United States Patent [19]

Leveen

[11] **3,857,140**

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[54] **DETACHABLE BANDAGE CLASP**

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[52] **U.S. Cl.**..... **24/87 TB,** 128/170, 128/171

[51] **Int. Cl.**.... **A44b 9/00,** A61f 13/00, A61f 15/00

[58] **Field of Search**..... 24/87 TB, 85 B, 255 A; 206/339; 128/170, 171

[56] **References Cited**

UNITED STATES PATENTS

1,465,717	8/1923	Mercer	24/87 TB
1,691,810	11/1928	Itzerott	24/87 TB
3,036,572	5/1962	Castelli et al.	128/171
3,373,742	3/1968	Shears et al.	128/171

FOREIGN PATENTS OR APPLICATIONS

360,020	2/1906	France	128/170
1,058,094	2/1967	Great Britain	24/255 A

Primary Examiner—Donald A. Griffin

[57] **ABSTRACT**

A detachable bandage clasp is disclosed which is removably fastened to a fold in or the end of a bandage by means of two opposed sets of teeth contained on a set of jaws connected by a torsion spring hinge means. The jaws are centrally positioned to clasp and hold when in their closed position a portion of the bandage. The jaws are opened to release the bandage by a torsional pressure exerted on two lateral wing plates positioned on either side thereof and molded integrally thereto. This torsion on the wing plates causes flexure of the plastic jaw hinge. The jaws are closed by a release of the torsion exerted thereon.

On the distal end of each lateral wing plate there is at least one tine which engages an underlying layer of wrapped bandage when the clasp is in use. In a preferred embodiment the tine extends out from the lateral wing plate at a right angle to the plate and bends at a right angle also so that the tip of the tine is pointing toward the centrally located jaws and hinge and the shaft of the tine is parallel to the plane of the lateral wing plate.

6 Claims, 8 Drawing Figures

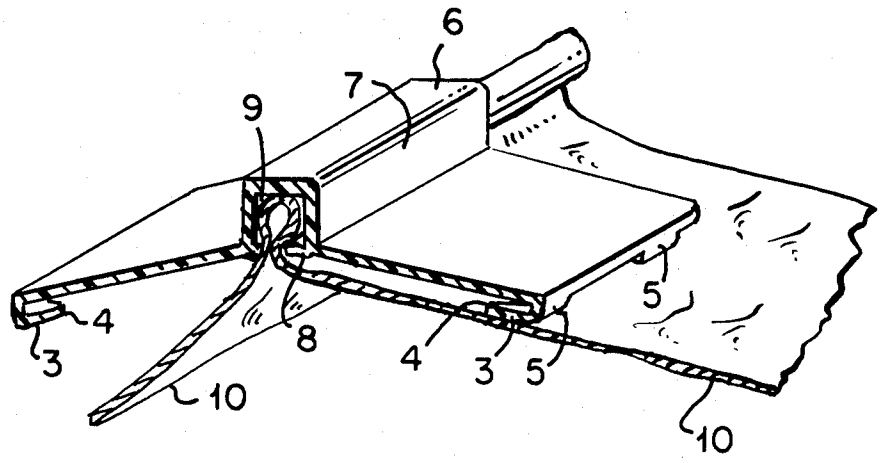


Fig. 1

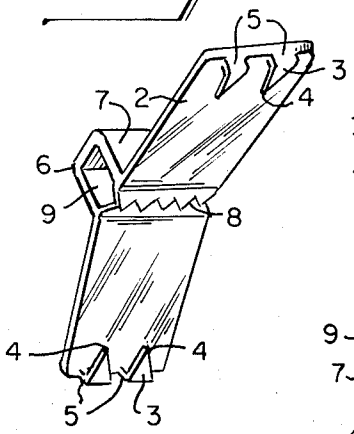
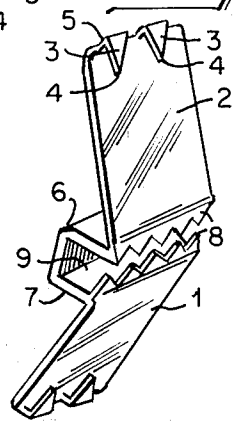


Fig. 2



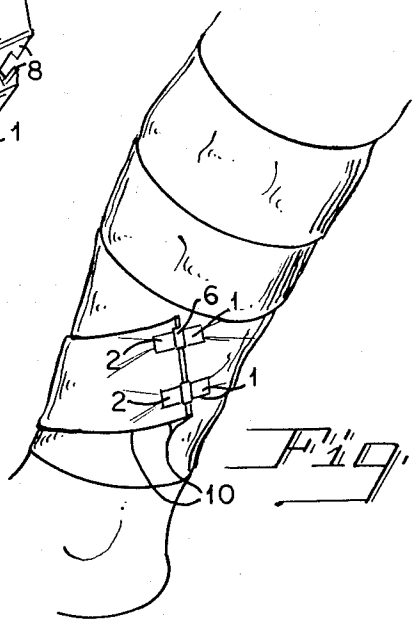


Fig. 4

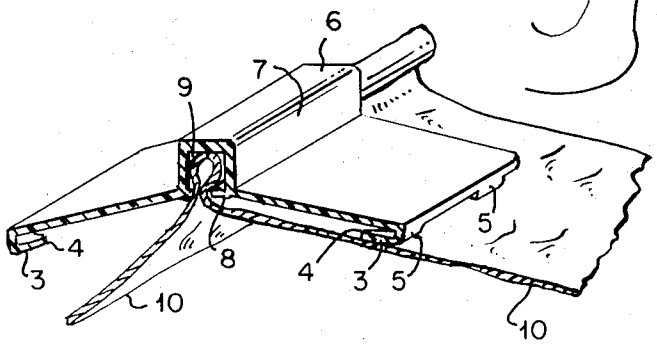


Fig. 3

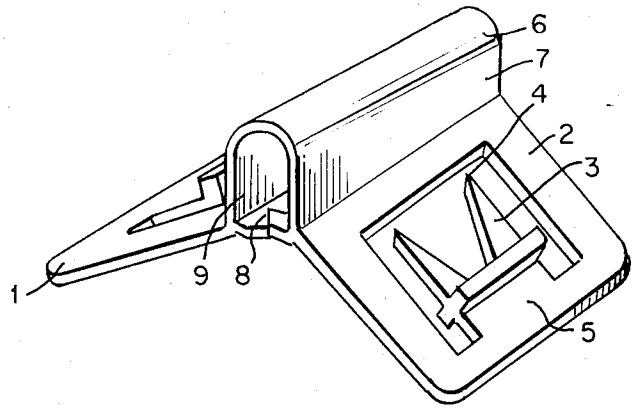


Fig. 5

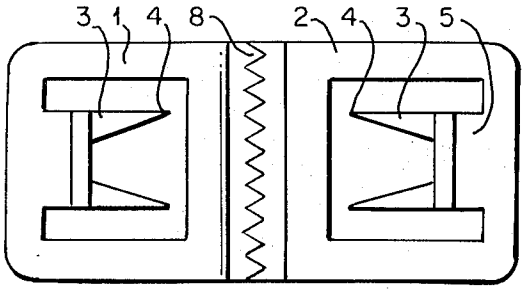


Fig. 6

Fig. 8

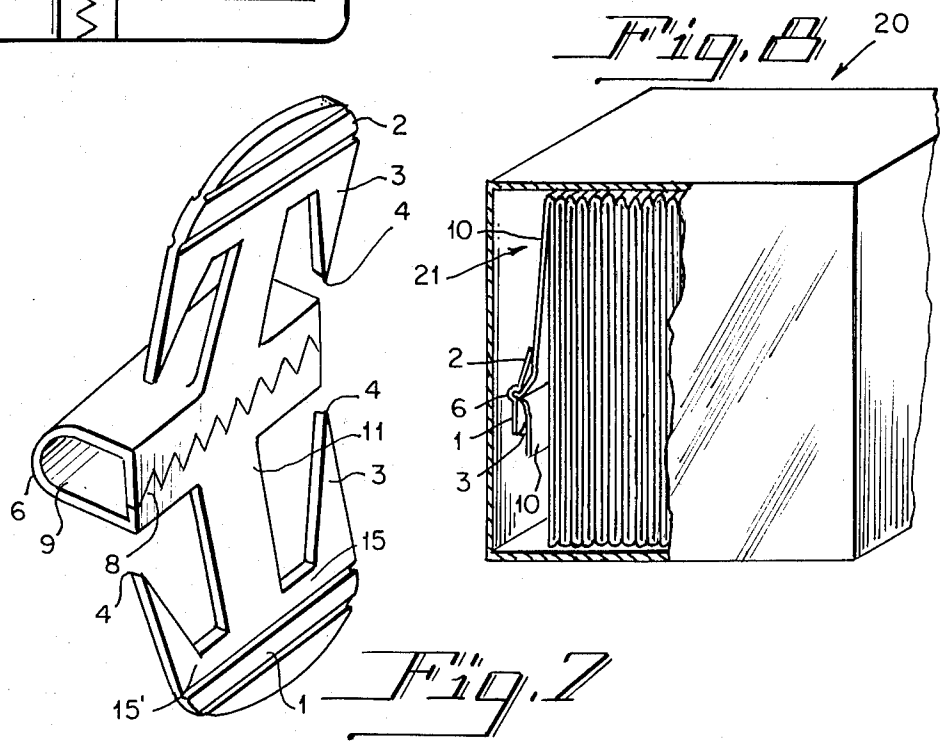


Fig. 7

DETACHABLE BANDAGE CLASP

OBJECTS OF THE INVENTION

It is a prime object of the invention to provide a clasp which has the advantage of being operable on any segment of the bandage no matter in which direction the bandage is wrapped. When the bandage is to be laundered the jaw of the clasp can be opened by hand pressure and the clasp removed easily and quickly and later replaced to form a firm semi permanent attachment to the bandage. In an alternative embodiment the clasp may have its tine tucked into a single plane in the lateral wings and flexurally moved out of the plane for attachment to underlying layers of wrapped bandage.

BACKGROUND OF THE INVENTION

For some time it has been a problem with bandage clasps to create a means of fastening the bandage which is independent of the direction of wrap and has a reasonably permanent or semi permanent attachment so that it does not become lost and can easily be applied.

An early effort at a solution to this problem is illustrated by U.S. Pat. No. 3,036,572 to Castelli where a metal clip is fused on to the end of the bandage which clip has a pivotal action and can hence be moved to engage the underlying layer of wrapped bandage irrespective of the direction of wrap of the same. This bandage fastener assembly however has several serious drawbacks which detract from its utility. First of all the metal fastener once attached to the end of the bandage cannot be removed at any time. Therefore the sharp metal prongs of the device can cut and tear other garments when the bandage is laundered in the home or the hospital. Second since the metal fastener cannot be removed once installed during manufacture of the bandage roll it is not possible to shorten the bandage and install such a clip or to interchange clips or fasteners which may have been lost.

A more recent attempt resulted in the Shear et al. U.S. Pat. No. 3,373742, granted in 1968. In this patent the tines or prongs of the fastener are kept in one plane and hence do less damage in the laundry than the angular tines of the Caselli patent. But here again we have a permanently attached fastener which once it is heat sealed to a plastic pellicle on the end of the bandage it is no longer capable of removal if the bandage is shortened or a replacement is needed.

It therefore remained for the present applicant to design a bandage clasp which is quickly and easily attachable to any fold or end of a bandage and removable by finger pressure when it is desired to launder the same or shorten the bandage. The bandage of the present invention therefore offers a complete solution to the problems of the prior art by means of a unique structural adaptation.

