Jan. 26, 1932. R. M. CHESNEY 1,843,064

METHOD OF MAKING REENFORCING UNIONS

Filed Jan. 2, 1930

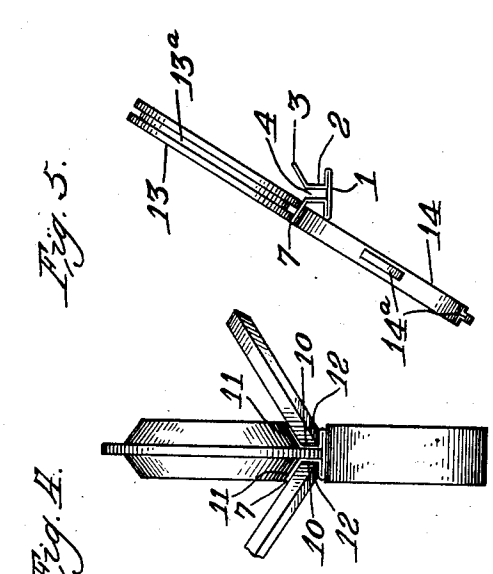


Fig. 4.

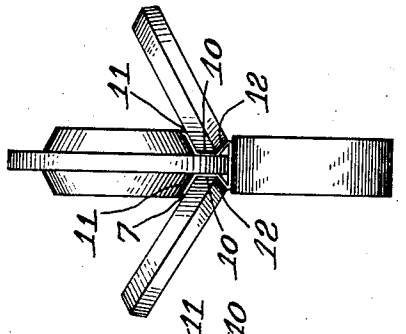


Fig. 5.

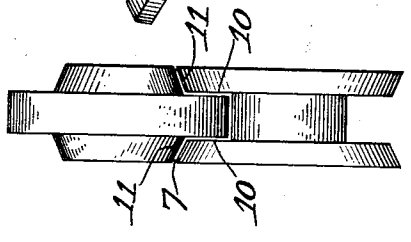


Fig. 2.

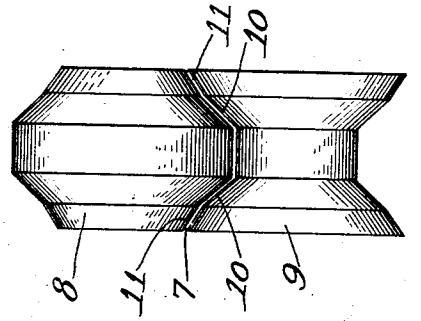


Fig. 1.

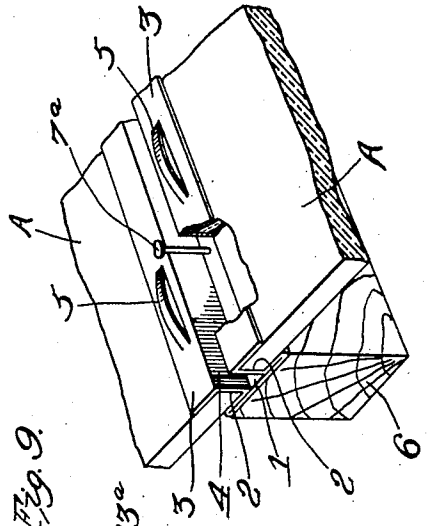


Fig. 9.

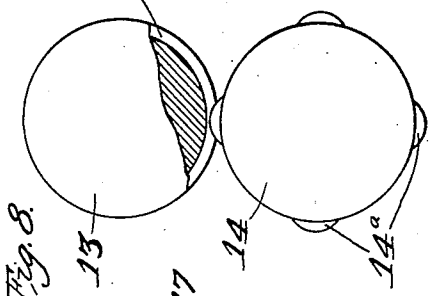


Fig. 8.

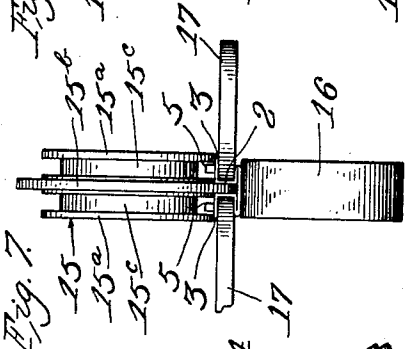


Fig. 7.

