

March 8, 1966

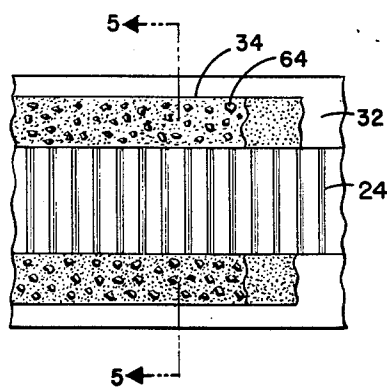
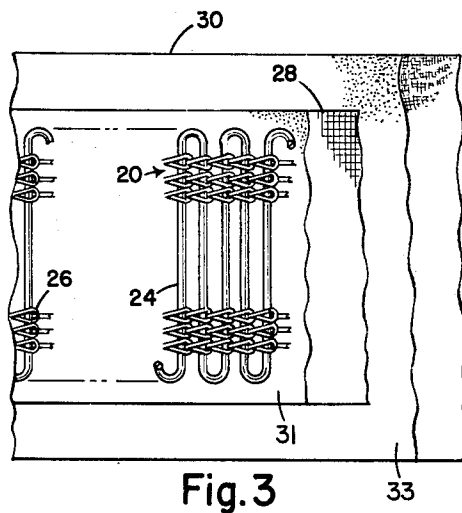
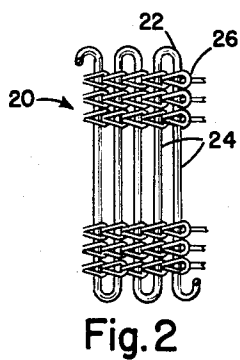
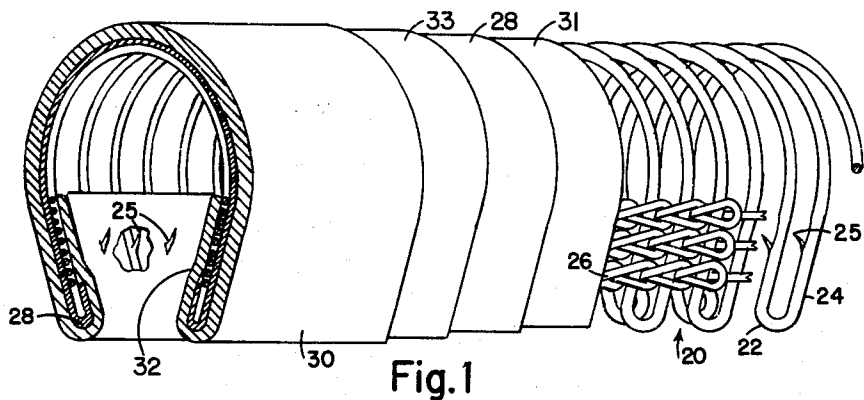
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3,238,689

BEADING FOR FINISHING STRUCTURAL EDGES

Original Filed March 30, 1960

3 Sheets-Sheet 1



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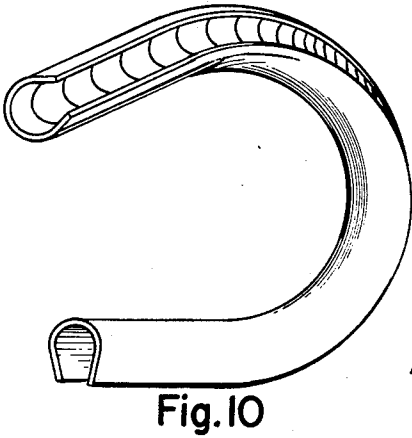
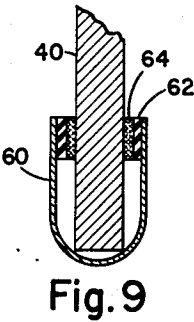
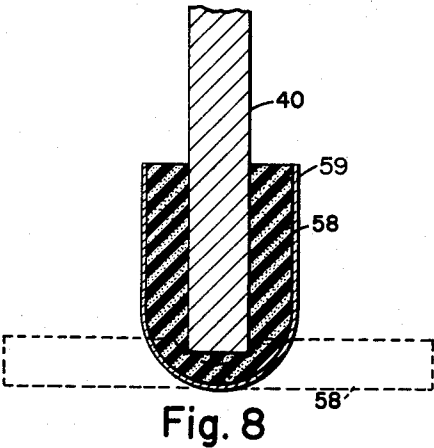
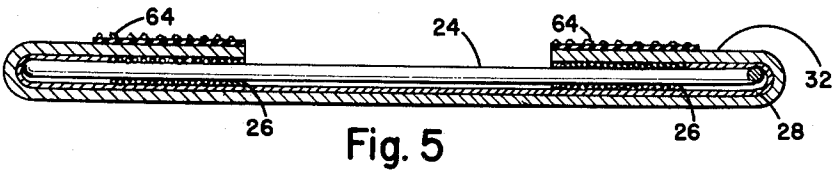
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BEADING FOR FINISHING STRUCTURAL EDGES

