J. G. BRAUN.

FIREPROOF BUILDING CONSTRUCTION.

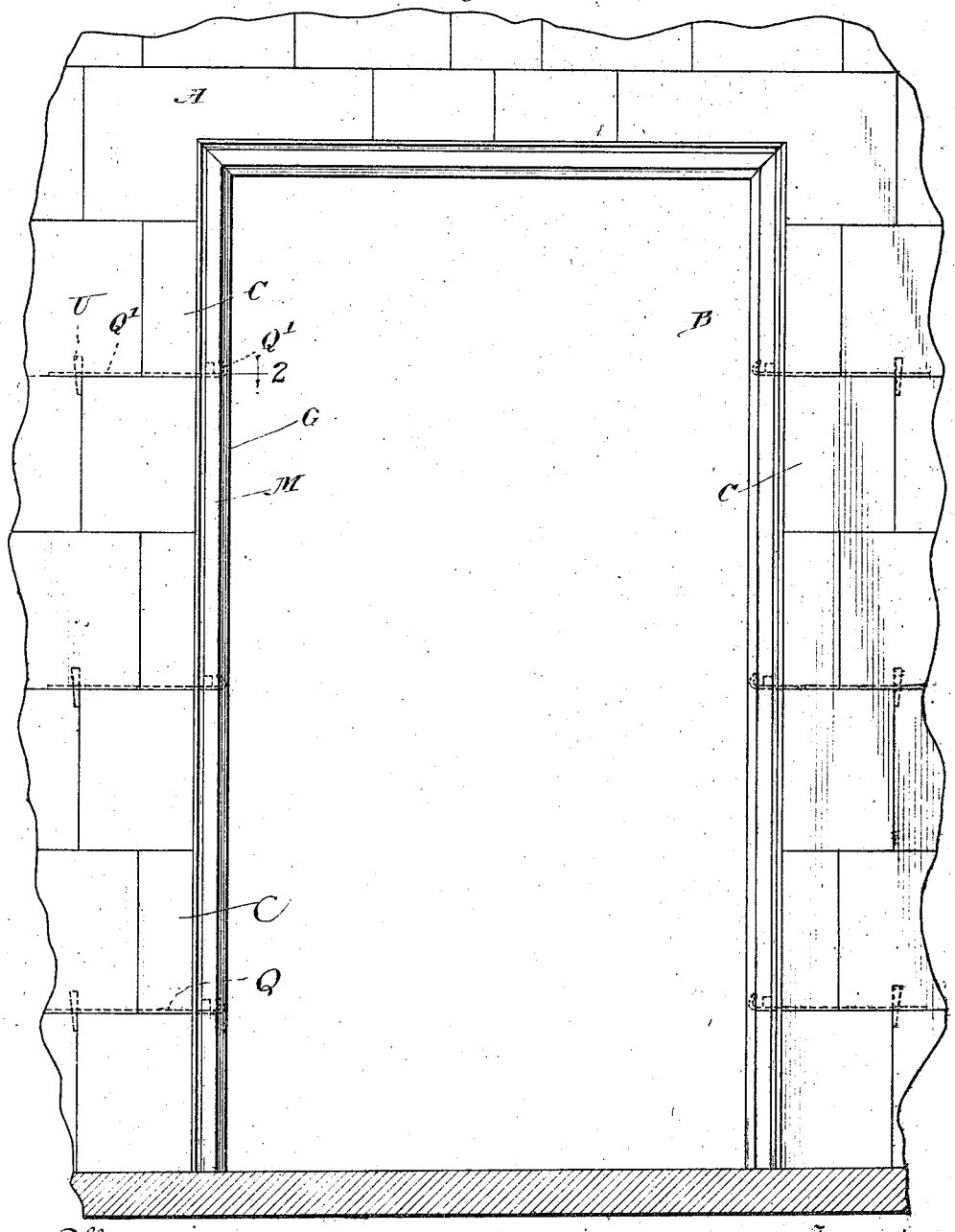
APPLICATION FILED APR. 29, 1912.

