

No. 729,445.

PATENTED MAY 26, 1903.

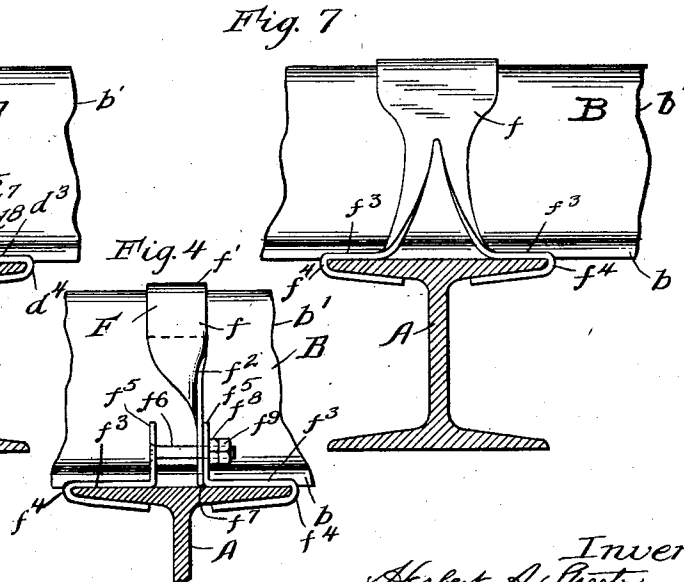
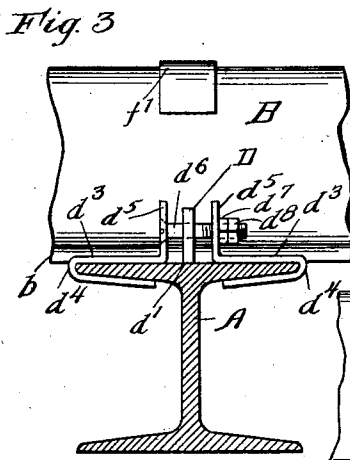
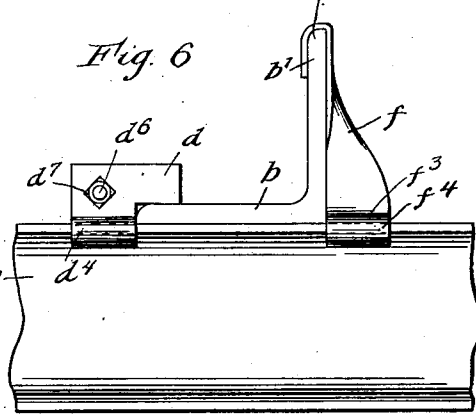
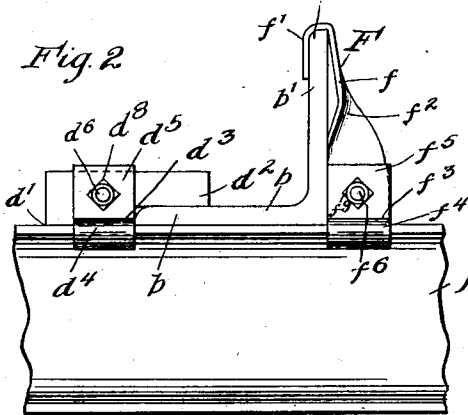
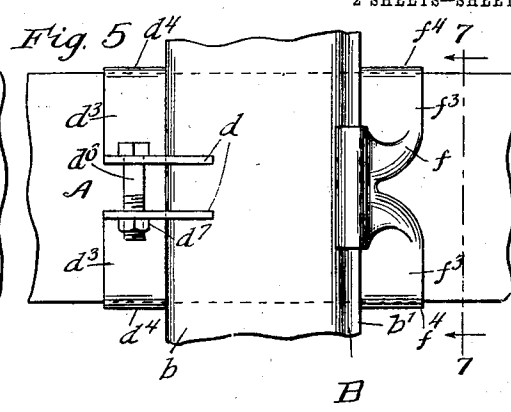
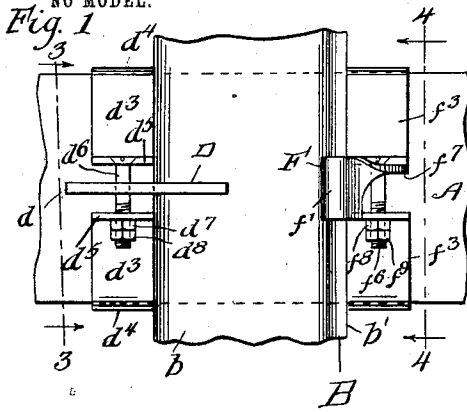
H. A. STREETER.

MEANS FOR CLAMPING AND SECURING CROSS METAL BEAMS TOGETHER.

APPLICATION FILED FEB. 13, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
Wm. Geiger
H. W. Munday,

Inventor
Herbert A. Streeter
By Munday, Evans & Lidecke,
Attorneys

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2 SHEETS—SHEET 2.