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BEADING FOR FINISHING STRUCTURAL EDGES

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3 Sheets-Sheet 3

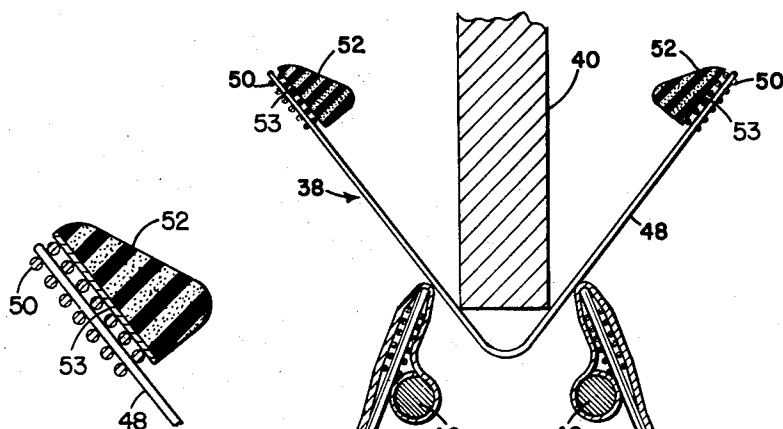


Fig. II

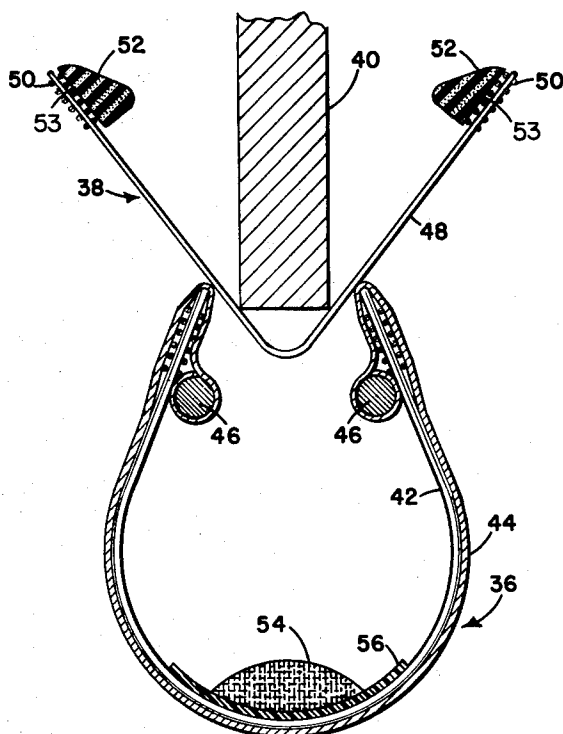


Fig. 6

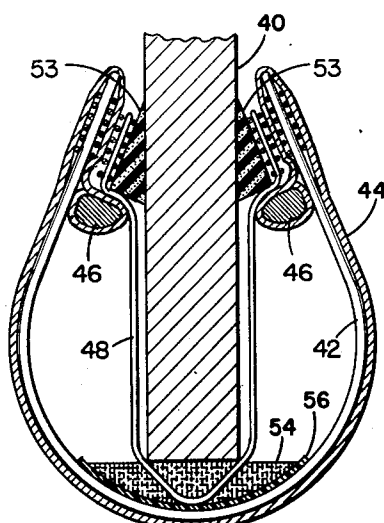


Fig. 7

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BEADING FOR FINISHING STRUCTURAL EDGES
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Original application Mar. 30, 1960, Ser. No. 18,650.
Divided and this application Feb. 1, 1962, Ser. No.
170,449

4 Claims. (Cl. 52-717)

This application is a division of my application Serial No. 18,650, filed March 30, 1960, Beading for Finishing Structural Edges, now Patent No. 3,091,821.

This invention relates to beadings or moldings for finishing or garnishing structural edges, such, for example, as the projecting edges of interior plates or panels of automobile bodies, one object of the invention being to provide an improved beading of this character capable of being more readily applied and of adhering more tenaciously to the structural edge to be finished.

