July 16, 1968 J. R. C. LANE 3,392,427

ANCHORING DEVICE

Filed Dec. 27, 1966

Fig. 2.

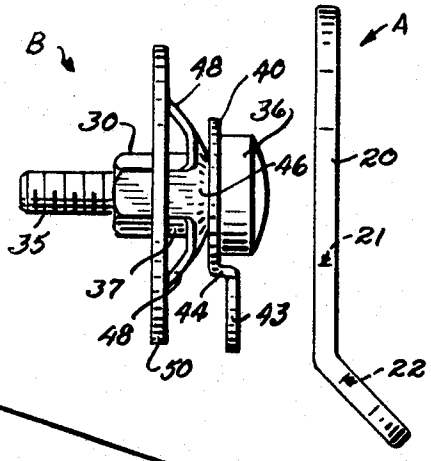


Fig. 1.

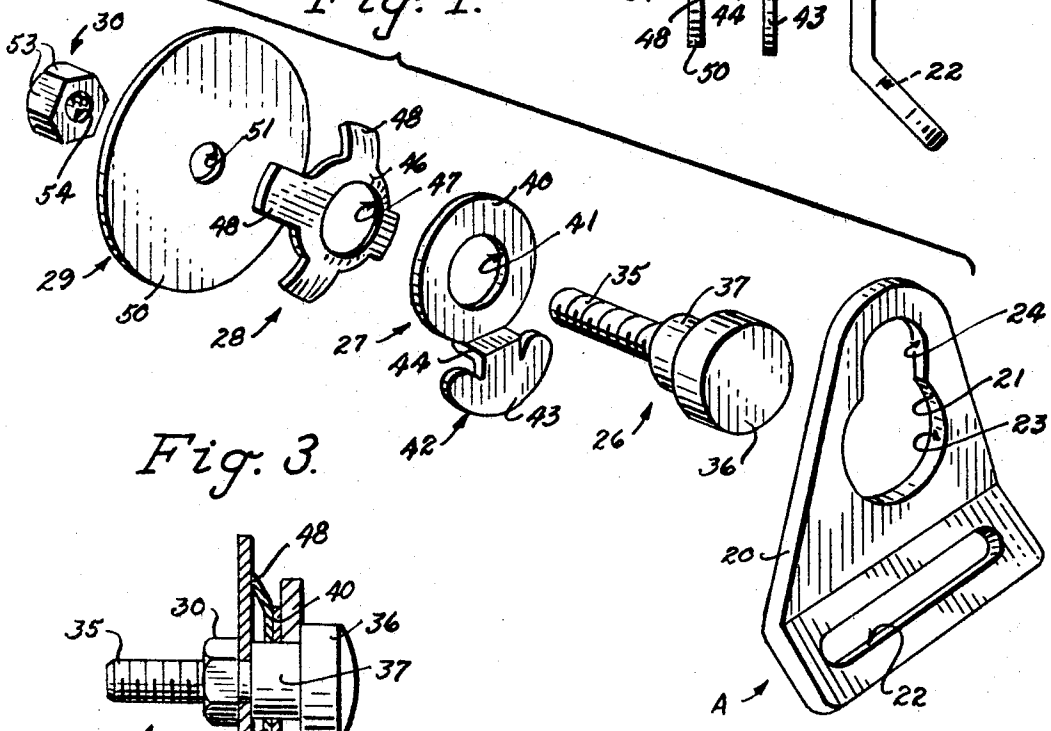
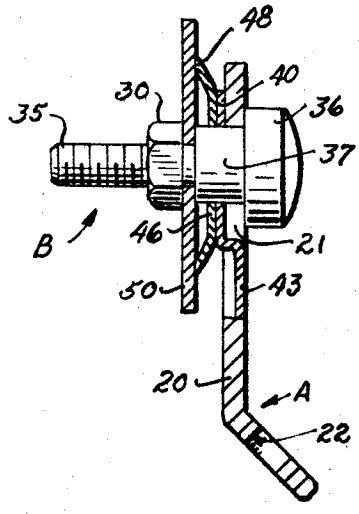


Fig. 3.



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ANCHORING DEVICE

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ABSTRACT OF THE DISCLOSURE

An anchoring device for removable attachment of an attaching plate to a bolt-like member. The plate is provided with a keyhole slot; the head of the bolt-like member is aligned with and passed through the larger part of the keyhole slot; the bolt-like member is registered with the narrower part of the keyhole slot for anchoring the plate; and a locking member is spring urged into the larger part of the keyhole slot and locks the plate in an anchored position.

Disclosure

This invention relates to improvements in detachable anchoring devices.

