March 30, 1965 J. M. ROBBINS 3,175,862

SEAT BELT ESCUTCHEON

Filed March 23, 1964

FIG. 1

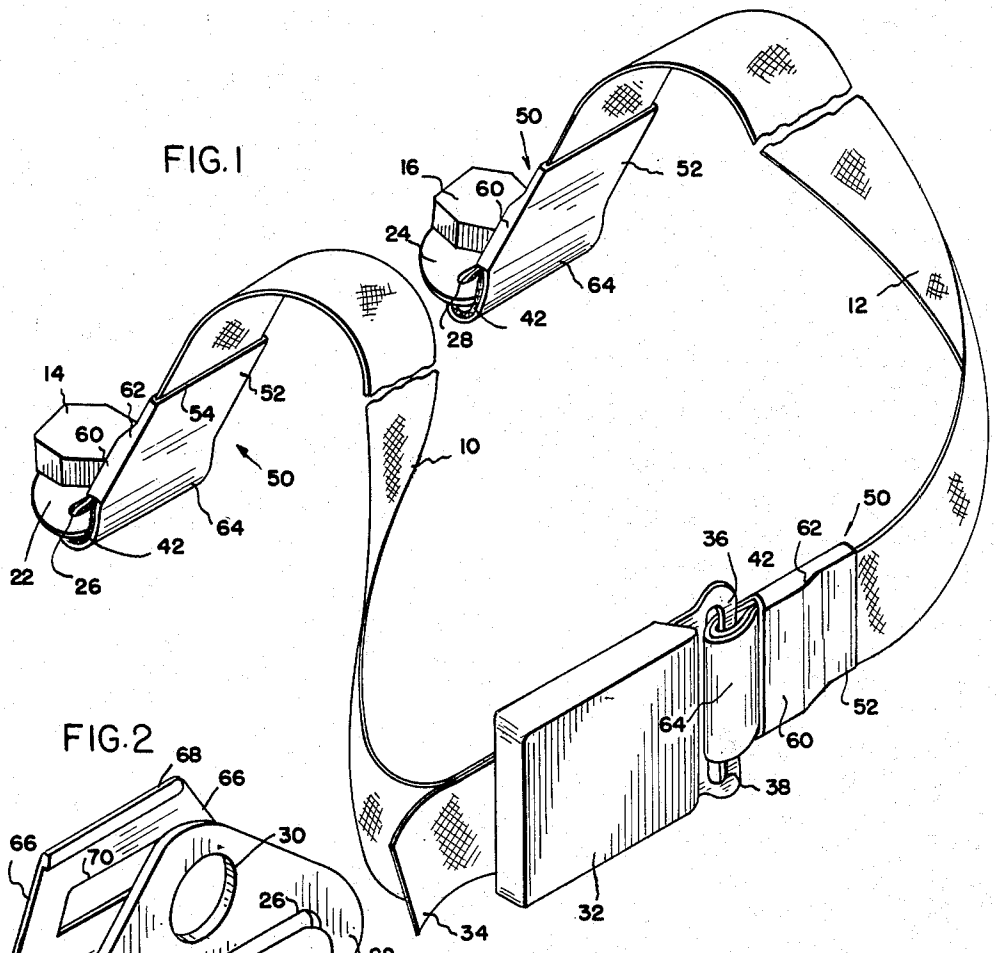


FIG. 2

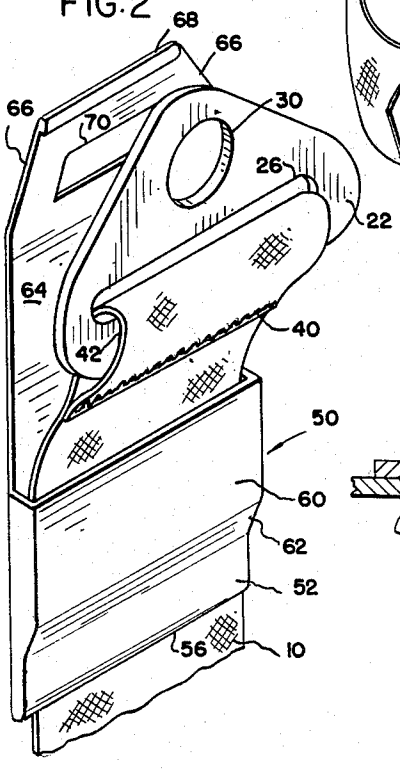
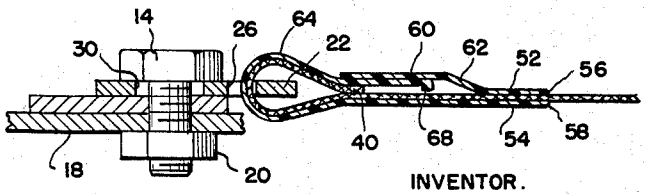


