(No Model.)

G. B. PHELPS.

FIRE PROOFING AND FURRING DEVICE.

No. 279,011. Patented June 5, 1883.

Fig. 1.

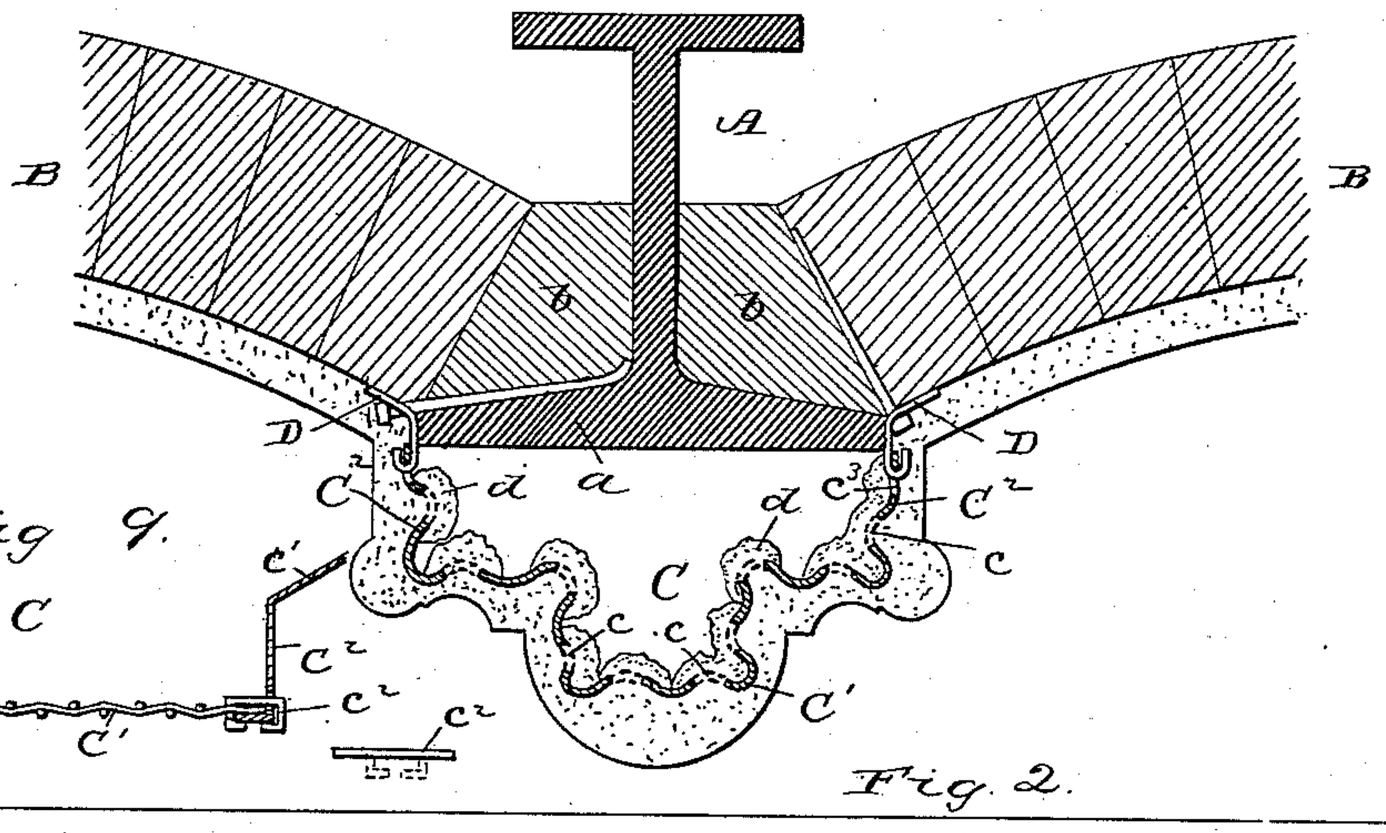


Fig. 9.

Fig. 2.

