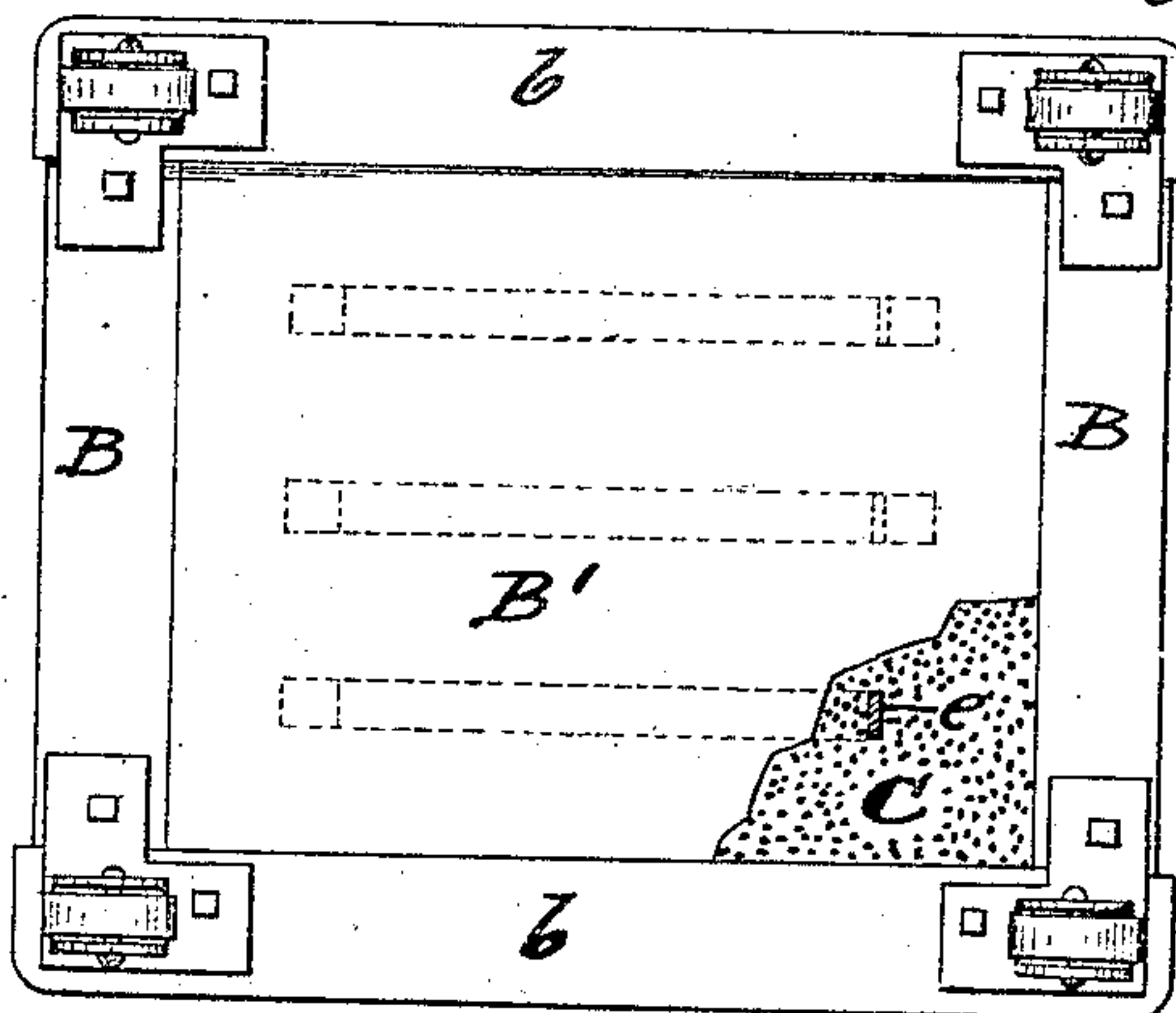


SAFE.

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Inventor
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UNITED STATES PATENT OFFICE.

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To all whom it may concern:

Be it known that I, CHARLES J. AEBI, a citizen of the United States, residing at Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Safes; and I do declare the following to be a clear, full, and exact description of the invention, attention being called to the accompanying drawing, with the reference characters marked thereon, which forms also a part of this specification.

This invention relates to improvements in safes, particularly such which are constructed with a view to render them fire-proof. The walls of such safes consist usually of an outer and an inner shell, with a space between them which is filled with a suitable material which has fire-resisting qualities. This material is usually introduced through the outer shell, an opening being left therein by temporary omission of a part of this shell. After the space has been filled in, the outer shell is completed, thereby closing also the temporary fill-opening.

The invention relates to the means and construction used whereby this temporarily omitted part of the outer shell is secured in place to complete the outer shell after the space between the two shells has been filled in, and to close also the opening through which this filling was introduced.

In the following specification and particularly pointed out in the claims at the end thereof, will be found a full description of my invention, together with its parts and construction, which latter is also illustrated in the accompanying drawing, in which:—

Figure 1, shows the body of a fire-proof safe in vertical section, the line of section passing through the door-opening, the safe being constructed as contemplated by my invention. Fig. 2, shows the same body upset endwise, so as to rest on its top, the section being only a partial one. Fig. 3, shows in perspective view a plate which forms a part of the outer shell and is temporarily left off until the space between the shells has been filled, the opening resulting from omission of this plate serving to permit introduction of the fill-material after which the outer shell is completed by placing this plate in position. Fig. 4, shows this plate after placed in position, the view being one similar to Fig. 2, except that the section here is taken

on a plane at right angles to the section shown in that figure. Fig. 5, in a similar view shows a modified manner of applying this plate. Fig. 6, is a top-view of Fig. 4. Fig. 7, shows a modified form of the means whereby this plate is held in position.

