

W. D. FORSYTH.
PROCESS OF MAKING EXPANDED METAL.
APPLICATION FILED DEC. 12, 1910.

1,007,027.

Patented Oct. 24, 1911.

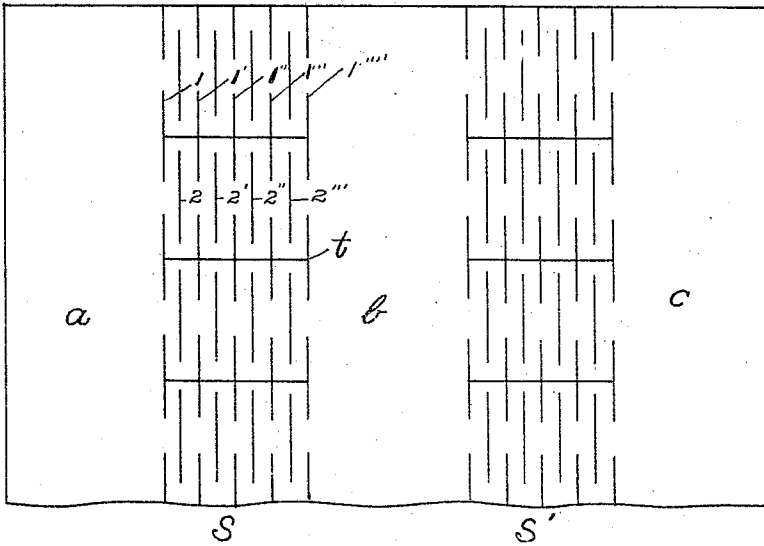


Fig. 1.



Fig. 2.



Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM D. FORSYTH, OF YOUNGSTOWN, OHIO, ASSIGNOR OF ONE-HALF TO ALEXANDER M. NEEPER, OF PITTSBURGH, PENNSYLVANIA.

PROCESS OF MAKING EXPANDED METAL.

1,007,027.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Application filed December 12, 1910. Serial No. 596,763.

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 new and useful Improvements in Processes of Making Expanded Metal, of which the following is a specification.

My invention relates to new and useful improvements in processes for making expanded metal adapted to be used in the construction of buildings, the roofs, walls and partitions thereof and for reinforced concrete construction.

My invention consists of a process of making expanded metal which has longitudinal and meshed members which consists in the following: 1st. Slitting a sheet of metal with series of longitudinal parallel slits made at equal intervals along said sheet, the outside line of slits of each of said series of slits being coincident with the edges of the longitudinal members of said sheet. 2nd. Slitting said sheet with other series of longitudinal parallel slits of substantially the same length as the first mentioned series of slits, parallel to, intermediate and between said first mentioned series of slits, the medial points in said last mentioned series of slits being substantially equidistant from the medial points of the adjacent slits of the first mentioned series. 3rd. Transversely cutting said sheet between the outside slits of the first mentioned series of slits between the edges of said longitudinal members at the medial points of said slits of the first mentioned series. 4th. Corrugating said sheet so that the slits of the first mentioned series shall coincide with the bases of said corrugations and the slits of the second mentioned series shall coincide with the apexes of said corrugations. 5th. Stretching said sheet laterally so as to form the corrugated meshed members thereof.

Figure 1 represents a sheet of metal with a series of longitudinal slits made therein preparatory to forming the longitudinal and meshed members of my improved expanded metal. Fig. 2 shows the slit sheet corrugated so that the one series of slits will coincide with the bases of the corrugations and the other series of slits with the apexes of said corrugations. Fig. 3 shows the end view of my improved expanded metal with

the longitudinal members ribbed and the meshed members corrugated.

Similar figures and letters of reference refer to like parts throughout the several figures.