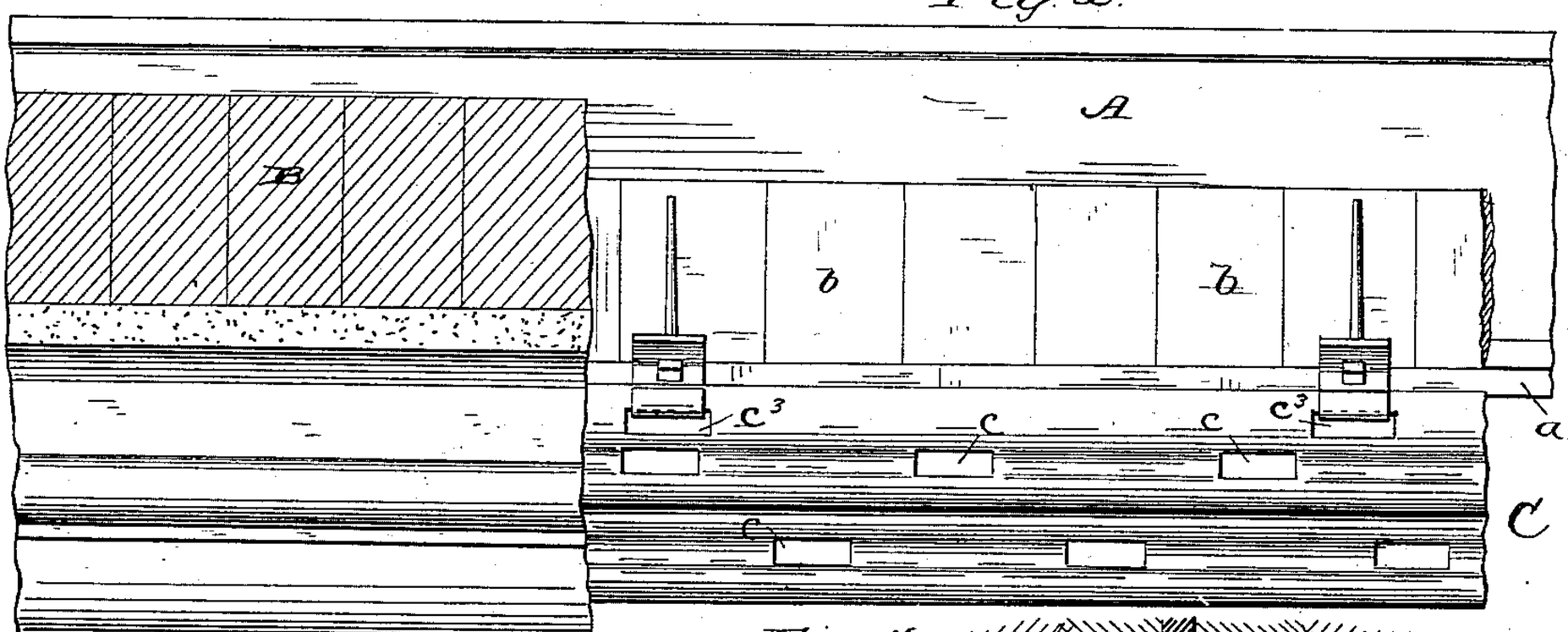


Fig. 4.

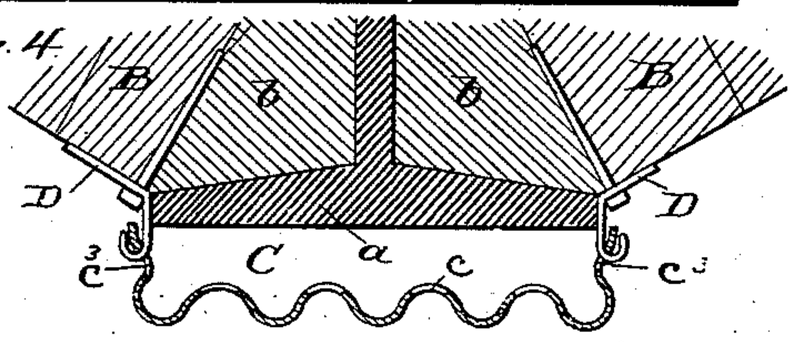


Fig. 3.

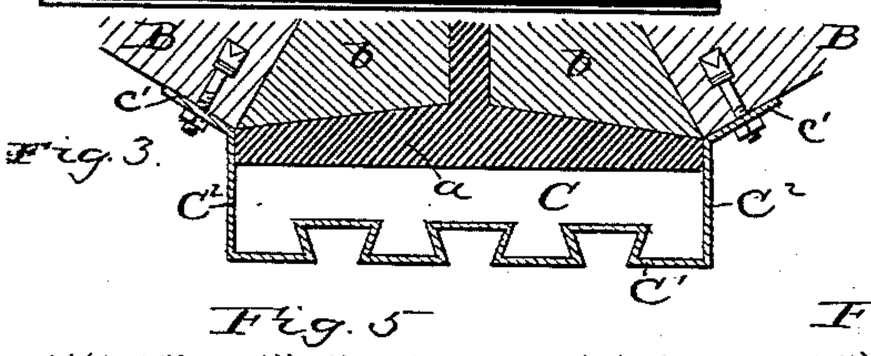


Fig. 5

Fig. 7.

