

H. E. WHITE.
EXPANDED METAL STRUCTURE.
APPLICATION FILED MAR. 17, 1910.

993,930.

Patented May 30, 1911.

2 SHEETS-SHEET 1.

Fig. 1.

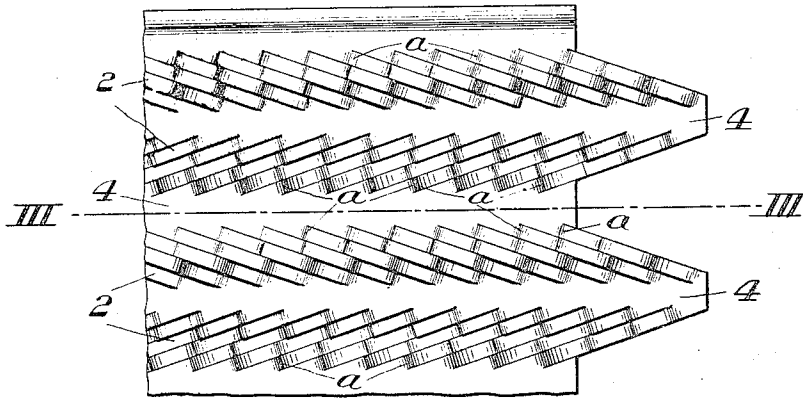


Fig. 2.

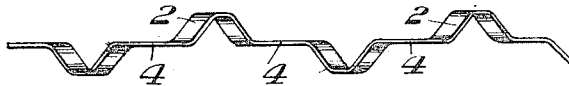


Fig. 3.

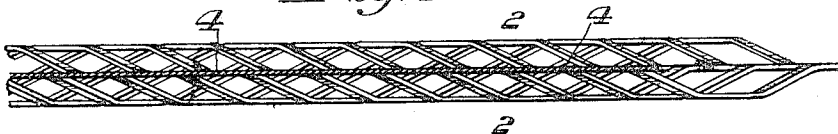
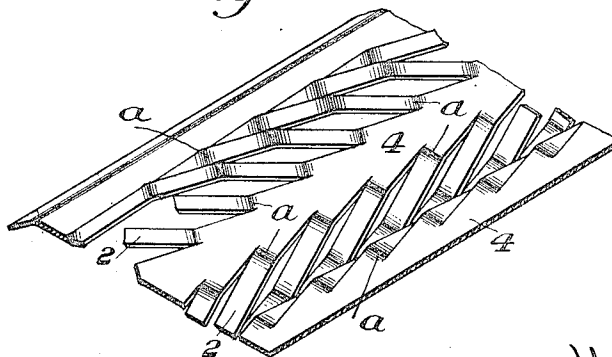


Fig. 4.



