United States Patent [19]

Bryant

[11] **3,907,182**

[45] **Sept. 23, 1975**

[54] **RECEPTACLE CLAMP**

[76] Inventor: **Clyde C. Bryant,** 1920 Forrest Ave., East Point, Ga. 30344

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[21] Appl. No.: **356,804**

[52] **U.S. Cl.** ..... **224/2 B;** 24/3 R; 24/250; 224/2 C; 224/26 R

[51] **Int. Cl.**[2] **F41B 13/04**

[58] **Field of Search** ..... 224/2 B, 2 C, 2 D, 2 R, 224/26 R; 24/3 R, 250, 3 L, 170

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Primary Examiner—Robert J. Spar
Assistant Examiner—Ross Weaver
Attorney, Agent, or Firm—Gipple & Hale

[57] **ABSTRACT**

A clamp for removably securing a receptacle to an article comprising a receptacle with a substantially U-shaped frame secured to the receptacle. A spring arm and cam drive are rotatably mounted to the frame with the cam drive comprising a cam, and a cam lever secured to the cam, the lever being adapted to rotate the cam against the spring arm to engage the article. A locking device is mounted to the frame to hold the clamp in a fixed position.

4 Claims, 14 Drawing Figures

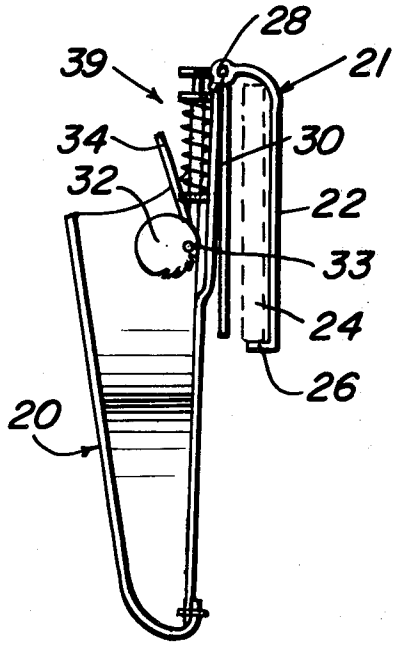


FIG. 1

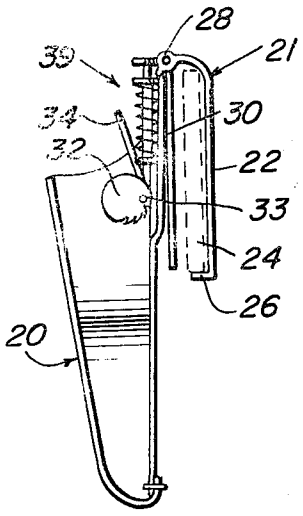


FIG. 2

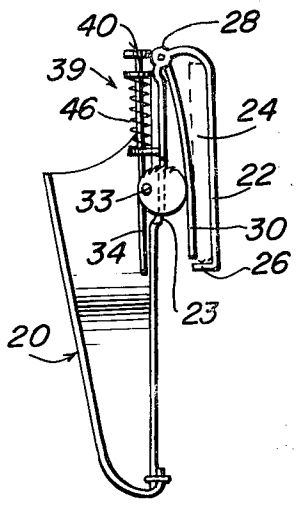


FIG. 3

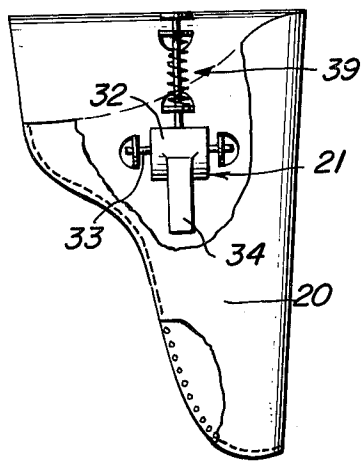


FIG. 4

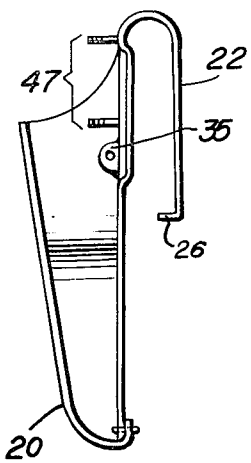


FIG. 5

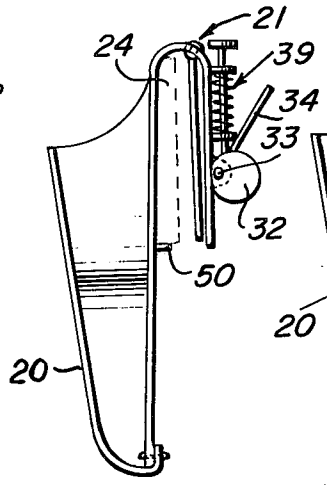


FIG. 6

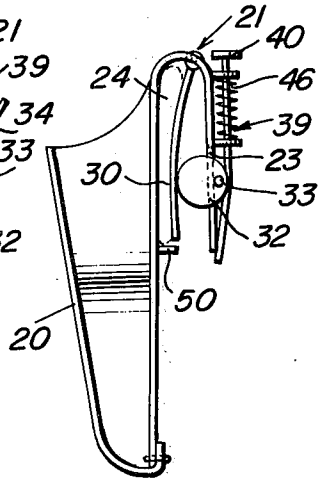


FIG. 7

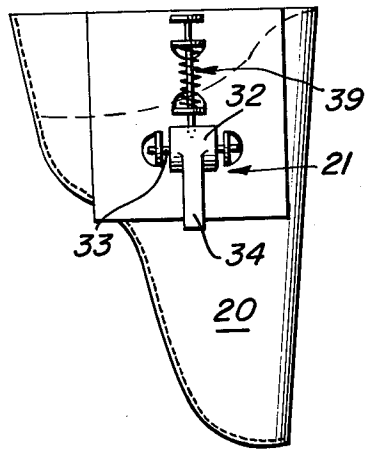
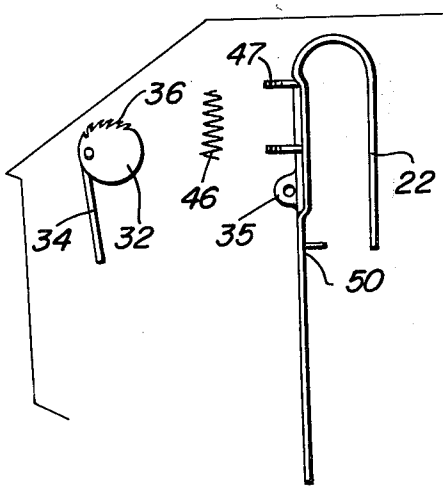
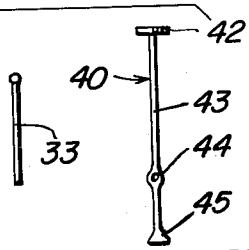


