No. 667,292. Patented Feb. 5, 1901.

J. E. BROOKS.

FIREPROOF ROOF.

Application filed May 11, 1900.

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

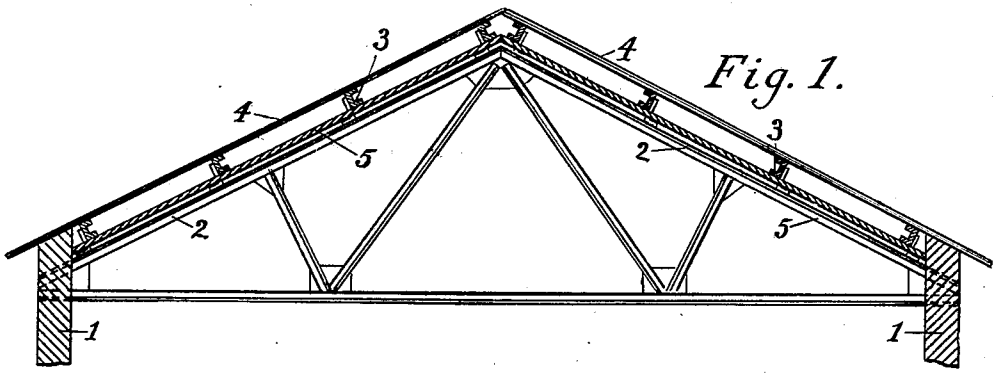



Fig. 2.

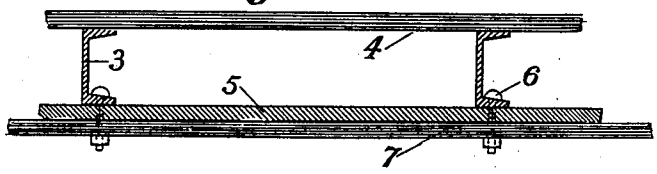



Fig. 3.

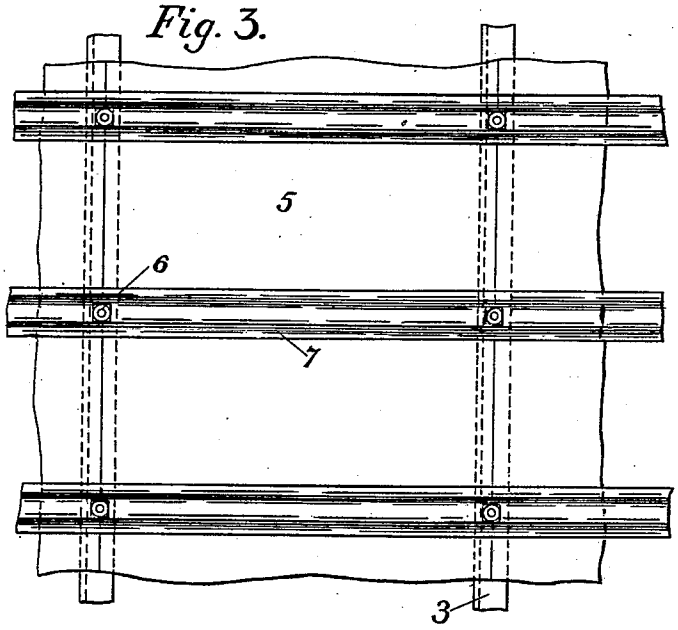
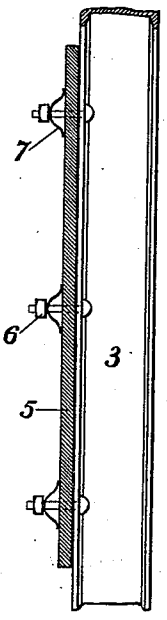



Fig. 4.




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(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

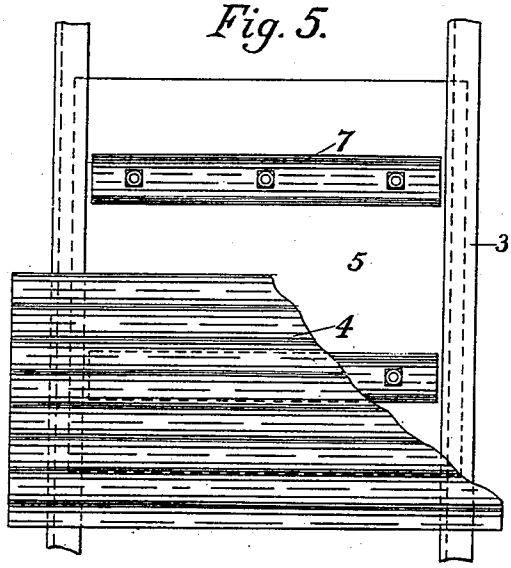



Fig. 6.

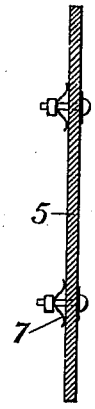



Fig. 7.

