

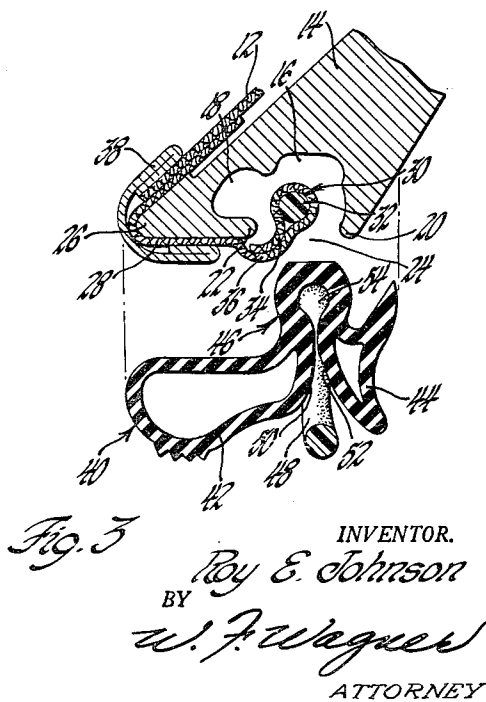
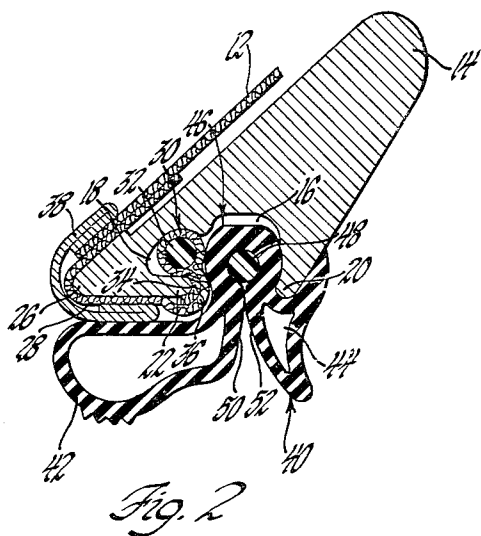
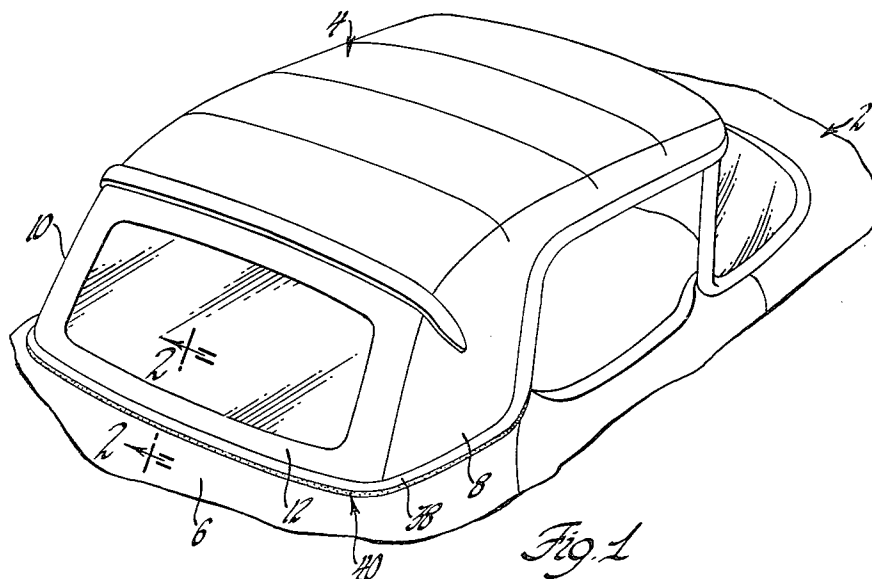
May 21, 1963

R. E. JOHNSON

3,090,646

MEANS FOR SECURING CONVERTIBLE TOP FABRIC

Filed Sept. 9, 1960



1

3,090,646

MEANS FOR SECURING CONVERTIBLE TOP FABRIC

Roy E. Johnson, Orchard Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 9, 1960, Ser. No. 55,069

6 Claims. (Cl. 296-107)

This invention relates to motor vehicles of the type having convertible fabric tops and more particularly to means for attaching the top fabric to the convertible top mechanism.

An object of the invention is to provide an improved convertible top.

Another object is to provide a convertible top utilizing simplified and improved means for attaching the material to the bow structure of the convertible mechanism.

A further object is to provide means for attaching the top fabric to a top bow member which eliminates the need for tacking, cementing, and other time consuming methods.

