

No. 629,674.

Patented July 25, 1899.

M. F. X. FOLEY.

STEEL CLIP OR HANGER FOR CEILINGS.

(Application filed Mar. 10, 1899.)

(No Model.)

Fig. 1.

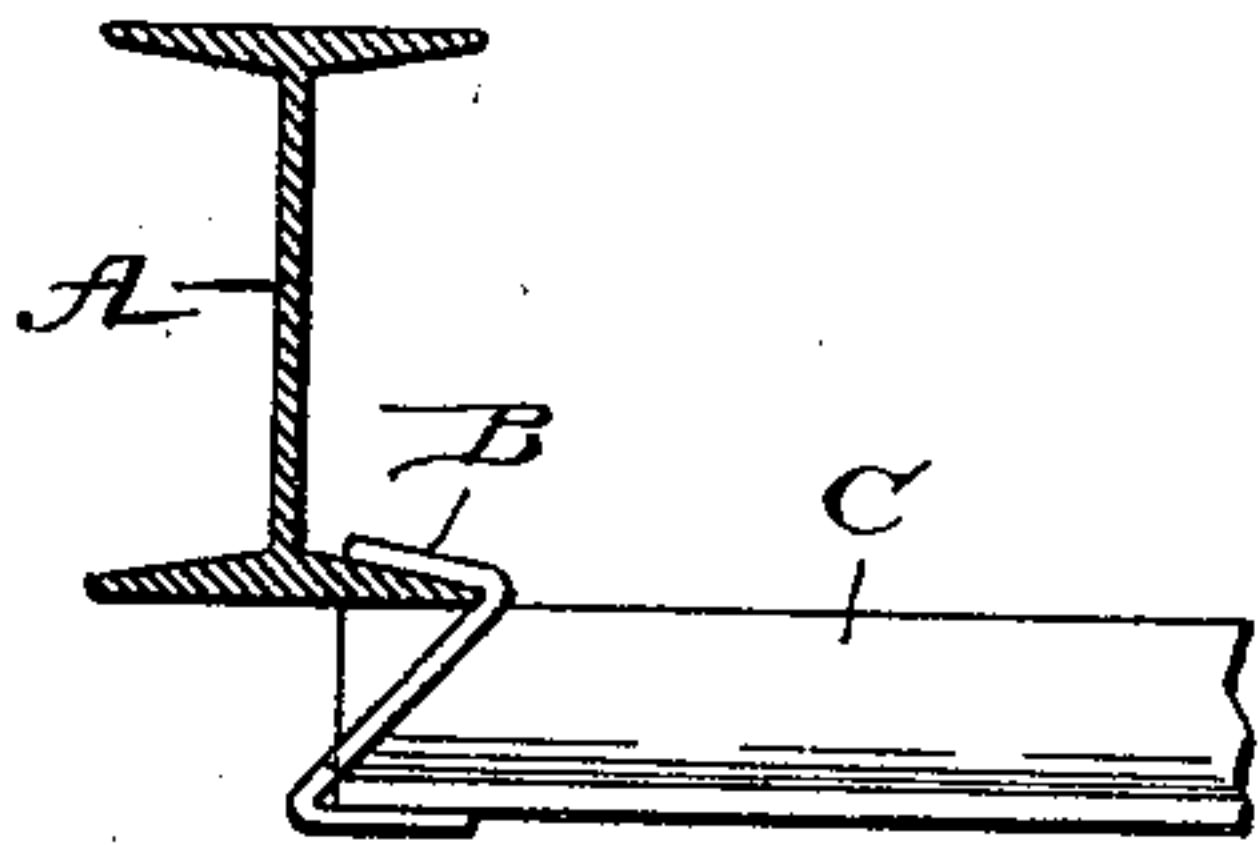


Fig. 2.

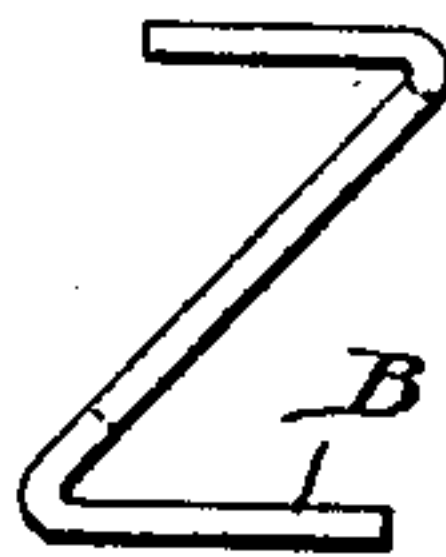


Fig. 3.

