United States Patent

[11] 3,550,955

[72] Inventors **Arthur S. Nicholas**
Grand Rapids;
James S. Chamberlain, Royal Oak, Mich.

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[73] Assignee **Leon Chemical & Plastics, Inc.**
Grand Rapids, Mich.
a corporation of Michigan

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[54] **SEAT BELT TERMINAL JACKET**
7 Claims, 4 Drawing Figs.

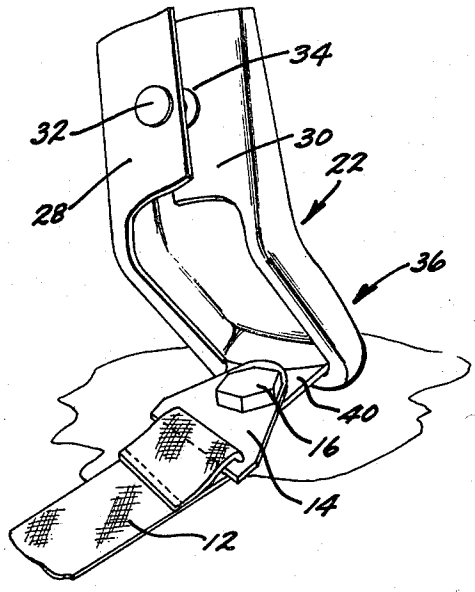
[52] **U.S. Cl.** **297/385**
[51] **Int. Cl.** **A62b 35/60**
[50] **Field of Search** 297/385; 190/57, 58, 39; 150/33, 12; 280/150SB

[56] **References Cited**
UNITED STATES PATENTS

3,291,528	12/1966	Sencabaugh	297/385
3,305,266	2/1967	Nicholas et al.	297/385
3,401,980	9/1968	Nicholas	297/385

Primary Examiner—James T. McCall
Attorney—Price, Heneveld, Huizenga & Cooper

ABSTRACT: This disclosure relates to a jacket for the terminal end of a seat belt wherein the jacket encloses the end of the belt and has an anchor plate. The jacket has an opening at the bottom to permit the stud to secure the anchor plate to the support and to permit the anchor plate to project out of the bottom of the jacket. A tongue on the bottom of the jacket is also secured by the stud to hold the jacket in place. A belt-enclosing sleeve on the jacket is formed by flaps which can be opened to receive the belt and closed to encase it after the anchor plate and jacket are fixed to the support by a stud.



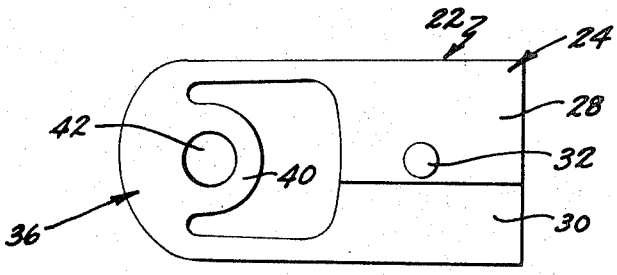


FIG. 1.

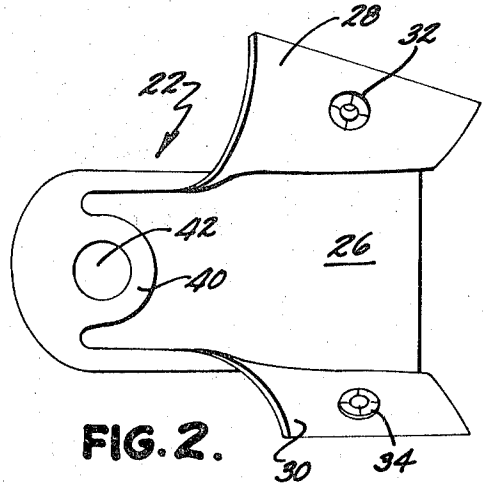


FIG. 2.

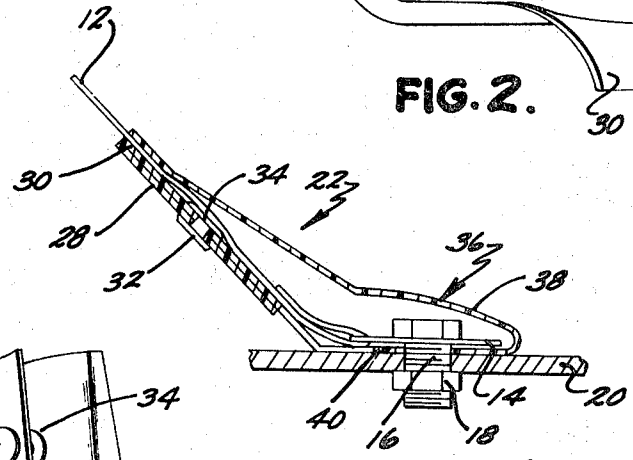


FIG. 4.

