July 15, 1947. H. AUDINO 2,423,923

GUARD FOR ROOFING GUTTERS

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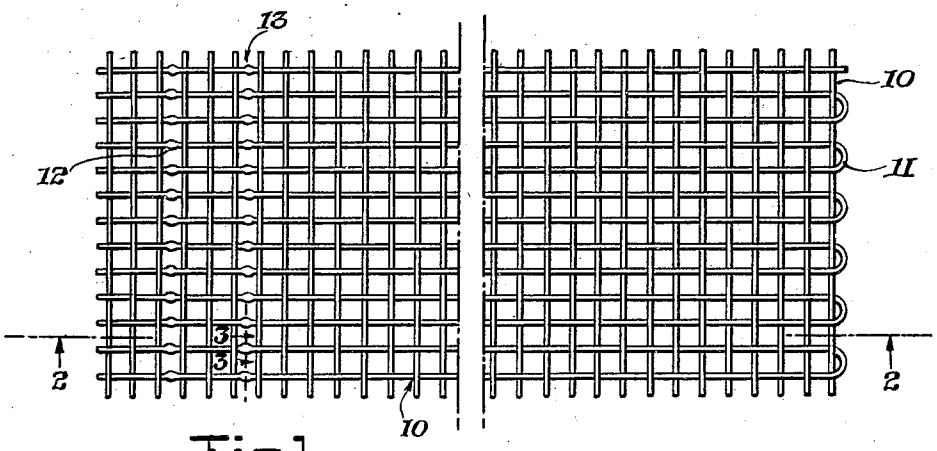


Fig.1.

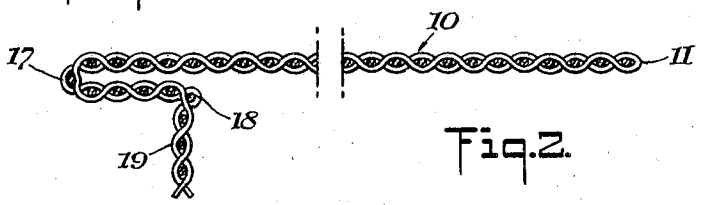


Fig.2.

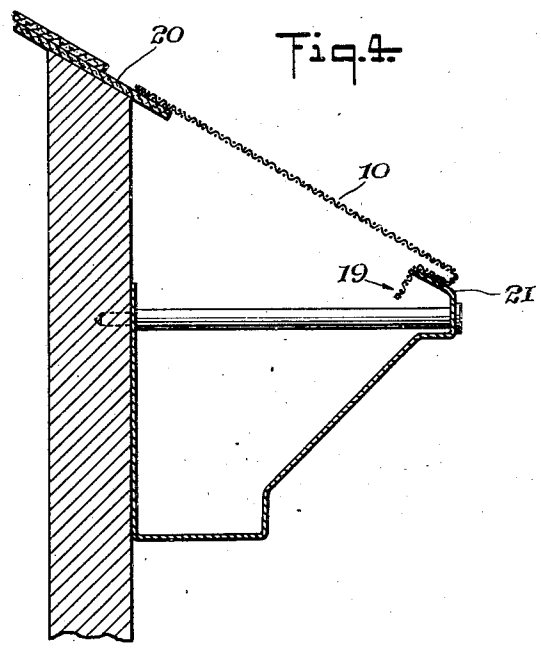


Fig.4.

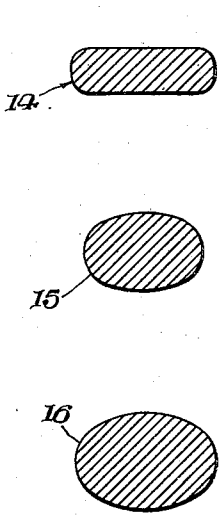


Fig.3.