1,157,078

Patented Oct. 19, 1915.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 2

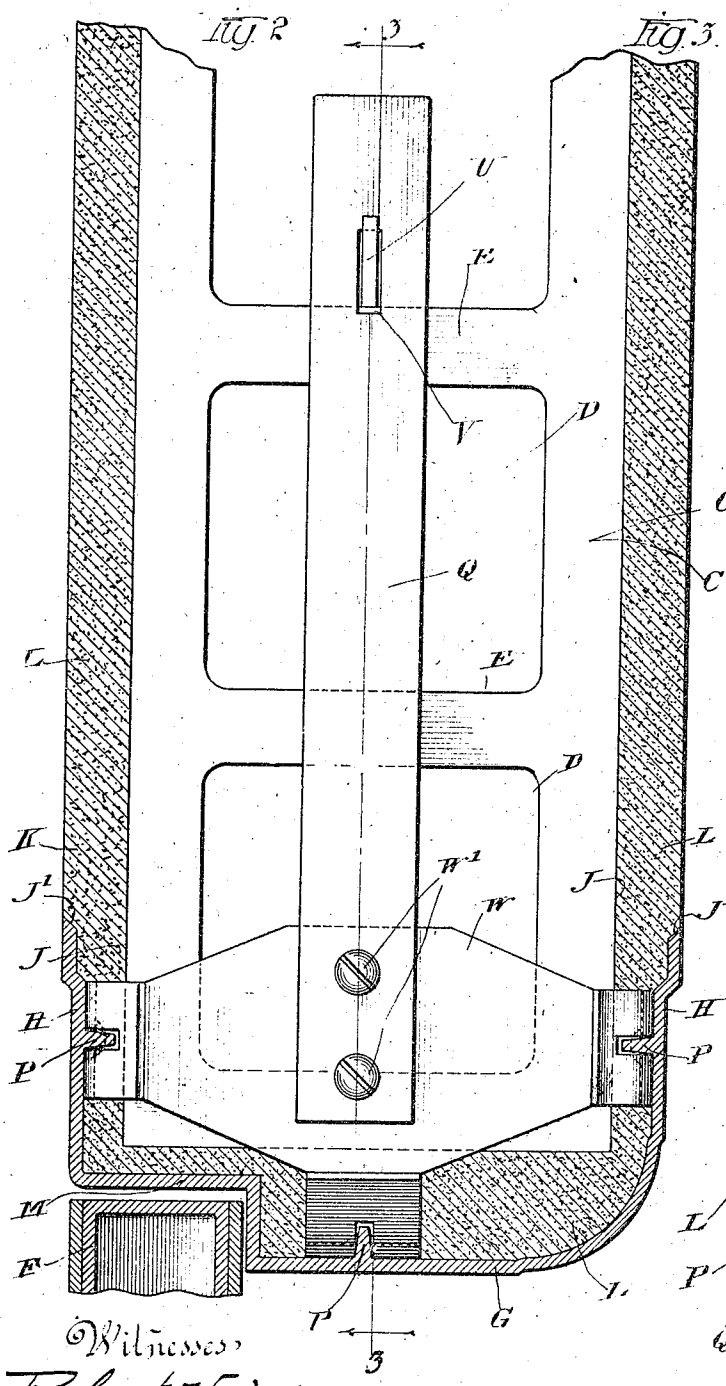
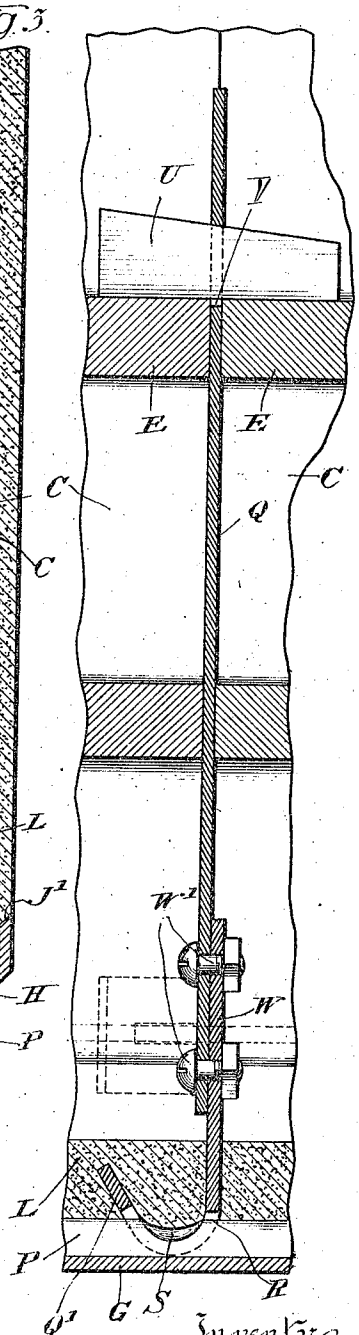


Fig. 3.



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3 SHEETS—SHEET 3.

