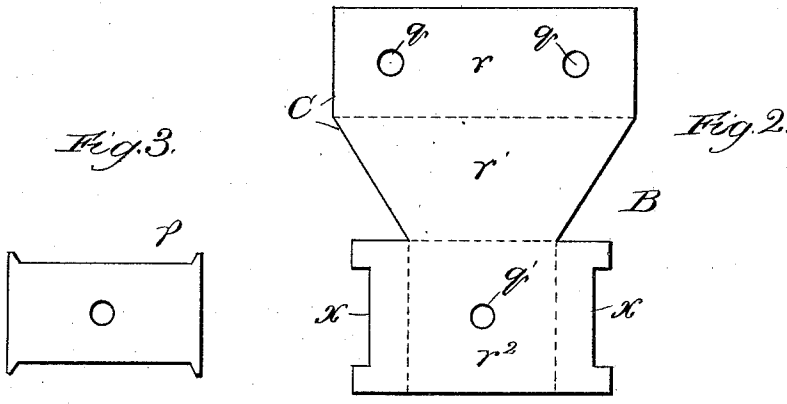
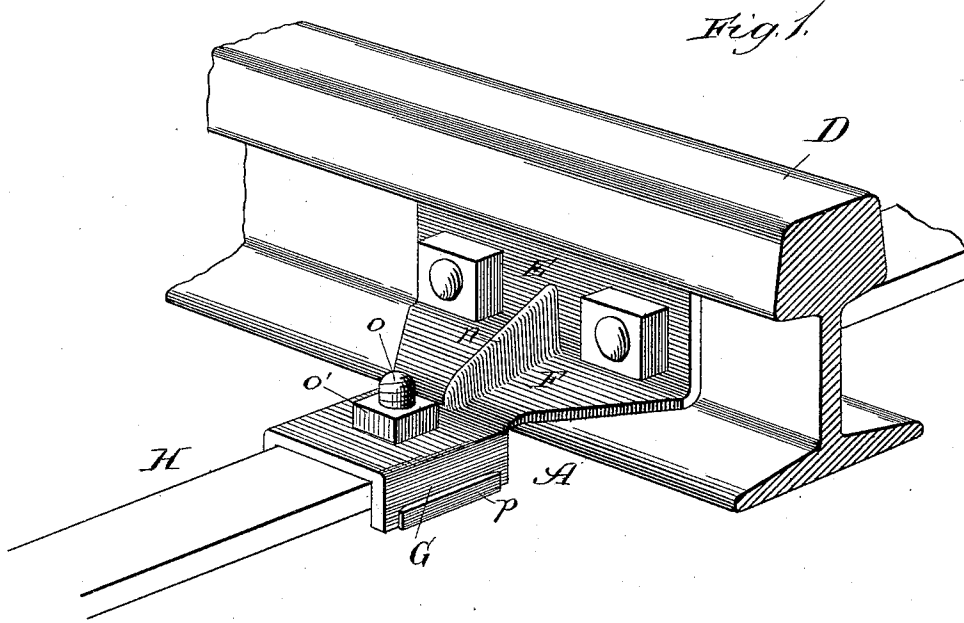


A. A. STROM.

MANUFACTURE OF CLIPS FOR CONNECTING TIE BARS WITH SWITCH RAILS.

No. 397,447.

Patented Feb. 5, 1889.



Witnesses:
Wm. Gaylord
J. H. Dyrenforth

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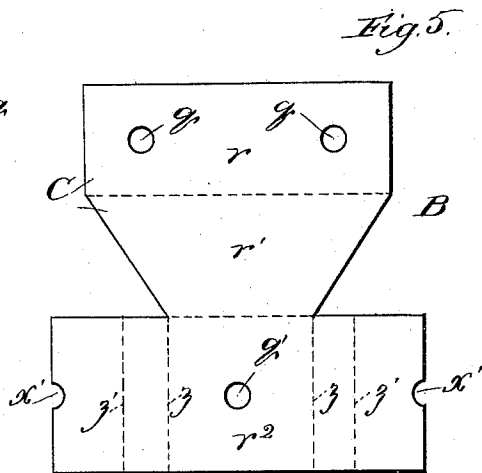
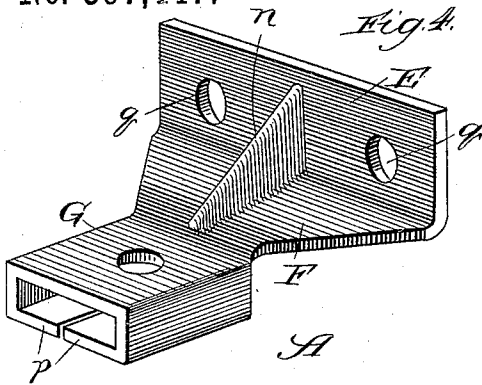


Fig. 7.

