

(No Model.)

W. CORRY.
SAFE, VAULT, &c.

No. 364,753.

Patented June 14, 1887.

Fig. 1.

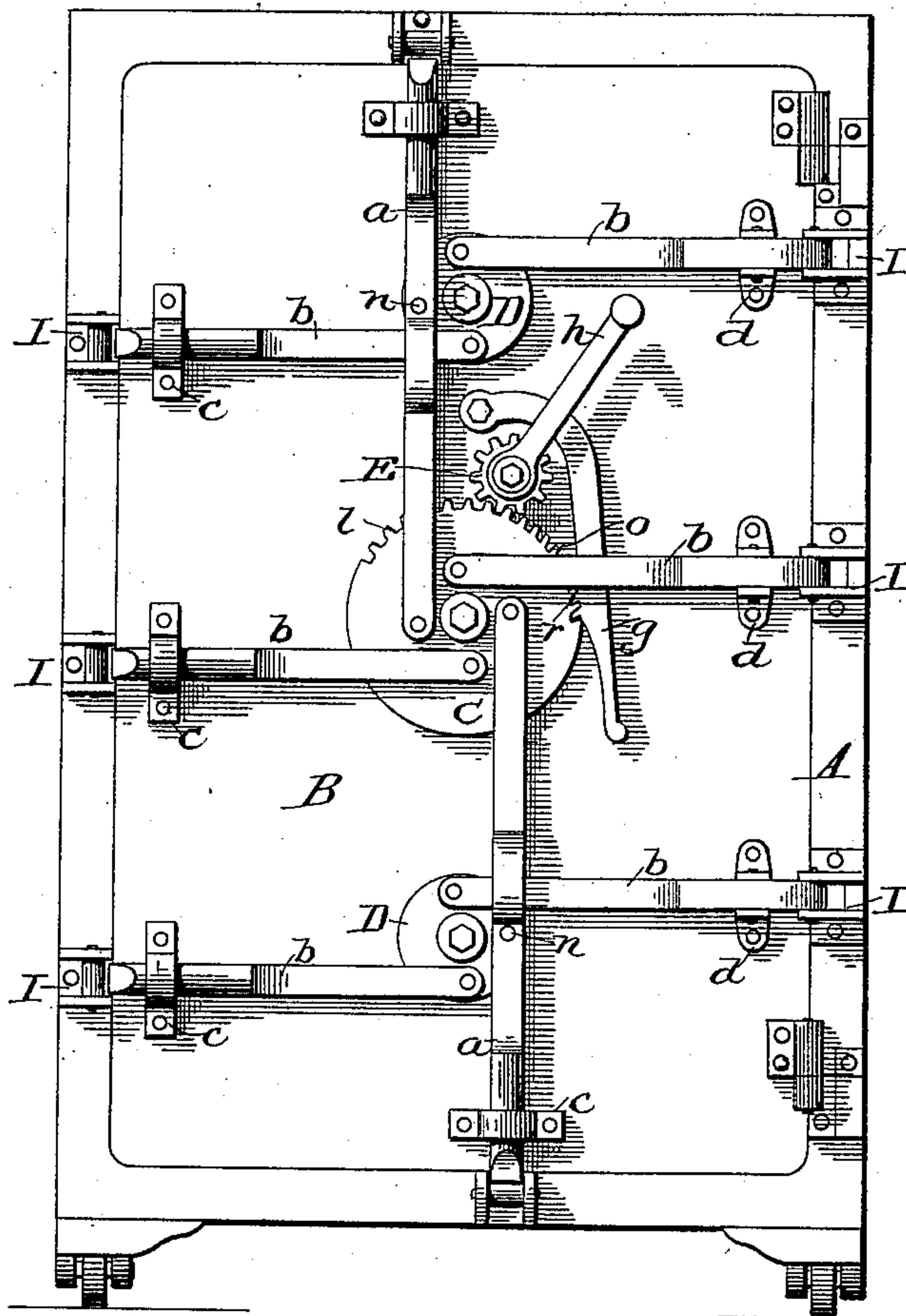


Fig. 2.