The walls of safes of this class consist of an inner shell A, of sheet-metal and an outer shell B of sheets or plates of metal. These plates B are secured and connected to each other by rails of angle-iron formed into rectangular frames *b* which constitute part of the outer shell. Where top, sides and bottom are formed in one continuous sheet as here presumed, there are only two of these frames, one placed around each of the four edges of front and rear sides respectively. Otherwise there are also short rails along the horizontal upper and lower edges of the sides and between the front and rear frames. The inner shell is of smaller dimensions, to leave a space C, between it and the outer shell, to be filled with suitable fire-resisting material which is introduced in liquid or plastic state. The shells have no front-side, being left open to constitute a door-opening D. Space C, around this opening is closed by the jamb *d* which is a continuous frame connected at its front and rear edges respectively to outer and inner shells, thereby connecting also these two shells to each other and holding them properly spaced apart until the fill-material is introduced. To permit such introduction, a part of the outer shell that is one of the plates of which it is composed is temporarily omitted and connected in position after space C has been filled, screws or bolts being generally employed for this purpose.

My invention is an improvement upon the manner of connecting this omitted part, permitting the work involved to be done quicker and giving also superior results inasmuch as it leaves the outer surface smooth and without traces which would indicate the particular manner of connection.

In practice the bottom plate of the outer shell is the one which is thus temporarily left off, and the fill-material is introduced through the resulting opening, the safe-body being for this purpose set upon its upper end as shown in Fig. 2. I prefer to follow this method, although obviously any other part or plate of the outer shell may be omitted for this purpose, as for instance the top-plate, as

is done in safes of larger sizes which are not upset. Space C is filled with the fill-material which is introduced in liquid or plastic state through the opening left by this 5 omitted plate. After this space has been filled flush to the outer shell, as shown in Fig. 2, the plate omitted from this shell and indicated by B', is now placed in position, directly upon the filling if possible as shown 10 in Fig. 4, and so as to close the opening in the outer shell and to complete thereby this latter. In some safes internal strips b', are applied to angles b. If they are left projecting as shown in Fig. 2, plate B' may rest upon 15 them. It is however not connected to these strips.

Plate B' is illustrated in Fig. 3, and for the purpose of holding it in position, projections are provided on its inner side, which, when 20 said plate is placed in position within the opening, are pressed into the yielding filling, so as to be surrounded and inclosed thereby. These projections may be provided in any suitable manner for the purpose. By preference I provide anchors which have an inwardly projecting part e and at the free ends 25 of this latter a part E angularly arranged to the first part. This part E, upon which the security of the connection of plate B' depends, becomes fully and deeply embedded in the plastic filling and with sufficient of this between it and the outside so as to assure a firm and complete connection after the fill-material has become hardened as shown in 30 Fig. 1. The other ends of these anchors are secured to the plate in any suitable manner, preferably by rivets which are countersunk on the outside.

In Fig. 5 a modified manner of applying 40 this plate is shown. The same in one direction is larger than the fill-opening and instead of resting within this latter so as to be even with the outer shell, it is slipped first under one edge of the shell at the opening and after 45 dropped fully into this latter, it is slid in the other direction and towards the other edge sufficient to pass under and be also engaged by this edge.

The anchors on plate B' may be arranged 50 and shaped in various ways, and as shown in Figs. 3, 4, and 7, each showing a modified form. It will at once be realized that the connection of this plate in the manner described presents no difficulties whatever and, 55 it may be added, requires practically no time at all when compared with the mode of connection in vogue now, by means of screws or bolts which require drilling of holes etc. The connection is clean and smooth and no

traces are left showing the particular manner of connection of the plate, nor are there any visible or projecting bolt or screw heads which would interfere with the final finishing of the outside of the safe.

Having described my invention, I claim as 65 new:

1. In a safe-body, the combination of an inner and an outer shell arranged with a space between them, the outer shell having an opening communicating with this space, a 70 filling to occupy this latter which is introduced through the opening mentioned, a plate to close this opening after introduction of this filling, and means held by the filling and connected to this plate to hold the same 75 in place.

2. In a safe-body, the combination of an inner and an outer shell arranged with a space between them, the outer shell being provided with an opening communicating with this 80 space, a filling to occupy this latter which is introduced through the opening mentioned and a plate provided with projections on its inner side to close this opening, said plate being held in place by engagement between 85 these projections and the filling.

3. In a safe-body, the combination of an inner and an outer shell arranged with a space between them, the outer shell being provided with an opening communicating 90 with this space, a filling to occupy this latter which is introduced through the opening mentioned while in plastic state and a plate to close this opening, the same having anchors attached to its inner side which, when 95 said plate is placed in position, become embedded in the fill-material while the same is in plastic state whereby said plate is held in position after the material has become hardened. 100

4. In a safe-body, the combination of an inner and an outer shell, arranged with a space between them, a filling to occupy this space which is introduced through an omitted part of the outer shell, a plate to supply 105 this omitted part of the shell which is placed in position after the space between the shells has been filled and engages under opposite edges of the outer shell and means on the inner side of this plate which, by being 110 embedded into the filling serve to hold said plate in place.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

CHARLES J. AEBI.

Witnesses:

C. SPENGEL,

JOHN E. KESSLER.