Feb. 16, 1954 T. VAN DUZER 2,669,197

GUTTER STRAINER

Filed Feb. 19, 1951

Fig 1.

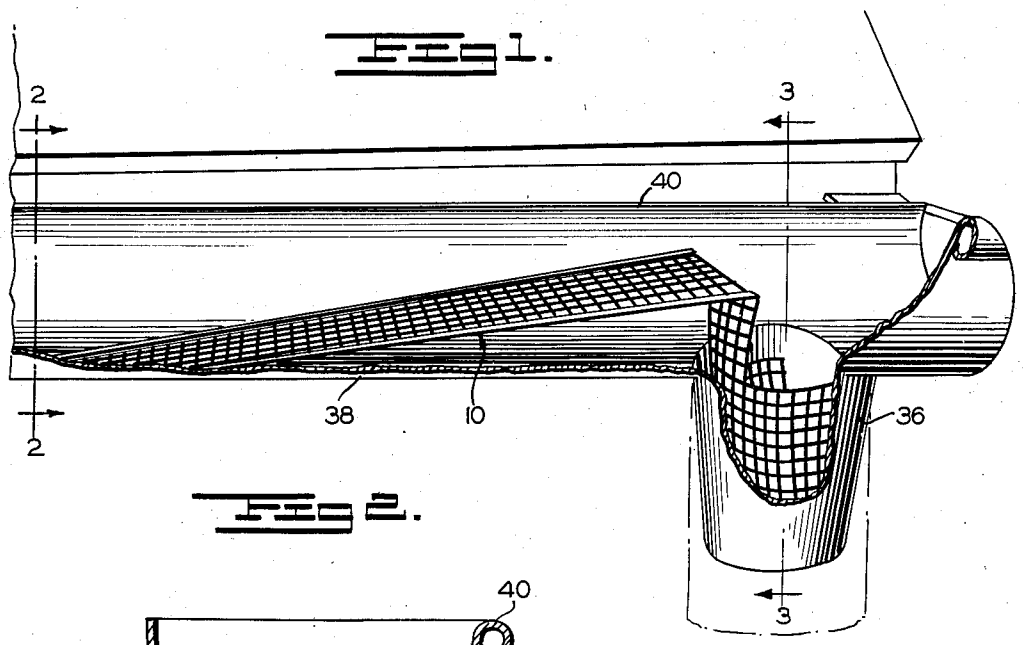


Fig 2.

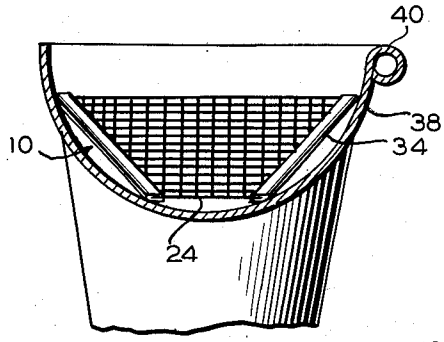


Fig 3.

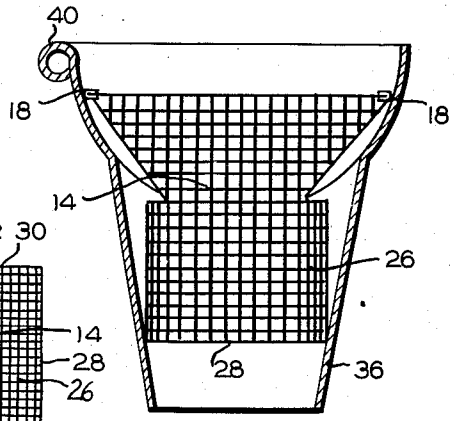
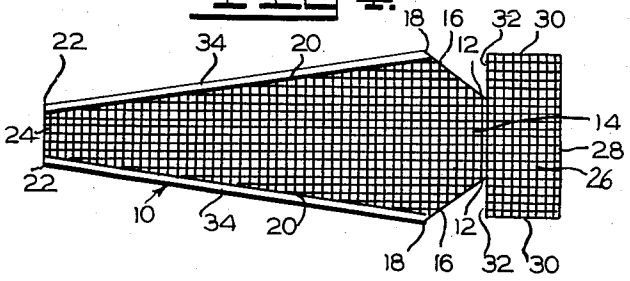


Fig 4.



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GUTTER STRAINER

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3 Claims. (Cl. 108—30)

1

This invention relates to a new and improved gutter or eaves trough strainer.

An object of this invention is to provide a strainer of the aforesaid type which may be readily and easily installed in an eaves trough or gutter and downspout for the purpose of preventing the clogging of the latter with solid matter such as leaves, seeds, slag from composition roofing, etc.

Another object of this invention is to provide a gutter or eaves trough strainer which is of a single piece construction and may be adapted for use with different sizes and shapes of downspouts.

An additional object of this invention is to provide a gutter type strainer which when properly installed will prevent the clogging of downspouts over a period longer than possible with the usual type strainers and which when finally becoming clogged will not cause backed up water to overflow the walls of the gutter which is obviously objectionable but will permit the water to overflow the end of the strainer into the downspout.

A further object of this invention is to provide a strainer of the aforesaid type which is not only easily and cheaply constructed but which also may be packed in bulk quantities for shipping without difficulty because of its flat shape in unformed condition.