FIG. 3



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SEAT BELT ESCUTCHEON

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This invention relates to a protective cover or escutcheon for safety seat belts which may be applied to the junction between the ends of the belt and various fastener elements employed with the belt.

Seat belts commonly employed in cars for safety purposes normally comprise two sections of webbing, each of which has one end fastened to the floor or frame of the car at spaced apart points. The other edges of the webbing sections carry buckle elements which are adapted to be joined together so that the belt forms a loop for restraining the forward motion of the passenger wearing the belt with respect to the seat. The ends of the two webbing sections are fixed to the floor fasteners and to at least one of the elements of the buckle by means of loops which are sewn in the belts and which surround slots in the fastener elements.

The primary purpose of the present invention is to provide an escutcheon formed of a resilient material such as a plastic, which will encompass these loops formed on belt ends so as to provide a finished appearance to the junctions as well as other advantages.

One of the advantages which such escutcheons provide, in addition to a pleasing appearance, is the elimination of the need to provide a relatively large sewn area at the loop ends. In the absence of an escutcheon of the type provided by the present invention the sewn area where the belt is joined back on itself to form a loop which engages a fastener element is visible. In order to provide a sewn area which is aesthetically pleasing so as to blend with the highly finished trim work on the interior of most cars, and which additionally will provide a junction which is strong enough to absorb the forces which may be imposed on the belt, it is necessary to sew a relatively large area with a flat intricate stitch. It is possible to provide the required strength with a very narrow dense stitch which extends across the width of the belt such as the "volutement" stitch known to the sewing trade. However, such stitch does not provide an aesthetic finished appearance and, moreover, it rises a fair distance over the surface of the sewn material and thereby provides a surface which may potentially scratch or catch the clothes of a person wearing the belt. The present escutcheons completely cover the sewn area which forms the loop of the belt and a stitch of the volutement type may therefore be employed to form the belt loop. This allows a belt to be formed from a shorter section of webbing and also saves sewing thread.

Other advantages of the present escutcheon reside in the fact that it may act as a handle to insert the tongue of the buckle mechanism into the mating section at an end of the other belt. It may also act as a stop for retractors which are commonly employed with seat belts. The present escutcheon also acts to protect the wearer from the relatively rough ends of the belts which are normally seared to prevent their unravelling. Additionally, the escutcheon provides a convenient place for a label bearing the information currently required by governmental authorities as well as other trademark information.

A preferred embodiment of the present invention, which will subsequently be disclosed in detail, is formed of a thermo-setting plastic such as polyethylene by an appropriate process such as injection molding. It includes a flattened tubular section having an interior passageway adapted to snugly engage the belt webbing. One of the sides of this tubular section is offset in a direction perpendicular to the thickness of the interior passage. An elongated flap extends from one side of the offset tubular section. This flap is adapted to be passed through a slot in a fastener member and then tucked into the offset portion. In use the offset portion encompasses the sewn area and the flap surrounds the outer side of the loop. The flap preferably has a flange form on its extreme end which is adapted to catch in the offset portion beyond the end of the loop.

Other objects, advantages, and applications of the present invention will be made apparent from the following detailed description of a preferred embodiment of the present invention. The description makes reference to the accompanying drawing in which:

FIGURE 1 is a perspective view of an entire safety seat belt assembly which employs the escutcheons of the present invention at the two ends of the belt which are attached to floor fasteners as well as the end of the belt which is attached to the tongue of the belt buckle;

FIGURE 2 is a perspective view of the end of the belt which is looped about a floor fastener end plate and which has an escutcheon of the present invention surrounding its end, prior to the insertion of the escutcheon flap through the end plate loop; and

FIGURE 3 is a cross-sectional view through a belt end attached to a floor fastener and protected by an escutcheon of the present invention.

