EDWARD K. HALL.

Improvement in Burglar Proof Safes.

No. 115,728. Patented June 6, 1871.

Fig 1

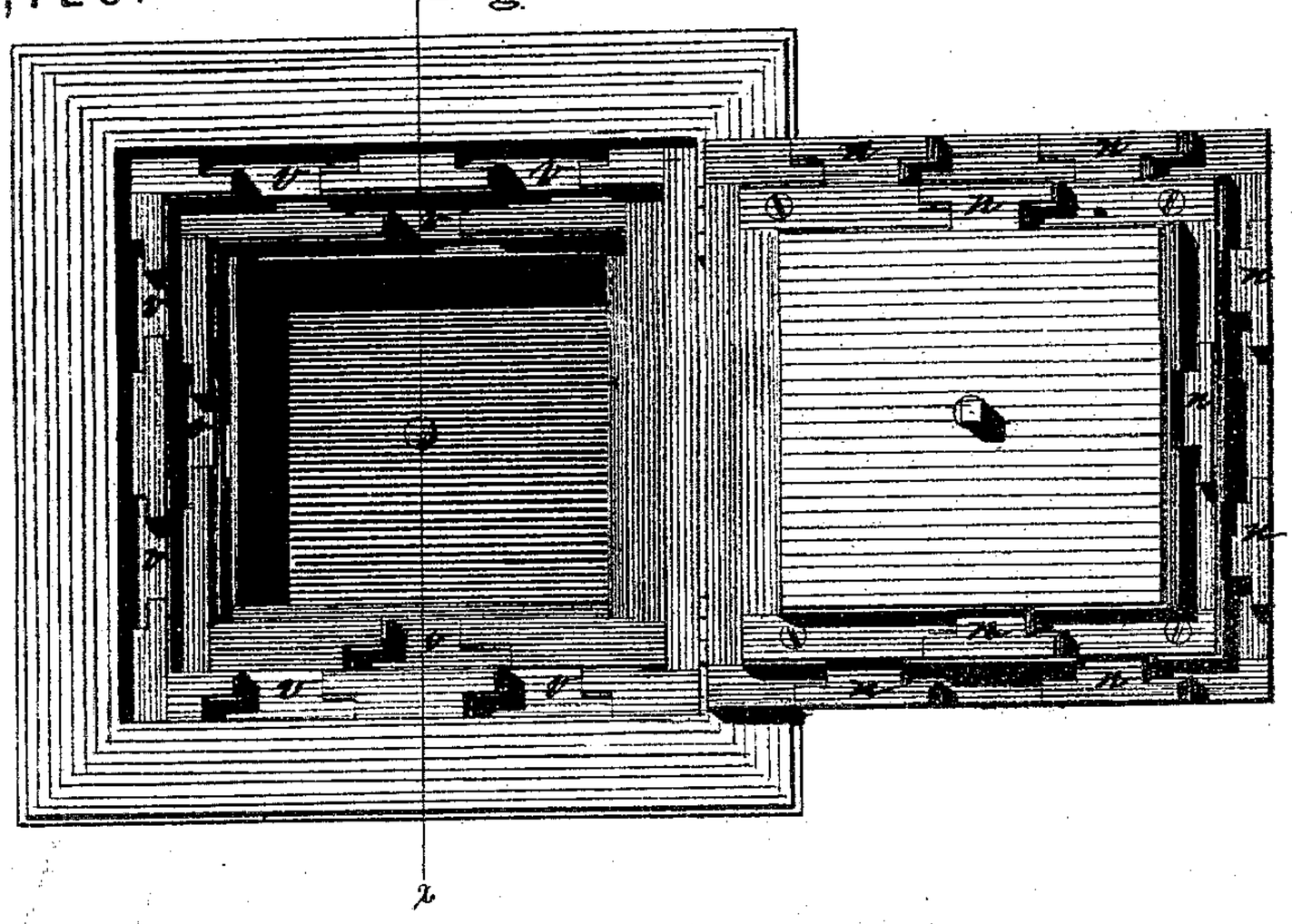


Fig 2

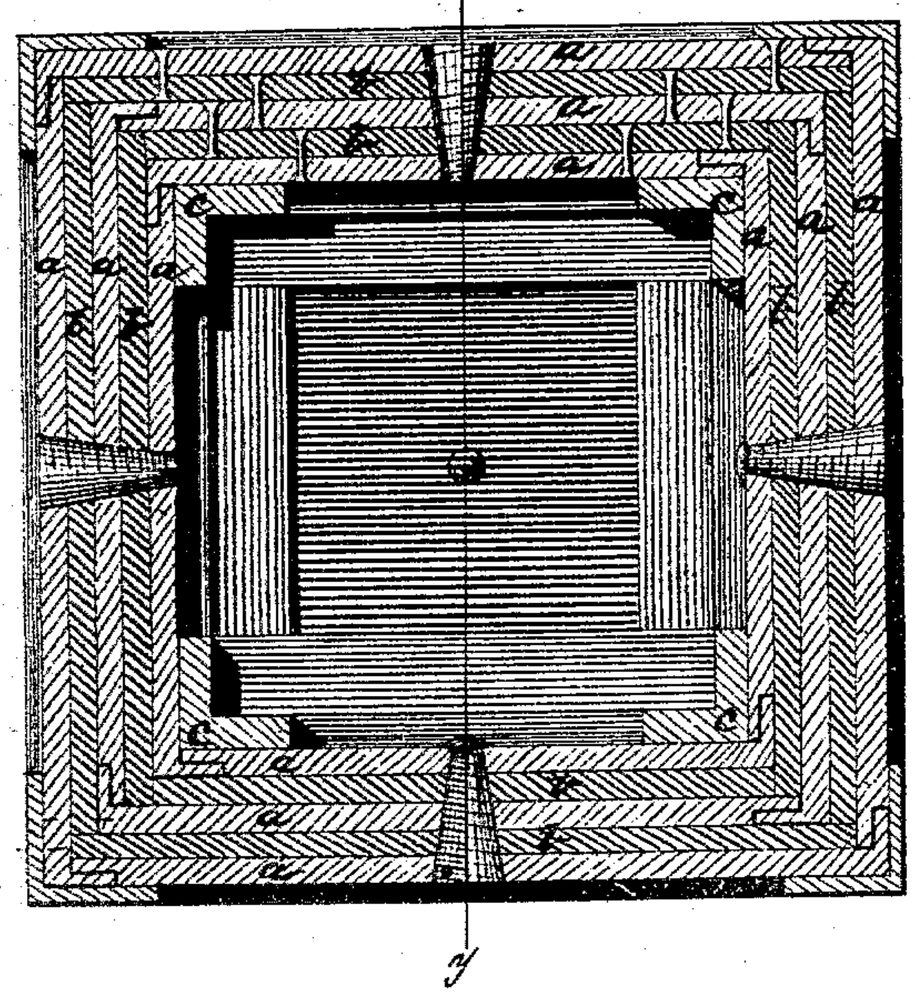


Fig 3.

