United States Patent [19]

Perkins

[11] **3,866,276**

[45] **Feb. 18, 1975**

[54] **SPRING-LOADED BELT KEEPER**

[75] Inventor: **Neale A. Perkins,** Sierra Madre, Calif.

[73] Assignee: **Safariland Leather Products,** Monrovia, Calif.

[22] Filed: **June 11, 1973**

[21] Appl. No.: **368,981**

[52] **U.S. Cl.** ..... **24/259 A,** 2/319, 2/311, 24/262 GC, 24/73 LF

[51] **Int. Cl.** **A44b 21/00**

[58] **Field of Search** ..... 2/338, 322, 311, 312, 319; 24/259 A, 73 LF, 262 GC

[56] **References Cited**

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Primary Examiner—Geo. V. Larkin

Attorney, Agent, or Firm—Christie, Parker & Hale

[57] **ABSTRACT**

A removable keeper clamps together cooperating sections of thistle cloth material on a pair of overlying belts to substantially prevent relative longitudinal movement of the two belts. The keeper comprises a strip of spring metal bent to form a front section which extends over the front of the overlying belts, a top and bottom section extending over the top and bottom, respectively, of the overlying belts, a detent section extending up from the bottom section behind the two belts, and a latch section extending downwardly from the top section behind the two belts. A locking member at the end of the latch section is shaped to be releasably engaged with the detent section in a snap fit to apply tension to the two belts transverse to the plane of cooperating thistle cloth sections to squeeze the thistle cloth sections of the belts together so as to substantially prevent relative longitudinal movement between the two belts.

4 Claims, 5 Drawing Figures

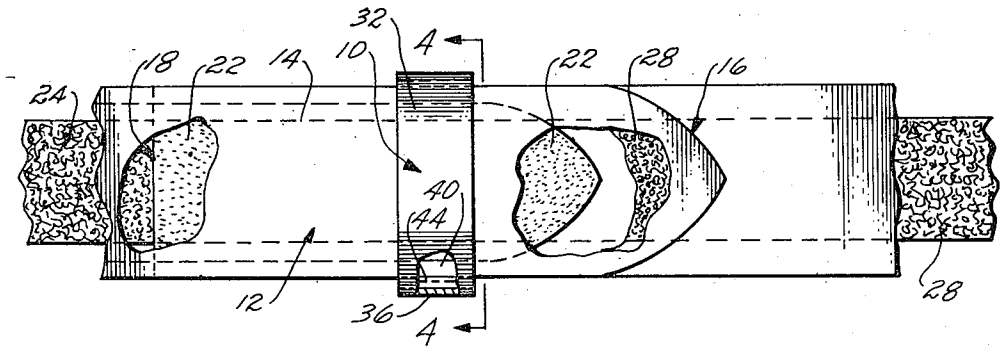


Fig. 1

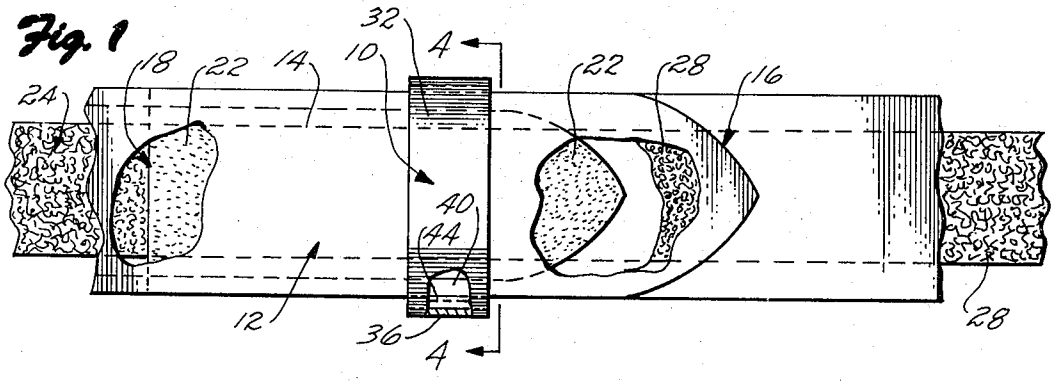


Fig. 2

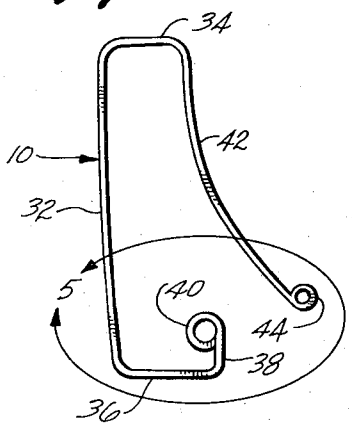


Fig. 3

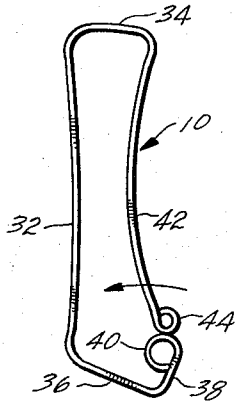
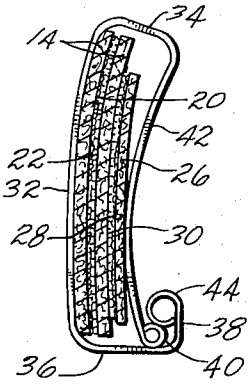


