

A. H. SCHAFFERT.
DOOR JOINT CONSTRUCTION.
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Fig. 1.

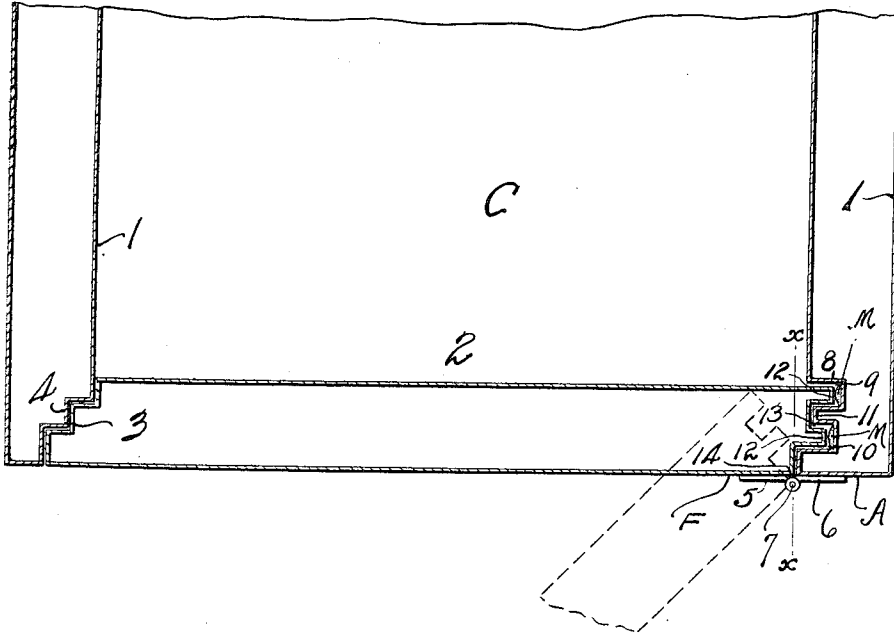
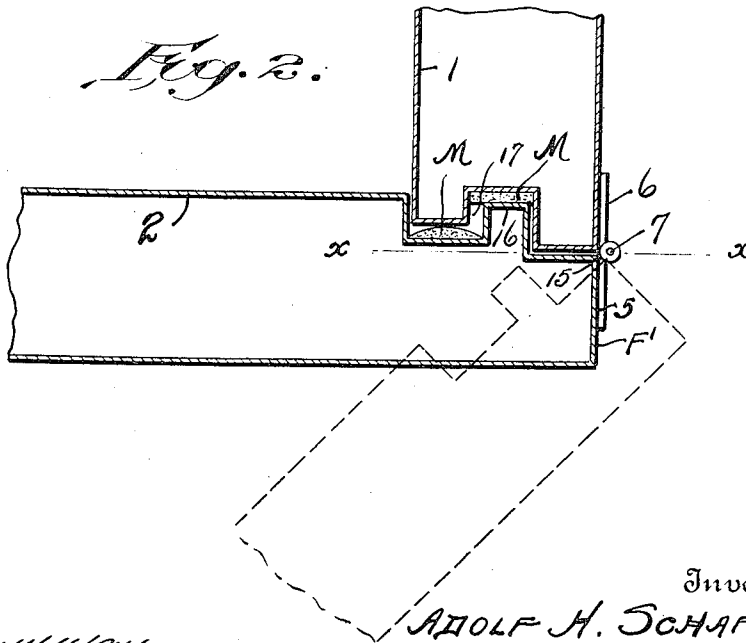


Fig. 2.



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DOOR-JOINT CONSTRUCTION.

1,231,069.

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To all whom it may concern:

Be it known that I, ADOLF H. SCHAFFERT, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Door-Joint Construction, of which the following is a specification.

This invention relates to the subject of metal furniture and more particularly to door joints for metal safes or cabinets.

In the construction of fireproof cabinets and sheet metal safes of the type commonly used in offices, it is essential that a tight and effective joint be formed between all of the meeting edges of the door and door case to provide a fire-resisting seal. While a stepped formation has been generally utilized for all sides of the door, with good results, it is also desirable to provide a construction at the hinged edge of the door, whereby the door and door case become interlocked to provide a joint that will not come apart if the hinges should be removed. This is an important feature in safe construction, where it is not only desirable to provide a fireproof joint, but one that materially adds to the safety of the structure. In carrying forward this plan of construction in a joint that is returned or doubled upon itself to provide the interlocking tongue and groove arrangement, as distinguished from a regular stepped joint or a joint that merely follows a broken line in substantially one direction, it has been difficult to avoid interference between the matching tongues and grooves unless unusually large spaces are left, thereby making a loose and easily penetrated joint. This condition results where the interlocking members carried by the hinged edge of the door are located entirely on the door side of the hinge pivot. In other words, the door is hung in such a manner that the interlocking joint portions thereof are located on the same side of the hinge pin-
dle as the leaf of the hinge to which the door is secured. This construction is not only weak, since it affords only a small interlocking engagement between the door and door case, but does not in some cases produce an operative and fireproof joint.

Accordingly, the present invention has as its primary object in view remedying these objec-

tions by supporting and interlocking the hinged edge portion of the door on both sides of the hinge pivot, thus eliminating any interference between the meeting portions of the door and door case, and providing a secure interlocking joint capable of being effectually sealed.

A further object of the invention is to provide a neat and substantial construction susceptible of embodiment in various forms while observing the same general principles of construction and arrangement that make a practical and effective fireproof joint, which is simple, and therefore capable of being economically manufactured.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings—

Figure 1 is a horizontal sectional view of a portion of a sheet metal safe, showing the construction of the door case and door at the hinged edge thereof.

