July 8, 1930. A. L. ABBOTT 1,770,189

VAULT CONSTRUCTION

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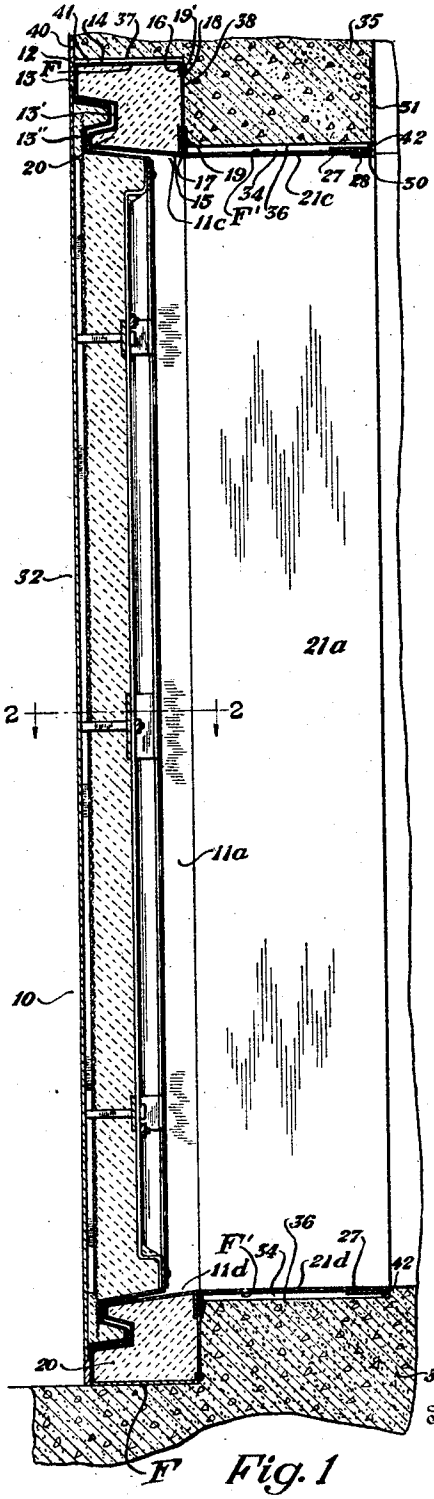


Fig. 1

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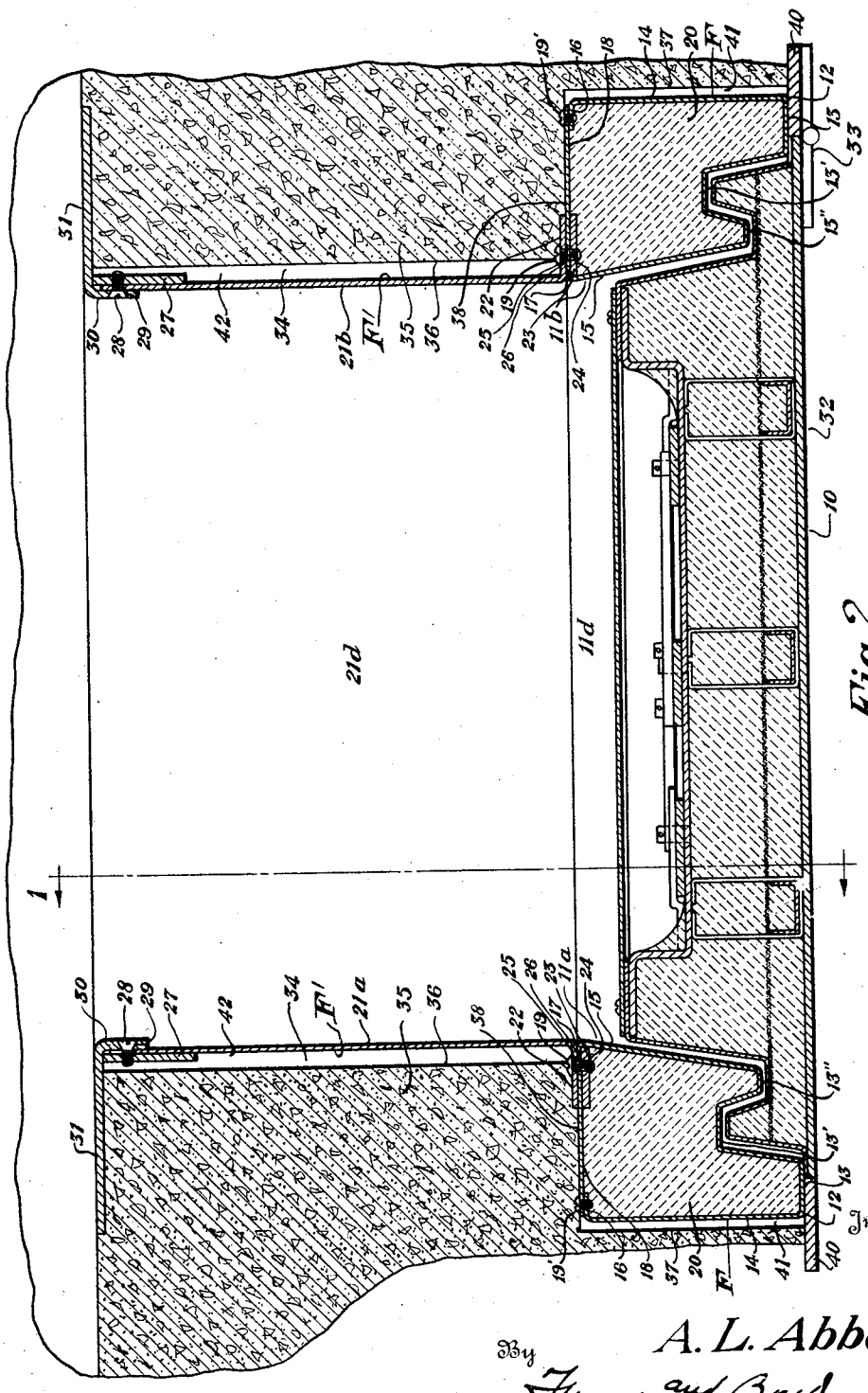


