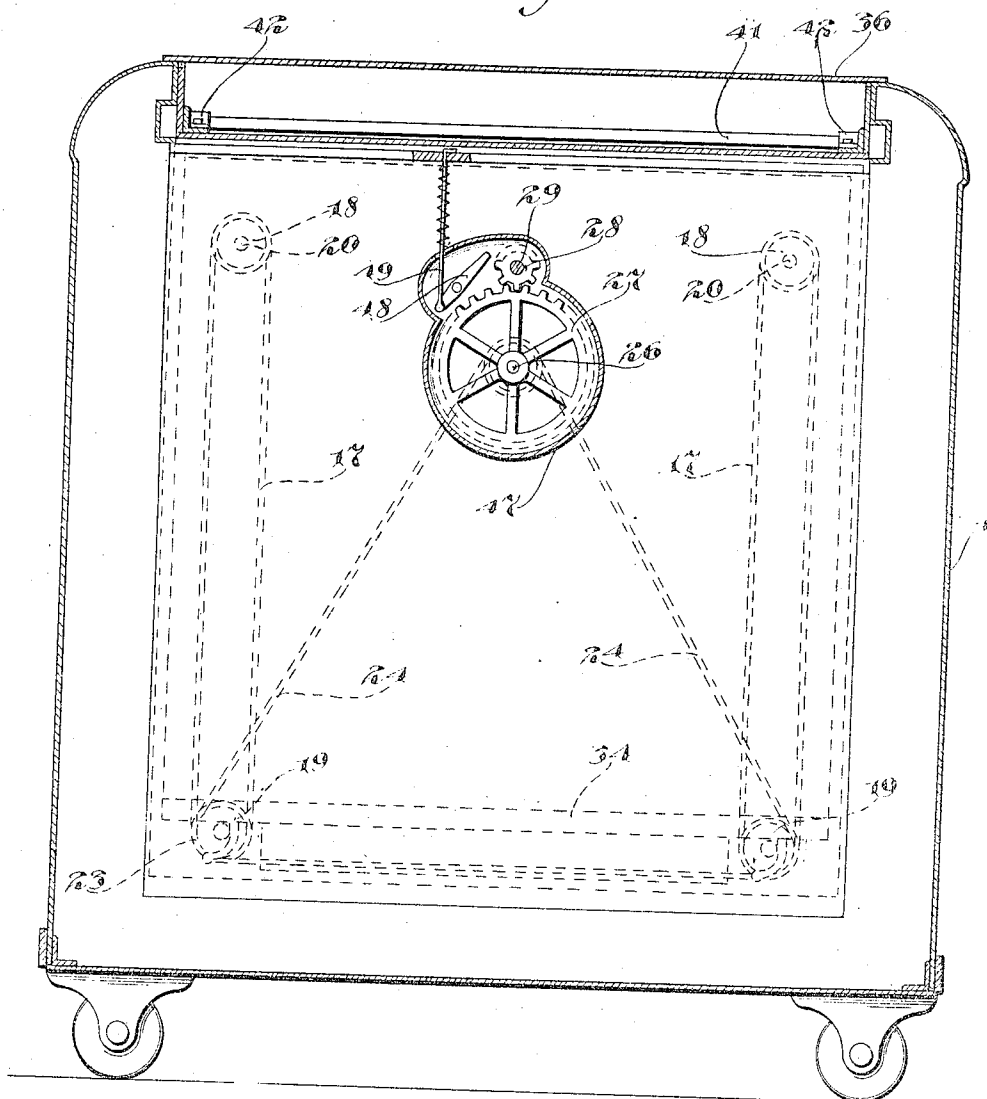
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6 SHEETS—SHEET 4.

