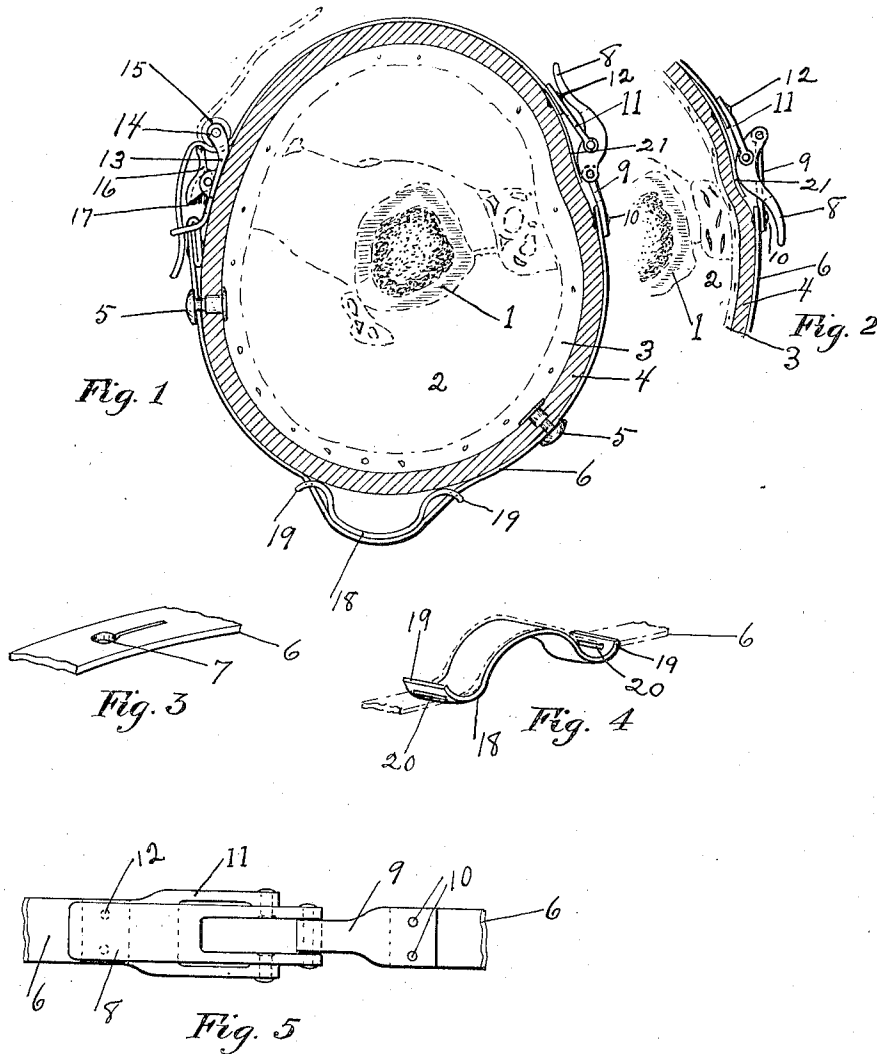


W. W. ROBINSON.  
TOURNIQUET.  
APPLICATION FILED SEPT. 12, 1917.

1,317,319.

Patented Sept. 30, 1919.



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## TOURNIQUET.

1,317,319.

Specification of Letters Patent. Patented Sept. 30, 1919.

Application filed September 12, 1917. Serial No. 190,874.

*To all whom it may concern:*

Be it known that I, WALLACE W. ROBINSON, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Tourniquets, of which the following is a specification.

This invention relates to improvements in tourniquets. It is specially designed for use in connection with soldiers' uniforms. Its objects is to provide available means which can be instantly and conveniently applied to stop hemorrhage when the arm or leg is injured. It consists of a flexible band adapted to be applied to the sleeve or leg of the garment and means for tightening it around the arm or leg to compress the arteries and veins and stop the hemorrhage. It is also designed to leave a portion of the arm or leg outside the arteries without compression. It is also designed to provide a specially efficient device operable by one hand for tightening the band without causing the flesh to move around the bone in the tightening which is a natural result where the tightening is caused by drawing the end of the band through the buckle. My device may consist simply of a circular flexible band with a tightening, locking and releasing lever.

In the drawings I have illustrated a convenient embodiment of my invention, but it may be embodied in various other forms and still be within the spirit and scope of my invention.

