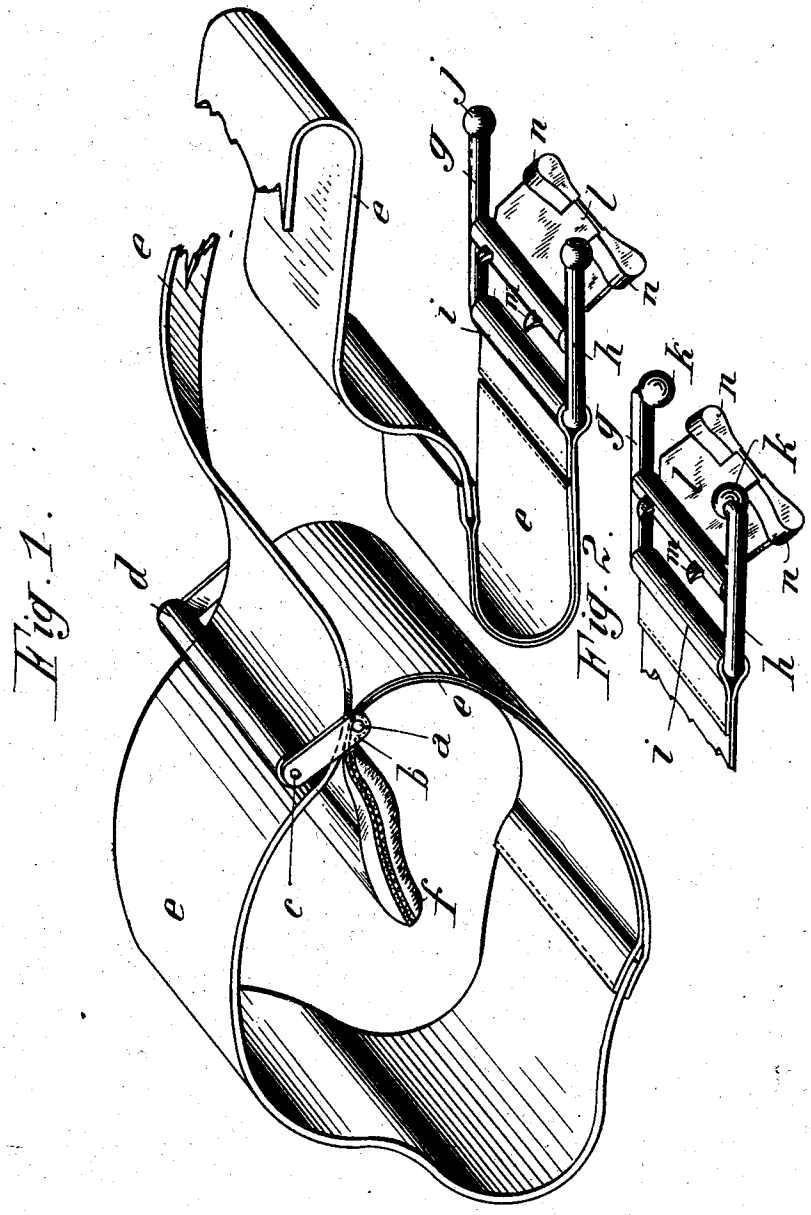
No. 721,162. PATENTED FEB. 24, 1903.

E. E. DENAIN.

HEMOSTATIC BANDAGE.

APPLICATION FILED SEPT. 10, 1902.

NO MODEL. 2 SHEETS—SHEET 1.