Fig. 6.

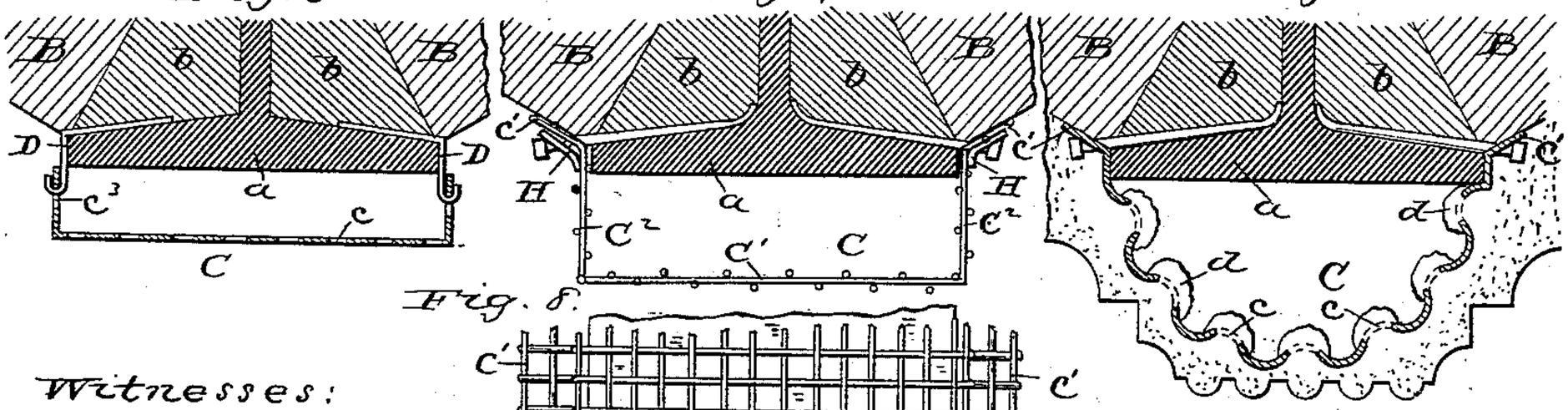
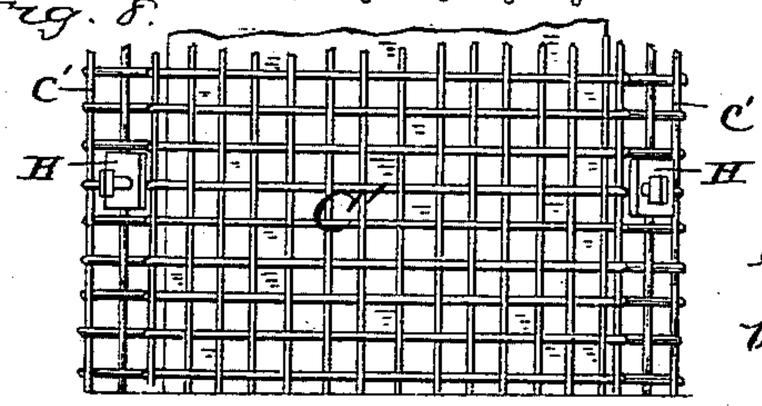


Fig. 8.



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atty

UNITED STATES PATENT OFFICE.

GEORGE B. PHELPS, OF WASHINGTON, DISTRICT OF COLUMBIA.

FIREPROOFING AND FURRING DEVICE.

SPECIFICATION forming part of Letters Patent No. 279,011, dated June 5, 1883.

Application filed January 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. PHELPS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Fireproofing and Furring Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a section of a portion of a ceiling, showing my improvement with plaster applied thereto. Fig. 2 is a side view, showing the molding, a part of the same being broken away to show the beam and furring attachment. Figs. 3, 4, 5, 6, and 7 are sectional views, showing modified forms of the attachment and various modes of securing the same to the ceiling. Fig. 8 is a bottom plan view of Fig. 7. Fig. 9 shows another method of using wire-cloth as a furring attachment.

A is a beam of an ordinary form, upon which arches B B are supported, the lower flange, *a*, of said beam forming a bearing for the skewbacks *b*.

