W. F. POTTS.

WALL JOINT FOR SAFE OR VAULT CONSTRUCTION.

APPLICATION FILED MAR. 4, 1918.

1,365,726.

Patented Jan. 18, 1921.

2 SHEETS—SHEET 1.

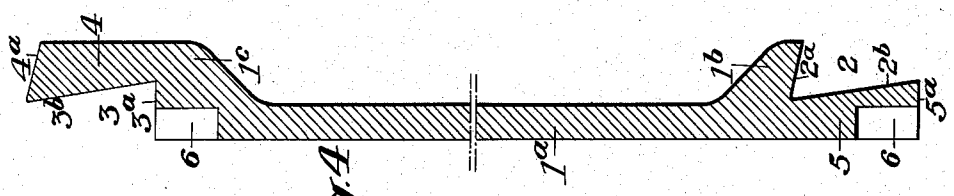


Fig. 4

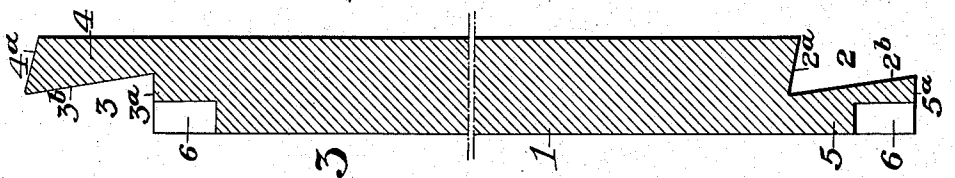


Fig. 3

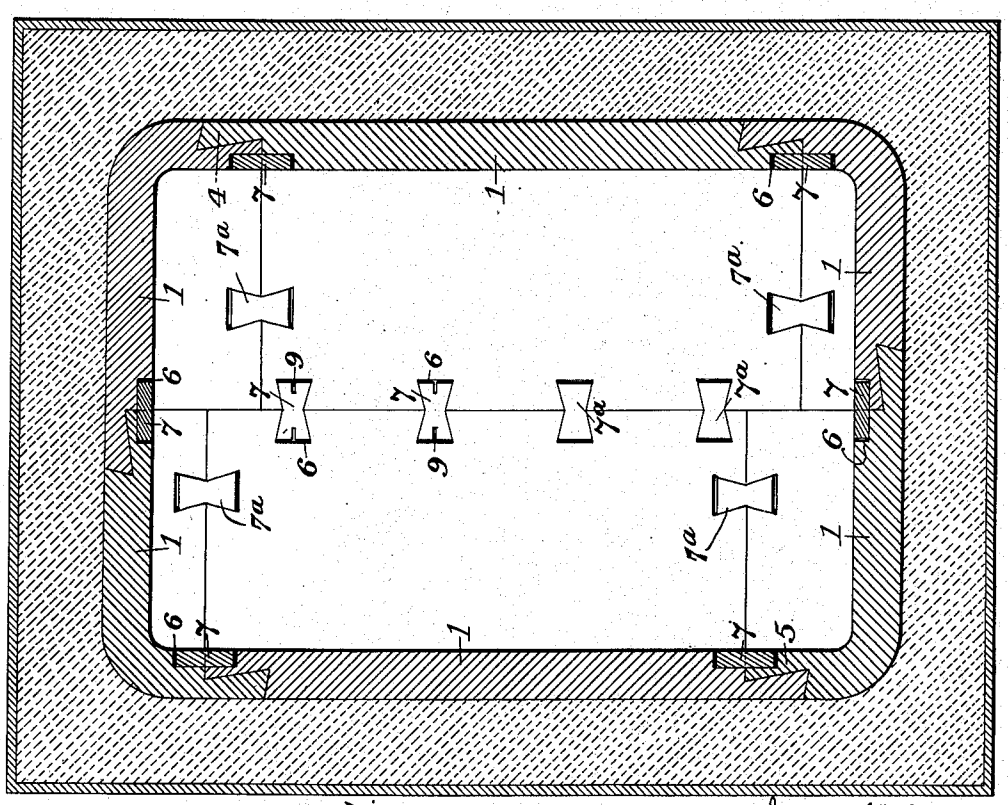


Fig. 1

Inventor:
Walter Fisher Potts
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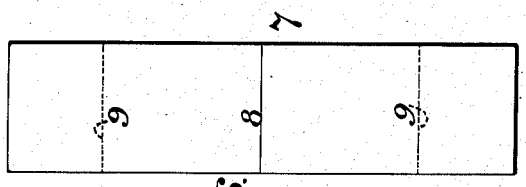


Fig.6.

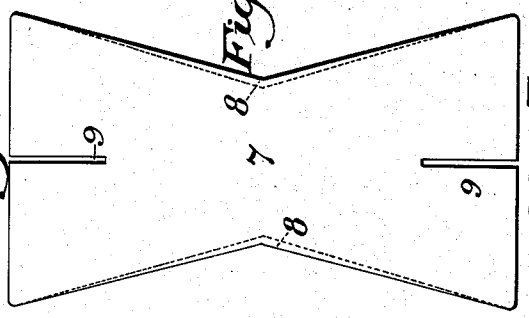


Fig.5.

