Feb. 24, 1942. G. B. MARZOLF 2,274,078

DOWNSPOUT CONNECTION

Filed June 30, 1941 2 Sheets-Sheet 1

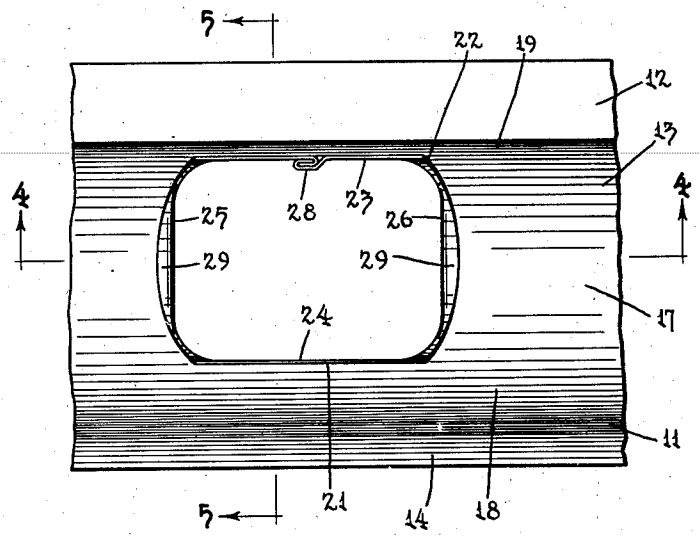


Fig. 1

Fig. 4

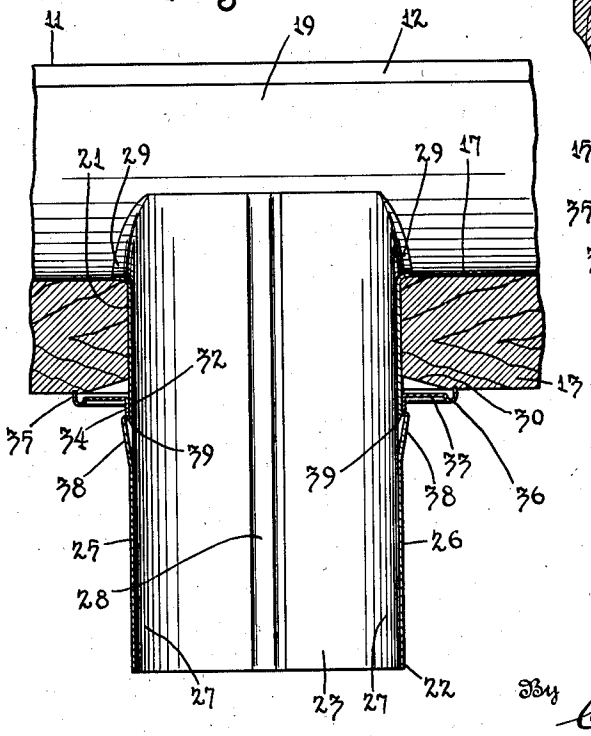
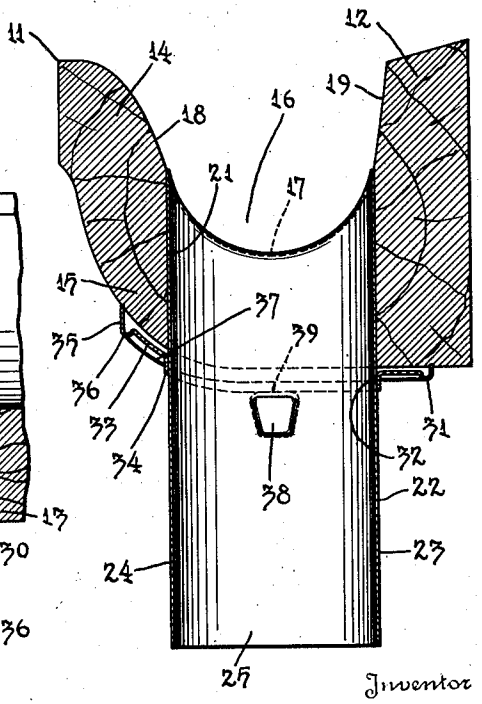