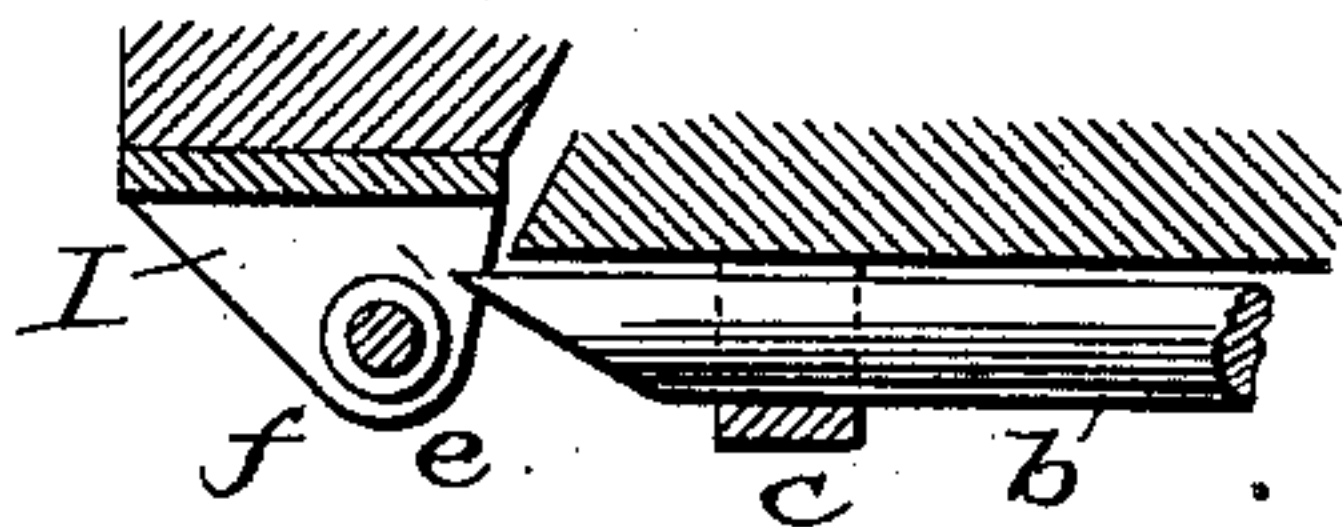
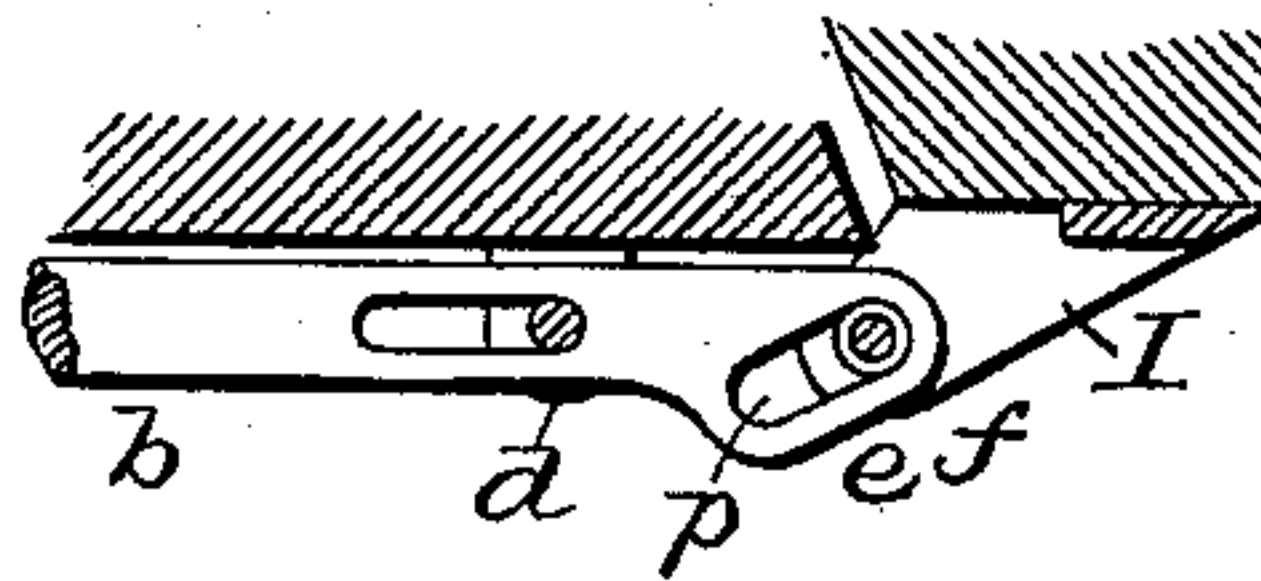