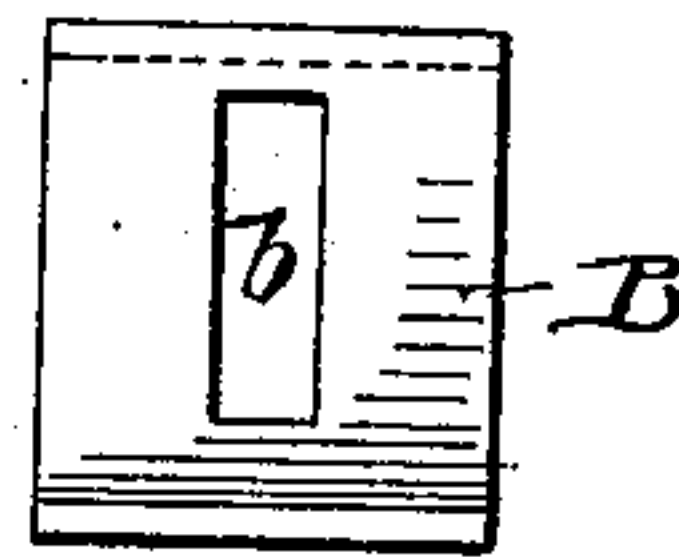


Fig. 4.

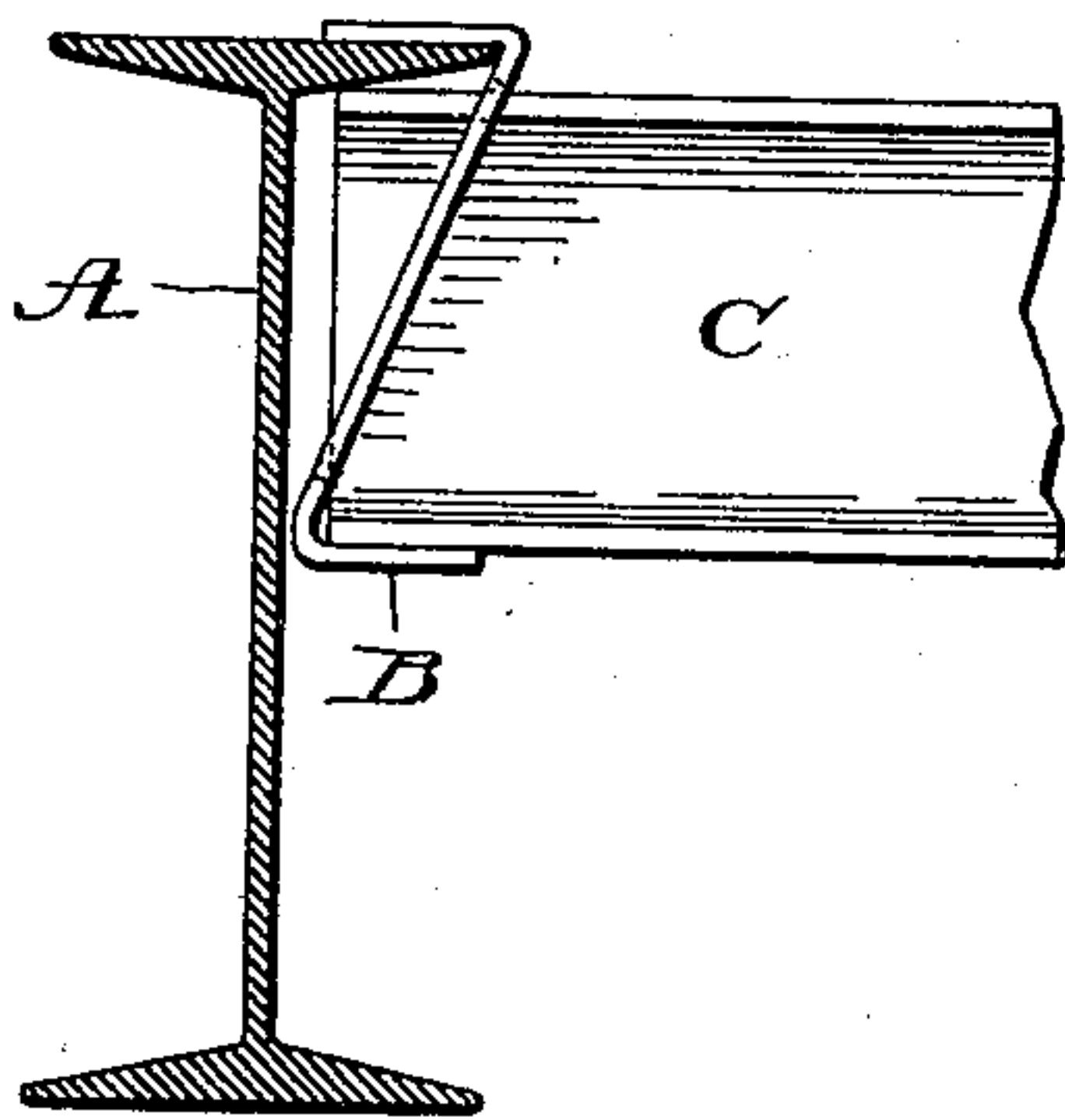


