

No. 770,617.

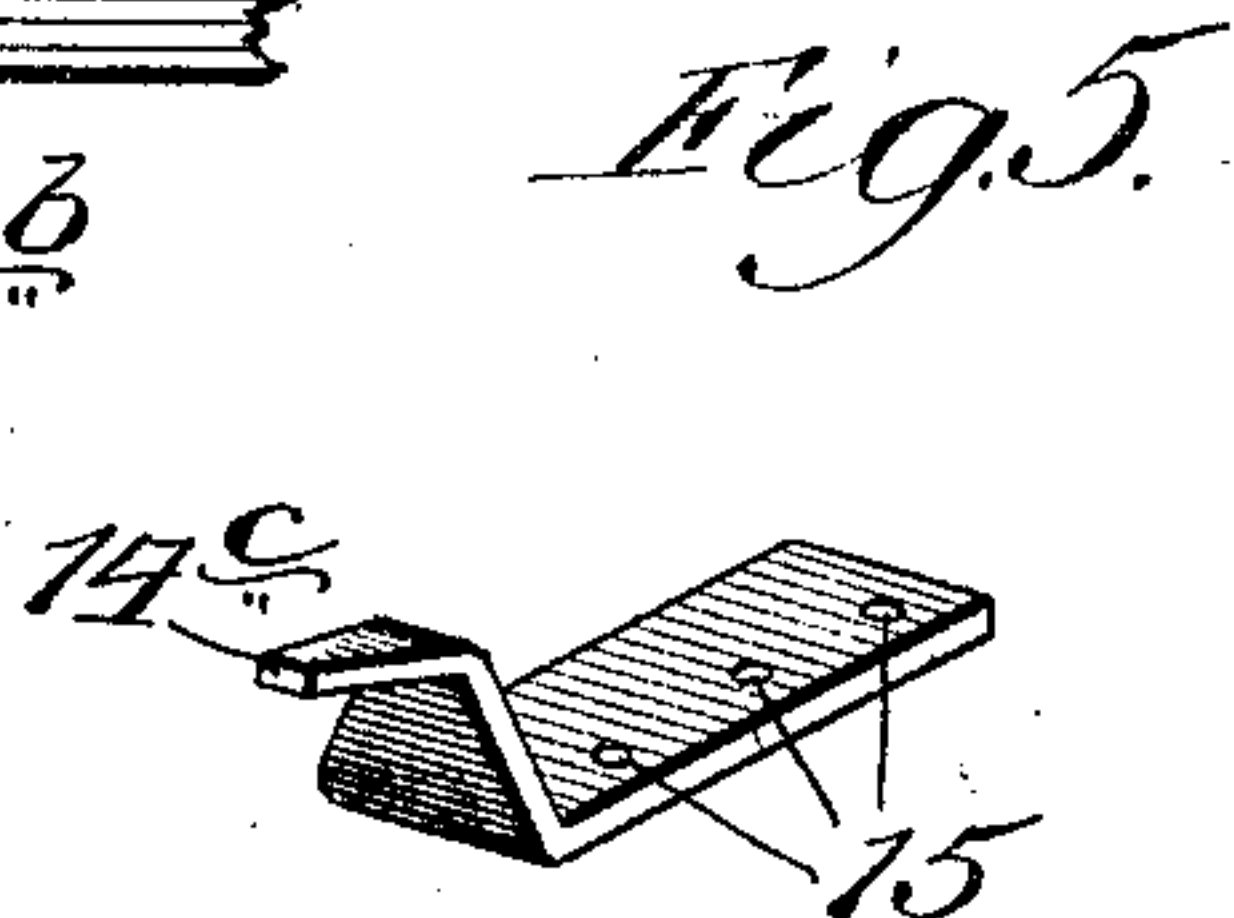
