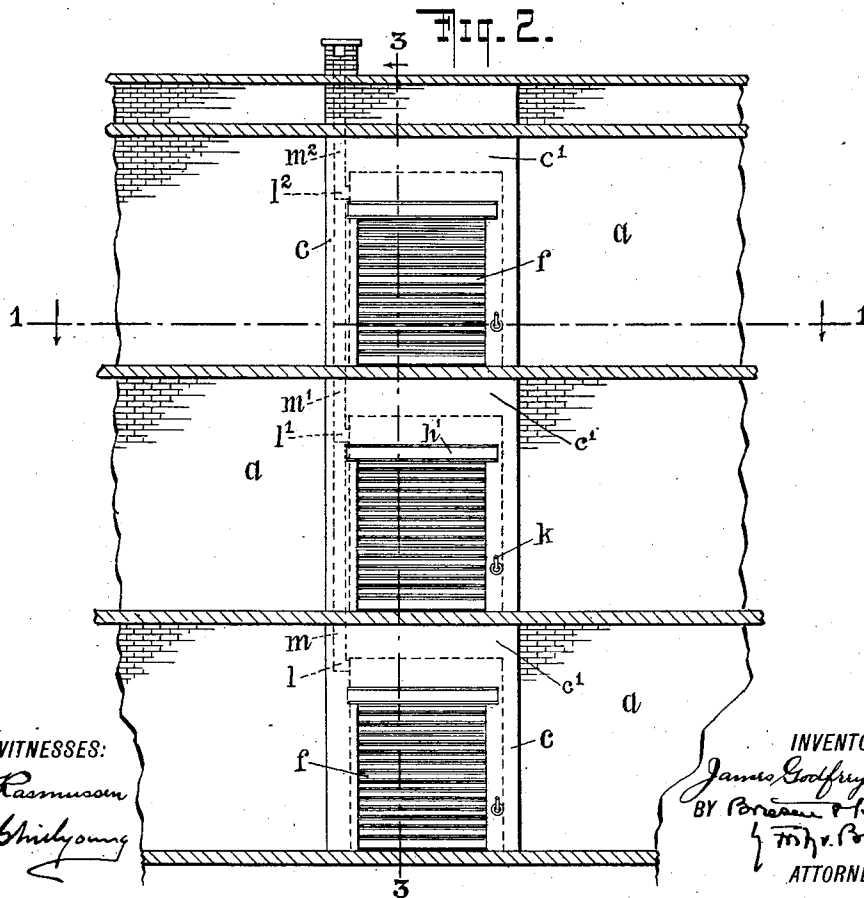
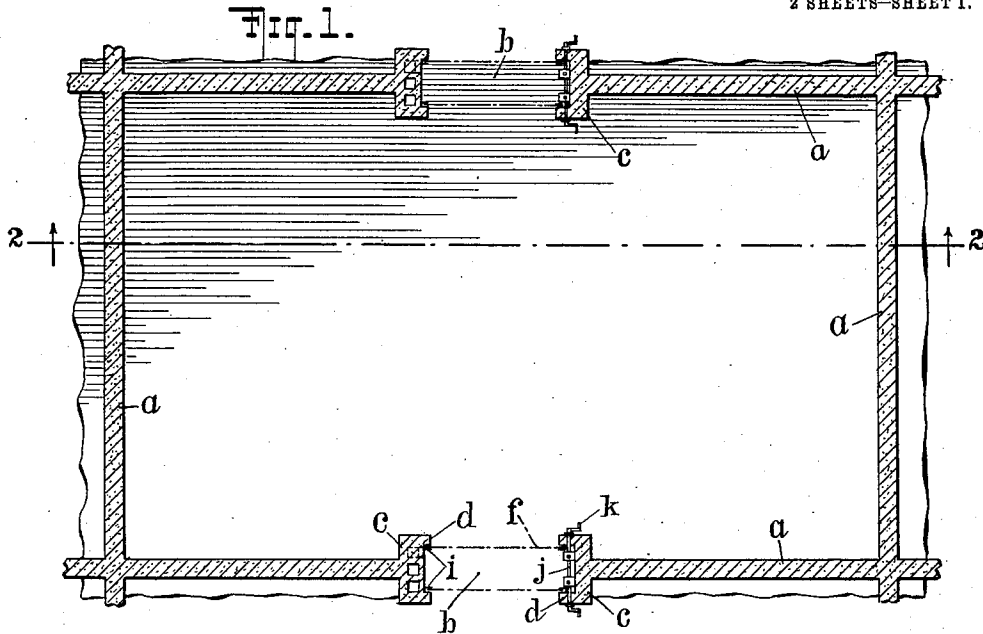




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FIREPROOF STRUCTURE.
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998,065.