Yet another object is to provide a convertible top of the type including a rear bow member adapted for abutting engagement with the vehicle body, wherein the rear marginal edge of the top is secured to the bow in a manner eliminating tacks, screws, or cement.

Yet a further object is to provide an arrangement of the type described in which the attachment means is formed in part by a weatherstrip element which also provides a seal between the bow member and the adjacent body surface.

A still further object is to provide a convertible top including a rear bow member of generally U-shape plan form having a continuous slot of irregular cross-section formed on the underside thereof in which is recessed the beaded terminal edge of a fabric top, which bead is retained in position by an inverted U-shaped web section of a weatherstrip element, the web section being adapted to receive a cord-like wedge element which serves to expand the web in the slot portion of the bow so as to prevent withdrawal of both the web and the beaded edge of the top.

These and other objects, advantages and features of the invention will become more fully apparent as reference is had to the accompanying specification and drawings wherein:

FIG. 1 is a perspective view of a portion of a vehicle having a convertible fabric top wherein the rearward portion of the top is secured in accordance with the invention;

FIG. 2 is a side elevational view in section looking in the direction of arrows 2-2 of FIG. 1; and

FIG. 3 is a view similar to FIG. 2, showing the various elements prior to disposition in the final assembly position shown in FIG. 2.

Referring now to the drawings and particularly FIG. 1, the reference character 2 indicates a vehicle body of the convertible type having a retractable fabric top 4 which is movable from the raised position shown to a retracted position within a well provided within the body immediately forwardly adjacent the rear deck portion 6.

Fabric top 4 includes side walls 8 and 10 which are joined with a transverse rear wall 12. The U-shaped lower edge of walls 8, 10 and 12 is secured, in a manner shortly to be described, to an extruded rear bow member 14 of the convertible top mechanism, not shown. When the top mechanism is in the erect position, bow 14 abuttingly engages the horizontal body panel 6 in a conventional manner.

As seen best in FIGS. 2 and 3, bow member 14 is

2

formed with a downwardly opening slot 16, one side of which includes a rearwardly directed groove portion 18 spaced above the lower surface of the bow. Slot 16 and groove 18 are bounded by a depending rearwardly curved lip portion 20 and a horizontal forwardly directed lip portion 22, respectively, which define an opening 24 extending the entire length of the bow member 14. The lower extremity of the top material forming flaps 8, 10 and 12 is wrapped around the rear edge 26 and lower surface 28 of bow 14 and includes a continuous beaded terminal edge 30 which is adapted to be received in groove 18. Beaded edge 30 is formed by wrapping the extremity of the fabric around a vinyl cord 32, the overlapping adjacent layers 34 and 36 being sewn together or otherwise joined to retain cord 32 therein.

After the beaded edge 30 of the top fabric has been disposed in the position shown in FIG. 3, a generally C-shaped metal trim strip 38 is applied to the rear edge 26 of bow member 14 for protective and decorative purposes. After installation of trim strip 38, an elastomeric weatherstrip 40 is applied to the lower surface of bow member 14. Weatherstrip 40 comprises a pair of spaced closed convolutions 42 and 44 of irregular cross-section connected by an upwardly extending inverted U-shaped web portion 46. Web portion 46 is adapted for upward insertion through the opening 24 into slot 16 which simultaneously urges beaded portion 30 of the top fabric rearwardly into nesting relation with slot 18. As seen in FIGURE 2, the insertion of web portion 46 causes fabric layers 34 and 36 to embrace lip 22 and constrict or reduce the size of opening 24, thus producing a throat or narrowest passage of the slot. After installation of the web portion in the manner described, a length of vinyl cord 48 is forced upwardly between the opposed surfaces 50 and 52 of closed convolutions 42 and 44 to occupy the opening 54 defined by web 46. The diameter of cord 48 is such that when in the installed position shown in FIG. 2, radial outward pressure is exerted on web 46 expanding the major diameter thereof sufficiently to prevent retraction through the throat opening 24. As a result, both weatherstrip 40 and the beaded terminal edge 30 of the fabric top are securely retained on rear bow member 14.

From the foregoing it will be seen that a novel and improved attachment means for fabric tops has been devised. The arrangement not only substantially reduces the time required to effect the connection, but also completely eliminates the use of tacks, screws, cement, and other conventional time consuming means of attachment common to convertible top constructions heretofore. It is also to be noted that attachment means in accordance with the invention allows the fabric to be temporarily disconnected from the bow structure without mutilation and in an exceedingly short period of time. Furthermore, when attached in the manner shown, the connection is not subject to deterioration from exposure to the elements, such as is the case particularly with cemented constructions.

