

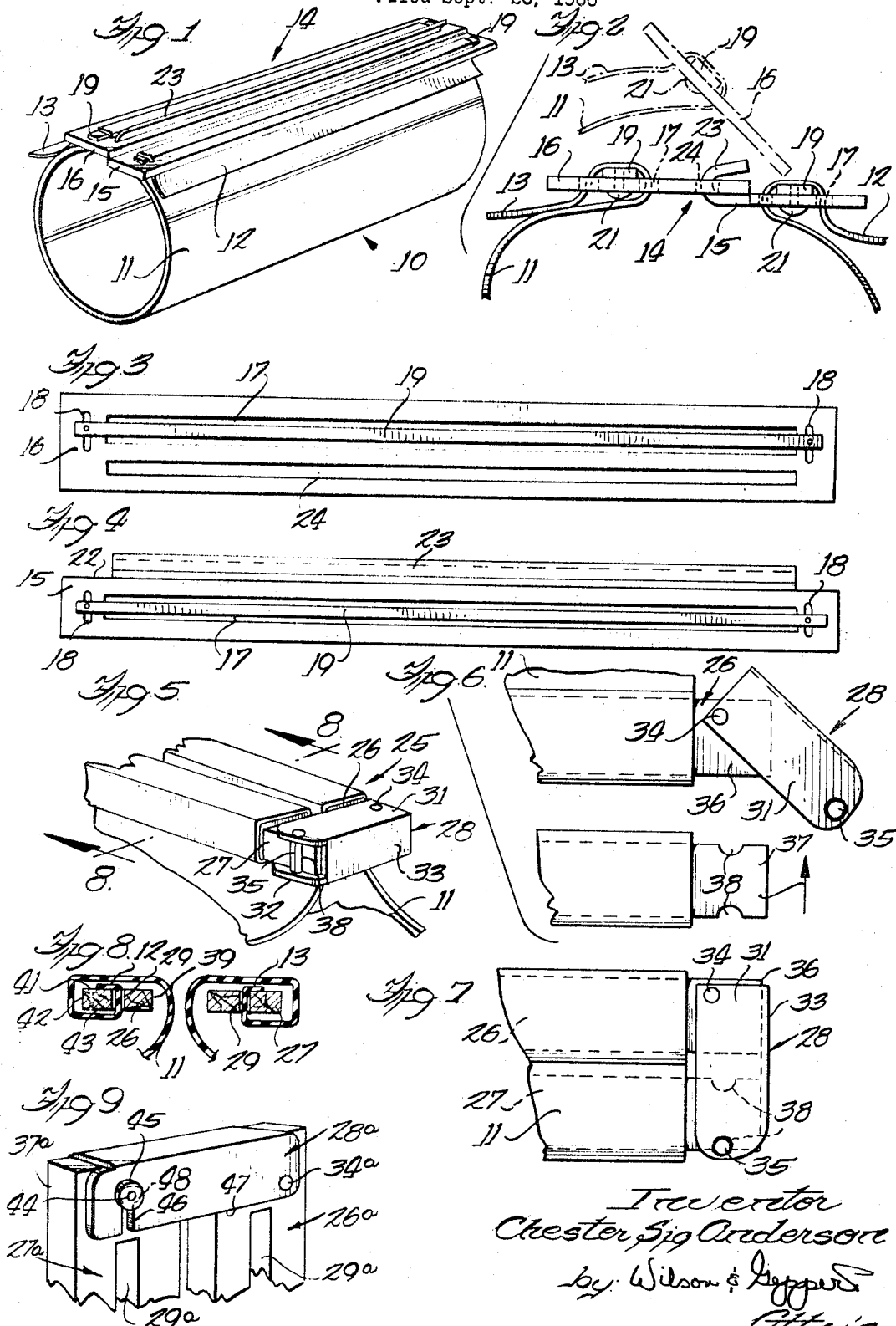
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C. S. ANDERSON

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EMERGENCY HEMOSTATIC PATCH BANDAGE

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Inventor
Chester Sig Anderson
by Wilson & Lepp
Attys

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EMERGENCY HEMOSTATIC PATCH BANDAGE

Chester Sig Anderson, 2 North Ave.,

St. Charles, Ill. 60174

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9 Claims

ABSTRACT OF THE DISCLOSURE

An emergency patch bandage to be applied to a wound or gash to inhibit the flow and prevent leakage of blood from the wound without restricting the blood supply in either direction in the injured member, the bandage comprising a relatively wide and elongated elastic impervious band of material having one component of a buckle assembly adjacent each end of the band. The buckle assembly includes means to adjust the length of the elastic band depending on the part of the body to which it is applied and separate means to couple the two parts of the buckle assembly together.

