

Oct. 15, 1946.

E. R. HUBBARD

2,409,432

INTRAVENOUS NEEDLE HOLDER

Filed Feb. 5, 1945

Fig. 1.

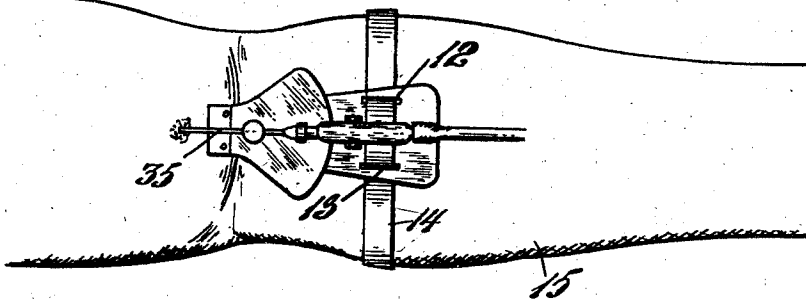


Fig. 2.

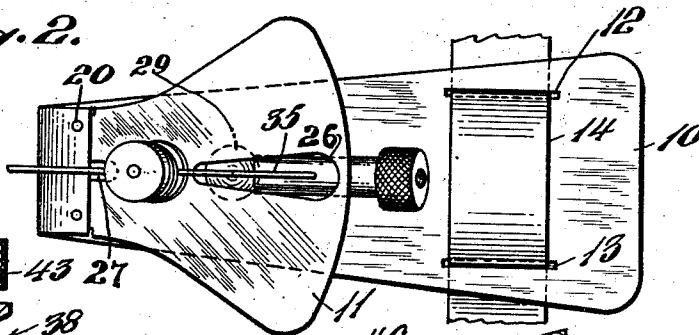


Fig. 3.

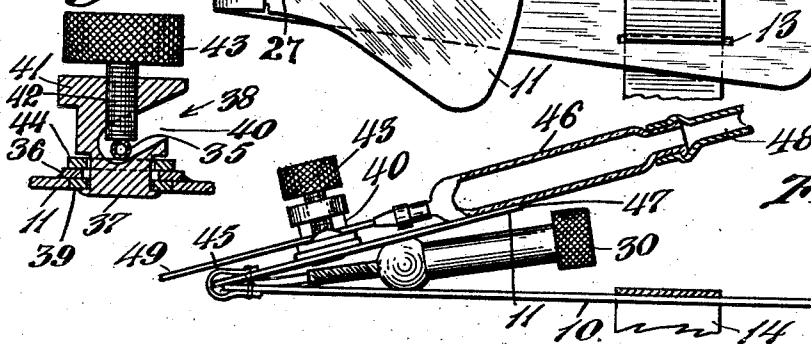
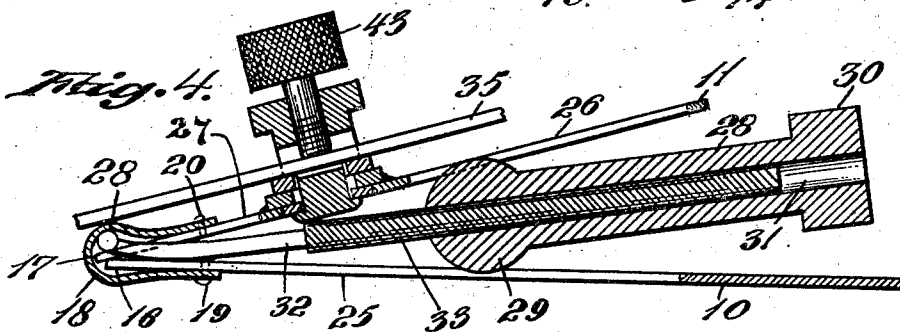


Fig. 4.



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2,409,432

INTRAVENOUS NEEDLE HOLDER

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Application February 5, 1945, Serial No. 576,253.

6 Claims. (Cl. 128-216)

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This invention relates to the transmission of fluid either into or from the human body, and more particularly to a holder for an intravenous needle.

In the extraction of plasma or blood from the human body or the transmission of fluid into the human body for feeding purposes, it is found that the angular relation of the needle which is inserted into the blood stream is of importance in the flow which is obtained through the needle. It is also difficult to manually support the needle in the proper position by holding it in the proper relation during the time that the flow continues.

One of the objects of this invention is to provide a support which may receive the needle after the same has been inserted into the blood stream and which may also serve to adjust the needle so that the angularity at which a maximum flow will occur is provided.

Another object of this invention is to provide a support which may be strapped upon the arm or limb into which the needle is inserted.

Another object of this invention is to provide a support for the needle so that the same will be firmly and securely held in the position in which it is adjusted.

Another object of this invention is to provide a support for the glass tube with which the needle is connected.

Another object of this invention is to provide an extremely simple means by which an adjustment may be obtained and the parts held in position.

A further object of this invention is to provide a single tightening screw which will serve to hold the needle bound in place on its post support and also will serve to bind the post against rotation after the proper adjustment is provided.

Another object of this invention is to provide an extremely simple means for adjusting the needle after it has been held or bound on one of the relatively movable parts of the support.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a top plan view illustrating the needle as inserted in an arm and the support bound in place on the arm;

Fig. 2 is a top plan view on a larger scale of this support with the needle in position;

Fig. 3 is a central sectional view showing the support of the needle and the tube with which the needle is associated as resting on the support

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and also fragmentally the flexible tube connected with the rigid glass tube with which the needle is associated;

Fig. 4 is a section on a larger scale than shown in Fig. 3 and showing a fragmental part of the base;

Fig. 5 is a sectional view of the post.