BRIEF STATEMENT OF THE INVENTION

Accordingly the present invention comprises a new bandage fastener or clasp which comprises a structural frame capable of flexure preferably composed of a resilient plastic of durable nature. This frame consists of a set of centrally positioned opposed jaws which are opened and closed by a tension spring hinge interposed therebetween, the said frame having a right and left lateral wing plate. Each wing plate is attached proximally to said tension spring hinge and jaws and each wing plate has positioned distally a securing means adapted to secure said clasp to an underlying layer of wrapped bandage. The opposed jaws when opened and subsequently closed by torsional pressure on the wing plates are adapted to clasp a fold of the bandage in the teeth of the jaws and hold the bandage therein firmly until released by a second torsional pressure on the wing plates attached thereto.

The lateral wing plates can have various types of securing means such as tines or prongs so structured as to avoid cutting or tearing any other fabrics during laundry operations. One such securing means is a tine which extends out at a right angle to the lateral wing plate and bends at a second right angle with its tip pointing in the direction of the clasping jaws.

The bandage clasp of the present invention can be further illustrated by reference to FIGS. **1** through **7** of the drawing.

FIG. **1** is a perspective view of the clasp with the jaws closed as it is manufactured.

FIG. **2** is a perspective view of the clasp with the jaws opened ready for insertion of the fold of the bandage.

FIG. **3** illustrates a perspective view of the clasp attached to a bandage.

FIG. **4** shows the clasp holding a bandage against a leg.

FIG. **5** is a perspective view of a second embodiment of the invention wherein the tines are in the same plane as the lateral wing plates.

FIG. **6** is a bottom plan view of the embodiment of FIG. **5** wherein the jaws are closed.

FIG. **7** shows still a second embodiment where in perspective view a set of lateral wing plates are equipped with two tines having a central support bar.

FIG. **8** is a perspective of a bandage assembly.

The alternate forms of the device are practical because it does not require a great deal of torsion to open the jaws and hence the lateral wing plates need not be solid. The teeth on the jaws hold the bandage firmly. The clasp when assembled on a bandage end is normally packed in an accordian pleat inside a cardboard box of rectangular shape with one end of the bandage protruding from the box. This makes for ready use and is of value in conservation of shelf space in the drugstore. A slight tension is created on the pull of the bandage from the box by the plastic ring which restricts slightly the slot through which the free end of the bandage protrudes. The clasp is located on or near the end of the bandage remaining in the cardboard container.

Referring now to the several Figures of the drawing the detachable clasp shown comprises a frame preferably molded of a suitable plastic material, having a left lateral wing plate **1** and a right lateral wing plate **2.** Interposed between these two lateral wing plates and connecting the two is a set of jaws **7** and **9** which are opened and closed by a torsion spring hinge **6.** These jaws each have a set of teeth **8** which firmly clasp a fold or end of a bandage when actuated. On each lateral wing plate there is positioned at least one tine **3** preferably at or near the end of the said wing plate. This tine has a support bar **5** which attaches it to the lateral wing plate **1** or **2.** This support bar extends at a right angle to the plane of the lateral wing plate for a short distance then makes a right angle turn to become the shaft of the tine **3** which has on its end a tip **4.** Both the shaft and the tip of the tine point toward the jaws which are centrally located in the frame. The shaft end and the tip **8**

of the tine are thus in a parallel plane with the lateral wing plates and are in this manner far less apt to catch on fabric or fingers at a time when such is not desired. The bandage is inserted in a receiving channel **9** shown in both FIGS. **1** and **2.** and the jaws **3** opened by twisting or torsion on the two lateral wing plates created by pressing down on the back of the hinge **6** while holding firm on the wing plates **1** and **2.**

The result of such effort is shown in FIG. **3** where the bandage **10** is grasped within the bite of the two sets of teeth **8** while the set of tines not needed are merely rested on one segment of bandage **10** while the other tine or tines tip **4** is embedded in the underlaying substrate which is normally a layer of bandage. As shown in this illustration more than one layer of bandage can be clasped in the jaws of the fastener and at any point in the roll the clasp can be affixed by simply folding the bandage slightly and biting the fold. Also the structure of the tines permit them to be hung at any position or segment of the bandage