Fig. 4



Witnesses:
E. C. Skinkle
Geo. Knutson

Inventor:
Edward L. Mooney.
By his Attorneys,
Williamson & Merck

E. L. MOONEY.

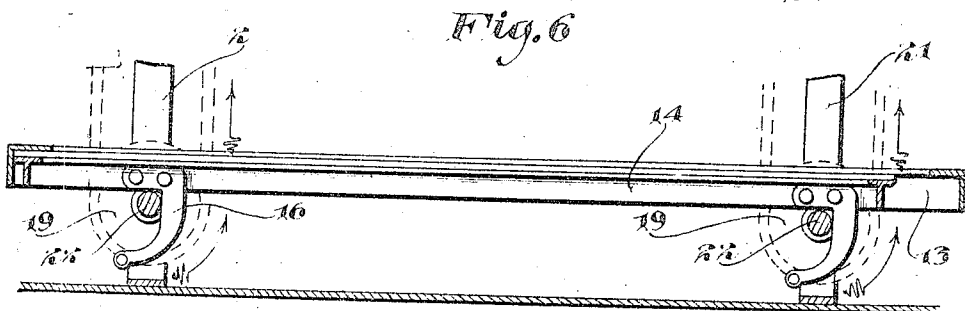
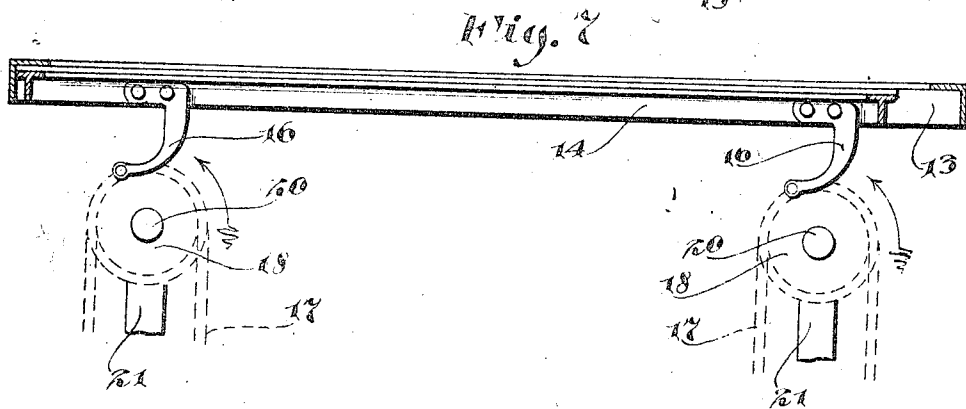
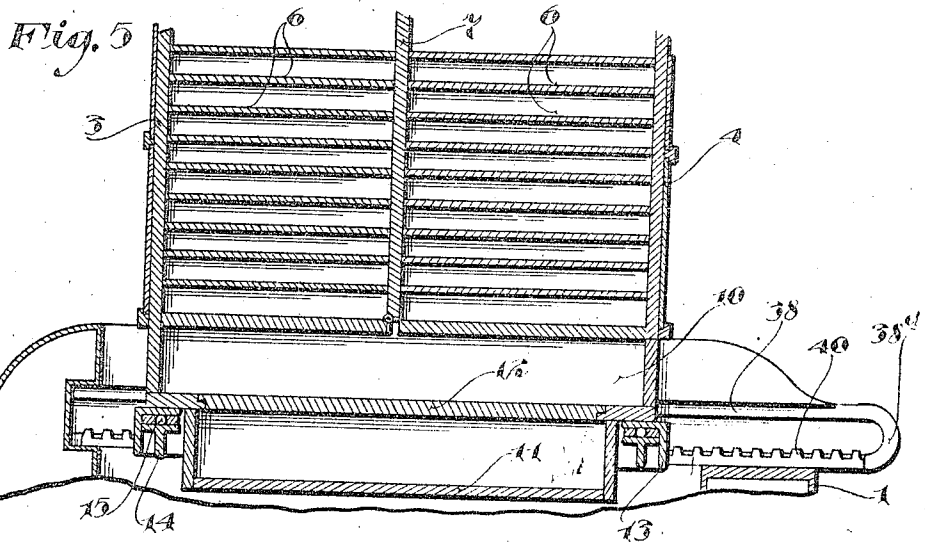
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6 SHEETS—SHEET 5.



