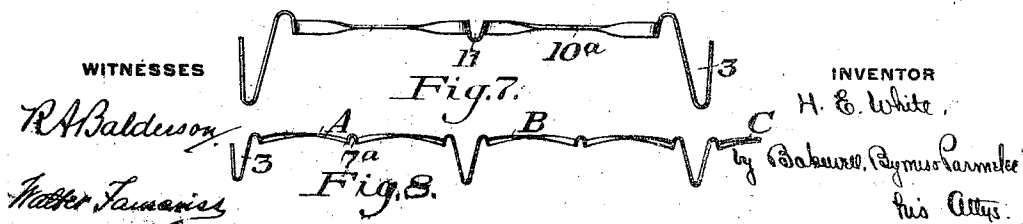
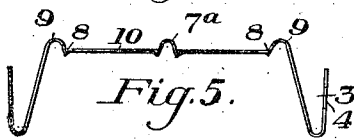
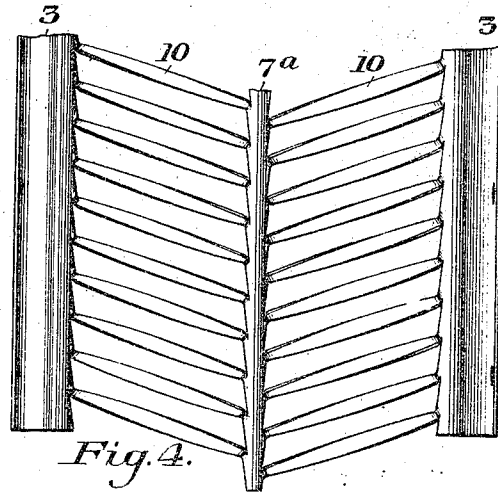
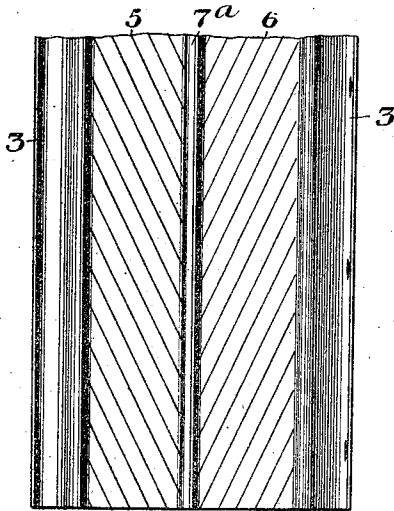
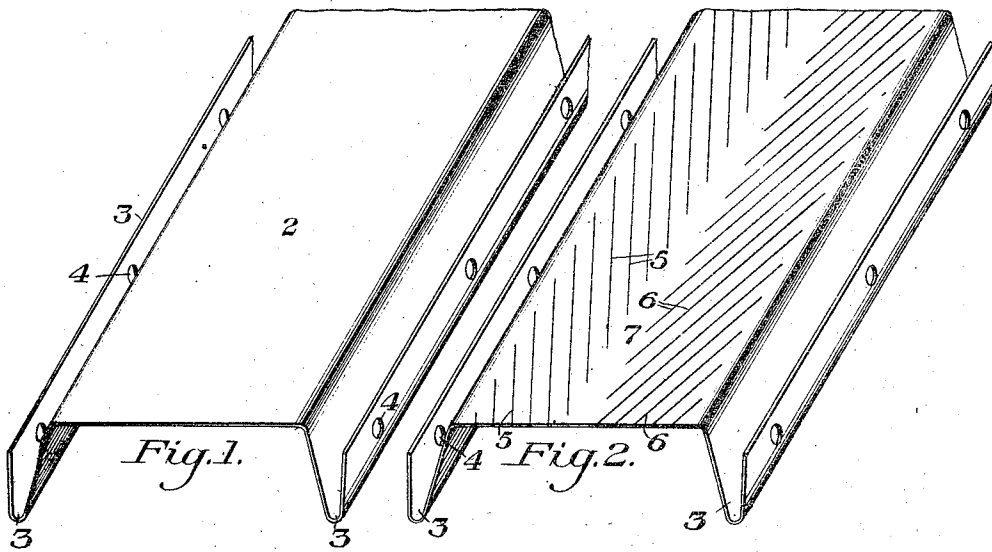


H. E. WHITE.
 METHOD OF MAKING EXPANDED METAL STRUCTURES.
 APPLICATION FILED FEB. 4, 1910. RENEWED OCT. 9, 1911.

1,014,617.

Patented Jan. 9, 1912.



WITNESSES

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UNITED STATES PATENT OFFICE.

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METHOD OF MAKING EXPANDED-METAL STRUCTURES.

1,014,617.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed February 4, 1910, Serial No. 541,961. Renewed October 9, 1911. Serial No. 653,728.

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 Method of Making Expanded-Metal Structures, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view showing the first form of a portion of the blank; Fig. 2 is a similar view showing the blank after it has been slitted or cut preparatory to expanding; Fig. 3 shows a portion of the blank after a supplemental bending operation has been made therein; Fig. 4 shows a portion of the completed article; Figs. 5 and 6 are end views of Figs. 3 and 4 respectively; and Fig. 7 is an end view showing a modification; and Fig. 8 is an end view illustrating a lathing composed of several units of the form shown in Figs. 4 and 6.

