J. C. Hintz,

Safe Bolt Work.

No. 98,494. Patented Jan. 4, 1870.

Fig. 1.

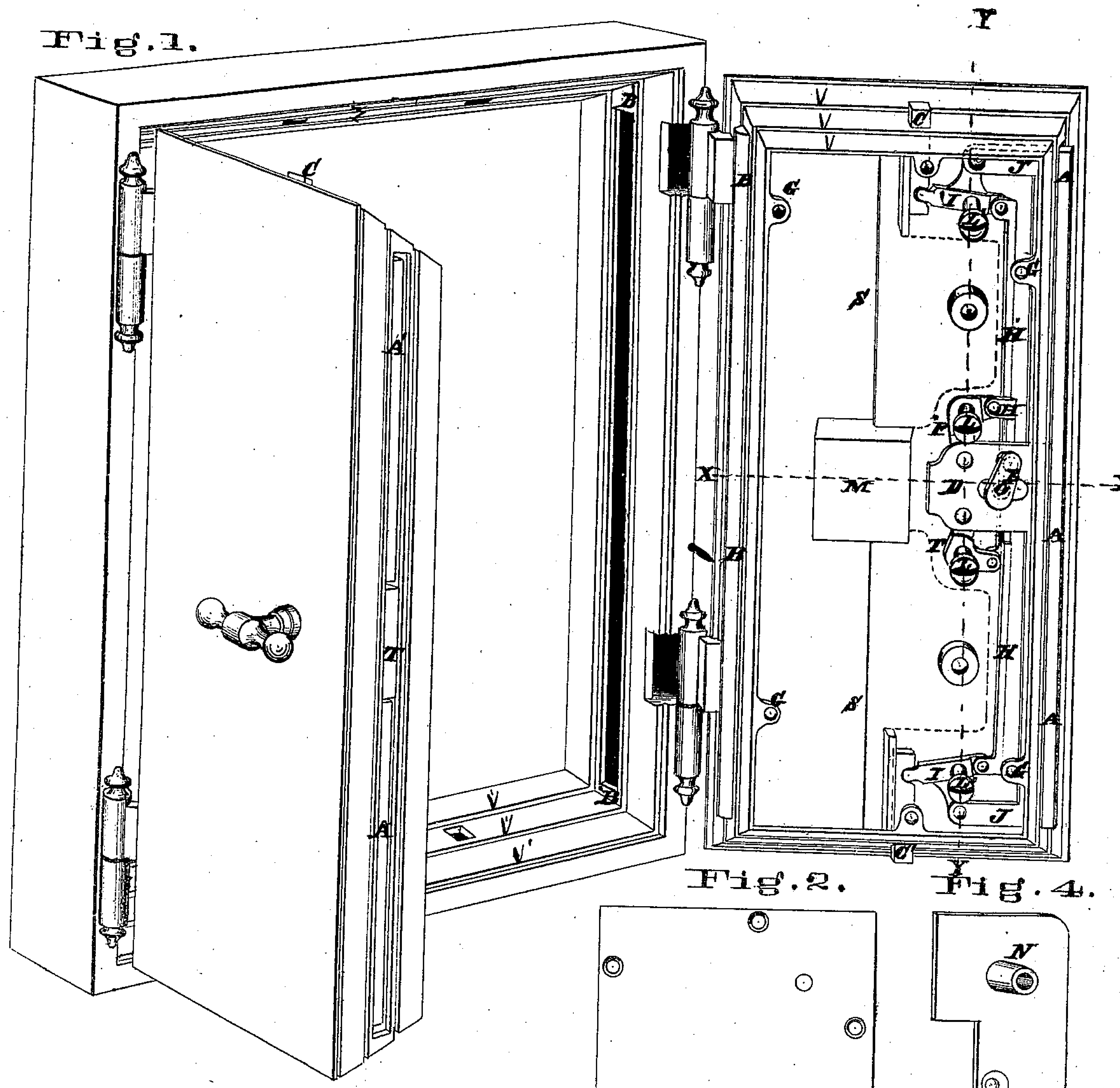


Fig. 2.

