Our invention relates to wire fabric structural members and the method of making the same, said structural members being particularly adapted for use in the framing of buildings, such as low cost dwellings, and are adapted to be used economically as a substitute for wooden timber for many purposes. The present invention is an improvement over our Patent No. 2,199,152 on Building Construction, patented April 30, 1940.

Among the objects of our invention is to produce structural members of very high efficiency and very light weight, which are capable of being used in a framed structure, in such a manner that said structure will have self contained connections for interior or exterior coverings or both, thus greatly facilitating the rapid erection of such a structure from our structural members.

Another object of our invention is to produce structural members that are adapted to produce a structural frame for a building or similar structure, providing maximum facility for the running of electrical conduits, pipes and other similar members, in the walls and floors of such a building.

It is another object of our invention to provide structural members which, when combined with cement, or stucco, or plaster, or similar material, or a concrete floor, will act with the same to carry stress as combination members, thereby greatly increasing the efficiency of the construction.

One of the principal advantages of our improved structural member is that the web system is more thoroughly braced in such structural members, increasing the efficiency over previously known forms of wire fabric structural members, and a particular advantage is that the improved structural members are able to carry the vertical shear more efficiently without sacrificing any stiffness in the upper chords of joists or the compression members in studs made in accordance with our invention.

Another important advantage is that wire fabric structural members made in accordance with our present invention are better able to carry heavy shears, particularly in the deeper joist sections, than previously known wire structural members of corresponding weight. Also under overload the wire structural members forming the subject matter of this invention, when used as a joist, will begin to yield by the buckling of compression diagonals near the ends, giving an ample warning of a dangerous condition, instead of the welds or wires breaking, making it possible usually for the joist or similar structural member, after such bending has occurred, to be straightened out and become as good as new.

Among the advantages existing in our new and improved wire structural member are those involved in the manufacture thereof, which include the fact that the same can be manufactured in flat continuous sheets, and that such flat continuous sheets can be manufactured from wire in coils by running the longitudinal wires through suitably designed apparatus, in which one or more sets of parallel wires are woven to and fro on diagonal lines across the longitudinal wires and welded thereto where the same cross said longitudinal wires and each other, which will permit of high speed of manufacture. Instead of feeding the wire from coils, two sets of straight diagonally extending wires can be used, the first set being, preferably, applied to the longitudinal wires in one welding stage and the second set in another.

Another advantage of our present invention is that the length of the unbraced members in the web system may be made uniform and may be reduced economically to produce more efficient compression members. Also because of the closer spacing of the diagonal members in the web system a joist can be cut to meet any condition encountered with less waste than in our previously developed structures, which results in an economy in the quantity of material under any given condition.

Other objects and advantages of our invention will appear as the description of the drawings proceeds. We desire to have it understood, however, that we do not intend to limit ourselves to the particular details shown or described, except as defined in the claims.

In the drawings:

Fig. 1 is a fragmentary plan view of a flat welded fabric used to make a structural member made in accordance with our invention.

Fig. 2 is a fragmentary side elevational view of a structural member made from such fabric.

Fig. 3 is a vertical sectional view through a structural member made from said fabric that is U-shaped in cross section.

Fig. 4 is a vertical sectional view through the structural member shown in Fig. 2, taken substantially on the line 4-4 of Fig. 2.

Fig. 5 is a view similar to Fig. 4 of a modified form of structural member made from such a fabric as shown in Fig. 1.

Fig. 6 is a fragmentary plan view of a slightly modified form of flat welded fabric used to make
a structural member made in accordance with our invention.

Fig. 7 is a fragmentary side elevational view of a structural member made from such a fabric as shown in Fig. 6.

Fig. 8 is a vertical sectional view of a structural member U-shaped in cross section made from such a fabric.

Fig. 9 is a section taken on the line 9—9 of Fig. 7.

Fig. 10 is a section similar to Fig. 9 of a modified form of structural member made from the fabric shown in Fig. 1.

Fig. 11 is a plan view of a web stiffening member for use in conjunction with our invention.