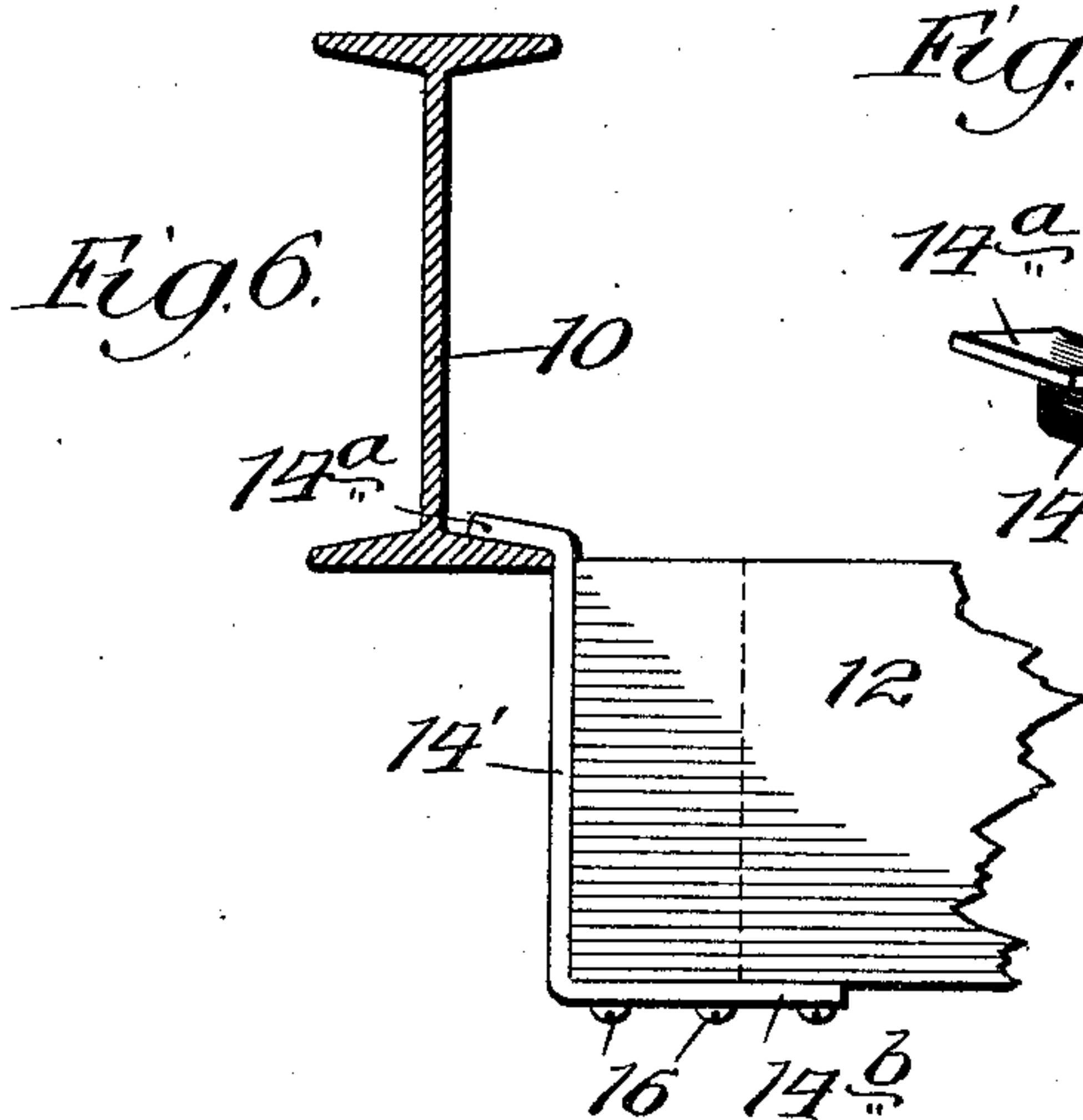
