

G. LIDSEEN.
ASSEMBLING CLIP.
APPLICATION FILED MAR. 13, 1908.

910,399.

Patented Jan. 19, 1909.

Fig. 1

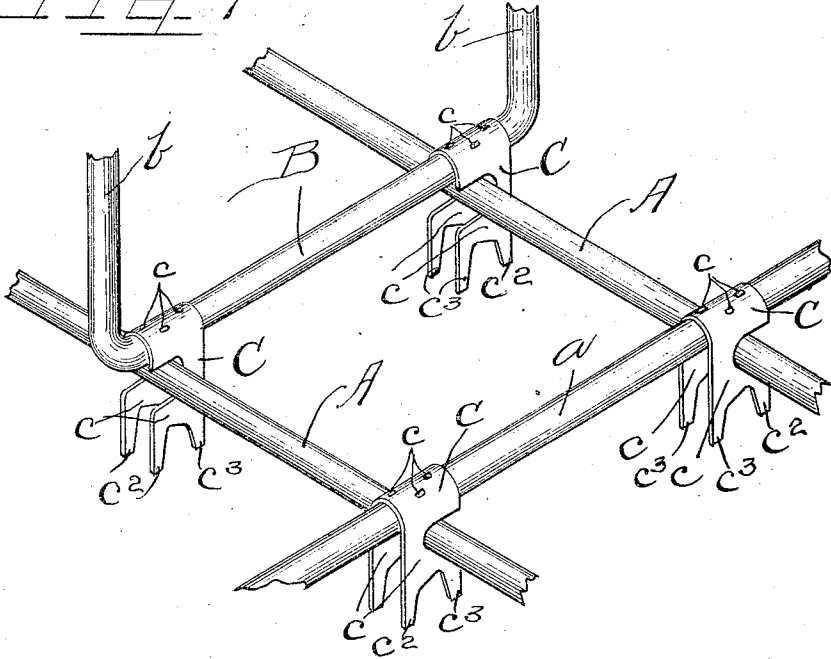


Fig. 2

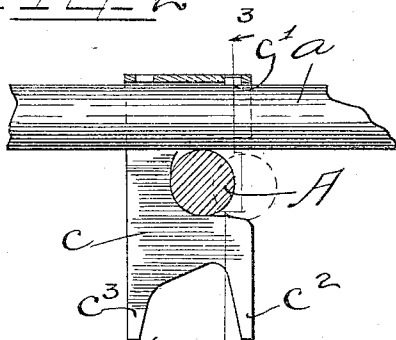


Fig. 3

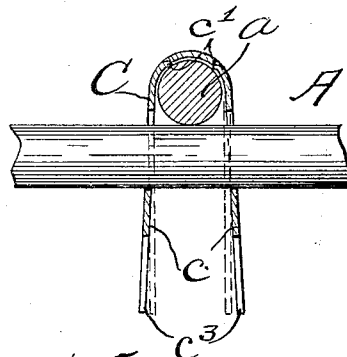


Fig. 4

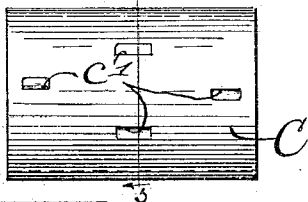
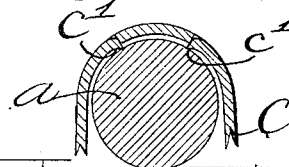


Fig. 5



WITNESSES

J. H. Angell.
R. E. Hannah

INVENTOR

Gustave Lidseen

Charles W. Smith, ATTORNEY

UNITED STATES PATENT OFFICE.

GUSTAVE LIDSEEN, OF CHICAGO, ILLINOIS.

ASSEMBLING-CLIP.

No. 910,399.

Specification of Letters Patent.

Patented Jan. 19, 1909.

Application filed March 13, 1908. Serial No. 420,975.

