

(No Model.)

G. HAYES.
FIREPROOF CEILING.

No. 486,982.

Patented Nov. 29, 1892.

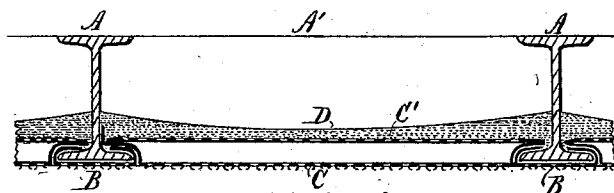


Fig. 1.

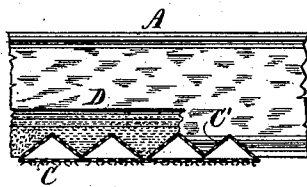


Fig. 2.

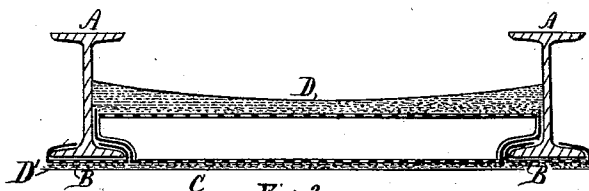


Fig. 3.

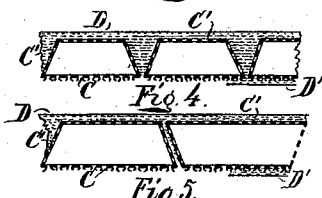


Fig. 4.

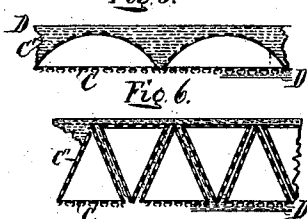


Fig. 5.

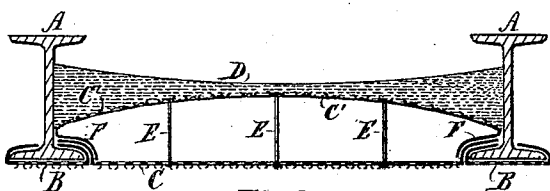


Fig. 8.

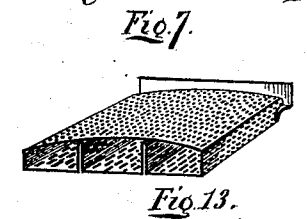


Fig. 7.

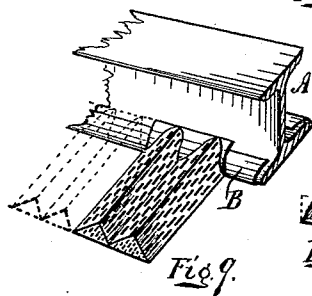


Fig. 9.

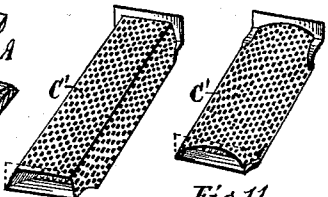


Fig. 10.

Fig. 11.

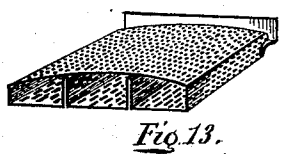


Fig. 13.

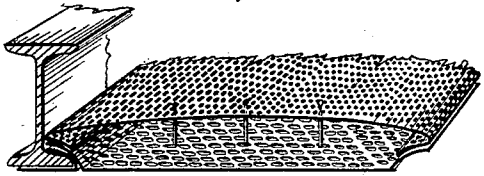


Fig. 12.

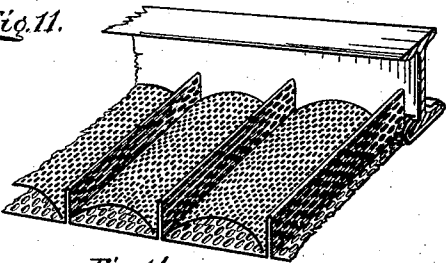


Fig. 14.



Fig. 15.

Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE HAYES, OF NEW YORK, N. Y.

FIREPROOF CEILING.

SPECIFICATION forming part of Letters Patent No. 486,982, dated November 29, 1892.

Application filed January 14, 1889. Serial No. 296,364. (No model.) Patented in France October 26, 1888, No. 193,756; in Belgium October 26, 1888, No. 83,740, and in England April 16, 1889, No. 6,517.

To all whom it may concern:

Be it known that I, GEORGE HAYES, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Ceiling Construction and Fireproofing between Flanged Beams (for which I have obtained patents in the following foreign countries: in Great Britain, No. 6,517, dated April 16, 1889; in France, addition to No. 193,756, dated October 26, 1888, and in Belgium, perfection to No. 83,740, dated October 26, 1888,) of which the following is a specification.

My improvements relate to iron-beam formations having ceilings underneath in buildings where fireproofing is desirable; and it consists of a covering or clothing for the lowermost face of the iron beams, each separately formed of sheet metal with its edges upturned and over the flanges of the beams, gripping or clamping thereupon, whereby it is secured thereto and sustained, the said covering formed with tongued apertures arranged at intervals throughout for reception of plaster applied to its lower face, as hereinafter set forth.