Fig. 12 is a side elevational view thereof.

Fig. 13 is a plan view of a keeper member used in conjunction with said web stiffening member.

Fig. 14 is a side elevation thereof, and

Fig. 15 is an enlarged sectional view taken on the line 15—15 of Fig. 4.

Referring in detail to the drawings, in Fig. 1 is shown a flat welded wire fabric that we use in making joists in accordance with our invention.

Said fabric comprises a pair of marginal longitudinal high tensile strength steel wires 22, which, preferably, have a tensile strength of from 500,000 to 800,000 pounds per square inch, and two inner longitudinal wires 28 of similar high tensile strength steel. Said fabric further comprises obliquely extending parallel wires disposed across the above referred to longitudinal wires, so arranged as to extend at two different oblique angles to the longitudinally extending wires. All of the obliquely extending wires, preferably, extend at an angle of about 60 degrees to the longitudinally extending wires. While we have found that an angle of 60 degrees is most desirable, substantially as good results are obtainable if a slightly different angle is used. The parallelly arranged diagonally extending or obliquely extending wires are arranged in equally spaced relation in the mesh that results from the intersecting obliquely extending wires.

In the form of the invention shown in Figs. 1 to 5, inclusive, the obliquely extending wires are made up of a single series of eight parallel wires numbered 20 to 27, inclusive. Said wires are first brought in parallelism to each other in regularly spaced relation at the proper angle to the longitudinally extending wires across said longitudinally extending wires, so as to intersect all said longitudinally extending wires, and are then all bent back on themselves at the same angle to the portions laid across said longitudinal wires and again brought across the longitudinally extending wires in parallelism and in regularly spaced relation to each other at an equal oblique angle thereto and at an angle to the lengths of the previously laid diagonally extending series. Said wires are then again bent on themselves at the same angle to again extend in parallelism to each other obliquely across the longitudinally extending wires and parallel to the first laid series of eight wires, and this bending back of the wires on themselves and laying the same across each other and across the longitudinally extending wires is continued as the longitudinal wires are advanced so that it may be said that the obliquely extending wires are woven back and forth as said longitudinal wires are advanced. As the wires advance through suitable apparatus for forming the fabric, the obliquely extending wires are welded to the longitudinally extending wires and to the obliquely extending wires, which the same intersect, so that every obliquely extending wire is welded to every other obliquely extending wire at the intersections thereof, and every obliquely extending wire is welded to every longitudinally extending wire wherever such an obliquely extending wire intersects such a longitudinally extending wire.

There is a row of intersections 30 of the diagonally extending wires on the center line of the fabric spaced equidistantly from the longitudinally extending wires 28. The bends in the wires where the angularity thereof is changed are indicated by the numeral 31 and these bends 31, preferably, lie beyond the marginal longitudinally extending wires 28 so that the said marginal wires are spaced inwardly slightly from the actual margins of the fabric. The arrangement of longitudinal and obliquely or diagonally extending wires is such that the longitudinally extending wires 28 are very effectively braced by the intersecting obliquely extending members welded to each other and to such longitudinally extending members. This is highly advantageous when the two wires 29 form the upper chord in a joint or similar structural member and are subjected to compression.

It will also be noted that the intersecting obliquely extending wires are spaced from each other where the same intersect the longitudinally extending wires 28, the next intersection of said obliquely extending wires to each other being at 30, which point of intersection is spaced slightly beyond the point of intersection 61 of said obliquely extending and longitudinally extending wires. This makes it easier to weld the obliquely extending wires to the longitudinally extending wires, as each obliquely extending wire is welded separately to such longitudinally extending wire.

It will also be noted that the intersections 62 of the diagonally or obliquely extending wires with each other nearest the bend 31 are spaced from the marginal longitudinally extending wires 28 and that said bends are spaced from said wires 28 so that the intersections of the diagonally extending wires with the longitudinally extending marginal wires 28 are also separated from each other in a similar manner to that described in connection with the intersections of the obliquely extending wires and the longitudinally extending wires 29, which makes it easier to weld the obliquely extending wires to the longitudinally extending wires.