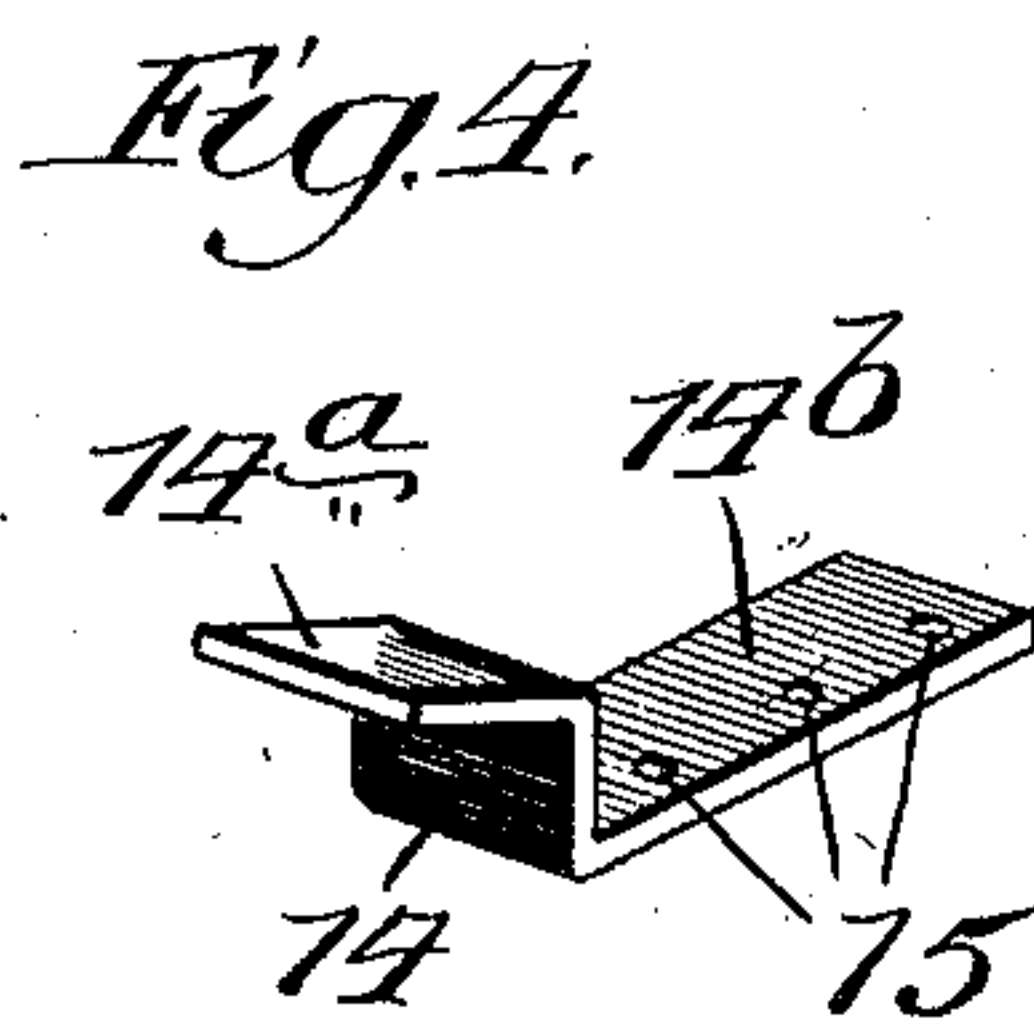
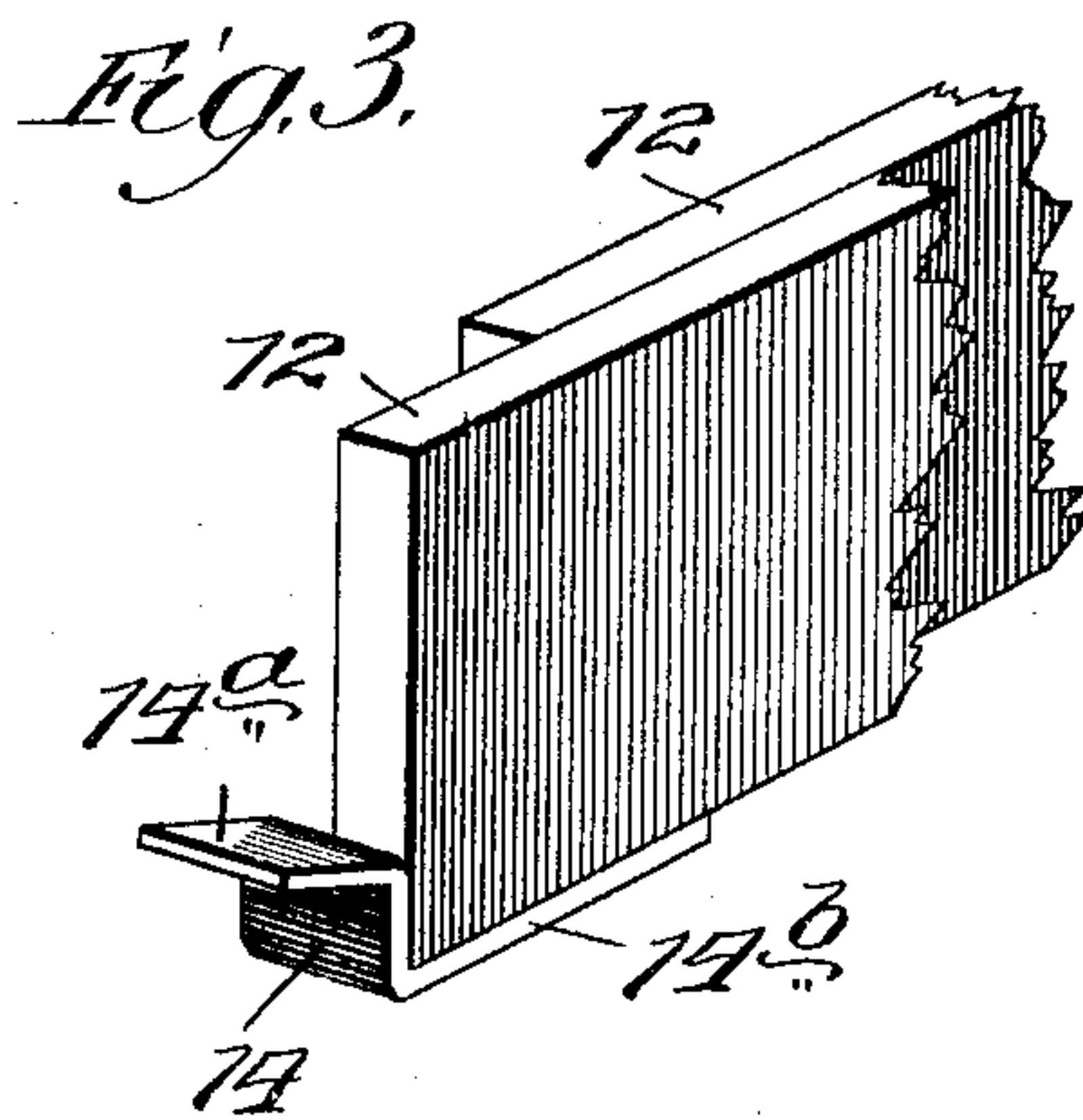
