F. L. SAINO.

HINGE FOR FIRE DOORS.

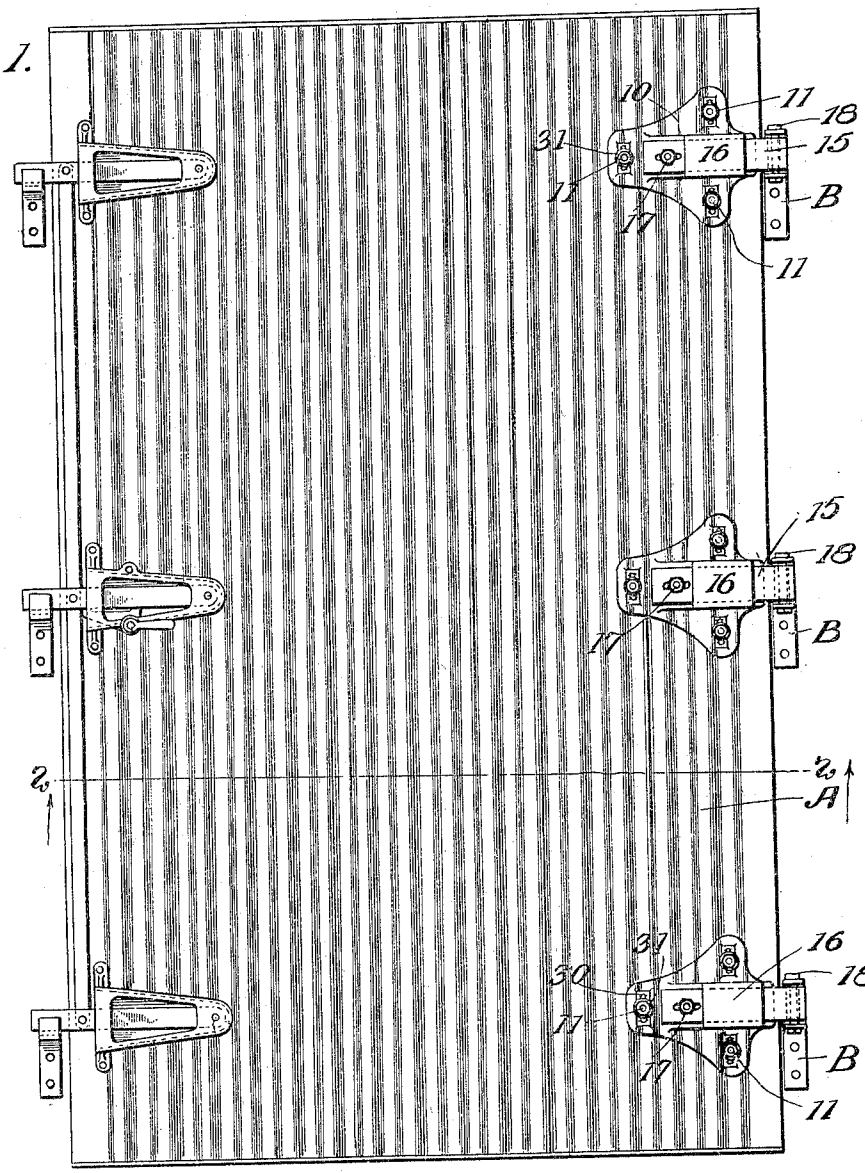
APPLICATION FILED MAY 26, 1915.

1,228,481.

Patented June 5, 1917.

2 SHEETS—SHEET 1.

Fig. 1.



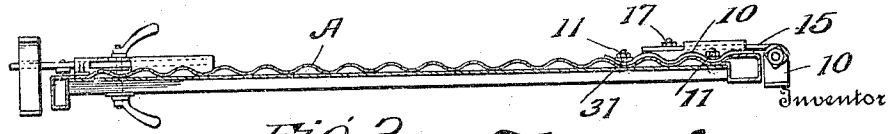


Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

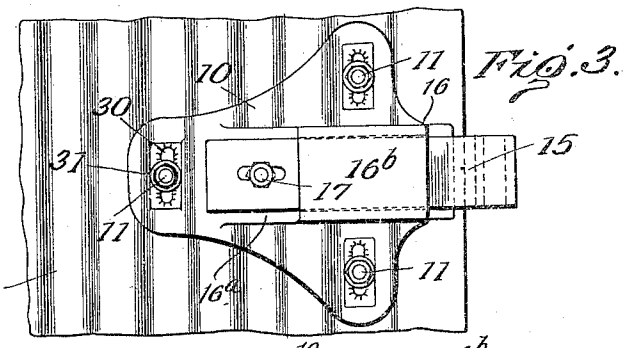


Fig. 3.

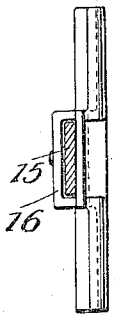


Fig. 4.

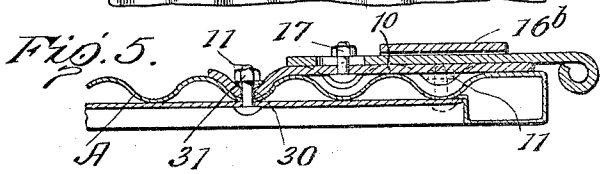


Fig. 5.

