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TRANSFUSION EQUIPMENT
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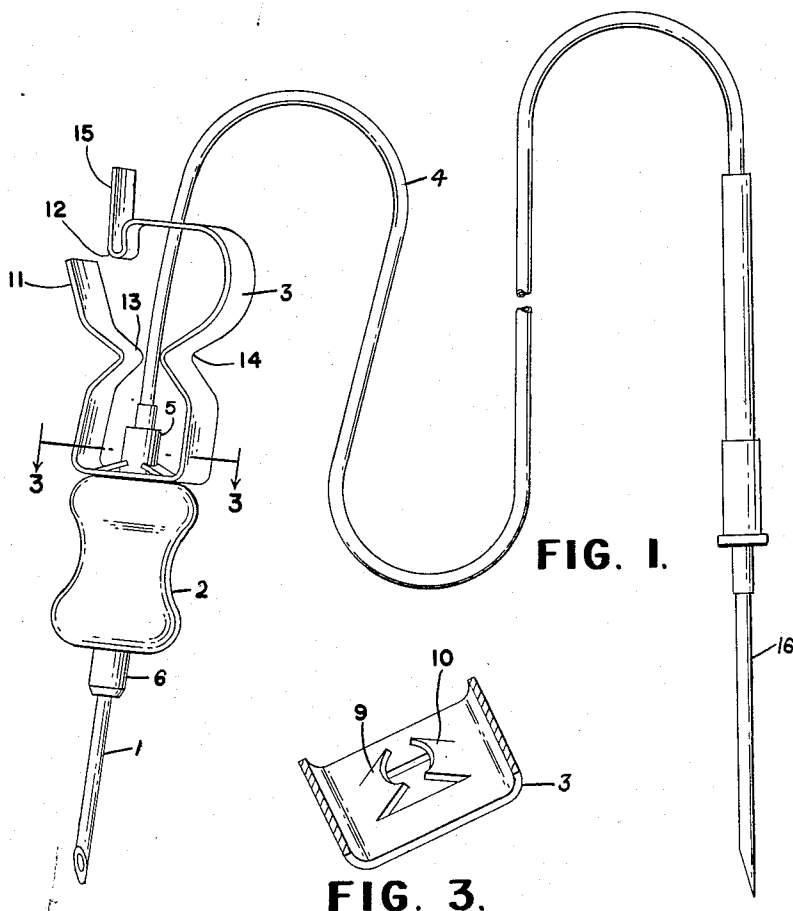


FIG. 1.

FIG. 3.

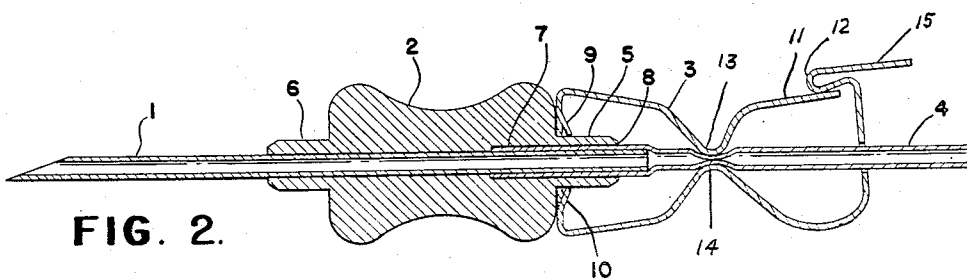


FIG. 2.

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TRANSFUSION EQUIPMENT

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3 Claims. (Cl. 128—214)

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This invention relates to apparatus for use in transferring blood from a human donor to a sterile flask.

It is common practice in collecting blood to provide a flexible tube with a needle on each end one of which is inserted into the donor and the other through a perforatable closure of the collecting flask and to provide a clamp for opening and closing the flexible tube.

Extensive experience in the collection of blood has demonstrated defects in the apparatus heretofore available for this purpose. For instance, it has been found that when a person has to take a large number of blood donations he may develop considerable fatigue and lose a considerable amount of time in operating the clamp and even in finding it if it is not held in a fixed position and in inserting the flask needle of the device through and withdrawing it from the perforatable closure of the flask. There is also danger of infection if the fingers of the person taking the donations comes into contact with the blood of numerous donors.

An object of my invention is to improve the blood donation equipment and more particularly to provide a combination of a handle and a clamp associated with the flask needle designed to afford the person taking the donations a large and comfortable handle so that the needle may be inserted into and withdrawn from the flask with a minimum of effort, the clamp may be operated with a minimum of effort and loss of time and the hand of the person taking the donations is kept clear of the closure and thus out of accidental contact with the blood.

An embodiment of the invention is illustrated in the accompanying drawings in which

Fig. 1 is a perspective view of the entire apparatus including the flask and donor needles, the connecting flexible tube, the handle and clamp, with the latter in open position.