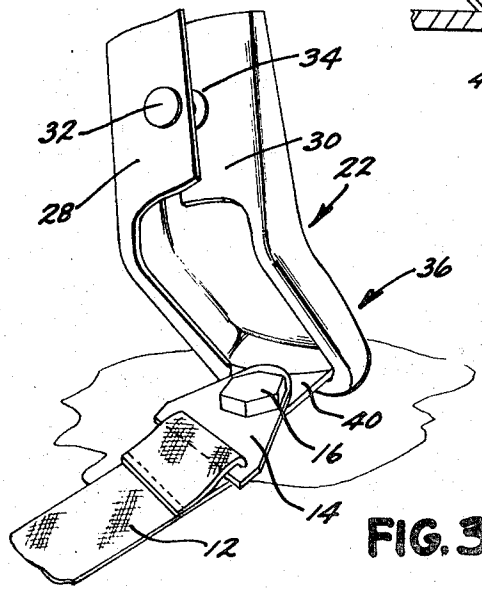


FIG. 3.

INVENTOR.
ARTHUR S. NICHOLAS
JAMES S. CHAMBERLAIN
BY Price, Heneveld
Huizenga & Cooper
ATTORNEYS

SEAT BELT TERMINAL JACKET

DISCLOSURE

This invention relates to a jacket for the terminal end of a seat belt for vehicles. In one of its aspects, the invention relates to a seat belt with a terminal end anchor plate having a jacket to cover the connection of the anchor plate to a support, the jacket having a tongue through which it is fixed to an attaching stud, holding the jacket securely over the anchor plate, wherein a sleeve on the jacket is adapted to enclose the end of the belt after the flap and anchor plate have been secured to the support.

Nicholas et al., U.S. Pat. No. 3,305,266 discloses and claims a safety belt terminal protector in which a sleeve at one end receives the end of the belt and at the other end is closed to extend around the terminal end of the anchor plate. An opening is formed at the bottom of the protector and a flexible apertured tongue extends into the opening from an edge to secure the protector to the support through the anchor plate stud. The protector is installed by threading the terminal end of the belt through the sleeve and pulling it out of the opening until a loop can be formed in the end of the belt. The tongue and the anchor plate are then fixed to the the support by bending the protector upwardly with respect to the support and inserting a wrench between the belt and the cover portion of the protector to secure the stud to the vehicle body.

It has been found that this protector has been extremely effective for the desired purposes. However, the threading of the belt end through the jacket sleeve and installation of the stud with the belt loop have been found to be more time consuming than desireable for the efficiency orientated automobile industry.

The invention of this application involves an improvement over the protector described and claimed in U.S. Pat. No. 3,305,266 which is incorporated herein by reference. The improvement has the superior properties of the above-described protector and additionally has a split sleeve for more rapid and easier installation of the belt and protector into a vehicle.

By various aspects of this invention one or more of the following, or other, objects can be obtained.

It is an object of this invention to provide a safety belt terminal portion protector jacket which completely encloses the terminal belt portion, anchor plate, and fastener from moisture, dust, etc. on the top as well as on the end and the side edges of the anchor plate, yet employs a headed fastener such as a stud and positively secures the jacket with the fastener as well as the anchor plate without the necessity of threading the belt through a sleeve portion of the protector jacket.

It is another object of this invention to provide a novel safety belt terminal portion jacket that can itself be directly secured by a headed fastener, yet completely encloses the head of the headed-type fastener as well as enclosing an anchor plate and seat belt terminal portion without the necessity of threading the belt through a belt-enclosing sleeve. This type of attachment positively secures the jacket, holding it against displacement when it is kicked or stepped upon.

It is another object of this invention to provide a safety belt jacket and jacket assembly that enables quick, simple assembly thereof and attachment to the vehicular support surface with a stud-type fastener to secure all of the elements, with the jacket completely enclosing and protecting all of the elements of the assembly without the necessity of threading the belt end through a belt-enclosing sleeve.

It is yet another object of this invention to provide a safety belt terminal portion protector which is anchored to the fastening stud and completely covers the belt terminal portion and which protector can be quickly and efficiently installed in place with a minimum of operation.

Other aspects, objects, and the several advantages of this invention are apparent to one skilled in the art from a study of this disclosure, the drawing, and the appended claims.

According to the invention there is provided a safety belt terminal protector having an elongated hollow jacket with a belt-receiving portion and an anchor element-receiving portion integral therewith. Both of the portions are oblong in cross section and have narrow edges and relatively wide side faces. The belt receiving portion is tubular shaped having a first open end for protrusion of a safety belt out of the jacket, and a passage into the anchor element-receiving portion. One side of the tubular portion is longitudinally open from end to end to permit insertion of a belt therein without threading the same through the belt-receiving portion. Means are provided for releaseably closing the tubular portion longitudinally to retain a belt therein.

The anchor element receiving portion has its terminal end closed, both edges closed, one side completely closed, and an opening on the opposite side. The opening has a width substantially equal to the width of the open end to allow a section of the belt and an attached orificed anchor member on the belt to pass therethrough. The anchor element-receiving portion has a integral tongue extending part way across the opening from one edge thereof, the tongue having an orifice therein to receive a fastener, the tongue being resiliently flexible to bend to an extended position generally normal to the regular position for allowing installation of the stud member through the tongue and the anchor member.