Patented July 18, 1911.

2 SHEETS-SHEET 2.

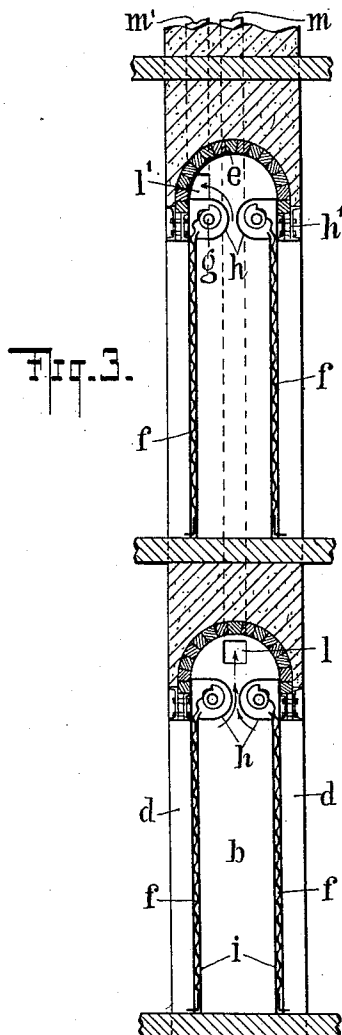


Fig. 3.

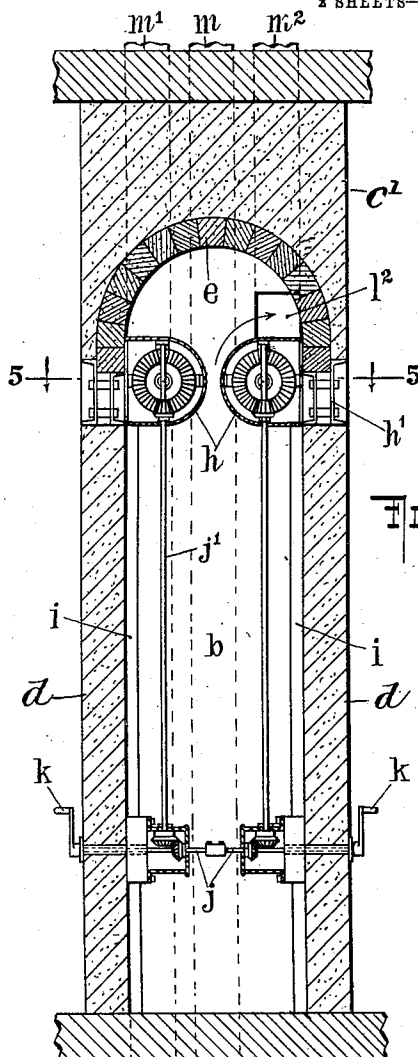


Fig. 4.

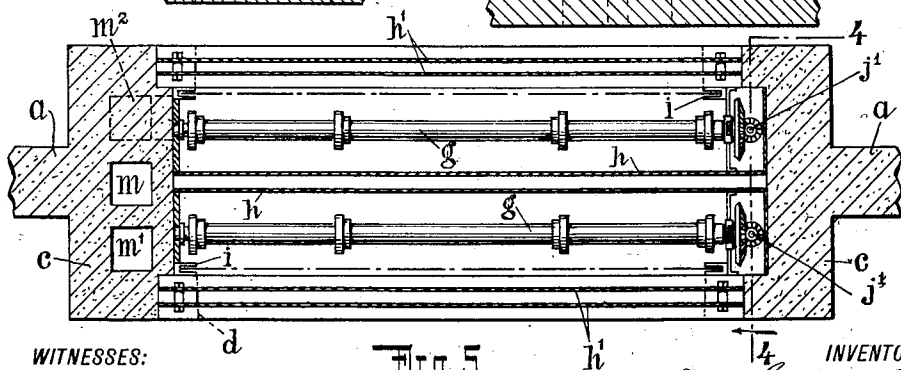


Fig. 5.