This application is a continuation-in-part of my pending application Ser. No. 459,757, filed May 28, 1965 and now abandoned.

The present invention relates to an emergency patch bandage and more particularly to an elastic bandage acting as a waterproof patch or gasket to prevent leakage of blood from a gash or wound but not restricting the blood supply in either direction.

The utilization of a resilient rubber or equivalent elastic band as a tourniquet on an arm or leg to stem the flow of blood from a ruptured blood vessel is well known, but the use of a tourniquet can be highly critical as the blood circulation should not be halted for an extended period of time or there is a possibility of gangrene affecting the limb or part in question. The present invention is not be utilized as a tourniquet but is a pressure bandage to prevent bleeding from a wound without impairing the general circulation of blood thereat in the body.

As is well known, the blood pressure changes with every heart beat. Upon contraction, the heart sends blood into the arteries with the pressure rising in most adults to approximately 120 millimeters of mercury, and when the heart relaxes, the pressure falls to a normal average of approximately 80 millimeters of mercury. This means that the pressure bandage of the present invention should apply a pressure slightly in excess of 120 millimeters of mercury thus stopping bleeding from a wound but allowing the deep veins to still function.

An important object of the present invention is the provision of an elastic or rubber bandage acting as a waterproof patch covering and holding back the bleeding from a damaged, leaking, open or torn gash in any part of the body. This patch acts as a gasket to prevent leakage of blood externally but allowing normal blood circulation and supply in either direction in the area of the wound. This type of patch is believed to be ideal for sucking chest wounds as a temporary patch until professional or hospital repair can be made.

Another important object of the present invention is the provision of an elastic patch bandage which is formed of a relatively wide, thin, stretchable rubber or rubberized leakproof or impervious material that is of any suitable length. The band is provided with a novel buckle or clasp for connecting the ends of the material, which buckle may be adjusted on the elastic band to provide the requisite pressure when the ends are connected to-

gether by the buckle to hold the bandage tightly over the wound on any part of the body.

A further object of the present invention is the provision of a novel two-part connecting means in the form of a buckle, one part of which is secured to or adjacent each end of the elastic band. The buckle has two simple elongated parts, preferably stamped out of rustproof steel or suitable metal with an elongated longitudinal slot found in each part and a center bar reciprocally mounted on each member which overlies the longitudinal slot and moves to a tightened position when engaging the elastic band. The ends of the band are threaded through the buckle members and around the reciprocable bar so that when the top parts of the buckle are connected, the tightening action of the bar when the band is applied to the body will hold against the elastic band and become tighter as additional strain is applied to the material of the band. The part of the buckle includes an extension to provide a bent hook and the other part has a slot accommodating the hook.

The present invention also comprehends the provision of another embodiment of connecting means for the ends of the elastic band which provides for ease of applying the band to the body and ease of coupling the connecting means together to apply tension to the band. This connecting means includes a pair of normally parallel oriented wooden bars with metal connecting members at each end. Each bar has a central elongated slot there-through to receive the end of the elastic band; adjustment of tension and length of the band being accomplished by rotation of either bar to roll the band thereon. The tension on the elastic band causes the parallel bars to tightly engage the metal connecting members.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

In the drawing:

FIGURE 1 is a perspective view of the elastic pressure bandage and buckle shown in operative position to surround an arm or leg or other part of the body.

FIG. 2 is an end elevational view of the buckle of FIG. 1 with a fragmentary showing of the band.

FIG. 3 is a top plan view of one member of the buckle assembly of FIG. 2 having a connecting slot.

FIG. 4 is a top plan view of the other buckle member having a hook thereon.

FIG. 5 is a fragmentary perspective view of the elastic pressure bandage utilizing a second embodiment of connecting assembly.

FIG. 6 is a fragmentary top plan view of the elastic band and connecting assembly with the end member in disconnected position.

FIG. 7 is a fragmentary top plan view similar to FIG. 6 but showing the end member in connected position.

FIG. 8 is a cross sectional view taken through the connecting assembly on line 8—8 of FIG. 5.

FIG. 9 is a fragmentary perspective view of another embodiment of connecting assembly to be utilized with the elastic band.