Fig. 5.

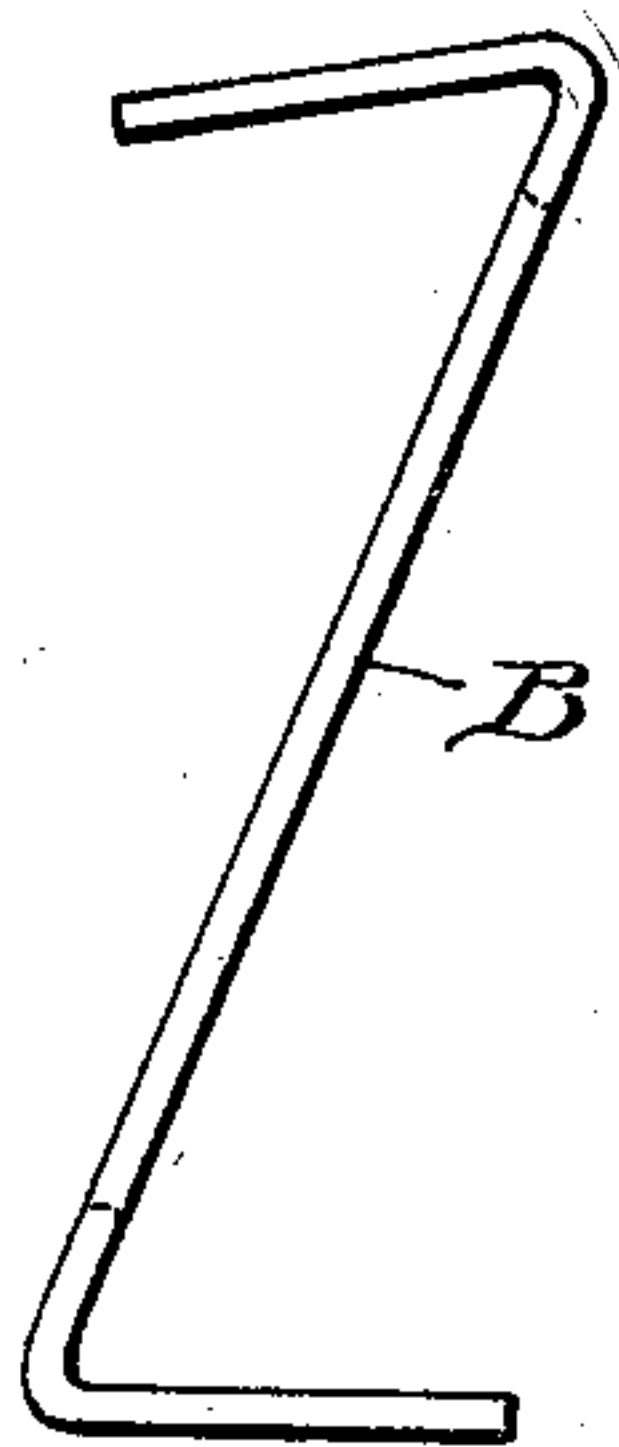


Fig. 6.