Fig. 4



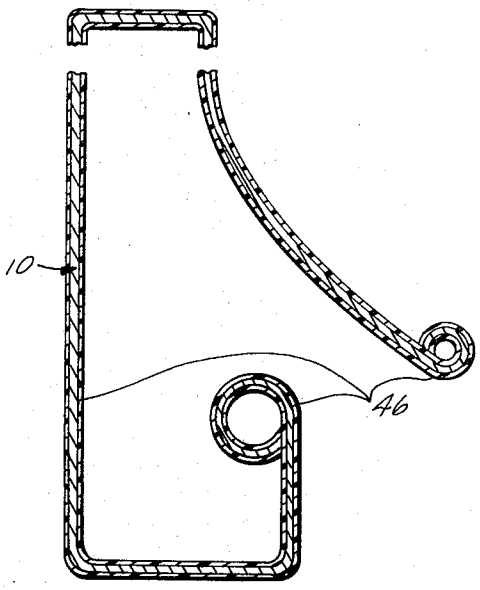


Fig. 5

SPRING-LOADED BELT KEEPER

BACKGROUND OF THE INVENTION

This invention relates to a removable keeper for clamping overlying straps or belts together to prevent their movement relative to each other.

In the past, a "Sam Browne" belt has been worn chiefly by police officers for carrying firearms and other law enforcement equipment. Prior art Sam Browne belts are relatively heavy, and as a consequence, they are generally secured to either a shoulder strap or a clothing belt. In the latter instance, several keepers are secured to the Sam Browne belt and used to engage the clothing belt. The shoulder strap and keepers substantially increase the time required for an officer to remove or apply the belt. Moreover, the shoulder strap is uncomfortable, and the total thickness of the belts and keepers makes the belt unsightly and uncomfortable.

In recent years, an improved belt combination for law enforcement officers has been developed which eliminates the need for a shoulder strap, or a plurality of keepers for fastening the Sam Browne belt to a clothing belt. The improved belt combination is disclosed in my U.S. Pat. No. 3,664,560. It includes a reversible dress belt worn on the trousers and having an inner layer of thistle cloth material of the type sold under the trademark "VELCRO". The police officer's Sam Browne belt has an inner layer of a cooperating type of VELCRO material, and the Sam Browne belt is applied by reversing the dress belt so its inner layer of VELCRO material faces outwardly to mate with the VELCRO layer on the inside of the Same Browne belt to thereby fasten the Sam Browne belt around the officer's waist.

The improved belt combination described above previously has included a keeper attached to an end of the Sam Browne belt. In use, the keeper holds the end of the Sam Browne belt in a fixed position so the belt cannot be easily removed by another person simply by grasping the end of the belt and pulling on it. One prior art belt keeper includes a leather strap which is wrapped around the overlying portions of the Sam Browne belt and the reversible dress belt. The keeper has cooperating VELCRO sections on it so the VELCRO sections of the keeper can be fastened together to hold the keeper around the belts. Another prior art keeper includes a box-shaped metal piece fastened to one end of the Sam Browne belt. The other end of the Same Browne belt and the dress belt can be threaded through the keeper which will then hold the overlying belt sections together.

The prior art keepers are fairly successful in preventing the overlying belt portions from relative lateral movement (movement toward and away from each other), but they do not always provide a good restraint against relative longitudinal slippage between the Sam Browne belt and the reversible dress belt, or between the overlapping portions of the Sam Browne belt.

SUMMARY OF THE INVENTION

Briefly, this invention provides a removable keeper which clamps together cooperating VELCRO sections of a pair of overlying belts or straps by squeezing the cooperating VELCRO sections together sufficiently to substantially prevent relative longitudinal movement between the two overlying belts or straps.

Briefly, the removable keeper comprises an integral strip of resilient material including an elongated front section which extends over the front of the overlying belt sections. The strip is bent at the ends of the front section to form a top section and a bottom section extending transversely with respect to and away from one side of the front section so as to extend around the top and bottom of the overlying belt sections. A detent is formed at the remote end of the rear section spaced from the plane of the front section, and the remote end of the top section is bent to form an elongated latch section extending transversely to the top section and downwardly toward the bottom section behind the overlying portions of the two belts. A locking member formed at the remote end of the latch section is shaped to be releasably engaged with the detent. The latch section positions the locking member so it can be forced into releasable engagement with the detent in a snap fit so the keeper applies tension to the two belts in a direction transverse to the plane along which the two belt sections are engaged. This squeezes the two belts together and thereby substantially prevent their longitudinal movement relative to each other.

