To all whom it may concern:

Be it known that I, DAVID H. BELLAMORE, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Safes, Safe Cabinets, and the like, of which the following is a specification.

My invention relates to safes, safe cabinets and the like, and particularly to the portions of such structures which are at and adjacent to the joint between the jamb walls at a doorway and a door.

The principal object of my invention is to provide means for retarding travel of heat into the interior of the structure, and more particularly to provide means for retarding such travel of heat through the jamb walls; through the door edge walls; through the joints or cracks between the jamb and door edge walls; and also along paths or courses behind said jamb and door edge walls. Other objects will be in part obvious and in part pointed out hereinafter.

In accordance with my invention, I provide metallic tongues or plates on the jamb and door edge walls, which plates extend into the interior of the jamb and door and which serve to radiate and diffuse heat to the air or filling material there situated, thus acting in the manner of radiators to decrease the temperature of the jamb and door edge walls and to retard the heat travel through these walls toward the interior of the safe. These tongues or projections also are in position to intercept heat traveling behind the walls and serve to diffuse and radiate heat traveling along these paths. As a further means of retarding or preventing heat travel to the interior of the structure I provide two-part jamb and door edge walls, the two parts being substantially out of heat-conducting contact with each other, and in combination therewith, I preferably provide insulating material on jamb and door edge walls in such manner that when the door is closed an air-tight seal will be present across the joint between the door edge and jamb walls.

In order that a clearer understanding of my invention may be had, attention is here-by directed to the accompanying drawings, forming a part of my application and illustrating certain possible embodiments of my invention. Referring to the drawings, Fig. 1 is a fragmentary sectional view of a metallic structure, including a portion of the jamb and a portion of a door edge seated in the jamb; and Fig. 2 is a view similar to Fig. 1 showing a possible modification of the construction of the jamb wall and of the door edge wall which is seated therein.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring to Fig. 1 of the drawings, the structure illustrated is of a type commonly employed for safe cabinets and the like. The structure includes a body section and a door. The body section includes outer walls, such as 1, and inner walls, such as 2, which at the front of the structure are usually extended outwardly to form the door jamb, and at their outer ends are joined to the outer walls, such as 1, by means of angle irons, such as 4. With such a construction heat is very apt to travel through the conducting jamb portion of wall 2 into the interior of the cabinet. To retard the heat travel along this jamb portion, I do not extend the wall 2 to the outside of the structure but shorten this wall 2 so that it will stop at a place somewhere intermediate the inner and outer portions of the structure. Thus portion 3 forms an inner portion of the jamb wall. I form an outer portion of the jamb wall by utilizing a separate wall plate 5, the outer end of which is suitably secured, as by welding or otherwise, to the jamb receiving portion of angle iron 4.

Plate 5 is of such size that it does not extend to or contact with jamb wall portion 3, thereby providing an insulating space between the two jamb wall portions 3 and 5, which acts as a heat insulating medium and retards the travel of heat from the wall portion 5 to the wall portion 3. Wall portion 3 and wall portion 5 are preferably provided with parallel flanges 6 and 7, and a strip of suitable insulating material 15, such as rubber, asbestos or other non-conductor of heat, is placed between flanges 6 and 7. To secure rigidity, flanges 6 and 7 may be riveted or otherwise secured together, as by means of rivets 8.

The construction of the door is similar to the construction above described, in that it includes an outer wall 9, and an inner wall 10 which has a portion 11 extended forwardly to form the inner portion of the wall edge.
but not extending to the outer wall 9. An outer wall edge portion 12 is secured, as by welding or otherwise, to the outer wall 9 and extends inwardly, but does not reach or contact the wall portion 11. These portions 11 and 12 also have horizontal flanges 13 and 14 spaced from each other, with a strip of suitable insulating material 15 disposed between the flanges, and, if desired, rivets 16, or the like, securing the flanges 13 and 14 together. The jamb wall and the door edge walls are preferably designed to provide the conventional complementary stepped construction, except that a considerable portion of the non-conducting strips 15 are left exposed, and are so positioned that when the door is closed the exposed portions of these strips will press one against the other and effect a substantial sealing of the joint between the jamb walls and the door edge walls, thus tending to prevent and retard heat traveling through such joint.

In order to prevent and retard the travel of heat into the interior of the structure along paths behind the jamb walls and the door edge walls, the flange 6 of the jamb walls and the flange 13 of the door walls are extended as at 6" and 13" into the space between the outer and inner walls of the construction. These flanges serve to radiate and diffuse heat into the air or filling material 17, whichever is present between the walls 1 and 2 of the cabinet body and between the walls 9 and 10 of the door. These flanges are particularly useful for absorbing and diffusing heat which might travel behind the jamb wall 5 and the door wall 12 through a crack there produced by reason of the shrinkage of the filling material 17 away from these walls due to the influence of intense heat upon the structure. Obviously, flanges 7 and 14 may also be extended in the above manner.