Witnesses:
E. C. Skinkle,
per [signature]

Inventor:
Edward L. Mooney
By his Attorneys:
William M. [signature]

E. L. MOONEY.

SAFE.

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6 SHEETS—SHEET 6.

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Fig. 8

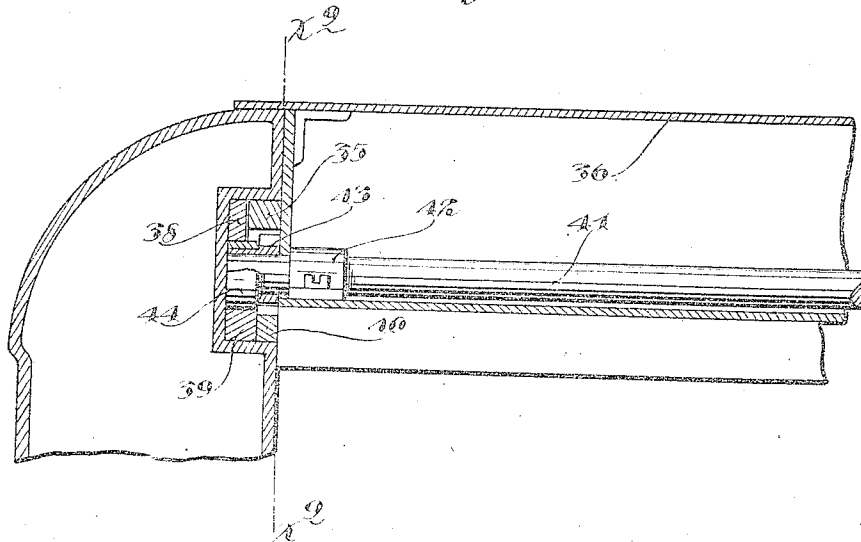
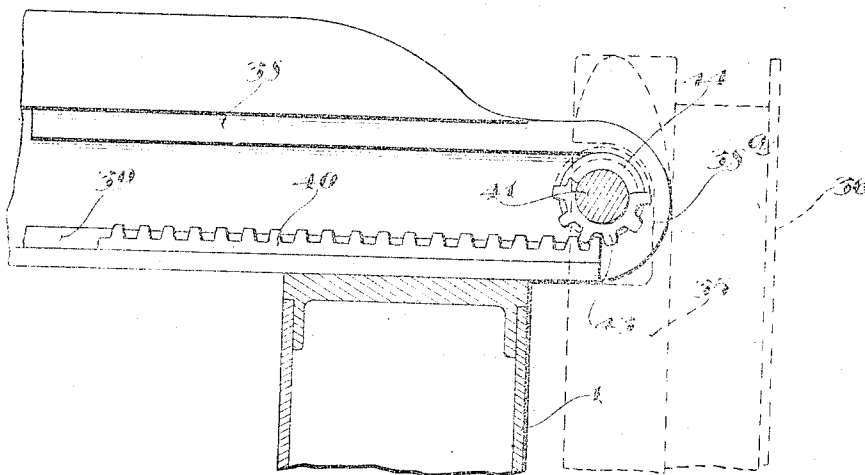


Fig. 9



Witnesses;
E. C. Skinkle
Geo. Knutson

Inventor;
Edward L. Mooney
By his Attorneys;
William F. Hurdant

UNITED STATES PATENT OFFICE.

EDWARD L. MOONEY, OF MINNEAPOLIS, MINNESOTA. ASSIGNOR OF ONE-HALF TO
PHILIP W. WIRTH, OF MINNEAPOLIS, MINNESOTA.

SAFE.

1,045,729.

Specification of Letters Patent.

Patented Nov. 26, 1912.