Referring more particularly to the disclosure in the drawing wherein is disclosed illustrative embodiments of the present invention, FIGS. 1 to 4 disclose an elastic pressure bandage 10 which would be applied to a gash or wound on an arm or leg or other portion of the human body. The bandage 10 consists of a wide band 11 of an elastic material, such as rubber or a rubberized fabric, which is leakproof and preferably at least seven inches wide. The ends 12 and 13 are secured to a buckle assembly 14 so that the band may be passed around the body or any portion thereof with the buckle assembly

14 holding and retaining the band 11 on the body under tension to cover a gash or wound that is bleeding to stop the external flow of blood.

The buckle assembly 14 includes a pair of elongated members 15 and 16 which may be stamped out of rust-proof steel or other suitable material; each member having a longitudinally extending central opening or slot 17 of a length to receive the wide band 12. A transverse narrow slot 18 is positioned adjacent each end of the slot 17 and is of a length equal to or slightly greater than the width of slot 17. A movable cross bar 19 is positioned on each member for reciprocation by a rivet 21 extending upward through each slot 18 and secured to the end of the cross bar 19. Thus, reciprocation of the cross bar 19 is limited by the length of slots 18.

The member 15 is provided with extra stock on one longitudinal edge 22 of the member which is bent to form a hook 23 along a substantial portion of the edge 22. Also, the member 16 is provided with extra stock along one side of the slot 17 to allow for a second elongated slot 24 parallel to the slot 17 and receiving the bent hook 23 of the member 15 to releasably retain the two members together.

In use, the end 12 of the band 11 is threaded up through the slot 17 of member 15 between the hook 23 and the cross bar 19, over and around the cross bar and down through the slot 17 at the other side of the cross bar 19 to extend under the member 15 and lay on top of the band 12 (see FIGS. 1 and 2). Likewise, the opposite end 13 extends up through the slot 17 in member 16 between one side of the cross bar 19 and the slot 24, over and around the cross bar and down through slot 17 at the other side of the cross bar 19 and under the member 16 to lay on top of the band 12.

The length of the band 11 can be easily adjusted by pulling the ends 12 and 13 further through the members 15 and 16, respectively, and when the band is applied to cover a wound, the rubber or rubberized fabric is stretched to apply pressure to alleviate the external flow of blood with the hook 23 of member 15 engaging the slot 24 of member 16. The tension in the band 11 draws the cross bars 19 outwardly to securely clamp the ends 12 and 13 within the buckle assembly 14 and retain the band 11 with the requisite tension therein.

FIGS. 5 through 9 illustrate a second embodiment of the present invention utilizing another form of buckle assembly 25 on the elastic band 11 having opposite ends 12 and 13. This form of buckle assembly includes a pair of parallel elongated members 26 and 27 which are joined together at their opposite ends by generally U-shaped connecting members 28. Each elongated member 26 and 27 has a central longitudinally extending slot 29 therein to receive the end 12 or 13 of the elastic band 11.

Each connecting member 28 has parallel top and bottom walls 31, 32 and a connecting end wall 33. Adjacent one end of each connecting member, a first or pivot rivet 34 extends through and between the top and bottom walls 31, 32 and is secured therein. Adjacent the opposite end of each member 28, and nearer the end wall 33 than rivet 34, is a second or connecting rivet 35 extending through and between the top and bottom walls 31, 32 and secured thereto.

The pivot rivet 34 extends through an opening in the end 36 of the member 26, each end of member 26 having a connecting member 28 pivotally mounted thereon as shown in FIG. 6. The opposite ends 37 of member 27 have oppositely disposed grooves 38 formed in the sides thereof to receive the connecting rivet 35.

In use, the elastic band 11 is secured at its ends 12 and 13 to the buckle assembly 25 with the end 12 extending from below the member 26 up around the inside edge 39, over the top surface 41, down the outside edge 42 across the lower surface 43 to the slot 29 and up through the slot and onto the top surface 41 toward the outer edge 42 underneath the band 11 wound thereonto.

The end 13 is similarly wound and secured onto the member 27. To apply to a patient, the band is applied onto the arm, leg or other part and the connecting members 28 are pivoted to open position (see FIG. 6). The members 26 and 27 are urged together and one end 37 of member 27 is inserted into the connecting member 28 so that the rivet 36 is received in the outwardly facing groove 38, and the opposite end 37 of member 27 is drawn toward the member 26 so that the opposite connecting member 28 can be pivoted over the end 37 and the rivet 35 engage the groove 38 of this opposite end 37. The tension on the elastic band 11 draws the members or bars 26 and 27 outwardly to engage the rivets 35 of the connecting members 28, thus locking in the bar 27 making a safety hold. If the length or tension of the band requires adjustment, the band can be shortened and the tension increased by rotating the bar 27 to wind an additional layer of the band thereon. The grooves 38 are formed on both edges of bar 27 to allow for a one-half turn of the bar.