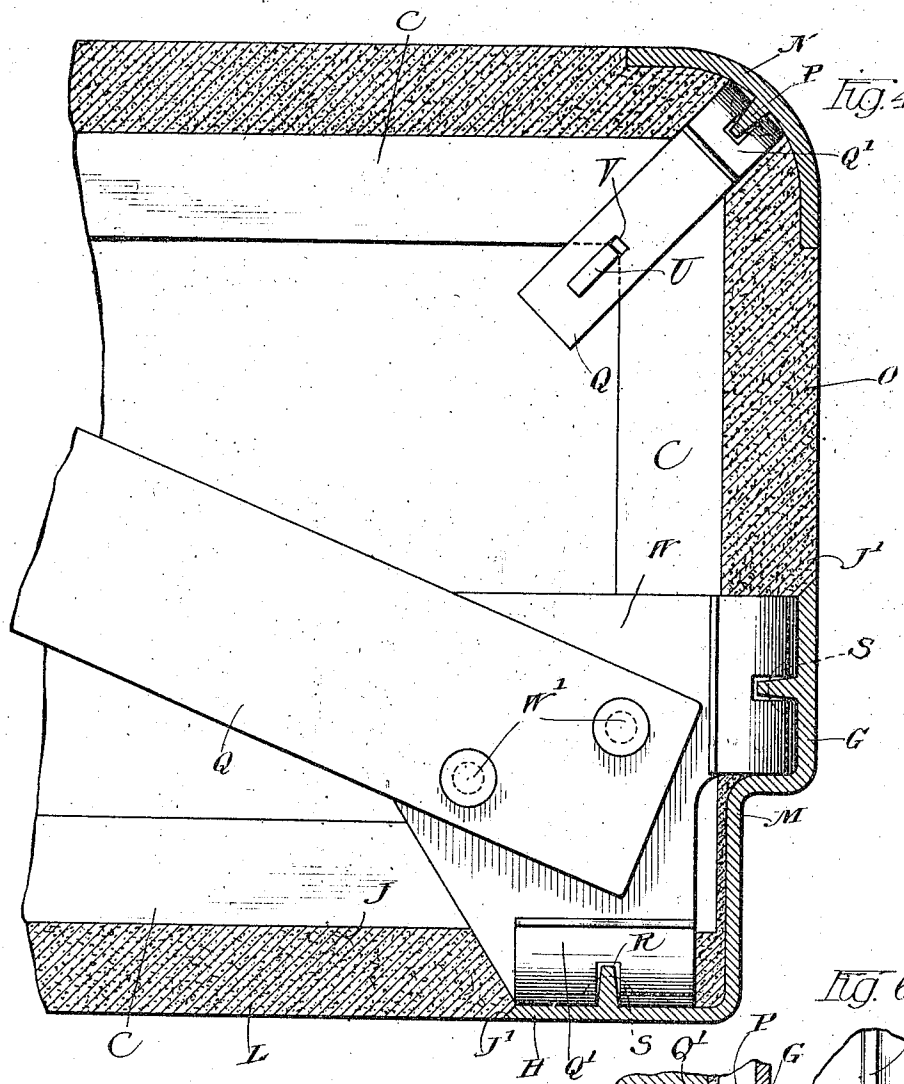


Fig. 4.

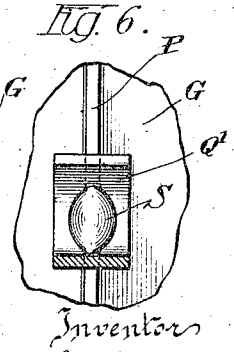


Fig. 6.

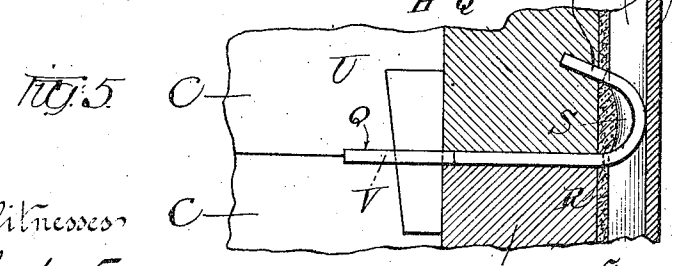


Fig. 5.

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UNITED STATES PATENT OFFICE.

JACOB G. BRAUN, OF CHICAGO, ILLINOIS.

FIREPROOF BUILDING CONSTRUCTION.

1,157,078. Specification of Letters Patent. Patented Oct. 19, 1915.

Application filed April 29, 1912. Serial No. 693,972.

To all whom it may concern:

Be it known that I, JACOB G. BRAUN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fireproof Building Construction, of which the following is a specification.

My invention relates to fireproof building construction, and more particularly concerns improvements in means for securing and maintaining building walls and such members as door, window and supporting frames, in their proper relative position.