C is a furring device or form and support for the plaster, having orifices adapted to receive the keys *d* of the plaster and cause the same to adhere securely. This furring device C may be made of sheet metal or wire-cloth, and is formed with the bottom part, C′, upwardly-extending side parts, C^2, and, in some cases, flanges *c′*, which fit the soffit of the arch. The device C is suspended below the beam, so as to leave a space between it and the lower surface of the beam. By thus placing it the beam is more effectually fireproofed, room is afforded for the plaster-keys, and a hollow base for the molding formed upon it, which will facilitate the ornamentation of the ceiling and materially diminish the cost and weight of the molding. The attachment C may also be so shaped (see Figs. 1 and 6) as to have an outline in transverse section corresponding roughly with the form of the molding to be applied thereto, so that the plaster required will be a comparatively thin coat, having only sufficient thickness to admit of properly shaping it over the base C and to prevent cracking. When sheet metal is used to form the part C it may be plain and straight in cross-section, as shown in Fig. 5, or corrugated in either of the manners shown in Figs. 3 and 4. In either of the forms shown in Figs. 4 and 5, I perforate the part C at suitable intervals, as shown at *c*, in order to afford opportunity to the plaster to key securely to it. Wire-cloth may also be used to form the part C, as shown in Figs. 7 and 8, the plaster entering through the reticulations of the same and obtaining a firm hold; or wire and sheet metal in combination may be employed, as shown in Fig. 9, the sheet metal forming the continuous side pieces of the device C and the wire-cloth being used for the bottom portion, being fastened to the side pieces by means of flanges on the same and ordinary rivets, or by clamps c^2, as shown in said figure. In this construction the stiffness of the sides prevents any upward yielding when the plaster is applied.

In Fig. 1, I have secured the part C in place by means of hangers D, which are nailed to the under surface of the arch, and are provided with hooks at their lower ends, which engage with apertures c^3 in the sides C^2. These hangers are first secured in place, and the piece C of the desired shape is afterward hooked on. In Fig. 5 the hangers are held between the skewback and flange *a*. The part C may, however, be provided with the flanges *c′* and directly nailed or secured by expansion-bolts to the soffit of the arch. When wire-cloth is used in this way I prefer to interpose washers H between the nail-head and the wire.

In perforating the sheet metal of the corrugated form shown in Figs. 1, 4, and 6, it is advantageous to make the perforations for the keying of the plaster in those bends of the corrugation which are concave relative to the side to which the plaster is applied, as shown in the drawings, rather than in the convex bends. In the latter case the connection of the plaster outside with the key on the inside will be much weaker, and the plaster, consequently, more likely to fall; but when the perforations are made in the concave corrugations a very thin coating may be laid over the convex corrugations without weakening its connection with

the key or rendering it liable to cracking and falling.

The advantages of my invention in readiness of attachment to the ceiling, in fireproofing purposes by making a space between the plaster and the beam, in furnishing a furring to which the plaster will cling securely, and which may be used as a hollow form for the molding, (thereby decreasing its weight and cost,) its strength and stiffness, and its cheapness of construction, are apparent.

I do not in this application limit myself to the use of the device C with a beam, as it is apparent that it may be used for fireproofing and the support of moldings in other situations, as in the constructions of stairways and ornamentation of ceilings.

I am aware that a continuous ceiling of corrugated sheet metal or wire fabric has been used to support the plastering, and that corrugated sheet metal has been applied to the under surface of beams to serve the same purpose, and I do not claim such constructions, broadly.

I do not in this application claim all the modifications shown, it being my intention to claim such constructions as are not covered by the following claims in other applications, and I hereby reserve my right to do so.

What I claim is—

1. In combination with a molding, a hollow metallic furring device parallel with the molding and of substantially the same contour in cross-section, secured to the surface to be plastered, and adapted to receive the keys of the plaster, substantially as set forth.

2. The metallic hollow form or base C for the molding, secured to the ceiling, adapted in outline to the form of the molding, and having apertures for the keying of the plaster, substantially as set forth.

3. The combination, with the metallic beam A and arches B, of the fireproofing and furring device C, secured to the surface of the ceiling independently of the beam, partially surrounding the same at a distance therefrom, and adapted to support the plastering, substantially as set forth.

4. The combination, with the beam, of the furring device having the bottom part, C′, and upwardly-extending side parts, C^2, whereby it is secured to the ceiling partially surrounding and at a distance from said beam, substantially as set forth.

5. The combination, with the beam A and a metallic furring device beneath, parallel to and of substantially the same width as the beam, and adapted to receive the keys of the plaster, of the individual hangers D, secured to the ceiling at the sides of the beam and supporting said device, substantially as set forth.

6. The combination, with the beam A and a metallic furring device arranged longitudinally beneath the beam, and of substantially the same width, and adapted to receive the keys of the plaster, of the hooked hangers D, secured to the ceiling at the sides of the beam independently of the furring device and supporting the same, substantially as set forth.

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

GEORGE B. PHELPS.

Witnesses:
J. S. BARKER,
A. J. HOUGHTON.