My invention has relation to a novel method of producing expanded metal structures, particularly adapted for use for a metallic lath, and is designed to provide a method by means of which such structures can be cheaply and rapidly made.

In accordance with my invention, I first take a sheet metal blank and roll it or press it to the form shown in Fig. 1. This blank consists of a plain central portion 2 having U-shaped side ribs 3 formed by bending portions of the metal downwardly and then backwardly upon itself. The outer sides of these U-shaped ribs may be formed with perforations 4 to increase the bonding effect of the structure. The blank in this form is next passed through a cutting or slitting machine of any suitable or usual character, and the two series of cuts or slits 5 and 6 are formed in the plain central portion 2. These two cuts or slits are oppositely directed, and are separated by a plain narrow central portion 7. Either coincidently with this cutting and slitting operation, or by a subsequent separate step, the blank is bent to shape the central portion 7 into the narrow U-shaped rib 7^a, and the edge portions of the blank adjacent to the ribs 3 are at the same time bent backwardly as shown at 8, forming the bends 9. The sheet is then expanded laterally, which forms the finished structure, a portion of which is shown in Fig. 4. Owing to the bending of the central

rib 7^a, and the formation of the downward or backward bends 9, when the metal blank is expanded, the webs or slats 10 formed thereby will be caused to take half bends or twists, as clearly shown in Figs. 4 and 6, thereby materially stiffening the structure. That is to say, as the inner edges of the bends 9 face in the same direction as the edges of the rib 7^a, in expanding, the lower edge of each slat at one end becomes the upper edge at the opposite end.

The central U-shaped rib may, however, be bent in the reverse direction, as shown at 11 in Fig. 7; and in such case a subsequent bending or flattening of the slats 10^a will be necessary in order to form the half twists or bends, since otherwise the slats would stand in an approximately vertical edgewise direction.

For convenience of illustration and description, in Figs. 1 to 7, I have illustrated the manufacture of a single unit of the lathing. In practice, however, I prefer to form relatively wide sheets composed of a plurality of similar connected units.

In Fig. 8 I have shown a sheet composed of two of the units A and B, and a portion of a third unit C; and I desire it understood that the structure may be of any practical width and number of units.

By the method above described, expanded metal structures of this character can be rapidly manufactured at a comparatively low expense.

Blanks of the form shown in Fig. 1 can be readily rolled or pressed to any desired length and of any practical width, and the subsequent operations on these blanks can be rapidly and easily performed to give the finished structure. This structure is well adapted for use as a self-furring lathing.

While I have shown the adjacent series of slits as extending in opposite directions, and this is the preferred form, it is not essential to my invention, since the series of slits may all extend in the same direction.

The novel structure formed by the method herein shown and described is not herein claimed as it forms the subject matter of my pending application Serial No. 541,962 of even date herewith.

It has been heretofore found that any attempt to manipulate a plate of light sheet metal after it has been closely slitted over a great part of its area, has been attended

with serious difficulties. The sheet is so flimsy that it is controlled only by the exercise of great care, and rapid or rough handling is out of the question. The present invention is believed to present an entirely new departure in the manufacture of materials of the ribbed, expanded metal class, in that it aims to eliminate the tendency to flimsiness by providing the blank with deep ribs therein before the slitting takes place. These ribs stiffen the sheet to such an extent as to prevent undue flimsiness and enable the sheet to be readily expanded and to be rapidly handled. The ribs thus formed are further utilized in guiding the sheets through the cutting dies thus insuring greater accuracy of cutting, and also as a place to grip the sheet during the operation of expanding. In that form of the invention in which the bent edge portions of the ribs adjacent to the ends of the cuts or slits are also employed, the slots are caused to take a half twist in expanding, thus obviating a separate step of rolling or flattening.

What I claim is:—

1. The herein described method of making expanded metal structures, which consists in first forming a blank having a plain flat portion, and deep U-shaped ribs at its edge portions, and intermediate the plain portions, then forming two series of oppositely oblique cuts or slits in each plain portion at opposite sides of its center and also forming relatively shallow ribs intermediate each two adjacent series of cuts with their edges facing toward the same side of the structure as the nearest adjacent edges of the deep ribs, and then expanding the blank, the for-

mation of the intermediate ribs in the manner described causing the slats to take half bends or twists in expanding, substantially as described.

2. The herein described method of making expanded sheet metal structures, which consists in first forming a blank having plain portions and deep U-shaped ribs at the edges of and between the plain portions, then making a series of cuts or slits in the plain portions and shaping the portions between adjacent series of cuts or slits into shallow ribs, and also bending the edge portions of the deep ribs adjacent to the ends of the cuts or slits to cause said edges to face toward the same side of the sheet as the edges of the shallow ribs, and then expanding the blank; substantially as described.

3. The herein described method of making expanded sheet metal structures, which consists in first forming a blank having plain portions and deep U-shaped ribs at the edges of and between the plain portions, then forming a plurality of series of cuts or slits in the plain portions and shaping the portions between adjacent series of cuts or slits into shallow ribs, and then expanding the blank, the initial provision of the deep U-shaped ribs serving to stiffen and guide the sheet in the subsequent operations, and thereby make possible greater accuracy therein, substantially as described.

In testimony whereof, I have hereunto set my hand.

HERBERT E. WHITE.

Witnesses:

C. Y. FARRELL,
H. R. GLENN.