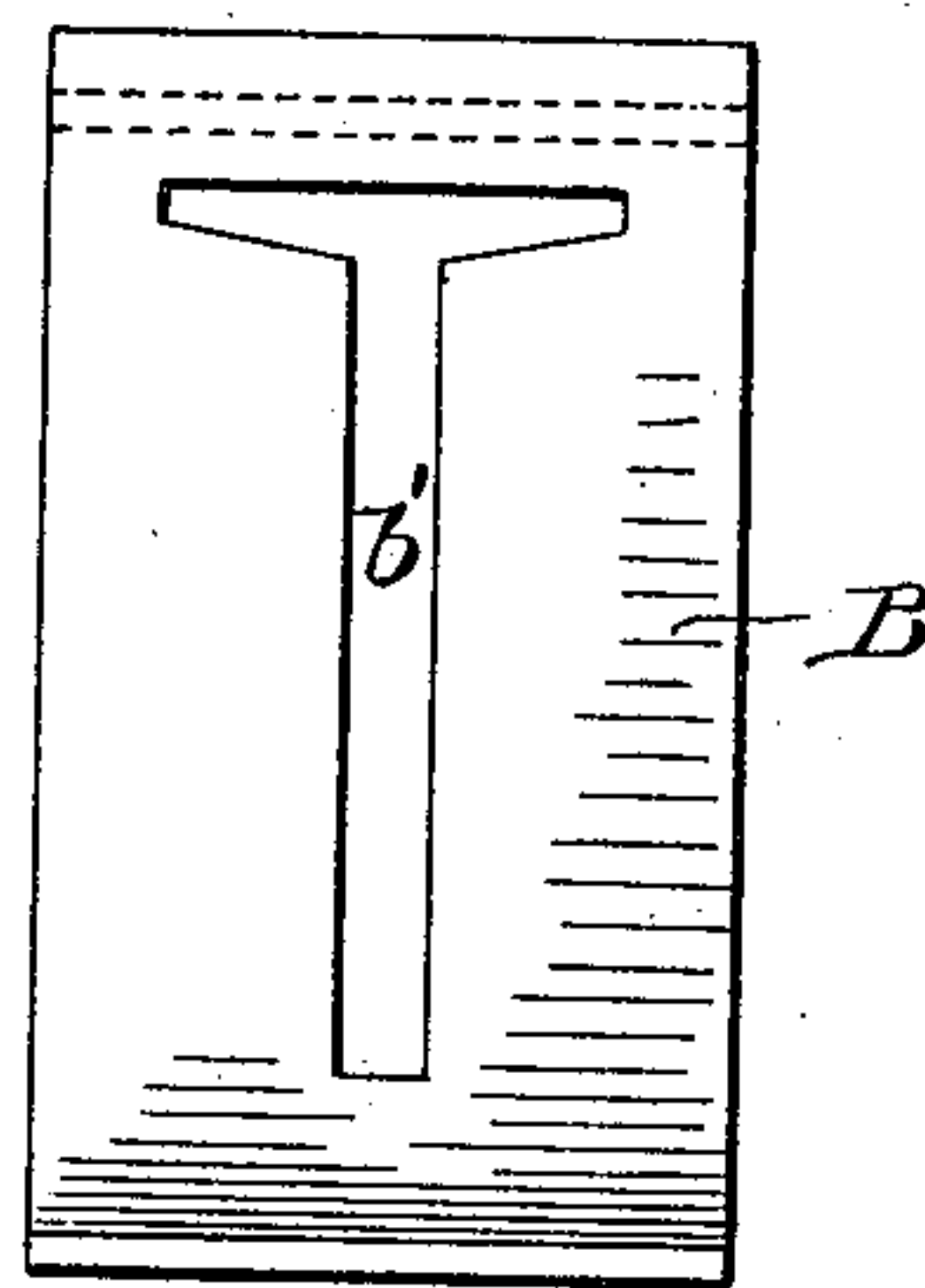