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APPLICATION FILED SEPT. 10, 1902.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

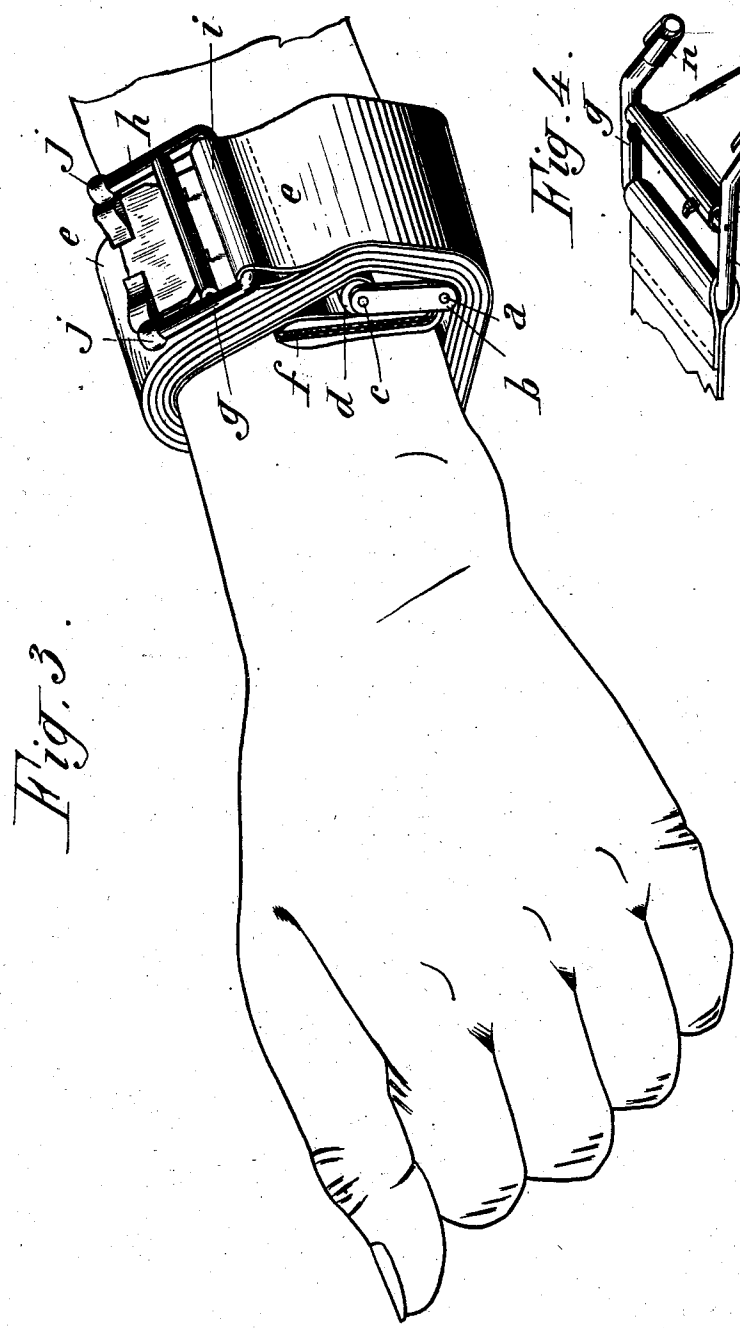


Fig. 4.

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UNITED STATES PATENT OFFICE.

EDOUARD ETIENNE DENAIN, OF PARIS, FRANCE.

HEMOSTATIC BANDAGE.

SPECIFICATION forming part of Letters Patent No. 721,162, dated February 24, 1903.

Application filed September 10, 1902. Serial No. 122,777. (No model.)

To all whom it may concern:

Be it known that I, EDOUARD ETIENNE DENAIN, a citizen of the French Republic, and a resident of Paris, France, have invented a certain new and useful Hemostatic Bandage with Instantaneous Fixing, of which the following is a specification.

The contrivances hithereto employed to stop hemorrhage by pressure are generally intended to be applied by professionals.

The object of this invention is to supply a hemostatic bandage at a moderate price and capable of being applied not only by a person without experience in the dressing of wounds, but even by the patient himself if possessed of one sound hand only.

In the accompanying drawings, furnished by way of example, one form of the invention is illustrated.

Figure 1 represents an unfolded hemostatic bandage; Fig. 2, a varied form of the buckle-frame; Fig. 3, a hemostatic bandage applied to a forearm; Fig. 4, a varied form of the buckle of the hemostatic band.