A modified construction is illustrated in Fig. 2, wherein it is seen that the inner portion 18 of the jamb wall has a straight portion 19 extending forwardly, then curves backward, as at 20, forming a forwardly disposed projection 21, then curves forwardly, as at 22, forming a forwardly open recess or pocket 23, and then has a flange portion 24 extending sidewise. The outer portion 25 of the jamb wall has a straight portion extending inwardly at the end of which is a U-shaped portion 26 extending sidewise and open toward and receiving the flange 24 between its walls in spaced, non-contacting relation thereto. Rivets 27, or other means, may be employed to hold the U-shaped portion 26 and flange 24 together.

The door edge wall, as shown, has an outer portion which has a straight inwardly extending portion 28, then curves outwardly as at 29, forming a rearward projection 30, then curves inwardly, as at 31, forming a rearwardly opening pocket or recess 32, and ends in a sidewise disposed U-shaped portion 33 which is open toward and receives between its walls a sidewise extending flange 34 formed at the end of the inner portion 35 of the door edge wall. Flange 34 is spaced from and is out of heat conducting contact with the walls of the U-shaped portion 33.

Suitable strips 36 and 37 of non-conducting material, such as rubber, asbestos, or the like, are placed and secured in the pockets 22 and 32, and the construction is such that when the door is closed, door wall projection 30 will press tightly against strip 36 and strip 37 will be pressed tightly against jamb wall projection 21, thus sealing the joint between the jamb and door edge walls at two places, which are spaced from each other and thereby provide an insulating dead air space between them. The strips 36 and 37 are preferably elastic and resilient in order that a tight sealing will be insured at all times. By reason of the peculiar construction of the jamb and door edge walls as just described, the walls are expansible under the influence of high temperatures into tighter sealing engagement with the engaged insulating material. The construction described preferably extends continuously about the entire jamb and door edges, though obviously the various heat radiating and diffusing portions of the walls may be interrupted or notched or may be otherwise modified. Non-continuous heat radiating and diffusing flanges are disclosed in my application Serial No. 651,488, filed on even date herewith, and to which application reference is made hereby.

From the above description it will be apparent that heat conduction directly through the walls is retarded by reason of the fact that the walls are severed and, in addition, heat traveling along these walls is diffused and radiated into the air or filling material 17 between the inner and outer walls by the sidewise extending portions which also serve to absorb and radiate heat traveling along paths behind the jamb and door edge walls. The sealing of the joint retards and prevents heat travel therethrough.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What I claim is:

1. In a structure of the character described, an inner wall, an outer wall, a transverse wall portion having a channel shaped
heat diffusing flange and heat insulating material both within and about the channel flange.

2. In a structure of the character described, in combination, an inner wall, an outer wall spaced from said inner wall, a transverse sheet metal wall extending between said walls, and a heat diffusing flange of channel form extending sidewise from said transverse wall into the space between said inner wall and said outer wall.

3. In a structure of the character described, in combination, a transverse sheet metal wall comprising two overlapping portions substantially out of direct contact with each other, a channel-shaped heat diffusing flange on one of said portions, and heat insulating material both within and about said channel flange.

4. In a structure of the character described, in combination, a transverse sheet metal wall comprising two portions substantially out of direct contact with each other, a channel shaped heat diffusing flange on one of said portions, heat insulating material intermediate said two portions and heat insulating material both within and about said channel flange.

5. In a structure of the character described, in combination, a sheet metal jamb wall comprising two portions substantially out of direct contact with each other, a channel shaped heat diffusing flange on one of said portions, a sheet metal door edge wall comprising two portions substantially out of direct contact with each other, a channel shaped heat diffusing flange on one of said portions, and heat insulating material intermediate said two jamb wall portions and heat insulating material both within and about the channel flange on the jamb portion and intermediate said two door edge wall portions, and heat insulating material both within and about the channel flange on the door portion.

6. In a structure of the character described, in combination, a wall comprising two portions substantially out of direct contact with each other, one of said portions having a portion which is channel-shaped in cross-section and the said other wall portion having a flange seated within said channel but out of direct contact therewith.

7. In a structure of the character described, in combination, two transverse sheet metal walls adapted to be closed one upon the other, insulating material on each wall, and a projection on each wall positioned to engage against the insulating material on the other wall when said walls are closed together, one of said walls comprising two portions substantially out of direct contact with each other, one of said portions having a portion which is channel-shaped in cross-section and the said other wall portion having a flange seated within said channel but out of direct contact therewith.

8. In a structure of the character described, in combination, a wall comprising two portions substantially out of direct contact with each other, one of said portions having a portion which is channel-shaped in cross-section and the said other wall portion having a flange seated within said channel but out of direct contact therewith, one of said portions being expansible laterally under the influence of heat.

9. In a structure of the character described, in combination, two transverse walls adapted to be closed one upon the other, insulating material on each wall, and a projection on each wall positioned to engage against the insulating material on the other wall when said walls are closed together, each of said walls being expansible under the influence of heat laterally into tighter engagement with the said engaged insulating material, said walls comprising two portions substantially out of direct contact with each other, one of said portions having a portion which is channel-shaped in cross-section and the said other wall portion having a flange seated within said channel but out of direct contact therewith.

This specification signed this 2 day of July, 1923.

DAVID H. BELLAMORE.