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COUPLINGS FOR JOINING LENGTHS OF TROUGH GUTTERS

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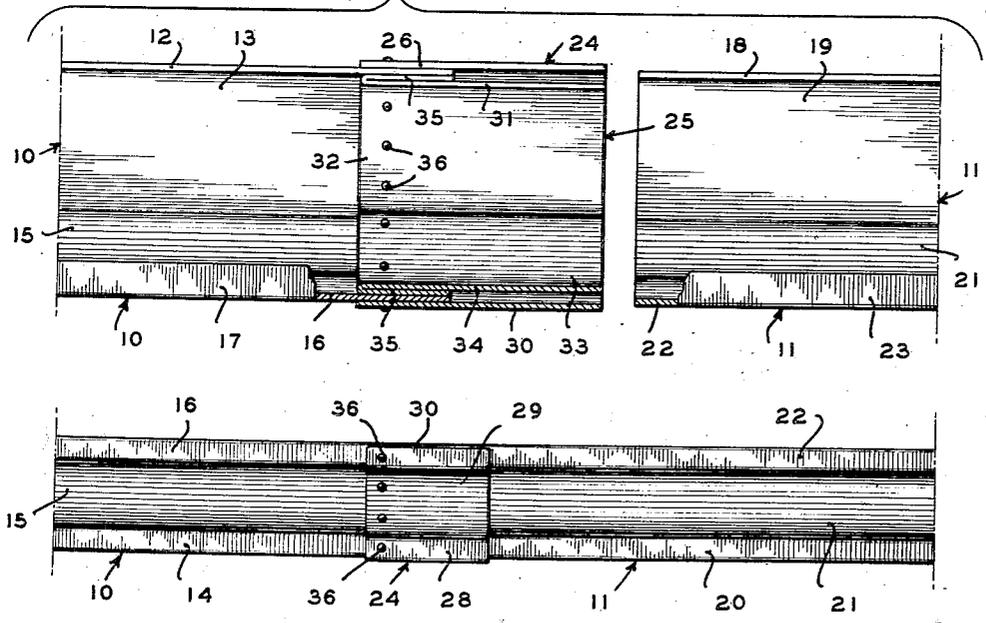
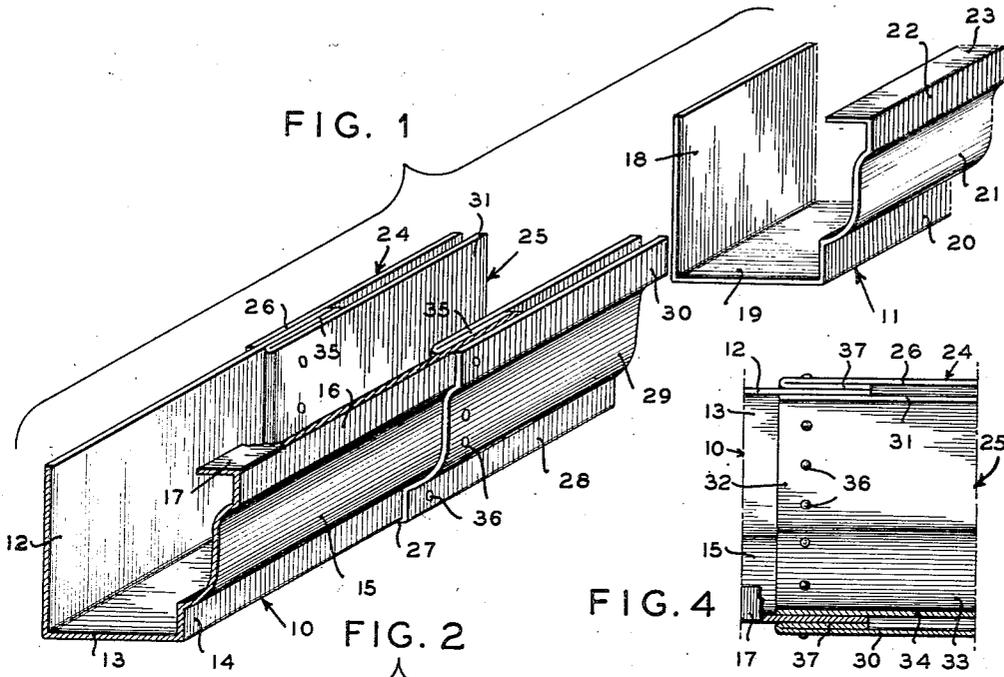