Referring to the drawings the present invention may be employed in connection with a safety seat belt comprising a pair of woven webbing belt straps 10 and 12. The belts 10 and 12 must have sufficient strength to withstand the maximum force which might be imposed by reason of the inertia of a passenger on the sudden stopping of the car. This is normally in the range of 4,000–6,000 lbs. One end of each of the belts is fixed to the floor or the frame of the vehicle by means of floor fasteners 14 and 16. The fasteners may be bolts which pass through the floor 18 of the vehicle and are fixed thereto by suitable lock nuts 20 as well as any other variety of end fasteners. The belts are attached to the floor fasteners 14 and 16 by means of flat end plates 22 and 24. The end plates 22 and 24 each constitute a flat metal plate generally triangular in shape and having slots 26 and 28 formed parallel to one of their sides and central holes 30 adjacent to one of their apexes. The bolt 14 passes through the hole 30 so as to retain the end plate to the floor of the vehicle.

The other end of the belt 10 passes through and is fixed to a female buckle element 32. The extreme end 34 of the belt extends out of the female buckle 32 and the effective length of the entire seat belt may be adjusted by varying the point of joinder between the belt 10 and the female buckle element 32.

The other ends of the belt 12 is fixed to a tongue 36 which acts as a male buckle member and is engageable with the female buckle member 32 for purposes of closing the belt. The exact configuration of the male tongue 36 is not of importance, however, it has a slot 38 adjacent to one side which is similar to the slots 26 and 28 in the end plates 22 and 24.

For the purposes of the present invention, the joinder between the belt ends which are attached to the tongue 36 and to the end plates 22 and 24 are identical. In each case, the extreme end of the belt is passed through the slot (26, 28, or 38) and the belt end is then sewn across a point removed from the end as at 40 in FIGURE 2 so as to form a loop 42 in the belt. With the present invention the sewn seam 40 which finishes the loop 42 may be of a compact highly dense stitch which extends a relatively high distance beyond the surface of the belt. As has been noted, the alternative to forming such a highly dense stitch is to connect a relatively wide belt

area in forming the loop. In such a case, a lower more finished stitch may be employed so as to achieve the same bond strength as is provided by the dense narrow stitch 40.

Escutcheons, or protective coverings, formed in accordance with the present invention are employed at the end plates 22 and 24 and at buckled tongue 36 to cover the loop ends to provide the advantages set forth in the preamble hereto. The escutcheons at these three points are identical and are generally indicated at 50. The escutcheons are preferably formed of a flexible resilient material such as a thermo-setting plastic and they may be formed by injection molding.

As is best illustrated in FIGURE 2, the escutcheons include a narrow thin tubular section 52 which has a central passageway 54 through which the belt webbing may pass. The passageway 54 has dimensions such that it tightly encompasses the belt and its extreme ends are tapered as at 56 and 58 so as to provide a relatively smooth snag-free surface between the belt and the escutcheon.

One of the walls of the tubular section 52 is offset as at 60 in a direction perpendicular to the surface of the belt so as to create a generally offset section to receive the stitched section 40 of the belt and a flap as will be detailed subsequently. The offset section 60 is joined to the narrow tubular section 52 by an outwardly inclined wall 62. The offset section surrounds the belt webbing and provides room for the sewn seam 40 and the flap as will be noted. The flap 64 extends from the non-offset wall adjacent the end of the offset section 60. The side walls of the flap 64 are tapered inwardly adjacent to its extreme end 66 in order to ease its insertion through the slots 26, 28, and 38 of the hardware attachments to the offset portions of the escutcheon. The extreme edge has a flange 68 extending across its width in the direction of the offset portion 60. The slot 70 across the major portion of the width of the flap 64 between the tapered edges 66 aids the flexibility of the flap section and assists in accommodating the sewn seam 40 when the escutcheon is in position.

In use, the tubular sections 52 and 60 of the escutcheon are slid over the belt before the end of the belt is passed through the slots in the hardware and sewn at 40. The end of the tab 64 is then passed through the slot in the hardware and brought back over the loop into the offset portion 60. As is shown in FIGURE 3, the sewn seam 40 and the end of the flap 64 are accommodated within the offset portion. The flange 68 presses beyond the edge of the belt webbing so as to assist in the retention of the flap in the offset portion.