In the present methods of attaching seat belts to motor vehicles, the end of the strap which is to be secured to the car frame is provided with a metal tongue or plate which usually receives only one size or type of seat belt and the tongue or plate is fixedly secured to the frame by means of a bolt. The bolt usually has one end extending underneath of the car and, if it is desirable to use a different size or type seat belt than that which was originally installed there, it is necessary to crawl under the car and remove the bolt; remove the tongue or plate which supported the old type seat belt from the bolt; attach the tongue or plate which supports the new seat belt to the bolt; and then again crawl under the car to fixedly secure the bolt to the frame of the car. The primary object of this invention is the provision of an improved anchoring device which permits facile interconnection of the attaching plates of seat belts and provides a positively locked attachment which prevents unwanted loosening of the attaching plate of the seat belt from its anchored position.

Other objects and advantages of the invention will be apparent during the course of the following detailed description, taken in connection with the accompanying drawing, forming a portion of this specification, and in which drawing:

FIG. 1 is an exploded perspective view of the various elements of my invention.

FIG. 2 is a side view showing my improved anchoring device with the attaching plate about to be secured to the attaching means.

FIG. 3 is a view similar to FIG. 2 and showing the attaching plate anchored to the attaching means.

In the drawing, wherein for the purpose of illustration is shown a preferred embodiment of the invention, and wherein similar reference characters designate corresponding parts throughout the several views, the letter A may generally designate an attaching plate and B attaching means to which attaching plate A may be removably anchored.

As shown in the drawing, attaching plate A comprises an elongated plate **20** which is provided at one end thereof with a keyhole slot **21** and at the other end thereof with an elongated slot **22**. Keyhole slot **21** has a larger part **23** and a narrower part **24**, as is conventional in keyhole slots in which an attaching member is inserted into the slot through larger part **23** and is registered with narrower part **24** for interconnection of the same to the

attaching plate. The attaching plate shown in the drawing is of the type to which a seat belt strap may be interconnected through elongated slot **22**.

It is, of course, to be understood that this invention is not limited to the provision of removable attachments for seat belts and that attaching plate A might be a part of some other type of fastener or device.

Attaching means B preferably includes bolt-like means **26**; locking member **27**; spring means **28**; washer **29**; and nut **30**.

Bolt-like means **26** preferably comprises an elongated threaded shank **35** having a head member **36** at one end thereof and including spacing means **37** adjacent head member **36**. In the preferred form, head member **36** and spacing means **37** are preferably integral and are formed integral with threaded shank **35**. In this way, the various parts of the attaching means are held to a minimum, permitting ready assemblage of the same. Spacing means **37** could, however, comprise a sleeve or elongated washer removably received on threaded shank **35**. Spacing means **37** is of a peripheral size and shape to be readily received within narrower part **24** of keyhole slot **21**.

Locking member **27** preferably includes a washer portion **40** having a central opening **41** and a peripheral projection **42**. Projection **42** comprises a tab-like flange **43** which is offset from the plane of washer portion **40** such as by leg portion **44**. The planes of tab-like flange **43** and washer portion **40** are preferably parallel but are offset from one another for a purpose to be subsequently described. Tab-like flange **43** has a semicircular exterior configuration which substantially conforms to the internal diameter of larger part **23** of keyhole slot **21**.

Spring means **28** preferably comprises a dish-shaped body portion **46** having a central aperture **47** and supporting legs **48**.

Washer **29** preferably comprises a cylindrical body portion **50** having a central aperture **51**.

Nut **30** is conventional, having wrench receiving faces **53** and a threaded central aperture **54** which may be received on threaded shank **35** of bolt-like means **26**.

Attaching means B is assembled as shown in FIG. 2, washer portion **40** of locking member **27** being rotatably and slidably mounted on spacing means **37** by passing of spacing means **37** through central aperture **41** of washer portion **40**; spring means **28** also being mounted on spacing means **37** by passage of spacing means **37** through central aperture **47** thereof; washer **50** is received on threaded shank **35** by passage of threaded shank **35** through central aperture **51** thereof and abuts the end of spacing means **37**; and nut **30** threadedly attached to threaded shank **35** for maintaining the assembled attaching means.

As shown in FIG. 2, washer portion **40** of locking member **27** is held in abutment with the under side of head **36** of bolt-like member **26** by spring means **28**. Spacing means **37** maintains head **36** in a spaced apart position from washer **50**, legs **48** of spring means **28** bearing on washer **50** and the apex thereof urging washer portion **40** into abutment with the under surface of head **36**.

The threaded end of shank **35** which extends beyond nut **30**, as shown in FIGS. 2 and 3, is provided for suitable interconnection of the attaching means to an anchoring point such as the frame of a car.

Washer **50** is not an essential part of the attaching means, but it will be seen that if the same were omitted and the attaching point was the carpeted floor of a car, legs **48** of spring means **28** would bear directly thereagainst and cause wearing out and possible tearing of the carpeting.

