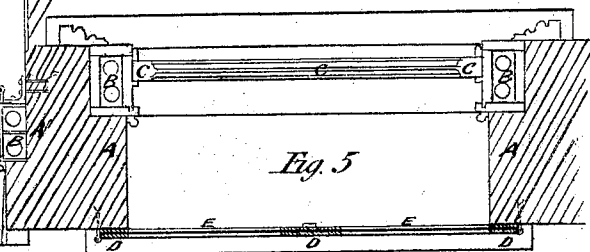
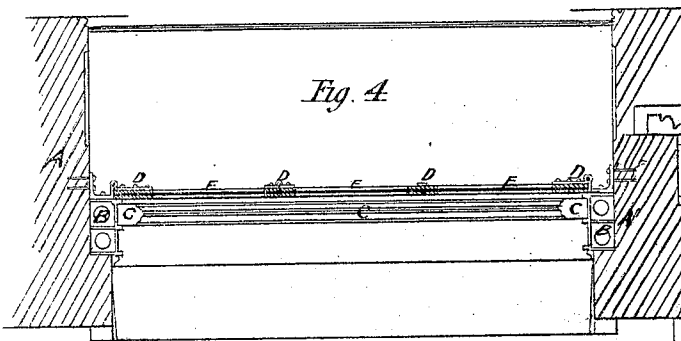
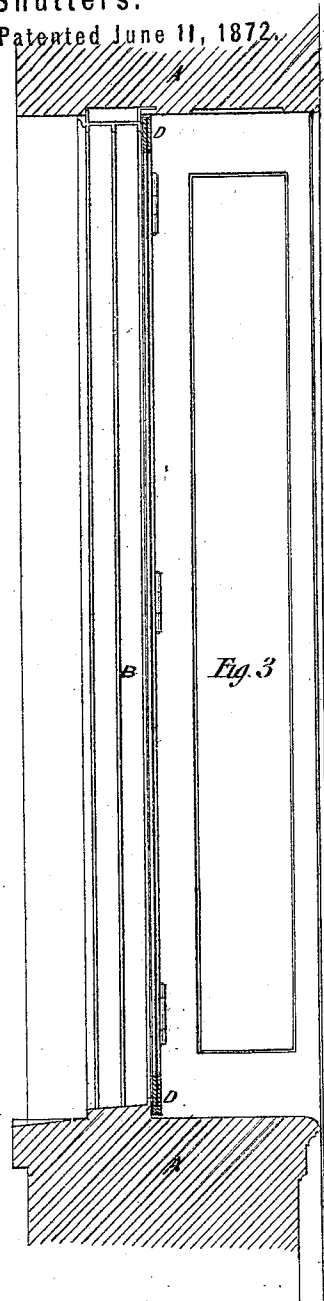
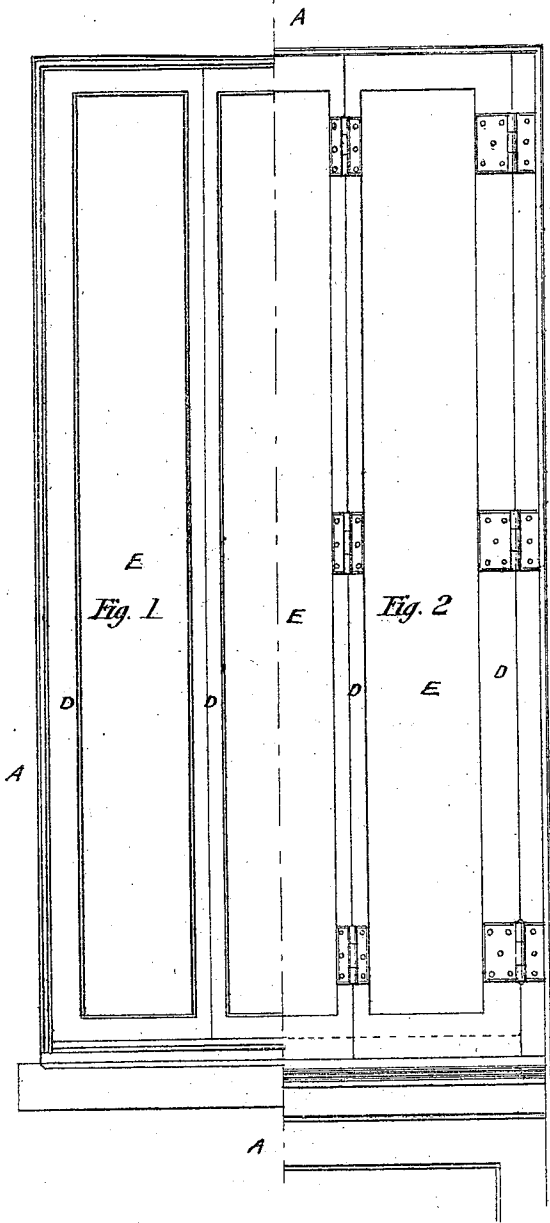


F. SCHUMANN.

Improvement in Fire-Proof Shutters.