The apparatus comprises a slide of any suitable form and which, as shown in the accompanying drawings, consists of a rod *a*, the ends of which carry two cheek-pieces *b*, supporting, by means of two pins *c*, a small roller *d*, made of copper or other suitable material. A band *e*, of elastic or non-elastic textile material, is sewed onto the rod *a*, the end of the band adjoining the slide *a b c d* carrying a compressible pad *f*. The said pad is first sewed to the end of the band and the slide firmly fixed against the pad. To the other end of the band a buckle is fixed, which consists of a frame or stirrup and of the buckle itself. The buckle-frame consists of a round rod made of steel or any other strong flexible material. The two ends of this rod are bent so as to form two arms *g h* at right angles to the center part *i*, which serves for fixing the said frame to the free end of the band *e* by sewing, Fig. 1. At the end of each of the arms *g* and *h* is a small roller *j*, which rotates on the ends of the said arms. These small rollers may be dispensed with and replaced by small projections *k*, forming part with the ends of the said arms, which are bent as shown in Fig. 2. Before the buckle-frame is fixed to the band *e* the band is inserted in the slide *a b c d* in the manner shown in Fig. 1. The buckle proper is formed by a steel plate *l* of about one millimeter in thickness, with two or more teeth on one of its sides, while toward the opposite side it is made stouter, so as to form curvilinear surfaces *n n*, to which the hand is applied in order to pass the buckle from one side of the arms of the frame to the other for the purpose of fixing the band on the buckle. This part of the buckle must be carefully adjusted in the frame, as it should slide between the rollers, so that these may rebound. The plate forming the buckle is fixed to a round steel rod, the ends of which carry two pins or trunnions capable of always turning in openings formed in the lower third part of the arms of the frame. In the buckle illustrated in Fig. 4 the two rollers are replaced by two metal plates *n n'*, each bent so as to form a cylindrical surface. Each bent plate *n'* is soldered along one of its edges to the end of one of the arms of the frame *g*. The free part of each of these plates forms a spring when the curvilinear parts of the buckle are forced against the rollers. The buckle itself, as stated above, is formed of a metal plate; but the two curvilinear surfaces are formed by the ends of the said plate bent as shown in the drawings. The band being thus arranged is employed in the following manner: Supposing that the artery of the forearm has been cut or torn, the blood gushes out. There is urgent necessity for action. The band, which is always arranged in a noose, as shown in Fig. 1, is slipped onto the wounded arm, and then, the compression-pad having been placed on the spot to which it is desired to apply pressure, the band is wound around the arm, being pulled slightly at the same time. The band having been completely wound the buckle is worked in the frame, which acts as a spring, (or rebound,) and the teeth, which enter the band to the extent of one millimeter, effect an instantaneous fixing. The bandage is employed in the same way for a wound in the leg or in the foot.

The dimensions and forms of the pads, bands, slides, and buckles are of course variable. The slides may be made of metal or in any other suitable material, animal or vege-

table. The buckles may be made of steel, bronze, or any other substance possessing the requisite strength and flexibility. The pad may be flexible or otherwise. The bands may be made of any elastic or non-elastic textile material—silk, cotton, wool, &c.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a hemostatic bandage, the combination with a band, of a pad sewed to the end of the said band, a slide fixed to the said band adjacent the pad, and through which the band extends to form a noose with the pad inside, a frame attached to the free end of the band, and a plate with teeth, supported by the said frame and having spring engagement therewith, substantially as described.

2. In a hemostatic bandage, the combination with a band, of a pad attached to the end thereof, a slide fixed to the band adjacent the pad and into which the band is introduced to form a noose with the pad inside, and a buckle fixed to the free end of the band and having teeth adapted to engage the band and fasten the same, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

EDOUARD ETIENNE DENAIN.

Witnesses:

ADOLPHE STURM,

EDWARD P. MACLEAN.