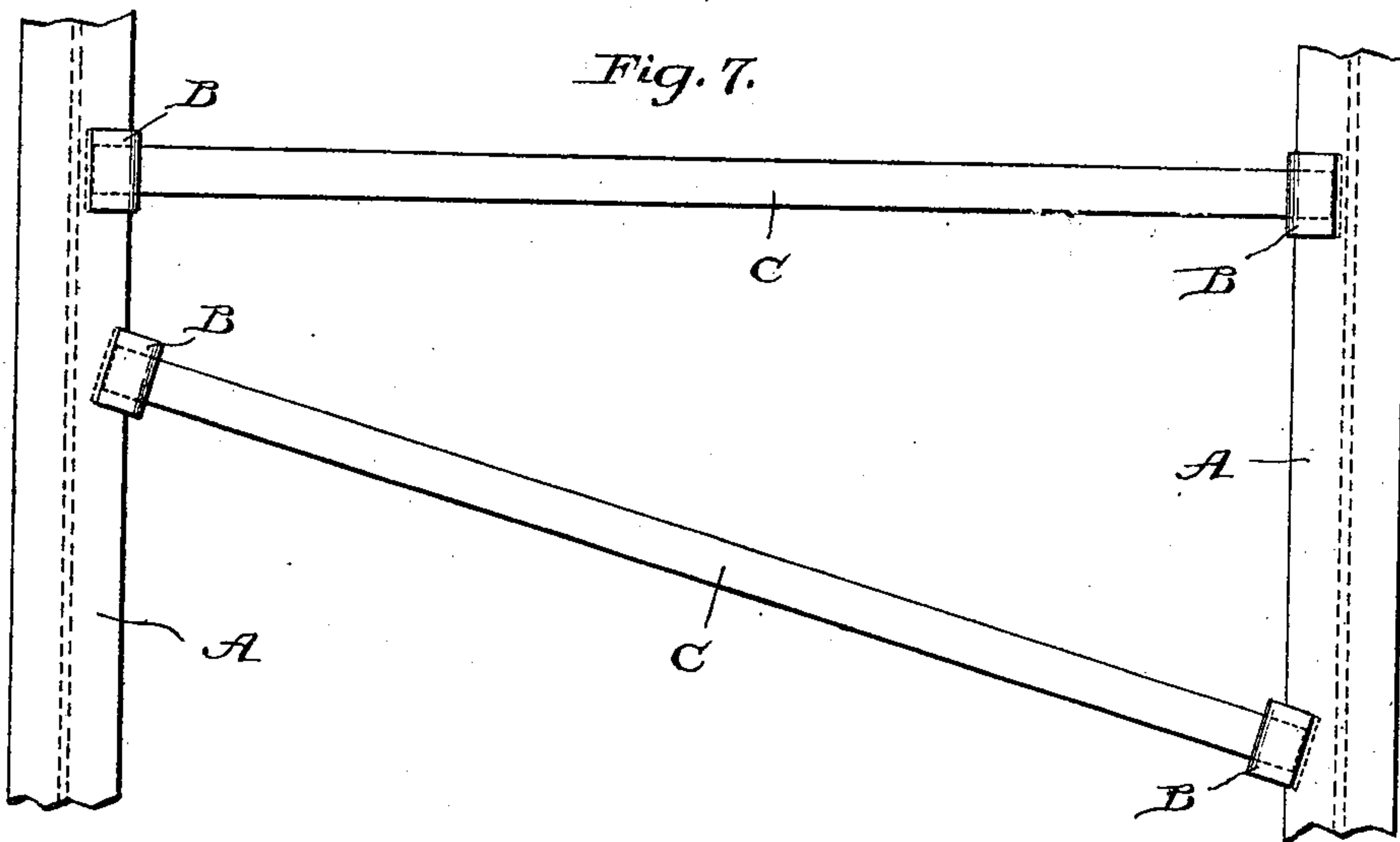


