Dec. 29, 1925. 1,567,355

C. G. CARLSON

SAFE DOOR STRUCTURE

Filed Sept. 9, 1920 2 Sheets-Sheet 1

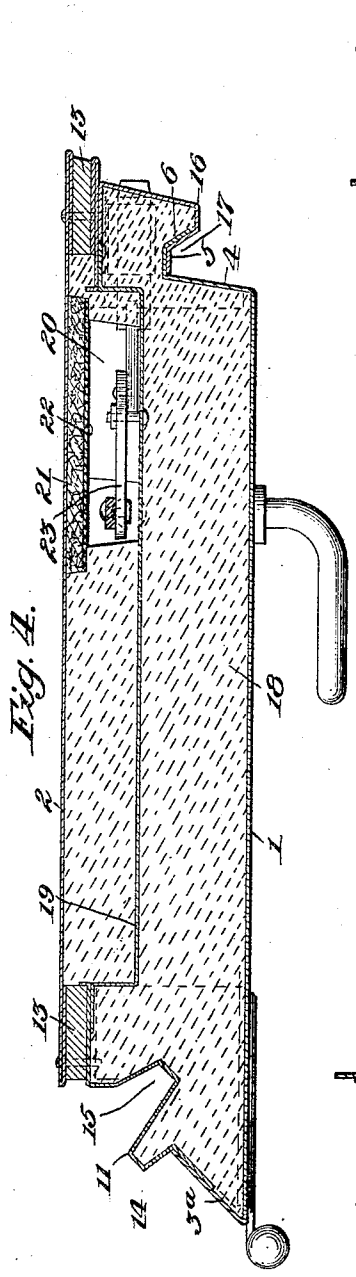


Fig. 4.

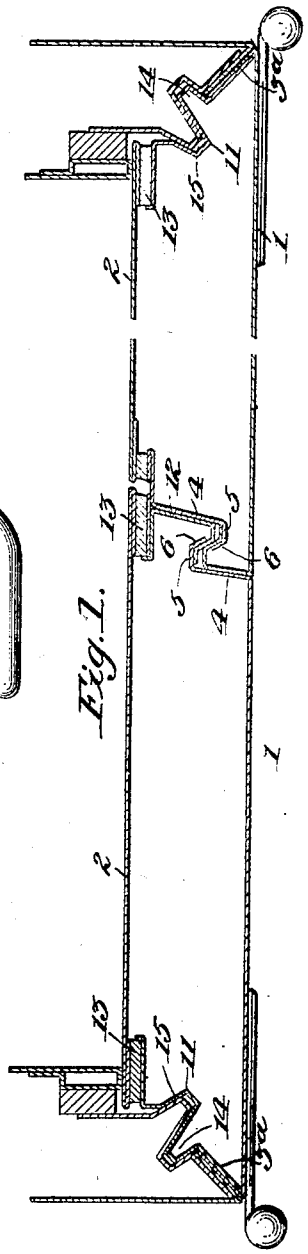


Fig. 1.

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Its Att'ys.

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Fig. 5.