Fig. 5



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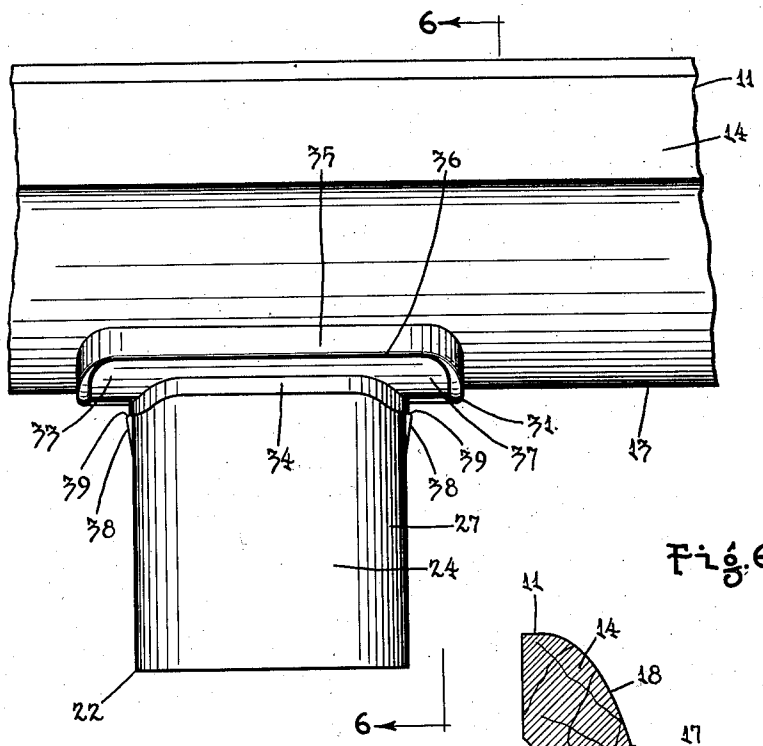


Fig. 2

Fig. 6

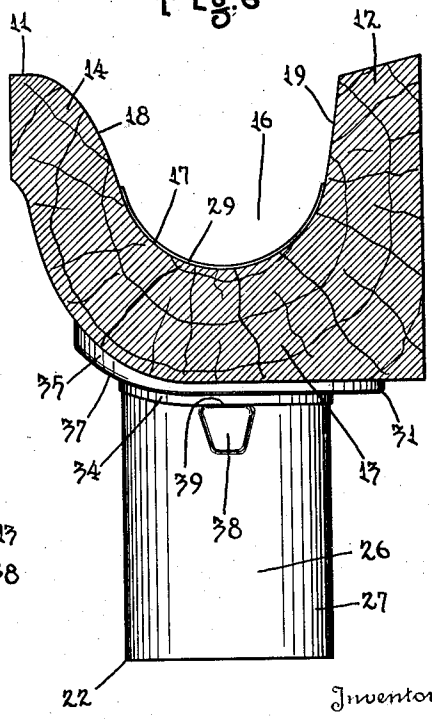
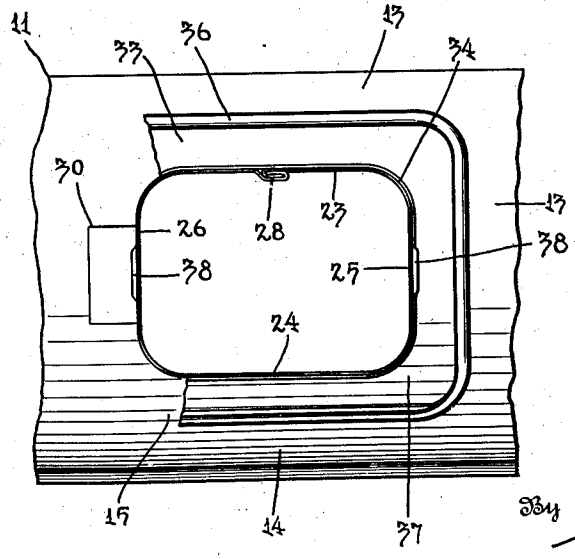


Fig. 3



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UNITED STATES PATENT OFFICE

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DOWNSPOUT CONNECTION

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Application June 30, 1941, Serial No. 400,366

6 Claims. (Cl. 108—28)

My invention relates to down spout connections for wood gutters and has for an object thereof to provide a connection which will be neat and attractive in appearance.

