

L. H. MILLER.

Improvement in Bolts for Safes, Doors, &c.

No. 131,699.

Patented Sep. 24, 1872.

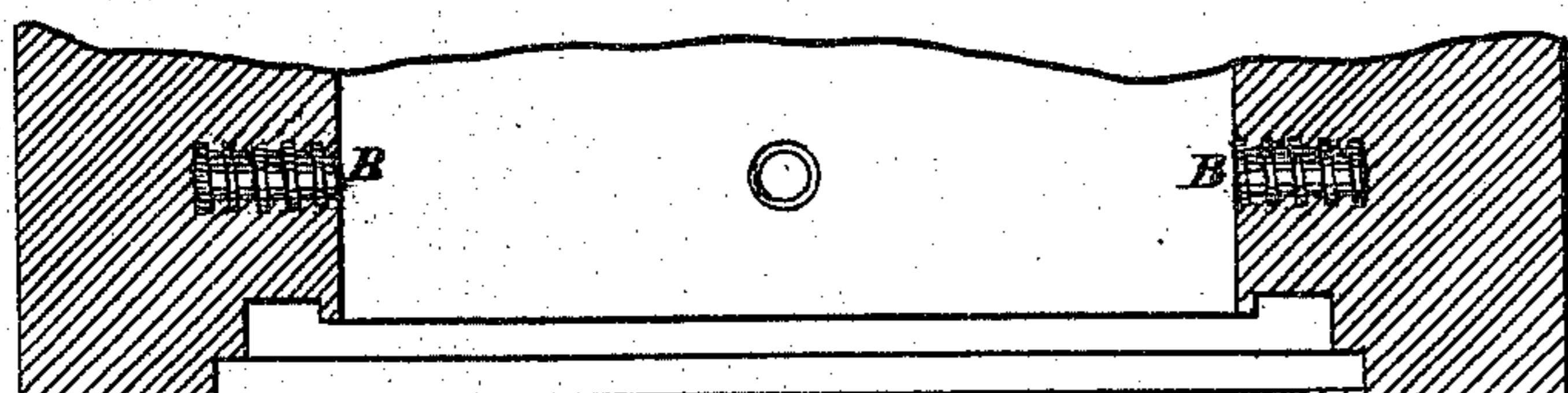
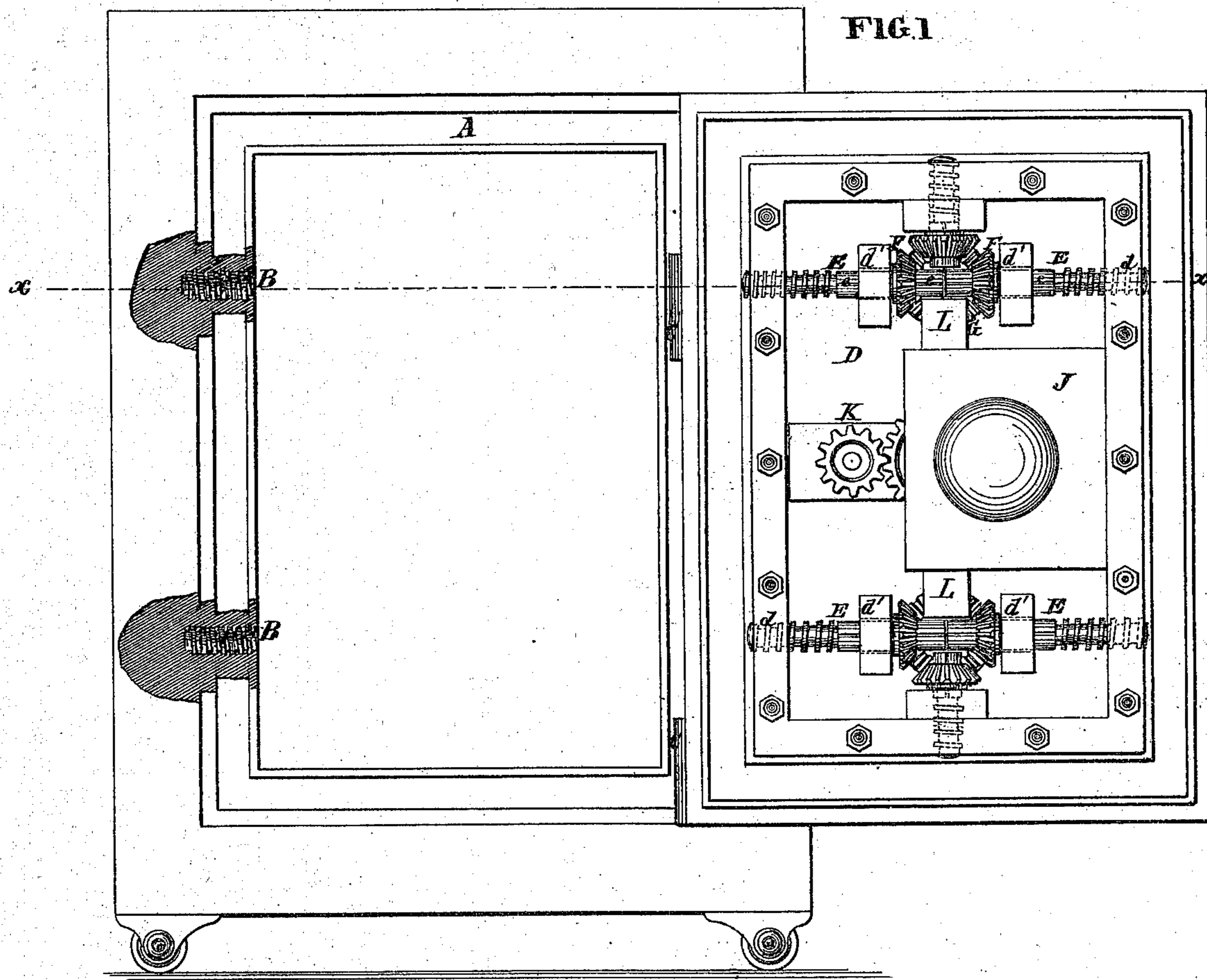