As may be seen, the escutcheon completely covers the seam 40 and the extreme end of the belt. The escutcheon provides only smooth snag-free plastic surfaces and may be additionally embossed so as to simulate the weave of the belt or otherwise asethetically blend therewith. The stiffness of the escutcheon makes it a convenient handle for the buckle tongue 36.

The escutcheon of the present invention is therefore seen to provide a simple, low cost, and easy to apply device for protecting and enhancing the appearance of safety belt ends attached to the various parts of belt hardware.

Having thus described my invention, I claim:

1. A seat belt assembly including a first fastener member having an aperture therein and an extending section adapted to be joined to a second fastener member, a belt member having one end looped and rejoined to the main belt section, said loop passing through said aperture so as to join the belt to the fastener without covering said extending section, and a protective cover for the loop including a tubular section surrounding the belt at the joinder between the looped end and the main belt section and a flap section connected to the tubular section, covering the belt loop and passing through the aperture and having its extreme end tucked within said tubular section.

2. A seat belt assembly including a belt connected to a first fastener having a slot therein and an extending section adapted to be joined to a second fastener member, said connection being made by means of a loop at the end of the belt which passes through said slot without covering said extending section and is sewn to the main belt section by a narrow stitch extending across the width of the belt, and a cover for said loop, said cover being formed of a resilient material and including a tubular section having a passageway therethrough with a thickness approximately that of the belt, said section surrounding the belt at the stitch, and a flap extending from said tubular section, passing through said slot and having its extreme end connected to said tubular section.

3. In a seat belt assembly having a first fastener member which is adapted to be connected to a second fastener member by an extended section and a belt connected to said first fastener section by means of a loop which passes through an aperture in the first fastener member and is sewn to the main belt section without covering said extended section, a cover for said loop including a tubular section surrounding the belt at the sewn joinder of the loop section and a flap extending from one side of the tubular section and passing through said aperture so as to cover said loop and having its extreme end tucked within said tubular section.

4. In a seat belt assembly including a belt connected to a first fastener having an aperture therein and an extending section adapted to be joined to a second fastener member, said connection being made by means of a loop in the belt end which passes through an aperture in the fastener without covering said extending section and is sewn to the main belt section, a cover for said loop including a tubular section surrounding the belt at the sewn joinder of the loop section and a flat member having one end extending from one side of said tubular section, passing through said aperture and having its extreme end tucked within the other side of said tubular section so that the flap covers the loop.

5. The structure of claim 4 wherein said flap has a ridge extending transversely to the extension of the flap adjacent to the extreme end thereof, said ridge projecting from said flap toward the side of the tubular section opposite to that from which the flap extends when the flap is in an elongated position.

6. A seat belt assembly including a belt connected to a first fastener having a slot therein and an extending section adapted to be joined to a second fastener, said connection being made by means of a loop at the end of the belt which passes through said slot without covering said extending section and is sewn to the main belt section by a stitch extending across the width of the belt, and a cover for said loop, said cover being formed of a resilient material and including a first tubular section having a passage therethrough with a thickness approximately that of the belt, an offset tubular section adjoining said first tubular section and having a passage therethrough with a thickness greater than that of said belt, both of said passages surrounding said belt with said offset section surrounding said stitching, and a flap extending from one side of said offset section, and passing through said slot, with its extreme end tucked into said offset section so as to cover the belt loop.

7. The structure of claim 6 wherein said flap has tapered sides adjacent to its extreme end as well as a ridge extending transversely across the end of the flap adjacent to its extreme end, the ridge being so positioned that when the flap is extended over the loop and tucked into the flap, the ridge extends past the sewn edge of the belt and is thereby restrained against a retracting motion.

8. In a seat belt assembly having a belt connected to a first fastener which has an extending section adapted to be joined to a second fastener, said connection being made by means of a loop at the end of the belt which passes through a slot in the first fastener and is rejoined to the main belt section, a cover for said loop including a flat tubular section surrounding the belt at the joinder of the loop to the belt and a flap extending from one side of the

tubular section, said flap having tapered sides adjacent to its extreme end, said flap passing through said slot and having its extreme end tucked between the other side of the tubular section and the belt so as to cover the loop.

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