Another object of the invention resides in providing a connection which can be easily applied to the gutter.

A still further object of the invention resides in providing a connection with which a relatively tight joint with the gutter may be conveniently made.

Another object of the invention resides in employing a flanged nipple or conductor sleeve for use with the gutter and in employing a collar adapted to receive the nipple and to fit the exterior surface of the gutter.

Another object of the invention resides in providing means for holding the collar in engagement with the gutter.

A feature of the invention resides in providing a shoulder on the nipple for engagement with the collar to restrain longitudinal movement therebetween.

A feature of the invention resides in constructing the collar with a lip adapted to engage the outer surface of the gutter and with a web connected to the lip and spaced from the surface of the gutter, said web yieldably movable toward said gutter to procure engagement of the shoulder on the nipple with the collar.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a plan view of a gutter illustrating an embodiment of my invention applied thereto.

Fig. 2 is an elevational view of the structure shown in Fig. 1.

Fig. 3 is an inverted view of the structure shown in Fig. 2.

Fig. 4 is a longitudinal, elevational, sectional view taken on line 2—2 of Fig. 1.

Fig. 5 is an elevational, cross-sectional view taken on line 5—5 of Fig. 1.

Fig. 6 is an elevational, cross-sectional view taken on line 6—6 of Fig. 2.

In the use of wood gutters with which metal down spouts are employed, considerable difficulty has been encountered in procuring suitable connections between the down spouts and gutters. The usual practice in making such a connection has been to cut a square-cornered opening in the gutter to receive the end of a square-cornered down spout nipple, such nipple having been notched by hand at the sides thereof and bent by hammering to approximate the interior cross-sectional contour of the gutter. Additionally, nails have been used to nail the nipple to the gutter. Frequently, the openings were faultily made, leaving unsightly spaces between nipples and gutters and resulting in leakage about the exterior of the down spout. The present invention contemplates the use of a wood gutter and metallic down spout connecting nipple rounded at its corners to fit an easily accurately formed round-cornered opening in the gutter and also contemplates the preforming and preflanging of the nipple at its upper end to conform with the interior contour of the gutter and to bridge any gap existing between the nipple and the walls of the opening in said gutter. Additionally, it is a purpose of the invention to do away with the nailing of the nipple to the gutter. The invention further contemplates the use of a collar adapted to receive said nipple and to fit against the gutter upon the exterior thereof, said parts being held from relative movement to retain the nipple properly assembled relative to the gutter. In this manner, the disadvantages occasioned by the customary method of connecting the usual down spout nipples to wood gutters is eliminated.

For the purpose of illustrating my invention, I have shown in the drawings a portion of a wood gutter 11 which is constructed with a back 12, a bottom 13 and a front 14. The bottom 13 is connected to the front 14 by a curved corner 15. These various parts are arranged to provide a trough 16 within the gutter which has a curved lower surface 17 and upwardly flaring front and rear surfaces 18 and 19. In the gutter 11 is cut a round-cornered opening 21 through which the down spout connection passes. This opening is easily and accurately made on the job under instructions and with a template furnished with the pipe connection, said opening extending through the bottom 13 and intersecting the lower surface 17 and the front and rear surfaces 18 and 19 of the trough 16.