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FIREPROOF STRUCTURE.

998,065.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed October 19, 1910. Serial No. 587,824.

To all whom it may concern:

Be it known that I, JAMES GODFREY WILSON, a subject of the King of Great Britain, and resident of Larchmont, Westchester county, State of New York, have invented certain new and useful Improvements in Fireproof Structures, of which the following is a specification.

My invention relates to the means whereby passage through doorways in fire-proof structures is controlled and is applicable not only to such doorways when placed in the exterior walls of a structure, but also to doorways piercing interior dividing walls.

The principal object of my invention is to provide an arrangement and construction of the doorways such that the fixtures and operative mechanism of the doors is protected from the action of fire, so that the working parts may not become warped or otherwise rendered inoperative during a conflagration; and so that the doors themselves may not be warped or twisted out of place or permit smoke and flames to pass therethrough.

A further object of my invention is to provide means for keeping the fire-proof door or curtain cool during the progress of a fire as well as for carrying off smoke and flames immediately adjacent thereto.

Further objects will appear as the specification proceeds.

My invention resides in constructing a fire wall of the usual character and providing the same with a broad lobby and fire-protecting doors so arranged as to be readily opened and closed and having their operative portions so housed in the fire wall structure wherein the doors are placed that they are masked and effectually screened against direct access of the fire from the exposed side of the structure.

In accomplishing my invention I use a pair of doors facing oppositely and inclosing between them a fire proof chamber or lobby wherein the operative mechanism of both doors is housed.

As to each fire-proof door proper, any known and preferred type may be used within the spirit of my invention, but I prefer doors slidable vertically in lateral guides, the doors being opened by rolling upon horizontal overhead rollers in the manner well known in the art. I preferably make provision for controlling the opening

and closing of the doors from either or both sides of the wall.

For the purpose of keeping the inclosed lobby cool I may provide a ventilating flue leading from the upper part of the lobby through the fire-proof wall to the open air, the flues serving further as a means of carrying away from said lobby any flames, smoke and other products of combustion which may penetrate within the lobby owing to failure on the part of either door of the pair to completely seal the opening during an outbreak of fire.

In cases where the invention is applied to close an opening in a relatively thin partition wall or the like, the space required for the inclosed lobby is obtained by building out from one or both faces of the wall a pair of wing-walls to form the end of a chamber. The projecting structure thus constituted, which somewhat resembles a chimney breast, may extend through the height of several floors of the building, the ventilating flues appertaining to the lobbies on different floors being formed (somewhat in the manner of chimney flues) in the thickness of the masonry or other fire-proof material of which the wing walls or the wall proper are composed.

In the accompanying drawings Figure 1 is a horizontal section on line 1—1 of Fig. 2 and illustrates a room inclosed within a fire-proof structure by fire-proof partition walls, in two of which walls are door ways, the passage through each of which is controlled by means of a pair of fire proof doors housed in a lobby as above referred to. Fig. 2 is a sectional elevation on line 2—2 of Fig. 1 showing the arrangement as applied to a three-story building. Fig. 3 is an enlarged vertical section on line 3—3 of Fig. 2 showing the lobbies and doors at one side of the floors; Fig. 4 is a section on line 4—4 of Fig. 5 drawn on a still larger scale showing the lobby and doors at one side of one of the floors with special reference to the details of the winding mechanism; and Fig. 5 is a horizontal section through the entire lobby on line 5—5 of Fig. 4.

In the drawings *a a* represent partition walls composed of brick work or other usual fire proof material; these walls as shown are arranged on the floor of the building so as to cut up the same into a number of independent areas or rooms. Each of these