No. 127,803.

Patented June 11, 1872.



WITNESSES.

Geo. L. Swine
Walter Allen

INVENTOR.

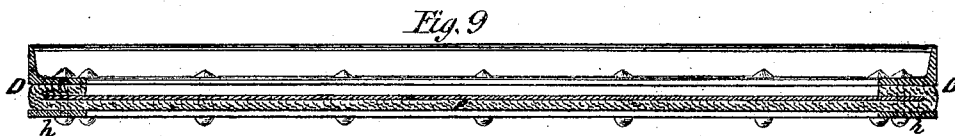
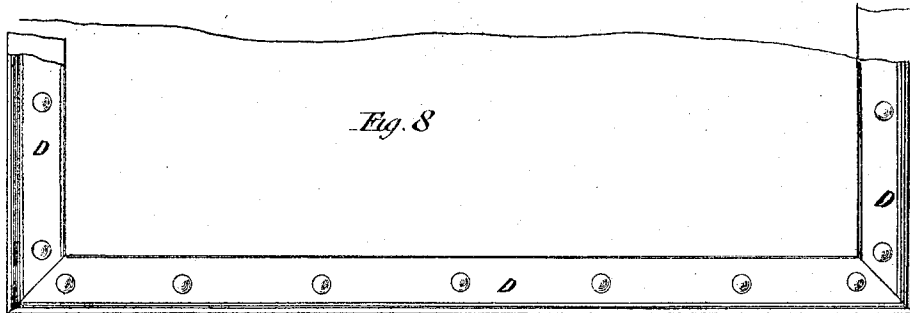
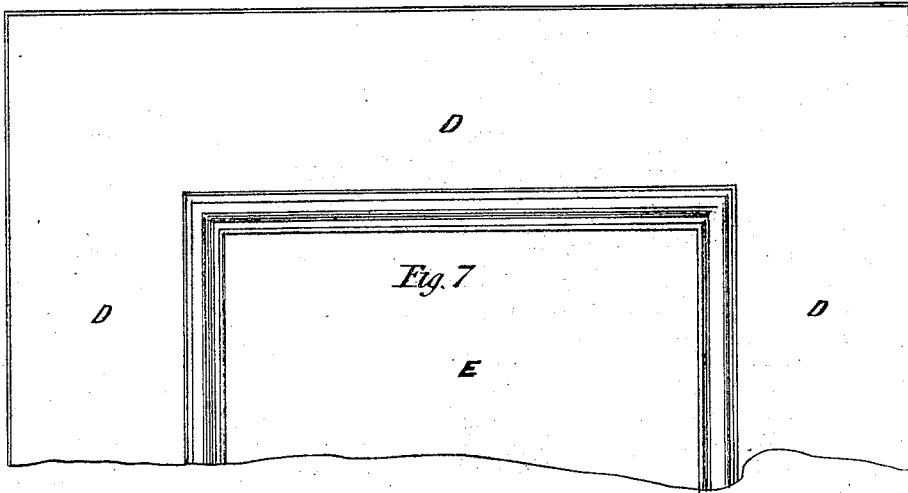
Frang Schumann

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WITNESSES.

Paul E. Swin
Walter Allen

INVENTOR.

Franz Schumann

UNITED STATES PATENT OFFICE.

FRANZ SCHUMANN, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
TO HIMSELF AND ALFRED B. MULLETT, OF SAME PLACE.

IMPROVEMENT IN FIRE-PROOF SHUTTERS.

Specification forming part of Letters Patent No. 127,803, dated June 11, 1872.

Specification of certain Improvements in Fire-Proof Doors and Shutters, invented by FRANZ SCHUMANN, of the city and county of Washington, District of Columbia.

