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2,670,735

CLAMPING DEVICE

Filed June 18, 1951

Fig. 2.

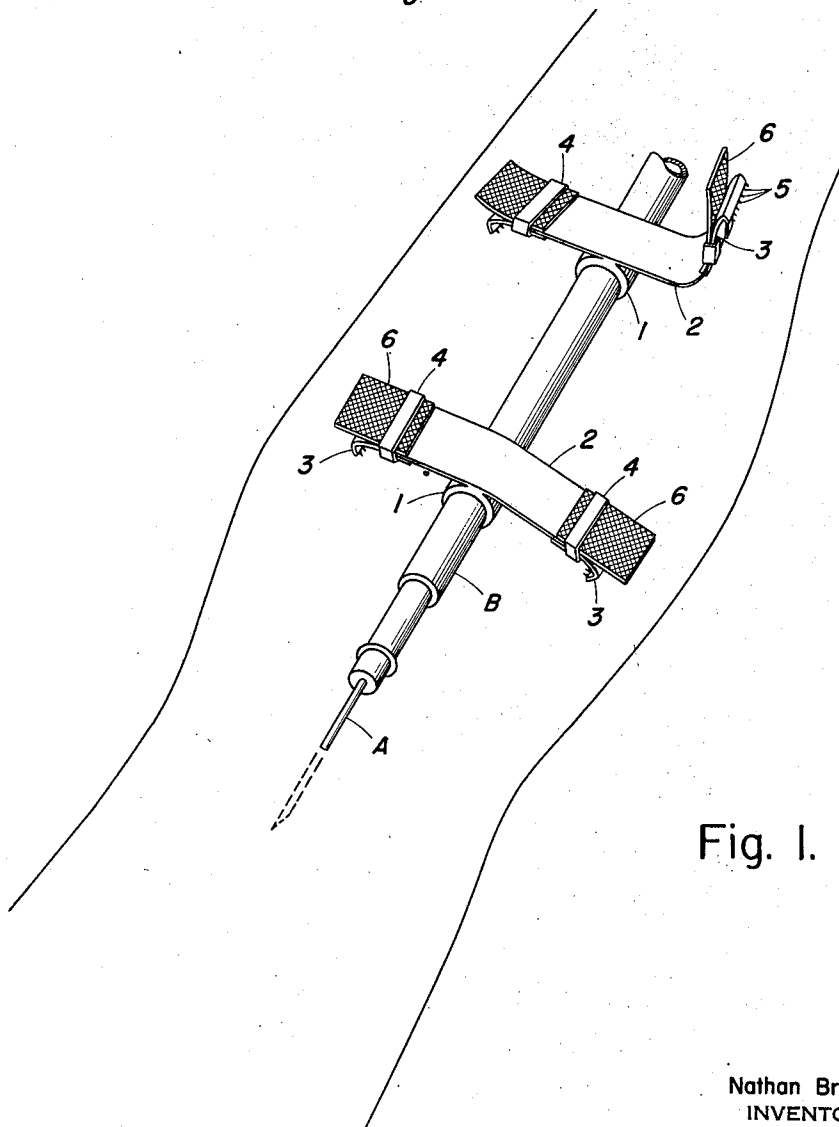
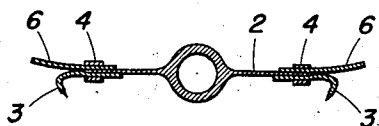


Fig. 1.

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UNITED STATES PATENT OFFICE

2,670,735

CLAMPING DEVICE

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2 Claims. (Cl. 128-214)

1 The present invention relates to an improved clamping device which is particularly adapted for use in disasters in the administration of blood plasma, etc. in the field where time is essential and where it is impractical and difficult to secure the apparatus securely to the skin.

In administering blood plasma heretofore, it has been common practice to secure the tube through which the plasma is administered at a point near the needle inserted into the vein of the patient's arm by placing strips of adhesive tape across the tube and attaching to the arm. This expedient for securing the tube to the arm suffers from the disadvantage that if the skin were not properly prepared the adhesive tape might slip off the skin, or when the tube was firmly secured to the arm it would frequently happen that the pressure of the adhesive tape, or other means employed to fasten the tube on the arm, would cause collapse of the tube. In addition, the act of attaching the tube with tape would often move the needle so that it would have to be reinserted.

