

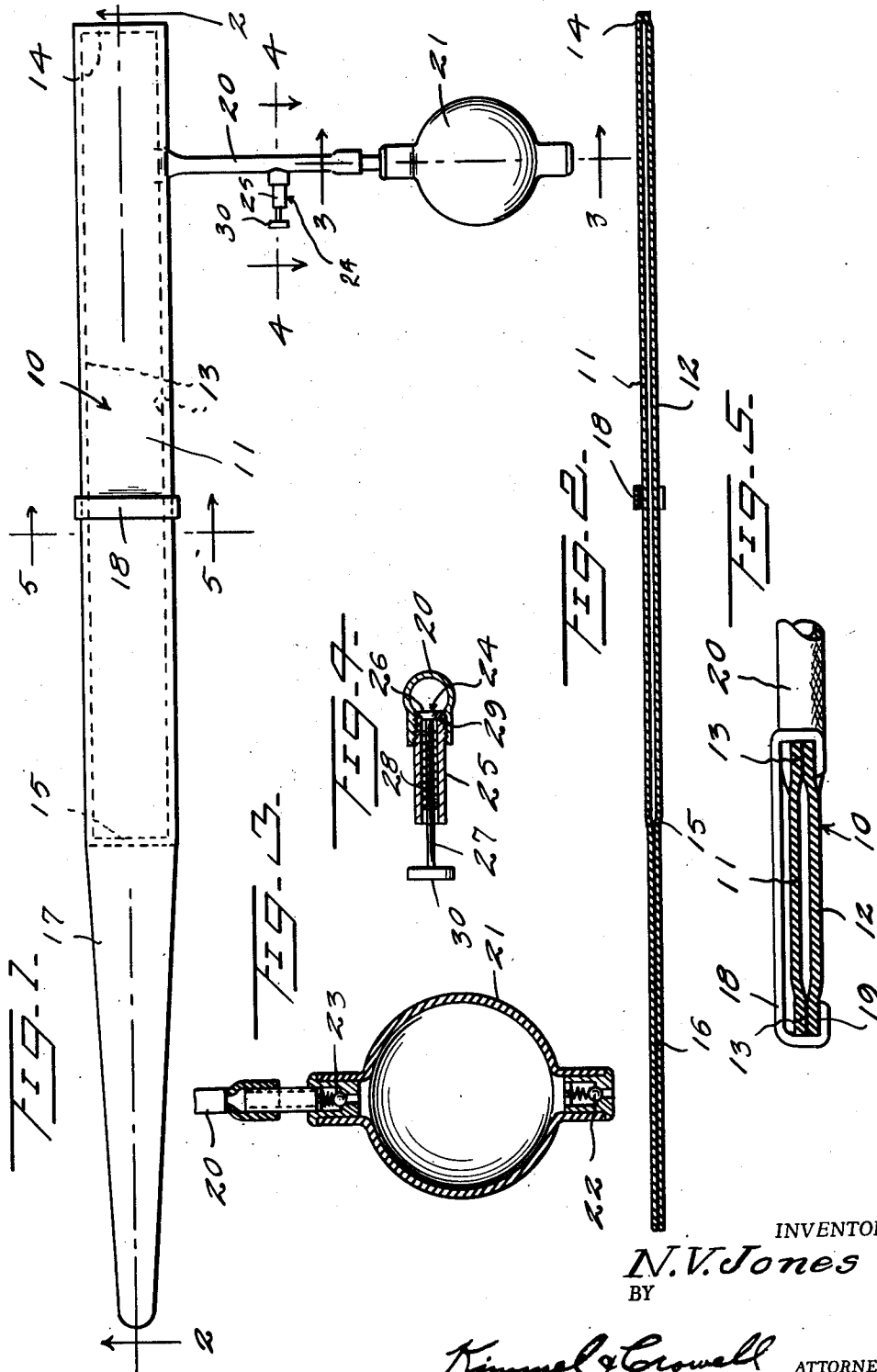
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TOURNIQUET

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TOURNIQUET

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This invention relates to surgical appliances and more particularly to a tourniquet.

In the application of a tourniquet on a limb so as to effect the extending of veins for application of serum or other medicine into the veins, the tourniquets at present available and in use are so constructed that when pressure has been released, the release of pressure is effected quickly so that a needle which is projecting into a vein frequently jumps out, thereby requiring the re-application of the pressure by the tourniquet. It is an object of this invention to provide a tourniquet embodying an inflatable band adapted to be applied to an arm or limb, which is so constructed that pressure may be gradually released, thereby eliminating the possibility of the muscular reaction due to sudden release of pressure and also eliminate the possibility of the needle being forced out under muscular reaction.

Another object of this invention is to provide a tourniquet of this kind, including an improved means for holding the band on the arm or limb.

A further object of this invention is to provide a tourniquet of this kind, including an inflatable band formed of a pair of face abutting resilient strips which are secured together at their outer edges for a major portion of the length thereof, so as to thereby provide a relatively long inflatable tube designed to apply equal pressure completely about a limb or arm.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawing and specification, and then more particularly pointed out in the appended claims.