FIG. 8





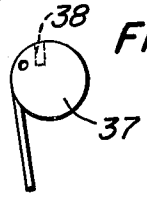


FIG. 8A

FIG. 9

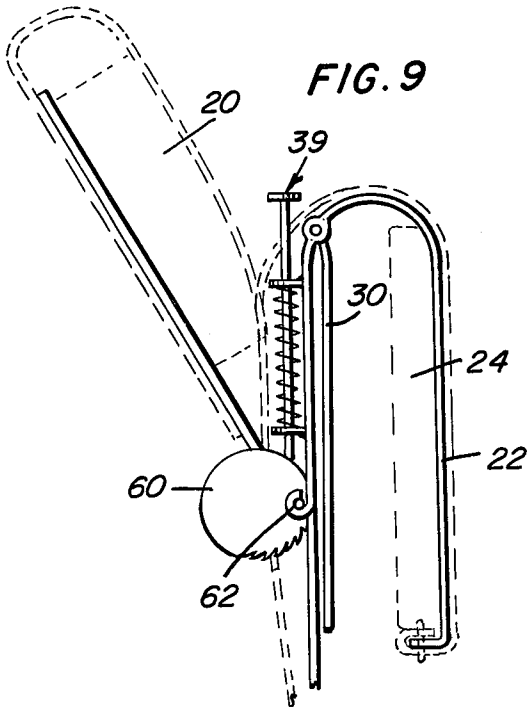


FIG. 10

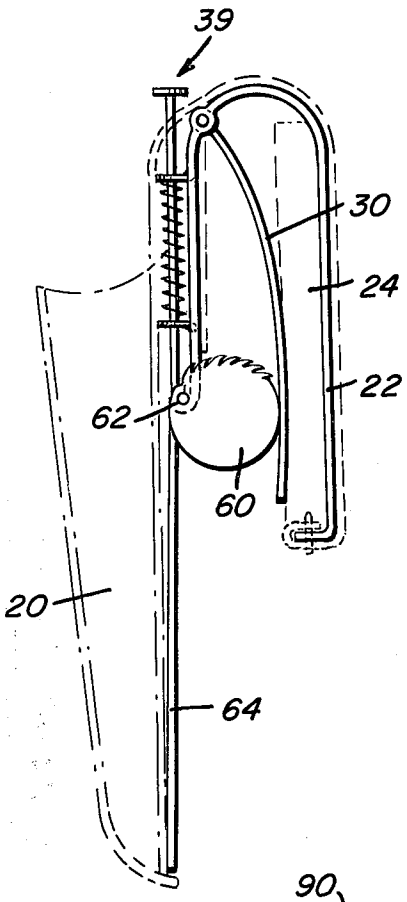


FIG. 11

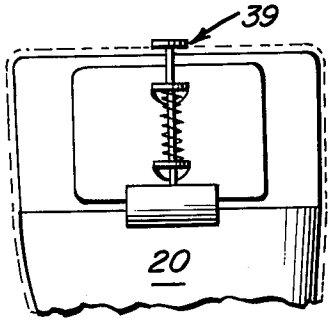


FIG. 12

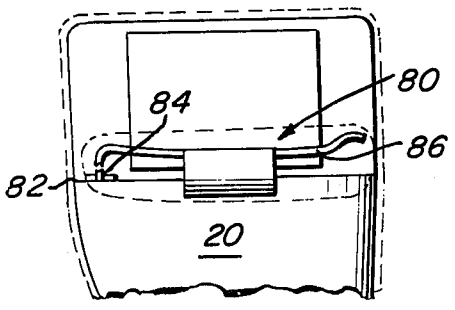
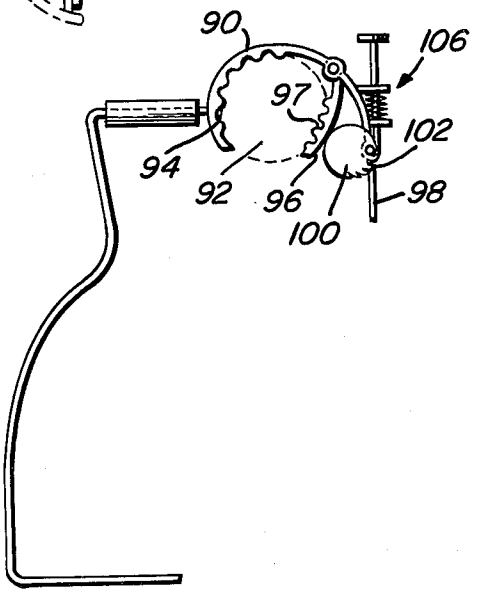


FIG. 13



RECEPTACLE CLAMP

BACKGROUND OF THE INVENTION

The present invention generally relates to fastener clamps and more particularly pertains to fastener clamps utilized to removably secure holsters, sheaths and similar receptacles on a belt, strap or garment worn by an individual.

The invention provides a novel clamp apparatus for releasably locking a receptacle such as a gun holster or sheath for a knife, axe, or other implement on a strap or garment to prevent the accidental displacement or removal of the receptacle from its position while at the same time being so constructed as to permit the receptacle to be easily removed or mounted on the strap or garment without loosening, removing or substantially disturbing the strap, or garment. In addition, the receptacle clamp of the invention is extremely difficult to detach from a mounted position by pulling, turning, or twisting the mounted receptacle. The receptacle and clamp apparatus is easy to mount to the person of a wearer and easy to detach from such a mounted position on parts of clothing such as pants, tops, coat linings, breast pockets, underwear, leg straps and shoulder straps. The invention will also lock on another object such as the sun visor of a car, under the dash or in other suitable places.