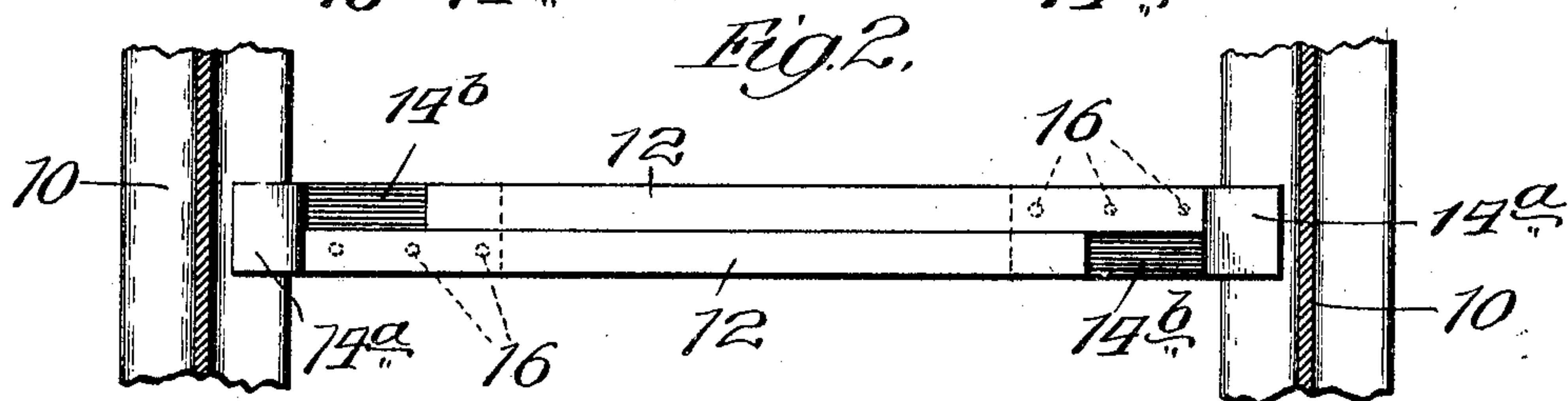