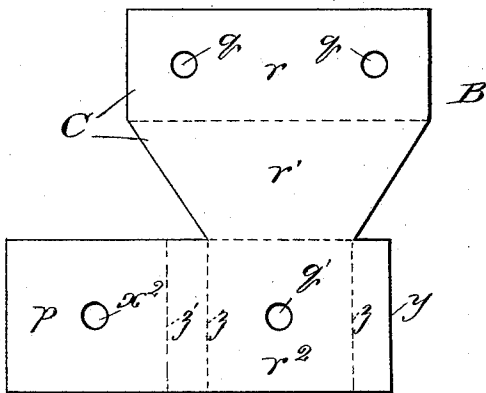
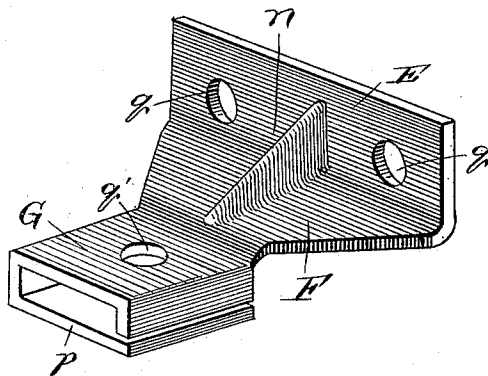


Fig. 6.



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UNITED STATES PATENT OFFICE.

AXEL A. STROM, OF AUSTIN, ASSIGNOR TO THE STROM MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS.

MANUFACTURE OF CLIPS FOR CONNECTING TIE-BARS WITH SWITCH-RAILS.

SPECIFICATION forming part of Letters Patent No. 397,447, dated February 5, 1889.

Application filed October 19, 1888. Serial No. 288,542. (No model.)

To all whom it may concern:

Be it known that I, AXEL A. STROM, a citizen of the United States, residing at Austin, in the county of Cook and State of Illinois, have invented a new and useful Improvement in the Manufacture of Clips for Connecting Tie-Bars with Switch-Rails, of which the following is a specification.

It is common in railroad-switches to connect the switch-rails, in order that the movement of one shall move the other or others, by means of tie-bars which are fastened to the rails. The connection may be made through the medium of a metal device known in the art as a "clip," and comprising, generally described, a head to be secured to the switch-rail and a socket extending from the head.

Hitherto the clips referred to have been formed by casting them ordinarily of malleable iron, it having been considered not feasible to forge them in a manner and on a scale that would be practical. When so cast, however, they are too readily frangible, and there is, therefore, objection to their use.

The object of my improvement is to provide a clip of the class referred to and for the purpose named by bending a sheet-metal blank to produce it.

To this end my invention consists in the method I employ of forming the article.

In the accompanying drawings, Figure 1 is a perspective view showing a section of rail with the clip in one of its various forms secured to it and a tie-bar adjusted in the clip, the tie-bar being shown as broken away. Fig. 2 is a plan view of the blank from which the clip shown in Fig. 1 is formed. Fig. 3 is a similar view of a detail. Fig. 4 is a perspective view showing a further and preferred construction of the clip. Fig. 5 is a plan view of the blank from which the clip shown in Fig. 4 is formed. Fig. 6 is a perspective view showing another modification of the clip, and Fig. 7 is a plan view of the blank from which the clip shown in Fig. 6 is formed.

A is the clip, formed from a sheet-metal blank, B, preferably steel, and which may be bent into the desired form by stamping it out of steel plate by means of a suitable die. The blank is formed with a head, C, comprising, preferably, a rectangular portion, r,

