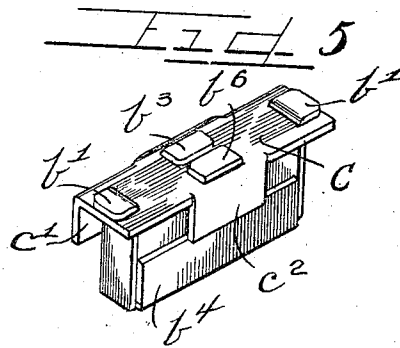
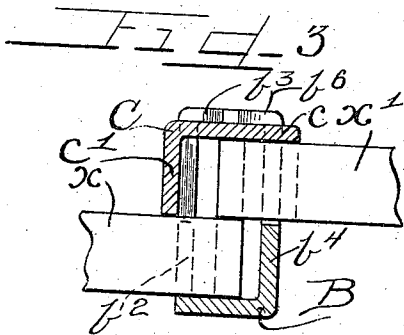
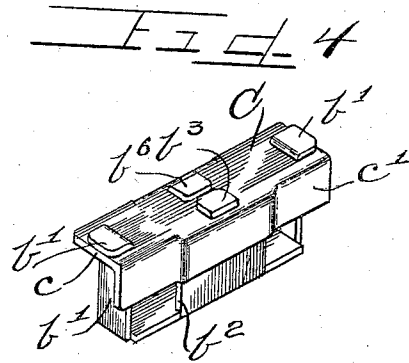
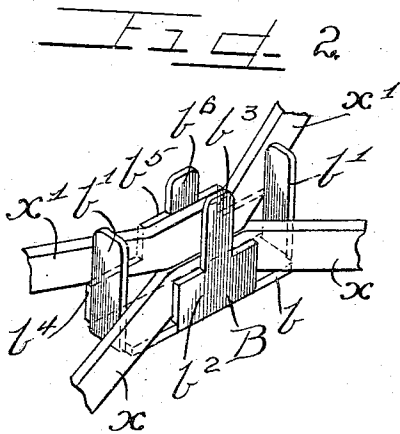
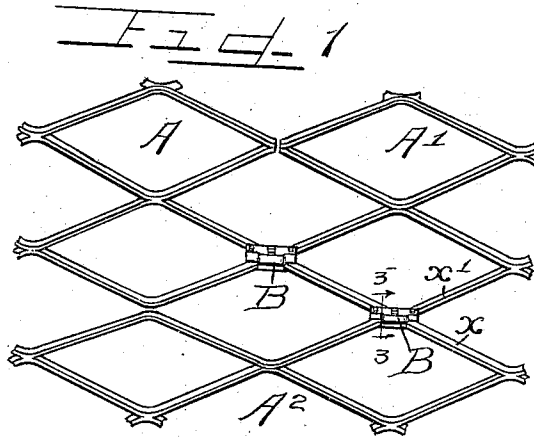


G. LIDSEEN.
 ATTACHING CLAMP OR BOND.
 APPLICATION FILED MAR. 12, 1908.

988,001.

Patented Mar. 28, 1911.



WITNESSES

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UNITED STATES PATENT OFFICE.

GUSTAVE LIDSEEN, OF CHICAGO, ILLINOIS.

ATTACHING CLAMP OR BOND.

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Specification of Letters Patent.

Patented Mar. 28, 1911.

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To all whom it may concern:

Be it known that I, GUSTAVE LIDSEEN, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Attaching Clamps or Bonds; 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 concrete large quantities of expanded metal having large meshes are used. These ordinarily are comparatively short and narrow compared with the dimensions of the structure to be built. In consequence, it becomes very important to rigidly connect adjacent webs of contacting sheets to form practically a unitary structure so that when invested with the concrete or cementitious material there will be no tendency to break at the joints between sheets, either at the abutting ends or along the sides thereof. For this purpose, the sheets are sometimes wired together though this is unsatisfactory inasmuch as the wire is not always secured properly to prevent stretching after the forms are removed and the weight comes upon the structure. In other instances malleable iron clips have been used, which engage the webs of adjacent sheets and which may be riveted or bolted together. These frequently are objectionable for the reason that the webs do not fit well in the seats provided therefor in the inner faces of said clips and it has proven difficult to apply the same for that and for other reasons. Frequently also, because of blow holes imperfect constructions result, which tend to weaken the clip with the result that a break occurs when stress is applied. Furthermore, the expense for clips of the kind is considerable and inasmuch as great numbers of such clips must be employed if used at all, many contractors have avoided their use altogether and have resorted to the method before mentioned, namely, wiring, notwithstanding the constant danger therefrom.

The object of this invention is to afford a stamped metal clip or bond adapted to rigidly engage in a practically unitary structure, the adjacent webs along the sides of the sheets or the adjacent ends of the webs along the adjacent ends of the sheet of such a man-

ner as to afford a unitary structure of maximum strength.

It is also an object of the invention to afford a construction in which the parts thereof overlap and interlock to firmly jam and bond the webs together and to prevent any possibility whatever of slippage or movement of any kind.

Finally it is an object of the invention to afford a construction in which both ends and side clamps are afforded whereby the metal webs of the sheets are firmly engaged in place.

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 view of three sheets showing the same attached or bonded together by devices embodying my invention. Fig. 2 is a perspective view of the bottom of the clip showing the side webs engaged therein and ready to receive the upper clamping plate. Fig. 3 is an enlarged section on line 3—3 of Fig. 1. Fig. 4 is a perspective view of a clamp or bond showing the same closed. Fig. 5 is a similar view showing the opposite side of the clamp or bond.

In said drawings: A and A' indicate expanded metal sheets, the ends of which abut and which are secured together by clamps or clips embodying my invention and A² indicates an expanded metal sheet arranged to break joints with the ends of the sheets A—A' and the webs along one side of which are rigidly connected with the webs along the adjacent sides of the sheets A—A' to form a unitary structure of all the sheets in each layer or course of expanded metal. Said clips, as shown, are each pressed or stamped from sheet metal of requisite gage and tensile strength and each comprises a bottom clip member B, and an upper clip or female member C. Said bottom clip member is stamped to afford a central plate b, of a width and length corresponding with the size of the mesh and web of the expanded metal with which the clip is to be used and at each end of which a tongue b' is turned upwardly as shown in Fig. 2, to fit in the angles formed by the intersecting webs of the sheets. These are of a length to extend considerably above the upper web when secured in place, as shown in Fig. 2. Said clip member B is provided on one side with a relatively short flange b², which is centrally

disposed and of a height corresponding with the height of the bottom or lower web x and extending upwardly therefrom is a central tongue b^3 corresponding in dimensions and extending to the same height as the tongue b' . On the opposite side of the clip is a flange b^4 , which extends the entire length of the clip and bears against the tongue b' at each end thereof and is of a width also to correspond with the width of the web x , and extending upwardly therefrom and integral therewith is a relatively broad tongue b^5 , which is the same width as the flange b^2 , and extends upwardly to a height to correspond with the width of the web x' , which rests upon the web x . Extending upwardly from the middle of said tongue b^5 , is a tongue b^6 , corresponding in width with the tongues b' and b^3 and extending to the same height as said tongues.

The upper clamping clip or male member C comprises a top plate c and a downturned flange c' , adapted to fit against the tongues b' , at the ends of the clip. The ends of said tongues project upwardly through apertures in the plate c and serve as a brace therefor and the flange c' has a width corresponding approximately with the width of the web x' before described. Said flange c' is formed to fit down over the tongue b^3 and flange b^2 , said tongue b^3 projecting upwardly through a suitable aperture in said clip as shown in Figs. 4 and 5. On the opposite side of the clip member C a relatively short flange c^2 is formed of a width to extend downwardly over the broad tongue b^5 to reinforce the same, and, as shown, the tongue b^6 extends upwardly through a suitable aperture in said clip member C so that when the parts of the clip are brought together to engage the sides or ends of the sheets of expanded metal, the ends of the tongues b' — b^3 — b^6 are closed down as shown in Figs. 3 to 5 inclusive, effectively closing the clip.

The operation is as follows: The lower clip member is secured in place and the upper clip member interlocked therewith after the webs of the expanded metal either at the ends or at the sides of said sheets are engaged therein. Preferably a special implement or tool (forming the subject matter of another application for patent), is employed for engaging the sheets together by means of said clips or bonds. Of course, however, if desired, the clips or bonds may be secured in place manually. Obviously should the webs vary slightly from standard in width, the clips may take up this difference so that at all times the webs forming the sheets are very rigidly gripped by the clip or bond. When engaging the ends of the sheets together the tongues b' project upwardly, as shown in the angle formed by two integrally connected webs at the end of each sheet and the lateral tongues b^3 — b^6

project upwardly on each side of the joint. In this way the end tongues firmly engage the sheets together at their ends while the side tongues tend to confine said webs laterally to prevent the same from spreading when stress is applied. When engaging the clips together along the sides as, for instance, sheet A^2 with the sheet A or A' , the lateral tongues engage within the bends or angles formed by the webs of a mesh of each sheet with the lower web x resting flat on the bottom plate b and extending approximately to the height of the flange b^2 on said clip while the web x' rests thereon and on the upper edge of the flange b^4 to insure a firm bearing. The upper clip member C is then applied firmly clamping the upper member x' between flange b^4 and the upper plate c of the clip member while the lower web x is firmly clamped to the bottom plate b of the lower clip member and the bottom flange c' of the upper clip member. In this arrangement the tongue b' projects upwardly in the angle formed by the webs x — x' and being closed down and outwardly as before described through the clip member C, serves to rigidly engage the webs from any longitudinal slippage. The flange b^2 and the broad tongue b^5 are approximately of a length to fit in the bend formed by the meeting of the lateral webs in each mesh and these, together with the end tongues serve to very rigidly hold the webs from bending when stress is applied, thereby preventing distortion of the meshes and insuring a firm union and a practically uniform distribution of stress throughout the structure.

Obviously by the construction described each part of each web is firmly gripped by the clip or bond and the respective parts of each clamp or clip member B and C serve to effectively reinforce the corresponding part of the other to afford approximately double the strength that would be possible without such reinforcement and the firm gripping of the adjacent webs.

I am aware that similar results may be attained by modifying the construction in various details and I therefore do not purpose limiting this application for patent otherwise than necessitated by the prior art.

I claim as my invention:

1. A clip or bond of the class described embracing interfitting clamping members, one provided with transverse end flanges and side flanges having reduced tongues and the other member provided with longitudinal side flanges and having apertures to receive the end flanges and tongues and adapted when brought together to rigidly grip and bond the webs of the sheets to be connected.

2. A clip or bond of the class described embracing interfitting clamping members, one of which is apertured, tongues integral

with the other member adapted to extend through said apertures and adapted to be clenched over the member thereby rigidly securing said members together, flanges integral with one of the members, one flange cut away at the ends to provide openings and the flange on the opposite side extending the entire length of the clip.

3. A device of the class described embracing interfitting clamping members, one provided with tongues and the other with apertures to receive the tongues therein, said tongues adapted to be bent over the apertured member to prevent removal of the same, a flange integral with the side of one of the clamping members at the center thereof and a flange integral with the opposite side of the same clamping member extending the entire length thereof.

4. In a device of the class described a clamping member provided with end flanges, longitudinal side flanges reduced in width at their outer ends, one of said longitudinal flanges bearing directly against the article clamped thereby and a complementary clamping member provided with transverse apertures to receive the end flanges and longitudinal apertures to receive the reduced end of the longitudinal flanges.

5. In a clip or bond for connecting reticulated metal, male and female clamping members constructed of pressed metal and each comprising a rectangular structure provided with transverse and longitudinal flanges adapted to receive therebetween the webs of the sheets to be connected, each of said members having flanges to position and firmly grip the webs engaged therebetween, the flanges of the male member engaging within the flanges of the female member and tongues on the male member adapted to be closed down after passing through the female member.

6. A clip for connecting reticulated metal

comprising a male member having longitudinal flanges, a female member having longitudinal flanges, the flange on one side thereof being greater in length than the flange on the corresponding side of the male member and the flange on the opposite side of the female member of less length than the flange of the male member on the same side and means for clamping the members rigidly together.

7. A device for binding the webs of reticulated material together comprising a member consisting of a rectangular plate of metal, flanges at the ends thereof, a flange on one side at the middle of the plate equal in height to the width of the web, a tongue extending outwardly from the flange, a flange on the opposite side of the plate, a part of said flange equal in height to the width of a web extending the full length of the plate and said flange above said part being restricted in length, a tongue extending outwardly from the restricted part of the flange and a member adapted to be clamped to said member by the end flanges and the tongues.

8. In a device of the class described a member provided with a longitudinal flange on one side extending for the entire length thereof, and a short flange on the opposite side positioned at the middle of the member, a member provided with a flange pressed inwardly intermediate of the ends to engage on each side of the short flange and with a short flange to engage on the outer side of the long flange of the first named member.

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

GUSTAVE LIDSEEN.

Witnesses:

K. E. HANNAH,
J. W. ANGELL.