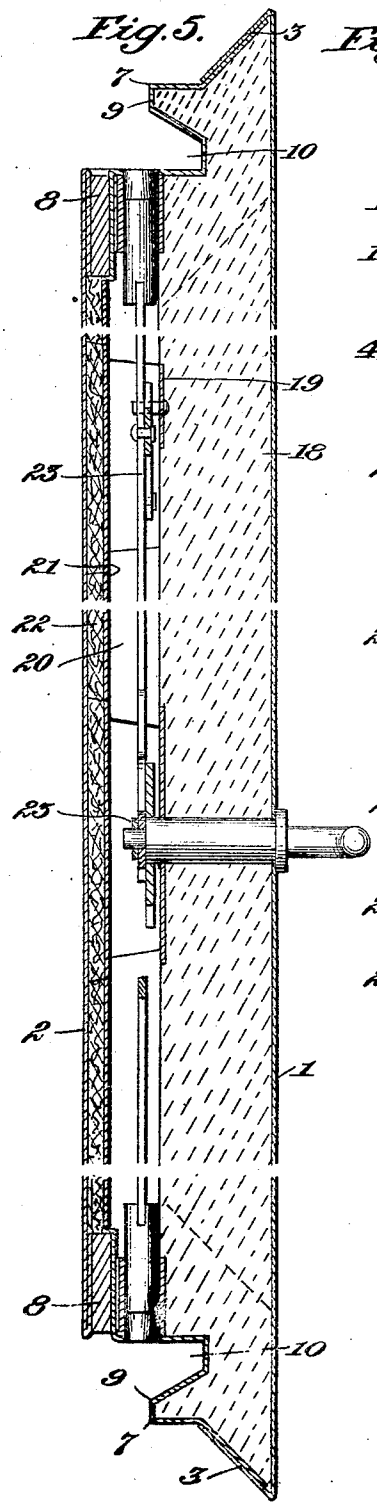


Fig. 3.

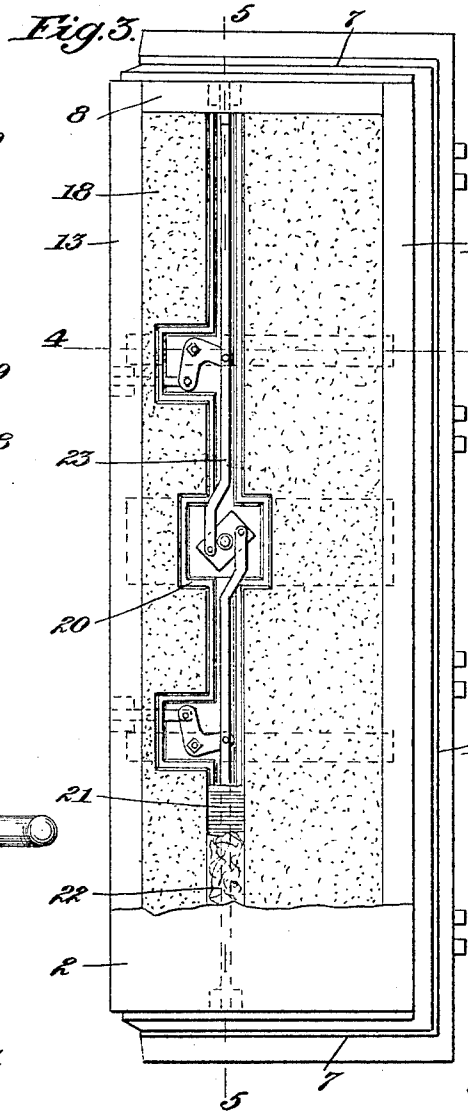
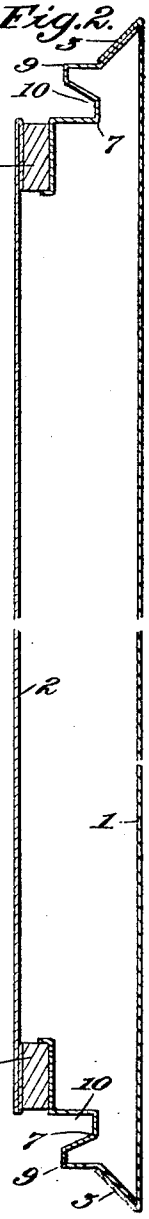


Fig. 2.



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Patented Dec. 29, 1925. 1,567,355

UNITED STATES PATENT OFFICE.

CLIFFORD G. CARLSON, OF JAMESTOWN, NEW YORK, ASSIGNOR TO ART METAL CONSTRUCTION COMPANY, OF JAMESTOWN, NEW YORK, A CORPORATION OF MASSACHUSETTS.

SAFE-DOOR STRUCTURE.

Application filed September 9, 1920. Serial No. 409,205.