INVENTOR
Hector Audino
BY Daly & Daly
ATTORNEYS

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GUARD FOR ROOFING GUTTERS

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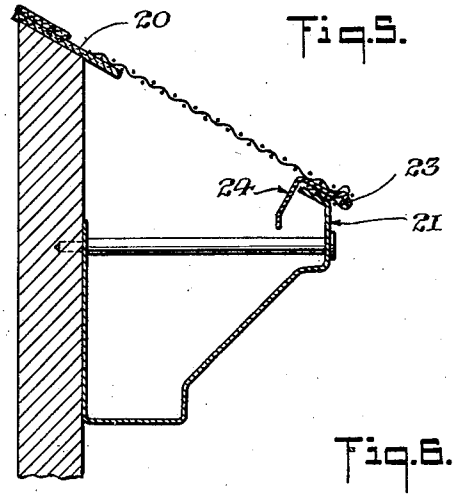
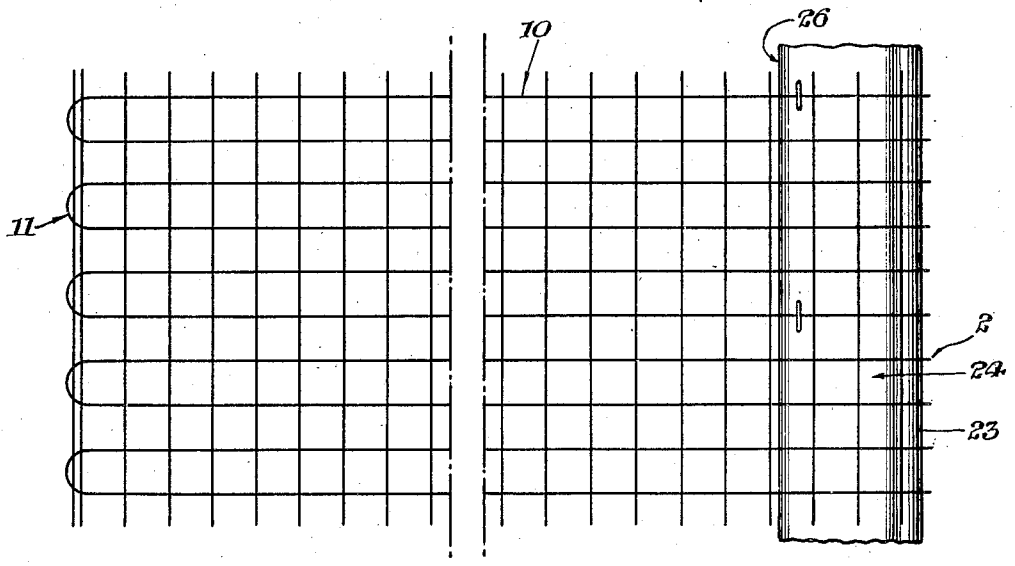


Fig. 5.

Fig. 6.



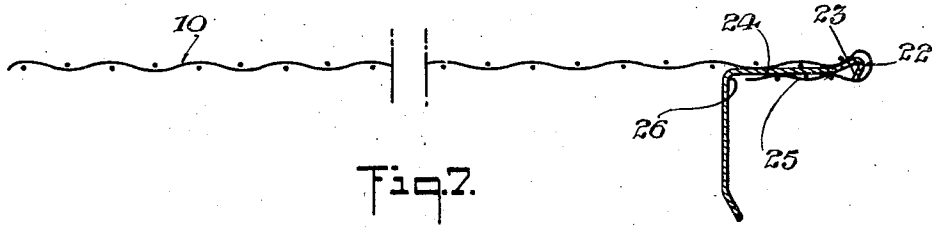


Fig. 7.

INVENTOR
Hector Audino
BY Dorsey & Dorsey
ATTORNEYS

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GUARD FOR ROOFING GUTTERS

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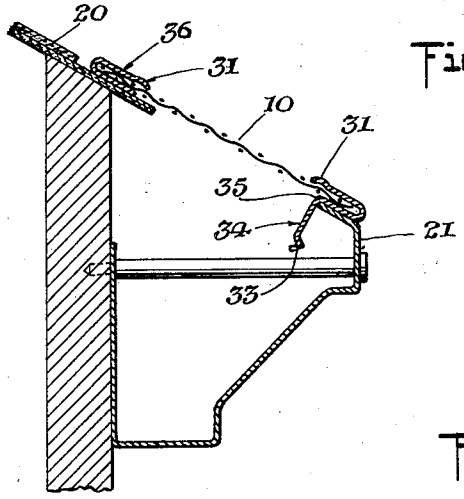


Fig. 8.