WITNESSES

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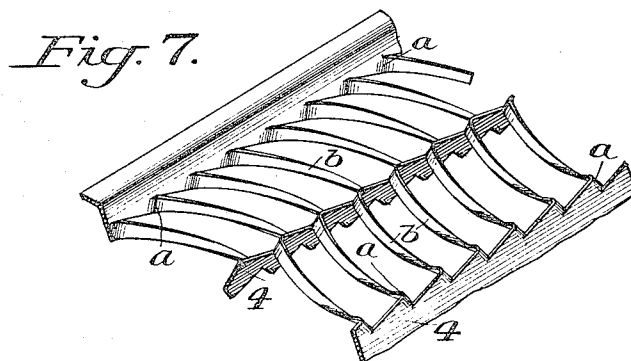
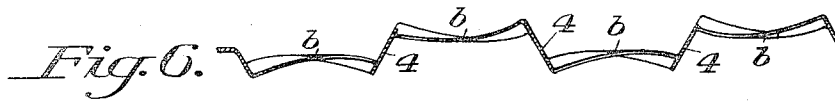
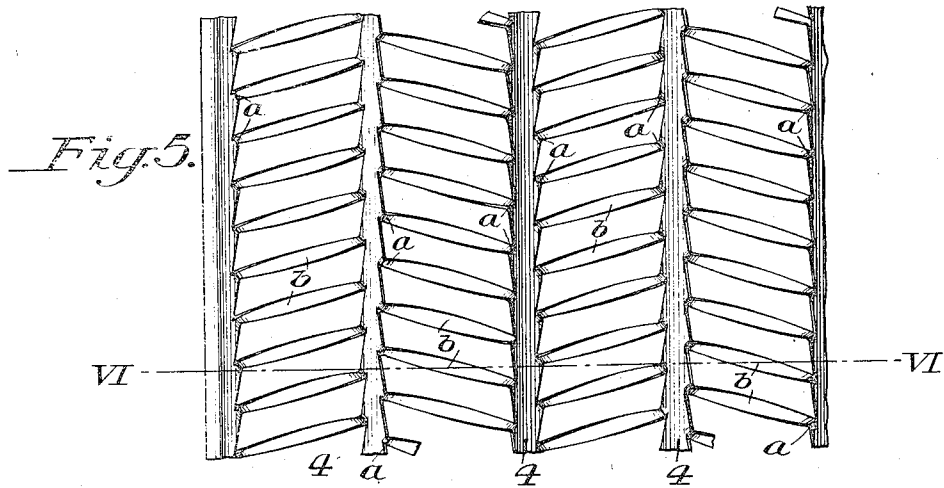
by Babcock, Byrnes & Parmelee.
his Attys

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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

HERBERT E. WHITE, OF YOUNGSTOWN, OHIO, ASSIGNOR TO THE GENERAL FIREPROOF-
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EXPANDED-METAL STRUCTURE.

993,930.

Specification of Letters Patent.

Patented May 30, 1911.

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To all whom it may concern:

Be it known that I, HERBERT E. WHITE, of Youngstown, Mahoning county, Ohio, have invented a new and useful Improvement in Expanded-Metal Structures, of which the following is a full, clear, and exact description.

My invention has relation to expanded metal structures.

10 The invention relates to expanded metal structures of the general class shown and described in my Patent No. 651,643, dated June 12th, 1900, in which the structure consists of slatted open work portions or sections, separated by ribs which are substantially on edge, or greatly inclined to the general plane of the structure.

15 My present invention provides a structure of this character in which these ribs, instead of being all turned or inclined in the same direction as in my said patent, are alternately inclined in opposite directions, and the slats of the intermediate slatted open-work portions have half bends or
25 twists.

30 The object of my invention is to provide a structure of this character which can be readily and cheaply made; which will possess increased strength, and which is admirably adapted to support a plaster or mortar when the structure is used for lathing.

35 The nature of my invention will be best understood by reference to the accompanying drawings, in which:—

40 Figure 1 is a plan view showing a portion of a partially formed blank such as is employed with my invention. Fig. 2 is an end view of a blank ready for expansion; Fig. 3 is a section on the line III—III of Fig. 1 on an enlarged scale; Fig. 4 is a perspective view of a portion of the blank ready to be expanded; Fig. 5 is a plan view of a portion of the expanded structure; Fig.
45 6 is a section on the line VI—VI of Fig. 5; and Fig. 7 is a perspective view of a portion of the expanded structure.

50 According to my invention, the sheets or blanks from which the structures are to be formed are first cut or slitted in any usual or well known manner, to form a plurality of parallel slitted portions or areas, such as shown at 2 in Fig. 1, these slitted portions or areas being separated from each other by
55 intermediate unslitted portions or ribs 4.