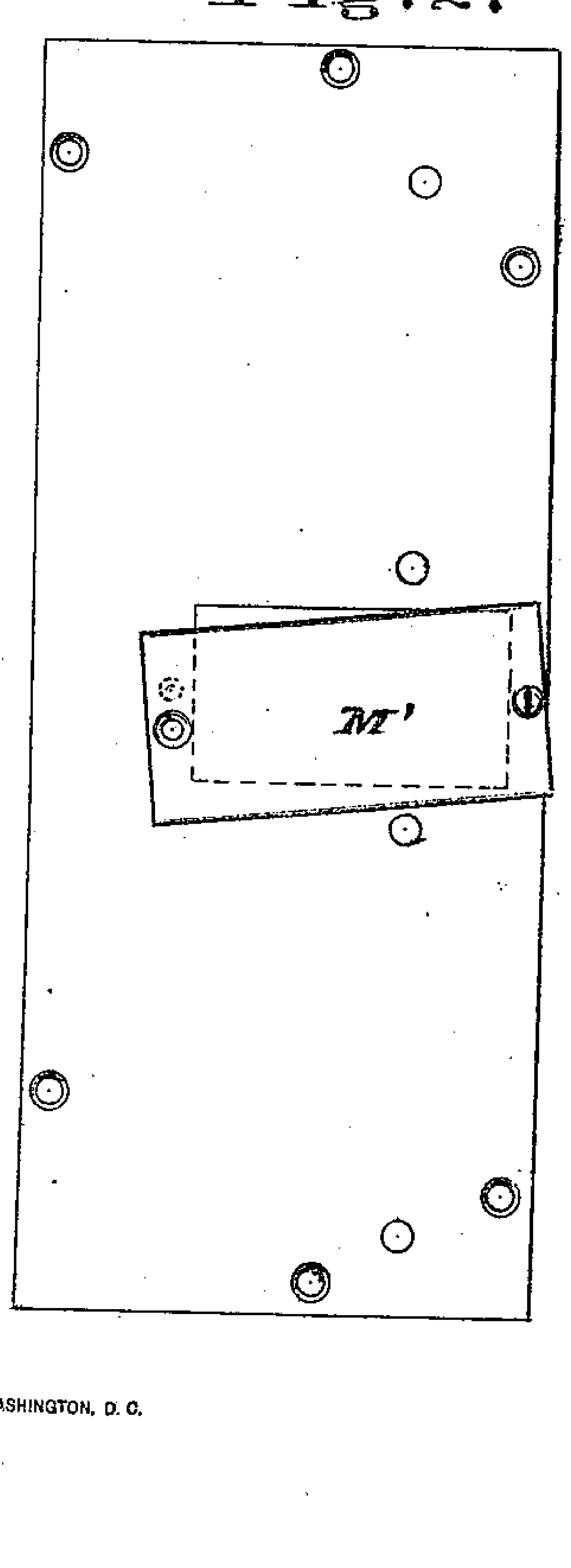


Fig. 4.