It further consists of a hollow blocking of sheet metal to extend from beam to beam, two sides, edges or ends molded or curved to adapt it for resting upon the flanges of the beams and admit of its presenting a face flush (or in a plane) with the clothing or covering of the beams hereinbefore mentioned, the said lower face of the blocking formed with tongued apertures arranged at intervals throughout for reception of plaster applied thereto, and said blocking formed as a boxing with an upwardly-facing surface adapted by apertures arranged at intervals throughout to receive plaster or other composition to be laid thereupon, as deafening fireproofing, &c. The hollow of the blocking interior forms an air-space also, serving to prevent passage of sound and heat, all as hereinafter more fully described, reference being had to the accompanying drawings, in which—

Figure 1 represents a section transverse to the run of the beams, showing the covering or clothing to under face of beams and the blocking extending or bridging between the beams.

Fig. 2 is a sectional view of the same construction at right angles to Fig. 1. Fig. 3 is a similar sectional view to Fig. 1, but showing increased dead-air space within the blocking. Figs. 4, 5, 6, and 7 are cross-sections of blockings presenting modifications in shaping and manner of placing several of the blocks together. Fig. 8 represents sectionally another modification in blocking. In this case the upper surface is arched from beam to beam. Fig. 9 represents portions of a beam and blocking corresponding with Figs. 1 and 2 in perspective. Fig. 10 is a perspective view of blocking like Figs. 4 and 5. Fig. 11 is a perspective view of blocking like Fig. 6. Fig. 12 is a perspective view of blocking like Fig. 8, with a beam at one side. Fig. 13 is a perspective view of blocking arched oppositely to that of Fig. 12. Fig. 14 is a perspective view of another modification in form of blocking, the lower or ceiling sheet formed with folds at intervals projecting upward with sheet metal sprung into arch form between the uprights, forming upper faces of boxes. (Here shown as several united.) The beam at one side is also shown. Fig. 15 represents a piece of the sheet metal used for the beam-covering, and also for the lower face of blocking, showing one of the tongued apertures which are formed therein at intervals throughout.

On the drawings, A indicates the iron beams, such as usually employed in buildings.

B indicates the clothing or covering applied to the under side or face of the beam. Its edges are bent upward and over the flanges of the beam, gripping or clamping thereon and securing the clothing to the beam. This covering-plate is prepared to receive plastering and serve as lathing by apertures arranged at intervals throughout, the edge metal of each of which is turned outward with a backward bend or curve at the verge of the opening and left projecting as tongues, hooks, or barbs, which, with the apertures, afford secure "key" for the plaster when applied thereto.

C indicates the lower or ceiling face of the blocking. This face of the sheet metal is also prepared to receive plastering by apertures arranged at intervals throughout. The edge metal of each aperture is turned outward with a backward bend or curve and left projecting

as tongues, hooks, or barbs to afford key for the plaster in conjunction with the apertures.

C' indicates the upper face of the blocking, perforated or otherwise apertured as a means of holding plaster thereto.

D indicates the plaster or other suitable composition or material laid upon the surface C' to serve as deafening and to prevent passage of fire between the beams.

E indicates rods, wire, or strips of metal for fastening the two sheet-metal faces at a proper distance when forms like that of Figs. 8 and 12 are used.

At F the blocking is formed to rest upon the flange of the beam and fit thereto, being curved or molded to a form corresponding to the face of the flange of beam and admitting the lower face C of the blocking down far enough to bring the face on a line flush (or in a plane) with the covering B of the beam, so that plaster applied over the surface of both will form a ceiling with a plane surface. The blocking is formed hollow, so that its interior becomes a dead-air space, conducive to prevention of sound and passage of fire and influence of heat.

I do not confine myself to the precise forms shown, as they may vary according to circumstances.

All the forms of blocks shown, except Figs. 8, 12, and 14, may be made of one piece of sheet metal and preferably so, but also may be made of pieces joined in any suitable manner. That of Figs. 8 and 12 may be all in one piece for short span, but for large span would be in two pieces and connected by the rods E. That of Fig. 14 would always be in several pieces, connected by soldering, riveting, &c., when desirable.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A covering for the under surface of iron

beams, of sheet metal, having apertures arranged at intervals throughout, the edge metal of which is turned outward and with a backward bend or curve projecting as tongues, hooks, or barbs to hold plaster and having its edges turned over to clamp the flanges of the beams, essentially as shown and described.

2. A trough-like covering-plate for the lower face of iron beams, with upturned edges for securing to beams and apertures at intervals throughout its face, and projecting hooks to grasp and hold plaster thereto, essentially as shown and described.

3. A hollow sheet-metal blocking for use between iron beams, molded or formed at two edges or ends with curves to rest upon flanges of beams, with its lower face flush with the lower face of beams to serve as ceiling-lath, the said lower face apertured at intervals, each aperture having at its verge raised and projecting tongues, hooks, or barbs, as herein set forth, the upper face of the blocking also apertured, and all constructed essentially as shown and described.

4. A ceiling construction consisting of a covering-plate for iron beams and a hollow boxing or blocking for insertion between the beams, with its lower face flush with the covering-plate of beams and all apertured, and with projecting tongues for reception of plaster, essentially as shown and described.

5. The combination of iron beams, apertured and tongued sheet-metal covering-plate with upturned flanges gripping the beams, and hollow apertured and tongued sheet-metal blocking between the beams, formed and arranged essentially as shown and described.

GEO. HAYES.

Witnesses:

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FRED STEPHANIE.