The primary object of my invention is to provide improved means for firmly and securely anchoring or fastening door frames or like members to the wall tiling or other material of which the wall is composed; which means will be simple and reliable and will effectively prevent bulging, warping or relative displacement of the wall and frame members.

A further object of my invention is to provide improved means of this character which may be cheaply and conveniently manufactured, and which will be adaptable to various forms of building construction and to various positions and disposition with respect to the wall tiling and frame members, depending upon the particular requirements or conditions under which it is to be used.

With these and other new and useful objects in view, as will hereinafter appear, my invention consists in the construction, combination and arrangement of parts herein described and shown in the accompanying drawings which illustrate one embodiment of my invention.

In the drawings: Figure 1 is a view illustrating a portion of a fireproof wall having a door opening and a frame surrounding it, and illustrating one way of distributing my anchoring devices to secure the best results. Fig. 2 is a plan sectional view taken transversely of a portion of the wall and door frame substantially on the line 2—2 of Fig. 1. Fig. 3 is a sectional view on line 3—3 of Fig. 2. Fig. 4 is a view similar to Fig. 2 of a thicker and heavier wall showing my invention adapted to fastening of corner piece members. Fig. 5 is a view in side elevation illustrating the corner piece retaining or fastening device, and Fig. 6 is a detail fragmentary view more clearly showing the manner of attaching the retaining or anchoring device to the frame.

The wall and door frame construction illustrated in the drawing is intended as representative of any standard of desired fireproof building construction, and serves to exemplify my invention; but it will be obvious to one skilled in the art having obtained an understanding of my invention from the disclosures herein made, that my invention may be equally as well embodied in modified structures more particularly adapted to other types of fireproof construction than that shown in the invention. The wall A illustrated in the drawing has an opening or aperture B for the purpose of providing a door in the wall. The wall A is shown as composed of hollow fire-proof tile-bricks C, such as are extensively used in the construction of fire-proof buildings. These tile-bricks are laid edgewise one above the other in break-joint fashion in accordance with the usual building methods, and are of the rectangular type, each brick having a number of interior cells D separated by partitions E. The edge of the door opening B is surrounded by a frame G for a door F.

The frame G shown in Figs. 1 to 3 inclusive, may be made of any suitable material, but is preferably of iron, so as to be fireproof, the material being of sufficient thickness or strength for that purpose. This frame is hollow, so to speak, and is considerably thicker or wider than the tile-brick wall, so that the wall may set into or interfitted in the door frame as shown. As will be seen, the sides or faces H of the frame are spaced from adjacent faces J of the tile wall, in order to lie flush with the outer face, or surface K of the usual layer or layers L of plaster applied to the tile-brick wall. The plaster is also filled in between the frame and edge of the wall to make a solid structure. It will be noted that the edge J^1 of the frame is undercut or beveled inwardly to further insure against the loosening of the plaster. The frame shown has a continuous shoulder or portion M forming a suitable space for the door F.

The structure shown in Fig. 4 is slightly different in form and more particularly adapted to thicker and heavier walls. In such thicker walls it is generally unnecessary and less expensive to extend the door frame over the entire edge of the wall, but

instead to extend it only part way into the door opening and to provide a round or angular corner piece or member N at the other side edge of the door opening. The intermediate space O may be filled in with plaster and made flush with the surface of the door frame and corner piece, although obviously this corner piece and frame may be formed in one piece if desired, or in any other suitable manner.

The frame G has a number of concealed longitudinal instanding ribs or ridges P, preferably formed integrally therewith, for the purpose of providing means to which the anchoring or retaining devices may be fastened. Instead of ribs short lugs may be used, positioned at the points where it is desired to anchor the frame members, but the ribs serve the purpose to better advantage, for the reason that the anchoring devices may be attached at any positions along the door frame and thus render the construction more adaptable to the varying distances and slight inaccuracies which might occur in fitting the bricks and frame.

In its simpler form the anchoring or retaining device is better shown in Figs. 4, 5 and 6, as used for retaining the corner piece N, or any similar member, such as used for instance to protect a wall edge. As shown in these figures the device comprises a flat relatively thin strap of metal Q which may have one of its ends bent around to form an open hook Q^1. The bight in the loop or hook thus formed has an elongated slot R cut in it of a size and shape to admit the rib P of the door frame or corner piece, as the case may be, whereby after the rib and bent portion Q are interfitted the rib may be swaged or riveted at S on the inside of the bend, as clearly shown in Figs. 5 and 6. Any other suitable manner of attaching the anchoring strap to the frame or corner piece may be used if desired. The structure shown, however, has the advantage of eliminating bolts or other fastening devices passing through the exposed surface of the frame or corner piece. The metal strap may be as long as necessary to meet particular requirements. In the case of the corner piece or similar member (Fig. 4) it may extend diagonally into the tile brick wall, preferably in the plaster between the bricks.