To all whom it may concern:

Be it known that I, GUSTAVE LIDSEEN, a citizen of the United States, and a resident of the city of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Assembling-Clips; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In the construction of reinforced or armored concrete a great variety of so-called systems or arrangements of the metal relatively the concrete investing the same have been devised, in all of which some means are necessary for rigidly connecting (at least temporarily) the various metallic members forming the skeleton or tension members of the structure.

In many of the so-called systems metallic bars or rods have been so disposed that when invested with the concrete said rods or bars if in a horizontal slab or beam lie well below the neutral axis of the structure, and in such constructions resort has been had to various devices to properly space the members in the bottom of the beam. Sometimes blocks of concrete or cement have been molded and placed beneath the main tension members to support the same at a sufficient height above the form to insure the same being entirely invested with the concrete and to afford a sufficient body of concrete below the same to afford the requisite adhesion, due to the surface adhesion of the concrete upon the steel.

Usually in connecting transverse and longitudinal members wiring has been resorted to. This, however, is a comparatively slow process and in the event of upwardly directed straps, as for instance in beam construction, the upwardly directed ends of the straps are free to be readily moved and in consequence it has been very difficult, if not impossible, to hold the same at the desired position or angle to insure the most effective results on the completed structure; as for instance, when using such upwardly directed arms or straps as shear members.

The object of this invention is to afford an assembling clip adapted to rigidly lock intersecting structural members at the point of intersection to hold the same rigidly in place while the investment of concrete or cement is being applied thereto.

It is also an object of the invention to afford an assembling clip adapted to rigidly engage together, upwardly directed "U" straps or bars, in such manner as to rigidly support the arms thereof in the adjusted position.

Furthermore, it is a very important object of the invention to afford an assembling clip adapted also to serve as a spacing member or foot piece by the use of which the tension rods are all supported at the best practicable height above the bottom of the form to insure the greatest strength in the construction when completed, said supporting portions of said clip being so constructed, however; as to permit the same to be invested with concrete or cement and to permit the concrete to bond thoroughly around the joint at the intersection.

It is finally an important object of the invention to afford a construction of such cheapness and practicability as to insure its extensive use and of such simplicity as to enable any unskilled laborer to instantly apply the same in place to secure the maximum holding effect thereof.

The invention consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a fragmentary perspective view illustrating the application and use of clips embodying my invention. Fig. 2 is an enlarged central section taken longitudinally of the transverse reinforcing member. Fig. 3 is a section taken on line 3—3 of Fig. 2. Fig. 4 is an enlarged top plan view of the assembling clip. Fig. 5 is a section on line 5—5 of Fig. 4.

As shown in the drawings: A—A' indicate longitudinal tension members such as may be employed in the construction of beams and various other armored concrete constructions.

a indicates a transverse tension member rigidly clipped thereto and B, indicates a "U" strap having lugs or arms b, directed upwardly, as is usual in the arrangement of shear members for beams, and for many other purposes. All said members, as shown, are constructed of round steel rods which may, of course, be of any desired diameter and at their intersections with each other said elements are rigidly engaged together by assembling clips C, embodying my invention. Said clip, as shown, is constructed preferably of a sheet or plate of high carbon steel or other suitable metal bent centrally

in its plane to a "U" shape and affording divergent ends c , in the rounded top of which are inwardly struck projections or teeth c' , which may be of any desired number and arrangement. As shown, however, one of said inwardly directed integral teeth is provided in the top and near each end of the clip on approximately a medial line and directed oppositely and as shown, two are shown centrally and on opposite sides of a medial line in the top of said clip with the abrupt faces thereof directed inwardly as indicated in Fig. 5. The divergent ends of each of said clips are notched at the bottom to afford forwardly and rearwardly arranged downwardly directed legs c^2-c^3 , adapted to rest on the bottom of the form. Opening through corresponding sides of each of said arms C , of the clip is a notch rounded at its inner part and inclining slightly outwardly and downwardly as shown in Fig. 2, and having sharp edges adapted to engage and bite into the lower or tension rods A , when engaged in clamping transverse members thereto. Said notch in width vertically is made somewhat larger than the rod to be engaged therein and the bottom of said notch is at a distance from the top of the clip to permit of firmly jamming the rods together, as shown in Fig. 1, when the clip is engaged into place.

