No. 875,155. PATENTED DEC. 31, 1907.

N. E. CLARK.

EXPANDED METAL.

APPLICATION FILED MAY 15, 1907.

Fig. 1.

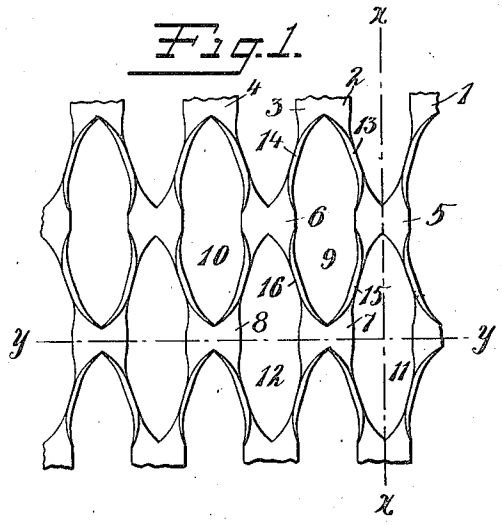
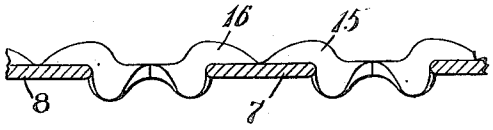


Fig. 2.

Fig. 3.



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EXPANDED METAL.

No. 875,155. Specification of Letters Patent. Patented Dec. 31, 1907.

Original application filed June 26, 1906, Serial No. 323,451. Divided and this application filed May 15, 1907. Serial No. 373,703.

To all whom it may concern:

Be it known that I, NORRIS ELMORE CLARK, a citizen of the United States, residing at Plainville, Hartford county, Connecticut, have invented certain new and useful Improvements in Expanded Metal, of which the following is a full, clear, and exact description.

My invention relates to improvements in expanded metal and its manufacture, and particularly for lathing and grilles, and this application is a divisional one from Serial No. 323,451, filed by me June 26, 1906.

One object is to provide an improved material having great strength and holding capacity. In its preferred form this requires a special method of manufacture, as hereinafter set forth.

Figure 1 is a view of a fragment of material of my invention. Fig. 2 is a longitudinal sectional view of the same on the plane of the line X—X Fig. 1. Fig. 3 is a transverse sectional view on the plane of the line Y—Y Fig. 1.

The fabric is made by first slitting a sheet of metal so as to form strips 1, 2, 3, 4, etc., connected or bonded at intervals, such as 5, 6, 7, 8, etc. in alternating arrangements; second, stretching the sheet so as to open the slits and form openings such as 9, 10, 11, 12, etc., and third, turning parts of the strips, such as 13, 14, 15 and 16, on edge, leaving the bonds flat.

When slitting the sheet, the cut edges of the strips, which bound what are usually termed the "strands", are compressed and beveled off smooth. The expansion or stretching is preferably so effected that the bonds and strands remain in the same plane, and so that the strands where they begin to diverge are tangential to each other. In this way the metal is not injured by the expansion. The resulting product is much smoother if rolled after expansion, particularly when the rolling is sufficient to produce reduction in gage of the metal. The reduction rounds out the edges of the strands.

After expansion the sheet is treated by suitable dies or punches so as to turn the strands on edge. All the strands in the row of openings 9, 10, etc. are turned up from the plane of the sheet. This of course means that all the strands in the row of openings 11, 12, etc. are turned down. This results in uniformity in the strength of the product and causes the least strains in the metal. The bonds of the completed fabric all lie in a single plane, while the strands serve as holding anchors in planes at right angles to the original sheet. The edges of the strands being smooth, there is no tendency for them to cut their way out of the plaster when used as lathing. When used for grilles or other exposed purposes, the smooth edges are particularly desirable.

What I claim is:

1. An expanded metal fabric consisting of a plurality of rows of bonds connected by strands, the bonds being round on the edges and alternating in the adjacent rows, all the strands in the alternate rows being turned from the plane of the bonds.

2. An expanded metal fabric consisting of strands connected at intervals by bonds and spaced apart intermediate the bonds to form openings, all the edges of the strands bounding the openings in alternate rows being turned in the same direction from the plane of the bonds.

3. An expanded metal fabric consisting of strands connected at intervals by bonds and spaced apart intermediate the bonds to form openings, all the edges of the strands bounding the openings in alternate rows being turned in the same direction from the plane of the bonds, the edges of the strands being rounded.

4. An expanded metal fabric composed of twisted strands, the corners of whose edges are rounded, and flat bonds connecting the strands.

5. An expanded metal fabric composed of twisted strands connected by flat bonds compressed on the edges.

6. An expanded metal fabric composed of twisted strands connected by bonds rounded on the corners.

7. The method of forming a sheet metal fabric which consists in forming an expanded flat sheet having a plurality of pairs of parallel rows of openings, the openings in one row of a pair alternating and overlapping the openings in the adjacent rows, and turning the edges of all the strands bounding the openings of alternate rows up from the plane of the sheet.

8. The method of forming an expanded metal fabric which consists in slitting a sheet so as to produc strands connected by bonds in alternating arrangement, expanding the

slitted sheet and maintaining the bonds and strands in the same plane, and then turning the strands on edge.

9. The method of forming an expanded metal fabric which includes expanding a sheet, rounding the edges of the strands, and then turning the strands on edge.

10. The method of forming an expanded metal fabric which consists in slitting the sheet so as to form strands connected in alternating arrangement, then opening the slits but maintaining the adjacent strands tangential to each other at the points of connection, and then twisting the strands on edge.

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