United States Patent [19]

Fisher

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[54] **BELT ADJUSTER**

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[21] Appl. No.: **151,273**

[52] **U.S. Cl.** **24/196**

[51] **Int. Cl.** **A44b 11/10**

[58] **Field of Search** ..... 24/196, 74, 77, 230 A, 24/194, 171, 126 K, 126 B, 136 B, 194

[56] **References Cited**

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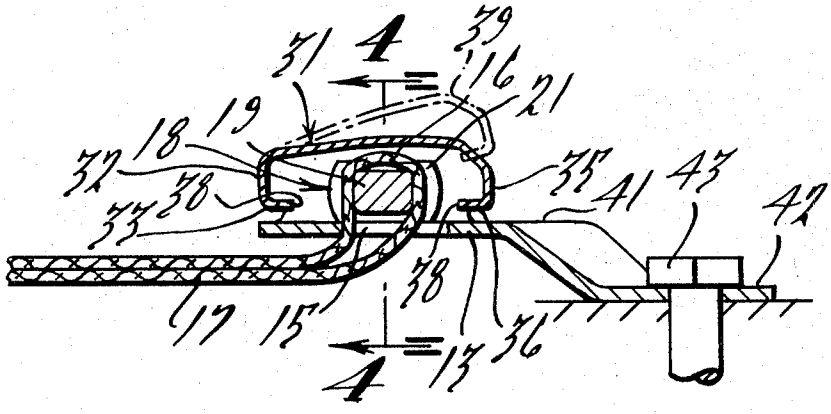
[57] **ABSTRACT**

A belt adjusting and locking device has a channel shaped housing embodying a base web and upstanding sides. A spool-like belt bar has a rectangular central portion and end walls located above a rectangular aperture in the base web. An inverted channel shaped cover plate is forced down over the upstanding sides of the housing to enclose the bar and a belt loop extending through said aperture and about said bar.

2 Claims, 4 Drawing Figures



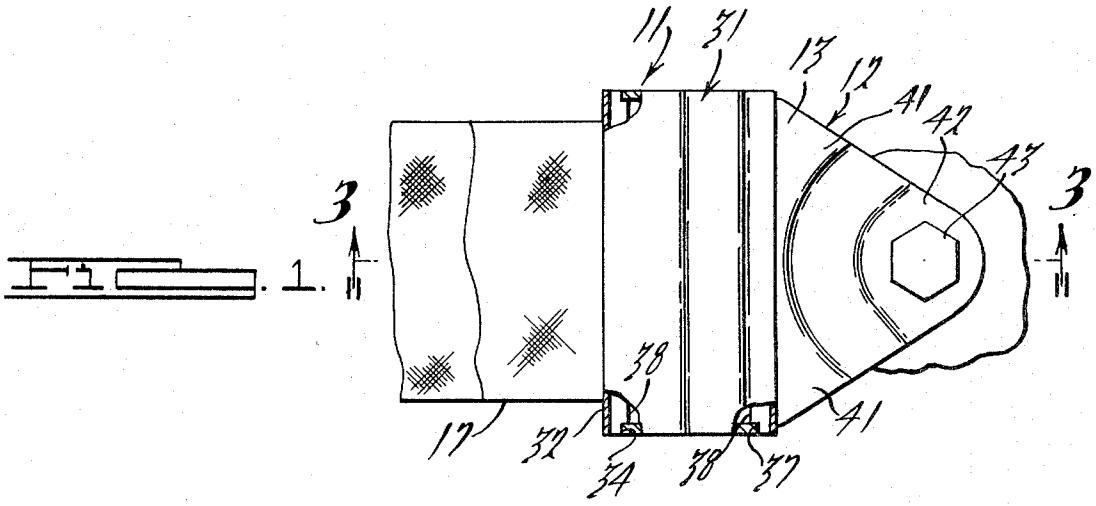


FIG. 1.

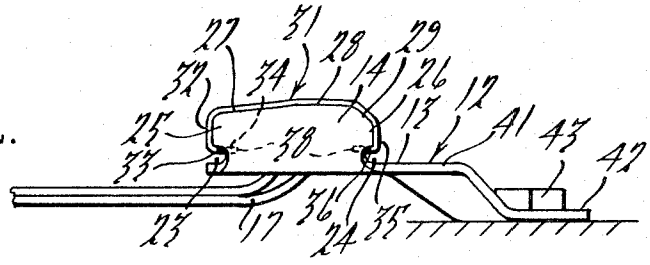


FIG. 2.

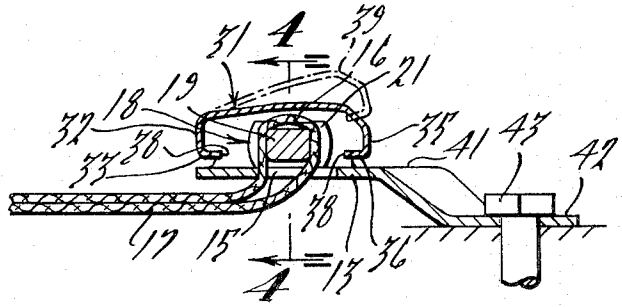


FIG. 3.

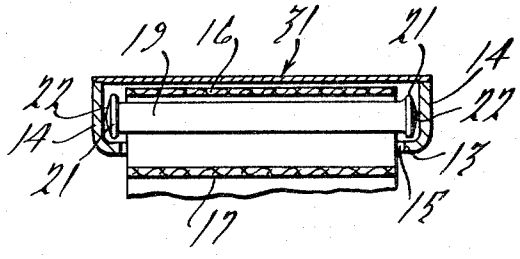


FIG. 4.