Fig. 2 is an axial section of the flask needle with the adjacent end of the flexible tube and the associated handle and clamp, with the latter in closed position, and

Fig. 3 is a perspective view of the front end of the clamp showing how it is attached to the handle.

Referring to the drawings, 1 is the flask needle which is to be inserted through the perforatable closure of the flask (not shown), 2 is the handle, 3 is the clamp, 4 is the flexible tube and 16 is the donor needle. The handle 2 is hourglass shaped. The handle preferably is a solid mass of a suitable material such as wood, synthetic

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resin or metal capable of being sterilized. I have found that aluminum is admirably adapted for use for making the handle. The needle 1 preferably is made of stainless steel and the clamp 3 is formed of spring steel as is customary. The tube 4 is formed of transparent synthetic resin such as polyethylene, such tubing being now extensively used for a variety of purposes.

The handle 2 consists of the hourglass shaped body portion described above and integral tubular extensions 5 and 6 the bores of which are in alignment with a bore extending through the axis of the handle body. The bore through the extension 6 and part of the way through the body of the handle is of a size snugly fitting the needle 1. The needle is secured in the handle by swaging or staking the projection 6. The bore 7 through the extension 5 and into the body of the handle is slightly larger than the bore through the extension 6 and is adapted to receive the end of the tube 4 which is slipped over the rear end of the needle cannula. The tube 4 is secured in position by crimping the extension 5 at 8.

The clamp 3 is of conventional hourglass shape having the inward bends 13 and 14 which are adapted to be brought toward each other to pinch the tube 4 and the operating tabs 11 and 15 by means of which the tab 11 may be engaged and disengaged under the keeper 12 to pinch and release the tube 4. It is noted however that the clamp 3 is formed so that it is of about the same size as the handle so that the handle and the clamp fit comfortably in the hand of the operator and so that there is no substantial lateral projection tending to interfere with the movement of the hand of the operator lengthwise of the structure. It is noted in this connection that the tab 15 lies substantially parallel to the axis of the handle.

The clamp 3 is secured to the handle 2, i. e. to the extension 5, by means of the tines 9 and 10 which are struck out of the end portion of the clamp as more clearly appears in Fig. 3. When the opening between the tines 9 and 10 is of the proper size the clamp 3 may be secured to the handle by simply forcing it onto the projection 5. The tines 9 and 10 tend to spread farther apart when being slid forward on the projection 5 but any reverse movement of the clamp with respect to the handle tends to swing the tines together to grip the extension 5 more tightly and thus prevent the removal of the clamp from the handle.

In use, the assembly is supplied in sterile con-

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dition with the clamp open and the needles protected by removable hoods (not shown). The hood is removed from the donor needle and it is inserted into a vein of the donor. The clamp is then closed and the hood removed from the flask needle which is then inserted through the closure of the collecting flask which preferably is more or less evacuated. The clamp is then opened and blood flows from the donor into the flask. After the desired amount of blood has been collected in the flask the clamp is closed and the flask needle removed from the flask. Then by again opening the clamp a small sample of blood is permitted to flow into a test tube for laboratory examination. The clamp is then closed again and the donor needle withdrawn from the donor.

It will be appreciated that the hourglass shape of the handle permits the operator to position his fingers with respect thereto by the sense of touch, permits him to exert the necessary force to puncture the flask closure and serves to keep his fingers at a substantial distance from the closure and out of contact with any blood which accidentally may be deposited thereon for instance as the needle is withdrawn. The hourglass shape of the clamp also permits it to be operated by the sense of touch and as pointed out above the handle and clamp being rigidly connected in alinement and of about the size illustrated afford a handle which is easily grasped and manipulated by the operator without fatigue or loss of time.

I claim:

1. Apparatus for transferring blood from donor to storage flask comprising a donor needle, a

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flask needle, and a flexible tube connecting said needles, an hourglass shaped rigid handle rigidly secured to said flask needle and a spring punch clamp of substantially the same diameter and length as said handle rigidly secured thereto.

2. Apparatus for transferring blood from a donor to a storage flask comprising a needle, an hourglass shaped handle having an axial bore through which said needle extends, a spring clamp of about the same length as said handle and of about the same transverse dimension as the transverse dimension of said handle rigidly connected to the end of the handle remote from the needle point in alinement with said handle.

3. Apparatus for transferring blood from a donor to a storage flask comprising a donor needle, a flask needle, and a flexible tube connecting said needles, an hourglass shaped rigid handle rigidly secured to said flask needle and a clamp rigidly secured to said handle, said flask needle extending through an axial bore in said handle and being connected to said flexible tube within said bore and said clamp being secured to said handle in alinement therewith.

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