DESCRIPTION OF THE PRIOR ART

In the prior art it has previously been necessary to provide sheaths, and gun holsters with mounting means by means of which the receptacle is mounted to the person of the wearer through a belt or strap passing through a closed loop. Such an arrangement necessitates the loosening of the open end of the belt or strap to mount or remove the receptacle from the person and limits the areas on which a receptacle could be carried and/or mounted.

Various individuals tried to overcome the problems with different types of apparatus. For example, U.S. Pat. No. 1,307,655, discloses a holster having semicircular catches on the front of the attaching member to fasten the attaching member to a holster. Releasable clamping mechanisms were utilized to mount various receptacles as is shown in U.S. Pat. Nos. 1,046,912 and 2,138,978, the latter disclosing a spring activated clamp holster which could be quickly mounted and detached from the belt of an individual. Such apparatus was reliant on the pressure of the spring holding the clamp down and if suitable pressure were placed on the spring the holster could be dislodged or lost from the mounting.

The present invention with its cam latch and locking pin construction, however, allows double lock protection.

BRIEF DESCRIPTION OF THE DRAWINGS

Other features and advantages of the invention will be apparent from the following description of the embodiments of the invention as shown in the accompanying drawings.

FIG. 1 shows a cross-sectional view of the invention with the clamp in open position;

FIG. 2 is the cross-sectional view of the invention shown in FIG. 1 with the clamp in a closed position;

FIG. 3 shows a side view of the invention shown in FIG. 2 with partial sections of the holster removed;

FIG. 4 is a cross-sectional view of the invention shown in FIG. 1 and FIG. 2 disclosing the frame member secured to the holster;

FIG. 5 shows a cross-sectional view of another embodiment of the invention showing the clamp in an open position;

FIG. 6 is a cross-sectional view of the invention shown in FIG. 5 showing the clamp in a closed position;

FIG. 7 is a side view of the invention shown in FIG. 6;

FIG. 8 discloses an exploded view of the components of the clamp shown in FIGS. 5 and 6;

FIG. 8a shows an alternate embodiment of a cam apparatus that can be used in the invention;

FIG. 9 shows a cross-sectional view of another embodiment of the invention with the clamp in an open position;

FIG. 10 is a cross-sectional view of the embodiment shown in FIG. 9 with the clamp in a closed position;

FIG. 11 is a partial side view of the embodiment shown in FIG. 10;

FIG. 12 is a partial side view of an alternate locking mechanism of the invention; and

FIG. 13 shows a cross-sectional view of a ski lift clamp embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the invention a holster or receptacle **20** is secured to an inverted substantially U-shaped frame member **22** of a clamp mechanism **21.** While the receptacle **20** is disclosed in the form of a gun holster the invention is not necessarily limited to the particular form of the receptacle illustrated but may be applied to any type of receptacle such as a knife sheath, night stick case, handcuff case, boy scout equipment, lineman's and electrician's tool sheath, axe sheath, bags or other receptacle which may be desired to be attached on the clothing of an individual. The frame member **22** of the clamp mechanism **21** is permanently secured to the receptacle **20** by riveting, stitching, adhesive or other suitable means and through its novel structure it is constructed to allow the receptacle to be quickly and easily mounted on a belt or strap **24.** It should be noted that when a strap **24** as shown by the dashed lines in FIGS. **2, 6** and **10** is used, the clamp mechanism **21** when closed extends around the strap making the locking action very effective. The clamp mechanism **21** holds the receptacle **20** in place against accidental displacement from the mounted position on the strap while at the same time permits easy removal or attachment in response to the desire or inclination of the wearer without requiring opening of the strap or other cumbersome manipulations of the strap. The preferred embodiment of the clamp mechanism **21** has a substantially U-shaped or J-shaped frame member **22** having a flange or projection **26** integrally formed thereon. The frame is preferably made of heavy spring metal but can be constructed of plastic or other suitable material. The flange **26** basically is a projection which extends perpendicularly from the plane of the front wall of the frame member **22** towards the rear wall of the frame which is secured to receptacle **20.** The belt or strap **24** is seated on the top of the projection and rests against the inner surface of the front wall of the frame **22.** A