The operation is as follows: In engaging the members together the clip is straddled over the upper or transverse bar with the notch directed in position to receive the longitudinal member therein and the divergent ends or arms of the clip are sprung together, as shown in dotted lines in Fig. 3, thus slightly increasing the distance of the bottom of the notch in said arms from the top of the clip in which position the clip may be slid on the transverse member until the tension member at right angles therewith lies within the notch as indicated in Figs. 2 and 3. Preferably, the construction is such as to necessitate a slight pressure in springing the clip into place and when the lower or divergent ends of the clip are released the same spring outwardly as shown in full lines in Fig. 3, the outer edges at the bottom of the notch engaging the tension rod A and pressing the same upwardly carrying the transverse rod a or strap B therewith, the pressure being sufficient to permit said sharp edges to bite slightly into the rod and to force the transverse member firmly against the inwardly directed teeth c in the top of the clip and which, biting into said transverse rod, act to rigidly hold the same from rotation or movement as does the sharp edges of the clip for the longitudinal rod. The holding effect is such owing to the toothed construction of the clip, that "U" straps having long arms may be firmly engaged on the longitudinal tension rod and

positively supported either vertically or in any desired inclined position, while the concrete or cement is being packed about the same, and inasmuch as the legs c^2-c^3 , which, as shown, are of small size and extend some distance below the longitudinal rods or tension members, the entire skeleton thus formed is supported a sufficient distance from the form to insure the correct position of the arm within the investing material.

While I have in my specification referred to "tension members," and "shear members," I of course, do not purpose limiting the application of devices embodying this invention to such specific uses, for evidently, any intersecting rods for whatsoever purpose used, or affording whatsoever portion of the interior metallic structure for armored concrete, may be engaged together by means of said clips. Of course too, it is not essential that the rods engaged together should be of the same size for the clips may, of course, be constructed to engage a smaller upon a larger rod or vice versa, or when constructed as shown in Figs. 2 and 3, with each notch for the tension rod of greater width than the diameter of the rod, the rods may be proportionately varied in diameter to any extent, provided the sum of the diameters of the rods be approximately the sum of the diameters of the rods of equal size which the clip could engage together.

Obviously therefore, I do not purpose limiting this application for patent otherwise than necessitated by the prior art as details of construction and application may be varied without departing from the principles of this invention.

I claim as my invention:

1. An assembling clip for engaging crossed bars comprising a plate of metal folded to provide arms to receive a bar therebetween and said arms provided with notches in one side thereof inclining outwardly and downwardly toward the edge of the respective arm and rounded at the edge, said notches being greater in width at the mouth than the interior thereof adapted to wedgingly receive bars therein of different diameters.

2. An assembling clip comprising a plate of metal folded to U shape to receive a bar between the arms, a notch in each arm having the lower edges angularly inclined downwardly to the edge of the clip whereby the notch is widest at the edge of the clip and gradually decreases in width inwardly, said lower edge rounded at the outer end and inwardly facing teeth struck from the clip at the bend.

3. A clip comprising a plate or strip of resilient metal bent to form a rounded part with divergent ends, teeth formed centrally at the rounded part and facing inwardly, teeth at the ends of the rounded part facing oppositely, said divergent ends provided

with notches varying in width from one end thereof to the other and being widest at the mouth adapted to receive bars of different thicknesses and each diverging end of the clip provided with a notch providing legs adapted to receive bonding material therebetween.

4. A clip comprising a strip of metal having its ends folded providing a bend and divergent arms, teeth at the bend, transverse notches provided in the arms, the metal forming the lower side of each notch rounded

toward the legs of the clip and each notch gradually decreasing in width from the rounded end to the opposite end and legs at the outer ends of each arm affording a space for bonding material.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

GUSTAVE LIDSEEN.

Witnesses:

K. E. HANNAH,
LAWRENCE REIBSTEIN.