Another object is the provision of such a beading having an extremely flexible construction capable of being bent and twisted to fit panel edges of irregular shape.

Another object is to supply a beading having an adjustable type of construction adapted to be readily adjusted in size to fit structural edges of varying thickness.

A further object is to provide a beading of smaller size, thinner edges, smooth finish and with a spring tensioned grip on the panel or other structural edge.

Still a further object is the provision of a finish beading having the above advantages in a construction capable also of being readily and economically manufactured.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

FIG. 1 is an enlarged fragmentary perspective view of a beading comprising the present invention;

FIG. 2 is an enlarged fragmentary view of a wire fabric supporting strip used therein;

FIG. 3 is an enlarged view showing the supporting strip laid on tape and outer or facing strips for covering the same;

FIG. 4 is a view similar to FIG. 3, but showing the marginal edges of the tape and facing strips folded over the supporting strip;

FIG. 5 is an enlarged sectional view on the line 5-5 in FIG. 4;

FIG. 6 is an enlarged sectional view of a modified supporting strip and an inner lining strip in course of application to a panel edge;

FIG. 7 is a view similar to FIG. 6 showing the beading assembled and completely applied to the panel;

FIG. 8 is an enlarged sectional view of a modified inner or lining strip applied to a panel;

FIG. 9 is a view similar to FIG. 8, showing a further modified lining strip;

FIG. 10 is a perspective view of a length of beading bent and twisted to show the flexibility thereof, and

FIG. 11 is an enlarged fragmentary, sectional view showing a portion of the inner lining strip of FIG. 6.

The invention is embodied in the present instance in a beading comprising a supporting strip shown detached in FIG. 2 and comprising a flexible resilient wire fabric or cloth 20 formed by a flexible resilient wire strand 22 looped back and forth transversely of the strip to provide a series of longitudinally spaced cross strands 24. Cross strands 24 are maintained in spaced relation with one another by one or more lines 26 of thread

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loosely knitted through the strands, preferably in the form of a chain or lock stitching, serving to hold the cross strands in a common plane, but permitting relative movement therebetween as the beading may be bent and curved as hereafter described and shown in FIG. 10. A single line of such threads 26 may be applied adjacent the outer margins of the wire loops, or such lines of stitching may be multiplied to cover more or even all of the length of the wire strands.

A wire fabric as shown in FIG. 2, is preferably laid on a length of suitable tape material 28, FIG. 3, and the wire and tape material then laid on a strip of facing fabric or lace 30. A permanently flexible adhesive 31, such as latex, is applied between the wire fabric and tape material and at 33 between the latter and facing fabric to secure the same together and the marginal edges of the tape and facing fabric are wrapped around the margins of the wire fabric 20 as at 32, FIG. 4, the inturned margins being secured to the wire fabric and its stitching 26 by applications of such adhesive. The inturned margins 32 of the facing fabric 30 are given a band 34 of such latex on which gritty particles of sand, carborundum or the like may be sprinkled for a purpose hereafter described.

The wire strand 22 of the supporting strip is a resilient flexible, medium soft wire, having a diameter of, say, 0.028 inch, soft enough for forming, but resilient enough to afford spring action, as well understood in the art. The strands and covering materials are formed into the substantially oval or U-shape shown in FIG. 1, as by bending the middle portions thereof around a $\frac{5}{16}$ inch do, for example, depending of course upon the thickness of the panel to be garnished. The inner sides of the wire strands 24 are preferably notched or cut to strike up sharp barbs 25 pointed inwardly and toward the bottom of the strip oval, as shown. The side walls of the U-shaped form are inclined somewhat toward each other (FIG. 1) being shown in a median degree of inclination, adapting them to be sprung apart sufficiently to enclose the edge of the panel to be finished, after which the spring tension of the wire fabric and the barbs 25 produce a tight gripping of the panel sides. The latex bands 34, with or without the addition of gritty material, further assist in securely attaching the beading to a panel edge, and the flexibility of the beading adapts it to be applied to panelled edges of varying thickness, shape or curvature.

In a modified construction shown in FIGS. 6 and 7, a beading 36 is employed together with a substantially channel-shaped liner 38 which is inserted therein and which supplies additional gripping attachment to the panel 40. The outer or supporting frame 36 in this modification comprises resiliently flexible wire cross strands 42, as before, covered by a facing strip 44. The inturned marginal edges of the facing strip may have woven therewith in the edges thereof a longitudinally extending strand or cord 46, forming an abutment projecting somewhat inwardly for a purpose hereafter described.