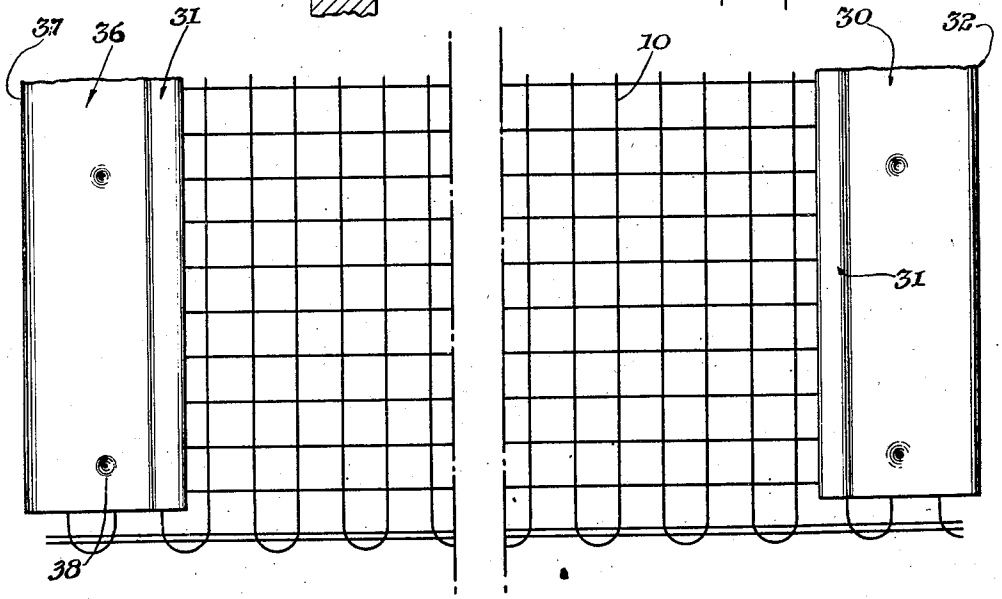


Fig. 9.

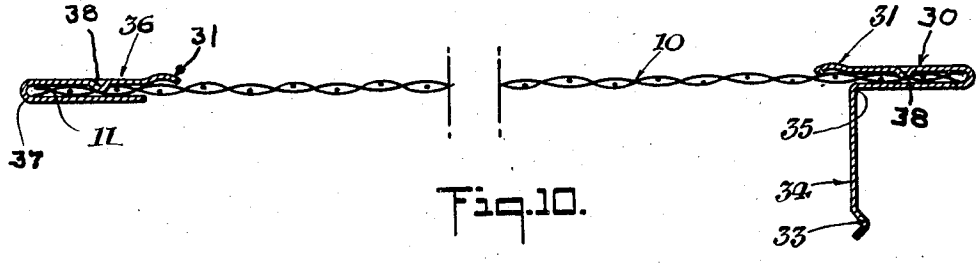


Fig. 10.

INVENTOR
Hector Audino
BY Darby & Darby
ATTORNEYS

Patented July 15, 1947

2,423,923

UNITED STATES PATENT OFFICE

2,423,923

GUARD FOR ROOFING GUTTERS

Hector Audino, Teaneck, N. J.

Application October 2, 1945, Serial No. 619,773

3 Claims. (Cl. 108—30)

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The present invention relates to guards for roofing gutters and particularly to such removable guards cut in suitable lengths in the form of a screen either of perforated metal or wirecloth and designed to prevent the entry of foreign matter which has a tendency to clog the gutter.

It is an object of the invention to provide such a gutter guard or screen which may be readily installed and easily removed by the householder without the assistance of skilled help.

It is another object of the invention to provide such a guard or screen in a partly fabricated form which is readily cut and formed into its final form by the householder and may, therefore, be lower in its sale price.

Other objects and features of the invention will appear when the following description is considered in connection with the annexed drawings in which—

Figure 1 is a broken plan view of a section of gutter guard or screen in accordance with the preferred form of my invention;

Figure 2 is a cross-sectional view of the screen of Figure 1;

Figure 3 is a detailed view showing the alteration of the cross-section of the screen wire in order to make it readily bendable at selected points;

Figure 4 shows a cross-section of one form of roofing gutter and the adjacent building wall together with a guard in accordance with Figures 1 and 2 in place to prevent the entering of foreign matter into the gutter;

Figure 5 is a view similar to Figure 4 but showing a second form of my invention in cross-section and in position on the roofing gutter;

Figure 6 is a plan view of the form of screen shown in section in Figure 5;

Figure 7 is a sectional view showing the screen of Figure 6;

Figure 8 is a view similar to Figure 4 showing a third form of the screen of my invention in place on a roofing gutter;

Figure 9 is a plan view of the screen of Figure 8; and

Figure 10 is a cross-sectional view of the screen of Figure 9.

Referring now to the drawings and particularly to Figures 1 and 2 thereof, the screen of this form of my invention comprises the screen proper 10 which is provided with the selvage edge 11. This screen is, in its preferred form, made in continuous lengths and may be composed, for example, of wirecloth of three mesh to the inch and approximately eight inches wide. The wire

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diameter used may be that commonly used commercially and known as hardware galvanized wirecloth.

Approximately one inch from one edge of the wire 10 the strands running in the direction perpendicular to the edge are scored or weakened so that the screen may be readily bent along this line. This scoring or weakening is indicated at 12 in Figure 1. Likewise at approximately two inches from the edge and parallel to the edge the strands are weakened by similar score lines 13. These points of weakening or scoring may be procured in any one of a number of manners. Thus the wire may be mechanically flattened at points such as 12 and 13 to provide the line of bending and the flattening may be in either of the forms shown in Figure 3, that is, may be either rectangular in section as indicated at 14 in Figure 3, or a relatively round oval as indicated at 15 in Figure 3, or may be a relatively flat oval as indicated at 16 in Figure 3. If desirable, the lines of bending may be improved by omitting a strand of wire parallel to the edge at the section where the bending is to take place or instead of scoring the wires as shown in Figure 1 a comparable result may be obtained by locally heating the transverse wires in the areas such as 12 and 13 by means of high frequency currents to the annealing point of the cold worked steel (1000° F. to 1100° F.) and allowing the product to cool in air thus softening the steel wires on the bending lines.

Due to the construction above described, the gutter guard or screen of my invention may be shipped to the user in a roll, for example, of the conventional type of 100 feet in length and may then be cut in shorter lengths and bent to the form shown in Figure 2, that is, may be bent through 180° along the line formed by the weakened areas 13 and then bent in the opposite direction 90° along the line indicated by the weakened area 12. As a result the screen is provided with the two bends designated 17 and 18 in Figures 2 and 4 and as so bent is in condition to be applied to the roofing gutter in convenient sections.

The application to the gutter is extremely simple, as is indicated in Figure 4, in which the unbent selvage edge rests on the roof 20 and the portion 19 extending downwardly from the bend 18 bears against the gutter edge 21 and holds the screen or guard in its proper position by its own weight. It will, of course, be understood that the form of gutter shown in Figure 4 is merely illustrative and that the gutter guard of my invention is equally applicable to the many

other forms of roofing gutters which are in common use and particularly to gutters made of wood.

If desirable the roll of wirecloth may be weakened along lines transverse thereof at spaced intervals whereby the screen may be readily severed into unit lengths for bending and easy installation.

