J. GROVE.

Fire-Proof Safe.

No. 223,502. Patented Jan. 13, 1880.

FIG. 1.

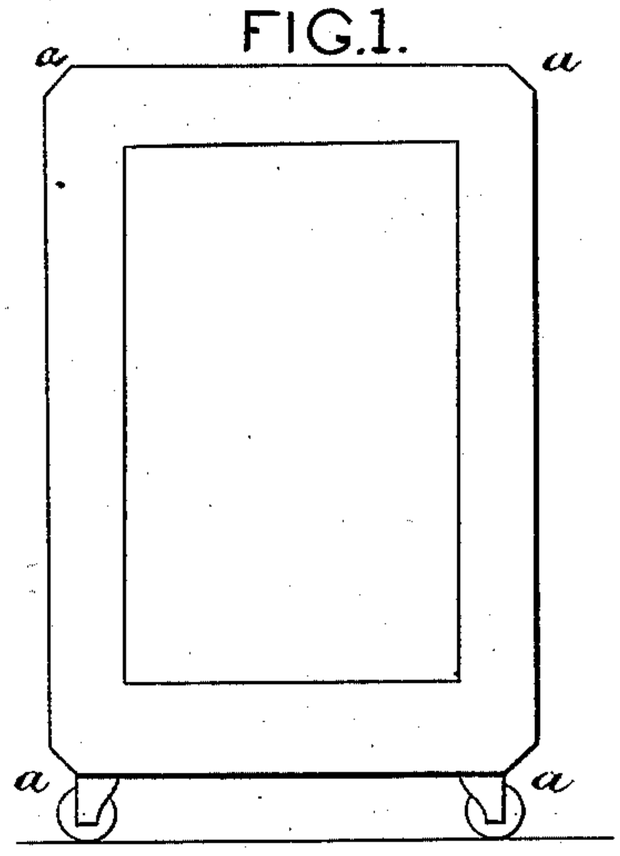


FIG. 2.