FIG. 3

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## COUPLINGS FOR JOINING LENGTHS OF TROUGH GUTTERS

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Original application June 18, 1949, Serial No. 100,068, now Patent No. 2,639,680, dated May 26, 1953. Divided and this application April 21, 1953, Serial No. 350,085

3 Claims. (Cl. 108—28)

This invention relates to sheet metal slip joints for uniting lengths of trough or other eave gutters and more particularly to gutters of the ogee type which, in cross section, are angularly bent with sharply defined corners.

The present application is a division of applicant's pending application Serial No. 100,068 filed June 18, 1949, and now Patent No. 2,639,680 dated May 26, 1953.

It is a major object of the present invention to provide a novel and improved coupling or joint for ogee gutters of the class set forth which will effectively couple gutter lengths without interference with flow there-through and which will be of particularly simple and efficient design.

It is a further object of the invention to provide a coupling for joining the opposed ends of lengths of sheet metal gutter of identical cross-sectional configuration and which will nest said gutter ends, aligning and bridging therebetween.

It is a still further object of the present invention to provide a novel coupling of the class set forth which will include inner and outer members of a cross-sectional conformation similar to that of the gutter lengths to be united, which may be economically manufactured, will be strong and durable, and will require no special or skilled labor to assemble and install.

Further objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawing wherein:

Fig. 1 is a perspective view illustrating fragmentarily two aligned lengths of gutter, the extremity of one of said lengths having secured thereto the novel coupling of the present invention;

Fig. 2, a top plan view of the lengths of gutter illustrated in Fig. 1, parts being broken away for purposes of greater clarity;

Fig. 3, a front elevational view, on a slightly reduced scale, illustrating two lengths of gutter coupled in accordance with the present invention; and

Fig. 4, a fragmentary top plan view of a slightly modified form of gutter coupling.

With continued reference to the drawing, there has been illustrated two contiguous lengths 10 and 11 of ogee gutter which are to be coupled to form a joint therebetween. These lengths of gutter are of identical cross-sectional conformation.

As will be apparent from an examination of Fig. 1, the gutter length indicated generally at 10 includes a vertically disposed rear wall 12, a horizontally disposed bottom wall 13, and a front wall comprising a lower vertical portion 14 and an upper vertical portion 16 united by an intermediate arcuate or S-shaped portion 15. Desirably, the upper extremity of the vertically disposed portion 16 of the front wall includes an inwardly directed and horizontally disposed portion or lip 17, as is well known in this art, the gutter described being of the sharply angular ogee type where, under prior art practices, greatest difficulties have been encountered in

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connection with the provision of so-called slip joints, employed for the adjustable uniting of opposed extremities of contiguous lengths of guttering.

As stated hereabove, the gutter length 11 is of identical cross-sectional conformation as the gutter length 10 and includes a vertically disposed rear wall 18, a horizontally disposed bottom wall 19, and a front wall comprising a lower vertically disposed portion 20 and an upper vertically disposed portion 22 united by a concavo-convex intermediate portion 21. The free extremity of the upper vertically disposed portion 22 is provided with an integrally formed inwardly directed portion or lip 23 similar to the horizontally disposed portion 17 of the gutter length 10.

The coupling per se comprises inner and outer transversely disposed members 24 and 25, respectively, having a cross-sectional conformation complementary to that of the gutter lengths which it is desired to unite, it being understood that these transverse members are secured to a free extremity of a gutter length and project therebeyond, the method of assembly being such that a space is provided between the projecting portions of these transverse members and the opposed extremity of the adjacent gutter length is nested therebetween in proper alignment with the gutter length to which said coupling members have been secured.

As illustrated, the outer transverse member 24, which is of a slightly greater cross-sectional area than the gutter per se whereby an extremity of a gutter length is snugly and securely received therein, includes a vertically disposed rear wall 26, a horizontally disposed bottom wall 27 and a front wall comprising a lower vertical portion 28 and an upper vertical portion 30 united by an arcuate concavo-convex intermediate portion 29. Desirably the upper edge of the rear wall 26 is flush with the upper edge of the rear wall 12 of the gutter length and the upper edge of the front wall portion 30 is flush with the lower surface of the horizontally disposed lip 17, such dimensions, while not critical, making for a neater appearance in the finished joint.