It is, therefore, an object of this invention to provide a clamping device for fastening, to a patient's arm, etc., tubes through which blood plasma or similar material are to be administered; which will firmly support the tube but will not cause collapse thereof; which may be rapidly attached and rapidly removed and which will remain attached regardless of moisture, such as preparation, or oily matter such as grease on the skin, to which it is attached. Other and further objects of the invention will be disclosed as description progresses.

Reference should now be made to the drawings in which:

Figure I is a perspective view of the clamping devices of the present invention applied and ready to be applied to the patient's arm to secure thereon a tube through which blood plasma or similar material is being administered while

Figure II is a cross sectional view of a slightly modified form.

In the drawings A represents the needle inserted into the vein of the patient, and B represents a flexible rubber or rubber-like material tube through which blood plasma or similarly administered material is being applied. The attaching means of the present invention comprises a central tubular part 1 adapted to be slipped over the tube B and engage the same. The walls of the tubular part 1 are of sufficient rigidity so as not to be collapsed by the maximum pressure exertible thereon. Attached to the central tubular part 1

2 is a transverse flexible or extensible elastic member 2 which may conveniently be thin rubber or similar rubber-like material of an elastic nature. Transverse elastic member 2, and the skin gripping parts secured thereto, as more fully described below, may comprise an integral part of tubular part 1 or may be a surgical dressing of the type described in U. S. Patent 2,472,009, cemented or otherwise attached to tubular part 1. On each end of the member 2 and spaced from the central tubular part 1 there are attached skin grasping members 3 which may conveniently be of non-corrosive metal such as stainless steel. These members 3 may conveniently comprise a portion lying along and cemented or otherwise attached to the member 2, and may be further held to member 2 by a strip of metal 4 lying on top of member 2, the ends of which are bent over to engage member 3. The outer ends of members 3 are bent inwardly and terminate in a serrated edge or series of needle-like points 5 which are adapted to engage the skin of the patient. The needle-like points are of such length as to merely enter the cornified layer and not deep enough to injure the skin. At the ends of the elastic member 2 and extending beyond part 3 there may be provided small pieces of cloth tape 6, cemented or otherwise fastened to part 3 and/or 2, and preferably at a point where the tape 2 is cemented to the member 3 so that the cloth forms convenient tabs for stretching elastic member 2 in attaching the device to or removing it from the patient's arm.

While the tubular part 1 has been thus far described as a separate part which is slipped over tube B, it will be apparent that, if desired, part 1 may be cemented or otherwise permanently secured to tube B or may be an integral enlarged part of tube B, and, if desired, the walls of tube B may be sufficiently strong to resist any forces normally tending to collapse them, in which case the transverse elastic member 2 may be directly attached to and integral with tube B as shown in Figure II.

In using the clamping device of the present invention the central tubular part 1 is slipped over the tube B, advantageously the clamping device is slipped on tube A at time of manufacture before sterilization of the set, and a needle A is applied as customary in giving blood transfusions. When the needle has been inserted into the patient's arm the tube is clamped to the arm by taking hold of the tabs 6 and stretching member 2. The serrated edge or needle-points 5 or part 3 are then placed in contact with the patient's skin

3

and the tension on the tabs released so that the needle-like points engage the skin and hold tube B in position. To remove the device, the tabs 4 are pulled and lifted and readily removed. It will be apparent that the central tubular portion 1 will prevent the device from collapsing the tube B and that the device may be quickly applied and removed, but, while applied, firmly clamps the tube B to the patient's arm.

I claim:

1. The combination with a tube adapted to be secured to the skin of a patient of an elongated elastic tape arranged transversely of said tube, means for securing said tape to said tube, and skin engaging means on said tape on opposite sides of said tube near each end of said tape, said skin engaging means comprising a metal strip secured to said elastic tape and having its outer edge bent downwardly and inwardly, said edge having a plurality of skin engaging points thereon, whereby said tape with said tube secured thereto may be attached to the skin.

2. A device adapted to secure a flexible tube

4

to the skin of a patient comprising in combination an elongated elastic tape, tube engaging means on said tape intermediate of its length, and skin engaging means on said tape on opposite sides of said tube engaging means and near each end of said tape, said skin engaging means comprising a metal strip secured to said elastic tape and having its outer edge bent downwardly and inwardly, said edge having a plurality of skin engaging points thereon, whereby said tape with said tube engaging means thereon may be attached to the skin.

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