In a preferred form of the invention, the keeper is applied to two overlying belt portions which are engaged by cooperating VELCRO fasteners. The keeper in its locked position squeezes the two mating VELCRO sections together with such force that the resistance to relative longitudinal movement between the two belt sections is increased several times over the resistance afforded when no keeper is used.

These and other aspects of the invention will be more fully understood by referring to the following detailed description and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a fragmentary elevation view, partly broken away and partly in cross-section, showing a spring-loaded removable keeper applied to several overlying belt sections attached by cooperating VELCRO fasteners;

FIG. **2** is an elevation view showing the removable keeper in its normal unlocked position;

FIG. **3** is an elevation view showing the keeper in the process of being moved to its locked position;

FIG. **4** is a cross-sectional elevation view taken along line **4—4** of FIG. **1** and showing the keeper in its locked position around the overlying belt sections; and

FIG. **5** is an enlarged cross-sectional elevation view of the portions of the keeper shown within the circle **5** of FIG. **2.**

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. **1,** a removable spring-loaded keeper **10** is applied to the overlapping end portions of a Sam Browne belt **12** worn on the trousers (not shown) of a user (not shown) such as a law enforcement officer. The Sam Browne belt has a front side **14** which comprises a strap made of dressed leather. In use, the Sam Browne belt is worn by forming it in a loop so that a front end section **16** of the belt faces outwardly, with a rear end section **18** of the belt being covered by the front section when the two end sections of the belt are overlapped at the front of the user. The reverse side of the leather strap **14** includes an elongated layer **20** (shown in FIG. **4**) of VELCRO pile material

extending for a short distance near front end **16** section of the belt. The front side of leather strap **14** includes an elongated layer **22** of VELCRO hook material extending for a short distance near rear end **18** of the Sam Browne belt. When the two ends of the Sam Browne belt are overlapped so the belt can form a loop, VELCRO layers **20** and **22** are pressed together in a mating engagement to hold the two ends of the belt in a fixed position around the waist of the user.

Preferably, Sam Browne belt **12** is worn in combination with a reversible dress belt **24** which is threaded through belt loops (not shown) on the trousers of the user. Dress belt **24** preferably includes an elongated strap **26** (shown in FIG. **4**) of dressed leather having means (not shown) at its ends for holding it in a loop around the waist of the user. An elongated layer **28** of thistle cloth pile material is secured to the inner side of leather strap **26.** The VELCRO pile material preferably extends for substantially the entire length of the strap **26.**

In use, dress belt **24** is worn on the trousers in a conventional manner with leather strap **26** facing outwardly. When Sam Browne belt **12** is to be worn by the user, the dress belt is unfastened and reversed so that its inner layer of VELCRO pile material faces outwardly. Sam Browne belt **12** preferably includes an elongated layer **30** of VELCRO hook material extending substantially the entire length of the inner side of strap **14.** The Sam Browne belt is worn by wrapping it around the exterior of the reverse-positioned dress belt **24** and engaging hook material **30** of the Sam Browne belt with pile material **28** of the dress belt.

Once the Sam Browne belt is in place around the waist of the user, keeper **10** is releasably engaged around the overlapping ends of the Sam Browne belt located at the front of the user and around the portion of the dress belt underlying the overlapping portions of the Sam Browne belt.

Referring to FIG. **2,** keeper **10** in its normal unlocked position comprises an elongated integral strip of resilient material, preferably spring steel. The spring metal strip includes an elongated substantially linear front section or front leg **32** extending for a distance slightly greater than the width of Sam Browne belt **12.** The spring metal strip is bent at the ends of the front section **32** to form an elongated top section or top leg **34** and an elongated bottom section or bottom leg **36,** both of which extend substantially parallel to each other at approximately right angles relative to the plane of front section **32.** Top and bottom sections **34** and **36** extend away from the plane of front section **32** in the same general direction, and they have a length approximately equal to the thickness of the three overlying belt sections shown in FIG. **4.**

The spring metal strip is bent at the remote end of bottom section **36** to form an elongated rear section detent-carrying leg **38** extending upwardly from the bottom section at an angle of approximately 90° relative to the bottom section. Rear section **38** extends substantially parallel to the front section **32** and upwardly from the bottom section for a relatively short distance. The end of rear section **38** is bent in a curvilinear configuration toward the plane of the front section to form an elongated rounded detent or detent member **40** which extends for the entire width of the spring metal strip.