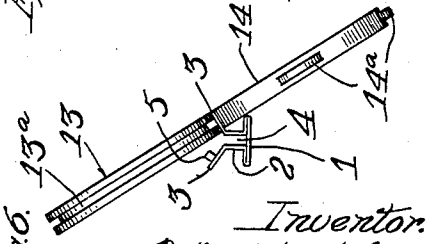


Fig. 6.

Inventor.
Robert M. Chesney
By Dyrenforth, Lee, Christy and Wilks
attys.

Patented Jan. 26, 1932 1,843,064

UNITED STATES PATENT OFFICE

ROBERT M. CHESNEY, OF WARREN, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED STATES GYPSUM COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

METHOD OF MAKING REENFORCING UNIONS

Application filed January 2, 1930. Serial No. 418,085.

This invention relates to improvements in methods of making reenforcing unions for construction boards and, more especially, the type of union shown in my co-pending application, Serial No. 360,731, filed May 6, 1929.

By the use of my invention, I am enabled to make such a union with relatively narrow upper flanges or legs and also provide said flanges with the plaster-retaining loops in the process of manufacture.

By the use of my invention, a union of the type shown can be economically manufactured out of sheet metal.

Other features and advantages of my invention will appear more clearly as I proceed with my specification.

In that form of apparatus shown in the accompanying drawings for carrying out my invention—

Figure 1 is a view in front elevation showing the first step in the process of manufacture; Fig. 2 is a similar view showing the second step; and, likewise, Figs. 3, 4, 5, 6 and 7 are similar views showing, respectively, the succeeding steps in sequence; Fig. 8 is a view in side elevation of the apparatus shown in Fig. 5 or 6, and Fig. 9 is a view in perspective of the completed union, showing the same in use.

It will aid in the understanding of my invention if I first describe the completed union. As stated above, this union is of the type shown in my co-pending application, Serial No. 360,731, filed May 6, 1929. The completed union is shown in Figs. 7 and 9. It will be seen that it is in the shape of a channeled section, somewhat like the letter I, and comprises a base 1, web sections 2, 2, and flanges or legs 3, 3.

The base 1 is formed with flanges having a double wall giving it greater strength and to furnish a rigid support for the remaining parts of the union. The web sections 2 are formed a short distance apart so as to leave therebetween a groove 4. The channels lying back to back between the base 1 and the flanges or legs 3 are adapted to embrace the edges of wall boards or construction boards A, A, as shown in Fig. 9.

The union shown in my co-pending application, above referred to, has the flanges or legs 3 considerably wider than the base 1. The union shown in this application also has the flanges or legs 3 wider than the base 1 but only a very little wider. That is, the flanges or legs 3 of the union here shown are considerably narrower than those shown in my co-pending application, but still preferably slightly wider than the base 1. The flanges 3 are provided with projections in the form of outwardly projecting loops 5 which are formed by slitting the flanges and extruding the slitted bands. The loops 5 serve to retain plaster which may be placed over the joint and, also, serve as grounds to insure the placing of plaster of sufficient thickness over the joints. These loops may be formed in any desirable shape and number.

One of the particular features of my invention is the designing of a process permitting the manufacture of a union with relatively narrow flanges or legs 3 in which the loops 5 lie above the base part 1. It will be seen that in such a union, the loops 5 cannot be easily formed after the union is completed, since the projecting flanges of the base 1 will prevent making such loops with rotary cutters. In the practice of my invention, however, I form such loops before the legs or flanges 3 are bent into horizontal position. These loops are cut and formed into the union when the flanges are in the position shown in Figs. 5 and 6, and it will be seen that when in this position, rotary cutters may be employed, as will be described more in detail hereinafter.

In assembling a wall or composition board, the edges of two adjacent boards A are placed within the channels formed between the base 1 and flanges 3, as shown in Fig. 9. The union may be secured to a frame or stud 6 by driving a nail 7^a into the center groove 4 and through the base 1, as shown in Fig. 9.

I shall now describe more in detail the process of forming the union.

