Dec. 26, 1944. M. RACHLIN 2,365,972

METHOD OF MAKING GUTTER CIRCLES

Filed May 5, 1941

Fig. 1.



Fig. 2.

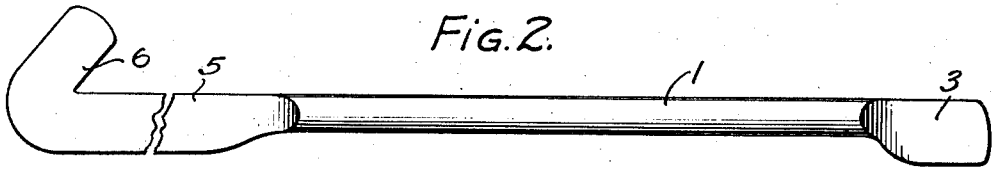


Fig. 3.

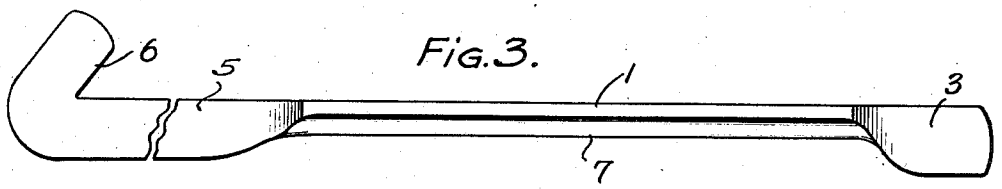
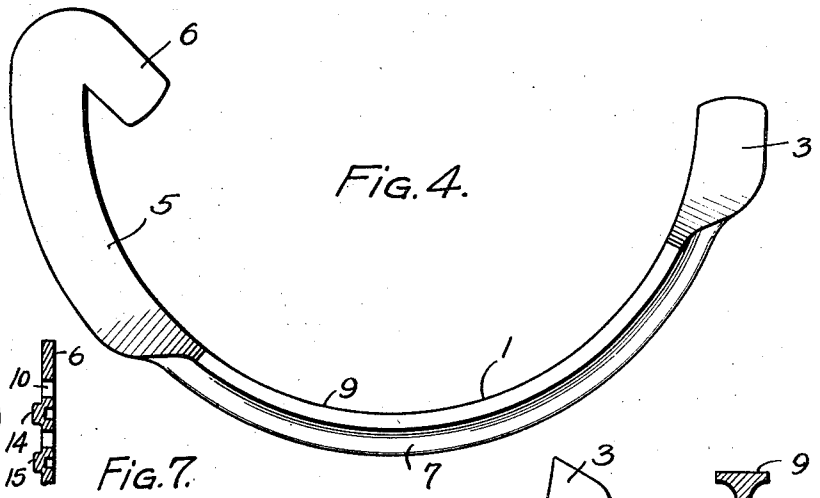


Fig. 4.



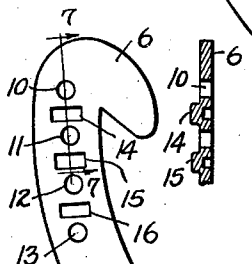


Fig. 7.

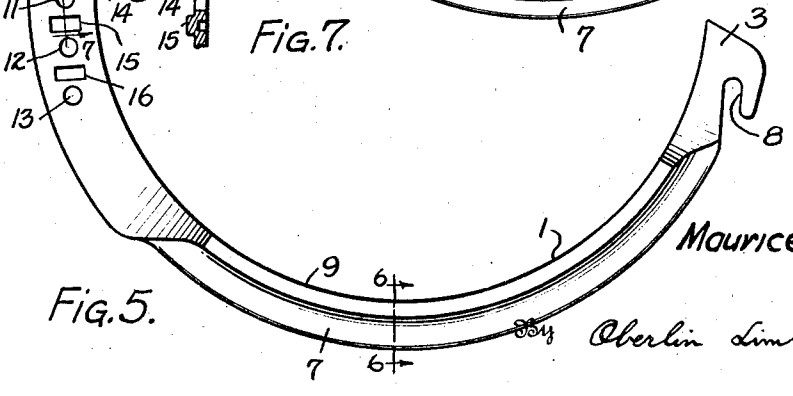


Fig. 5.



Fig. 6

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METHOD OF MAKING GUTTER CIRCLES

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5 Claims. (Cl. 29—150)

This invention is directed to a method of making a gutter circle and the gutter circle formed by such method. The term gutter circle, as generally employed in the art, is used to designate an arcuate member substantially in the configuration of a semi-circle which is used to support a roof gutter.

In the present case, it is an object of the invention to provide an exceedingly strong gutter circle at minimum cost from the standpoint of labor as well as material.

It is another object of the invention to start with a substantially straight piece of wire and form it into a circle, the resulting circle having more strength than that possessed by the wire initially.

It is a still further object of the invention to eliminate any twisting and other weakening operations which are employed to a great extent in the present day manufacture of gutter circles.

It is a specific object of the invention to form a gutter circle from wire which when finished has a smooth, relatively wide, flat, gutter engaging surface which extends at right angles to flattened terminal portions.

It is another object of the invention to form a gutter circle from wire in such manner that practically all waste is entirely eliminated, which is not the case with sheet metal circles.

It is a specific object of the invention to employ a relatively inexpensive starting material such as wire, which costs much less than strip material and to form this wire into a gutter circle having wide surfaces at right angles. In addition, the invention contemplates a strengthening of the wire by pressing and flattening operations somewhat in the nature of a forging operation.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain structure embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:

Figure 1 is a plan view.