To all whom it may concern:

Be it known that I, CLIFFORD G. CARLSON, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented new and useful Improvements in Safe-Door Structures, of which the following is a specification.

This invention aims to improve the general structure of safes intended for the storage and protection of valuable papers, documents, records and the like, to guard them against theft and the ravages of fire, dampness and other destructive influences.

The present invention relates more particularly to the door structure which contains the bolt and like mechanism, said mechanism being disposed between the inner and outer plates of the door and within a recess formed in the insulation filling the space comprised between the said plates.

The invention and the merits thereof will be more fully comprehended from the following description, reference being had to the drawings hereto attached which illustrate an embodiment thereof.

While the drawings show an adaptation of the invention the latter is not restricted except in so far as limited by the appended claims.

Figure 1 is a diagrammatic view in horizontal section of a pair of safe doors and portions of the side walls of the safe to which the doors are hinged.

Figure 2 is a view similar to Figure 1 in vertical section.

Figure 3 is a view in elevation of a safe door as seen from the inner side, parts being broken away.

Figure 4 is a horizontal section on the line 4—4 of Figure 3 showing the parts on a larger scale.

Figure 5 is a view similar to Figure 4 on the line 5—5 of Figure 3.

Corresponding and like parts are referred to in the description and indicated in the several views of the drawings by like reference characters.

The door controlling entrance to the safe is preferably hinged thereto by means of suitable hinges so disposed that the door may swing rearwardly to a position against the adjacent side of the safe so as to be out of the way when in open position, or so as to clear the inner wall whereby the interior of the safe is unobstructed, so that drawers and containers may be readily moved in and out without interference therewith on the part of the door.

Figure 1 illustrates a pair of doors. However, it is to be understood that the safe may be provided with a single door which is hinged at one edge and makes connection at its opposite edge with the other side of the safe in a manner similar to the meeting edges of the doors as indicated in Figure 1. Inasmuch as the doors are of similar or like construction a detailed description of one will suffice for a clear understanding of both. Each of the doors comprises an outer wall or plate 1 and an inner plate 2. The outer wall or plate 1 has its edge portions bent to extend from the same side and towards the inner plate thereby providing in effect a shallow pan structure which is adapted to receive and contain the insulation in a soft or plastic state. The relatively top and bottom edges of the outer plate 1 are similarly bent as indicated at 3, said bent edges being preferably disposed approximately at an acute angle about 45°. The hinge edge of the plate is preferably bent as indicated at 3^a and corresponds to the top and bottom bent edges 3. The swinging edge of the plate 1 is bent in the same general direction as the other three bent edges, as indicated at 4, thence outwardly as shown at 5 and again towards the plane of the plate 1 as indicated at 6. The bent portions 4 and 6 are oppositely inclined. Molding strips or edge plates or walls 7 are secured at one edge to the top and bottom bent edge portions 3 of the plate 1 and are attached at their opposite edge portions to strips 8 of wood or other suitable heat insulating material to which the inner plate 2 is fastened. The molding strips 7 are formed with projecting portions 9 and depressions 10, the latter constituting longitudinal pockets which receive corresponding projecting portions at the top and bottom of the safe, whereas the projecting portions 9 are adapted to enter