The oblique cuts or slits of adjacent areas extend in the opposite directions, as shown. Each slitted area is bent out of the general plane of the sheet or blank by the cutting die, the bends of adjacent areas being in opposite directions with respect to said plane. These bends are of alternately concave and convex form, and extend across the entire width of each slitted area so that the slats of one slitted area are each bent downwardly below the general plane of the sheet, while the slats of the adjacent slitted area are all bent upwardly with respect to said plane. The character of this bending is clearly shown in Figs. 1, 2, 3 and 4. This bending may be accomplished by any suitable arrangement of dies. By reason of these bends, the slats of adjacent slatted areas are given a tendency, when the sheet is expanded, to bend or twist in opposite directions, by reason of the initial bending points *a*, where the slats join the ribs. After the blanks have been slitted and bent in this manner, they are expanded in the usual way, forming a structure such as shown in Figs. 5, 6 and 7, in which the intermediate ribs 4 are substantially on edge, in planes which are greatly inclined to the general plane of the structure, adjacent ribs 4 being inclined in opposite directions, and the connecting slats each having a half bend or twist *b* therein, these bends or twists in adjacent series of slats being in opposite directions. The ribs 4 are caused to assume these oppositely inclined positions by reason of the tendency of the slats of adjacent slitted areas to bend or twist in this manner in opposite directions due to the bending before described. This will be readily understood when it is considered that by reason of the alternating convex and concave curvature of the slitted areas, the slats of one area will connect the lower edges of adjacent ribs (looking at the structure in plan), while the slats of the adjacent area will connect the upper edges of adjacent ribs, and the ends of the two series of slats which are joined to any one rib are turned or twisted in opposite directions. In this manner, I provide a structure which is of maximum stiffness due to the opposite bends or twists of adjacent series of slats and to the opposite inclination of adjacent ribs, and at the same time provide a structure which is admirably adapted for use as

a metallic lathing, since the ribs form shelves or pockets to support and retain mortar.

While in the drawings, I have illustrated a blank having four slitted areas only, it will be understood that I may use blanks having any desired number of slitted areas; and in practice the blanks are usually of considerable width, and of any desired length.

While I have shown the slits and ribs as extending alternately in opposite directions, and this is the preferred arrangement, my invention is not limited thereto, since the ribs may all extend in the same direction.

What I claim is:—

1. An expanded metal structure, comprising slitted open-work portions or sections, separated by ribs which are substantially on edge, that is to say, greatly inclined to the general plane of the structure, adjacent ribs being inclined in opposite directions, and the slats of adjacent slitted or open-work portions or sections connecting opposite edge portions of said ribs, whereby such adjacent sections are offset wholly to opposite sides of the central flat plane of the structure; substantially as described.

2. An expanded metal structure, comprising slitted open-work portions or sections, separated by ribs which are substantially on edge, that is to say, greatly inclined to the general plane of the structure, and the slats connecting the ribs having half bends or twists therein adjacent slitted portions or sections being offset to opposite sides of the central flat plane of the structure; substantially as described.

3. An expanded metal structure, comprising slitted open-work portions or sections, separated by ribs which are substantially on edge, that is to say, greatly inclined to the general plane of the structure, adjacent ribs being inclined in opposite directions, and the slats connecting the ribs having half

bends or twists therein, the bends or twists of adjacent series of slats being in opposite directions, and the slats of adjacent slitted or open-work portions or sections connecting opposite edge portions of said ribs, whereby such adjacent sections are offset wholly to opposite sides of the central flat plane of the structure; substantially as described.

4. A blank for expanded metal structures, consisting of alternately slitted and unslitted areas, each slitted area having a curved bend out of the central plane of the blank and the unslitted portions being in the central plane of the blank; substantially as described.

5. A blank for expanded metal structures, consisting of alternately slitted and unslitted areas, each slitted area having a curved bend out of the central flat plane of the blank, adjacent bends being in opposite directions with respect to such plane; substantially as described.

6. A blank for expanded metal structures, consisting of alternately slitted and unslitted areas, the slitted areas being bent alternately to opposite sides of the central flat plane of the blank; substantially as described.

7. An expanded metal structure, comprising slitted open-work portions or sections, separated by ribs which are substantially on edge, that is to say, greatly inclined to the general plane of the structure, adjacent ribs being inclined in opposite directions, and the slats of the open-work portions connecting the edge portions of the ribs, the slats of one section connecting the upper edge portions of adjacent ribs, and the slats of another section connecting the lower edge portions of adjacent ribs; substantially as described.

In testimony whereof, I have hereunto set my hand.

HERBERT E. WHITE.

Witnesses:

H. R. GLENN,
A. J. WATSON.