Fig. 2.

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Patented July 8, 1930 1,770,189

UNITED STATES PATENT OFFICE

ALBERT L. ABBOTT, OF CANTON, OHIO, ASSIGNOR TO DIEBOLD SAFE & LOCK COMPANY, OF CANTON, OHIO, A CORPORATION OF OHIO

VAULT CONSTRUCTION

Application filed December 7, 1926. Serial No. 153,141.

The invention relates to fireproof vaults which may be made of concrete or other fire resisting materials, and which include fireproof doors and jamb frames and vestibules therefor.

It has been the usual practice in constructing and installing the doors for such vaults, to provide for the doors, jamb frames and vestibules having straight sides. When such door frames are installed, the opening therefor, cut in the wall of the vault, has sufficient clearance to admit the straight sided vestibule and jambs, thereby forming straight and direct passage-ways about the jamb frame and vestibule between the same and the opening in the vault wall.

When such door frames are properly installed, these straight and direct passage-ways are filled with grout or like material, but it has been found in practice that workmen omit to fill these passage-ways with grout, whereby even though the front of the jamb frame may be provided with an architrave covering the front end of these passage-ways, heat as from fire and the like in front of the vault doors soon warps the architrave, and the passage-ways then become straight and direct flues which carry the heat from the outside of the vault to the interior thereof.

Accordingly, the objects of the present improvements are to provide a vault construction which will overcome the difficulties incident to the usual practice as aforesaid, by providing means effectually stopping the direct passage of heat between the door jamb frame and vestibule and the vault wall opening.

These and ancillary objects are attained by a construction and arrangement which may be stated in general terms as including in a vault and the like, a door jamb frame and a vestibule connected with the frame, and the frame including fireproof material preferably completely filling a metallic casing extending outwardly from the vestibule walls, the outwardly extending fire-proof frame being arranged to be inserted in a rabbeted seat formed at the front side of the door opening in the vault wall, whereby even though grouting is omitted, a direct passage-way or flue for heat from the front of the vault to the interior is blocked.

A preferred embodiment of the invention is illustrated in the accompanying drawings forming part hereof, in which—

Figure 1 is a vertical sectional view of the improved vault construction, as on line 1—1, Fig. 2.

Fig. 2, a horizontal cross section of the improved construction as on line 2—2, Fig. 1.

Similar numerals of reference indicate corresponding parts throughout the drawings.

The improved vault construction indicated generally at 10, includes door jamb frame side members 11^a and 11^b, and top and bottom members 11^c and 11^d.

Each of the frame members preferably includes a metallic casing 12 having a front wall 13 with an outwardly opening groove 13′ and an outwardly projecting tongue 13″ formed therein, for receiving an inwardly projecting tongue and an inwardly facing groove in the door, hereinafter to be described.

Each of the jamb frame casings further includes an outer rearwardly extending wall 14 and an inner rearwardly extending wall 15 preferably integral with and extending from the edges of the front wall 13.

The outer rearwardly extending wall terminates at its rear end in an inwardly directed flange 16, and the inner rearwardly directed wall 15 terminates at its inner end in an outwardly directed flange 17, and each jamb frame casing 12 is completed by the back wall 18 secured at its edges as by screws 19 and 19′ to the flanges 16 and 17 of the walls 14 and 15.

Each door jamb frame casing 12 is preferably completely filled with a fireproofing compound 20; and the door frame thus includes fireproof material completely engirdling the sides, top and bottom of the door, and this fireproof door frame, as will hereinafter be set forth in detail, is located in a rabbeted seat preferably formed in the vault wall at the front end of the door opening therein.

The inner rearwardly extending walls 15 of the jamb frame form the front end of the

door vestibule, and for providing vestibules of any desired length, vestibule side plates 21^a and 21^b, and top and bottom plates 21^c and 21^d, having outwardly extending flanges 22 at their front edges are secured to the jamb frame members by means of the screws 19 extending through suitable apertures in the flanges 22.