The inner lining strip 38 is preferably formed of strands 48 looped back and forth transversely thereof as described above in connection with the supporting strip and shown in FIG. 2. Such strands may be made of flexible wire, or may be strands or cords of tightly twisted paper of known construction. Such strands are retained in longitudinally spaced relation with one another by one or more lines of thread 50 interwoven therewith, as described above in connection with the supporting frame. Liner 38 preferably has a pair of longitudinal strips of rubber 52 of generally triangular shape secured thereto by latex or other flexible cement. Each of strips

52 is preferably backed with a strip of cloth 53 (FIG. 11) which is of any known weave having a high resistance to longitudinal stretching action. Backing cloths 53 are preferably secured to strips 52 and then strips 52 are cemented to the inner sides of the margins of the side walls of the liner, as shown in FIGS. 6 and 7. Although strips 52 exert a good gripping action on panel 40 when the beading is mounted, I found that the gripping action may be improved either by coating the inner facing surfaces of the strips with latex and then applying the beading or by applying the above facing coating of latex and then adding a layer of gritty material such as that described earlier in connection with FIG. 4.

The liner 38 may be first partially applied to the panel edge and the outer supporting strip then applied to embrace the liner and close it against the panel sides, as shown in FIG. 6, or the liner may be first completely applied and the supporting strip thereafter applied over the liner, the supporting strip in either case pressing and holding the rubber strips 52 of the liner in tight engagement with the panel, as shown in FIG. 7. A coating of latex is applied to the outer sides of liner 38, FIG. 6, and supporting strip 36 is then pressed home over the liner.

Abutment cords 46 not only engage the upper portion of the liner and are pressed inwardly thereagainst by the spring tension of strip 36 thereby additionally securing both the supporting strip and liner to the panel, but cords 46 aid in insuring proper alignment between the strip and the liner. That is, if the liner happens to be off-center on the panel, or if the liner is centered and strip 36 is pressed inwardly unevenly, strip 36 will tend to engage more of the liner on one side than on the other and in extreme cases, one edge of the liner may project beyond the edges of strip 36. However, abutment cords 46 eliminate the possibility of improper alignment between liner 38, strip 36 and the panel, because if the liner is off-center on the panel or if the strip is started over the liner in a cocked or twisted manner, one of cords 46 will engage the outer portion of the liner adjacent the strip of rubber 52 on that side prior to the opposite cord engaging the corresponding portion on the opposite side of the liner. In the situation described above, the first cord will stop the inward movement of the liner on that side and allow the liner to move inwardly on the opposite side until the outer portion of the liner engages the stop cord on that side at which point the liner, the supporting strip and panel are substantially in line and further inward movement of strip 36 will cause the same to move evenly over the liner to its position shown in FIG. 7.

It has been found beneficial to lay a bead 54 of asphalt on the inside of the bottom of the supporting strip 36 in position to be engaged and flattened by the edge of the panel, so as to afford a flat seating of the beading on the panel and prevent contacts with the beading from any tendency to rock and loosen it on the panel. If the tape 28 is omitted, a strip of impervious material, preferably a plastic 56, such as vinylite, is preferably laid on the inside of the wire fabric of the supporting strip before the application of asphalt, to prevent it from penetrating and disfiguring the facing fabric.

The inner liner may have other forms, such as a strip of flexible rubber 58, with a restraining cloth backing 59, FIG. 8, adapted to be bent into channel shape and to embrace the edge of the panel as explained above in connection with the liner 38, the sides of this liner being given coatings of latex to secure them to the channel sides and to the supporting frame applied thereover. A further modification of the liner is shown in FIG. 9, in which a cloth strip 60 is provided at its marginal edges with bands of latex 62 sprinkled with gritty material 64, if so desired, for gripping engagement with the sides of the panel.

An inner liner, such as described has the advantage that it can be readily engaged with the panel, notwithstanding interposed cement or gritty material, by wrapping it around the panel edge (FIG. 6) with a minimum of sliding friction with the side faces of the panel. Then the outer supporting frame may be readily slid over the liner, with a minimum of sliding friction and tendency to derange the parts.

A beading formed as described is extremely flexible, as shown in FIG. 10, being readily bent in any direction or subjected to twisting as may be required by panel edges of varying shape or curvature. The transverse strands of the outer supporting strip and of the liner, where a liner is employed, are adapted to have movement toward and from one another, while held in line by the interwoven threads. The modified liners of FIGS. 8 and 9 are made of yieldable materials and the facing strip, being a lace or other loosely woven fabric, is capable of corresponding flexure.