FIG. 2.

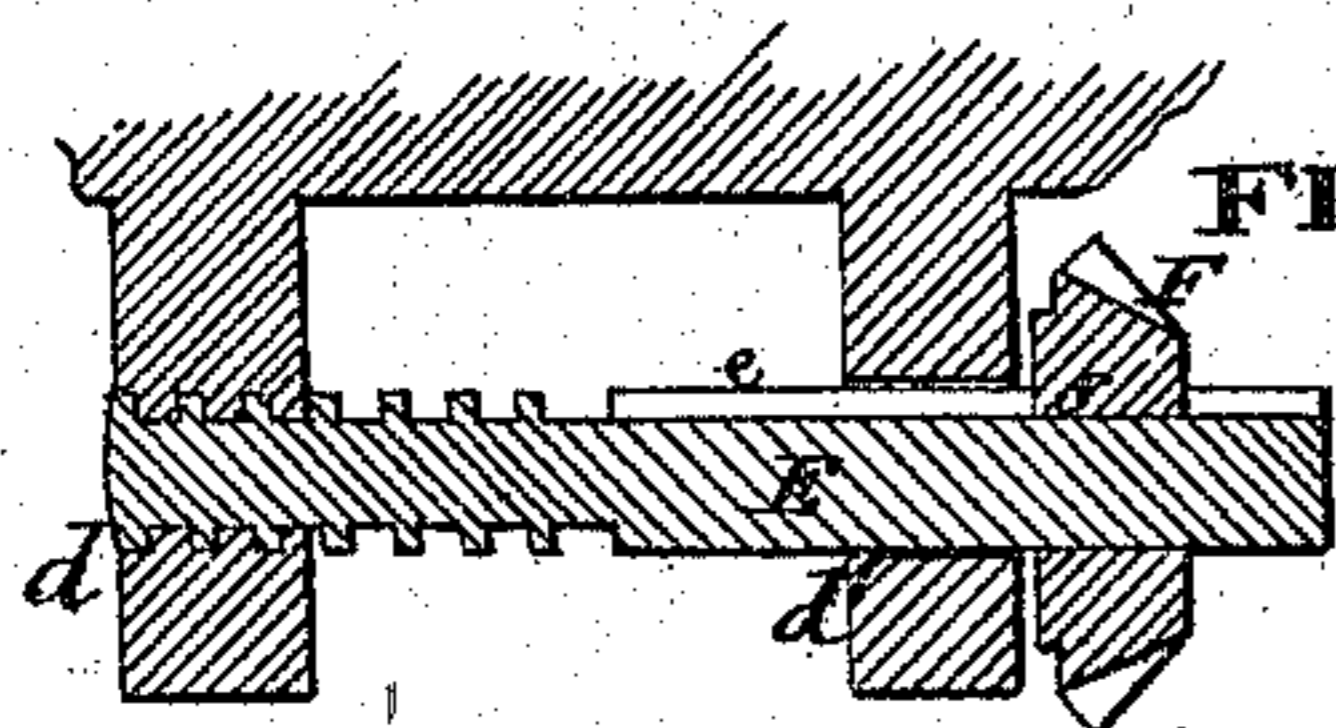
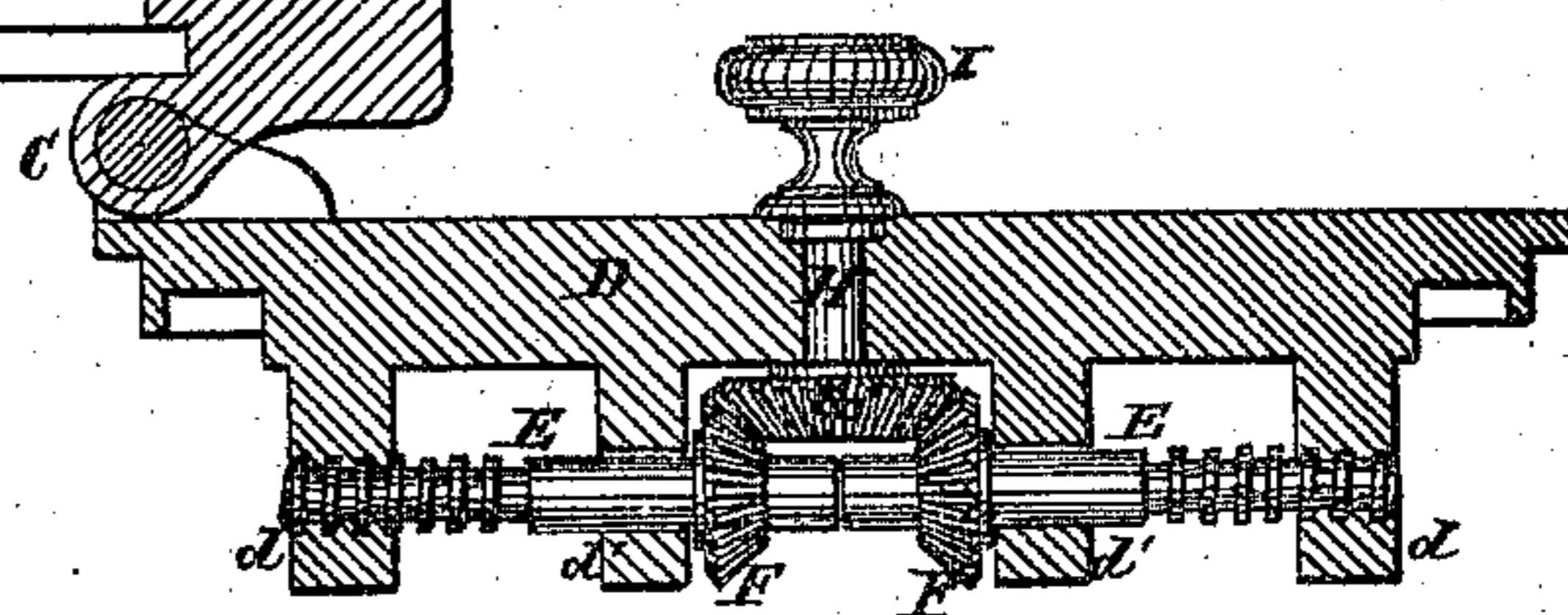


FIG. 3.



WITNESSES.

Das. L. Ewin
Walter Allen

INVENTOR.