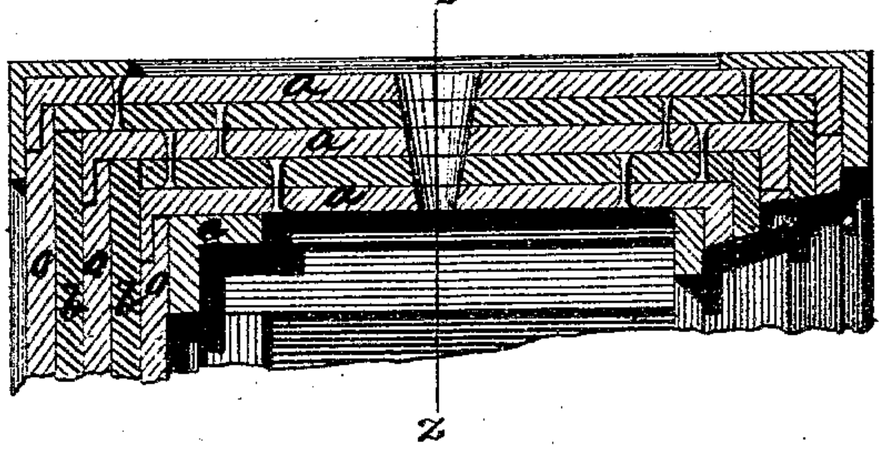


Fig 4

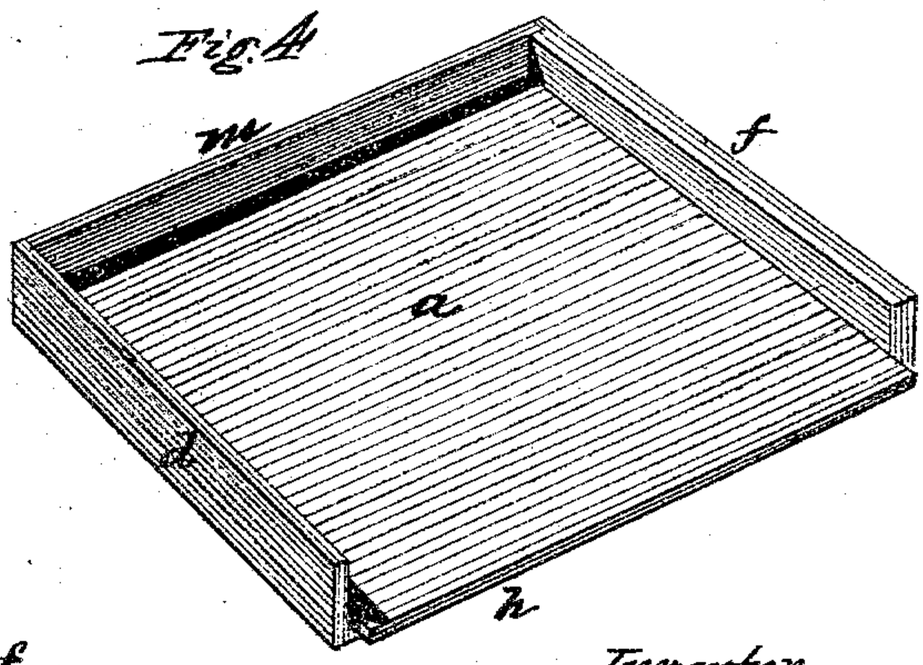


Fig 5

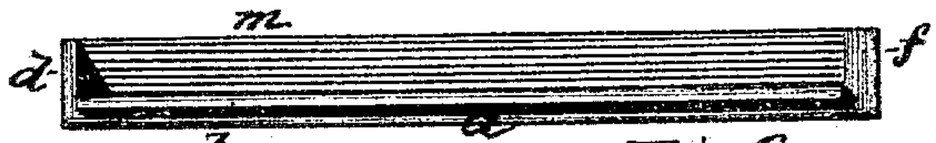
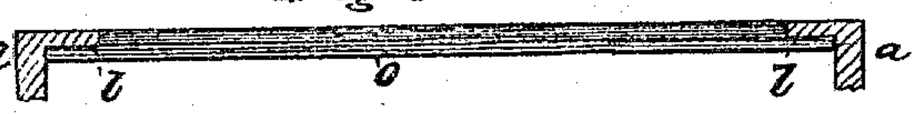


Fig 6



Witnesses.

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UNITED STATES PATENT OFFICE.

EDWARD K. HALL, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN BURGLAR-PROOF SAFES.

Specification forming part of Letters Patent No. 115,728, dated June 6, 1871.

To all whom it may concern:

Be it known that I, EDWARD K. HALL, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain Improvements in Safes, Vaults, Cells, &c., of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to safes for the preservation of valuables; and the invention consists, first, in a novel manner of constructing the body of the safe; and, second, in a novel method of securing the door to the body, all as hereinafter more fully explained.

Figure 1 is a front view of a safe with the door open. Fig. 2 is a transverse vertical section, taken parallel with the door, on the line *z z* of Fig. 3. Fig. 3 is a vertical section of a portion taken on the line *x x* of Fig. 1 and *y y* of Fig. 2. Fig. 4 is a perspective view of one of the plates detached. Fig. 5 is a front edge view of the same; and Fig. 6 is a top edge view of one of the back plates, and showing its union with the side plates.

