Feb. 26, 1963 J. R. BAUER 3,078,536

STRAP LOCKING DEVICE

Filed Oct. 30, 1961

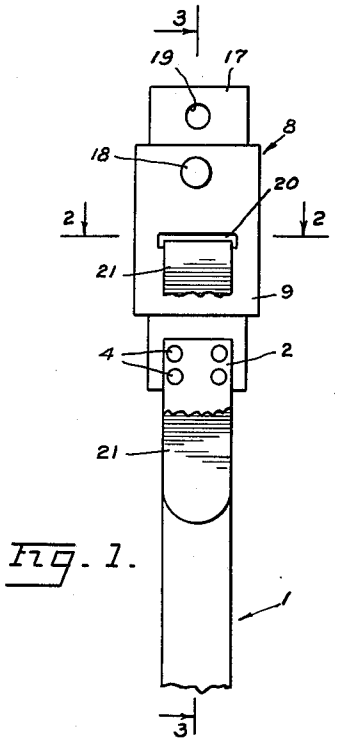


Fig. 1.

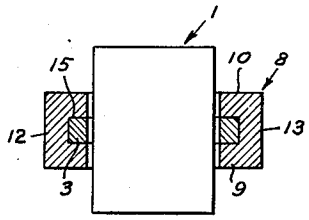


Fig. 2.

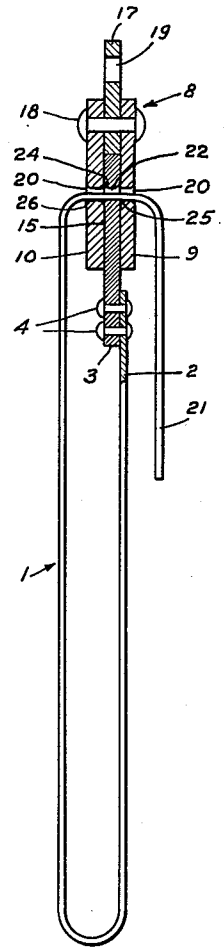


Fig. 3.

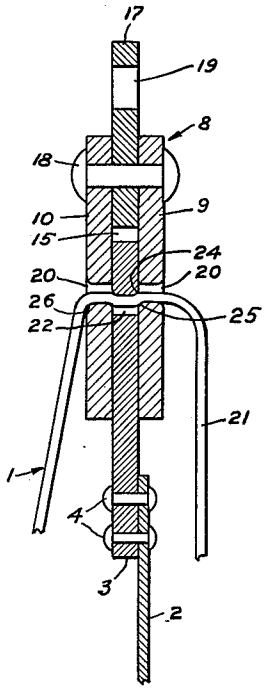


Fig. 4.

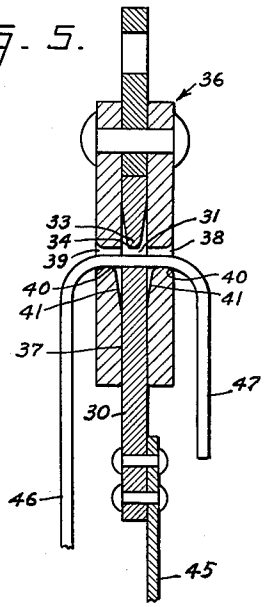


Fig. 5.

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3,078,536

Patented Feb. 26, 1963

3,078,536

STRAP LOCKING DEVICE

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Filed Oct. 30, 1961, Ser. No. 148,474

1 Claim. (Cl. 24—194)

This invention relates to a strap locking device.

The object of this invention is to provide a lock for a strap which is simple in construction, efficient in operation and inexpensive to produce.

Another object of this invention is to provide a lock for a strap in which an end of the strap is impinged upon by an anchor plate sliding between two lock casing walls, the force of impinging being proportionate to the pulling force of the strap.

Another object of this invention is to provide a lock for a strap in which an end of the strap is passed through three slots, one of which is provided in an anchor plate secured to the strap and two other slots in the lock casing walls, whereby the pull exerted on the anchor plate displaces the same in relation to said walls and, thus, impinges upon the strap.

Other objects and advantages will appear as the specification proceeds and the novel features of the device will be particularly pointed out in the claim hereto annexed.

In this specification and the annexed drawing, the invention is illustrated in the form considered to be the best, but it is understood, that the invention is not limited to such form; and it is also to be understood that in and by the claims following the description, it is desired to cover the invention in whatsoever form it may be embodied.

