M. S. GOLDSMITH.
METHOD OF FORMING RIBS ON SHEET METAL.
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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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METHOD OF FORMING RIBS ON SHEET METAL.

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To all whom it may concern:

Be it known that I, MAX S. GOLDSMITH, a citizen of the United States of America, and resident of Cincinnati, county of Ham-ilton, State of Ohio, have invented certain new and useful Improvements in Methods of Forming Ribs on Sheet Metal, of which the following is a specification.

This invention relates to a new and improved method of forming dove-tailed ribs in metal sheets.

Sheet metal employed as reinforcing members for concrete, or as metal lath, is usually provided with stiffening ribs or corrugations which are rolled, stamped, or otherwise pressed into the metal. It has been found by practical experience that dove-tailed or wedge shaped ribs are more desirable than other forms of ribs since they not only stiffen the sheet, but also aid in holding the concrete, plastering or similar material in place relatively to the metal. However, such ribs are the most difficult to form with previous methods and require distinct and separate operations for their formation.

In the improved method, the ribs are formed simultaneously with the corrugations formed therein, which are produced during the first operation in carrying out my invention.

Fig. 2 is an end view of a sheet having the completed dove-tailed ribs formed thereon in the final operation of carrying out my invention.

Fig. 3 is a sectional view of the dies employed in forming the ribs shown on the sheet in Fig. 1, with a portion of the sheet located between them.

My invention consists in first forming in the sheet a rib or corrugation of the shape disclosed in Fig. 1, and then distorting the corrugation so that it forms the dove-tailed rib shown in Fig. 2.

The corrugation shown in Fig. 1, has side walls which are substantially at right angles to the sheet and the intermediate portion or crest between the side walls is depressed so that a substantially V-shaped longitudinally extending groove 6 having a curved apex, is formed between the parallel side walls. This results in the formation of two distinct parallel grooves on the reverse side of the sheet. The metal between the two parallel grooves, however, does not extend flush with the metal of the sheet and its apex is preferably rounded off into a curve, as shown. During the operation of forming the corrugations 5 into dove-tailed
ribs, I employ means for flattening out the crest or intermediate portion of each corrugation 5. This spreads the outer edges of the side walls of the ribs apart and forms a dove-tailed rib 7 on one side of the sheet, and a groove in the reverse side of the sheet, which has overhanging edges.

In Fig. 3 I have shown a pair of dies or presses 8 and 9 which may be employed in the operation of forming the corrugations 5. Each corrugation 5 is of such a shape that, if it cannot be conveniently formed by means of presses, it may be formed by means of rolls or by means of two or more sets of dies or presses. Under some conditions it may be desirable to form the corrugations 5 by means of rolls rather than by means of dies.

In Fig. 4 I have shown a pair of rolls 10 and 11 which may be employed in distorting or flattening the intermediate portions of the corrugations 5. The roll 10 is provided with a series of circumferentially extending grooves 12 and the cooperating roll 11 is provided with a series of circumferentially extending ridges 13 which during the rolling operation project into the corrugations 5 and also into the groove 12, and cooperate with the bottom of the groove in flattening out the intermediate portion 6 of each corrugation. It will be understood that any desired number of ridges and grooves may be employed on the rolls and that the ridges are preferably of the same width as the distance between the side portions of the corrugations 5 and therefore aid in preventing the lower edges of the corrugations 5 from moving inwardly toward each other during the operation of flattening the intermediate portions 6. As illustrated the intermediate portions 14 and 15 of the rolls 10 and 11, between the grooves 12 and ridges 13, are so constructed that they engage the portions of the sheet located between the corrugations. Although such a construction may not be necessary under all conditions, it, when employed holds the inner edges of the ribs positively in engagement with the side of the circumferentially extending ridges 13 on the roll 11 so that there is no tendency for the sheet to buckle between the ribs. It will, of course, be understood that thecrest or intermediate portions of the corrugations 5, may be flattened one at a time, or that several may be simultaneously flattened by means of a press, and that the press may be so constructed that it will support and hold the portions of the sheet between the corrugations, during the flattening operation, for the purpose of preventing the sheet from buckling.

Having thus described my invention, what I claim is:

A method of forming dove-tailed ribs in sheet metal, which consists in forming a rib with walls at right angles to the sheet and with a portion intermediate its walls bent inward toward the sheet sufficiently to form an angle between the inwardly bent portion and the said right angle wall materially smaller than the same angle in the completed article, and compressing the intermediate portion to a position parallel to the sheet, whereby the walls are turned to positions inclined to the sheet.

In testimony whereof, I have hereunto subscribed my name this 50th day of December, 1914.

MAX S. GOLDSMITH.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."