The first step is illustrated in Fig. 1, in which the strip of sheet metal, indicated, in general, by 7, is passed between the two rolls 8 and 9. These rolls, as shown, are formed

to bend the marginal edges of the strip upwardly at 10, 10 and outwardly at 11, 11. The portion between the bends 10, 10 forms the bottom of the base 1. The portions between the bends 10 and 11 are wide enough to form the upper thickness of the base 1 and the webs 2, 2. The marginal edge outside of the bend 11 eventually forms the legs or flanges 3, 3. In the second step shown in Fig. 2, the portions between the bends 10 and 11 are bent upwardly at right angles to the base 1. In the step shown in Fig. 3, the bends 12, 12 are formed in the margins, and in the step shown in Fig. 4, the portions between the bends 12 and 10 are bent downwardly flat against the lower part of the base to complete the base portion 1.

The particular feature of my improved process lies in the fifth, sixth and seventh steps, illustrated respectively in Figs. 5, 6 and 7. It will be seen that after the fourth step, illustrated in Fig. 4, the union will be in the form shown in Figs. 5 and 6. It is to be particularly noted that the legs 3 have been formed but the same are not yet bent down parallel with the base 1. In the fifth and sixth steps, the loops 5 are formed in the flanges 3. Since the flanges 3 are not yet bent down parallel with the base 1 but lie in obtuse angular relation thereto and with each other, the loops 5 can be formed in said flanges with rotary cutters. Such rotary cutters, for example, may include a pair of rolls 13 and 14, as shown in Fig. 8, the former being provided with a peripheral groove 13^a and the latter, with rounded projecting cutters 14^a. Each flange 3 is passed between a pair of these rollers, as shown in Figs. 5 and 6, and the cutters 14^a cut parallel slits in the flanges 3 and extrude or stretch out the slitted band to form the plaster-retaining loop 5. If the flanges 3 were parallel with the base 1, the rotary cutters 13 and 14 could not be used without making said flanges wide enough so that the base 1 would not interfere with the cutters. By cutting these loops when the flanges 3 are in the angular position shown, the rotary cutters may be used, even though such flanges are narrow, as shown.

After the loops 5 have been formed, the flanges 3 are bent down into parallel relation with respect to the base 1 by means of the roller 15, shown in Fig. 7. This roller is provided with flanges 15^a engaging the extreme edges of the flanges 3. It is also provided with a deep centrally arranged flange 15^b adapted to enter the groove 4 of the union. The recesses 15^c accommodate the loops 5. Numeral 16 indicates a lower supporting roller and 17, 17 horizontally arranged rollers entering the channel-shaped sides of the union.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as possible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. The process of making a reenforcing union of the character described out of a strip of sheet metal including; bending the strip longitudinally to form a base, a web section connected to said base, and flanges carried by said web section lying in angular relation to said base; then forming plaster-retaining means in at least one of said flanges with rotary cutters; and then bending said flanges into parallel relation to said base.

2. The method of making a reenforcing union of strip metal, comprising bending the strip longitudinally to form a base, a web section connected to said base and flanges extending outwardly from said web section and then slitting and stretching outwardly a plurality of loops from the metal of said flanges.

3. The method of making a reenforcing union of strip metal, comprising bending said strip to form channel-shaped grooves for the reception of the edges of construction boards, and slitting and stretching outwardly a plurality of loops from the metal of said strip.

4. The method of making a reenforcing union of strip metal for joining the edges of construction boards, which comprises slitting said strip longitudinally, and stretching arcuate loops outwardly from the plane of said strip, said loops being adapted to lie adjacent the edges of said boards.

5. The method of making a reenforcing union of strip metal for joining the edges of construction boards, which comprises forming said strip into channel shape for receiving the edges of adjacent boards, and slitting and stretching arcuate loops outwardly from the plane of the metal.

6. The method of making a reenforcing union of strip metal for embracing the adjoining edges of construction boards, which comprises forming longitudinal flanges on said strip extending at an obtuse angle thereto, slitting and stretching loops from the plane of said flanges, and bending said flanges to a substantially right angle position relative to said strip.

In witness whereof, I have hereunto set my hand this 28th day of Dec., 1929.

ROBERT M. CHESNEY.