While but one embodiment of the invention has been shown and described, it will be apparent that other changes and modifications may be made therein. It is, therefore, to be understood that it is not intended to limit the invention to the embodiment shown, but only by the scope of the claims which follow.

I claim:

1. Means for attaching top fabric to the rear bow of a convertible top mechanism comprising, a slot extending continuously along the length of said bow, said slot being bounded on one side by a depending turned lip and on the other side by a rearwardly deformed groove spaced above the lower surface of said bow, said groove

3

being bounded on one side by a horizontal lip projecting in the direction of said intumed lip, said top fabric embracing said lower surface of said bow and cooperating with said intumed lip to form a constriction in said slot, a cylindrical marginal edge on said top fabric disposed in said groove, a weatherstrip having a body portion abutting the lower surface of said bow outside said slot, said weatherstrip having an intermediate portion of generally U-shaped cross-section extending upwardly into said slot, and a cord element wedged between the legs of said intermediate portion causing the latter to expand horizontally sufficient to prevent withdrawal of both said intermediate portion of said weatherstrip and said cylindrical margin of said top fabric through said constriction.

2. In a convertible top, the combination of a top fabric member having a marginal edge enveloping a first cord, a rear bow member, a slot extending the length of said bow, said slot including a horizontal groove adapted to receive the marginal edge of said top, a weatherstrip element having a body portion overlying the lower surface of said bow outside said slot, said weatherstrip element including a web portion of inverted U-shaped cross-section projecting into said slot, and a second cord disposed in the opening formed by said web, said cord being dimensioned so as to expand the cross-sectional dimension of said web so that the combined cross-sectional width of said web and the top fabric adjacent to said marginal edge exceeds the width of the opening of said slot.

3. In combination, a U-shaped convertible top bow having a flat lower surface, a downwardly facing slot formed in said bow extending the length thereof, said slot including a horizontal groove portion extending continuously along one side thereof, said groove and slot being bounded by a horizontal lip formed in part by said lower surface of said bow and a generally vertical intumed lip terminating flush with said lower surface, top fabric overlying the rear edge and lower surface of said bow, said fabric having a terminal folded edge wrapped around said horizontal lip, the extremity of said folded edge enveloping a cord recessed in said groove, a generally C-shaped metal trim strip overlying the rearward and downward surface of said bow in abutting relation with said top fabric, a weatherstrip engaging the lower surface of said bow and metal trim strip, an inverted U-shaped web on said weatherstrip recessed in said slot, and a cord disposed in the convolution formed by said web, said cord acting to expand the diameter of said web at the level of said groove sufficiently to prevent withdrawal of both the web and the cord enveloping portion of said top fabric.

4

4. In a motor vehicle convertible top, a bow member having a slot formed therein, a throat formed in said slot, a fabric top having a beaded marginal edge recessed in said slot, a weatherstrip having a body portion located outside said slot and an inverted generally U shaped rib portion extending through said throat into said slot, and a wedge element disposed in the convolution formed by said rib portion.

5. In a motor vehicle convertible top, a bow member having a slot formed therein, a depending intumed lip forming one side of the opening of said slot, means forming a groove in one side of said slot, a fabric having an extremity wrapped around an edge and a surface of said bow and cooperating with said lip to form a constriction in said slot, a beaded marginal edge on said extremity being recessed in said groove, a weatherstrip having a body portion located outside said slot and an inverted generally U shaped rib portion extending into said slot through said constriction, and a wedge element disposed in the convolution formed by said rib portion.

6. Means for attaching top fabric to the rear bow of a convertible top mechanism comprising a slot extending continuously along the length of said bow, said slot being bounded on one side by a depending intumed lip and on the other side by a rearwardly deformed groove, said groove being bounded on one side by a horizontal lip, a cylindrical marginal edge on said top fabric disposed in said groove, said fabric embracing said horizontal lip and cooperating with said depending lip to form a constriction in said slot, a weatherstrip abutting the lower surface of said bow, said weatherstrip having a body portion located outside said slot and an intermediate portion of generally U shaped cross section extending upwardly through said constriction into said slot, and a cord element wedged between the legs of said intermediate portion causing the latter to expand horizontally sufficient to prevent withdrawal of said intermediate portion of said weatherstrip and said cylindrical margin of said top fabric through said constriction.

References Cited in the file of this patent

UNITED STATES PATENTS

45	1,298,836	Vetter	Apr. 1, 1919
	2,834,412	Velke	May 13, 1958
	2,914,776	Hotz	Dec. 1, 1959

FOREIGN PATENTS

50	1,033,883	Germany	July 10, 1958
----	-----------	---------	---------------