having bolt or rivet holes q , and of a width that will permit its insertion against the web between the head and flange of a rail, D, a tapering portion, r' , extending from the rectangular part, and a cross-piece, r^2 , having a perforation, q' . To form the clip shown in Fig. 1, the ends of the cross-piece r^2 should be recessed, as shown at x in Fig. 2. To form that shown in Fig. 4, the cross-piece should be longer than represented in Fig. 2 and recessed, as illustrated in Fig. 5, in the form of a semicircle, x' , at the centers of its ends, which extend equally on opposite sides of the tapering part r' of the head C; and to form the clip shown in Fig. 6 the cross-piece r^2 should extend but slightly beyond the head B at one end, as shown at y in Fig. 7, and considerably farther at the opposite end, as shown at p , the part p being provided with the perforation x^2 . In all instances, however, the perforations for the bolts or rivets may be drilled after the clip is formed. To form the clip represented in Fig. 1 from the blank shown in Fig. 2, the blank is first heated, and the part r of the head C is bent to form the head E to be secured against the web of a rail, D, the part r' is bent to form a neck, F, which extends upon the beveled surface of the flange of the rail, and the ends of the cross-piece which extend beyond the head C are bent in opposite directions to form of the cross-piece a bottomless socket, G, to receive a tie-bar, H. A base for the socket G may be formed of a separate perforated piece, p , which fits toward its opposite ends in the recesses x in the edges of the sides of the socket, and is held in place by a bolt, o , and nut o' , which also serve to secure the tie-bar H to the clip A. If desired, the bolt o and plate p may be integral, when the plate would form the head of the bolt. The advantage of having the plate p fit in the recesses x is that thereby the strain on the device is divided the more between the bolt and socket, and a solid bearing is afforded to the bolt.

The operation of bending the blank illustrated in Fig. 2 to form the clip shown in Fig. 1, or of bending the blanks shown in Figs. 5 and 7 to form the clips represented in Figs. 4 and 6, should be performed, as the best manner of forming the clips, by means of

suitable dies which I have invented for the purpose.

The operation of forming a clip from the blank B presented in Fig. 5 differs from the operation already described only in the formation of the socket G, the base p of which is integral with it and formed by bending the ends of the cross-piece r^2 in opposite directions at the dotted lines z and bending them toward each other at the dotted lines z' , the parts which are thus bent toward each other being of respective lengths to cause them to come quite or almost together at their ends, as shown in Fig. 4, the semicircles x' thereby being caused to coincide and produce the circular opening for the securing-bolt.

To form the clip illustrated in Fig. 6 from the blank B shown in Fig. 7, the proceeding is the same as that described in connection with the production of the other two forms of clips, except as to the formation of the socket G, which is accomplished by bending both ends of the cross-piece r^2 at the dotted lines z in opposite directions, and the longer of the two ends at the dotted line z' to cause it to extend parallel to the said main or body portion, the longer end being of sufficient length to extend to the bent shorter end.

The term "socket" herein employed is intended to include any suitable form of recess which will serve to receive and permit securing therein of any form of tie-bar.

The clip illustrated is adjusted by bolting or riveting it at the head E through the apertures q to the web of a rail, and the tie-bar is connected with the clip by passing it into the socket G and inserting a bolt through it and the socket, the bolt being secured by means of a nut or by other suitable means, such as a key.

To afford additional strength, the parts E and F should be struck up to form a ridge, n , upon them, as shown.

While it is preferred that the blank shall comprise the form illustrated and described, the part r , referred to as the rectangular part

of the head C, may be omitted, thereby, when the clip is forged from the blank, having the clip devoid of a head, E, when the device would be secured to the rail by bolts or rivets passed through the part F (which would then constitute the head of the clip) and through the rail-flange. The tapering form of the part r' of the blank, which affords the neck F in the finished clip illustrated, or the head of the clip if the part E be omitted therefrom, as described, is not necessary, as it may be straight or of other suitable form. My invention is intended to include the manufacture of all such modifications.

What I claim as new, and desire to secure by Letters Patent, is—

1. The improvement in the art of manufacturing clips A, which consists in forming a sheet-metal blank, B, with a head and a cross-piece, r^2 , then bending the head to fit against a rail and the cross-piece to form a socket, substantially as described.

2. The improvement in the art of manufacturing clips A, which consists in forming a sheet-metal blank, B, with a head, C, comprising the parts r and r' , and with a cross-piece, r^2 , then bending the parts r , r' , and r^2 , respectively, into a head, E, to fit against the web of a rail, a neck, F, to fit upon the rail-flange, and a socket, G, to receive a tie-bar, substantially as described.

3. The improvement in the art of manufacturing clips A, which consists in forming a sheet-metal blank, B, with a head, C, comprising the part r and tapering part r' , and with a cross-piece, r^2 , then bending the parts r , r' , and r^2 , respectively, into a head, E, to fit against the web of a rail, a neck, F, to fit upon the rail-flange, and a socket, G, and striking up a ridge, n , on the head and neck portions, substantially as described.

AXEL A. STROM.

In presence of—

M. J. BOWERS,

J. W. DYRENFORTH.