The inner transverse member 25, which is of slightly smaller cross-sectional area than the gutter per se whereby the member 25 may be snugly and securely seated within the gutter length to which united, includes a vertically disposed rear wall 31, a horizontally disposed bottom wall 32, and a front wall including an arcuate concavo-convex portion 33 and a vertically disposed upper portion 34. Preferably the upper extremity or top edge of the rear wall 31 is flush with the upper edge 12 of the gutter length 10 and the upper edge of the front wall portion 34 is flush with the lower surface of the horizontally disposed lip portion 17.

If desired, the inner transverse edge of the member 25 may be provided with an integral reversely directed spacing portion 35, the bending of this spacing portion being outwardly and backwardly with respect to the plane of this transverse member. It will be understood that when the inner and outer transverse members 24 and 25 are positioned in vertical alignment, with the extremity of a gutter length positioned therebetween and with the free edge of this gutter length in alignment with the free edge of the reversely bent spacing portion 35, a space or socket is provided between the projecting portions of these transverse coupling members within which the opposed extremity of the adjacent gutter length may be conveniently received. The socket thus provided is of greater width than the thickness of the material from which the gutter lengths are formed, it being obvious that gutter lengths and transverse members may all be of comparable gauge or thickness, such an arrangement

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making for greater ease of assembly through a slight constriction or manual compression of the free edge of the gutter length which is being united to the gutter length carrying the coupling member. After the assembly or slip joint has been accomplished, it will be understood that the added gutter length frictionally engages against the inner surfaces of the outer transverse member 24.

Any desired means may be employed for securing inner and outer transverse members to an extremity of a gutter length. Welding may be employed or fastening means such as rivets or the like 36 may be utilized for securely retaining inner and outer transverse members in overlying-underlying relationship with the extremity of a gutter length therebetween.

There has been illustrated in Fig. 4 of the drawing a slightly modified form of the invention wherein the outer transverse member 24 is provided on its inner transverse edge with an integral reversely directed spacing portion 37, the bending thereof being inwardly and backwardly with respect to the plane of the member 24. This portion 37 serves the identical purpose discussed hereabove of the reversely bent portion 35 of the inner transverse member 25, it being understood that in this modified form of coupling the bent portion 35 is omitted. It will be further understood that the reversely bent portion 35 or 37, which is alternately employed depending upon the construction desired, need not necessarily be formed integrally with respect to the transverse member of which it is a part but may be conveniently manufactured separately and apart therefrom.

The novel gutter coupling described in detail hereabove is susceptible of particularly economical manufacture, does not detract from the appearance of the assembled and installed gutter, is strong and durable, requires no special or skilled labor to assemble, provides a structure whereby gutter lengths may be readily and rapidly assembled and furnishes a highly satisfactory solution to problems which have vexed prior art practices.

It will be obvious to those skilled in this art that various changes may be made in the invention, without departing from the spirit and scope thereof, and therefore the invention is not limited by that which is shown in

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the drawing and described in the specification but only as indicated in the appended claims.

What is claimed is:

5 1. A joint for detachably connecting two lengths of sheet metal gutter in contiguous relation, each of said lengths having a substantially flat bottom and substantially flat side walls making abrupt angles with said bottom, said lengths being of identical cross-sectional configuration, said joint including inner and outer rigid transverse members of complementary cross-sectional configuration fixedly secured respectively to the inner and outer surfaces of an extremity of one of said lengths and projecting therebeyond, the secured edge of one of said transverse members having a reversely extending transverse spacing portion whereby the free edges of said transverse members are spaced apart a distance greater than the thickness of the material of said gutter lengths to provide a socket for the reception of the end portion of the other of said lengths.

20 2. A joint for detachably connecting two lengths of sheet metal gutter in contiguous relation as set forth in claim 1 where the inner transverse member is provided with a reversely extending transverse spacing portion disposed in face-to-face relation with respect to the inner surface of said gutter member.

30 3. A joint for detachably connecting two lengths of sheet metal gutter in contiguous relation as set forth in claim 1 where the outer transverse member is provided with a reversely extending transverse spacing portion disposed in face-to-face relation with respect to the outer surface of said gutter member.

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