Fig. 7.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## STEEL CLIP OR HANGER FOR CEILINGS.

SPECIFICATION forming part of Letters Patent No. 629,674, dated July 25, 1899.

Application filed March 10, 1899. Serial No. 708,485. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL F. X. FOLEY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Steel Clips or Hangers for Ceilings; 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 of reference marked thereon, which form a part of this specification.

My invention relates to the construction of fireproof ceilings and floors in large iron buildings; and the object of my improvement is to provide a simple and economical means of securely fastening the light steel members that support the ceiling to the floors or girders without the use of bolts or rivets. To accomplish the desired result, I attach to the iron girders slotted steel clips or hangers, into which the ends of the intervening ceiling-supporting members are placed and afterward driven into the desired position in the manner hereinafter shown, and more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 shows a section of an I-beam and one end of the light steel ceiling-support secured thereto by my improved clip. Fig. 2 shows a side or edge elevation of my improved clip before it is secured to the girder. Fig. 3 is a front elevation of the clip. Fig. 4 shows a section of a large I-beam or girder having the ceiling-support composed of a light I-beam, which is attached to the larger I-beam by means of a clip having a slot slightly different from that shown in Fig. 1. Fig. 5 is an edge or side view of the clip shown in Fig. 4. Fig. 6 is a front elevation of the clip shown in Fig. 4. Fig. 7 is a plan view showing two large I-beams or girders having a light ceiling-supporting I-beam secured in position between them and another ceiling-support in position to be driven into place.

A represents the large I-beams of the kind ordinarily used in the construction of fireproof buildings.

B is a slotted steel clip or hanger, preferably bent in the form of the letter Z and adapted to fit upon one or the other of the flanges of the large I-beams.

b and b' are the slots in the clips or hangers. These slots do not extend all of the way down to the bottom of the clip; but enough metal is left at that point to prevent the lower part of the transverse bar from going completely through the clip, thus forcing the several parts to assume the positions shown in Figs. 1 and 4.

C are light steel bars fitting between the large girders at suitable intervals and placed at right angles thereto. These light bars are usually formed to the shape of an inverted T or made the same shape as the large I-beams. When formed in the shape of an inverted T, the slot in the clip or hanger is made straight, in the manner shown in Fig. 3. If the light transverse bar is made the shape of an I-beam, the slot or opening in the clip is made T-shaped, as particularly shown in Fig. 6.

After the supporting-girders or large I-beams A are in position the manner of adjusting the intervening cross-bars C is as follows: One of the slotted clips B is placed on each of the girders A in such a position that they will not be opposite to each other. The ends of the intervening cross-bars C are then fitted into the slots b or b' of the clips, so as to be in the diagonal position shown in Fig. 7. The ends of the cross-bar C are then driven along the beam until the said cross-bar is in the desired position, straight across between the two beams A and directly at right angles thereto, in the manner shown in Fig. 7. After the intervening cross-bars C have been thus driven into place it will be impossible for them to fall or the clip to move along the I-beam. If an inverted-T-shaped cross-bar is used and it is secured upon the bottom flange of the I-beam, the upper straight edge of the cross-bar will extend through the slot b and fit against the straight part of the flange of the beam, and as the slot b is not cut clear down to the bottom of the clip when the cross-beam is driven into place the top of the clip will be made to conform to the bevel



of the upper side of the flange of the I-beam. The same results will follow when using an I-shaped cross-bar, as shown in Fig. 4.

When the clip shown in Fig. 2 is made for use on the bottom flange of the I-beam, in the manner shown in Fig. 1, the top part of the clip is preferably bent so as to be nearly if not quite parallel with the bottom, so that when it is forced into place it will conform to the bevel of the flange and be in binding contact therewith. When the clip is intended for use on the flat top part of the I-beam, as shown in Fig. 4, the top part of the clip is preferably bent downwardly, as shown in Fig. 5, so that when driven into place the clip will bend tightly against the flat top part of the I-beam.

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

1. A ceiling-supporting clip formed of a slotted plate bent so that one end thereof fits upon the supporting beam or girder, the other end being adapted to carry the end of the transverse ceiling-supporting member; one part of the end of said ceiling-supporting member projecting through the slot in the clip and the other part of said end impinging

against the solid part of the clip, substantially as shown and for the purpose described. 30

2. A ceiling-supporting clip formed of a Z-shaped plate having therein a slot through which one part of the end of ceiling-support may project, said slot being made of such a length that the base or bottom part of said ceiling-support will not project through but impinge against the solid metal forming the bottom of the slot, substantially as shown. 35

3. In a fireproof-ceiling construction, the beams or girders A, A, in combination with supporting-clips B, and the transverse bars C; said clips being adapted to fit upon the end of the transverse bars in such a way that they cannot be forced all of the way through, and the transverse bars C, made of such a length that they cannot be put in directly at right angles to the beams, but must first be placed in a diagonal position and afterward driven into place, substantially as shown and described. 45 50

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

MICHAEL F. X. FOLEY.

Witnesses:

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