It is apparent from the above description that the invention provides a beading which is adapted to be readily applied and capable of adhering tenaciously to the edge of the panel to be finished. The construction is such as to afford extreme flexibility for conforming the beading to the panel edges of varying curvature. By predetermining the size of the beading and the spacing of its side walls, it may be given the correct spring tension for suitable gripping of the sides of panels of different thickness, the side walls of a beading of any given size being capable of expansion or contraction to accommodate different panels and thus afford substantial adjustability. The construction is such, furthermore, as to produce a beading of more small and trim size, with thinner edges and smoother surface, contributing to produce a pleasing appearance and finish.

It will thus be seen that the invention accomplishes its objects and while it has been herein disclosed by reference to the details of preferred embodiments, it is to be understood that such disclosure is intended in an illustrative, rather than a limiting sense, as it is contemplated that various modifications in the construction and arrangement of the parts will readily occur to those skilled in the art, within the spirit of the invention and the scope of the appended claims.

I claim:

1. A flexible adherent beading for finishing structural edges of automobile bodies and the like comprising a supporting strip formed by a continuous length of flexible resilient wire looped back and forth transversely of the strip to provide longitudinally spaced cross strands, said supporting strip having substantially an oval shape in cross section open at one side thereof for closely conforming to and embracing said structural edges, a flexible facing strip closely fitting and enclosing the outer surfaces of the sidewalls and bottom of said supporting strip and having marginal portions wrapped inwardly around the margins of said side walls and adhesively secured thereto, each of said marginal portions of said facing strip having an abutment strand extending longitudinally thereon and secured thereto and projecting inwardly of said supporting strip, and inner flexible channel-shaped strip received within said open side of said supporting strip for embracing said structural edges and having the outer edges of its side walls formed with resilient rubber material for pressure by said abutment strands into engagement with said structural edges, means for securing said supporting strip to said inner strip, and means for securing said rubber material on said structural edges and retaining said beading thereon.

2. A flexible adherent beading for finishing structural edges of automobile bodies and the like comprising a supporting strip formed by a continuous length of flexible resilient wire looped continuously back and forth transversely of the strip to provide longitudinally spaced cross strands, said supporting strip having substantially an

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oval shape in cross section open at one side for closely conforming to and resiliently embracing said structural edges, a flexible facing strip closely fitting and enclosing the outer surfaces of the side walls and bottom of said supporting strip and having marginal portions wrapped inwardly around the margins of said side walls and adhesively secured thereto, each of said marginal portions of said facing strip having an abutment strand extending longitudinally therealong and secured thereto and projecting inwardly of said supporting strip, and inner strip of flexible material within said supporting strip and folded about and secured to said structural edges, a band of asphalt on the inside of the bottom of said supporting strip seating said inner strip and structural edges therein, said abutment strands on the inside of said side walls of said supporting strip being disposed to engage and deform said inner strip inward toward said structural edge for pressing said inner strip against said structural edge when said supporting strip is fitted over said inner strip, and said margins of said side walls engaging said inner strip cooperatively with said abutment strands and said asphalt for retaining said supporting strip on said inner strip and said structural edge.

3. A two-piece flexible adherent beading for finishing structural edges of automobile bodies and the like comprising a supporting strip formed by a continuous length of flexible resilient wire looped back and forth transversely of said strip to provide longitudinally spaced cross strands, said supporting strip having substantially an oval shape in cross section open at one side thereof for closely conforming to and embracing said structural edges, a flexible facing strip closely fitting and enclosing the outer surfaces of the side walls and bottom of said supporting strip and having marginal portions wrapped inwardly around the margins of said side walls and adhesively secured thereto, each of said marginal portions

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of said facing strip having an abutment strand extending longitudinally therealong and secured thereto and projecting inwardly of said supporting strip, an inner flexible channel-shaped strip fitted within said open side of said supporting strip for folding over and embracing said structural edge, said abutment strands being adapted to engage and press said inner strip forcefully against said structural edges when said supporting strip is fitted over said inner strip to secure said inner strip to said structural edge, and said marginal portions of said supporting strip being adapted to engage said inner strip cooperatively with said abutment strands for retaining said beading on said structural edges.

4. The beading of claim 3 wherein said inner strip is formed of a continuous length of flexible resilient wire looped back and forth transversely of said inner strip to provide longitudinally spaced cross strands, and said inner strip is deformed by said engagement of said abutment strands with said inner strip.

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