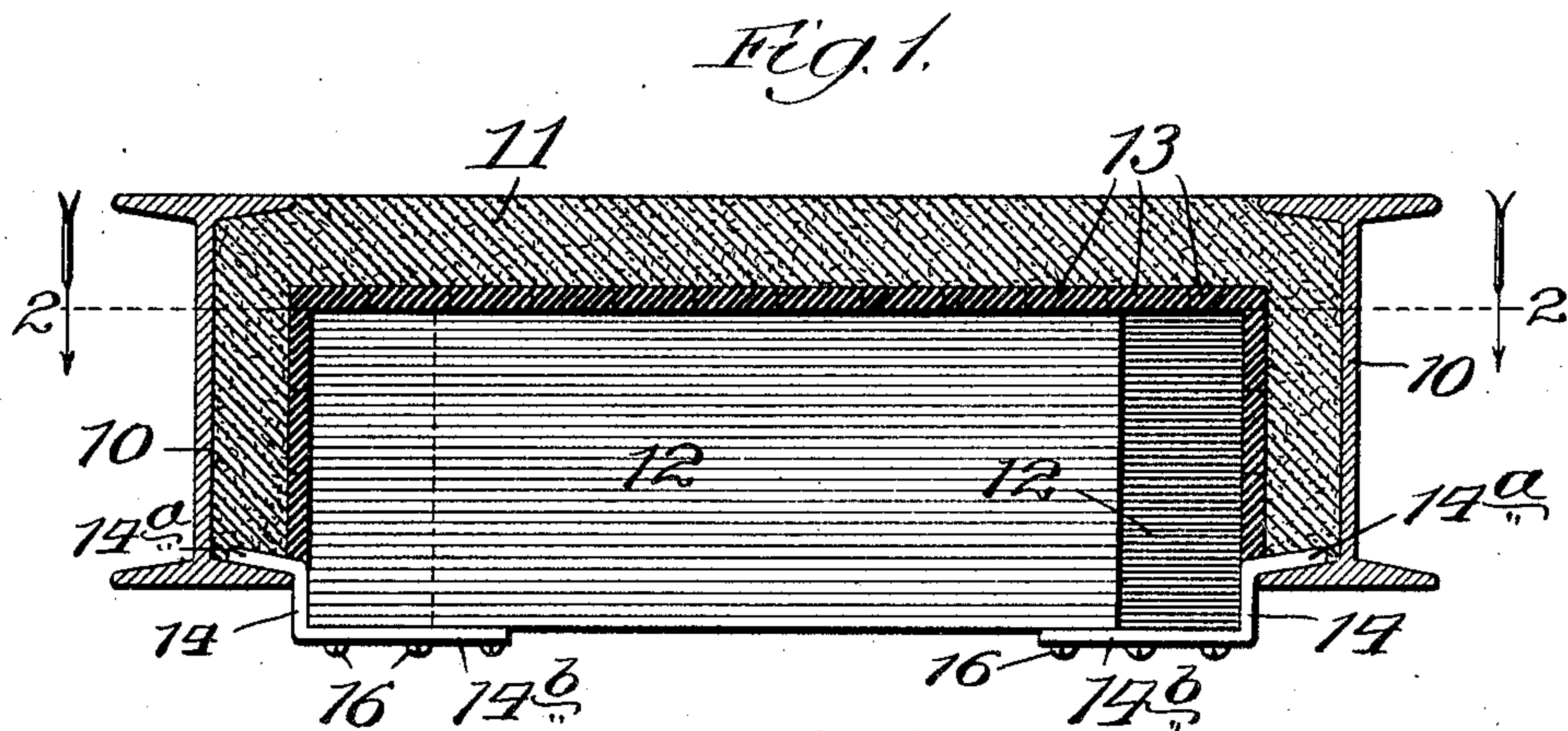
PATENTED SEPT. 20, 1904.

