

GEORGE H. IRELAND.  
Improvement in Safes.

No. 115,479.

Patented May 30, 1871.

FIG. 1.

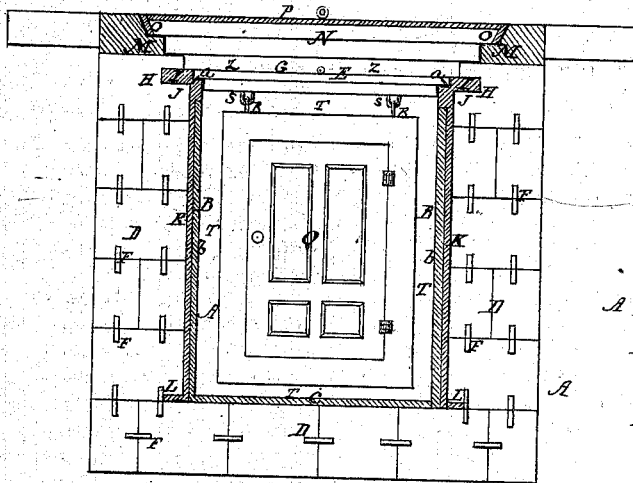


FIG. 4.

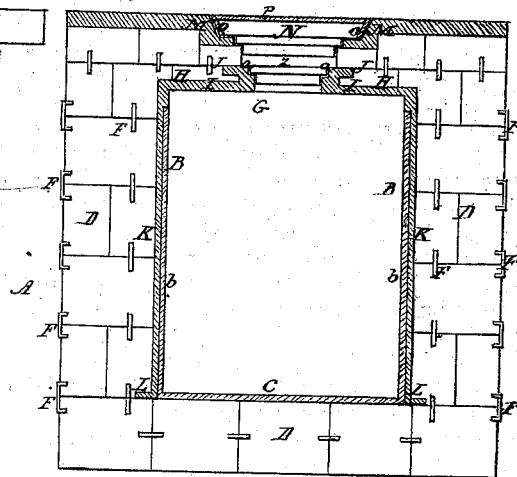


FIG. 2.

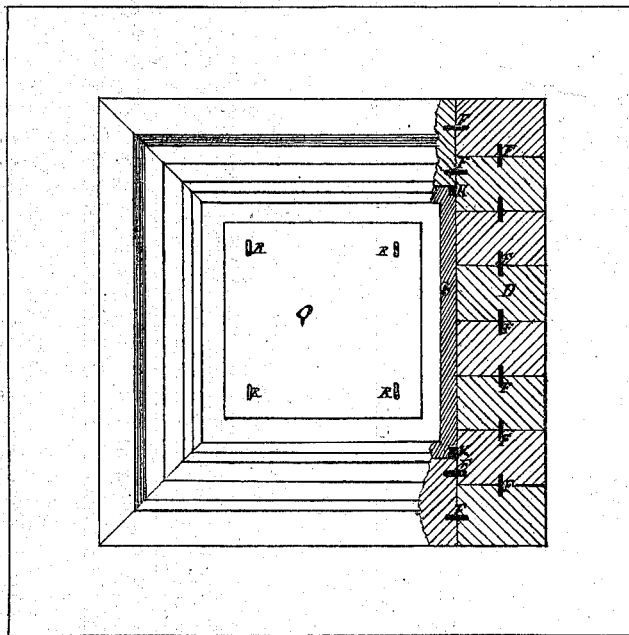
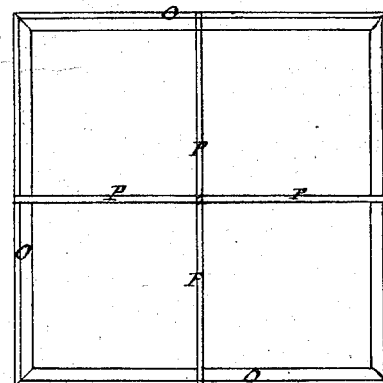


FIG. 3.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

GEORGE H. IRELAND, OF SOMERVILLE, MASSACHUSETTS.

## IMPROVEMENT IN SAFES.

Specification forming part of Letters Patent No. 115,479, dated May 30, 1871.

*To all persons to whom these presents shall come:*

Be it known that I, GEORGE H. IRELAND, of Somerville, county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in the Construction of Safes, Vaults, &c.; and that the following is a full and exact description of the same, reference being had to the accompanying drawing.