hinge **28** is formed in or secured to the U-shaped frame member preferably at the bend of the U-shaped member to rotatably hold a spring arm **30** which is mounted in the hinge **28** and projects down into the interior of the U-shaped frame. A cam **32** is movably or rotatably secured to the frame member so that it may be rotated or moved by means of a cam lever **34** secured to the cam. The frame member **22** is provided with an opening **23** in registry with the cam **32,** the opening being greater than the size of the cam **32.** When the cam **34** is moved the cam rotates through the opening **23** in frame **22,** causing the cam surface to abut against the spring arm **30,** driving the spring arm which is constructed of spring steel or other suitable resilient material towards the projection **26** and against the strap to hold the strap **24** snugly in place. The cam **32** is preferably secured to the frame member **22** by means of a a cam pin **33** and eye bracket structure **35.** The cam **32** can have a ratchet surface **36** such as that shown in FIG. **8** or a surface **37** such as that shown in FIG. **8a** with an aperture **38** which is adapted to receive a locking means **39.**

The locking means **39** is constructed and arranged so that it will releasably lock the receptacle **20** in place on the strap once thr receptacle **20** has been positioned. Referring more specifically to the locking means referred to, it comprises a pin **40** having a head **42,** a body **43** forming an enlargement **44** which limits the amount of vertical movement of the pin, and a locking end **45** which is adapted to fit into the ratchet teeth of the cam or into an aperture which is provided in the face of the cam to lock the cam into position. A biasing spring **46** is positioned around the pin **40** with one end abutting against one of the pin guide members **47** and the other end being attached, mounted or abutting against enlargement **44.** The spring **46** of the locking means drives the lock pin **40** downward into either an aperture in the cam or into the ratchet teeth of the cam to hold the cam in position.

On the side of the receptacle next to the gun the cam pin **33** is fixed on each side of a bracket or hole cut through the U-shaped frame member **22.** The pin passes through the cam **32** which preferably has a leather covered lever **32** attached thereto which extends from the large side of the cam. The cam is so arranged that when the lever is thrown down parallel or substantially flush with the side of the holster, the cam exerts pressure on the spring arm **30** which is hinged at the bend of the inverted U-shaped frame member. The spring arm is driven into the strap **24** and exerts pressure upon the strap locking the receptacle into position. The spring loaded locking pin **40** is urged downward by the spring means **46** through an extruded groove in the frame member and eyes of the guide members **47** and snaps into an aperture **38** in the cam or the ratchet teeth formed in the top of the cam. It should be noted that the drawings disclose the pin **40** removed from the frame member and not slidably mounted in a groove so that the action of the pin can be readily seen. However, in the preferred embodiment the pin **40** slidably rests in the groove of the frame member **22.** The pin is held down in the aperture or ratchet teeth by the coil spring **46** around the pin pushing against the enlargement **44** near the bottom of the body of the pin from its spring seat on the bottom of the top eye guide member **47.** When the clamping mechanism is desired to be released, the head **42** of the lock pin is pulled upward compressing the spring and disengaging the lock end **45** from the ratchet teeth or aperture of the cam. The cam lever **34** is rotated in a clockwise direction in the embodiments of FIGS. **1–4** and **9–11** and counterclockwise direction in the embodiment of FIGS. **5–7** to remove the pressure on the spring arm **30** so that the spring arm is no longer held to the strap by the cam so that the holster or receptacle can be removed from the belt or strap.

In addition to the lock means previously described, it is also envisioned that an alternative locking machanism can be used such as the one shown in FIG. **12.** This alternative locking mechanism **80** comprises an extruded eye **82** secured to the frame **22** and extruded outward from the holster body. The pin or latch support **84** is moveably secured to a cross latch member **86** and is secured to the extruded eye so that it can be moved vertically but not horizontally. The cross latch member **86** acts as a spring with regard to the eye **82** and is continuously biased downward due to its spring steel construction. When the cam is desired to be disengaged, the cross latch member **86** is lifted upward against its spring action and the latch of the cam is then rotated to disengage the cam from the spring arm so that the article is released.

In another embodiment of the invention shown in FIGS. **5–7,** a projection **50** is secured to the inner surface of the rear wall of the frame member and the spring arm **30** is rotatably mounted away from the receptacle on the bend of the U-shaped member. The cam and lock means is reversed from the previous embodiment and is mounted on the front wall of the frame member **22.** The cam and lever lock is positioned on the front frame wall or side away from the holster or receptacle next to the wearer's body. In this embodiment, the strap retainer projection **50** is an integral part of the frame member located opposite its position on the previous embodiment.