G. B. WAITE.

EXTENSIBLE CENTERING SUPPORT.

APPLICATION FILED JULY 6, 1904.

NO MODEL.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

GUY B. WAITE, OF NEW YORK, N. Y.

## EXTENSIBLE CENTERING-SUPPORT.

**SPECIFICATION** forming part of Letters Patent No. 770,617, dated September 20, 1904.

Application filed July 5, 1904. Serial No. 215,328. (No model.)

*To all whom it may concern:*

Be it known that I, GUY B. WAITE, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Extensible Centering-Supports Employed in the Construction of Arches, of which the following is a specification.

My invention relates to an improved form and construction of temporary centering-supports used in the construction of arches of concrete, masonry, and the like.

In the class of devices to which my present invention relates the concrete is filled in upon a temporary wooden form or support, consisting of lagging-strips transversely overlying a series of ribs disposed across the space between two adjacent permanent I-beam supports of the permanent arch, such as the floor-beams of a fireproof building, and these ribs are arranged in pairs, each having a suspension hook or hanger secured to one end, by which it is hung from the lower flange of the I-beam, its opposite end resting slidably upon a laterally-extended support on the companion rib. Such a construction is illustrated in Letters Patent No. 655,426, granted to me August 7, 1900.

The object of my present invention is to simplify and cheapen the above-described construction, and this I accomplish by a construction in which the hanger and the lateral support for the other rib are combined in a single integral member by varying the form of the hanger hitherto used and giving it an inwardly-extending base adapted to be secured to the lower edge of the end portion of the rib and making said base long and wide enough to constitute a rest on which the adjacent end of the companion rib may be slidably supported.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical cross-section through that portion of an arched fireproof floor of concrete or the like lying between two adjacent I-beams, showing my improved centering structure in side elevation therein. Fig. 2 is a top view of that portion of Fig. 1 lying below the line 2 2 of the latter figure. Fig. 3

is a perspective view of one end of the companion ribs, showing the hanger attached thereto. Fig. 4 is a perspective view of the hanger detached. Fig. 5 is a perspective view of a slightly-modified form of hanger; and Fig. 6 is a view generally similar to Fig. 1, illustrating in broken elevation a centering-support adapted for the formation of a low or "flat" arch.

Referring to the drawings, 10 designates the usual floor-girders in the form of I-beams, constituting the permanent supports for the arch.

11 designates an arched filling of concrete, cement, or other fireproof material. To support this material as it is laid in place, I employ a series of transverse ribs disposed side by side in pairs, said ribs being designated by 12 and themselves directly supporting the lagging-strips 13, laid transversely thereof.