The invention embodies a conductor sleeve or nipple 22 which is constructed of such diameter as to be closely received within a down spout. The nipple 22 is constructed with a rear wall 23, a front wall 24 and lateral walls 25 and 26, which walls are connected together by means of rounding corners 27. The nipple is constructed from sheet metal which is formed with a seam 28 securing the ends of the metal together. At the upper ends of the walls 25 and 26 are provided outwardly extending flanges 29. The entire up-

per end of the nipple 22 is constructed to conform to the contour of the trough 16, so that the two walls 23 and 24 fit against the inner surfaces 18 and 19 of the trough, and so that the flanges 29 overlie the surface 17 of the bottom 13. These parts are preformed to fit the said surfaces whereby a close connection may be procured between the nipple and gutter.

In conjunction with the nipple 22 a collar 31 is employed which is constructed with an opening 32 in the same of exactly the form of the nipple 22. The said collar is constructed with an annular web 33 which has a flange 34 issuing outwardly from it at the opening 32. Flange 34 encircles the nipple 22 and fits snugly about the same bounding the opening 32. The outermost edge of the web 33 of collar 31 has a lip 35 projecting outwardly therefrom which extends in a direction opposite to the direction of extent of the flange 34. A bead 36 is formed in the collar 31 at the locality of the juncture of the lip 35 with the web 33. The collar 31 at the forward portion thereof, designated by the reference numeral 36, is curved to fit the curved corner 15 of the gutter, while the remainder thereof fits the straight surface of the bottom 13.

For the purpose of holding the collar 31 in position, two lugs 38 are struck out of the two side walls 25 and 26 of the nipple 22 and form shoulders 39 at the upper ends of the same. These shoulders are adapted to engage the lower edge of the flange 34 to restrain movement of the collar 31 in a direction away from the flanges 29. The lugs 38 are wedge-shaped in form, as shown in Fig. 2, so that as the collar is forced upwardly, the two lugs 38 are sprung inwardly to cause the same to clear the flange 34 and the said flange to pass the shoulders 39. During such movement, the side walls 25 and 26 bow sufficiently to permit of assembly as recited. It will be noted in Fig. 4 that the web 33 of the collar 31 is spaced from the undersurface of the gutter 11. This permits of springing the said collar slightly toward said undersurface to procure engagement of the flange 34 with the shoulders 39. To further facilitate such springing movement, notches 30, best shown in Fig. 4, are cut in the bottom 13 of said gutter 11. The lug 38 is so situated that when the parts are assembled, web 33 is slightly sprung. Thus, the flange 34 is held through the resiliency of the web 33 in engagement with the shoulder 39. This will compensate for slight variations in the dimensions of the gutter and at the same time will hold the lip 35 in contact with the bottom of the gutter throughout its extent.

The use of the invention is very simple. A hole is cut in the gutter of the proper size by the erector of the gutter. The nipple 22 is then inserted into the hole from the top of the gutter. If the hole is a little too large in a longitudinal direction, the flanges 29 will cover the same upon the interior surface of the gutter. If the hole is a little too large in a transverse direction, the side walls 23 and 24 of the nipple may be easily spread outwardly until the same at the upper edges fit smoothly against the edges 16 and 17 of the trough 16. Collar 31 is next applied and slid upwardly along the nipple 22. As the flange 34 of the collar engages the lug 38, walls 25 and 26 are forced inwardly to permit the collar to pass said lugs. The final movement of the collar past the lugs is procured by springing the collar 31 in a manner to move the web 33 thereof toward the gutter proper and if necessary into the slots 30. This procures engagement of the shoulders 39 with the lower edge of the flange 34, whereby the collar becomes locked on the nipple and held from movement thereon. After the parts have been assembled, the nipple becomes rigidly secured to the gutter and the parts become firmly held in assembled position.