Figure 2 is a plan view.

Figure 3 is a plan view.

Figure 4 is a plan view.

Figure 5 is a plan view of the completed article, all of such views being taken from above with the article placed on its side.

Figure 6 is a sectional view taken on line 6—6 of Figure 5, and

Figure 7 is a partial section taken on line 7—7 of Figure 5.

It will be understood that the blank as shown in Figure 1 initially was a straight piece of wire of predetermined length, the length depending upon the size of gutter circle which it is desired to produce. The straight piece of wire has a terminal portion 3 which is bent so that its axis extends in a plane parallel to the axis of the major portion 1. The terminal portion 5 initially extended outwardly from the major portion 1 with its axis also in a plane parallel to the major portion of the blank or what may be conveniently termed the remainder. The portion 6 is made by reversely bending the end of the terminal portion 5. Thus far, I have described the transition of a length of wire from its initial straight condition into the blank shown in Figure 1. These operations are so simple that a showing thereof is not believed to be necessary. It is to be understood that the bends 2, 4 and 17 may be made simultaneously, and at the same time, that the length of wire is cut from stock. On the other hand, the stock may be cut into predetermined lengths and bent in any desired sequence.

Regardless of the manner in which the blank of Figure 1 is obtained, it is next subjected to a flattening operation. This consists of exerting pressure by means of dies or otherwise upon the portions 3, 5 and 6 and I prefer to flatten both ends at the same time. The blank will then have the appearance shown in Figure 2.

The blank of Figure 2 is then subjected to a pressing operation which consists of changing the cross-section of the portion 1 from circular into the configuration shown in Figure 6. It is to be understood that the pressing operation takes place in a direction at right angles to the flattening operation and as a result, a wide, flat gutter engaging surface 9 is produced which extends at right angles to the flattened terminal portions. It is to be particularly noticed that I obtain relatively wide surfaces at right angles without twisting the metal in any degree.

The blank is then subjected to a trimming operation which consists of forming a notch 8 in the end 3 and trimming off the outermost portion of the terminal 3. It also involves trimming the extreme end of the reverse bend 6. If desired, the terminal portion 5 may be punched to provide the apertures 10, 11, 12 and 13 and at the same time, the outstanding projections 14, 15 and 16 may be formed in the portion 5. All of

the last named operations may take place sequentially or simultaneously. It is, of course, the function of the apertures and projections to provide a means for interlocking and securing the gutter circle to what is known in the art as a shank. A shank is a metallic member which normally extends beneath the shingles or other roofing material and has a depending portion vertically arranged and the circle ordinarily is secured to such depending portion.

From the preceding description it will be seen that I have provided a gutter circle which can be made expeditiously and inexpensively. Furthermore, it will be noted that there are no twists in my circle and that it is considerably stronger due to pressing and flattening than the piece of wire from which it was made originally. The gutter circle made according to my invention utilizes substantially all of the metal of the initial length of wire so that practically no waste is involved such as occurs with sheet metal stampings and the like. The circle is provided with a relatively wide, flat gutter engaging surface 9 and is exceedingly strong due to the provision of the reinforcing rib 7.

I have used the terms flattening and pressing because in one instance, the terminal portions are provided with flat, parallel surfaces and in the other, the middle portion or remainder is provided with one flat surface 9. The strengthening of the initial wire is approximately the same in both cases since the metal is subjected to a die forging operation.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the means and the steps herein disclosed, provided those stated by any of the following claims or their equivalent be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A method of making a gutter circle which comprises providing a length of wire, bending the terminal portions of said length of wire, in such manner that the axes of said terminal portions extend in planes parallel to the axis of the remainder of said length of wire, then reversely bending one end, then flattening such bent terminal portions and then bending said length of wire into arcuate form.

2. A method of making a gutter circle which comprises providing a length of wire, bending the terminal portions of said length of wire, in such manner that the axes of said terminal portions extend in planes parallel to the axis of the remainder of said length of wire, then reversely bending one end then flattening such bent terminal portions, then pressing the remainder of said length of wire in a direction at right angles to the direction of flattening, to provide a flat gutter engaging surface.

3. A method of making a gutter circle which comprises providing a length of wire, bending the terminal portions of said length of wire, in such manner that the axes of said terminal portions extend in planes parallel to the axis of the remainder of said length of wire, then reversely bending one end then flattening such bent terminal portions, then pressing the remainder of said length of wire in a direction at right angles to the direction of flattening, to provide a flat gutter engaging surface, then bending said length of wire into arcuate form.

4. A method of making a gutter circle which comprises providing a length of wire, bending the terminal portions of said length of wire, in such manner that the axes of said terminal portions extend in planes parallel to the axis of the remainder of said length of wire, then reversely bending one end, then flattening such bent terminal portions, then pressing the remainder of said length of wire in a direction at right angles to the direction of flattening, to provide a flat gutter engaging surface, then bending said length of wire into arcuate form and trimming the flattened terminal portions to provide securing tongues.

5. A method of making a cutter circle which comprises providing a length of wire, bending the terminal portions of said length of wire, in such manner that the axes of said terminal portions extend in planes parallel to the axis of the remainder of said length of wire, then reversely bending one end, then flattening such bent terminal portions, then pressing the remainder of said length of wire in a direction at right angles to the direction of flattening, to provide a flat gutter engaging surface, then bending said length of wire into arcuate form and trimming the flattened terminal portions to provide securing tongues and then forming apertures and projections in one of said terminal portions.

MAURICE RACHLIN.