In said drawings Figure 1 is a sectional view of an arm and sleeve with my device applied, the figure showing an edge view of the device in position but not tightened; Fig. 2 is a portion of Fig. 1 showing the device in tightened position; Fig. 3 is a detail of a portion of the band, showing a buttonhole to receive a stud or button on the garment; Fig. 4 is a detail view of the bridge, and Fig. 5 is a detail plan view of the tightening device.

The same reference characters indicate like parts in the several figures.

In said drawings 1 represents the bone, 2 the muscles and 3 the skin and subcutaneous tissue of the arm. Inclosing the arm is a sleeve 4. Secured to the sleeve at one or more points are studs or buttons 5 by means of which the tourniquet can be secured to and held in proper operative po-

sition on the garment. This may be permanently or removably secured and I have shown one means for removably securing the device to the garment which consists in providing the band 6 with a button hole 7 to admit the button. The band is provided with a tightening lever 8 pivotally attached to a link 9 attached to the band at any desired point in any convenient manner, as by a rivet 10. The lever is also connected to a link 11 which is also connected to the band at a suitable point and in any convenient manner, as by a rivet 12. The pivot points at which the lever is connected with the links are such that when moved outwardly it draws the links and band together and causes the band to shorten and thereby compress the flesh, arteries and veins without rolling the soft parts about the bone.

If desired the band may be in the form of a strap as shown, one end being provided with a buckle 13 and the other end adapted to engage the buckle in any convenient manner. As shown the free end of the band passes through a loop 14 in the buckle and around an antifriction roll 15. The buckle is provided with an automatically locking tongue 16 held yieldingly closed by a spring 17. However, it is not intended that the band be limited to a strap and buckle. At some point the band passes over a bridge 18 which is preferably a flat strip of rigid material having its ends 19 turned upwardly and provided with slits 20 through which the band passes. It is noted that the area of the arm between the ends of the bridge will not be compressed and at this point the circulation of the blood and lymph through the veins and lymphatics will not be stopped. It is evident that this bridge should be located away from the main arteries. The construction of the bridge may be varied and still be within the spirit and scope of my invention. Located below the bearing end of the tightening lever is a device 21 to serve as a bearing for the end of the lever when it is turned to tighten the band, and thus prevent rolling up or pinching of the flesh under the tightening operation. The location of the bridge and the lever tightening device may be at any point in the band which experience may prove to be best suited to accomplish the desired result and to cause the least inconvenience to the wearer.

The operation of my device is simple and readily understood and it can be operated

by the injured person, himself, or by any person who may be at hand. It does not require a skilled attendant. It may be removably secured to the garment and be  
 5 always ready or it may be removed and carried in the pocket or other convenient place and quickly placed in position when needed. When the band is in position on the arm or  
 10 leg it is only necessary to take hold of the end of the lever and move it outwardly which shortens the band and compresses the flesh, veins and arteries. This is true in all cases, but when the tourniquet is made as shown the free end is first passed through  
 15 the buckle and then drawn reasonably tight and the tightening is then completed by operation of tightening the lever as before described. This device may be quickly released temporarily to allow a slight bleeding to  
 20 prevent gangrene and then reset.

I claim:

1. In a tourniquet, a flexible band having free ends and including two links attached to the band at points spaced apart and from  
 25 the ends thereof and a tightening lever pivotally attached to each of said links, whereby the outward turning of the lever shortens the band, and means for adjustably uniting said free ends.

30 2. In a tourniquet, a flexible band and a tightening lever pivotally connected to the band at two points somewhat spaced apart, whereby the turning of the lever shortens

the band, and means for positively attaching the band to the garment.

3. In a tourniquet, a flexible band and a tightening lever pivotally connected to the band at two points somewhat spaced apart, whereby the turning of the lever shortens the band, and means for positively attaching  
 40 the band temporarily to the garment.

4. In a tourniquet, a flexible band, means for tightening it and means for rendering it, when in use, inoperative over a given area.

5. In a tourniquet, a flexible band, means for tightening it and a relief arch for rendering it, when in use, inoperative over a given area.

6. In a tourniquet, a flexible band, means for tightening the band and means independent of the tightening means for rendering it, when in use, inoperative over a given area.

7. In a tourniquet, a flexible band having free ends comprising a strap and buckle, an  
 55 independent tightening device including a lever pivotally attached at two points to the band adapted to be used after the band is in position and buckled, and means located adjacent the bearing end of the lever for preventing said bearing end from rolling up  
 60 and pinching the flesh while the tourniquet is being tightened.

In testimony whereof I affix my signature.

WALLACE W. ROBINSON

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."