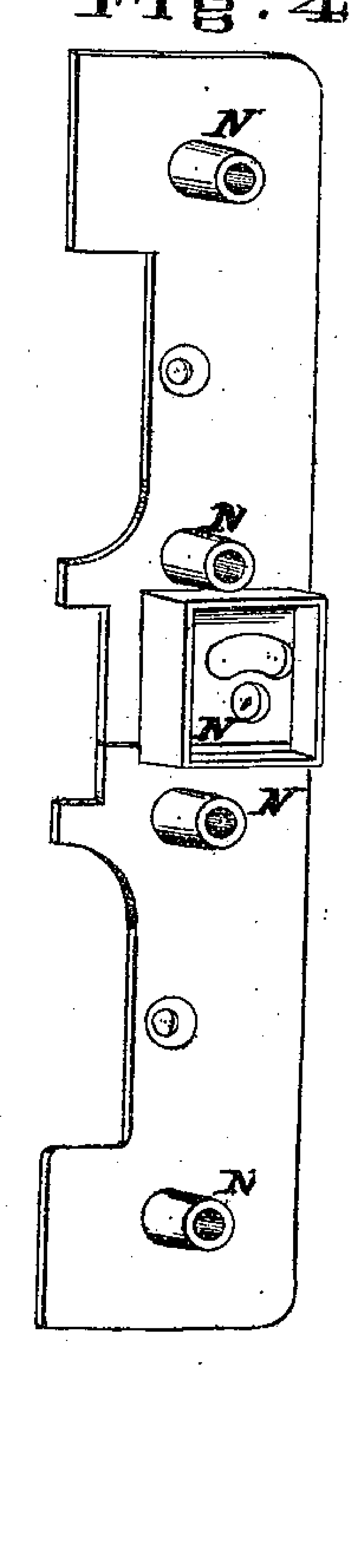
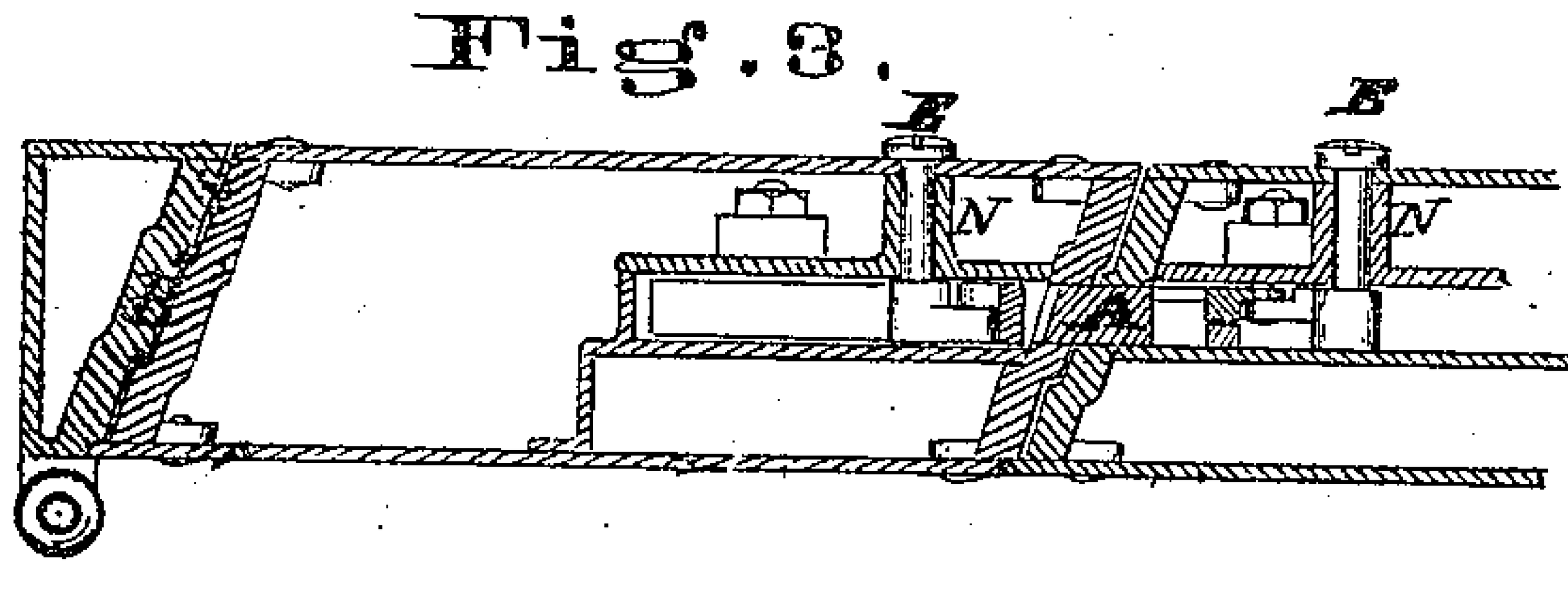


Fig. 3.



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JOHN C. HINTZ, OF CINCINNATI, OHIO, ASSIGNOR TO CHARLES DIEBOLD AND JACOB KIENZLE.

IMPROVEMENT IN BOLT-WORK AND DOORS FOR SAFES.

Specification forming part of Letters Patent No. **98,494**, dated January 4, 1870.

To all whom it may concern:

Be it known that I, JOHN C. HINTZ, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Doors and Bolt-Work for Fire-Proof Safes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification.

The objects of my improvements are, first, the attainment of greater security in fire-proof safes by an arrangement of mechanism to prevent the fire passing through the joints of the doors, by the employment of projections or steps at the top and bottom of the safe-doors and door-frames, lips at the hinged ends of the doors, entering corresponding recesses in the door-frames, and elongated bolt on one door, which enters a corresponding recess on the other door when the doors are closed; secondly, improved mechanism for adjusting the bolts.

Figure 1 is a perspective view of the front of a safe containing my improvements, one of the doors being open and the inner face-plate removed. Fig. 2 is an elevation of the inside of the safe-door, showing the means of access to the lock and bolt-work. Fig. 3 is a lateral transverse section through one door and part of the other, the safe being shut and bolted, in the line *x x*, Fig. 1. Fig. 4 is a vertical section in one of the doors, parallel to the plane of the inner face of the door.