The triangular formations provided at the marginal portions of the fabric by means of the obliquely extending wires between the bends 31 and the longitudinally extending marginal wires 28 provide a very rigid and strong construction, and a strong connection between the web comprising the obliquely extending wires and said longitudinal wires, and will eliminate any distortion at this point under extreme stress. In addition to this, the projecting bends 31 provide a means for connecting the two edges of the fabric together, or for securing or anchoring other members thereto. While only one oblique intermediate intersection 63 of the obliquely extending members is disclosed in Fig. 1, obviously the number of intersections between the longitudinally extending wires can be varied so as to either increase or decrease the same as may be found desirable, it being, of course, understood that while reference is made to the use of eight obliquely extending wires to be laid in the fabric simultaneously, the number thereof can be
varied as may be found desirable to get the pattern that might be preferred. The number of diagonal wires and the spacing thereof may be varied in accordance with the weight of sections desired and the diameter of wire that may be found desirable or necessary for use in the diagonally extending members.

Structural members of various cross sectional shapes can be made from the fabric shown in Fig. 1. Thus a member that is U-shaped in cross section can be made therefrom, as shown in Fig. 3, the same being shown as being an inverted U-section. The section shown in Fig. 3 may be obtained by cold forming the fabric shown in Fig. 1. This can be accomplished by bending the fabric shown in Fig. 1 so that the bends 64 in the obliquely extending members will lie just inwardly of the longitudinally extending members 23, whereby the transversely extending portion 55 of the inverted U-shaped member will be made up of the obliquely extending members lying between the two longitudinally extending members 23 with the intersections 30 thereof lying substantially in the middle of said transverse portion. The remainder of the fabric between the longitudinally extending wires 28 and the longitudinally extending wires 28 will form the leg portions 66 of said inverted U-shaped member with the bends 31 at the extremities of the legs.

Such a section as shown in Fig. 3 is suitable for a number of purposes, but greater rigidity can be obtained by bringing together the margins of the fabric to form a structural member substantially triangular in cross section, as shown in Fig. 4, this structural member being also shown in Fig. 2 in elevation. The structural member of the cross section shown in Fig. 4 can also be obtained by cold forming the fabric shown in Fig. 1. The marginal portions of the fabric can be joined to close the section by welding or otherwise fastening the bends 31 of the wires to each other, or by connecting the longitudinal wires 28 with each other by welding or otherwise. In Fig. 4 the longitudinally extending wires 28 are shown as being welded to each other to secure the fabric in such a position that there is a transversely extending portion 67, similar to the previously described portion 65, referred to in connection with Fig. 3, and inclined legs 68 that converge from the portion 67 to beyond the marginal longitudinally extending members 22.

Instead of welding or otherwise securing the longitudinally extending marginal wires 28 to each other, as shown in Fig. 4, an additional longitudinal member 32 may be inserted between the projecting bends 31 beyond the marginal wires 28 and the extending portions of the diagonally extending wires welded thereto to form the closed, triangular in cross section, structural member shown in Fig. 5, which is otherwise substantially the same character as that shown in Fig. 4.

One of the advantages of a structural member of the type shown in Figs. 2, 4 and 5 is that it may be turned with the apex thereof downwardly, as shown in Figs. 4 and 5, or reversed so as to have the apex thereof extend upwardly and serve as a beam substantially equally well in either position. This would not be true of the structural member shown in Fig. 3, unless the wires 28 are relatively large in diameter with respect to the wires 23.