Referring now to Figures 5, 6 and 7, and particularly to Figures 6 and 7, there is shown a form of my invention in which the wirecloth **10** is cut in suitable lengths of about four feet and is again provided with a selvage edge but is not provided with the lines of weakening or scoring **12** and **13**. In place thereof the wirecloth is bent as indicated at **22** and a piece of metal as, for example zinc is included within the bend. The zinc is formed with a small bend on the end thereof, as shown in Figure 7 at 23, and the wirecloth **10** is bent and pressed together as indicated at **22** through 180° and includes the bend **23** of the metal reinforcement **24**. It is contemplated that the screen will be shipped with the zinc strip **24** incorporated into the wirecloth as above described, the screen extending as indicated at **25** back along itself for a distance of approximately one inch and the two components are then stapled together at suitable intervals. This design provides for the screen in sections resting directly upon the roof **20** and for the depending portion of the metal **24** bearing against the edge **21** of the gutter.

The utilization of the metal strip **24** is advantageous in that its weight serves to hold the screen in position and, further, if the strip be zinc the presence and contact thereof in a fabricated section wherein steel may become exposed to the elements will serve to protect the steel from corrosion.

In this form of my invention as well as in the third form shortly to be described, the gutter guard is made in sections approximately four feet long although in order to provide suitable length combinations some sections will be made three feet and some five feet in length.

In the third form of my invention which is shown in Figures 8, 9 and 10, each edge of the screen section is enclosed in a metal member, the metal member on the edge **11** of the screen which is to rest on the roof being designated **36** and the metal member on the opposite or gutter edge being designated **30**. The member **36** is formed with a bend **37** therein which surrounds the lefthand edge thereby holding the member of the screen **10**. If desirable the member **36** may be center punched as indicated at **38** to enhance the gripping action of the member upon the screen or the same effect may be obtained by stapling. In a like manner a metal member **30** preferably of zinc is attached at the other edge of the guard or screen section, this member **30** being formed similarly to the member **36** and being provided at the end of its lower extension with a bend **33** which serves to stiffen the edge. Further, a bend **31** in members **30** and **36** serves to improve the contact of the wirecloth with the zinc strip and in the case of member **36**, member **31** also provides sufficient overhang to prevent water from lodging in the 180° bend of the zinc and likewise to prevent leaves from lodging in the bend.

In this form the screen has the advantages mentioned above in connection with the form of

Figures 5, 6 and 7 and is installed in the same manner, as is clearly indicated in Figure 8.

While I have described preferred forms of my invention such description was given for the purposes of illustration only and, consequently, I wish to be limited not by the foregoing but solely by the appended claims.

What is claimed is:

1. In a roof gutter guard, in combination, a wirecloth having a selvage edge and formed in a continuous strip of proper width, a line of weakened areas in the transverse wires, said line extending along said wirecloth parallel to the other edge and spaced therefrom, and a second line of weakened areas in the transverse wire, said second line being spaced from said first line and parallel thereto, whereby said screen may be given a 180° bend along said second line after cutting in suitable lengths and a 90° bend in the reverse direction along said first line to provide a depending portion of said screen spaced from the edge thereof for cooperation with a roofing gutter in which said sectional guard is installed said depending edge being adapted to extend within the gutter and the portion between said two ends being adapted to rest on the gutter edge.

2. In a roof gutter guard, in combination, a wirecloth having a selvage edge and formed in a continuous strip of proper width, a line of flattened areas extending along said cloth parallel to the other edge and spaced therefrom, and a second line of flattened areas spaced from said first line and parallel thereto, whereby said screen after cutting in suitable lengths may be given a 180° bend along said second line and a 90° bend in the reverse direction along said first line to provide a depending portion of said screen said depending portion being spaced from the edge of the screen for cooperation with a roofing gutter in which said sectional guard is installed said depending edge being adapted to extend within the gutter and the portion between said two ends being adapted to rest on the gutter edge.

3. In a roof gutter guard, in combination, a wirecloth having a selvage edge and formed in a continuous stripe of proper width, a line of heat treated areas extending along said wirecloth parallel to the other edge and spaced therefrom, and a second line of heat treated areas spaced from said first line and parallel thereto, whereby said screen may be given a 180° bend along said second line and a 90° bend in the reverse direction along said first line to provide a depending portion spaced from the edge of said screen for cooperation with a roofing gutter in which said sectional guard is installed said depending edge being adapted to extend within the gutter and the portion between said two ends being adapted to rest on the gutter edge.

HECTOR AUDINO.

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