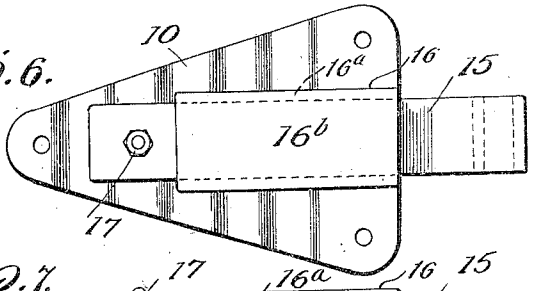


Fig. 6.

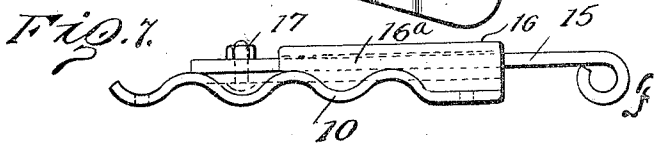


Fig. 7.

Witnesses

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UNITED STATES PATENT OFFICE.

FELIX L. SAINO, OF MEMPHIS, TENNESSEE.

HINGE FOR FIRE-DOORS.

1,228,481. Specification of Letters Patent. Patented June 5, 1917.

Application filed May 26, 1915. Serial No. 30,611.

To all whom it may concern:

Be it known that I, FELIX L. SAINO, a citizen of the United States, residing at Memphis, Shelby county, and State of Tennessee, have invented and discovered certain new and useful Improvements in Hinges for Fire-Doors, of which the following is a specification.

My said invention consists in an improved construction of fire shutters for fire-proof buildings, the present invention relating especially to the means for mounting and securing said doors on hinges, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar reference characters indicate similar parts,

Figure 1 represents a door of my improved construction in front elevation,

Fig. 2, a cross section on the dotted line 2—2 in Fig. 1,

Fig. 3, a detail view on an enlarged scale, showing a face view of one of the hinges,

Fig. 4, an edge view thereof,

Fig. 5, a central longitudinal sectional view,

Fig. 6, a detail view of the modified form of the hinge, and

Fig. 7, an edge view of the same.

In said drawings, the portions marked A represent the door, and B the part of the hinge secured to the wall or window-frame.

The door A is an improved construction of corrugated metal door such as shown in my co-pending application No. 32,948, and need not be particularly described herein.

The hinge members B are secured to the sides of the window casing, or in the brick or masonry alongside of said window casing, and may be of any appropriate or approved construction for the purpose. The hinge housings or plates 10 are secured to the face of the doors or shutters by bolts 11 which are inserted through vertical slots 30 in the recess corrugations of said plates and are clamped in position by means of nuts 31 which impinge against conical washers interposed between said nuts and the face of the housings 10. Said plate 10 is constructed substantially triangular and has the slots 30 located at the apices thereof, whereby to securely hold the plate at widely separated and properly distributed points. This manner of securing the plate holds the hinge against twisting or turning movement when the same is subjected to great strains. The edges of the slots through which said bolts 11 extend are serrated or notched, and the adjacent faces of the washers are likewise serrated or notched on their conical faces to engage with the serrations along the edges of said slots; thus, when the nuts are screwed up tightly, the washers will be engaged with the face of the housing to secure said housing from vertical movement on said door. By loosening the nuts said housing may be adjusted vertically as desired. The hinge-bars 15 are mounted in sockets 16 of the plates 10 and secured in horizontal adjustment by means of bolts 17 which extend through said plates and through slots in said hinge-bars, permitting said bars and plates to be adjusted in a horizontal direction in relation to each other. The eye on the outer end of each bar 15 is secured to the hinge member B on a pintle 18 in the usual manner. Said sockets 16 provide each a pair of lateral supporting members 16^a, and a plate 16^b, connecting the same, forms a retaining member for the bar 15 that fits closely within the socket.

In use, the shutter is put into position in the window or door opening and the hinge-bars are mounted on the hinge member B, the housings 10 being loosely connected with the shutter. The shutter is then adjusted in position to fit the opening when the nuts 31 on the bolts 11, which pass through the washers, are tightened, securely clamping said hinge housings to the door in this position. By this means all unnecessary labor, time and care in the adjustment of the parts before placed in position are saved. This is a decided advantage, inasmuch as, as is well understood, the window and door openings of brick and concrete buildings are not always of uniform dimensions and it is difficult to provide the bolt holes for the hinges in exactly the position required to support the shutter in position to fit the opening. By my arrangement, the shutters are made to fit without experiencing these difficulties.

It is obvious that those skilled in the art may vary the details of construction and arrangement of parts without departing from the spirit of my invention, and therefore I do not wish to be limited to such features except as required by the claim.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

A hinge comprising a corrugated plate of substantially triangular design and provided with slots disposed at the apices thereof and arranged in parallel relation, said slots adapted to receive bolts for securing the plate against a corrugated supporting surface and adjusting the same thereon in the lengthwise direction of said corrugations, said plate constructed with integral side portions and the plate portion between said side portions being constructed with a level surface, a portion formed integrally with and connecting said side portions and forming a socket piece therewith, a bar fitting closely within said socket piece, said bar and the plate portion constructed with a slot and an aperture respectively, and a securing bolt passing through said slot and aperture for adjusting the hinge at right angles to the first mentioned adjustment, substantially as set forth.

In witness whereof, I have hereunto set my hand and seal at Memphis, Tennessee, this 4th day of May, A. D. nineteen hundred and fifteen.

FELIX L. SAINO. [L. S.]

Witnesses:
JOHN L. STOUT,
JOHN W. FARLEY.

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