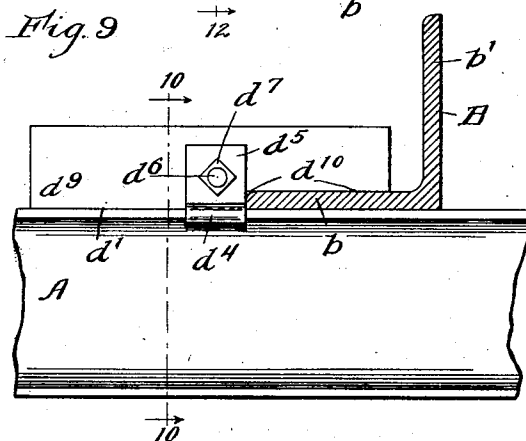
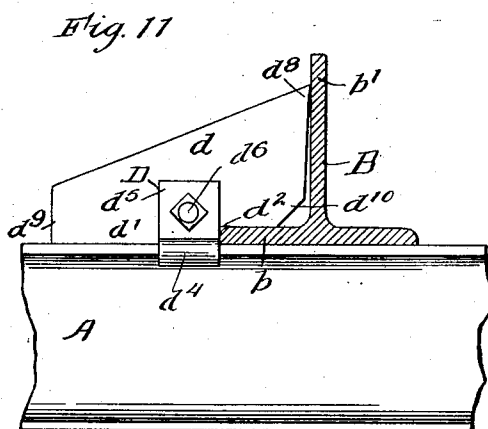
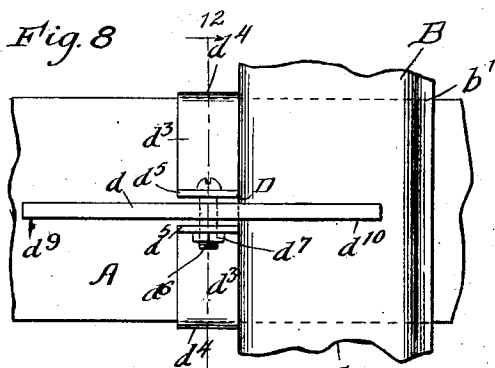
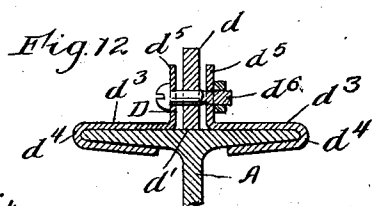
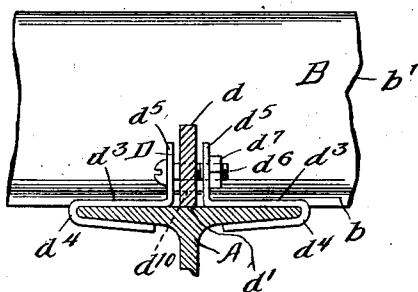


Fig. 10



Witnesses:

Wm. Geiger
A. W. Munday

Inventor
Herbert A. Streeter

By Munday, Everts & Adcock

Attorneys

UNITED STATES PATENT OFFICE.

HERBERT A. STREETER, OF CHICAGO, ILLINOIS.

MEANS FOR CLAMPING AND SECURING CROSS METAL BEAMS TOGETHER.

SPECIFICATION forming part of Letters Patent No. 729,445, dated May 26, 1903.

Application filed February 13, 1903. Serial No. 143,190. (No model.)

To all whom it may concern:

Be it known that I, HERBERT A. STREETER, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Means for Clamping and Securing Cross Metal Beams Together, of which the following is a specification.

My invention relates to improvements in means for securing and clamping together crossing metal beams in roofs and other structures.

The object of my invention is to provide a simple and economical means for securing and spacing on the rafters or slanting beams of the roof the customary metal cross beams or bars.

My invention consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown or described.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference indicate like parts, Figure 1 is a plan view of a device embodying my invention. Fig. 2 is a side elevation. Fig. 3 is a section on line 3 3 of Fig. 1. Fig. 4 is a section on the line 4 4 of Fig. 1. Fig. 5 is a plan view showing a modified construction of the clips or clamping and securing devices. Fig. 6 is an elevation of the construction shown in Fig. 5. Fig. 7 is a section on the line 7 7 of Fig. 5. Figs. 8, 9, 10, 11, and 12 show constructions where one of the clips or securing devices is omitted.

In the drawings, A represents the longitudinal steel beams or rafters of the roof, and B the cross beams or bars. The cross beams or bars B are secured to the rafters or incline-beams A at each crossing of the beams by means of a pair of metal clips or securing devices D and F.