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To all whom it may concern:

Be it known that I, EDWARD L. MOONEY, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Safes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a fire proof and burglar proof safe, and to such ends, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

This improved safe is adapted for general use, for the storage and protection of money, jewels, and other articles, but as illustrated in the drawings, it is designed particularly for use to store and protect from loss, individual account books or files, such as at present very extensively employed by retail grocers and provision houses.

The improved safe, as preferably constructed, is illustrated in the accompanying drawings wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a perspective view with some parts broken away, showing the improved safe opened up, and with the account book cabinet and co-operating table in position for use; Fig. 2 is a plan view of the safe with some parts broken away and some parts sectioned; Fig. 3 is a vertical section taken through the safe approximately on the line $x^2 x^3$ of Fig. 2, some parts being left in full; Fig. 4 is a transverse vertical section taken approximately on the line $x^4 x^4$ of Fig. 3; Fig. 5 is a fragmentary view in vertical section taken approximately on the line $x^5 x^5$ of Fig. 2; Fig. 6 is a detail view in transverse section taken approximately on the line $x^6 x^6$ of Fig. 3, some parts being indicated by dotted lines and showing the so-called cabinet supporting frame lowered; Fig. 7 is a view corresponding to Fig. 6, but showing the cabinet supporting frame raised; Fig. 8 is fragmentary view in transverse vertical section taken approximately on the line $x^8 x^8$ of Fig. 2; Fig. 9 is a transverse section taken approximately on

the line $x^9 x^9$ of Fig. 8, some parts being broken away.

In this improved safe, I provide an outer case and an inner case with the latter arranged to slide, preferably vertically, from a concealed position within the outer case into an open or exposed position, and vice versa. In this preferred arrangement, the outer case is a heavy rectangular double-walled tempered steel structure having a rectangular opening in its top; and the inner case is made in the form of a folding cabinet, which, when folded up or closed, is adapted to be moved vertically downward into the interior of the said outer case. The outer case is provided with a heavy double-walled cover, preferably arranged for a compound sliding and pivotal movement to and from its closed position. The said outer case or body portion of the safe is indicated by the numeral 1 and the space between its walls is preferably filled in with fire proof packing such as asbestos wool, indicated in part in Fig. 3, and designated by the numeral 2. The inner case, for the particular purpose in which this safe was designed, is, as indicated, in the form of a folding cabinet made up of sections 3 and 4 connected by hinges 5. The sections 3 and 4 are each formed with a multiplicity of small individual account books or other articles. The sections 4 are one-half the size of the sections 3 so that when the several sections are folded together, a rectangular inner case or cabinet is formed, of proper size to be easily dropped into the rectangular compartment 1^a of the outer case or body 1. The numeral 7 indicates a small table which, at its lower or inner edge is hinged to the bottom of the cabinet section 3 so that it is adapted to be turned upward and folded between the sections 3 and 4, or is adapted to be turned downward into a position for use, as indicated in Fig. 1. Also, in Fig. 1, the numeral 8 indicates a stool seat applied to the free end of a supporting arm 9 that is hinged to one side of the front portion of the safe body 1. This seat is thus positioned where it may be used by a person working at the table 7 and within reach of the books of the open cabinet.

The main section 3. of the inner case or

cabinet is formed with a drawer compartment 10, and just below this drawer compartment it is preferably also formed with a so-called secret or sub-compartment 11 which is somewhat reduced in width. A removable section 12 in the bottom of the compartment 10 affords a removable cover in the compartment 11. At its sides, the drawer compartment 10 rests directly upon a vertically movable rectangular elevator frame 13, preferably constructed from angle iron, and of such marginal dimensions that it may be moved vertically within the main compartment 1^a of the safe body 1. This marginal frame 13, in turn, is supported by a rectangular supplemental frame 14, between which frames 13 and 14, ball bearing devices 15 are interposed so as to permit the said supplemental frame 14 to move slightly in a horizontal direction in respect to the frame 13.