In the drawing,

Figure 1 is a plan view of a tourniquet constructed according to an embodiment of this invention,

Figure 2 is a longitudinal section taken on the line 2—2 of Figure 1,

Figure 3 is a sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a sectional view taken on the line 4—4 of Figure 1,

Figure 5 is a sectional view taken on the line 5—5 of Figure 1.

Referring to the drawing, the numeral 10 designates generally an inflatable band which is formed of a pair of face abutting resilient or rubber strips 11 and 12. The strips 11 and 12 are secured together along their longitudinal edges, as indicated at 13, and are secured to-

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gether at one end, as indicated at 14. The strips 11 and 12 are also secured together at a point inwardly from an end thereof, as indicated at 15, and the remainder of the strips 11 and 12 are secured together, as indicated at 16.

The two strips 11 and 12 at the point where they are secured together in face abutting relation, as indicated at 16, are formed into an elongated tapering tongue 17. A loop or narrow strap 18 is secured to the band 10 at a point between the ends thereof and within the inflatable area, being extended about the lengthwise edges of the strips 11 and 12, as shown in Figure 5, and then secured to the lower strip 12, as indicated at 19. By extending the strap 18 about the lengthwise edges of the band 10 when the tongue 17 is threaded through the strap 18, any strain applied to the strap 18 will not be applied directly to the securing means 19.

The securing means for holding the strips 11 and 12 together and the strap 18 onto the band 10 may be cementitious material or may be electronic sealing and securing means. It will, of course, be understood that the band 10 may be formed of any suitable flexible material, either rubber, plastic or air impervious fabric.

In order to provide a means whereby the band 10 may be inflated and deflated, I have provided a tube 20 which communicates with the space between the two strips 11 and 12. The tube 20 extends at right angles to the length of the band 10 and has connected therewith an inflating bulb 21. The bulb 21 includes a pair of spring-pressed check valves 22 and 23 so that air may readily be pumped into the band 10.

In order to provide a means whereby the band 10 may be either gradually or quickly deflated, I have provided a spring-pressed deflating valve 24 which includes a housing 25 and a valve plug 26 carried by an elongated stem 27. A spring 28 constantly urges the plug 26 outward to engage the valve seat 29 which is formed on the inner end of the housing 25. A knob or button 30 is fixed to the outer end of the stem 27 and is adapted to be pressed inwardly to provide for movement of the valve plug 26 to open position.

In the use and operation of this device, the band 10 is wrapped about the arm with the tongue 17 threaded through the strap 18, and the tongue 17 may then be extended underneath the band 10 after passing through the strap 18. The bulb 21 is then operated to inflate the band 10 in order to provide the desired pressure on the arm. After the operation has been performed on the arm, such as extending a needle into a vein, the band

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10 may be gradually deflated by pressure on the release button 30. In practice the band 10 is preferably gradually released so as to eliminate any shock to the nerves or muscles and thereby prevent a muscular reaction tending to force the needle from the arm.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

What I claim is:

1. A tourniquet comprising an elongated inflatable member formed of a pair of flat strips secured together along the edges thereof, a tube communicating at one end with the space between said strips, a resilient bulb connected to the other end of said tube and communicating therewith, a spring-pressed check valve between said bulb and said tube constantly urged to seated position towards said bulb, an air inlet opening to said bulb; a spring-pressed check valve constantly urged to seated position towards the atmosphere, and a deflating valve in said tube including a valve housing extending at right angles to said tube and formed with a valve seat on the inner end thereof, a valve stem loosely slidable in said housing and having one end extending outwardly thereof, a valve member on the other end of said stem engageable with said seat, an operating knob on said one end of said stem, and a coiled spring in said housing constantly urging said stem outwardly for seating said valve member whereby said operating knob may be depressed for unseating said valve member and gradually releasing the air in said inflatable member.

2. A tourniquet comprising an elongated member formed of a pair of flat strips secured together along a substantial portion of the opposite

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side edges thereof to provide an inflatable portion, the remainder of said strips being cementitiously secured together throughout the widths thereof to provide securing strap portions, a tube communicating at one end with said inflatable portion, an inflating bulb carried by the other end of said tube, a deflating valve housing communicating with said tube intermediate the length of the latter, a valve seat formed on the inner end of said housing, a valve stem loosely sliding in said housing, a valve member on the inner end of said stem engageable with said seat for sealing said tube, the outer end of said stem extending beyond the outer end of said housing and having an operating knob secured thereto, a coiled spring in said housing constantly urging said valve stem and member outwardly to seated position whereby said operating knob may be depressed for unseating said valve member to thereby gradually release air from said inflatable portion, and a transversely disposed loop forming member secured at its opposite ends to the side edges of said inflatable portion and adapted to receive said securing strap portion when said inflatable portion is engaged about the arm of a patient.

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