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM CORRY, OF CINCINNATI, OHIO, ASSIGNOR TO THE HALL'S SAFE AND LOCK CO., OF SAME PLACE.

SAFE, VAULT, &c.

SPECIFICATION forming part of Letters Patent No. 364,753, dated June 14, 1887.

Application filed April 1, 1887. Serial No. 233,272. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CORRY, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful
5 Improvements in Safes, Vaults, &c., of which the following is a specification.

This invention relates to means for forcing the doors of safes, vaults, and similar receptacles closed and holding them tight, and also in
10 starting them from their seat when it is desired to open them, all as hereinafter more fully set forth.

Figure 1 is a front elevation of a safe with my improvements applied thereto. Figs. 2 and
15 3 are sectional views showing details of construction.

The object of my invention is to provide means by which the door of safes, vaults, and pneumatic cabinets, or any similar receptacle,
20 can be forced tightly to its seat, so as to close it air-tight when so desired and hold it so until released, and also to start it from its seat when it is desired to open it.

In the drawings, A represents the front of a safe, and B the door of the same. On the door B, I arrange a series of bolts, *a* and *b*, the former being arranged to secure the door at its ends and the latter at its sides. These bolts are held in place near the edges of the door by
30 guides, of which two forms are shown, one form, *c*, being simply a flat strip of metal bent at its center to fit over the bolt, and being secured to the door by bolts or rivets, as shown in Figs. 1 and 2, thereby forming a support and guide
35 for the bolt, which is free to slide to and fro therein. The other form (shown in section in Fig. 3) consists of two brackets, *d*, secured to the door on opposite sides of the bolt and having a pin, *o*, secured therein, said pin passing
40 through a slot in the bolt, as shown in Fig. 3, either form of these guides being used, as preferred.

To the frame or wall of the safe A, along the free side of the door, and also at the top and
45 bottom, I secure brackets I, as shown in Figs. 1 and 2, these brackets consisting of two lugs or plates which project from the face of the safe and have secured therein a pin or bolt, *f*, on which is mounted an anti-friction roller or
50 sleeve, *e*, as shown clearly in Fig. 2, to permit the beveled end of the bolts *b* to be forced in

behind the pin and roller, and thus crowd or force the door inward to its seat as the bolts are moved endwise. On the opposite or hinged side of the door I secure similar brackets I, the
55 bolt and roller, however, being preferably somewhat smaller to work in an inclined slot formed in the outer end of the bolts *b* on that side, as more clearly shown in Fig. 3. This inclined slot is for the purpose of starting the door from
60 its seat, in case it sticks fast from any cause, and may be used or not, as desired, it being obvious that so far as crowding the door to its seat is concerned the bolts on the hinged side of the door may be provided with beveled ends,
65 the same as on the opposite side, or as shown in Fig. 2. In order to operate all these bolts simultaneously, I pivot at the center of the door a disk, C, to which I pivot the inner ends of one pair of end bolts and also one pair of the
70 side bolts, as shown in Fig. 1, they being pivoted to the disk equidistant from its center, so that the rotation of the disk C will impart to all the bolts connected to it a simultaneous and uniform movement. To operate the other
75 bolts, *b*, one pair of which is above and the other pair below the central disk, I pivot to the door two other disks, D, on a central vertical line, one above and the other below the central disk, C, and connect each by a pivot, *n*,
80 to one of the end bolts, *a*, so that when the central disk, C, is rotated to operate the bolts pivoted to it it will also rotate the disks D and thereby operate the bolts *b*, pivoted to the latter, and in that way it will be seen that by ro-
85 tating the central disk all the bolts will be moved simultaneously and uniformly, it being understood, of course, that all the bolts will be pivoted to their respective disks at an equal distance from the center, so that each bolt shall
90 have the same throw or movement.