The invention will now be described with reference to the accompanying drawings in which:

FIG. 1 is a bottom view of the protector according to the invention;

FIG. 2 is a view similar to FIG. 1 showing the flaps opened;

FIG. 3 is a view of the protector and the end of a seat belt showing the method of installation; and

FIG. 4 is a side elevational view of the protector in place over the end of the belt and the anchor plate.

Referring now to the drawings, there is shown a seat belt **12** having an anchor plate **14** secured thereto in conventional fashion by a doubled back belt loop stitched to itself. The anchor plate **14** has an aperture permitting the passage of a headed stud **16** therethrough for securing the terminal end of the belt to a support **20** such as in a vehicle. A fastener **18** holds the threaded stud in place.

An integral, one piece protector jacket **22** has a sleeve **24** with a top portion **26** and flaps **28** and **30**. The flaps are secured together around the belt to form the sleeve through snaps. More specifically, the flap **28** has a female snap member **32** and the flap **30** has a male snap member **34**.

At the other end of the jacket a foot **36** is formed integrally with the sleeve and at an obtuse angle thereto. The foot has a cover or top **38** and is closed at the end portion and along the sides and is open on the bottom. A tongue **40** having an aperture **42** extends into the central portion of the opening from the closed end of the foot portion.

To install the protector, the tongue **40** is bent out of the plane of the bottom of the foot **36** as illustrated in FIG. **3**. The anchor plate **14** is positioned over the tongue **40** and a stud **16** is inserted through the aperture in the anchor plate and the aperture in the tab and through an aperture in a support **20**. The stud **16** is then secured as by installation of the nut **18**. The flaps **28** and **30** are then opened so that the belt **12** can pass into the sleeve. The flaps are closed around the belt to enclose the belt in the sleeve. The snap then secures the flaps together to retain the belt within the sleeve.

As is obvious from the foregoing, the improved protector jacket, when installed, is adapted to function in a manner identical to the protector of the Nicholas et al., U.S. Pat. No. 3,305,266 patent. However, the installation of the earlier protector restricted the access of the operator to the limited openings at each side. In many cases, this made it difficult to engage the head of the stud with a tool, especially in the case of those installations where other structure of the vehicle body prevented access from one side. This unduly protracted the installation and in some cases made it a frustrating operation. This invention opens up the protector, permitting engagement

of the fastener from above. Thus, there is quick and ready access even though installation has to be in a location where side access is limited or impossible. Not only is installation time reduced, but the use of this type of protector is now possible in those situations where previously it was impossible, or so difficult that it was not practical.

The jacket is integrally formed in one piece from a flexible and resilient material such as polyvinyl chloride. The material is sufficiently flexible to permit flexing of the tongue out of its normal plane to permit insertion of the stud. The material has sufficient resilience and rigidity such that the tongue returns to its normal position after flexing and such that the body maintains its geometry in the absence of external forces.

Reasonable variation and modification are possible within the scope of the foregoing disclosure and drawings without departing from the spirit of the invention.

We claim:

1. In a safety belt terminal protector of a flexible, resilient material and of a generally flattened tubular shape having a sleeve portion and a foot portion and each of said portions having a top face and a bottom face; the end of said sleeve portion remote from said foot portion being open to provide a belt passageway and the end of said foot portion remote from said sleeve portion being closed; the bottom face of said foot portion having an opening therethrough and an apertured tongue projecting into said opening from said closed end for securing said foot portion after installation, the improvement in said terminal protector comprising: the bottom face of said sleeve portion being formed of a pair of flaps capable of being flexed to a spaced position to receive the belt into said sleeve portion; said flaps extending the entire length of said sleeve portion from said open end to said opening in the bottom face of said foot portion whereby said terminal protector may be flexed with respect to said tongue which permits vertical access to the aperture in said tongue from above.

2. A safety belt terminal protector according to claim 1 wherein said sleeve portion is formed by a closed side and a pair of overlapping flaps.

3. A safety belt terminal protector according to claim 2 wherein said flaps are secured together through snaps.

4. A safety belt terminal protector according to claim 1 wherein said flaps are secured together by a separable fastener.

5. In a safety belt and anchor plate terminal protector having:

a water repellent, dust repellent jacket having a generally flattened cross section with two closed edges on two wide sides, to receive and closely encompass a safety belt portion of an attached orificed anchor plate; said jacket having one end open for belt extension therefrom, and the other end closed to extend around the end of said anchor plate; and

one of said sides being closed, and the other side having a flexible, orificed anchor tongue formed in said other side for protrusion out of the bottom plane by said jacket for attachment of said anchor tongue to a support,

the improvement which comprises:

said other side having separable flaps between said open end and said anchor tongue to permit insertion of said belt into said jacket while said anchor plate and said anchor tongue are fixed to a support; and

means for releasably holding said flaps together so as to retain said belt within said jacket.

6. A safety e belt and anchor plate terminal protector according to claim 5 wherein said holding means comprises a snap fastener having a female portion on one flap and a male fastener on the other flap.

7. A safety belt and terminal protector according to claim 5 wherein said support forms a portion of a vehicle.