The object of the present invention is to provide a vault or safe for the reception of articles of value, &c., wherein they will be secure from thieves and fire, and from the action of moisture, frost, or other atmospheric elements. The invention consists, first, of a vault or chamber constructed of stone or brick masonry, with the layers tied together by metallic straps, in combination with a metallic frame, in which the door of the vault is to be secured and locked in any proper mode. This frame is arranged upon the interior of the vault, against the walls thereof, with which, as they are built, the said frame is constructed to interlock, becoming as it were a part and parcel thereof. Second, in combination with the above, the opening into the vault is extended beyond the outside of the said door thereto, and at such extension adapted for another door, which in its construction, as also in the construction of the opening, is such as to resist the action of fire and prevent the conduction of heat to the said inner door, between which and the said outer door is left an air-chamber or space.

In the accompanying drawing my improvements in the construction of vaults, safes, &c., are illustrated—

Figure 1 being a central vertical section through a vault constructed according thereto, and with the entrance to the vault arranged in the top and flush or nearly so with the surrounding floor or surface; Fig. 2, a plan or top view of the vault shown in Fig. 1, but with the doors removed, and with one side in partial horizontal section for more perfectly illustrating the construction of inside metallic frame; Fig. 3, a plan view in detail, to be hereinafter referred to; Fig. 4, a central vertical section, showing modification in construction of entrance to vault.

A in the drawing, Figs. 1 and 2, represents a vault or chamber surrounded and inclosed

upon its sides B and bottom C by masonry, D, composed of layers of stone, brick, or other suitable material. The several layers of masonry are tied together at suitable points by metallic straps F, producing walls of the greatest solidity and rigidity, and equal to resist the operations of the most forcible attempts by burglars to displace them, either in part or parts, or in the whole. The upper side G of the vault is open, and at such, in the present instance, entrance to the vault is effected. *b*, a lining of hydraulic cement to inside surface of walls to vault; H, a frame made of iron or other suitable metal. This frame, in the present instance, consists of a part, I, made of a shape corresponding to that of the vault. This part I of the frame H, in the construction of the vault-walls, is located at the vault-entrance, and it is suitably formed to interlock with the masonry, as shown at J. The frame H also consists of vertical rods or bars K, that are rigidly fastened to the part I, one rod at each corner of the vault. These rods extend down against the vault-walls, and at their lower ends are formed to interlock with the masonry in its construction, as shown at L. The part I to the frame H is open in its center, and around the same is constructed with a square shoulder, forming a seat for the cover or door A provided for the vault, as shown at *a*, which is suitably formed with a square shoulder therefor. The cover E is made of metal in any suitable mode of construction for strength, and it is to be provided with any suitable arrangement of bolts for locking it on and to the metallic frame H I. The opening G to the vault is extended beyond the door, and at such extension constructed to form a seat, M, for an additional and outside door, N, leaving a chamber or space, *z*, between the two doors. The door N is constructed of a metallic frame, O, shown in Fig. 3, braced and stiffened by straps, P, intersecting each other at the center of the frame, within which frame hydraulic cement is molded into the proper shape to produce the complete cover, shown in Fig. 1. The seat M for the door N is also constructed of hydraulic cement, which is extended beyond to form a hydraulic-cement exterior coating for the upper ends of the vault-walls. Q, a case or cabinet made of wood or other material, suitably prepared to

resist moisture and heat. This cabinet has hooks R fixed in its upper end, by which it is suspended from staples S to the under side of inner door E.

In Fig. 4 a modification in the construction of the vault is shown. It consists in extending the masonry, together with the part I of frame H, over the top of the vault and in narrowing the entrance into the same, as shown, the same principles of construction, however, being involved as in the vault hereinbefore described and illustrated in Figs. 1 and 2 of the drawing.

From the above description of my invention it is obvious that, first, with a vault or safe constructed for entrance through its top it is rendered susceptible of being on all its other sides completely banked and surrounded by earth, reducing the danger of injury to its contents by fire, thieves, &c.; second, but comparatively very little iron is used in the construction of the vault or safe, while at the same time great strength is secured; third, between the outside and inside of the vault there is no direct or continuous communication by iron or metal, it being broken, as is

obvious from the description and drawing, thus reducing the power of conduction of heat to the interior of the vault.

The doors of the vault may be hinged or not, according as may be deemed preferable.

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

1. A vault, safe, or chamber constructed, as set forth, of masonry, in combination with a metallic frame arranged to interlock with the said masonry, substantially as and for the purpose described.

2. In combination with the above, the entrance to the vault, constructed, as described, together with a door arranged to fit therein, of hydraulic cement, substantially as and for the purpose specified.

The above specification of my improvements in the construction of safes, vaults, &c., signed by me this 1st day of February, A. D. 1870.

GEO. H. IRELAND.

Witnesses:

EDWIN W. BROWN,  
ALBERT W. BROWN.