The so-called supplemental frame 14 is provided with two front and two rear depending legs 16, the ends of which are attached to links of corresponding endless elevator chains 17, of the link-belt type. These chains 17, of which there are, as shown, four, two at the front and two at the rear, run over sprockets 18 and 19. The upper sprockets 18 are loosely journaled on studs 20, rigidly secured to the upper portions of upright metal bars 21, which bars, at their upper and lower portions are rigidly secured to the inner walls of the outer case section or safe body 1. The lower sprockets 19 are secured to counter shafts 22 that are journaled in the lower portions of the bars 21, and, at their front ends, are provided with sprockets 23. A driving sprocket chain 24 runs under the sprockets 23 and over a sprocket 25 secured to a short shaft 26 journaled to the adjacent inner wall of the safe body 1, and to the adjacent bar 21. A spur gear 27 is also secured to the said short shaft 26, and this gear meshes with a pinion 28 secured to the inner end of an operating shaft 29 journaled in a sleeve-like bearing 30 and hub 31 secured to the safe body 1. At its outer end, the operating shaft 29 is provided with a coupling head 32 formed with the recess that is adapted to receive the cooperating end of a so-called supplemental operating shaft 33, which latter will be hereinafter more fully described.

The cover 34 for the safe body or outer case 1, is also preferably a double-walled hardened steel structure having a space between its walls filled with a bestos wool, or other fire proof packing indicated in part in Fig. 3, and indicated by the character 2^a. This cover, at its rear edge and sides is preferably formed with a lower relatively wide bead 35 and with a narrow upper flange 36, the latter of which is adapted to overlap the upper edge of the safe body 1, while the

former is arranged to run in a wide groove 37 formed in the rear and side portions of the inner plate of the safe body 1. Rigidly secured in the side grooves or runways 37 are upper rails 38, lower rails 39 and toothed racks 40 (see particularly Figs. 3, 8 and 9). At their outer or front ends, the rails 39 and 40 are joined by a curved section 38^a (see Fig. 9).

A shaft 41 is journaled in suitable bearings 42 secured to the bottom plate of the cover 34 at the rear side portions thereof, and this shaft is provided with a pair of rigidly secured spur pinions 43 that mesh with the corresponding racks 40, and thus serve to impart parallel movements to the opposite sides of the cover, and thereby preventing binding of the same when its retaining flanges 35 are moved within the side runways 37. At its extreme ends, the shaft 41 is provided with antifriction rollers 44 that work between the corresponding upper and lower guide rails 38 and 39.

At its outer edge, the cover 34 is provided with a handle bar 45 secured to projecting lugs thereof, and serving as a convenient handpiece to grip when moving the cover from one position to another. The elevator operating shaft 33, already described, is journaled in suitable bearings located at the central portion of the cover 34, and, at its outer end, it is provided with an operating crank 46. As shown, the gear 27 and pinion 28, already described, work in a casing 47 secured in the front portion of the safe body 1 and, as shown, formed integral with the bearing sleeve 30. Pivoted within the upper portion of the casing 47 is a lock dog or lever 48, which, by gravity or by a suitable spring, is under tension to engage the pinion 28 and thus lock the elevator actuating gears against rotation. This dog is shown as provided with an upwardly extended stem 49 that projects through the top plate of the front portion of the safe body 1, and when the cover 34 is closed, the stem 49 is pressed downward, as shown in Fig. 4. When, however, the cover is removed, the dog 48 engages the teeth of the pinion 28 and acts as a retaining pawl to prevent backward rotation thereof, and hence, affords means holding the elevator frames 13--14, and the inner case or cabinet, in elevated positions, but when the said elevator frames and cabinet are to be lowered, it is only necessary to press downward on the stem 49, so as to thereby throw the retaining dog 48 into an inoperative position.