In Fig. 1, X is a sheet of metal in which a , b and c represent the longitudinal members of my improved expanded metal. $1, 1', 1'', 1'''$, t and $2, 2', 2'', 2'''$ represent slits made in said sheet in two parallel series, S, S'. The slits $1, 1', 1'', 1'''$ and t , when the sheet of metal X is stretched laterally, form the outside edges of the meshed members of my improved expanded metal. The slits $2, 2', 2'', 2'''$ form the apertures in the meshes of my expanded metal, the slits $1, 1', 1'', 1'''$ coinciding with the bases of the corrugations thereof and the slits $2, 2', 2'', 2'''$ coinciding with the apexes of the corrugations thereof. The relations of the longitudinal members a, b and c and the corrugated meshed members of my expanded metal when the sheets are stretched, are shown in Fig. 2.

The series of slits S S' may be formed by rolls having proper cutters arranged to perforate the sheet to be expanded, with slits in the positions shown in Fig. 1 of the drawing, said slits being longitudinal at $1, 1', 1'', 1'''$ and at $2, 2', 2'', 2'''$ and transverse at t . After said slits have been passed through suitable rolls to perforate the metal the sheet is again passed through another pair of rolls to form the corrugations therein so that the perforations represented by slits $1, 1', 1'', 1'''$ shall be at the bases of the corrugations and the perforations represented by slits $2, 2', 2'', 2'''$ shall be at the apexes of said corrugations. The sheet may then be passed through another pair of rolls, one of which is provided with a tongue and the other with a proper groove so as to form the longitudinal members a, b and c into ribs as shown in Fig. 3 at a', b' and c' . After these operations the slitted and ribbed sheet is stretched laterally with the result that my improved expanded metal is formed having longitudinal members and corrugated meshed members said meshed members separating at their ends at the slit t and drawing away from one another at their extremities so that the longitudinal members of the sheet being operated upon are not materially distorted

or shortened, the shortening of the sheets treated when expanded being taken up in the movements of the meshed members within themselves, the ends of said meshed members approaching one another as the stretching takes place and separating from the ends of adjacent meshed members.

The longitudinal members are shown in the drawing to be three in number; they may be any number desired within the limits in size of the sheet and the lines of meshed members to be formed, and while the meshed members are shown of a given number in the drawing that number may be changed, being made greater or less as may be desired for any particular use. All of these variations in form may be made without departure from the spirit of my invention.

What I claim as my invention is:

1. The process of making an expanded metal having longitudinal members transversely connected by independent disconnected corrugated meshed members which consists in slitting a sheet of metal with series of longitudinal parallel slits made at intervals along said sheet, the outside line of slits of said series of slits being coincident with the edges of the longitudinal members of said sheet; slitting said sheet with other series of longitudinal parallel slits of substantially the same length as the first mentioned series of slits, parallel to, intermediate and between the said first mentioned series of slits, the medial points in said last mentioned series of slits being substantially equidistant from the medial points of the adjacent slits of the first mentioned series; transversely cutting said sheets between the outside slits of the first mentioned series of slits between the edges of said longitudinal members at the medial points of said slits; corrugating said sheet so that the slits of the first mentioned series shall coincide with the bases of said corrugations

and the slits of the second mentioned series shall coincide with the apexes of said corrugations; then stretching said slitted sheet laterally so as to form the meshed members thereof.

2. The process of making an expanded metal having longitudinal members transversely connected by independent disconnected corrugated meshed members, which consists in slitting a sheet of metal with series of longitudinal parallel slits made at intervals along said sheet, the outside lines of slits of said series being coincident with the edges of the connected longitudinal members of said expanded metal; slitting said sheet with other series of longitudinal parallel slits of substantially the same length as the first mentioned series of slits, parallel to, intermediate and between said first mentioned series of slits, the medial points in said last mentioned series of slits being substantially equidistant from the medial points of the adjacent slits of the first mentioned series; transversely cutting said sheet between the outside slits of the first mentioned series of slits between the edges of said longitudinal members at the medial points of said slits; corrugating said sheet so that the slits of the first mentioned series shall coincide with the bases of said corrugations and the slits of the second mentioned series shall coincide with the apexes of said corrugations; manipulating the longitudinal members so as to form them into ribs; then stretching said slitted sheet laterally so as to form the meshed members thereof.

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

WILLIAM D. FORSYTH.

Witnesses:

JAMES F. CALLAHAN,
M. E. THOMAS.