An advantage of this particular embodiment is that it locks onto the belt or strap or almost any place and cannot be removed until the pin lock has been lifted up freeing the cam lever so that the cam lever latch can be swung up. The holster can be quickly detached and will not slip in any direction nor can it be pulled off accidentally. This particular embodiment is also ideal for wearing inside the belt or waistband or inside the breast pocket with a reinforced pad. It should be noted that the embodiment can be attached or removed without removing the gun from the holster, knife from the sheath or article from the receptacle.

In yet another embodiment shown in FIGS. **9–11,** a cam **60** is secured to the holster or receptacle **20** and the holster body serves as the cam lever to drive the cam against the spring arm **30** to hold the strap **24** in place. The bottom part of the U-shaped frame is rotatably connected to the holster around the axle hinge **62** of the cam on each side of the cam and the driving lever on the cam flares out into the metal base **64** of the gun when locked into position. An identical locking means to the previous embodiments is used on this embodiment.

The mounting clamp of the invention provides for the detachment and attachment of a receptacle on a belt or strap by the person of the wearer. However, the clamp of the present invention can be utilized to attach the receptacle on clothing items other than a belt of strap. For example, the receptacle can be attached to the

edge of a coat pocket or on a pair of trousers or any other suitable support means.

In yet another alternative embodiment of the invention the clamp is envisioned as attached to the chair of a ski lift. In this embodiment as shown in FIG. **13**, the spring member **90** is of a substantially semi-circular configuration which allows it to be placed around a cable **92**. Enough of the spring member is cut away to allow the cable **92** to ride over a pulley mechanism without bumping. One portion of the spring member **90** has inwardly projecting teeth **94** which allows it to securely engage the cable **92**. A spring arm **96** of a preferred slightly arcuate configuration is rotatably secured to the spring member **90** near the midpoint of the spring member body. The section of the spring member **90** which extends away from the spring arm **96** at the spring arm connection **97** serves as a lever **98**. The spring arm **96** preferably has integral teeth **97** projecting from its inner surface which are utilized to engage the cable **92** when the spring arm is driven into the cable by a cam lever arrangement. Mounted on the lever **98** is a cam **100** having either a plurality of ratchet teeth **102** or an aperture not shown. Lock means **106** are mounted on the spring member lever section in the same manner as previously set forth so that a lock pin can be engaged with the cam, ratchet teeth or aperture to lock the cam in place once the cam has driven the spring arm against the cable to engage the cable.

While the preferred embodiment of the invention has been disclosed, it is understood that the invention is not limited to such an embodiment since it may be otherwise embodied in the scope of the appended claims.

What is claimed is:

1. A holster clamp combination for removably securing a holster on a strap, comprising a holster, a substantially U-shaped frame secured to said holster, said U-shaped frame defining an aperture therein constructed to receive a strap, a belt stop member secured to one wall of said U-shaped frame projecting away from said wall into said aperture, a spring arm pivotally mounted on said U-shaped frame, cam means rotably mounted to said U-shaped frame, said cam means comprising a substantially rounded cam body defining a rounded outer surface with a part of the surface forming a ratchet configuration and a cam lever secured to said cam body said cam lever being adapted to rotate said cam body through said frame aperture against said spring arm to drive said spring arm toward a wall of said frame to engage a strap positioned in said frame, and releasable locking means mounted to said frame, said releasable locking means comprising at least one guide member defining a groove, a locking pin slidably mounted in said guide member groove and spring means connected to said locking pin to bias said locking pin into engagement with said cam and being adapted to hold said cam means in a locked position against said spring arm.

2. A holster clamp as claimed in claim **1** wherein said belt stop member is secured to one end of said U-shaped frame and projects inwardly toward said holster.

3. A holster clamp as claimed in claim **1** wherein said belt stop member is secured to one wall of said U-shaped frame and projects inwardly away from said holster.

4. A holster clamp as claimed in claim **1** wherein said locking pin comprises a body having a head on one end and a locking projection on its other end with a circular spring seat placed on said body to hold said spring means.

* * * * *