When the fabric shown in Fig. 1 is bent to form any one of the structural members shown in section in Figs. 3, 4 and 5, the web portions of said structural members will, in side elevation, appear as shown in Fig. 2. When such a member is to be used as a beam or joist to support vertical loads it has the advantage that the greatest length of unbraced members which make up the web system, is a solid side of the diamond-shaped formation that exists between the intersections 60, 63 and 62. The length of the side of this diamond-shaped formation can readily be kept within allowable limits by proper arrangement of the diagonally extending members. On either side of the center of the span of such a beam one set of inclined or obliquely extending members is in compression, while the other set is in tension, and as a result the tension members brace the compression members most effectively. This is accomplished by rigidly connecting all of the intersecting diagonally extending members forming the web portions to each other at all their intersections and to the longitudinal wires where these are intersected. The system of bracing the upper chord members 29 by means of the diagonally extending members intersecting at 30 along the longitudinal center line of such upper chord is highly effective and most desirable where the structural member is used as a simple beam without having a concrete slab associated therewith and anchored thereto, to brace the upper or compression chord of said beam.

Instead of making the flat welded fabric of a plurality of parallel wires woven back and forth as hereinbefore described, the fabric can be made of two sets of straight parallel wires, each set being arranged at an angle to the other set as the overlapping lengths of the eight parallel wires previously described. The obliquely or diagonally extending members so formed have the same relationship to longitudinally extending wire members of high tensile strength as the obliquely extending wires previously described. A fabric made up of such separate straight wires arranged in such parallel relationship and at such angles to each other and to the longitudinally extending wires as shown in Fig. 6 of the drawings.

Referring to Fig. 6, the fabric is shown as being provided with a pair of marginal longitudinally extending wires 41 of high tensile strength, and a pair of inner longitudinal wires 40 of high tensile strength, these being arranged substantially in the same manner as the wires 28 and 29 shown in Fig. 1.

A series of parallel uniformly spaced straight wires 42 extending at an angle of substantially 60 degrees to the longitudinally extending wires 40 and 41, are placed on the longitudinally extending wires and welded thereto. The wires 42 are of such a length that the same extend only very slightly beyond the outer marginal edges of the marginal wires 41. A second set of straight parallel uniformly spaced wires 43, inclined at the same angle to the longitudinally extending wires as the wires 42, but in the opposite direction, are placed in uniformly spaced relation on the first mentioned set of wires 42 and are welded to the longitudinally extending wires 40 and 41. The wires 43 are, preferably, longer than the wires 42 and extend beyond the marginal longitudinally extending wires 41 a substantial distance, said wires 43 all extending an equal distance beyond the marginal wires 41. After the wires 43 have been put in position, said wires 43 are also welded to the wires 42 wherever the same intersect said wires 42.

The intersections 30' of the wires 42 and 43 between the inner longitudinally extending high
tenstic strength wires 40 are on the center line of the fabric midway between the wires 40, thus being similarly arranged to the intersections 30. The intersections 69 in the fabric shown in Fig. 6 are similarly spaced from the longitudinally extending wires 46, as are the intersections 60 from the wires 29, thus spacing the intersections 61 of said obliquely or diagonally extending wires and the longitudinally extending wires in such a manner as to facilitate welding of the diagonal extending wires and the longitudinally extending wires to each other, just as in the form of the invention shown in Fig. 1. The intersections 62 of said wires 42 and 43 are similarly spaced from the marginal longitudinally extending wires 41 and, as shown, the fabric is provided with another set of intersections 63 between each longitudinal wire 41 and each longitudinal wire 40. Of course, the number of intersections between the diagonally extending wires provided between each wire 43 and each wire 41 would be dependent upon the length of the wire members 42 and 43 and the spacing of said wires from each other, as well as the spacing of the longitudinally extending wires from each other, and can be varied as may be required to obtain the desired strength of the web portion of the structural member to be made from the fabric.

The ends of the longer wires 43 provide extending end portions 44 on each thereof at each of the margins of the fabric and the point of intersection of the wires 42 and the wires 43 are spaced from each other longitudinally of the marginal longitudinally extending wires 41, so as to space the webs 11 joining the wires 43 and 41 from the webs 12 joining the wires 42 and 41, thus simplifying the welding operation considerably.

The resulting fabric made as shown in Fig. 6 is very similar to that made as shown in Fig. 1, except for the marginal portions thereof, which, instead of having the triangular formations resulting from the bends at 31 in the form of the invention shown in Fig. 1, are provided merely with projecting stub ends of wires 44. Similar structural members can be made from the fabric shown in Fig. 6 as from the fabric shown in Fig. 1, and the structural members will have similar characteristics.

Thus in Fig. 8 is shown in transverse section a structural member formed from the fabric shown in Fig. 6, the same being of inverted U-shape in cross section and having a transverse portion 65 corresponding to the transverse portion 66 of the U-shaped in cross section member disclosed in Fig. 2, and having the parallel leg portions 66' corresponding to the leg portions 65 of the structural member shown in Fig. 3, the extremities of the legs 66' beyond the longitudinally extending members 41 being made up of the stub ends 44 of the wires 43. The structural member shown in Fig. 8 can be made in the same manner as the structural member shown in Fig. 3.

In Figs. 7 and 9 is shown a structural member of a closed triangular formation in cross section. The structural member shown in Figs. 7 and 9 can be formed from the fabric shown in Fig. 6 in a similar manner to that in which the structural member shown in Figs. 2 and 4 is formed from the fabric shown in Fig. 1, to provide the transversely extending portion 67' and the converging legs 68' corresponding to the portions 67 and 66 of the structural member shown in Figs. 2 and 4. When the fabric is so formed to produce the structural member shown in Figs. 7 and 9, the projecting end portions 44 of the wires 43 will cross each other as shown at 73 in Fig. 7. Said extensions 44 can be readily welded to each other at their points of crossing 73 to secure the structural member in closed triangular form. Instead of welding the projecting ends 44 to each other as above described, the marginal longitudinally extending wires 41 could be welded or otherwise secured to each other to hold the structural member in closed triangular in cross section form.

While the fabric shown in Fig. 6 has been described above as being made by first welding the wires 42 to the longitudinally extending wires 40 and 41, and then the wires 43 to the longitudinally extending wires 40 and 41 and to the wires 42, the fabric could be made by welding the wires 42 and 43 to each other, after having been placed in proper relative position, and then welding the longitudinally extending wires to the fabric thus formed.

Instead of securing the structural member shown in Figs. 7 and 9 in its closed triangular in cross section form by the above referred to means, a longitudinally extending member 45 can be inserted between the projecting ends 44 and said ends welded thereto, in which case it is unnecessary to weld the wires 41 to each other or the end portions 44 directly to each other. The same advantage exists in doing this as in providing the longitudinally extending high tensile strength member 32 in the form of the invention shown in Fig. 5.

The structural members shown in Figs. 7, 9 and 10 have the same advantage over the structural members shown in Fig. 8, as the structural members shown in Figs. 2, 4 and 5 have over the structural members shown in Fig. 3. The projections 44 of the wires 43 provide a means for easily fastening metal lath or other materials to the structural member, and if the structural member is reversed in position from that shown in Figs. 9 and 10 with the projecting ends 44 extending upwardly, the structural members can be used advantageously in combination with a reinforced concrete floor slab, the projections 44 then providing means for anchoring the concrete slab to the steel joist.

It is preferred, to weld the looped or bent portions 31 of the wires together, to welding the longitudinally extending marginal members 28 directly to each other, to form the structural member that is triangular in cross section, because this prevents the possibility of distortion that more readily occurs when the wires 28 are welded directly to each other. Similarly the projecting ends 44 of the wires in the form of the invention shown in Figs. 6 are, preferably, welded to each other to form a structural member, her triangular in cross section for the same reason. Another advantage of this form of securement is that the wires 20, 21, 22, 23, 24, 25, 26, 27, 42 and 43 are relatively soft as compared with the high tensile strength longitudinally extending wires 28, 29, 40 and 41, and thus the welds are more readily made between wires than between wires that are harder and of higher tensile strength. Also it will be noted that in all cases such softer diagonally extending wires are welded to the longitudinally extending harder higher tensile strength wires, making better welds than if such higher tensile strength wires are welded directly to each other.

Where a fabric such as that shown in Figs. 1 and 6 is used to form a beam such as that
What we claim is:

1. A metallic structural member having a pair of converging legs and a transverse portion connecting said legs, said member comprising a pair of longitudinal members spaced from each other, a second pair of longitudinal members spaced from said first pair, all said longitudinal members being parallel to each other, and obliquely extending members extending back and forth across said longitudinal members to provide two series of oblique members, the obliquely extending members of each series being parallel to each other and the members of one series being inclined opposite to the members of the other series relative to said longitudinal members, said obliquely extending members intersecting and crossing all said longitudinal members at points spaced longitudinally of said longitudinal members and being fixed thereto at said intersections and said obliquely extending members of one series intersecting the obliquely extending members of the other series and being fixed to each other at their intersections, each of said legs having a longitudinal member of said second pair adjacent its extremity and having one of said other longitudinal members adjacent its junction with said transverse portion, said obliquely extending members including bends projecting beyond said second pair of longitudinal members at the ends of said legs and a longitudinally extending member secured to said bends to hold said last mentioned longitudinal members in side by side relation to form a structural member of closed triangular cross section.

2. A metallic structural member comprising a body portion of wire fabric having parallel marginal longitudinal members, inner parallel longitudinal members, and members extending at opposite oblique angles to and intersecting all said longitudinal members, portions of said obliquely extending members extending beyond said marginal longitudinal members, said obliquely extending portions lying in two sets of parallel paths and intersecting each other at points between each of said marginal members and each of said inner members, and intersecting each of said marginal members at longitudinally spaced points and said inner members at longitudinally spaced points, the intersections between said marginal and inner longitudinal members including intersections adjacent said longitudinal members, said members being secured to each other at all said intersections, said structural members comprising a transverse portion lying between said inner longitudinal members and converging legs lying between said inner members and marginal portions, and a longitudinal member secured to said extensions of said obliquely extending members to secure said legs to each other.

3. A wire fabric structural member having a transverse portion and a pair of converging legs extending therefrom, the wire fabric body portion of said member comprising a pair of marginal longitudinal members adjacent but spaced from the convergent extremities of said legs and a pair of inner longitudinal members at the junctions of said legs and transverse portion, all said longitudinal members being parallel to each other, and obliquely extending members intersecting all said longitudinal members, said obliquely extending members comprising a set of parallel members extending at a predetermined oblique angle to said longitudinal members and a set of parallel members extending at the op-
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positive oblique angle to said longitudinal members, each obliquely extending member of one of said sets intersecting an obliquely extending member of the other set in each of said legs at a point spaced from the inner longitudinal member therein and another obliquely extending member of the other set at a point spaced from the marginal longitudinal member therein, the obliquely extending members of one of said sets intersecting the longitudinal members in spaced relation to the intersection of the members of the other of said sets with said longitudinal members, all said members being welded to each other at all said intersections to provide a series of triangular bracing structures in each of said legs uniformly spaced along each of said longitudinal members, the series of triangular structures along one longitudinal member in each leg being spaced from the series of triangular structures along the other longitudinal member in said leg, each member of one oblique set intersecting and being welded to a member of the other oblique set in said transverse portion and forming triangular bracing structures with said inner longitudinal members alternating with said triangular bracing structures therealong in said legs, and means interposed between the converging extremities of said legs and welded thereto to secure said legs to each other.

4. A wire fabric structural member having a transverse portion and a pair of converging legs extending therefrom, the wire fabric body portion of said member comprising a pair of marginal longitudinal members adjacent but spaced from the converging extremities of said legs and a pair of inner longitudinal members at the junctions of said legs and transverse portion, all said longitudinal members being parallel to each other, and obliquely extending members intersecting all said longitudinal members, said obliquely extending members comprising a set of parallel members extending at a predetermined oblique angle to said longitudinal members and a set of parallel members extending at the opposite oblique angle to said longitudinal members, each obliquely extending member of one of said sets intersecting an obliquely extending member of the other set in each of said legs at a point spaced from the inner longitudinal member therein and another obliquely extending member of the other set at a point spaced from the marginal longitudinal member therein, the obliquely extending members of one of said sets intersecting the longitudinal members in spaced relation to the intersection of the members of the other of said sets with said longitudinal members, all said members being welded to each other at all said intersections to provide a series of triangular bracing structures in each of said legs uniformly spaced along each of said longitudinal members, the series of triangular structures along the one longitudinal member in each leg being spaced from the series of triangular structures along the other longitudinal member in said leg, each member of one oblique set intersecting and being welded to a member of the other oblique set in said transverse portion and forming triangular bracing structures with said inner longitudinal members alternating with said triangular bracing structures therealong in said legs, and means interposed between the converging extremities of said legs and welded thereto to secure said legs to each other.

6. A wire fabric structural member having a transverse portion and a pair of converging legs extending therefrom, the wire fabric body portion of said member comprising a pair of marginal longitudinal members adjacent but spaced from the converging extremities of said legs and a pair of inner longitudinal members at the junctions of said legs and transverse portion, all said longitudinal members being parallel to each other, and obliquely extending members intersecting all said longitudinal members, said obliquely extending members comprising a set of parallel members extending at a predetermined oblique angle to said longitudinal members and a set of parallel members extending at the opposite oblique angle to said longitudinal members, each obliquely extending member of one of said sets intersecting an obliquely extending member of the other set in each of said legs at a point spaced from the inner longitudinal member therein and another obliquely extending member of the other set at a point spaced from the marginal longitudinal member therein, the obliquely extending members of one of said sets intersecting the longitudinal members in spaced relation to the intersection of the members of the other of said sets with said longitudinal members, all said members being welded to each other at all said intersections to provide a series of triangular bracing structures in each of said legs uniformly spaced along each of said longitudinal members,
the series of triangular structures along the one longitudinal member in each leg being spaced from the series of triangular structures along the other longitudinal member in said leg, each member of one oblique set intersecting and being welded to a member of the other oblique set in said transverse portion and forming triangular bracing structures with said inner longitudinal members alternating with said triangular bracing structures therealong in said legs, and means interposed between the converging extremities of said legs and welded thereto to secure said legs to each other.

7. A wire fabric structural member having a transverse portion and a pair of converging legs extending therefrom, the wire fabric body portion of said member comprising a pair of marginal longitudinal members adjacent but spaced from the convergent extremities of said legs and a pair of inner longitudinal members at the junctions of said legs and transverse portion, all said longitudinal members being parallel to each other, and obliquely extending members intersecting all said longitudinal members, said obliquely extending members comprising a set of parallel members extending at a predetermined oblique angle to said longitudinal members and a set of parallel members extending at the opposite oblique angle to said longitudinal members, each obliquely extending member of one of said sets intersecting an obliquely extending member of the other set in each of said legs at a point spaced from the inner longitudinal member therein and another obliquely extending member of the other set at a point spaced from the marginal longitudinal member therein, the obliquely extending members of one of said sets intersecting the longitudinal members in spaced relation to the intersection of the members of the other of said sets with said longitudinal members, all said members being welded to each other at all said intersections to provide a series of triangular bracing structures in each of said legs uniformly spaced along each of said longitudinal members, the series of triangular structures along the one longitudinal member in each leg being spaced from the series of triangular structures along the other longitudinal member in said leg, each member of one oblique set intersecting and being welded to a member of the other oblique set in said transverse portion and forming triangular bracing structures with said inner longitudinal members alternating with said triangular bracing structures therealong in said legs, the members of one of said sets having terminal portions extending beyond said marginal longitudinal wires, and means mounted between said terminal portions and welded thereto to secure said legs to each other.

8. The combination with a wire fabric structural member having a transverse portion and a pair of converging legs providing a structural member of triangular cross section having a pair of upper longitudinal chord wires secured near the junctions of said transverse portion and said legs and a lower pair of longitudinal chord wires secured near the extremities of said legs, of web stiffening means comprising a pair of flanged members each having hook means adjacent one end thereof engaging one of said lower chord wires, and wedging means engaging the corresponding upper chord wire, a member connecting said flanged members adjacent said ends having said hook means, and clamping means connecting said members near said wedging means.

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