(No Model.) 2 Sheets—Sheet 1.

A. DE MAN.

FIRE RESISTING FRAME AND DOOR.

No. 603,442. Patented May 3, 1898.

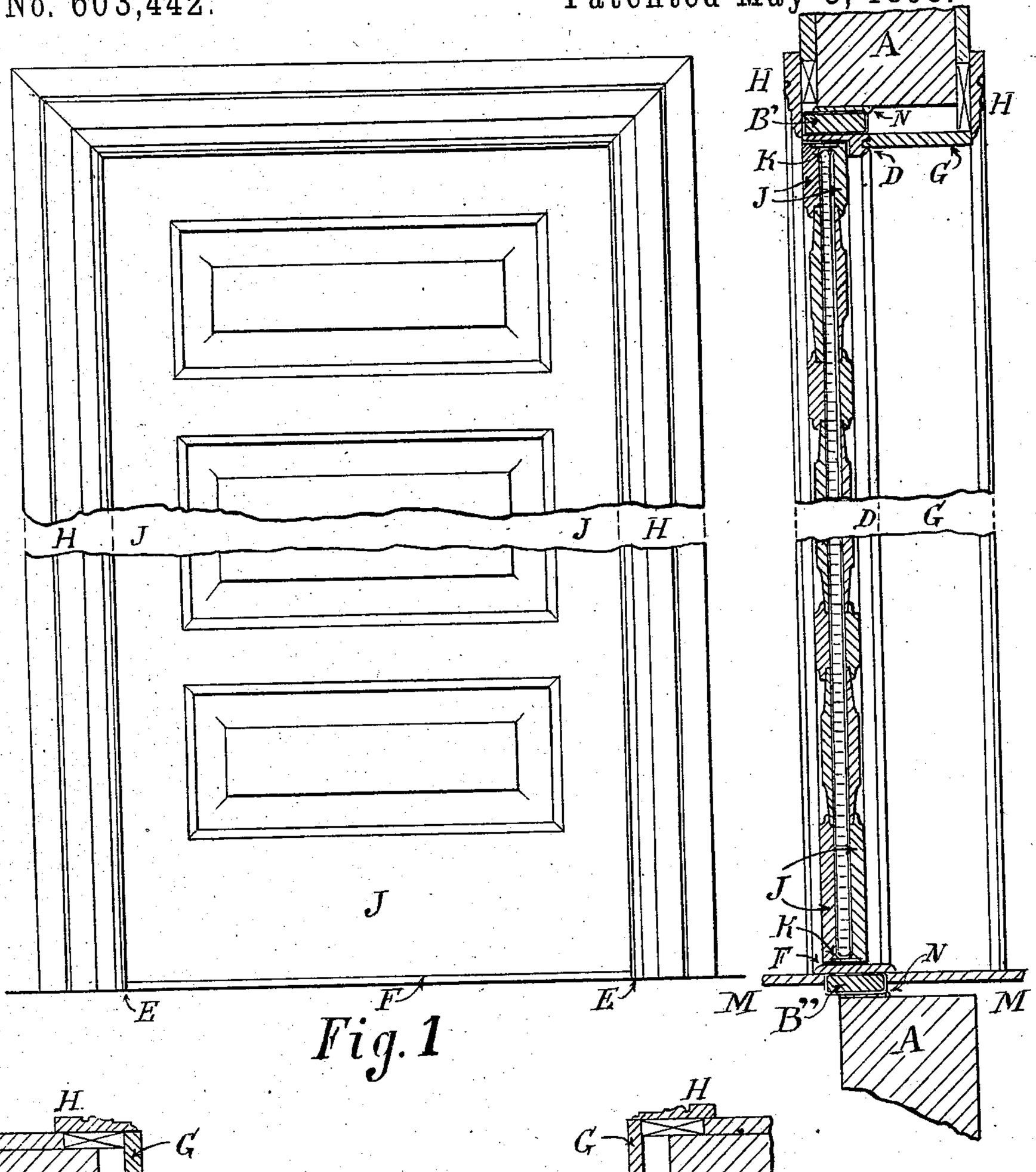