The longitudinal beams or rafters A may preferably be I-beams, and the cross-beams B angle beams or bars. The clip or securing device D comprises an upright or edgewise-fitting plate d , having a foot portion d' , fitting on the top face of the beam A, and a notched portion d^2 on the flange b of angle-beam B, a pair of clamps d^3 , each having a bend or hook d^4 to embrace the upper flange of beam A and an upright flange d^5 , and a

clamp-bolt d^6 , which passes through the upright flanges d^5 of the clamps d^3 and the upright or edgewise-fitting piece d . By screwing up the nuts d^7 d^8 of the clamp-bolt the clamp-pieces d^3 are caused to firmly embrace or clamp the rafter or incline-beam A with a secure grip, and thus prevent the cross or angle beams B from slipping down. The edge of the flange b of the angle-beam B abuts directly against the edges of the pair of clamp-pieces d^3 . The clip or securing device F comprises an upright member f , having a bend or hook f' , adapted to fit over and embrace the upright flange b' of the cross or angle beam B and provided with a right-angle twist f^2 to bring its lower portion transverse to said hook f' , and a pair of clamps f^3 , each having a bend or hook f^4 to embrace the edge of the upper flange of the beam A and an upright flange or portion f^5 , and a clamp-bolt f^6 , which passes through the upright flanges f^5 and the lower part f^7 of the upright member f . The clamp members f^3 are similar in construction and operation to the clamp-pieces d^3 and serve to firmly clamp or grip the upper flange a of the beam A. The clamp-bolt f^6 is provided with nuts f^8 f^9 .

In the modified construction illustrated in Figs. 5, 6, and 7 the upright or edgewise-fitting member d , which fits on the foot or flange b of the angle beam or bar B, is duplicated. Each of the duplicate upright or edgewise-fitting pieces d is made integral with one of the clamp-pieces d^3 , and in this modified construction shown in Figs. 5, 6, and 7 the clamp-pieces f^3 are made integral with the upright member f , which hooks over the upright flange b' of the angle-beam, and the clamp-bolt f^6 is in this construction omitted. In this modified construction one of the hooks or bends f^4 is formed after the clip is applied to the crossing beams A B.

In Fig. 11 I have illustrated the preferred, stronger, and perfected construction of the upright or edgewise-fitting piece d , the same having an extension d^9 to fit against the upright web or flange b' of the beam B and having its foot d' furnished with an extension d^{10} to give a more extended bearing upon the beam A and its notched portion d^2 , which fits on the flange b of the beam B, also furnished with an extension d^{10} to give a more extended

bearing on said flange *b*. By this construction of the upright or edgewise-fitting piece *d* the beam B may be very firmly secured in place by the clip or securing device D alone

5 on one side.

In the construction illustrated in Figs. 8, 9, and 10 the upright or edgewise-fitting piece *d* is provided with an extended foot *d*⁹ and the extended notched portion *d*¹⁰, but without the

10 extension *d*⁸ that fits against the upright web or flange *b*' of the beam B.

In the modification shown in Fig. 12 one of the upright flanges *d*⁵ is furnished with a threaded hole to receive the clamp-bolt *d*⁶,

15 and one of the nuts of the bolt is omitted.

I claim—

1. The combination with crossing beams or bars A B, of a clip or securing device D having an upright or edgewise-fitting notched piece

20 *d*, a pair of clamp-pieces *d*³, a clamp-bolt *d*⁶, and a clip or securing device F having an upright member *f* furnished with a hook *f*¹, a twisted portion *f*² and a pair of clamps *f*³ and clamp-bolt *f*⁶, substantially as specified.

25 2. The combination with a pair of crossing beams or bars, of a clip or securing device D having an upright or edgewise-fitting member *d*, clamp-pieces *d*³, a clamp-bolt *d*⁶, and a clip or securing device F having a hook or

30 bend *f*¹ and clamp-pieces *f*³ *f*³, substantially as specified.

3. The combination with a pair of crossing beams or bars A B, of a clip or securing device having an edgewise-fitting piece or member *d* provided with a notched extension *d*¹⁰

35 and an upright extension *d*⁸ fitting against the upright web or flange of the beam or bar B, and an extension *d*⁹ fitting against the upper face of the beam A, and clamps *d*³ and

40 clamp-bolt *d*⁶, substantially as specified.

4. The combination with a pair of crossing beams A B, of a clip or securing device D having an extended notched portion *d*¹⁰ and an extended foot portion *d*⁹, a pair of clamps *d*³ embracing the upper flange of beam A, and

45 a clamp-bolt *d*⁶.

5. The combination with a pair of crossing beams or bars, of a clip or securing device having a pair of clamps embracing the upper flange of the lower beam and each furnished

50 with an upright flange, a clamp-bolt extending through said flanges, and provided also with a member engaging one of the flanges of the upper beam, substantially as specified.

6. The combination with a pair of crossing

55 beams or bars, of a clip or securing device having a pair of clamps embracing the upper flange of the lower beam and each furnished with an upright flange, a clamp-bolt extending through said flanges, and provided also

60 with a member engaging one of the flanges of the upper beam, said member which engages the flange of the upper beam having also a foot portion resting on the lower beam, substantially as specified.

7. The combination with a pair of crossing beams or bars, of a clip or securing device having an upright member provided with a hook or bend, and a pair of clamps to embrace

70 the flange of the lower beam, substantially as specified.

8. The combination with a pair of crossing beams or bars, of a clip or securing device F having an upright member *f* furnished with a hook *f*¹, a twisted portion *f*², and a pair of

75 clamps *f*³, substantially as specified.

HERBERT A. STREETER.

Witnesses:

H. M. MUNDAY,

WILLIAM A. GEIGER.