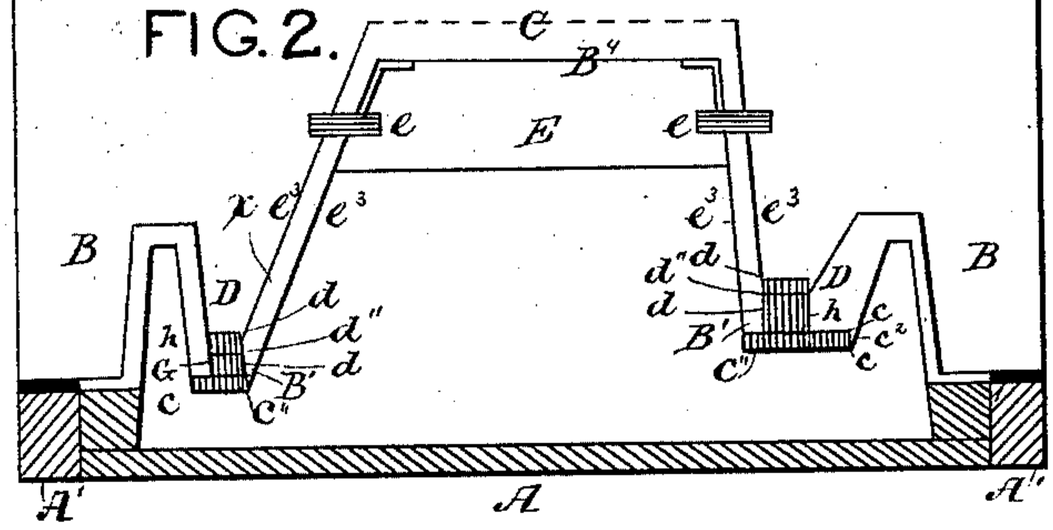
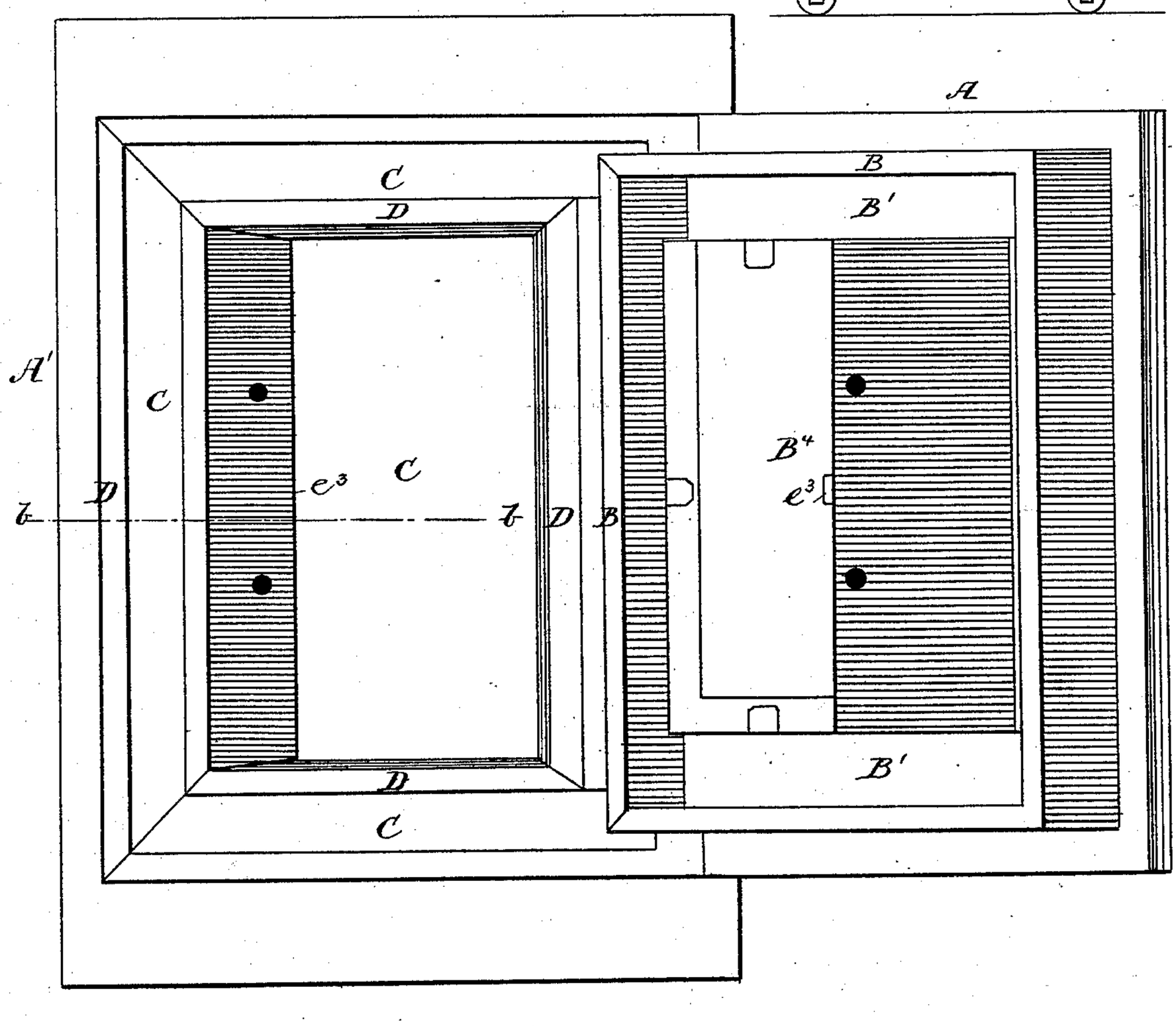


FIG. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH GROVE, OF TORONTO, ONTARIO, CANADA.

FIRE-PROOF SAFE.

SPECIFICATION forming part of Letters Patent No. 223,502, dated January 13, 1880.

Application filed January 16, 1879. Patented in Canada, February 12, 1879.

To all whom it may concern:

Be it known that I, JOSEPH GROVE, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements on Safes, for which I have obtained a patent in Canada, dated February 12, 1879, No. 9,650; and I do hereby declare that the following is a full, clear, and exact description of the same.

