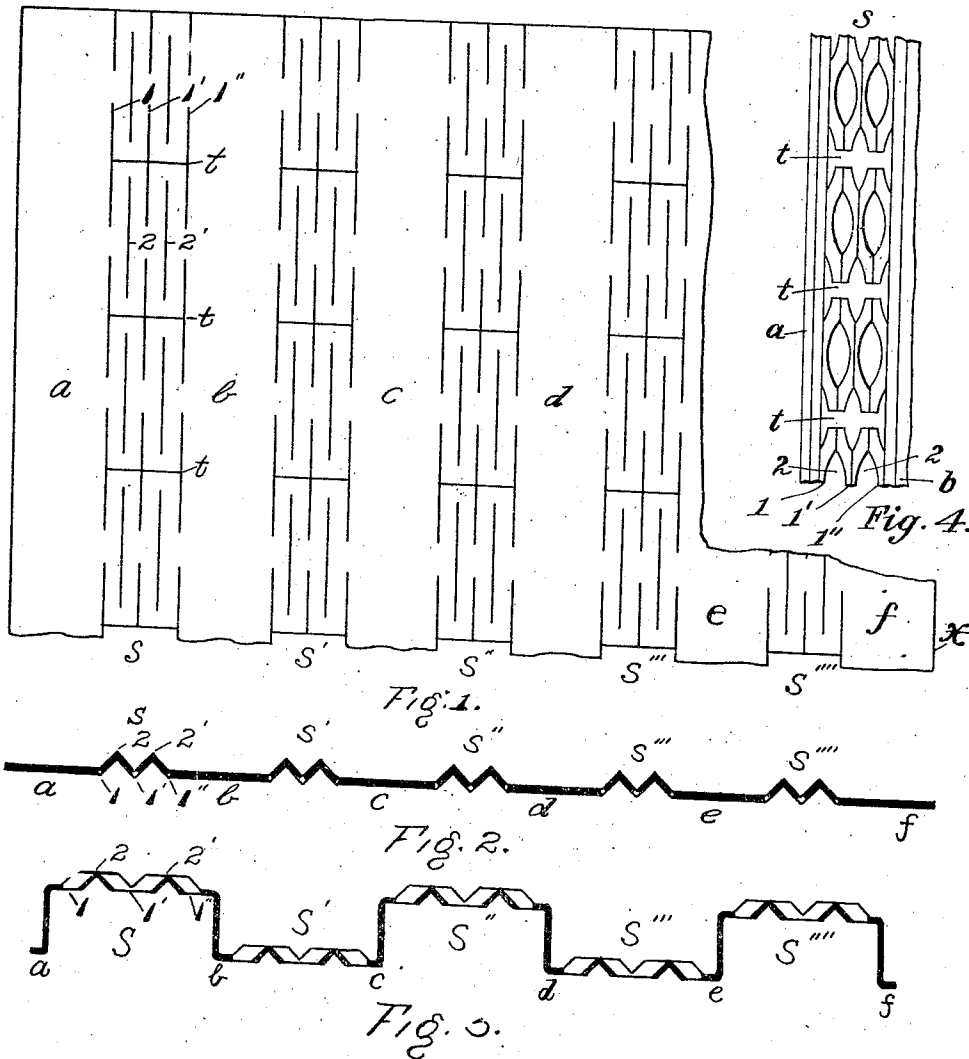


1,017,255.

Patented Feb. 13, 1912.



WITNESSES
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EXPANDED METAL.

1,017,255.

Specification of Letters Patent.

Patented Feb. 13, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM D. FORSYTH, a citizen of the United States, residing at Youngstown, in the county of Mahoning, in the State of Ohio, have invented a new and useful Improvement in Expanded Metal, of which the following is a specification.

My invention relates to new and useful improvements in expanded metal having longitudinal unexpanded members in one plane and transverse meshed members in another plane, adapted to be used for reinforcement of concrete for different structural purposes.

The object of my invention is to provide an expanded metal which can be used readily and effectively in building construction as an efficient and cheap substitute for studding and other constructions where thickness and longitudinal strength are desirable.

In the drawing which forms part of the specification in Figure 1, X is a sheet of metal slitted longitudinally and transversely, preparatory to being formed and expanded into my improved expanded metal. Fig. 2 is an end view of Fig. 1, with corrugations made therein at the longitudinal slits made in sheet X. Fig. 3 is an end view of sheet X after the same has been corrugated and stretched laterally so that the solid longitudinal members are in the vertical plane and the expanded meshed members are in the horizontal plane. Fig. 4 represents a plan view of one of the ribs of my expanded metal, the end view of which is shown in Fig. 3 between the lines *a*—*b*.

