H. W. PLUMMER.

TOURNIQUET.

APPLICATION FILED OCT. 6, 1917.

1,281,653.

Patented Oct. 15, 1918.

Fig. 1

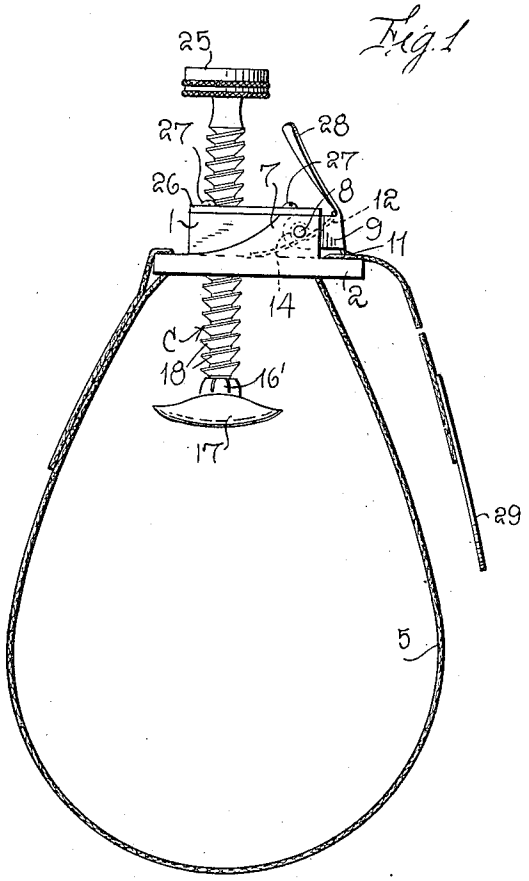


Fig. 3

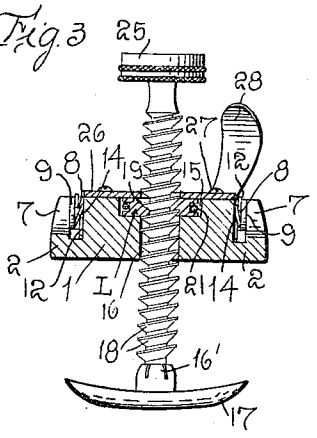


Fig. 4

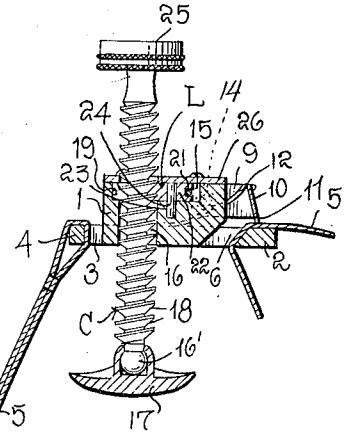
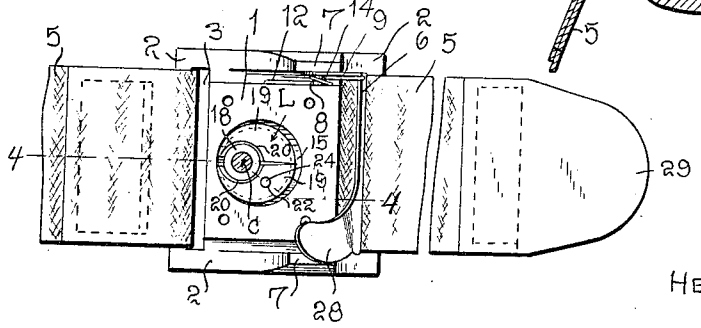


Fig. 2



Inventor

HENRY W. PLUMMER

By Wilfred C. Lawson

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY W. PLUMMER, OF AUGUSTA, MAINE.

TOURNIQUET.

1,281,653. Specification of Letters Patent. Patented Oct. 15, 1918.

Application filed October 6, 1917. Serial No. 195,031.

To all whom it may concern:

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

This invention relates to certain improvements in tourniquet or hermostatic bandages, and is an improvement over what is disclosed in my Patent No. 1,218,313, dated March 6, 1917, and it is an object of the invention to provide a novel and improved device of this general character which includes a flexible band or strip adapted to be drawn about a limb together with a compression member capable of quick adjustment against an artery so that the passage of blood through said artery is obstructed or retarded and wherein means are employed for effectively holding the flexible band or strip in applied position about a limb.

It is also an object of the invention to provide a device of this general character including a compression member capable of direct endwise thrust in one direction and which is moved endwise in an opposite direction upon axial rotation, together with novel and improved means for effectively maintaining in operative position a member for controlling the movements of the compression member.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved tourniquet wherein certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood I will now proceed to describe the same with reference to the accompanying drawings wherein:

Figure 1 is a view in elevation illustrating a tourniquet constructed in accordance with an embodiment of my invention;

Fig. 2 is a fragmentary view partly in top plan and partly in section of the device as illustrated in Fig. 1;

Fig. 3 is a fragmentary view partly in section and partly in elevation of the block and compression member as herein included; and

Fig. 4 is a sectional view taken substantially on the line 4—4 of Fig. 2.