L. H. Miller
By *Knight Bros*
Attorneys.

UNITED STATES PATENT OFFICE.

LUKE H. MILLER, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN BOLTS FOR SAFE-DOORS, &c.

Specification forming part of Letters Patent No. 131,699, dated September 24, 1872.

To all whom it may concern:

Be it known that I, LUKE H. MILLER, of the city of Baltimore, Maryland, have invented a new and Improved Method of Fastening the Doors of Fire and Burglar Proof Safes, Vaults, &c., of which the following is a specification:

Nature and Objects of the Invention.

My invention relates to bolts in the form of screws, which, in fastening the door, are made to enter corresponding threaded apertures in the door-frame of the safe or vault, so as not only to hold the door securely shut but to prevent the possibility of spreading or springing any part of the frame, either by violence in a fall or by the application of a wedge, jack, or other implement in the hands of a burglar. My invention consists in the combination with such screw-bolts, arranged in one or more radial groups with three or more bolts in each group, of a single check-lock, arranged to throw its bolt or bolts centrally between them, to prevent their retraction, as hereinafter specified.

Description of the Accompanying Drawing.

Figure 1 is a front view of a safe with the door open, exposing the rear or inner side of the door, a portion of the door-frame being shown in section. Fig. 2 is a horizontal section of the same on the line *x x*, Fig. 1. Fig. 3 is a section of one of the bolts and its attachments.

General Description.

A may represent the door-frame of a safe or vault, with threaded sockets B, for the reception of the door-bolts, and with the hinges C C, by which the door D is hung. E E represent the door-bolts. These are formed with screw-threads working within correspondingly-threaded sockets *d* in the door, and supported in sockets *d'*, and so arranged that when the door is closed the said bolts will correspond in position with the sockets B in the frame A. F F are hollow pinions, within which the inner ends of the door-bolts are adapted to slide freely, while the said bolts derive rotation from the said pinions by means of feathers *f* in the pinions working in grooves

e, or by forming the ends of the bolts and the apertures of the pinions, within which they fit, in square or other non-circular shape. The pinions F F are preferably beveled, and two, or three, or more of them may gear with a pinion, G, keyed upon the shaft H, which is rotated by an external knob, I, in order to impart the necessary rotation to the bolts to throw them in or out.

In the present illustration I have shown three screw-bolts arranged in the upper part of the door, and three in the lower part of the door, which latter three may be operated by a separate knob, shaft, and pinion, I H G. The lock J may be of any suitable construction. I have here illustrated it as described in Letters Patent heretofore granted to me, so as to be operated by a gear-wheel, K, and a spindle external to the mechanism of the lock itself. This or any other kind of lock which may be used, is adapted to throw its bolts behind or between the inner ends of the door-bolts E, when the latter are projected into their sockets within the door-frame.

In the illustration given in Fig. 1, the door being open, the door-bolts E and lock-bolts L are, of course, all retracted. If, now, the door be closed and the knobs I rotated in the proper direction, the door-bolts E, turning freely within their sockets *d*, will be made to project from the edges of the door and enter the sockets B of the frame A to the necessary distance. The lock-bolts L, being then thrown out in the usual way, will be interposed between the inner ends of the bolts E and effectually prevent the retraction of the said bolts.

From the above description it will appear that the bolts work in threaded apertures in both the door and the door-frame, so as to hold the two firmly together, not only against the opening of the door, but against any possible spreading of the frame, so that while the door is shut and locked, the entire door and frame are firmly screwed together, and may have as great strength as if formed in one solid piece.

In the present illustration the lock shown in the center of the door may represent a check-lock operating two bolts up and down, or any other lock for checking the screw-bolts can be used according to the space available

and other conditions, precisely as in the case of the common smooth bolts.

The invention is adapted for all burglar-proof work, either in portable safes or in vault-doors, or any other appliance where such security is required.

Claim.

What I claim as new in this my invention is—

The screw-bolts E, arranged in a radial group or groups of three or more, in combination with a check-lock, J, adapted to throw its bolt or bolts between their inner ends and thus prevent their retraction, as herein shown and described.

LUKE H. MILLER.

Witnesses:

WM. D. MILLER, Jr.,
CHAS. H. JONES, M. D.