This invention is illustrated in an accompanying drawing in which

FIG. 1 is a front elevation of the device,

FIG. 2 is a horizontal cross-section taken along the line 2—2 of FIG. 1,

FIG. 3 is a vertical cross-section taken along the line 3—3 of FIG. 1,

FIG. 4 is a partial vertical cross-section of the device showing the operation of the same; and

FIG. 5 is a vertical central cross-section through a modified form of the device.

My device includes a flexible strap 1, which may be made of any suitable material. An end 2 of said strap is secured to an anchor plate 3 by some means such as rivets 4. The anchor plate is preferably made of metal and is in form of an elongated rectangular parallelogram.

The anchor plate is slidable in a lock casing 8 consisting of a front wall 9, a back wall 10, which are parallel and separated from each other by a distance permitting free insertion and sliding of the anchor plate 3 therebetween. The walls 9 and 10 are preferably of substantially the same thickness as the anchor plate 3, and are connected by the sides 12 and 13, thus forming a rectangular passage 15 therebetween wherein the anchor plate is inserted for sliding.

An upper piece 17 is inserted in the top portion of said passage 15 and is riveted, as shown at 18, or otherwise secured, to said casing 8. The piece 17 may be provided with a hole 19 for suspending the device from a nail, or a hook.

The walls 9 and 10 of the casing 8 are formed with identical rectangular slots 20, which are sufficiently large to admit freely the other end 21 of the strap 1. The anchor plate 3 is also provided with a slot 22 which is of the same size and shape as the slots 20 and is registerable therewith when the upper end of said anchor plate abuts the lower end of the upper piece 17.

The upper ridges of the slot 22, and the lower inner and outer ridges of the slots 20 are rounded, as shown at

24, 25 and 26 respectively, for a purpose, as shall be hereinafter described in detail.

The device operates as follows:

The anchor plate 3 is inserted in the passage 15 and moved upwardly until it is stopped by the piece 17. At this moment the slots 20 and 22 are on the same level. The free end 21 of the strap 1 is inserted through said slots and may be easily withdrawn from said slots. When, however, a pull is applied on the end 2 of the strap, and the anchor plate 3 moves down slightly, as shown in FIG. 4, it impinges upon the strap 1 and positively locks the end 21 in the locking device. While the downward movement of the anchor plate 3 locks the end 21, said anchor plate also becomes locked by said end 21 between the walls, hence as long as a pull is applied on the anchor plate 3 the latter and the free end 21 of the strap are both securely locked in said lock.

It is desirable to have the anchor plate about three times thicker than the strap to prevent the tearing of the strap.

The rounded ridges 24 and 25 eliminate the shearing action of the anchor plate sandwiched between the walls 9 and 10 in spite of the fact that a considerable pull may be applied on the end 2 of the strap. The pull produces wedging action of the anchor plate 3 only.

FIG. 5 shows a modified form of the device in which an anchor plate 30 is formed with a rectangular slot 31, and has a portion of said plate located above said slot formed into a wedge 33 with rounded edges 34.

A casing 36, which corresponds to the casing 8 shown in FIGURES 1–4, is provided with a passage 37 in which said plate 30 slides, and with a pair of rectangular corresponding slots 38 and 39 with the rounded edges 40, the inner surfaces of the passage 37 under said slots 38 and 39 being inclined outwardly, as shown at 41.

An end 45 of a strap 46 is secured to the anchor plate 30, while the other end 47 of said strap is inserted through said slots 38, 31 and 39. When a pull is exerted on the end 45, the anchor plate 30 moves downwardly and wedges the portion of the strap underneath the wedge 33 between the same and the surfaces 41, thus effectively locking the end 45 in said lock.

I claim:

A locking device for a strap comprising: a casing consisting of a pair of spaced parallel walls;

an upper piece inserted between the upper ends of said walls and secured thereto for keeping said walls parallel;

an anchor plate in form of a rectangular parallelepiped slidably arranged between said walls;

said anchor plate and said walls having registerable transverse slots therein through which the first end of the above mentioned strap is inserted, the second end being secured to the lower end of said anchor plate; said anchor plate having its portion above the slot formed into a wedge by slanting its sides inwardly at an angle and having rounded edges at the apex of said wedge;

said walls having their inner surfaces below the slots slightly diverging outwardly to admit said wedge;

said wedge, when the anchor is forced downwardly, pushing the portion of the strap under said wedge downwardly between said diverging surfaces and thereby wedging the strap therebetween for locking said first end of the strap and said device together.

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