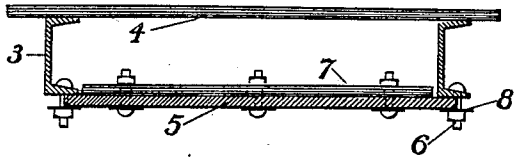



Fig. 8.

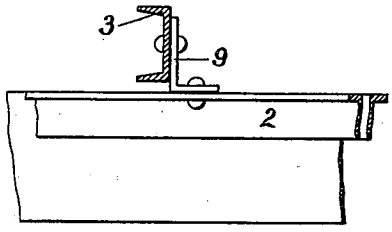
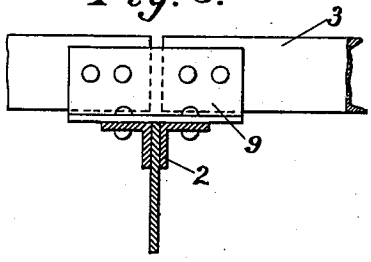



Fig. 9.




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# UNITED STATES PATENT OFFICE.

JAMES E. BROOKS, OF GLEN RIDGE, NEW JERSEY.

## FIREPROOF ROOF.

SPECIFICATION forming part of Letters Patent No. 667,292, dated February 5, 1901.

Application filed May 11, 1900. Serial No. 16,255. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES E. BROOKS, a citizen of the United States, and a resident of Glen Ridge, in the county of Essex and State of New Jersey, have invented a certain new and useful Fireproof Roof, of which the following is a specification.

The present invention relates to the construction of roofs, and has for one object the prevention of sagging and mayhap the falling of fireproof linings. Another end attained is the provision of a dead-air space between a metallic roof or weather-course and a lining of fireproof material, as one having asbestos as its base. Other objects will appear hereinafter.

To these ends the invention consists of features of construction and combinations of devices hereinafter described, and more particularly pointed out in the appended claims.

The invention is illustrated in the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end elevation of a roof in which the invention is embodied. Fig. 2 is a detail view, partly in section. Fig. 3 is a view from underneath of one form of the invention. Fig. 4 is a detail view, partly in section. Fig. 5 is a plan view of another form of the invention. Fig. 6 is a cross-section of a stiffened lining. Fig. 7 is a section of the form shown in Fig. 5. Figs. 8 and 9 are detail views of a connection between rafters and purlins.

The same part will be referred to by the same reference character.

In the drawings, 1 indicates walls; 2, rafters; 3, purlins; 4, an outside course, skin, or covering shown as corrugated-metal roofing resting on the purlins; 5, squares or the like of non-combustible lining, as one having asbestos or the like as a base.

In Figs. 2, 3, and 4 the lining 5 is shown as being secured directly to flanges of channel-bars or purlins by means of bolts and nuts 6 and corrugated-metal strips 7, the last named acting as stiffeners for the lining, which otherwise would sag, and thus open the seams, and perhaps even fall out. The stiffeners 7 are placed at the edges of the squares 5 and also at intermediate points and are continuous from one purlin to another in this form of the invention.

In Figs. 5 and 6 the strips 7 are of a length such that they pass between adjacent purlins and are secured to the upper sides of the squares 5 by rivets or other suitable fasteners, and two opposite edges of the squares rest on the washers 8 on the bolts and nuts 6, by which the lining is suspended at intervals from the purlins. The strips 7 prevent sagging of the lining in this form also.

The rafters and purlins are preferably separated by a space sufficient for the insertion of the lining between them, as by connecting them together by means of angle-supports 9, which are bolted or riveted to rafter and purlin, as shown in Figs. 8 and 9. Certain of the seams or edges of the lining-squares then rest on the rafters and the remainder come between them.

While I have shown strips of corrugated metal for the stiffeners, I do not limit myself thereto, since other forms of stiffener-strips may be used without departing from the scope of my invention and claims.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A roof construction comprising an outer covering of metal, spaced supports therefor, and an inner lining of non-combustible material at the under side of the supports, with metallic stiffeners for said lining, and means for securing the parts together, in combination, substantially as described.

2. A roof construction comprising an outer metallic covering, spaced supports therefor, an inner lining of non-combustible material, metallic stiffeners for the lining, and means for suspending said lining and stiffeners from the under side of said supports, in combination, substantially as described.

3. A roof construction comprising an outer metallic covering, purlins, rafters, supporting-angles connecting and spacing apart the rafters and purlins, an inner lining of non-combustible material passing between said rafters and purlins, and metallic stiffeners attached to said lining between purlins, in combination, substantially as described.

4. A roof construction comprising an outer

metallic covering, spaced supports therefor, an inner lining of non-combustible material at the under side of said supports, metallic stiffeners at the under side of the lining and extending from support to support, and means for attaching the lining and stiffeners to the supports, in combination, substantially as described.

5. The combination of rafters, purlins, and angles attached to both and holding the purlins at a distance from the rafters to provide spaces for the edges of lining material, substantially as described.

Signed at New York, in the county of New York and State of New York, this 9th day of May, A. D. 1900.

JAMES E. BROOKS.

Witnesses:
R. W. BARKLEY,
CHAS. A. BRODEK.