The safe cover 34 as already noted, is capable of sliding movements when turned into a horizontal position, to and from a position to close the top of the safe body 1. When the cover is moved to its extreme outermost position, it is then capable of being turned pivotally downward into a ver-

tical position, around the shaft 41 which acts as a traveling pivotal connection between the cover and the body of the safe. When the cover is turned down into its vertical position, as shown in Fig. 3, the shaft 33 of the elevator operating crank 46 is coupled to the supplemental shaft 29 so that by rotation of the said crank, the elevator frames 13 and 14 may be raised or lowered at will. When the said frames are lowered, the inner case or cabinet is, of course, carried downward completely into the cavity of the safe body 1, and when the said frames 13—14 are raised to their extreme positions, the said inner case or cabinet is carried entirely out of the safe body so that it may be opened up, as already illustrated.

In this connection, it is important to note that when the inner case, or cabinet, and the supporting frames 13—14 are lowered to their extreme positions, as shown in Fig. 6, the pivotal connection between the legs 16 and the chains 17 are at one side of the axes of the corresponding shafts 22, or, in other words, are beyond a dead center, so that they are locked in such manner that the inner case cannot be lifted or raised by force applied directly thereto, or, in fact, by any other force than that directed through the shafts 22 and sprockets 23. Also, it should be noted, that when the said inner case and frames 13—14 are raised to their extreme positions, the said pivotal connections are at one side of a dead center, as shown in Fig. 7, so that the said raised parts are held in their extreme uppermost position.

When the legs 16 are given the slight horizontal movement, they cause the supplemental elevator frame 14 to move slightly in a horizontal direction, in respect to the frame 13 which is supported thereby; and the ball bearing devices 15 make this slight relative movement between the frames 13—14 an easy matter.

The safe lock mechanism proper is shown in Figs. 2, 3 and 10. Primarily, the lock mechanism is controlled by an ordinary combination tumbler lock, the shaft 50 of which is journaled in the upper front portion of the safe body 1, and is provided with the usual operating knob 51 at its outer end. A lock releasing shaft 52 is journaled in the said safe body 1, preferably above the tumbler shaft 50, and at its outer end, is provided with the customary hand piece 53 (see Fig. 3). Mounted for sliding movements on top of the upper plate of the front portion of the safe body 1, is a lock bar 54 formed on its outer edge with a multiplicity of laterally offset longitudinally projecting lock lugs 55 that are engageable with reversely formed lock lugs 56 of a companion lock bar 57, that is rigidly secured to the lower front portion of the

safe cover 34. Rigidly secured to the upper plate of the front portion of the safe body 1, and engaged by the front edge of the sliding lock bar 54, are supplemental lock lugs 58 that are provided with lock seats that are adapted to be engaged by dowel pins or lock projections 59 secured on the lock bar 57 of the cover 34. It will thus be seen that when the safe cover 34 is slid into its closed position, its dowel pins 59 interlock the same to the supplemental lock lugs 58 and thereby greatly reinforce the connections which prevent the cover from being pried upward by means of a crowbar or other tool. When the lock lugs of the sliding lock bar 54 are engaged with the lock lugs of the lock bar 57 on the cover, the said cover is, as is evident, very securely locked against outward or opening, sliding movement. When, however, the sliding lock bar 54 is moved so that its lugs 55 are out of overlapping engagement with the lock lugs 56 of the bar 57, the cover may, as is evident, be slid outward into an open position and then turned downward into its vertical position shown in Fig. 3.

Sliding movements are adapted to be imparted to the lock bar 54 by manipulation of the shaft 52, through an arm 60 on the inner end of said shaft which is connected to the said lock bar 54 through a link 61.

In this specification and in the claims, the term "cover" is used in a broad sense to include any kind of a closure for the opened top or side of the outer case or body of the safe.

What I claim is:

1. In a safe, the combination with an outer casing having an open top and cover, of an inner casing movable into and out of said outer casing, and an elevator for raising and lowering said inner casing, provided with operating connections including separable driving elements arranged to be coupled together and uncoupled by movements of the said cover.