As disclosed in the accompanying drawings 1 denotes a block preferably rectangular in form and having the marginal portion of one face thereof defined by the flanges 2. One of the side flanges 2 is provided with a slot 3 resulting in a bar 4 to which an end portion of an elongated band or strip 5 is suitably secured. The band 5 is preferably formed of textile material possessing the requisite strength. The second side flange 2 and the adjacent marginal portion of the block 1 is provided with the slot 6 inwardly inclined in cross section and through which the free end portion of the band or strip 5 is loosely directed. The side flanges 2 are provided with the upstanding lugs 7 spaced relative to the adjacent ends of the block 1 and the spaces between the lugs 7 and the block 1 are bridged by the pins 8. The pins 8 serve as pintles for the inwardly directed arms 9 carried by the opposite ends of the locking bar 10. The inner marginal portion of the bar 10 is provided with the teeth 11 which are adapted to penetrate the band or strip 5 in order to hold the same against retrograde movement and especially after said band has been caused to properly embrace a limb. The bar 10 is constantly urged toward the adjacent side flange 2 through the medium of the springs 12. As herein embodied each of said springs has one end portion resting upon the side flange 2 and its opposite portion upon the intermediate arm 9 with the intermediate portion thereof coiled as at 14 about a pin 8. The face of the block 1 remote from the flanges 2 is provided with a circular recess or pocket 15 and disposed through the block

1 and in communication with the recess or pocket 15 and eccentric thereto is the opening 16 and which opening 16 is provided with a smooth bore. Loosely disposed through the opening 16 is the endwise movable compression member C having in swivel connection with one end thereof as at 16′ the knob or head 17 adapted to be pressed firmly against the flesh to close an artery when the device is in applied position upon a limb.

The intermediate portion of the compression member C is provided with the bevel threads 18 which permit the member C to freely pass through the locking member L when it is desired to force the head or knob 17 into contact with the flesh. As herein embodied the locking member L comprises two separable sections 19 each substantially semi-circular in form. Each of the sections 19 is provided in its straight marginal portion with the recess 20. The recesses 20 of both of the sections are adapted to register and the marginal portions thereof to engage with the threads 18. The sections 19 are normally maintained in operative engagement with the threads 18 through the medium of the spring 21 which comprises a split ring formed of resilient material and which spring co-acts with the peripheries of the sections 19. One of the sections 19 is provided with an opening 22 which is adapted to register with a recess 23 formed in the bottom of the recess or pocket 15 and disposed through said opening 22 and extending within the recess 23 is the pin 24 which serves to hold the locking member L against rotary movement. It is to be noted that the co-action between the locking member L and the compression member C is such as to permit movement of the head or knob 17 away from the limb only upon requisite axial rotation being given to said member C and for which reason the outer end of said member C is provided with the operating member 25 herein disclosed as a circular head having its periphery serrated or knurled for obvious reasons.

A material advantage is afforded by the particular manner by which the member C is operated as a quick and unobstructed endwise movement may be given to the member to cause the same to impose the proper pressure upon an artery when the device is applied to a limb and the member L holds the same normally against retrograde movement. The outward movement of the member C as afforded by the axial rotation thereof assures a gradual release of the pressure upon an artery so that in the event an operation is not entirely successful the pressure upon the artery can be quickly restored without undue injurious effect upon the patient.

The outer or open face of the recess 15 is adapted to be closed by the removable plate 26 held in applied position by the screws 27 or other suitable means and it will be understood that said plate is provided with a suitable opening through which the member C is freely movable in either direction. I also find it of advantage to provide one end portion of the bar 10 with the outstanding finger piece 28 arranged on a predetermined incline relative to the bar 10. This finger piece affords a convenient means whereby the teeth 11 of the bar 10 may be readily disengaged from the band or strip 5.

It has also been found desirable to secure to the outer or free end portion of the flexible band or strip 5 the metallic plate 29 preferably of steel.

From the foregoing description, it is thought to be obvious that a tourniquet constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated and it will also be obvious that my invention is susceptible of some change and modification without materially departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. A tourniquet consisting of a block, a limb embracing compression band co-acting with the block, a compression member disposed loosely through the block, a member carried by the block and co-acting with the compression member for retarding the movement of said compression member in one direction, said block and last named member being provided with co-acting means for holding said last named member against rotary movement about the compression member independently of the block.

2. A tourniquet consisting of a block, a limb encircling compression band co-acting with the block, a compression member disposed loosely through the block and provided with beveled threads, a locking member carried by the block and including relatively movable members normally in engagement with said threads, and means co-acting with one of said sections and with the block for holding the locking member against rotary movement about the compression member independently of the block.

3. A tourniquet consisting of a block, a limb encircling compression band co-acting with the block, a compression member disposed loosely through the block and provided with beveled threads, a locking member carried by the block and including relatively movable members normally in engage-

ment with said threads, one of said relatively movable members of the locking member being provided with an opening, said block being provided with a recess adapted to register with the opening of said member, and a pin seated within said opening and recess.

In testimony whereof I affix my signature in the presence of two witnesses.

HENRY W. PLUMMER.

Witnesses:
ALFRED TOULOUSE,
JOSEPH M. CADARETTE.

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