Coming now to that feature in which my invention chiefly resides, 14 designates the vertical portion or stem, 14<sup>a</sup> the outwardly-projecting lip, and 14<sup>b</sup> the rearwardly-extending base of an integral iron hanger, through the agency of a pair of which the ribs are suspended from the I-beams. This hanger is made from a strip of flat iron bent transversely at two places into the form shown and of a width equal substantially to the combined width of the two ribs, as shown in Fig. 2. The base 14<sup>b</sup> is of considerable length, and, as shown in Fig. 4, has a series of holes 15 formed therethrough along one edge, whereby it may be secured by screws or nails 16 to the lower edge of the rib. When so secured, the base 14<sup>b</sup> affords a laterally-projecting rest or support for the adjacent end of the companion rib, which latter has secured to its other end a similar hanger constituting a support for the adjacent end of said first-named rib, the two ribs being thus capable of sufficient contraction and expansion longitudinally to afford a fit between the I-beams. The stem 14 of the hanger rises opposite the end face of the rib, to which it is secured, and the lip 14<sup>a</sup> takes over the lower flange of the I-beam, strongly suspending the entire structure from the latter in the manner plainly shown in Fig. 1. The hangers



may be made in varying heights or lengths to suit varying heights of arches, as illustrated in Fig. 6, wherein a long hanger 14' supports the ribs for a low or flat arch. In order to

5 reduce the size of the hole left in the concrete by the removal of the hanger after the concrete has set, the lip may be tapered toward its point, as shown at 14° in Fig. 5, or otherwise reduced in size.

10 While I have shown and described the upper ends of the hangers as adapted to take over and rest upon the flanges of the permanent I-beam supports and contemplate such as their principal mode of use, yet such a manner of suspending the hangers is not of the

15 essence of the invention. In some cases side boards running parallel with the I-beams on either side of and suspended from the latter are employed, and in such cases the upper ends

20 of the hangers would hook over the upper edges of such side boards. My invention also is not concerned with any particular form or contour of centering-ribs. For convenience and brevity of illustration I have shown only

25 plain rectangular ribs; but it is obvious that the herein-described rib supporting and suspending hanger is applicable to other forms of ribs, such as curved ribs or ribs having straight intermediate portions and rounded or

30 cut-down ends.

From the foregoing it will be seen that my invention provides a very simple, light, inexpensive, and easily constructed and manipulated centering-support possessing a minimum of parts and capable of being advantageously employed in connection with all kinds of arched or flat floor-fillings for fire-proof buildings and other structures.

I claim—

40 1. In a centering-support for arches, the

combination with a pair of ribs disposed side by side and longitudinally adjustable relatively to each other, of hangers secured to opposite ends of said ribs, respectively, the inner ends or bases of said hangers extending 45 inwardly of and against the lower edges of said ribs and being of sufficient length and width to afford each a rest for the adjacent end of the companion rib, substantially as described. 50

2. In a centering-support for arches, the combination with a pair of ribs disposed side by side and longitudinally adjustable relatively to each other, of flat bent iron hangers secured to opposite ends of said ribs, respectively, the inner ends or bases of said hangers extending inwardly of and against the lower edges of said ribs for some distance and being each of a width substantially equal to the combined width of the ribs to thereby form a rest 60 for the adjacent end of the companion rib, substantially as described.

3. In a centering-support for arches, the combination with a pair of ribs disposed side by side and longitudinally adjustable relatively to each other, of hangers by which said ribs may be suspended from and between the permanent arch-supports, each of said hangers being formed of a flat iron strip bent transversely at two places to form an inwardly-extending base, a vertical stem or shank, and an outwardly-projecting tongue, said base being secured to the lower edge of one rib and being of sufficient length and width to form a rest for the adjacent end of the companion 75 rib, substantially as described.

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Witnesses:

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