Like letters and figures of reference refer to like parts throughout the drawing.

X in Fig. 1 is a sheet of metal in which a series of longitudinal slits, S, S', S'', S''', S'''' are made in a suitable way by pressing or rolling each series of longitudinal sheets consisting of parallel slits 1, 1', 1'' and 2, 2' and transverse slits *t*, *t*, *t*, formed with reference to one another as shown in said figure. *a*, *b*, *c*, *d*, *e* and *f* are the longitudinal members formed in said sheet which are not slitted. After the sheet X has been slitted as described above, it is passed through rolls having grooves and tongues of such size as to coincide with the longitudinal slits 1, 1', 1'' and 2, 2', and so that the longitudinal slits 1, 1', 1'' will coincide with the bases of the corrugations and the longitudinal slits 2, 2', will coincide with the

apexes of corrugations, the longitudinal members *a*, *b*, *c*, *d*, *e*, and *f* remaining in their original form, as shown in Fig. 2. The corrugations may also be formed by a press furnished with suitable dies so that the corrugations in the sheet shall coincide with the slits as described in case rolls are used as described above. After the corrugations have been formed in the sheet as shown in Fig. 2 and as described said sheet X is passed through rolls having suitable tongues and grooves or placed in a press having suitable dies so that the corrugated slitted portion of the sheet will be stretched laterally and the longitudinal members *a*, *b*, *c*, *d*, *e*, and *f* will be formed so as to be in a plane substantially at right angles to the stretched slitted members. The result of this forming and stretching is that the longitudinal members are solid and in a different plane from the slitted members, which by reason of being stretched laterally are reticulated and formed with meshes.

The presence of the transverse slits *t*, *t*, *t* in the sheet X permits the terminals of the meshed transverse members of my expanded metal to draw away from one another and prevents any substantial distortion of its longitudinal members.

While a certain number of longitudinal members have been shown and while the meshed members transverse and connecting the longitudinal members are shown with but two meshes, additional longitudinal members may be used and additional meshes may be added to the meshed connecting members. The transverse slits may be differently distributed so as to modify the detail of the structure of my expanded metal but the essential principle of my invention will not be thereby departed from.

It will be noted that all of the longitudinal members of the expanded metal are formed of bands of entire metal, which for that reason may be designated entire metal members or entire metal sections. It will be further noted that in the manufacture of my expanded metal the sheet from which it is manufactured is slitted in series of longitudinal slits which at intervals are transversely cut between the edges of the longitudinal or entire bands which alternate with the slitted portions of the sheet. The slitting of the sheet with series of slits and then transverse said series of slits cutting

said sheet between the edges of the longitudinal members or entire metal sections and stretching the sheet laterally when thus slitted in two directions, results in meshed members or reticulated metal sections which connect the longitudinal members or entire metal sections at intervals within the confines of the sheet. It will be further noted that all of the reticulated metal sections are disconnected at both their terminals or ends, which terminals or ends are made possible only by the transverse cut between the edges of the entire metal sections. When the sheet after being slitted is stretched laterally the ends of the reticulated metal sections move away from one another so that the reticulated metal sections are not connected with each other but are only connected with the entire metal sections of the expanded metal, which by reason of the movement of the ends of the reticulated metal sections of the sheet remain substantially undistorted when said sheet is stretched.

What I claim as my invention is:

1. An expanded metal made from a single sheet having substantially parallel sections of entire metal connected at intervals by reticulated metal sections which are disconnected from each other, between the entire metal sections, and which are corrugated so that the apexes of the corrugations thereof

coincide substantially with the medial lines of the openings of the meshes thereof, and the bases of the corrugations coincide substantially with the points of connection of said meshes with each other and with the entire metal sections, said entire metal sections and reticulated metal sections being in different planes.

2. An expanded metal made from a single sheet having substantially parallel sections of entire metal connected at intervals by reticulated metal sections which are disconnected from each other, between the entire metal sections, and which are corrugated so that the apexes of the corrugations thereof coincide substantially with the medial lines of the openings of the meshes thereof, and the bases of the corrugations coincide substantially with the points of connection of said meshes with each other and with the entire metal sections, said entire metal sections and said reticulated sections being in planes substantially at right angles to each other.

In witness whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM D. FORSYTH.

Witnesses:

JAMES F. CALLAHAN,
M. E. THOMAS.