Fig. 1

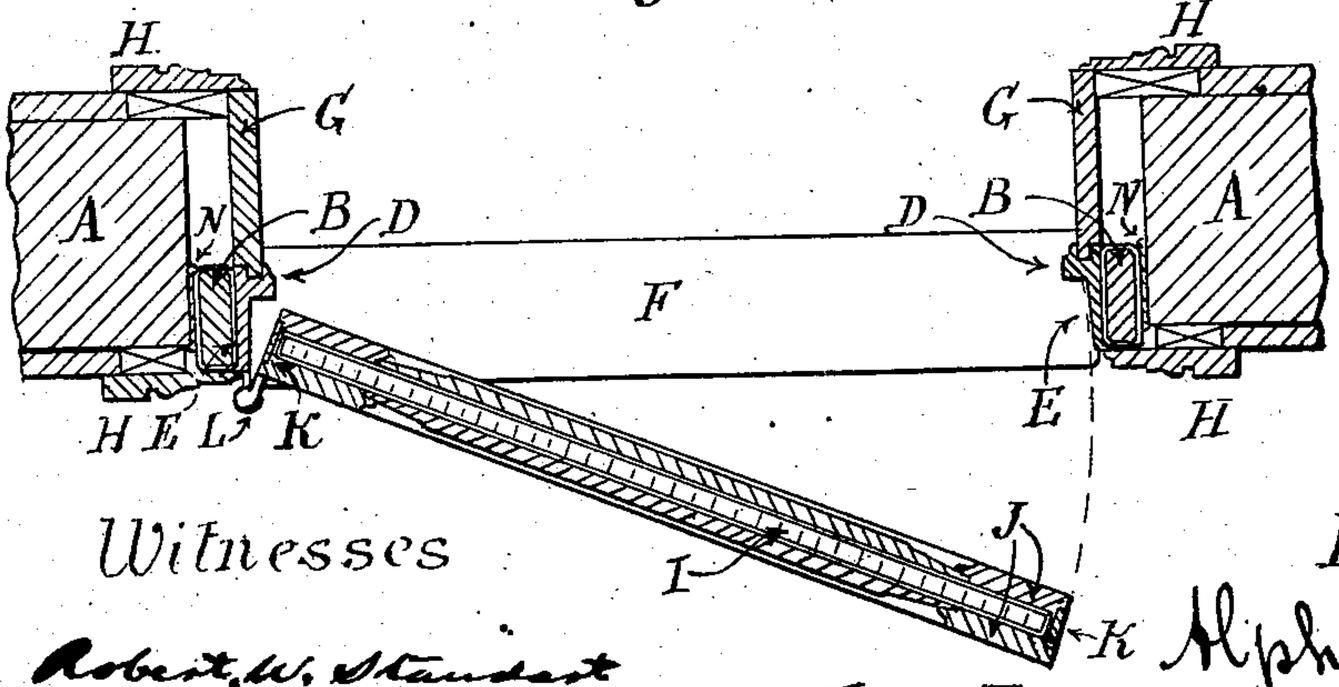

Fig. 2

Witnesses

Robert W. Standart

Joseph F. Standart.