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BELT ADJUSTER

BACKGROUND OF THE INVENTION

Reference may be had to applicant's U.S. Pat. Nos. 3,274,655 and 3,331,108 and the art cited therein for a disclosure of related structure.

SUMMARY OF THE INVENTION

The invention pertains to a belt adjusting and locking device to be employed within an anchorable housing or within the housing of a seat belt buckle. Belt bars have been employed in the past for adjustably supporting and locking the belt to permit the buckle or latching tongue to be shortened or lengthened to fit the user. The belt bar of the present invention is herein illustrated as being supported within an anchorable housing of channel cross section having a base web and two upstanding sides with a transverse aperture in the base web through which a loop of the belt extends. The loop of the belt is disposed over the belt bar and is confined between enlarged end walls, the outer faces of which are disposed adjacent to the upstanding sides. A cover element of channel shape is forced downwardly over the upstanding sides of the housing in fixed relation thereto. The cover element confines the belt bar within the housing for movement to positions at which the belt is released for shortening or lengthening and locked in adjusted position. While the device is illustrated as being mounted in an anchorable housing for securing one end of the belt or shoulder strap, it is also useable as an adjustable locking device within a belt buckle for adjustably securing the buckle to the belt.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a broken plan view of the belt adjusting and locking device which embodies features of the present invention;

FIG. 2 is a view in elevation of the structure illustrated in FIG. 1;

FIG. 3 is a sectional view of the structure illustrated in FIG. 1, taken on the line 3—3 thereof, and

FIG. 4 is a sectional view of the structure illustrated in FIG. 3, taken on the line 4—4 thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The belt adjusting and locking device **11** constructed in accordance with the present invention has a supporting member **12** of channel cross section which embodies a web **13** and upstanding sides **14**. The web has a rectangular aperture **15** between the sides **14** through which a loop **16** of a belt **17** extends. A belt bar **18** has a rectangular bar portion **19** over which the loop **16** extends. The bar portion **19** is of rectangle section and has rectangular end walls **21** which confines the loop **16** of the belt **17** therebetween. The outer faces **22** of the end walls **21** are of flat pyramidal shape to form a point or line engagement with the inner surfaces of the upstanding sides **14** of the support member.

The forward and rearward ends of the upstanding sides **14** have notches **23** and **24** formed therein at the bottom at the junction with the web **13**. This provides a forwardly extending end **25**, a rearwardly extending end **26**, a sloping top edge **27**, an edge section **28** parallel to the web and a sloping cam edge portion **29** at the end **26**. A cover plate **31** is made from spring material and has a shape conforming to the edge shape of the upstanding sides **14**. The cover plate **31** has a downwardly extending forward side **32** with an inwardly directed flange **33** containing a notch **34** at each end and a downwardly extending rearward side **35** with an inwardly directed flange **36** containing a notch **37** at each end. The notches **34** and **37** provide inwardly directed edge portions **38** which extend between the upstanding sides **14** when the cover plate **31** is secured to the side walls.

After the loop **16** has been secured over the bar portion **19**, the forward side **32** of the cover plate **31** is engaged over the ends **25** of the upstanding sides **14** in the position illustrated in dot and dash line **39** in FIG. 3. The end wall **35** is engaged with the sloping cam edge portions **29** of the upstanding sides **14** and a force applied to the cover plate **31** at the rearward edge will expand the end sides **32** and **35** thereof to permit the side **35** to pass down over the ends **26** of the upstanding sides **14** into fixed relation to the side walls **14**, as illustrated in FIGS. **2** and **3**. The inwardly projecting portions **38** of the flanges **33** and **36** will extend between the upstanding sides **14** and prevent any relative lateral movement between the upstanding sides and the cover plate.

The belt is adjusted in the usual manner by pulling one or the other end to change the position of the loop **16** over the bar portion **19** and is locked thereafter in adjusted position when tension is applied to the belt end to be secured. The thickness of the belt material is preferably greater than the distance between the top and bottom of the rectangular bar portion **19** and the top and bottom of the end walls **21**. This assures the clamping of the belt material without the cutting thereof due to the pull thereon. The belt bar is free to shift forwardly and rearwardly between the upstanding sides **14** to release or clamp the belt in the accepted manner.

The support member **12** has an attaching end **41** provided with an offset portion **42** which has an aperture therethrough containing a bolt **43** which secures the support member to the floor or other part of the vehicle where the belt, shoulder strap or the like is to be secured. It is to be understood that the belt bar **19** can be employed within a buckle or any other attaching device which is to be applied to a belt and be adjusted thereon.

I claim:

1. In a belt adjusting and locking device, a support member of channel cross section having a web and upstanding sides, said web having a transverse rectangular aperture therethrough located between said sides, a belt bar having a rectangular elongated body and enlarged end walls which extend beyond all four sides of the body, said end walls having an end face which converges outwardly toward the center to reduce the area of engagement of the faces with said upstanding sides, and a cover plate secured over said upstanding sides to confine said belt bar within said supporting member.

2. In a belt adjusting and locking device as recited in claim 1, wherein each end of the upstanding sides of the support member has a notch adjacent to the juncture with the web, and wherein said cover plate is of channel section following the shape of the upstanding

sides to extend thereover into engagement with said notches, at least one side of said cover plate extending between the upstanding sides of the support member to locate the cover plate thereon.

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