These and other objects will become apparent from the following description taken in conjunction with the drawings wherein:

Figure 1 is a perspective view of the gutter or eaves trough strainer of this invention in assembled relationship with a gutter and downspout, the forward gutter wall and a portion of the downspout being broken away;

Figure 2 is a vertical cross-sectional view taken along the line 2—2 of Figure 1;

Figure 3 is a vertical cross-sectional view taken along the line 3—3 of Figure 1; and

Figure 4 is a plan view of the gutter strainer of Figure 1 in unformed condition.

With reference to the drawings and in particular to Figure 4, the gutter strainer of this invention indicated generally as 10 is constructed preferably of a foraminous material which may be in the form, for example, of woven wire mesh or screening or perforated metal sheeting. In general, the shape of the strainer member 10 in unformed condition is that of a longitudinal member notched on both sides at 12 intermediate the ends thereof to form a throat 14 whose diverging walls 16 terminate at 18. The

2

sides 20 of the longitudinal member 10 converge toward each other along the length of the member from the points 18 and terminate at the points 22 to form the supporting end 24. Rectangular portion 26 of the strainer device formed by the end 28 of the longitudinal member, side walls 30, and walls 32 of the notched portions 12 is of sufficient width and length to permit folding as described hereinafter for positioning this end of the strainer in a downspout.

It has been found desirable to bind the sides 20 of the strainer 10 by means of metal binding strips 34 folded on their longitudinal center lines and positioned about the sides 20 and retained there by application under pressure, spot welding or other known means. This feature has been found to prolong the life of the strainer since it aids in preventing corrosion of the cut ends of the foraminous metallic material brought about by contact with wet leaves and other vegetable matter collecting thereon and to permit closer contact of the strainer sides 20 with the sidewalls of the gutter in which it is installed.

As is shown in Figures 1 through 3, the installation of the new and improved strainer 10 of this invention is accomplished by first bending the throat portion 16 along a line joining the points 18 downwardly to an angle a little less than 90° with the remainder of the strainer and then rolling the sides of the rectangular gutter retaining portion 26 of the strainer so as to approximate a semi-cylindrical portion having a diameter sufficiently larger than the diameter of the opening of the downspout 36 to permit the retention of this end of the strainer in position relative to the downspout. The other end 24 of the strainer device 10 will rest in the bottom of the gutter or eaves trough 38 and is supported thereby.

A preferred overall length of the sloping portion of the strainer 10 is approximately one foot. The length of the throat 14 and the positioning of the gutter supporting portion of the strainer within the gutter is preferably adjusted so as to provide a grade of approximately one and one-half inches per foot. This grade permits solid matter in the gutter line to deposit and begin its accumulation at the end 24 of the strainer 10 away from the downspout 36. As the accumulation gradually builds up the area of screen is covered in a direction approaching the overflow point above the downspout.

In addition, the strainer should be installed within the gutter line so that the top portion of

the throat, which is bent along a line joining points 18, lies preferably ¾ inch below the top edges 40 of the sides of the gutter 38. Installation in this manner permits the water to overflow the elevated end of the strainer 10 into the downspout 36 upon clogging of the strainer 10 by solid matter. Permitting the water to back up in the gutter line and overflow the sides thereof, which is the result obtained with most other strainers is obviously an undesirable feature.

The construction of my strainer as described hereinbefore provides a surface area approximately four times that of the usual basket type strainer and thus does not necessitate as frequent cleaning. In addition, the feature of permitting overflow into the downspout upon complete clogging of the strainer and preventing overflow of the top of the sides of the gutter offers obvious advantages over the prior art type strainers.

Because of the flat shape of the unformed strainer of this invention as illustrated in Figure 4 there is a resultant advantage in that difficulty of packing as encountered in the basket type or other type cleaners is not encountered.

Another particular advantage of the aforesaid structure is its universal adaptability to different sizes and shapes of downspouts. Although the strainer has been illustrated for use in conjunction with downspouts which are round in cross section, it is apparent that the ends of the gutter supporting portion of the strainer may be bent to conform with gutters which are rectangular or square in cross section with the same retaining feature brought about by the resiliency of the material of which the strainer is constructed.

The description of the foregoing invention is for the purpose of illustration only and is not limiting. The scope of this invention is set forth in the claims wherein I claim:

1. In combination with a gutter having a downspout, a one-piece strainer including an inclined tapered foraminous portion and a depending flexible end portion, said inclined portion resting in the gutter and spaced below the top thereof and to one side of said downspout, the sides of said member being provided with reinforcing means, and said depending end portion yieldably engaging the wall of the downspout so as to maintain the strainer in a fixed position.

2. In combination with a gutter having a downspout, a one-piece strainer including an inclined, tapered, foraminous portion spaced below the top of said gutter and having its tapered end resting in said gutter, the taper of said portion conforming to the shape of said gutter, the tapering edges of said inclined portion being provided with reinforcing means, and said tapered portion having a depending flexible portion, said depending portion having a constricted section adjacent said inclined portion, said depending portion being yieldable to bending adjustment for insertion into said downspout so as to maintain said strainer in a fixed position in which said inclined member does not substantially overhang said downspout opening, thereby permitting water to overflow said raised end and to discharge into said downspout when said strainer becomes clogged.

3. As an article of manufacture, a one-piece gutter strainer of the class described comprising, a flat, tapered, foraminous member having a constricted section near the wide end, the edges intermediate said constricted section and the narrow end being reinforced, and the portion of said member intermediate said reinforced edges and said wide end being yieldable to bending adjustment for insertion into a gutter downspout.

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