In FIGS. **5** and **6** of the drawing there is illustrated two views of an alternate form of the invention. In this form the jaw members **7** and **9** and spring hinge **6** and attachment teeth **5** and bandage receiving channel are all the same as in the earlier Figures but the lateral wing plates **1** and **2** have been modified to provide a set of tines having a tine support bar, tine shaft **5** and tip **4** of the tine all located in the same plane but by means of a lateral pressure exerted at the base or on the shaft of the tine it can be moved upward or downward so as to form an angle with the plane of the lateral wing plate. This is for a further means of guarantee that the tines will not interfere with other fabrics if it is desired to leave the clasp on the bandage when it is laundered.

Finally in FIG. **7** of the drawing a second alternate form of the invention is shown. In this variation the lateral wing plate is shaped so that it has two tines on the periphery and a center support plate **11** to which the tine support bar is attached. In this case lateral pressure exerted on the tine shaft **15–15'** causes the tip of one of the tines to move out of the plane of the lateral wing plate and be adapted for being embedded in adjacent bandage layers.

While the invention has been described with respect to several preferred forms thereof it must be remembered that the proper scope of the invention can only be determined by reference to the several appended claims to the concept of the invention.

In FIG. **8** of the drawing there is shown a preferred means of dispensing the bandage assembly of the invention. In this illustration the generally rectangular box **20** has a bandage folded into an accordion pleat **21** with one outer end near to a slot in the container such that it can be easily pulled out of the box or other container by a tug on the outer end. The inner end of the bandage has the jaws of the fastener clasp firmly fixed at or near the selvage so that when the bandage is pulled out of the container for wrapping the inner end of the bandage has the clasp ready for attachment to the underwrap and the bandage is secure. A prime advantage of this means of packaging and dispensing the bandage is that no danger of loss of sterility is involved if the bandage or container is dropped on the floor. In the case of a roll of bandage the same would roll along the floor and become useless in many cases. This cannot happen with the bandage-clamp assembly of the present invention because of the stabilizing influence of the box.

I claim as my invention:

1. A fastener for bandages which comprises a plastic resilient frame consisting of a centrally positioned set of jaws having interposed therebetween a tortion actuated spring hinge and a set of lateral wing plates which control the opening and closing of the said jaws when pressures are applied or released thereon, a bandage securing means positioned distally on each lateral wing plate and adapted to engage an underlying layer of wrapped bandage, said jaws capable of clasping releasably a segment of the bandage in an opposed set of teeth located thereon and holding the same until released by a second application of torsion.

2. A fastener clasp according to claim **1** wherein the bandage securing means positioned on each lateral wing plate comprises a combination of a tine support bar extending out at right angles to the plane of the lateral wing plate, a shaft of said tine extending at right angle to the support bar and a tip on said tine shaft both pointing in the direction of the said central jaws and spring hinge.

3. A fastener clasp according to claim **1** wherein the bandage securing means comprises a tine support bar extending in the same plane as the lateral wing plate, a tine shaft also in said plane and a tine tip and shaft both pointing in the direction of the said central jaws and spring hinge.

4. A fastener clasp according to claim **1** wherein the bandage securing means comprises a tine which is deflectable out of the plane of the lateral wing plate by lateral pressure exerted thereon transmitted from its tine support bar.

5. A fastener clasp according to claim **1** wherein the bandage securing means comprises a tine support bar medially located between each of two tine shafts each of said shafts having a tine tip thereon pointing in the direction of the central jaws and hinge and each tine flexurally deflectable out of the plane of its original position by pressure exerted thereon.

6. A bandage assembly comprising a strip of bandage material in predetermined length folded into an accordion pleat in a container with an outer end of the bandage adapted to be pulled out of the container through a nearby opening therein, the inner end of the bandage strip attached to the jaws of a fastener clasp of claim **1.**

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