In order to engage attaching plate A with attaching means B, larger part **23** of keyhole slot **21** is aligned

with head 36 of bolt-like member 26 and plate A is pushed over head 36, displacing locking member 27 against the force of spring member 28, and attaching plate A is then slid down over spacing means 37, so that attaching means B is registered within narrower part 24 of keyhole slot 21. In this position, the under surface of head 36 will be in abutment with the area of plate 20 which surrounds narrower part 24 of keyhole slot 21, as shown in FIG. 3. When narrower part 24 of keyhole slot 21 is registered with bolt-like member 26, locking member 27 will be urged by spring member 28 against plate 20 so that tab-like flange 43 interfits within larger part 23 of keyhole slot 21. In this position, it will be noted that attaching plate A is firmly secured to attaching means B and cannot be removed therefrom unless locking member 27 is depressed against spring means 28. There is thus no danger whatsoeevr of attaching plate A shaking loose from attaching means B, such as by the usual vibrations of vehicular driving. Moreover, since locking member 27 is rotatable on spacing means 37, attaching plate A may be rotated on attaching means B to whatever position is convenient for attachment of a seat belt thereto.

In order to detach attaching plate A from attaching means B, tab-like flange 43 is depressed, by hand, against the force of spring means 28 until it is entirely out of larger part 23 of keyhole slot 21, whereupon attaching plate A can be slid to a position where larger part 23 of keyhole slot 21 is aligned with head 36 of bolt-like member 26 and attaching plate A can be pulled off.

The parts are preferably dimensioned so that the length of spacing means 37 is just shorter than the thickness ot body portion 20 of attaching plate A, plus the thickness of compressed spring means 28, and plus the distance between the planes of the outer faces of tab-like flange 43 and washer portion 40 of locking member 27. This provides a device in which attaching plate A cannot be engaged on attaching means B unless attaching plate A is presented thereto with larger part 23 of keyhole slot 21 aligned with tab-like flange 43 of locking member 27. There is thus no danger of attaching plate A being jammed onto attaching means B in an incorrectly assembled condition.

Various changes in the shape, size, and arrangement of parts may be made to the form of the invention herein shown and described without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. An anchoring device including an attaching plate having a keyhole slot and attaching means for securing said attaching plate to an anchoring point when said attaching means is registered with the narrower part of said keyhole slot, said attaching means including bolt-like means having an elongated shank means provided with a head member at one end thereof and including spacing means adjacent said head member, said head member being shaped and dimensioned to pass through the larger part of said keyhole slot when aligned therewith and to abut against said attaching plate and retain said attaching plate on said elongated shank when said attaching means is registered with the narrower part of said keyhole slot, said spacing means having an external configuration for interfitting within the narrower part of said keyhole slot and spacing said head member from the anchoring point, a locking member, said locking member comprising a washer portion provided with a tab-like flange projecting from one side thereof and having the greater portion thereof lying in a plane parallel to and offset from the plane of said washer portion, said washer portion being slidably and rotatably mounted on said spacing means with said flange thereof positioned for interfitting within the larger part of said keyhole slot when said attaching means is registered with the narrower part of said keyhole slot, a washer mounted on said elongated shank means and positioned for abutment against the anchoring point on one side thereof and against said spacing means on the other side thereof, and spring means mounted on said spacing means, said spring means comprising a dish-shaped member having supporting feet positioned for abutment against said washer member and the apex thereof abutting against said washer portion of said locking member and urging said flange of said locking member to within the larger part of said keyhole slot and said attaching plate into abutment with said head when said attaching means is registered with the narrower par of said keyhole slot.

2. An anchoring device including an attaching plate having a keyhole slot and attaching means for securing said attaching plate to an anchoring point when said attaching means is registered with the narrower part of said keyhole slot, said attaching means including a head shaped and dimensioned to pass through the larger part of said keyhole slot when aligned therewith and to abut against said attaching plate and retain said attaching plate on said attaching means when said attaching means is registered with the narrower part of said keyhole slot, spacing means for spacing said head from said anchoring point, said spacing means having an external configuration for interfitting within the narrower part of said keyhole slot, a locking member mounted on said spacing means and having a projection interfitting within the larger part of said keyhole slot when said attaching means is registered with the narrower part of said keyhole slot, and spring means urging said projection of said locking member to within the larger part of said keyhole slot and said attaching plate into abutment with said head when said attaching means is registered with the narrower part of said keyhole slot, said locking member including a washer portion slidably and rotatably mounted on said spacing means and spring urged by said spring means into abutment with said attaching plate, and a flange member extending from the periphery of said washer portion having the greater portion thereof, said flange member including a tab portion offset from the plane of said washer portion and comprising said projection interfitting within the larger part of said keyhole slot upon registering of said attaching means with the narrower part of said keyhole slot.

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