Another feature of the elastic bandage which is available with either buckle assembly 15 or 25 is that the band 11 can be secured in the buckle members on a bias where the band is to be stretched around a limb or body part of varying diameter. In the buckle assembly 25, the bars 26 and 27 can be formed of wood, plastic or metal, and the connecting members 28 are preferably formed of metal. The bars 26 and 27 extend outward relative to the connecting members 28 to avoid any substantial contact between possible sharp edges of members 28 and the patient. Also, where the patient has lost a hand or foot, this invention also includes the use of a rubber stocking or elongated sheath closed at one end to be positioned over the stump end of the limb with the elastic pressure bandage applied over the sheath.

FIG. 9 further discloses a modification of the second embodiment of buckle assembly where the bar 27^a has a rivet 44 with a head at one end and a washer 45 at the other upset end centrally positioned extending through the end 37^a of the bar. The connecting member 28^a has a slot 46 in both the top and bottom walls thereof extending outwardly from the inner edges 47 of the walls to an enlarged end 48. The slot 46 receives the rivet 44 on the bar 27^a when the members 28^a is pivoted to closed position and the enlarged end 48 retains the buckle assembly closed under the tension in the band 11. This modification is especially useful for a child-size bandage and buckle assembly.

The tension applied by the band 11 is sufficient to stop the external flow of blood from the wound, but the tension is not excessive so as to impair the general or normal circulation of blood in the affected area; such as where the band is applied to an arm or leg. Thus, the elastic band is not intended and does not function as a tourniquet to impede the blood flow but allows normal blood circulation in the body in either direction.

Having thus disclosed the invention, I claim:

1. An emergency patch bandage comprising a relatively wide elastic band formed of an impervious material adapted to encompass a portion of the body and covering a bleeding wound thereon, and a buckle assembly for joining and retaining the band under tension, said buckle assembly including a pair of elongated members for adjustably clamping the opposite ends of the band, each member having an elongated slot, a cross bar mounted on each member aligned with the slot for limited lateral reciprocation, and connecting means to join the elongated members together.

2. An emergency patch bandage as set forth in claim 1 in which said connecting means includes a bent hook on one member, and the other member having an opening to receive said hook.

3. An emergency patch bandage as set forth in claim 1, in which each member has a short lateral slot spaced from each end of said elongated slot, and a rivet extending through each lateral slot and secured to the ends of

5

the crossbar to provide for limited lateral receprication of the crossbar.

4. An emergency patch bandage as set forth in claim 1, in which each end of said elastic band is threaded through the elongated slot in one of said buckle members, over and around the crossbar and back through the slot so that tension in said band draws the crossbars outwardly in the buckle assembly to clamp the ends of the band in adjusted position.

5. An emergency patch bandage comprising a relatively wide elastic band formed of an impervious material adapted to encompass a portion of the body and covering a bleeding wound thereon, and a buckle assembly for joining and retaining the ends of the elastic band and retaining the band under tension, said buckle assembly including a pair of elongated members for adjustably clamping the opposite ends of the band, each member having a generally central elongated slot therein to receive an end of the elastic band, the band being wound around each elongated member so as to be in between the elongated member and the body, and connecting means to joint the elongated members together including at least one generally U-shaped member receiving a pair of adjacent ends of the elongated members and pivotally supported on the end of one of said members to retain the members together.

6. An emergency patch bandage as set forth in claim 5, in which said generally U-shaped member includes a rivet extending through the end of the U-shaped member opposite the pivotal mounting, said other elongated member having grooves in the edges at the ends thereof cooperating with said rivet to join the buckle assembly together.

7. An emergency patch bandage as set forth in claim 6, in which the tension in the elastic band urges the elongated members outward so that the grooves in said other elongated member positively engage the rivets in said U-shaped members.

6

8. An emergency patch bandage as set forth in claim 5, in which said connecting means includes a generally U-shaped member at each end of said buckle assembly receiving the ends of said elongated members, each U-shaped member pivotally mounted on an end of one of the elongated members, a pair of aligned slots in the U-shaped members adjacent the end of each U-shaped member opposite the pivotal mounting, and a rivet having enlarged opposite ends extending through the other elongated member adjacent the ends thereof to be received in the slots in the U-shaped members.

9. An emergency patch bandage as set forth in claim 8, in which said aligned slots in each U-shaped member extend outwardly from the inner edges thereof and terminate in enlarged ends adapted to retain the rivets under the tension exerted by the elastic band.

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L. W. TRAPP, *Primary Examiner*.

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