H. E. & H. K. WHITE.

PROCESS FOR MAKING GUTTERS.

APPLICATION FILED MAY 6, 1908.

902,031. Patented Oct. 27, 1908.

Fig. 1

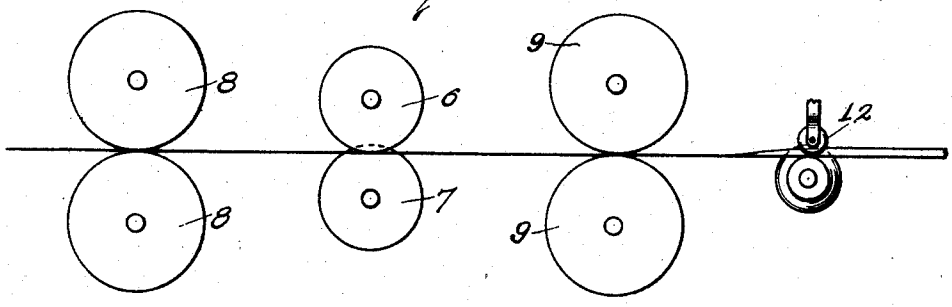



Fig. 5




Fig. 3

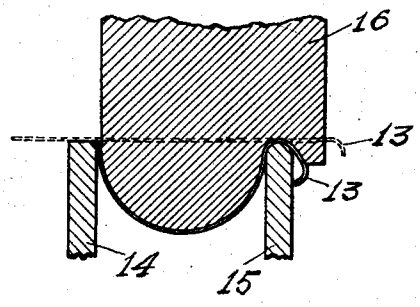



Fig. 2

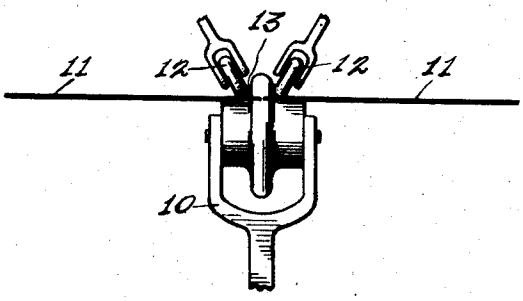
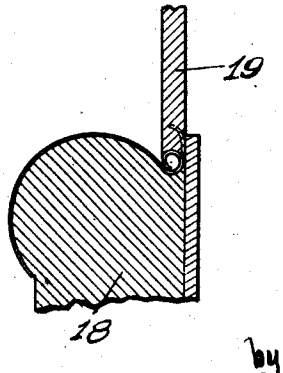



Fig. 4




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# UNITED STATES PATENT OFFICE.

HALBERT E. WHITE AND HARRY K. WHITE, OF CHICAGO, ILLINOIS.

## PROCESS FOR MAKING GUTTERS.

No. 902,031. Specification of Letters Patent. Patented Oct. 27, 1908.

Application filed May 6, 1908. Serial No. 431,104.

*To all whom it may concern:*

Be it known that we, HALBERT E. WHITE and HARRY K. WHITE, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Processes for Making Gutters, of which the following is a specification.

This invention relates more particularly to a new and improved method or process of making gutters or eaves troughs and also to the product resulting from such process.

The objects of the present invention are to provide a method whereby the cost of manufacture of gutters is cheapened, and the gutters made according to this process are of a superior quality to those heretofore in ordinary use.

For convenience in understanding the present invention, we have indicated in the accompanying drawings the various steps of the process, and have also illustrated the improved form of gutter.

In these drawings—Figure 1 shows diagrammatically a side elevation of the metal splitting or shearing machine in combination with rolls for turning flanges on the edges of the stock as it is being sheared; Fig. 2 is a front view of the flange rolls; Fig. 3 shows one of the forming dies at the end of its operation; Fig. 4 shows the second forming die; and Fig. 5 is an end view of the completed gutter.

As indicated in these drawings, 6 and 7 are shearing rolls which are adapted to split a sheet of metal into strips for forming the gutters. 8—8 represent the feed rolls for directing the sheets to the shearing rolls, and 9—9 represent similar rolls for drawing the sheets away from the shearing rolls. Just beyond the rolls 9—9 we provide a flanged forming roll 10, the flange of which presses up between the adjacent edges of the strips 11 which have been formed by the shearing rolls. Two other forming rolls 12—12 are arranged above the roll 10, preferably at an acute angle to the axis thereof, and are adapted to coact with the roll 10 to form flanges 13 along the edges of the strips 11. After the strips have been formed with such flanges, they are next placed in dies substantially as indicated in Fig. 3, for the next operation. These dies are made the full length of the section of gutter to be formed and are made in any suitable shape to give the desired cross-section to the gutter, as for instance, a substantially semi-circular form, as illustrated in the drawings. The female portion of the die is preferably made as indicated, of two upright strips 14 and 15, between which the body of the gutter is formed by the male die 16. The upper edge of the strip 15 is made substantially semi-circular to coact with a similarly shaped portion of the die 16 to form the next step in making a substantially round bead along the edge of the gutter, as indicated in Fig. 5.

After the gutter has been given the form indicated in Fig. 3, it is removed from the dies, and the final operation of completing the bead 17 is performed in another set of dies, as indicated in Fig. 4. The partially formed gutter is placed on a form or die 18, which supports the same in an inverted position while a forming die 19 engages with the flanged portion 13 of the gutter edge and turns it in against the outer surface of the gutter so as to form a substantially circular bead or roll as indicated at 17.

Heretofore, the common method of forming gutters has been to roll the same into form rather than by pressing, and the bead or roll along the edge has usually been made by engaging the edge of the gutter with a slotted rod or the like and twisting or turning the edge around into position; but in doing this, it was impossible to close the inturned edge against the outer edge of the gutter, as we have particularly indicated at 20, in Fig. 5, as there would always be a gap or opening left when the tool or rod was withdrawn. An important advantage of our process is that the various operations all tend to straighten the gutter instead of deforming it, as would frequently occur when made according to the old methods. Another improvement is in the rapidity and accuracy with which the gutters may be formed.

We also desire to protect the improved gutter, made according to this process, in which the inturned edge of the bead or roll is pressed tightly against the outer edge of the gutter, thereby supporting and stiffening the same and making a more serviceable article.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. The method of making gutters, which consists in passing a blank sheet through forming rolls to form a flange thereon, then pressing the sheet between dies to form the body of the gutter and to further partially

form a bead along the flanged edge, and finally presenting said partially formed gutter to a second set of dies which complete the forming of the bead or roll by turning the flanged edge in against the outer side of the gutter.

2. The process of forming a gutter or eaves trough, which consists in forming a flange along one edge of a strip of suitable stock, then stamping said stock to form the body of the gutter and to partially form a roll along the flanged edge, and finally again stamping said partially completed gutter to turn the flanged edge in to complete the roll.

3. The process of forming gutters or troughs, which consists in shearing a strip of metal from suitable stock and simultaneously forming a flange thereon, then stamping said strip to form the body of the gutter and to partially form a bead or roll along the flanged edge, and again stamping the flanged edge in to complete the roll or bead along the edge of the gutter.

4. The process of making gutters, which consists in forming a rounded flange along the edge of the stock, then pressing said stock to form the body of the gutter and to simultaneously further partially form a bead along the flanged edge, then pressing in said edge to complete the bead whereby the surface of the inturned edge will lie against the outer surface of the adjacent portion of the gutter.

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