rooms is provided with as many lobbies *b* as may desired with a view to the purpose for which the rooms are to be used. Each lobby is formed by building out a pair of wing walls *c c* from the opposite faces of the wall *a* at the sides of the doorway therein. The width of the actual opening at each end of the lobby is less than the width of the lobby itself, the opening being bounded laterally by the inwardly projected breast walls *d* and above by a continuous wall *e* supported upon a lintel *h'* formed preferably by metal girders as indicated. The roof of the lobby is constituted by a barrel vault *e* of brick work or the like which spans the space between the two walls *e' e'*; the vault which extends over at the width of the lobby between the wing-walls *c c* resting where necessary upon, or taking its abutment against the girders *h' h'* or a ledge or flange on the inner face thereof. It will thus be obvious that the use of horizontal lintels such as *h'* is not essential, as the top of the opening at each end of the lobby may, if preferred, be supported upon the breast-walls *d*. Guides *i* for the edges of the fireproof doors *f* are housed within and overlapped by the breast-walls *d* so as not to project beyond the latter. These guides being consequently not exposed to direct contact by fire, the edges of the doors are not liable to lose the support of the guides owing to the latter becoming warped under the action of flame.

Each door *f* is preferably of the corrugated sheet metal type indicated, and arranged to roll upon a horizontal winding roller *g* which extends across the lobby *b* above the top of the doorway opening, the housing *h* for the roller being mounted at the inner side of the lintel *h'*. The rollers *g* of both doors of a pair are in driving connection through the medium of similar trains of gearing (such as vertical shafts *j'* and pairs of beveled wheels as indicated), with a single horizontal shaft *j* which extends over the length of the lobby at one side thereof in such position that the respective ends of the shaft are presented at the outer faces of the breast-walls *d* at a convenient height to receive crank handles *k* whereby both doors may be simultaneously operated from either or both sides of the party wall *a*.

In the thickness of one of the wing-walls *c* an upright ventilating flue is provided, this flue opening at its upper end into the external atmosphere and communicating at its lower end, by way of a suitable aperture, with the upper part of the lobby *b*. In cases where as indicated the walls and also the lobbies appertaining to the fire proof doors therein upon different floors of a building are placed directly one over the other, the flues *m m' m''* appertaining to

the various lobbies in the same vertical range are arranged side by side in the thickness of the walls and communicate with the respective lobbies by way of openings as at *l, l' l''*. If necessary some of the flues could be in one wing-wall *c* of the range of lobbies and some in the other. Under normal conditions, so long as the doors *f* are open, these flues serve the usual purpose of ventilators for rooms with which they then communicate; when, however, the doors are closed in case of fire, the flues serve to carry off any flame or smoke which may accidentally gain access to the lobbies, and thus the temperature of the latter will be kept down.

I have shown lobbies on the several floors as being placed one above the other and I so prefer them, but this arrangement is not necessary and in case the lobbies were set one over the other the flues from each lobby would be carried up independently through the wall to the outside of the building.

I do not confine my invention to the exact details which have been shown and which have been stated to be merely a preferred form, since many of these details may be varied without departing from the spirit of the invention which I have set forth in the following claims:—

1. In combination with the wall of a fire proof structure, a fire proof lobby provided with a pair of openings and inwardly projecting breast-walls, a fire proof door for each opening, and guides for each door overlapped by said breast-walls, substantially as and for the purpose described.
2. In combination with the wall of a fire proof structure, a fire proof lobby provided with a pair of openings and inwardly projecting breast-walls, a slidable fire proof door for each opening, guides for each door overlapped by said breast-walls, and operating mechanism within said lobby, substantially as and for the purpose described.
3. In combination with the wall of a fire-proof structure, a fireproof lobby provided with a pair of openings and inwardly projecting breast-walls, a slidable fireproof door for each opening, guides for each door overlapped by said breast-walls, operating mechanism within said lobby, and means for actuating said operating mechanism from either side of said wall, substantially as and for the purpose described.
4. In combination with the wall of a fire-proof structure, a fireproof lobby provided with a pair of openings and inwardly projecting breast-walls, a slidable fireproof door for each opening, guides for each door overlapped by said breast-walls, operating mechanism for each door within said lobby and an operating shaft common to both of said mechanisms extending to both sides of

said wall, substantially as and for the purpose described.

5 5. In a fireproof structure provided with an opening, a passage through which is controlled by slidable fireproof doors, the combination with the wall of an inclosed fireproof lobby built integrally with the structure of the wall, said lobby serving to house the guides and operative mechanism of the
10 doors and being further provided with flues

extending through the wall to the external atmosphere, substantially as and for the purpose described.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES GODFREY WILSON.

Witnesses:

E. H. FRANZ,

E. S. MILLINGTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."