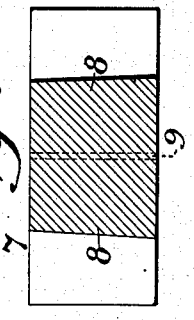


Fig.7.

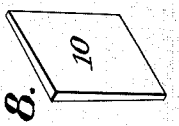


Fig.8.

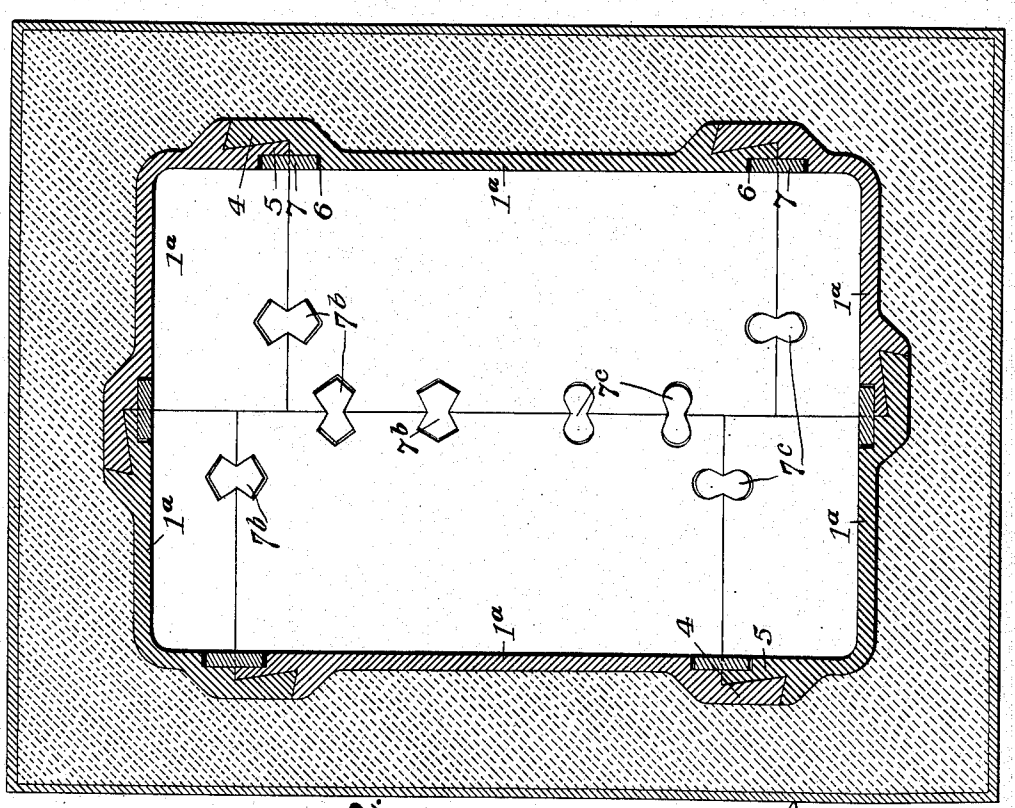


Fig.2.

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UNITED STATES PATENT OFFICE.

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WALL-JOINT FOR SAFE OR VAULT CONSTRUCTION.

1,365,726. Specification of Letters Patent. Patented Jan. 18, 1921.

Application filed March 4, 1918. Serial No. 220,226.

To all whom it may concern:

Be it known that I, WALTER FISHER POTTS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Wall-Joints for Safe or Vault Construction, of which the following is a specification.

My invention relates to safe or vault construction, and consists of certain improvements in the method of construction and the means for securing in locked position the sections or plates of safes, vaults and other similar structures, more particularly structures of the types that are built in place, which serve as the inner lining for the built-up structures of metal or masonry, or both, either brickwork or concrete, as the case may be.

My invention is highly valuable for use in connection with plates of steel, manganese, and variously alloyed metals of the type which are practically non-machinable and non-burnable, and while my invention is particularly applicable to plates of this character, it may be equally well employed in connection with any plates employed for the same purpose and which may be of a metal, or an alloy of metals, which may be machined or worked by the usual metal-working tools.

The important object of my invention is to provide an improved construction for the joints employed in the building of safes or vaults whereby the same will, to a maximum degree, be proof against attack at the joints from the exterior by means of wedges or explosives. In addition, my improved joint is of such a character that it will reduce the liability of sag or deflection of the plates with which it is used to a minimum and likewise form an even, uniform interior surface; eliminating all protruding parts which have been more or less common in former constructions.

These and other features of my invention are more fully described hereinafter, reference being had to the accompanying drawings, in which:

Figure 1, illustrates, more or less diagrammatically, a cross sectional view of a vault or safe equipped with lining plates and securing means therefor embodying my invention.