2. In a safe, the combination with an outer casing having a cover mounted for compound sliding and pivotal movements, of an inner casing moving into and out of said outer casing, and means for moving said inner casing in respect to said outer casing including separable driving elements on said outer casing and said cover arranged to be coupled together when said cover is moved into an open position and turned downward, and to be separated when said cover is moved into a closed position.

3. In a safe, the combination with an outer casing having an open top and provided with a cover arranged for compound sliding and pivotal movements, of an inner casing movable within said outer casing, and an elevator for moving said inner casing

vertically within said outer casing comprising interlocking driving shafts, one mounted in said outer casing and the other in said cover, the latter having an operating crank at its outer end, which driving shafts are adapted to be separated when said cover is moved into a closed position and are adapted to be coupled together when said cover is moved into an open position and turned downward.

4. In a safe, the combination with an outer casing having an open top and provided with a cover mounted for compound sliding pivotal movements, of an inner casing movable vertically within said outer casing, a multiplicity of elevator chains mounted within said outer casing, an elevator frame carried by said chains and supporting said inner casing, and means for driving said elevator chains including interlocking supplemental shaft sections, one mounted in said outer casing and the other in said cover, and the latter having an operating crank at its outer end, and which interlocking shafts are adapted to be uncoupled when said cover is moved into a closed position, and are adapted to be coupled together when said cover is moved into an open position and turned downward.

5. In a safe, the combination with an outer casing having an open top and a movable cover, of an inner casing movable within said outer casing, four endless elevator chains mounted within said outer casing and connected to said inner casing for vertically moving the latter, and connections arranged for simultaneously operating said elevator chains and including interlocking driving shafts, one mounted in said outer casing and the other in said cover, the latter having an operating crank at its outer end, and which driving shafts are arranged to be separated when said cover is moved into a closed position and are adapted to be coupled together when said cover is moved into an open position.

6. In a safe, the combination with an outer casing having a cover, of an inner casing movable within said outer casing, and means for moving said inner casing including cooperating driving elements arranged to be coupled together and uncoupled by movements of said cover, substantially as described.

7. In a safe, the combination with an outer casing having an open top and a movable cover, of an inner casing movable within said outer casing, and an elevator for moving said inner casing comprising four

endless chains, cooperating sprockets and shafts connecting said chains in pairs, and a driving shaft with connections for operating said elevator chains, substantially as described.

8. In a safe, the combination with an outer casing and an inner casing movable within the same, of an elevator frame supporting said inner casing and provided with depending legs, four endless sprocket chains connected, one to each of said frame legs, cooperating sprockets and shafts connecting said sprocket chains in pairs and for simultaneous movements, and a crank shaft with connections for operating said elevator chains, substantially as described.

9. In a safe, the combination with an outer casing and an inner casing movable within the same, of a two-sectioned elevator frame supporting said inner casing, one of the said frame sections having a slight horizontal movement in respect to the other, and an elevator comprising a multiplicity of endless sprocket chains and cooperating sprockets, said chains having links pivotally connected to the said latter noted section of the said two-part elevator frame, substantially as described.

10. In a safe, the combination with an outer casing and an inner casing movable within the same, of an elevator frame supporting said inner casing, a cooperating sprocket and sprocket chain, a connection between said elevator supporting frame and said sprocket chain, movable upward beyond a dead center, and means for operating said sprocket chain to vertically move the said inner casing and to carry said connection beyond a dead center at the limit of its upward movement.

11. In a safe, the combination with an outer casing and an inner casing movable within the same, of a two-sectioned elevator frame supporting said inner casing, one of said frame sections having a slight horizontal movement in respect to the other, for engagement with a part on said outer casing, and means for vertically moving said inner casing and for imparting said horizontal movement to one of the frame sections when it has reached the limit of its upward movement.

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

EDWARD L. MOONEY.

Witnesses:

BERNICE G. WHEELER,
HARRY D. KILGORE.