In constructing my safe I make the body of a series of iron and steel plates, arranged alternately, as represented in Fig. 2, in which *a* indicates the iron plates and *b* the steel plates, the latter being made very hard to prevent drilling. It is obvious that any number of plates may be used, according to the size and thickness required, and that more or less of the steel plates may be used, these matters being optional with the builder. To construct it I first prepare a series of iron plates, *a*, for the top, bottom, and two sides, all alike, except as to size, and of the form represented in Fig. 4. These plates are formed by first cutting out a rectangular plate several inches longer and wider than the finished plate is to be. I then cut a rectangular notch in each corner, and after heating the plate I turn up a flange a few inches wide on three of its edges, as shown in Fig. 4, in which *d*, *m*, and *f* indicate the flanges thus formed. The flange *f* on one edge is left of the full thickness of the plate, but the other two flanges, *d* and *m*, are cut away along their inner faces to one-half of their original thickness, as there shown. The remaining fourth edge, *h*, instead of being turned up into a flange, is left projecting, but is planed or cut away along its back side to one-half of its thickness, so that it corresponds in thickness with the flanges *d* and *m*. I then provide for the back a corresponding series of plates, *o*, which are simply cut of the proper size, and have a rabbet, *l*, cut along each of their edges on the back side, as shown in Fig. 6. With plates thus formed the body of the safe is built up by securing to suitable corner pieces *e* four of the plates *a*, one on top, one at the bottom, and one on each side, and adding a back plate, *o*, the thick flange *f* of plates *a* being always placed at the front, as shown in Fig. 3. To these are secured a corresponding series of steel plates, *b*, and then over these again another series of the iron plates *a* and a back plate, *o*, and so on continuously to any desired extent, the drawing representing five thicknesses of plates—three of iron and two of steel.

It will be observed that when a series of plates, *a*, thus formed with flanges, is applied to a cubic body, they will fit readily thereon with their flanges fitting over the corners and lapping over the recessed edges *h* of one another; and that thus each plate assists to hold the other three side plates, and also the back plate, in place; and that by this construction and arrangement of the plates the angles along each side or edge of the safe are formed of solid metal, instead of leaving a joint by the abutment of the edge of one plate against the face of another, as has heretofore been the custom. It will of course be understood that the plates are to be securely fastened together by bolts or rivets; for this purpose I prefer to use the conical bolts heretofore patented by J. L. Hall, one such being represented in each side of the safe in the Figs. 1, 2, and 3.

To secure the door of the safe to the body and prevent them from being forced asunder by the insertion of wedges or similar means, I construct the frame, or face of the jambs against which the door shuts, with a series of recesses, *v*, of T-form, as shown in Fig. 1, and on the inner or abutting face of the door I form a corresponding series of similar-shaped projections, *n*, these latter being arranged to enter the recesses *v* as the door is closed. It will thus be seen that when the door is closed it is securely clamped or locked to the frame at top, bottom, and on each side, and that it will thus be impossible to force them asunder.

The advantages of this plan over that of

dovetailed recesses and projections are very great, inasmuch as in the latter there must always be left considerable play in order to enable the door to close readily, and then when closed the strain is brought upon an inclined surface—the sides of the dovetail—instead of direct upon a flat face, as in the case of these T-heads.

As a whole, the construction of safes on the plan herein described is believed to be one of the best ever devised, and by it I am enabled to produce a safe of exceeding great strength and compactness.

It is obvious that instead of making the locking projections and recesses in the form of the letter T they may be made like an inverted L, the only difference being that in the latter case there will be but one lateral projection, whereas in the former there will be two for each projection.

It will of course be understood that this invention is applicable alike to all styles of safes, vaults, cells, and similar structures, and I so intend to apply it.

Having thus described my invention, what I claim is—

1. The plates *a*, constructed substantially as herein described, for use in safes, vaults, &c., as set forth.

2. The rabbeted back plates *o*, in combination with the series of plates *a*, when constructed and arranged substantially as described.

3. The T-shaped recesses *v*, in combination with the correspondingly-shaped projections *n*, when applied to the doors of safes, vaults, or cells, substantially as set forth.

EDWARD K. HALL.

Witnesses:
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