This invention consists in combining, with metallic shutters or doors, a fire-proof or fire-resisting material so applied as to protect the metal from excessive heat, and thus preserve the door or shutter intact in the event of fire occurring in neighboring buildings. Various kinds of fire-proof material may be used for this purpose, and it is to be applied and secured to the outside of the metallic doors or shutters in such a manner as its own character may render suitable. I prefer to employ felt, papier-maché, or other fibrous material rendered fire-proof by any of the known appliances for this purpose, and by means of molds formed to the required shapes on a thin frame of corrugated and perforated metal and applied on the outer side of the door or shutter; or, if preferred, the felt or other fire-proof material may be applied in sheet form, as hereinafter described. Soap-stone or other material may, however, be substituted for the fibrous matter referred to, and it may be secured by other means.

My invention differs essentially from the various contrivances in use in which a body of plaster or other fire-proof material is inclosed between two plates of metal. One of these plates being on the outside is necessarily exposed to the full effect of the fire, and being usually quite thin it does not afford lasting or effectual protection to the fire-proof material, and the latter, being usually of a brittle character or possessed of little cohesion, is soon disintegrated when its covering is removed or impaired. I remedy these defects by the application of fire-proof material of such a character and in such a manner that it can be effectually secured without an external metallic covering, and in such a manner that its own attachments are protected from exposure. The fire-proof substance thus constitutes the most exposed part of the structure and effectually accomplishes the purpose for which it is applied.

In the drawing, Figure 1 is an external elevation of a portion of a shutter illustrating my invention. Fig. 2 is an internal elevation

of the same. Fig. 3 is a vertical section thereof. Fig. 4 is a horizontal section, showing the shutter applied to the inside of a window. Fig. 5 is a horizontal section, showing it applied to the outside. Fig. 6 is a horizontal section on a larger scale of one leaf or fold of the door or shutter, showing a preferred mode of applying the fire-proof material. Fig. 7 is an elevation of a portion of the external face thereof. Fig. 8 is an elevation of a portion of the internal face under a modified form. Fig. 9 is a horizontal section of the same. Fig. 10 is a partial section, showing another modification in the mode of securing the fire-proof material.

A A represent parts of the wall of the building, B B the window-frames, and C the sash, all of which may be of common construction. D E are, respectively, the stiles and panels of my improved shutters or doors, which are to be hinged or otherwise attached to the masonry of the building independently of any wooden framing, said shutters being applied either on the inside of the windows, as illustrated in Fig. 4, or on the outside, as shown in Fig. 5. The construction of the door or shutter is more clearly shown in Figs. 6, 7, 8, 9, and 10. In Fig. 6 the stiles D are shown as made hollow with a double shell, *a b*, inclosing and securing the fire-proof material F and surrounding a central air-space, *c*. The panels E are made up of an inner metallic plate, *d*, permanently secured to the stiles D, and completely covered on its outer face with a body of felt or other proper material rendered effectually fire-proof, as before stated. Paper-pulp, calcined gypsum, steatite powder, or other suitable material, may be combined with or substituted for the felt, one requirement in the mode of applying the invention shown in Fig. 6 being that the material shall be adapted to be molded into permanent shape. It is thus molded, under pressure, upon both sides of a web, *g*, of corrugated iron or steel, the said web being perforated to permit the inner and outer sheets of plastic material to unite together in order to hold the outer body more securely. The outer face receives from the mold any desired ornamental shape, and when hard is coated with fire-proof paint and marbled or otherwise ornamented, if required.

In Figs. 8 and 9 the fire-proof felt, paper, or other matter *f* is stretched over the steel or iron plate *d* in the form of a sheet, and the two are firmly secured by screws or rivets to a frame or stiles, *D*, of angle iron, an external rim or frame *h* being employed to protect the edges from wear. If preferred, the rim-frame *h* may be applied around the edge, the felt or other sheet *f* having been first stretched over the frame *D*, as illustrated in Fig. 10.

If soap-stone is used, it may be applied in slabs bolted to the inner plate *d*, the bolt-heads being countersunk to a sufficient distance below the outer surface of the slab and covered with plaster. If preferred, a fire-proof mineral in plastic condition similar to cement may

be molded on the panel, as described, with reference to Fig. 6 of the drawing.

The invention is equally applicable to hinged or sliding doors or shutters, or to shutters which may be applied to permanently close openings in buildings.

Claim.

I claim as my invention—

A door or shutter with fire-proof or fire-resisting material applied to its external surface, substantially as herein set forth.

FRANZ SCHUMANN.

Witnesses:

JAS. L. EWIN,

WALTER ALLEN.