The inner end portion of the strap has a slot or opening V into which a wedging key U is inserted, as clearly shown in Figs. 4 and 5. When the device is used for door or window frames and the like, and the anchor strap may extend straight into the wall as shown in Figs. 1, 2 and 3, I prefer to locate the key and key slot in relative positions to the inner partitions E of the tile bricks, although, in the case of corner piece or like members as shown in Figs. 4 and 5, the key may be positioned in the corners in the tile bricks. The disposition of these key members of course depends upon the particular wall and frame member construction with which the anchoring devices are used.

It will be seen that by forcing or driving the key between the partitions or walls of the bricks and the end of the key slot, an extremely powerful force may be applied along the strap Q to draw the frame and wall firmly into relative position. In this manner the frame or other member and the tiles may be positively and permanently held together against warping, bulging or relative displacement, and since the anchor members and keys are embedded in the wall by the plaster or other material of which the wall may be composed, a solid compact structure may be obtained. Furthermore, it is to be noted that the anchoring devices are readily adaptable to various structures.

In the structure shown in Figs. 2 and 3 the anchoring device is preferably bolted to a separate plate or member W having several hooked or bent portions Q^1, instead of forming these hooks integrally on the anchoring strap Q. This is of advantage where the anchor straps are to be attached to the frame at several points. This arrangement also has the advantage that the parts are interchangeable, so that they may be carried separately in stock, and any length of strap may be used. Otherwise if the parts were made integral, it would be necessary to carry a complete device in stock for every form of frame member used. From an inspection of Fig. 1 it will be seen that any number of these devices may be distributed along the particu ar frame to be supported. In this latter vi w I have indicated the anchoring devices as positioned at the sides of the door. Obviously, however, the dispositions and number of these devices to be used are determined by possibilities of the structure being subjected to overheating by fire, or to other warping strains or conditions.

The shape and dimensions of the parts obviously must be designed in accordance with the particular requirements to be met. For instance, in the case of heavy vault or bank door frames the anchoring straps Q may be considerably lengthened and extend a sufficient distance into the walls to insure a solid, substantial structure.

What I claim as new is:—

1. In a construction of the class described, the combination of a fireproof wall, a frame having a series of concealed ribs, and a device consisting of a member riveted to said ribs and extending into said wall, and tension exerting mechanism for adjustably keying said device in said wall to anchor said wall and frame firmly in relative position.

2. In a construction of the class described, the combination of a fireproof wall, a metal-

lic door or like frame, having concealed in-standing ribs, a flat metallic plate having hooked slotted ends interlocked with said ribs and concealed in said wall, a concealed metallic extension in said plate extending a distance into the wall, a key slot adjacent the inner end of said extension, and a wedging key passing through said slot in engagement with the material of said wall for drawing and maintaining the frame into position with respect to said wall.

3. In a construction of the class described, the combination with a wall composed of fireproof tile-brick, of a metallic door frame having integral concealed ribs, a flat metallic plate concealed in said wall having slotted hooked portions into the slots of which said ribs project and are swaged to interlock said plate and door frame, a metal strap extension of considerable length bolted to said metal plate and embedded in said wall, a slot adjacent the end of said strap metal extension, and a metallic key passing through said slot in wedging engagement with the walls of adjacent tile bricks for drawing and anchoring said frame into position with respect to said wall.

4. In a construction of the class described, the combination with a wall composed of fire proof material, of a metallic door frame of U-shaped section having ribs on the three interior walls of the U-frame, a flat metallic plate within said frame having slotted hooked portions into the slots of which said ribs project and are swaged to interlock said plate and door frame, an anchoring device secured to said plate, and means for exerting tension on said anchoring device to hold said plate firmly against said wall.

5. In fire proof building constructions, the combination with a wall composed of fire proof tile brick, a metallic door frame of U-shaped section, integral ribs on the three interior walls of said frame, a metallic plate within said frame and having slotted hooked portions into the slots of which said ribs project and are swaged to interlock said plate and door frame, a metal strap extension secured to said plate and embedded in said wall, a slot adjacent the end of said strap, and a metallic key passing through said slot in wedging engagement with the walls of adjacent tile bricks for drawing and anchoring said frame into position with respect to said wall.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 26th day of April A. D. 1912.

JACOB G. BRAUN.

Witnesses:
CHARLES M. NISSEN,
EDGAR FRANCIS BEAUBIEN.