Fig. 2, is a similar view illustrating a modified plate construction within the scope of my invention.

Figs. 3 and 4, are sectional views on an enlarged scale of the plates illustrated in Figs. 1 and 2, and

Figs. 5, 6, 7 and 8, are views illustrating in detail one form of key or locking member which may be used with the plate construction forming the subject of my invention.

In many constructions heretofore employed in building safes, vaults and the like, the lining and other plates or sections have been joined together by various forms of joints having protruding lugs, and such parts have been secured together by means of wedges, screws, links, or straps coöperating with such lugs.

In my improved construction, the meeting edges of the sections have flanged and beveled portions at each end so as to interlock with each other, with mortises or recesses formed on the inner face at the meeting portions of the respective plates adapted to receive keys. In the present instance, these keys have an enlargement or dovetail at each end designed to fit mortises or recesses on the inner faces of the meeting portions of the plates. These keys are of a thickness equal to the depth of the mortises or recesses so that when finally set in place, the surface of the key will be flush with the surface of the plates forming the joint.

By this construction, I secure an absolute metal-to-metal joint, thereby insuring uniform strength in the construction of the sections or plates and their joints. It will be understood that the keys may be driven or mortised into the parts to be joined, either hot or cold. If the keys are inserted cold, slots may be provided at the extreme ends into which thin wedges may be driven after the keys are in position, thus imparting greater expansion to the ends of the keys and likewise tending to draw the sections more rigidly together at the joints.

In Fig. 1, I have shown a safe or vault lining in which the plates 1 are of the same thickness throughout their area. At each joint, the edges of the plates are provided with recesses 2 and 3. At one end, the walls 2^a and 2^b of the recess 2 are at an angle with respect to each other and both diagonally with respect to the main surface of the plate,

while at the other end the walls 3^a and 3^b are at an angle with respect to each other, only the wall 3^b is diagonally disposed; the wall 3^a of such plate being disposed substantially at right angles to the surface of the same. Each edge of the plate provides a projecting portion; one being indicated at 4 with a beveled end wall 4^a, while the other is indicated at 5 with a squared end wall 5^a. When the plates are fitted together, the projection 4 fits the recess 2, while the projection 5 fits the recess 3. The construction and arrangement is such that while the ends of each plate differ in shape, they cooperate and register properly with adjoining plates.

At the point where the right-angled end surfaces 3^a and 5^a of the adjoining plates meet each other—in other words the joint on the inner face of the plates—mortises or recesses 6 are formed; dovetail in contour preferably, although other shapes having enlarged ends may be employed. These mortises or recesses are adapted to receive keys 7, which may have dovetail ends, or ends otherwise shaped and capable of performing the same function; some of which forms of keys, within the scope of my invention, are shown in the drawings. These keys taper slightly at the central portion of the body, as clearly illustrated at 8 in Figs. 5 and 7, so that when driven home they will tend to wedge in place and at the same time draw the plates 1 together. If desired, the ends of the key may be slotted as indicated at 9 to receive wedges 10 of the shape shown in Fig. 8, which wedges may be driven in place after said keys have been set flush with the plates which they serve to join together.

While I have shown keys with squared ends or ends at right angles to the longitudinal axis of the same at 7 and 7^a, it will be understood that keys 7^b and 7^c having wedge-shaped or rounded ends might be employed, and keys having any other shaped ends and capable of performing the desired function are within the scope of my invention; several forms of such keys being shown in the drawings.

In Fig. 2, I have illustrated plates 1^a of a lighter type than those illustrated at 1 in Fig. 1, but in which the joint is of the same character; the thickness of the plate being increased adjacent the joint as indicated at 1^b and 1^c in order that such joint may be of the same type as that illustrated in Fig. 1.

It will be understood that any form of plates made with end joining portions of the types illustrated may be employed, and that such plates may be cast, bent, or otherwise shaped in the process of manufacture to form the corners of the safes; one edge of the plate having the beveled projecting end 4, while the opposite edge has the projecting end 5 with the meeting face at right angles to the general surface of the plates.

While illustrating definite forms of plate construction and the mode or manner of assembling the same, I do not wish to be limited precisely thereto, since other and equivalent constructions are within the scope of my invention and are intended to be covered by the appended claim.

I claim:

In safe or vault construction, the combination of a pair of plates, each having recessed edges oppositely disposed with respect to each other; the recessing of said edges providing projecting portions paralleling said recesses and the recess of one plate having a wall diagonally disposed with respect to the main surface thereof while the recess of the other plate has a wall at right angles to the main surface of the plate; said plates having on one surface adjacent the meeting walls lying at right angles to the main surface thereof registering recesses whose cross sectional width is least at the meeting edges, and retaining members fitting said surface recesses for maintaining their plates with their projecting edges in interlocking engagement.

WALTER FISHER POTTS.