corresponding pockets or depressions at the outer edges of the top and bottom of the safe. Corresponding molding strips or edge plates or walls 11 and 12 are secured at one of their edges to the vertical bent edges of the plate 1 and are secured at their opposite edges to vertically disposed strips of wood or other suitable heat insulating material 13 located at the hinge and swinging edges of the door and to which the vertical edges of the inner plate 2 are attached. The several molding strips may be secured to the bent edge portions of the outer plate 1 in any preferred and desired way and the wooden strips may be fastened thereto in any manner as by nails, screws or other fastening devices. The insulating strips 8 and 13 are interposed between the inner plate 2 and the edge plates, thereby holding these parts out of contact and preventing the conduction of heat from the outer plate 1 to the inner plate 2 through the metal edge plates. The molding strip 11 is disposed so as to form the miter-joint and is provided with a tongue or projection 14 and a depression or groove 15 which parts correspond with complemental parts of the side of the safe to which the door is hinged. On reference to Figure 1 it will be observed that the matching tongues and grooves extend from opposite sides of the miter-joint and are disposed or interlock so as to resist outward relative rectilinear movement of both the door and the side to which the door is hinged. The swinging edge of the door is formed with a projection 16 and a corresponding depression or pocket 17. These parts 16 and 17 correspond or match with companion parts at the meeting edge of the coacting door or the part against which the said door closes. The construction is such as to provide tortuous or zigzag joints between the meeting edges of a door and the edges of the parts against which the door closes so as to resist the passage of heat, smoke and dampness and because of the described interlocking tongue and groove joints, the door acts to tie together the walls or parts between which it extends and prevents the spreading or expansion of these parts so as to widen or enlarge the joints.

After the molding strips have been properly applied to the bent edges of the outer plate 1 of the door and the nailing strips 8 and 13 have been positioned, the door is placed in a horizontal position with the open side facing upward to facilitate the filling of the door space with insulation which may be poured or tamped in place as found most expedient. A suitable form or core piece is placed in position to provide a recess or space in the insulation for reception of the bolt and lock mechanism as indicated most clearly in Figures 3, 4 and 5. The form or core piece is not shown but the resultant depression or recess formed thereby is illustrated. Before placing the insulation 18 in position a plurality of stays or supports 19 are properly disposed within the door and have their opposite edges bent and secured in any substantial way to the strips 13 as indicated most clearly in Figure 4. The stays or supports 19 are adapted to provide means of attachment for certain parts of the bolt or lock mechanism as indicated most clearly in Figures 3, 4 and 5. The supports 19 are embedded in the insulation. The space or depression for receiving the bolt and lock mechanism is indicated generally at 20 and will be of such formation as to properly receive the component parts of the bolt and lock mechanism. The space or depression 20 is enlarged at its outer side and such enlargement is adapted to receive elements 21 and 22, the latter consisting of a strip of sheet material such as asbestos and the element 21 being of felt or analogous material. The elements 21 and 22 are placed in position after the bolt and lock mechanism has been applied. The inner plate 2 is placed in position after the lock mechanism and the elements 21 and 22 have been positioned. The inner plate 2 is secured in any manner to the insulating strips 8 and 13 at the respective edges of the door.

The bolt and lock mechanism is indicated generally at 23 and may be of any approved construction and arrangement common in safe structures it being understood that the space or depression 20 is of such formation as to receive the same. By having the inner plate 2 detachably connected with the strips 8 and 13 access may be readily had to the bolt and lock mechanism for any desired purpose. It is observed that the bolt and lock mechanism is disposed as near as possible to the inner plate 2 so as to provide sufficient insulation between the same and the outer plate of the door to afford ample protection to the lock mechanism from heat in the event of fire. The door when completed may be placed in position and hinged to the safe in any preferred way so as to insure a substantial connection and one embodying the matching or interengaging pockets and projections at the edges of the door in a manner herein specified.

What I claim is:

1. A safe door comprising an outer plate having its edge portions bent laterally from the same side, molding strips attached to the bent edge portions of the plate, nailing strips secured to the molding strips, insulating material occupying the space defined by the molding strips and the nailing strips, said insulating material having a depression formed therein for reception of the bolt or lock mechanism, supporting means embedded in the insulating material and hav-

ing connection with the nailing strips and an inner plate attached to the nailing strips.

2. A safe door comprising spaced inner and outer plates, molding strips connecting the inner and outer plates, insulating material filling the spaces bound by the plates and the molding strips and having a depression therein for the reception of the bolt or locking means, and metal strips extending transversely across the back of the depression and embedded in the insulating material and having their ends secured to the molding strips.

CLIFFORD G. CARLSON.