The preferred method of securing the flanges 22, the flanges 17, and the inner edges of the back walls 18 consists in spot welding clamping plates 23 to the inner edges of the back walls 18 and providing threaded apertures 24 in the clamping plates registering with screw apertures 25 and 26 in the flanges 22 and 17, respectively, whereby the screws 19 pass through the apertures 25 and 26 and are screwed into the apertures 24 in the clamping plate 23.

The vestibule plates 21^a, 21^b, 21^c and 21^d may be of any desired depth from front to rear for accommodating vault walls of any desired thickness and are preferably provided at their rear edges with screw plates 27 spot welded thereto and threaded apertures are provided in the vestibule plates and screw plates, for receiving screws 28 which pass through countersunk apertures 29 in a forwardly extending rear architrave flange 30 of the rear architrave plates 31.

Upon the jamb frame thus formed, a vault door 32 of any desired type, and which may be of the type set forth in United States Letters Patent No. 1,712,000, issued May 7, 1929, to Bruno T. Gialdini for vault doors, may be hung in a usual manner as by means of hinges 33.

The combined jamb frame and vestibule constructed as aforesaid thus includes the casing 12 filled with fireproofing compound 20, and the casing 12 extends laterally outwardly from the vestibule members 21^a, 21^b, 21^c, and 21^d; and the outer faces F of the outer members 14 of the frame are laterally off-set from the outer faces F′ of the members 21^a, 21^b, 21^c, and 21^d, of the vestibule; and the outer faces of the casing member 18 with the outer faces F′ of the vestibule members comprise an external rabbeted seat in the combined jamb frame and vestibule.

For applying the aforesaid combined jamb frame and vestibule to a vault in order to attain the fire resisting advantages set forth, a door opening 34 is made in a wall 35 of the vault, and the door opening is provided with laterally off-set faces 36 and 37 connected by a laterally extending face 38 intermediate the front and rear of the wall; and the faces 37 and 38 comprise a rabbeted seat at the front end of the door opening for receiving the fireproof door frame; and the vestibule members extend rearwardly parallel with the door opening faces 36, there being sufficient clearance between the faces of the door opening and the faces of the jamb frame and vestibule to admit the jamb frame and vestibule into the door opening and seat the frame in its rabbeted seat; and the outer face of the back walls 18 of the jamb frame casing preferably abuts against the laterally extending faces 38 of the door opening.

Accordingly the frame extending laterally outwardly from the vestibule laps over that portion of the wall extending inwardly from the faces 37, and the wall is preferably constructed of fire resisting material. The aforesaid inwardly extending portions of the vault wall fit in the rabbeted seat of the combined frame and vestibule.

In other words the combined door frame and vestibule, and the door opening are each provided with interfitting rabbeted seats, whereby there is no direct passage-way from the outside of the vault to the interior thereof between the door opening and the combined jamb frame and vestibule.

The usual type of vault construction includes a door opening having straight inner faces from front to rear and a door jamb frame and vestibule having straight outer faces from front to rear, there being thus formed straight and direct passage-ways about the jamb frame and vestibule which lead directly from the outside of the vault to the interior thereof in the event that the outer architrave is warped by the action of heat and the like.

If the usual vault door is properly installed, the passage-ways are filled with grout or like material, but in practice workmen often omit to fill the passage-ways with grout, so that the passage-ways are straight and direct flues which carry heat from the outside of the vault to the interior thereof.

It is obvious that the laterally off-set faces of the door opening and combined door frame and vestibule of the improved construction herein set forth eliminate this direct flue passage-way, and that the fire resisting door frame in front of the laterally extending face 38 of the door opening, and the material in the wall at the rear of the opening, comprise block walls overlapping each other and preventing a flow of heat from the outside to the interior of the vault.

Accordingly, in the improved construction it is unnecessary to fill with grout or like material, the offset closed clearance spaces 41 and 42 between the offset faces of the opening and frame.

I claim:

1. Vault construction including a vault wall, and a jamb frame and vestibule, the wall having a door opening formed therein and faces of the opening being laterally offset from each other, and the frame including fire resisting material and faces of the frame and vestibule being offset from each other and fitting with the offset faces of the door opening.

2. Vault construction including a vault wall, and a jamb frame, the wall having a door opening formed therein and having a rabbeted door frame seat formed therein at one end of the opening, and the jamb frame including fire resisting material fitting in the seat.

In testimony that I claim the above, I have hereunto subscribed my name.

ALBERT L. ABBOTT.

DISCLAIMER

1,770,189.—*Albert L. Abbott*, Canton, Ohio. VAULT CONSTRUCTION. Patent dated July 8, 1930. Disclaimer filed August 12, 1931, by the assignee, *Diebold Safe and Lock Company*.

Hereby enters this disclaimer and disclaims as follows:

Disclaims from claims 1 and 2 all vault constructions which do not utilize or include a hollow metal jam filled with fireproofing material and set in an enlarged opening, or rabbeted seat, in the wall at the outer end of the door opening which extends through the wall.

And disclaims further from claim 2 all structures in which the jamb does not extend wholly about the door opening, including top, bottom, and sides.

[*Official Gazette September 1, 1931.*]