In proceeding with this invention I provide two hingedly related leaves adjustable relative to each other. On one of these leaves straps are provided for holding it in place while on the other a post is mounted which may swivel about its central axis and may also receive the needle. This arrangement is such that the binding of the needle in position also serves to bind the post against rotation about its axis. The leaf is so arranged and the slots in the post are so arranged that the needle is supported at two points while the glass tube with which the needle is associated is also supported on this hingedly related member.

With reference to the drawing the holding device comprises two leaf members 10 and 11. The leaf 10 provides the base having a pair of slots 12 and 13 therein through which a strap 14 may be positioned to extend about the arm 15 as shown in Fig. 1 and hold the base securely in position on the arm. The two leaves 10 and 11 will contact as at 16 and 17 and are held in this contacted relation by a U-member 18 which is provided with rivets 19 extending through the member 10 and rivets 20 extending through the leaf 11. The U-member 18 permits relative flexing of the leaves 10 and 11 about their point of contact so as to provide various angular relationships between them. There is a sufficient inherent spring in the stock of the U-member 18 so as to tend to move the leaves toward each other when no obstruction is between them.

The base or leaf 10 is slotted longitudinally at 25 from the end 16 away from the hinge connection approximately half of its length. Spaced slots 26 and 27 are provided in the leaf member 11 which are so located as to register with the slots 25 in the leaf 10 when these members are together.

An adjusting member 28 has a spherical end portion 29 and a handle portion 30. Movement of this member 28 between the leaves 10 and 11 will serve to spread them apart as the ball 28 moves inwardly while it will permit the leaves to swing toward each other to decrease their angular relation when the ball is moved away from the hinge or contacting ends 16, 17. The ball extends into the slot 25 and 26 so as

to be centrally guided in its movement toward and from the hinge connection. In order that the movement of the member 28 may be nicely controlled a central bore 30 is provided through the member 28 which bore is threaded along its axial extent and a rod 32 threaded as at 33 to be received in the threaded bore 31 is located to extend in registry with and into the slots 25 and 27 and be held therein by a T-shaped head 28 so as to prevent its turning. The threads on this member and in the bore 31 may be of long angular pitch so that turning at the handle 30 will cause the ball to quickly move in one direction or the other so as to adjust the angularity or relationship between the leaves.

In order to hold the tubular needle 35 in desired relation upon the movable leaf 11 I provide a washer 36 soldered to the leaf and extending over an opening in which the lower end of a post designated generally 38 is received. A head 37 engages washer 39 and serves to hold this post against being drawn upwardly through the opening. Post 38 is recessed as at 40 and provided with a head 41. Recess 40 receives the needle 35 and binding screw 42 having a handle portion 43 is threaded axially through the post 38 so as to engage the needle 35 which rests upon washer 44 which engages washer 36. By pressing the needle against the opposite side of the washer 44 the post is drawn upwardly so that its head is drawn up tightly against washer 39 as well as holding the needle in the recess 40. The needle is thus very firmly retained in the recess by engagement with two points of the washer 44 while the needle also engages at 45 the hinge or U-connection 18 which holds the two leaves together. A glass container 46 is secured on the needle and also finds support at end 47 on the leaf 11. A rubber tube 48 may be secured to the end of this glass container 46.

In use, the needle is usually inserted in the arm adjacent the elbow and on the inside of the arm which is flexed as shown in Fig. 1. This needle 35 is inserted in the blood stream, the needle usually being beveled as at 49. The glass container 46 and tube 48 are at this time attached to the needle. After the insertion of the needle it is desired to hold the needle in place and the support, with the set screw 43 withdrawn to leave the recess 40 widely open, is moved sideways so as to place the walls of the recess about the needle and the needle is then held against being moved out of this recess by screwing the thumb screw to a position to close the entrance to the recess 40. This screw is not set up to

bind the needle firmly in place at this point. The base leaf 10 is then bound in position on the arm by the strap 14 and then adjustment as to alignment of the needle angularly about the axis of the post is had and the set screw 43 turned down tightly to bind the post and needle in position on the leaf 11. Then, by turning the handle 30 so as to vary the angularity of the leaf the adjustment whereby the greatest flow of the fluid through the needle is had until maximum flow will occur. At this point the parts are permitted to remain until the transfusion is completed.

I claim:

1. An intravenous needle holder comprising a leaf base, a second leaf hingedly related to the base and provided with means to bind a needle therein, and means to angularly adjust said leaves.
2. An intravenous needle holder comprising a leaf base having slots therein, a second leaf hingedly related to the base and provided with means to bind a needle therein, means to angularly adjust said leaves, and strap means extending through said slots to secure the base on a limb.
3. An intravenous needle holder comprising a leaf base, a second leaf hingedly related to the base and provided with means to bind a needle therein, and a ball between said leaves movable toward and from said hinge to vary the angular relation between said leaves.
4. An intravenous needle holder comprising a leaf base, a second leaf hingedly related to the base and provided with means to bind a needle therein, said leaves being each provided with a slot, and a ball between said leaves movable toward and from said hinge and guided by said slots to vary the angular relation between said leaves.
5. An intravenous needle holder comprising a base, a leaf hingedly related to the base, a post on said leaf having a lateral recess therein to secure a needle, a threaded member to bind the needle against a wall of said recess, and means to angularly adjust said leaves.
6. An intravenous needle holder comprising a base, a leaf hingedly related to the base, a post swivelly mounted on said leaf having a lateral recess therein to receive a needle, a threaded member to bind the needle against a wall of said recess and also bind the post on said second leaf, and means to angularly adjust said leaves.

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