Fig. 2 is a detail sectional view showing a modification of the invention shown in Fig. 1.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

Although susceptible of embodiment in various forms, the invention is shown in Fig. 1 in connection with a sheet metal cabinet C of the safe type. A simple example of such a cabinet is shown in the drawings and in this illustration 1—1 designates the opposite side walls of the cabinet, and 2 a safe door, shown of hollow formation. The swinging or free edge 3 of the door is preferably of stepped formation to match with a correspondingly stepped door case portion 4 formed at the front edge of one of the side walls of the cabinet. The opposite side edge portion of the door is supported from the cabinet by any suitable number of hinges which may be of the conventional type each consisting of the hinge plates or leaves 5 and 6 and the hinge pin 7. One of the hinge plates or leaves is rigidly and permanently fastened to an outer face F of the door and

the other hinge or leaf is permanently and rigidly fastened to the outer face of the cabinet. According to the application of the invention shown in Fig. 1 of the drawings, the hinge is located in the usual position, namely at the front of the cabinet with the separate leaves 5 and 6 thereof respectively, fastened to the front face A of one of the side walls and to the front face of the door 2, thus locating the hinge joint, between the door and the door case across the side or end portion of the door that fits within the door case. This disposition of the hinge joint distinguishes from the lateral arrangement of the hinge joint as suggested in the modification of Fig. 2 of the drawings, and which will be more particularly referred to.

With further reference to the construction of the joint at the hinged edge of the door, it will be observed from Fig. 1 that one of the side walls of the cabinet is formed adjacent its inner front edge with a grooved door case portion designated generally as 8, and which includes the grooves 9 and 10 having therebetween a rib member 11. In order to match this formation of the door case, the hinged edge of the door 2 is provided with a complementary interlocking sealing portion having spaced ribs 12 and an intermediate groove 13, all being offset, or disposed wholly at one side of a plane (line $x-x$) including the extreme outer corner 14 of the door, and intersecting the hinge face F of the door at right angles thereto. It will be further noted that the vertical axis or pivot 7 of the hinge also lies in the plane of the line $x-x$.

As shown, the door has a positive holding connection with the hinge on one side of its pivot, while it also has a releasable interlocking connection with the door case of the cabinet on the opposite side of the pivot through the medium of the ribs 12 interlocking with the door case portion 8 of the cabinet. And, it will be noted that the ribs 12 are located entirely at the side of the plane $x-x$ opposite the connection of the door with the leaf 5 of the hinge, and therefore, the door becomes held or locked on both sides of the pivot 7.

By utilizing the above features it is possible to obtain a tighter joint between the hinged edge of the door and the door case, with less interference than would be the case if the interlocking rib elements 12, at the hinged edge of the door, were located within a plane on the same side of the line $x-x$, as the hinge connection 5 with the door. That is to say, where the offset interlocking rib portion of the door lies substantially within a sector formed by the face to which the leaf 6 is attached, the line $x-x$ and the connecting arc, it is possible for the interlocking rib portion to freely draw

away from its complementary portion of the door case and also to enter the latter without interference.

A modified form of construction is shown in Fig. 2 of the drawings, wherein the interlocking joint between the door and the side of the cabinet has a lateral disposition longitudinally of the door as distinguished from the transverse disposition of the joint shown in Fig. 1 of the drawings. However, the modification of Fig. 2 embodies the same principles of construction already described, as it will be seen that though the leaf 5 of the hinge is secured to an outside end hinge face F' on the door and the hinge leaf 6 secured to the outside face of the cabinet wall 1, the hinge pivot 7 occupies the same relation to the plane $x-x$ intersecting the face F' at the corner 15 of the door as it does in Fig. 1.

It will also be observed in Fig. 2 that the rib 16 of the door is so disposed in a plane offset to one side of the line $x-x$, that the same matches with a complementary groove 17 in the cabinet wall, at a point which is on the opposite side of the pintle 7 from the hinge leaf 5.

From the foregoing, it will be apparent that the invention resides in locating rib elements for matching with a grooved door case, in such a position that they will be offset from or project beyond the corner of the door adjacent the hinge pivot, and lie within a plane at the side of the hinge pivot which is opposite the hinge connection with the door itself. The present drawings have shown the line $x-x$ as arranged both transverse, and longitudinally of the door, according to whether the hinge face of the door is the front or side edge thereof, showing that the invention is adapted to various styles or types of cabinets or other similar articles of furniture.

While the meeting metal edges of the joint are designed to be sufficiently tight to resist the entrance of fire, the efficiency and sealing of the joint is further increased by the use of suitable fireproof packing material in the groove portions of the joint, designated in the several figures as M.

Without further description, it is thought that the many features and advantages of the invention will be readily apparent, and it will also be understood that various changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit of the invention or scope of the appended claim.

I claim:

A hinged joint for sheet metal cabinet doors including in combination, a door case having an inwardly stepped tongue and groove portion, a hinge carried by the door case and having the axis of its pintle located adjacent the corner of the outermost

tongue thereof and intersected by a plane parallel with the outer face of said tongue, a door connected with said hinge and having a stepped tongue and groove portion formed therewith and complementary to that of the door case, the said tongue and groove portion of both the door case and door lying within the same area at the door case side

of the plane above mentioned when they are interlocked.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.
ADOLF H. SCHAFFERT.

Witnesses:

A. J. WATSON,
O. D. KAISER.

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