The main object of my invention is the construction of a safe which is in reality fire-proof, and which I obtain by means of the construction of certain recesses and projections around the door of my safe, but which are secured to the body thereof, which shall surround a similar and corresponding set of recesses and projections constructed and attached to the interior of the door of the safe, which recesses and projections aforesaid are constructed of iron, and in such a manner that an air-chamber shall be left all around the edge of the door when it is closed; but I do not limit myself to the use of any particular kind of iron, as they may be either of wrought or of cast iron; nor do I limit myself to the particular form of the said recesses and projections, as they may be either flat or round on the edge, and answer equally well the required purpose. Somewhere between the flanges by which these recesses and projections are secured to the interior of the door of the safe, and to that part of the safe around the door and their termination inward, I place non-conducting substances, one or more, in each of the four plates forming these recesses and projections, which will arrest the heat and flame which may enter through the seam around the door before it can reach the interior of the safe. I prefer to place these non-conducting substances at the outer projections, as hereinafter stated, and shown in the drawings; and they may be secured in any desired manner by cementitious matter, or by riveting or otherwise.

In the accompanying drawings the same letters of reference indicate the same parts, as in this specification.

Figure 1 is a front view, on a small scale, of an ordinary safe. Fig. 2 is a transverse section through the line *b b* in Fig. 3, and on an enlarged scale relatively to that of Fig. 1, without the inside furniture and fittings of the safe, but showing the recesses and projections constructed of iron plates, and having provision for non-conducting substances being placed therein, and constituting the chief improvement in my invention, as hereinbefore described.

The door of my safe is marked A, the jambs A′ A′, projections on door B B B^4, recesses on door B′ B′, recesses on jambs C C C, which receive the door-projections B B B^4, the projections on jambs D D, which projections partially fill the recesses B′ B′ on the door. Non-conducting substances *c″ c″* are placed between the flanges *c c c c*, and non-conducting substances *d″ d″* are placed between the flanges *d d d d*.

A cold air-chamber, E, forms a part of the main projection B on door. *e e* merely indicate a position of the bolts of a lock when the safe is locked, and which are intended to pass through the plates e^3 e^3 e^3 e^3, forming the main projections on the door and the main projections on the jambs. The bolts *e e* are in connection with the lock of the safe, and are operated by it in the usual manner.

Fig. 3 is a front view of my safe with the door partially open, which shows the main opening to the interior of the safe, showing, also, the projections D D and recesses C C, and the central projection in the interior of the door, B^4, the smaller projections B B, and the recesses on same, B′ B′.

It will be observed that by my construction the plates attached to the door are kept aloof from those attached to the jambs of the safe, thus leaving cold-air spaces or chambers between them when the door is closed, and in and through which there is no draft into the interior of the safe; and that the non-conducting material is placed only in the angular parts or projections and recesses, as described, leaving the other space or spaces between the plates filled with air.

The main opening through the safe has one of its sides—namely, that vertical side which is farthest from the door-hinges—inclining inward, as shown at *x* in Fig. 2, and the corresponding vertical side or edge of the door is correspondingly inclined, as shown; and this, in connection with the deep air-chamber space or spaces previously mentioned, permits the door, notwithstanding its thickness or depth, and notwithstanding the depth of the flanges

or projections and of the recesses, to be freely swung on ordinary hinges in the act of opening and closing, and avoids the necessity, incident to nearly all deep or thick safe-doors in which flanges or recesses are used, of having peculiarly-constructed hinges with double centers, whereby the door is first drawn out, like a drawer, off from its seat before it can be turned upon its hinges.

It will also be observed that the recesses and projections around the doorway are made separate from and secured to the body of the safe, and that the other set of projections and recesses is attached to the interior of the door, and not made integral therewith.

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

1. A fire-proof safe constructed as described, with deep recesses C C C, and projections formed of iron plates secured to the interior of the safe around the door-opening, and also with other plates attached to the interior of the door and provided with corresponding recesses and projections B B B′, the two sets of plates, when the door is closed, leaving a continuous air-chamber between them, and having the non-conducting substances *c″ c″* and *d″ d″* between the flanges, substantially as shown and described.

2. In a door for fire-proof safes constructed with deep projections or cavities, as described, and hung on ordinary hinges, the incline or bevel at the locking side thereof, adapted to a corresponding incline on the doorway, to permit the ready opening and closing of the door by simply turning it on its centers or hinges, all substantially as set forth.

JOSEPH GROVE.

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