The advantages of my invention are manifest. An extremely simple and practical construction is provided, whereby a close joint may be procured between a wood gutter and a metal down spout. The device may be manufactured at the factory ready to be assembled and quickly applied so as to reduce the amount of labor necessary to connect the down spout to the gutter. The collar employed with the nipple is neat and trim, so that the appearance of the assembled structure is greatly enhanced. The opening in the gutter receiving the nipple is closed both at the upper and lower surfaces of the bottom of the gutter, whereby leakage of water is prevented. My improved down spout connection can be constructed at a nominal cost.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In combination with a wooden gutter having a front, back and bottom and an outlet opening in the bottom, a nipple constructed of sheet metal and extending through said opening, said nipple fitting freely within said opening, a flange on the inner end of the nipple engaging the bottom of the gutter for closing said opening adjacent the nipple on the inner surface of the gutter, a collar encircling said nipple upon the exterior of the gutter and disposed adjacent the outer surface of the gutter, said collar closely fitting said nipple and closing said opening adjacent the nipple at the outer surface of the gutter and means for holding the collar in position against the bottom of the gutter.

2. In combination with a wooden gutter having a front, back and bottom and an outlet opening in the bottom, a nipple constructed of sheet metal and extending through said opening, said nipple fitting freely within said opening, a flange on the inner end of the nipple engaging the gutter on the inner surface thereof, a collar encircling said nipple upon the exterior of the gutter and constructed of sheet metal, said collar having an annular shaped web, a flange following along and issuing from the inner edge of the web and closely fitting the nipple, and a lip issuing from said web at the outer edge thereof and adapted to engage the outer surface of the gutter and means for holding said lip in engagement of the gutter.

3. In combination with a wooden gutter having a front, back and bottom and an outlet opening in the bottom, a nipple constructed of sheet metal and extending through said opening, said nipple fitting freely within said opening, a flange on the inner end of the nipple engaging the bottom of the gutter for closing said opening adjacent the nipple on the inner surface of the gutter, a collar encircling said nipple upon the exterior of the gutter and disposed adjacent the outer surface of the gutter, said collar closely fitting said nipple and closing said opening adjacent the nipple at the outer surface of the

gutter and means acting between said collar and nipple for holding the collar from movement along said nipple in a direction away from the gutter.

4. In combination with a wooden gutter having a front, back and bottom and an outlet opening in the bottom, a nipple constructed of sheet metal and extending through said opening, said nipple fitting freely within said opening, a flange on the inner end of the nipple engaging the nipple on the inner surface of the gutter, a collar encircling said nipple upon the exterior of the gutter and constructed of sheet metal, said collar having an annular shaped web, a flange issuing from the inner edge of the web and following along and closely fitting the nipple, and a lip issuing from said web at the outer edge thereof and adapted to engage the outer surface of the gutter, and means on said nipple forming a shoulder for engagement with said flange for holding the collar in engagement with the gutter.

5. In combination with a wooden gutter having a front, back and bottom and an outlet opening in the bottom, a nipple constructed of sheet metal and extending through said opening, said nipple fitting freely within said opening, a flange on the inner end of the nipple engaging the nipple on the inner surface of the gutter, a collar encircling said nipple upon the exterior of the gutter and constructed of sheet metal, said collar having an annular shaped web, a flange issuing from the inner edge of the web and following along and closely fitting the nipple, and a lip issuing from said web at the outward edge thereof, and adapted to engage the outer surface of the gutter, means on said nipple forming a shoulder for engagement with said flange for holding the collar in engagement with the gutter, said lip being of a length such as to space said web from the outer surface of the gutter to allow for movement of the collar toward the gutter in engaging the flange with said shoulder.

6. In combination with a wooden gutter having a front, back and bottom and an outlet opening in said bottom and formed with a curved corner at the connection between said bottom and front, a nipple constructed of sheet metal and extending through said opening, said nipple fitting freely within said opening, a flange on the inner end of the nipple engaging the bottom of the gutter for closing said opening adjacent the nipple on the inner surface of the gutter, a collar encircling said nipple upon the exterior of the gutter and disposed adjacent the outer surface of the gutter, said collar closely fitting the nipple and closing said opening adjacent the nipple at the outer surface of the gutter, said collar having a curved portion fitting the curved corner between the bottom and front of the gutter and means for holding the collar in position against the bottom of the gutter.

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