Fig. 3

Inventor

Alphonse De Man

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4

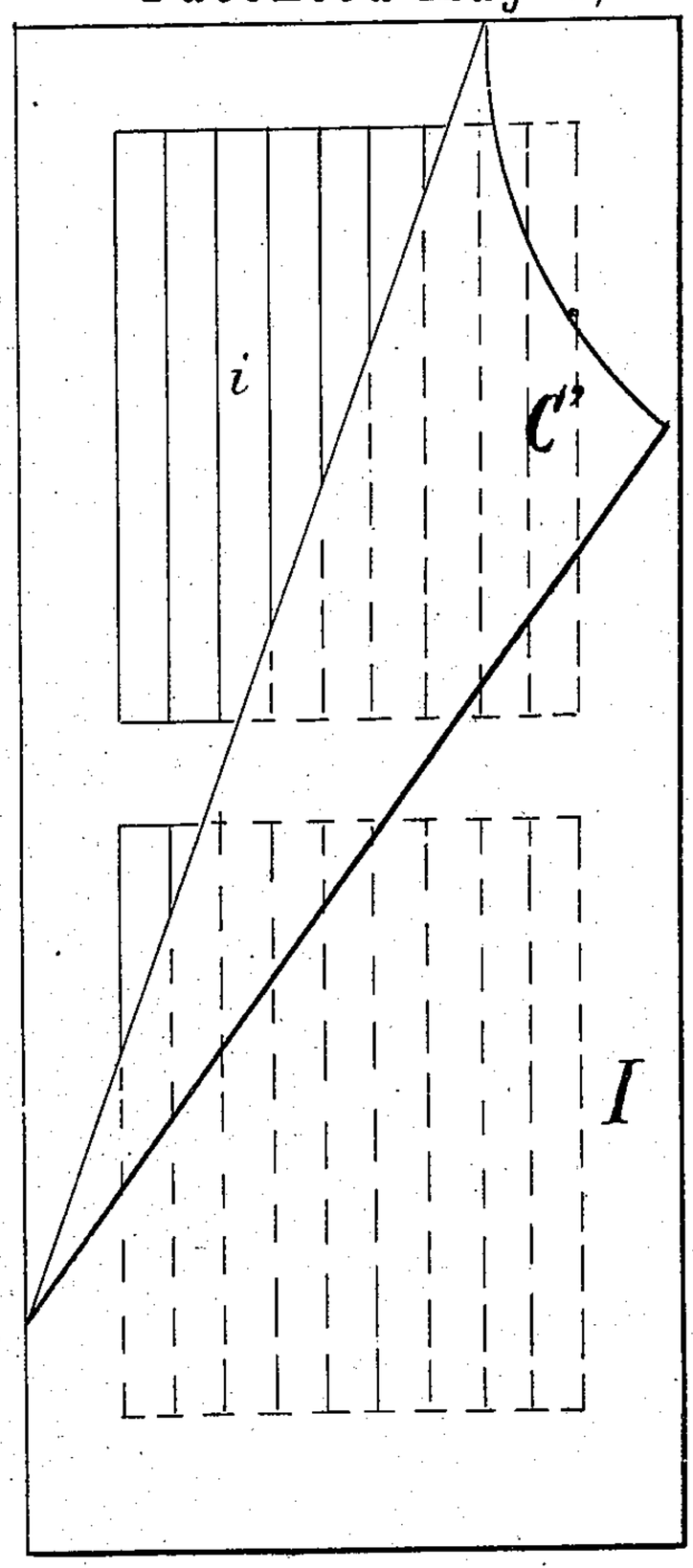

Fig. 5

Witnesses

Robert W. Staunton
Joseph G. Staunton,

Inventor

Alphonse De Man

UNITED STATES PATENT OFFICE.

ALPHONSE DE MAN, OF DETROIT, MICHIGAN.

FIRE-RESISTING FRAME AND DOOR.

SPECIFICATION forming part of Letters Patent No. 603,442, dated May 3, 1898.

Application filed July 3, 1895. Serial No. 554,847. (No model.)

To all whom it may concern:

Be it known that I, ALPHONSE DE MAN, of Detroit, Wayne county, Michigan, have invented a new and useful Improvement in Fire-Resisting Frames and Doors; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification.

The drawings comprise two sheets. On the first are Figures 1, 2, and 3. On the second are Figs. 4 and 5.

Fig. 1 is an elevation of a frame trimmed and a door with horizontal panels of ordinary design, a portion in the center being left out, shown by broken lines. Fig. 2 is a vertical section through the door-opening, showing the door and the position of the frame in the wall and its connection with extension-jambs and trim, also how the fire-protected core, which runs all around the opening, connects with the floor, the threshold lapping over the joint. Fig. 3 is a horizontal section through the door-opening and the relative parts, as specified in Fig. 2, showing the door partly open. Fig. 4 represents a face view of the core of the door, the door-facing being left off and the fireproof sheathing being partly turned over in order to show the lines of framework and flush flooring-panels. Fig. 5 is a horizontal section showing an enlarged detail of the door-frame with insulated core and filling between it and the wall, the veneer jamb, and its connection with the trim, also a portion of the door partly open, illustrating the combination of the insulated core with the wood facings and edge strip.

Like letters designate the same parts in the different figures.

In the accompanying drawings, A represents the wall with the door-opening.

B represents a horizontal section through the jambs of the core for the door-frame. B′ is the head, and B″ is the sill. This core forms a complete frame of common wood, and it should fill the opening in the wall. This core is entirely wrapped around with fireproof sheathing C, preferably glued with fireproof paste, so as to exclude the air from the wood.

D is the face-jamb, rabbeted out very thin at E.

E can be an independent strip up to dotted line *e*.

F is the threshold, veneered on the protected sill B″.

G is the extension-jamb.

H is the trim.

I represents core of the door; C, the fireproof sheathing.

J represents the door-facing. There are two of them to each complete door, applied on each side of the core, the wood and design of facing to match the finish of the room in which they show.

K is the thin strip, which is glued in the groove formed by the rabbeted edges of the door-facing, concealing the edge of the protected core.

L shows the hinges, with screws penetrating the cores of the frame and the door.

M is the floor.

N is the fireproof filling.

The object of my invention is to make wooden frames and doors to resist fire to such an extent that they will be able to confine a fire to the room where it originates and will not permit it to break through the opening which they protect until after several hours of the most severe fire which can possibly develop in a room.