B is a projection on the inner edges of the door, running nearly the whole length of the steps, between which it is, and intended to enter into the recess B′ in the frame of the door. A similar recess and projection are also used upon the other door. A is a bolt, which runs nearly the whole distance between the second step or projection on top and bottom of the door, and enters into the corresponding recess A′ in the other door. This bolt is operated by a series of levers, shown, and which operate as follows: The handle being turned, the eccentric or lever E, which is made fast to its inner end, and also attached to the plate D, also moves and carries with it the plate D, which is permanently attached to the bolt A, thereby moving said bolt in and out. Said plate D is attached by pivoted joints to two levers, F and F′, which are held in position by and swing upon the screw-bolts L L shown. The lever F is attached at its other end, by a pivot-joint, to the link H, and, as the handle is turned in such direction that the plate D goes out and shoots out the bolt A, the lever F, by means of its two pivot-joints mentioned, brings the link H′ down. The link H′ is attached at its upper end, by a pivot-joint, to another lever, I′, which lever is held in its place and turns freely upon a screw-bolt, L′, shown. This lever has a projection at the end opposite to where the pivot before named is placed. This projection sits in an appropriate recess in the upright bolt C, clearly shown in Fig. 1. Said lever is also attached, by another pivot-joint at a point at right angles to and above the line formed by the said projection and first-named pivot-joint to an arm, J′, permanently attached to and at right angles to the bolt A, as shown.

When the link H′ is brought down, as before described, it carries with it the end of the lever I′, to which it is pivoted, and thereby raising the opposite end, shoots up the upright bolt C, and at the same time, by its attachment to the arm of the bolt A, regulates the distance which the said bolt projects at that point into the recess A′.

The same motion of the handle which operates through the plate D and lever F to bring down the link H′, as described, operates through the same plate and the lever F′ to raise the link H, which, being attached to mechanism in all respects similar to that before described, shoots the vertical bolt C′ down, and regulates the distance through the arm J which the bolt A shall be carried into the recess A′ at that end, so that the same motion of the handle regulates the egress and ingress of the bolt A at the center and at both ends, and by mechanism having the same motion and same length of reach, thereby securing perfect uniformity on all parts of the bolt.

Similar mechanism is employed on the other door, and operates similar vertical bolts; but instead of the horizontal bolt A, there is, as before described, a recess, A′. In the center of said recess there is a bolt, T, which meets the bolt A in the center and binds it. M is

the lock, which acts immediately on the end of the plate D. M′ is a plate, fastened by screws to the inner face of the door, and by means of which access may be had to the lock M and bolt-work, and through which the lock may be removed.

The bolt-work may be removed through the recess where the bolt A works by removing the nut O under said plate M′, together with the screws L L L′ L′, whose heads are outside the inner face of the doors. In this respect the other door is similar to the one described, and its bolt-work may be removed in the same way.

Fig. 4 shows a vertical plate to be placed in the position in which it is shown between the bolt-work and inner face of the door, and it will be bounded toward the hinges by the partition shown in dotted lines, Fig. 1, and on the ends and other side by the door-frame. Its chief purpose is that the tubes N N N, which are intended to protect the screws L L L′ L′ from the cement filling, may have a permanent attachment.

The box or casing N′, as shown in the drawing, is intended to set over and protect the plate D and lever E from the cement, but it may well be made sufficiently large to cover the lock M as well. The plate shown in Fig. 4, together with the partition-plates indicated by dotted lines in Fig. 1, will serve to protect the remainder of the bolt-work from contact with the cement. The line S S, (shown in Fig. 1,) although it shows the boundary-line of the plate, yet it is not intended for such plate to so extend in the safe-doors that embody my invention. On the contrary, the cement should extend as far as the partition shown in dotted lines, Fig. 1.

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

1. The combination of links H and H′, levers F and F′ and I and I′, plate D, arms J and J′, and bolt A.

2. Safe-doors provided with the steps V, which fit into corresponding steps V′ in the door-frame, lips B and B, fitting into grooves B′ B′ of the door-frame, and elongated bolt A in one of the doors, fitting into a corresponding elongated recess in the other, all constructed and arranged as set forth.

JOHN C. HINTZ.

Witnesses:
J. C. HINTZ,
JAMES MOORE.