It is obvious that any desired number of disks D, with their bolts *b*, may be used by locating them properly and pivoting them to the end bolts, *a*, in the manner shown; but it will be
95 seldom that more will be required.

In order to impart the necessary force to the disk C to force the beveled ends of the bolts in behind the pins *f* of the several brackets, and thereby wedge or crowd the door into its seat,
100 I form on the periphery of the disk C a series of teeth, *l*, which extend part way around it,

as shown in Fig. 1, and then mount on the door a pinion, E, so as to engage with these teeth, said pinion being provided with a crank, h, for turning it, as shown. By these means great force can be exerted to thrust the bolts outward, and the friction that would otherwise be created by their beveled ends bearing against the pins f is prevented or greatly lessened by the anti-friction rollers or sleeves e, and hence the operator can exert such force on the bolts as to crowd the door in against the rubber or other packing ordinarily used to render it airtight.

In order to lock the bolts in place and prevent the door from being released until desired, I also cut in the periphery of the disk C a series of inclined notches or teeth, o, and pivot to the door a latch, g, having a series of corresponding teeth or notches, r, to engage with the teeth o on the disk C, as shown, this latch g serving as a pawl to hold or lock the disk fast, and consequently to hold the bolts and the door firmly in position. When it is desired to retract the bolts to open the door, the crank h is pressed in the opposite direction sufficiently to relieve the strain on the teeth of the catch, when the latter is swung out of contact with the disk and the crank h turned so as to rotate the disk sufficiently to withdraw the bolts, and if the door sticks fast in its seat from any cause the inclined slots p will force the door outward on that side, thereby loosening it, so it can be readily opened.

In cases where the door is light, as in pneumatic cabinets, and is not likely to stick in its seat, the inclined slots p may be dispensed with, and the bolts on that side be provided with beveled ends, the same as on the opposite side, as it is obvious they will operate to force the door shut just the same, the slots only being required when power is required to aid in opening the door as well as in closing it.

It will of course be understood that when the slots p are used it will be necessary to provide the door with the compound hinges, which permit it to move straight into and out of its jambs after being swung to its position, but which, being well known, need not be described. When the bolts are provided with the beveled ends at both sides of the door, of course the ordinary form of hinges may be used.

Having thus described my invention, what I claim is—

1. The combination, in a safe, vault, or similar receptacle, of a series of bolts, a b, pivoted at their inner ends to a central disk, C, with two or more sets of bolts, b, each set being pivoted at their inner ends to separate disks D, said disks being pivoted to the bolts a, and all arranged to operate substantially as shown and described.

2. In combination with the door B, having a series of bolts applied thereto, said bolts having their outer ends beveled at the free sides or edges of the door and provided with inclined slots at the hinged side of the door, a corresponding series of brackets, I, provided with anti-friction rollers e for the inclines of the bolts to operate on, substantially as shown and described.

3. The combination, with the bolts a b and their operating-disks C D, arranged as shown and described, of the pinion E, provided with a lever or handle, h, and the pivoted locking-lever g, both being arranged to operate in connection with the central disk, C, substantially as and for the purpose set forth.

In witness whereof I hereunto set my hand in the presence of two witnesses.

WILLIAM CORRY.

Witnesses:

R. T. PULLEN,
CHAS. O. HALL.