My invention consists in introducing in the construction of wooden frames and doors a core or body entirely insulated with fireproof sheathing, rendering the same impenetrable to the blaze and the air, consequently preventing its combustion. This is obtained for the door-frame by making a common wooden frame B, the outside of which fits as near as practicable the opening in the wall A and the inside of which fits very nearly the size of the door on all sides, including the bottom. The surface of this frame B B′ B″ is entirely covered with a fireproof sheathing C, making it as air-tight as possible. The inside face of the jamb B and head B′ of this frame is veneered with a wood jamb D to correspond with the finish of the door, the sill B″ being veneered with a threshold F to correspond with the floor. The sizes of the door and frame should be so arranged as to leave very little wood at the rabbet E of the jamb between the finished size of the door and the fireproof sheathing of the frame—say one-

fourth inch. This frame when in place must be well anchored to the wall, and all holes between the outside of it and the wall must be well stopped with fireproof material N. Then the trim H can be put on up to the rabbet-strip E, and it conceals entirely the fireproof core. The thin threshold conceals the fire-protected sill. The door has also a wooden core I, covered on the two faces and all edges with fireproof sheathing, insulating it completely. On each side of this core a thin door-facing J is veneered right on the fireproof sheathing and firmly secured to the insulated core. These door-facings are a trifle larger than the core, projecting on all edges—say one-fourth inch. This projection is, however, rabbeted down flush with the fireproof sheathing up to half of the thickness of the two door-facings, thus leaving a groove all around the edge of the door, and a thin strip K of the same kind of wood as the outside of the door is veneered in this groove, concealing entirely the core at the edges of the door. The size of the door is to be so regulated as to require very little fitting to go into the rabbet of the frame. The thin wood strip E, veneered on the core at the rabbet of the jamb, and the strip K on the edge of the core of the door will admit of a first and some subsequent fitting should it be required through the swelling of the parts or the settling of the building. It will also admit the letting in of hinges and striking-plates without damaging the fireproof sheathing of the cores.

In case the door would have to stand the fire in a room after the thin facing on the door and the veneer and trim of the frame would burn off the protected cores of the door the frame would hold the fire for hours and it would take a long time for the two thin strips of protected wood in the rabbet to burn through; but if it is found necessary these one-fourth-inch strips could be treated with some fire-protecting preparation, which would then prevent the fire from eating through this narrow space. The screw of the hinges penetrates the fire-protected core of the door and frame, so the door would be held in place as long as the cores are not destroyed.

In some special cases the fireproof sheathing can be a metallic sheet, and the appearance of a panel door is obtained by planting on the metallic sheet thin strips representing the stiles and rails of the door.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A fire-resisting wooden frame or structure consisting of an interior wooden core, a covering of fireproof material inclosing it to prevent access of air for combustion, and a finishing-facing on the exposed portions of the insulating material.

2. The combination with a fireproof wall, having a door-opening therein, of a wooden door-frame, formed of a core of wood, a fireproof insulating-sheathing inclosing the core of wood, an exterior wood finish on the core, and a practically fireproof door within the frame, substantially and for the purpose set forth.

3. The combination with a fireproof wall, having a door-opening therein of a wooden door-frame, consisting of the core B, B′, B″, formed of wood, inclosed within a fireproof insulating-sheathing, and the face-jambs, D E veneered on the core admitting, to match any kind of wood, and a practically fireproof door therein, substantially, and for the purpose set forth.

4. In a fire-resisting door-frame composed of an insulated wooden core, and a wooden facing, the rabbet-strips E *e′* veneered on a fire-protected core, admitting to let in the hardware without damaging the fireproof sheathing, also to accommodate any variation of the door by altering the thickness of the rabbet-strips.

5. Wooden, fire-resisting, doors, comprising in combination an insulated core made of wood, inclosed by a fireproof insulating-sheathing extending unbroken over the faces, and the edges to exclude air for combustion, and a wooden finishing-facing thereon.

6. In a fire-resisting door, the combination with a wooden core, an insulating-sheathing inclosing the core (to the exclusion of air for combustion) a wooden facing on the faces of the core, and the strips K, (on the edges) admitting of letting in the hinges, and to fit and refit the door without disturbing the fireproof sheathing.

7. In a fire-resisting door, composed of an insulated wooden core, covered with wooden facing on each side the wooden strip K, running all around the door, covering the edges, and admitting of the door being adjusted, without affecting the fireproof sheathing of the core.

ALPHONSE DE MAN.

Witnesses:
ROBERT W. STANDART,
JOSEPH G. STANDART.