The spring metal strip is bent at the end of top section **34** to form an elongated latch section or latch-carrying leg **42** extending downwardly from top section **34** toward the plane or bottom section **36.** Latch section **42** is preferably curved concave inwardly toward front ssction **32,** with the latch section extending in a general direction away from the plane of front section **32.** The end of latch section **42** is bent into a curvilinear configuration to form a locking member or latch member **44** which extends the entire width of the spring metal strip and is rounded away from the plane of front section **32.**

In use, the unlocked keeper is fitted around the three overlapping belt sections shown in FIG. **4** so that the overlapping belt sections are disposed in the U-shaped restraint formed by front section **32** and top and bottom sections **34** and **36** of the keeper. Force is then applied to latch section **42** in the direction of the arrow shown in FIG. **3** to force locking member **44** into engagement with detent **40.** As shown best in FIG. **3,** the length of latch section **42** is slightly longer than the distance between the top of detent **40** and top section **34** when the keeper is in its normal position shown in FIG. **2.** Thus, when the rounded surfaces of locking member **44** and detent **40** are pushed into locking engagement, bottom section **36** and rear section **38** of the keeper deflect downwardly as shown in FIG. **3** to permit locking member **44** to be engaged with the underside of detent **40** in a snap-fit. The locked position of the keeper is shown in FIG. **4.** In this position, the rounded surface of locking member **44** fits into the notched area provided under detent **40** to hold the keeper in a tensional position in which the inner surface of latch section **42** is bowed inwardly toward front section **32** so the intermediate portions of the latch section and the front section apply the greatest amount of tension to the overlapping portions of the belts. The tension applied by the keeper is in a direction transverse to the planes along which the cooperating VELCRO fasteners are engaged so that the pressure applied by the keeper squeezes the mating VELCRO sections together with an amount of force that substantially prevents relative longitudinal movement between the overlapping belt portions. In use, it has been found that the keeper provides about a tenfold increase in the force required to move the overlapping belt sections longitudinally relative to each other when compared with an instance where no belt keeper is used.

The distance between the bottom of front section **32** and detent **40,** when the keeper is in its locked position, is about the same, or slightly greater than the width of the overlapping belt sections so the locking member can be easily released from its locked position simply by pushing inwardly on the bottom of latch member from the detent.

Preferably, the keeper is coated with a layer **46** of nylon or other low-friction material which enhances the ability of the rounded engaging surfaces of locking member **44** and detent **40** to be releasably engaged with each other.

I claim:

1. A removable keeper for clamping the overlying portions of one or more belts or the like, the keeper comprising an integral strip of resilient material including

an elongated front leg,

a top leg at one end of the front leg,

a bottom leg at the other end of the front leg,

the top leg and the bottom leg each extending transversely relative to and away from the same side of

the front leg, the top and bottom legs having remove ends spaced laterally from the front leg,

an elongated latch-carrying leg at the remote end of the top leg extending transversely to the top leg and downwardly toward the bottom leg to a remote end spaced from the top leg, the length of the latch-carrying leg being a major portion of the length of the front leg,

an elongated detent-carrying leg at the remote end of the bottom leg extending transversely to the bottom leg and upwardly toward the top leg to a remote end spaced from the bottom leg,

a loop formed at the remote end of the latch-carrying leg and facing away from the front leg for providing a rounded, elongated latch member,

a loop formed at the remote end of the detent-carrying leg and facing toward the front leg for providing a rounded, elongated detent member having a rounded undersurface spaced above the bottom leg,

the latch member and detent member being positioned relative to each other so that the rounded surface of the latch member can be releasably engaged with the rounded undersurface of the detent member in a snap-fit,

the latch-carrying leg being longer than the minimum distance between the detent member and the top leg, and being normally curved away from the front leg when the keeper is in its unlocked position such that when the latch member is engaged with the detent member in a snap-fit to lock the keeper, the latch-carrying leg is held in a position bowed inwardly toward the front leg to apply pressure to the overlying belt portions to which the keeper is applied.

2. The removable keeper according to claim **1** in which the front leg is generally planar when the keeper is in its normal unlocked position, and in which the front leg bows outwardly when the keeper is under tension in its locked position.

3. The removable keeper according to claim **1** in which the latch member and the detent member have low-friction engaging surfaces.

4. The removable keeper according to claim **1** in which the strip is made of spring metal.

* * * * *

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 3,866,276

DATED : February 18, 1975

INVENTOR(S) : NEALE A. PERKINS

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 4, line 2, "plane or bottom" should read -- plane of bottom--

Col. 4, lines 51-52, "latch member from the detent" should read -- latch member 42 to free the locking member from the detent --.

Col. 5, lines 1-2, "remove" should read -- remote --.

Signed and Sealed this

twenty-second Day of *July 1975*

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks