T. LEE.

FIRE RESISTING DOOR.

APPLICATION FILED JUNE 22, 1914.

1,126,794. Patented Feb. 2, 1915.

FIG. 1

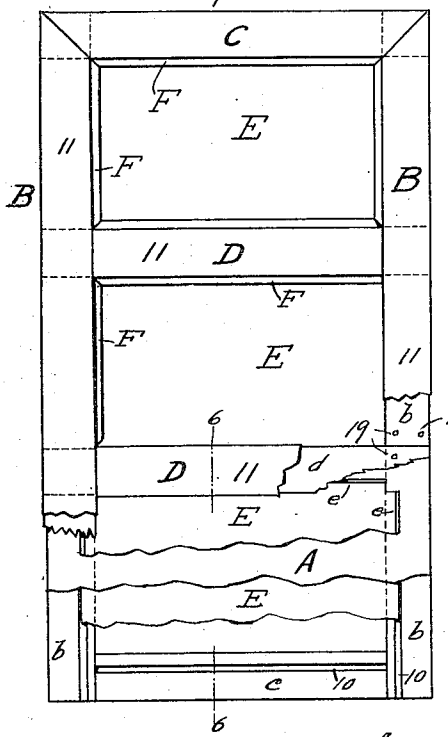


FIG. 2

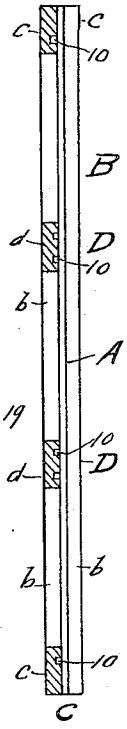


FIG. 5

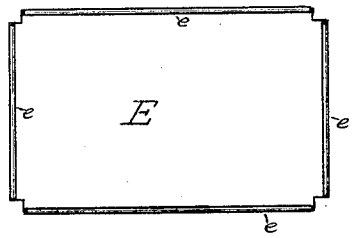


FIG. 3

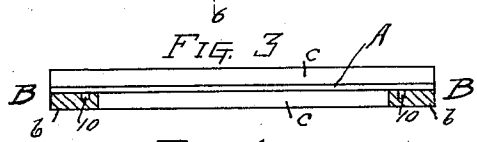


FIG. 4

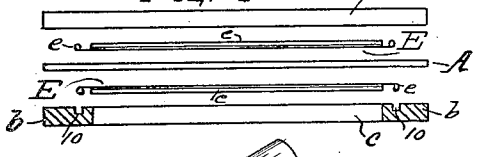


FIG. 7

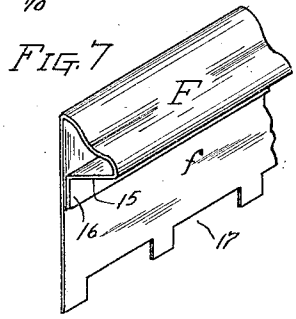
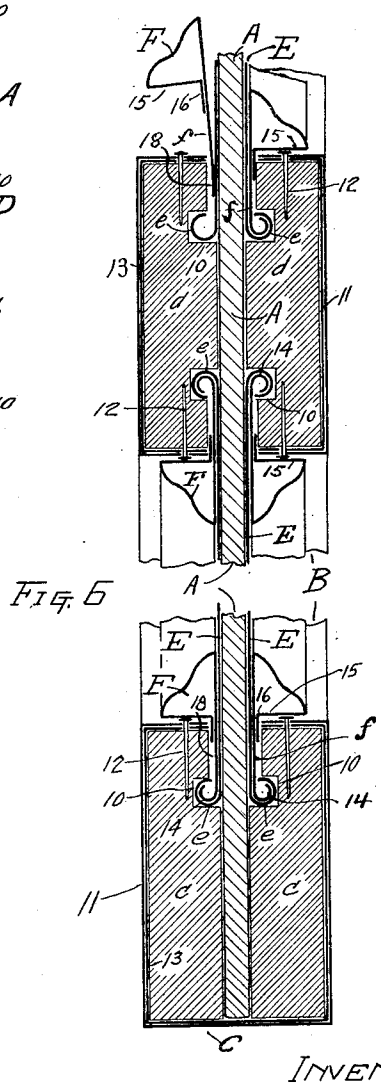


FIG. 6



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FIRE-RESISTING DOOR.

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To all whom it may concern:

Be it known that I, THOMAS LEE, residing at Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Fire-Resisting Doors, of which the following is a clear, full, and exact description, attention being called to the drawing, which accompanies this application and forms a part thereof.

This invention relates to doors comprising panels surrounded by frame members and constructed to be fire-resisting.

The invention concerns more particularly independent molding strips provided in the angles where panels and frame members meet and the connection of these strips in a manner which is in accord with the particular purposes of such doors.

The invention consists of the construction hereinafter described and claimed and illustrated in the accompanying drawing in which:

Figure 1. shows a face view of such a door with parts broken away. Fig. 2. shows a view of one of the longer or vertical edges thereof, all coverings being absent to expose the wooden frame. Fig. 3, shows a view of one of the shorter or horizontal edges under the same condition. Fig. 4. illustrates the manner in which the various parts and materials used are assembled to build up the door, the parts appearing in their positional relation as viewed in Fig. 3. Fig. 5. shows one of the parts used viz., a sheet-metal panel. Fig. 6. is an enlarged vertical section of a portion of the door and as indicated by a line 6—6 in Fig. 1. Fig. 7. shows in perspective view a portion of a molding strip used.

The body of the door consists of suitable material A of substantial thickness which may be a quarter of an inch more or less. This material is sustained by a wooden frame the members of which comprise the uprights or hanging stiles B and the horizontal connecting members or rails C. A large panel which thus results may be subdivided by additional cross-rails D into a number of smaller panels as shown in Fig. 1. All frame members comprise two complemental parts *b—b*, *c—c* and *d—d* respectively, which are secured to each other in superposed relation and with the body-forming material A between them. This material between the frame members is faced on both sides with sheet metal panels, indicated by letter E. They are shaped as shown in Fig. 5, being notched out at their corners and the edges between these notched-out corners are curled up toward the outside, that is away from the body-forming material to form elongated tubular recesses on the face side of the panels. These curls indicated at *e* are fitted into recesses of the adjacent frame parts of the frame members, these recesses being formed by grooves 10. The frame members are ensheathed with sheet metal 11, this sheathing being secured and held in place by nails 12 driven into the inner edges of the frame parts of the frame members.

Sheet asbestos 13 is preferably interposed between the wood and the sheathing, this being applied before the sheathing is placed in position. Where the panels meet the frame parts, molding F is provided which covers the heads of nails 12 used for holding the sheathing to the frame members. This molding consists of independent strips placed against the face-side of the panels and fitted endwise between the frame members. Each strip is provided with a flange *f* whereby it is held in place, this being done by forcing these flanges into interstices 18 between the body A and the adjacent parts of the particular frame member. These flanges are of such depth as to extend with their free edges into curls *e* of the panels which occupy recesses 10 in the frame members and, sufficient force being applied by means of implements provided for the purpose, these edges are caused to be deflected within these curls by reason of the resistance encountered therein. These deflected portions form keys 14 whereby the molding strips are securely locked in place. The front edge of the molding strips may be turned in as shown at 15 and this in-turned part may be provided with a flange 16 which occupies interstice 18 between body A and the frame part, it entering this interstice simultaneously with the insertion of flange *f*.

In heavier grades of sheet metal the edge of flanges *f* may be notched out as shown at 17 in Fig. 7 whereby the metal is weakened so that the deflecting thereof, to form the locking key, is facilitated.

The members of the door and the materials used are built up as shown in Fig. 4. The complemental frame parts, *b—b*, *c—c* and *d—d* constituting one half of the wooden frame members B, C and D are laid,

out in proper positional, that is frame-forming, relation and so that all grooves 10 face upwardly. Observe lower portion of Fig. 1, also Fig. 4.

The stile parts *b*—*b* shown, are full length pieces and all cross pieces *c*, *d*, *d*, and *c* are placed transversely into the space between them. One set of the sheet metal panels E is now placed upon these frame parts and positioned so that their curled edges occupy grooves 10. See Fig. 1. Body-forming material A is next laid down over these panels and over the frame parts so as to cover the entire area of the door between its four edges. The sheet metal panels for the other side of the door are now placed upon body A in proper relation and so that curls *e* at their edges face upwardly. The other complemental parts of the frame members are now applied to complete the frame. On this side of the door the frame parts *c*, *d*, *d*, and *c* of the horizontal frame members are of full length, that is equivalent to the width of the door, so as to overlap the stile parts *d*—*d* to permit angular connection of the various frame members to each other. The complemental frame parts *b*—*b* which complete the stile members on this side are short pieces fitted in between the cross pieces, as best shown in Fig. 2. Nails 19 are now applied to connect the complemental parts of the frame-members to each other to form these frame-members complete as well as to connect the frame members, uprights and horizontals, to each other to form the frame. The nails are driven from one side into the frame parts and through body A into the frame-parts on the other side thereof so that while they hold the frame-parts to each other, to form the frame-members they also hold body A clamped between them. Sheet asbestos 13 is now wrapped around the wooden parts after which the metal sheathing 11 is applied. The molding strips F are finally placed upon the panels and inserted as before described. Of the two molding strips which meet at corners of the panels, one strip extends the full length between opposite frame parts, the molding of the other strip being cut away to form a miter joint. Observe Fig. 1, middle panel.

The invention is obviously applicable to shutters which as far as construction is concerned would be the equivalent to doors.

Certain features of the invention, for instance the manner of securing the molding, are also applicable in cases where the frame members are of sheet metal, in other words, where the construction is substantially as shown but with the wood omitted.

Having described my invention, I claim as new:

1. A fire-resisting door comprising body-forming material, which material is faced with sheet metal panels and the edges of which panels are shaped to form elongated tubular sheaths on the face side of these panels, superposed frame parts to sustain the body-forming material and the panels, the frame parts having grooves on their inner sides occupied by said sheaths, and independent molding strips fitted against the face side of the panels one for each of the angles where the panels meet the inner edges of the frame parts, said molding strips having flanges and being held in position by these flanges when occupying said tubular sheaths in a deflected condition.

2. A fire-resisting door comprising body-forming material, superposed frame members to sustain this material and provided with grooves in their inner sides where they abut against the body-forming material and sheet metal panels to cover the body forming material and extending between this material and the frame-members, the edges of these panels being turned into the grooves in the frame-members mentioned and shaped to occupy them whereby said panels are held in place.

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

THOMAS LEE.

Witnesses:
C. SPENGEL,
A. JOHNSON.

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