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3,429,311

FLASHBACK INDICATOR FOR PARENTERAL LIQUID ADMINISTRATION SET

Filed May 23, 1966

FIG. 1.

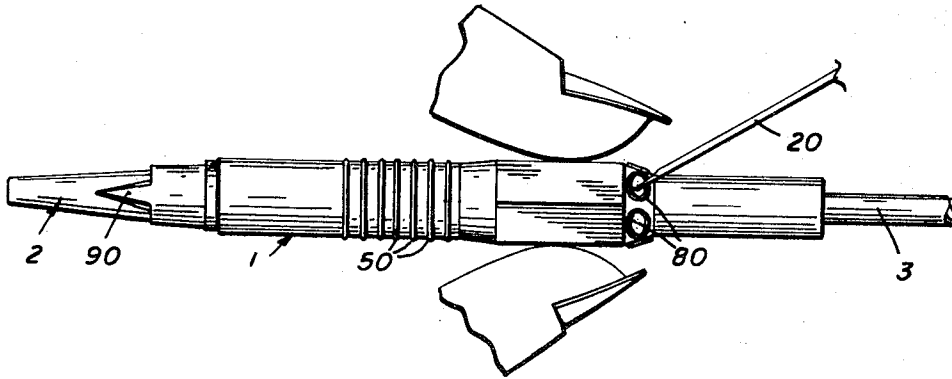


FIG. 2.

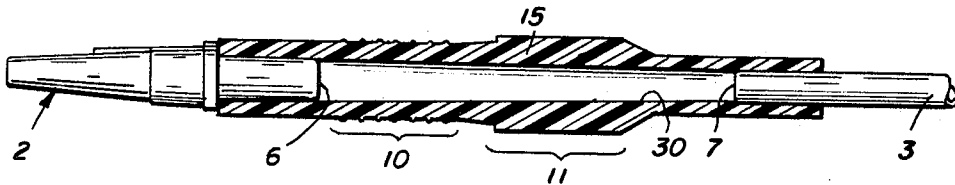


FIG. 3.

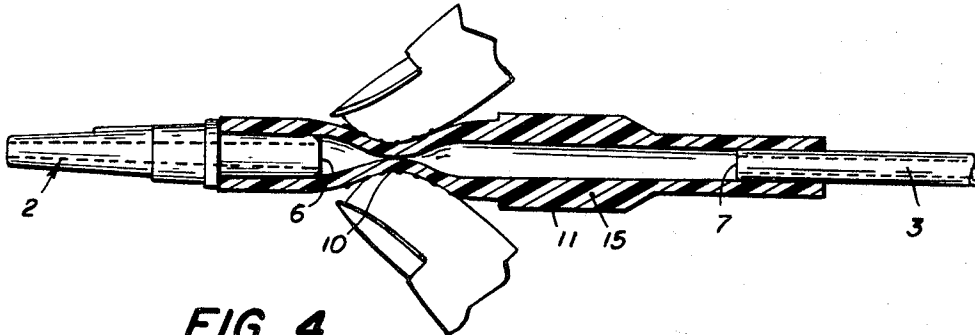
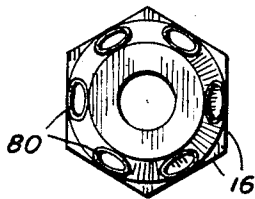


FIG. 4.



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2 Claims

ABSTRACT OF THE DISCLOSURE

A construction particularly adapted for connection between a rigid needle adapter and a flexible tube in a parenteral administration set or the like in which the construction includes a continuously smooth, tapered bore extending from the flexible tube to the needle adapter for minimizing liquid turbulence, and in which the construction includes a manually squeezable section longitudinally spaced from an externally faceted, relatively more rigid manipulating section in which the latter facilitates stable orientation of the construction when an auxiliary administration needle is inserted therethrough, and subsequently removed, and in which the latter section wall reseals after needle removal.

This invention relates to an improved device for telling a nurse or physician when a hypodermic needle of a parenteral liquid administration set is properly in a patient's vein. Such a device, sometimes called a "flashback indicator," connects between a rigid needle adapter and a flexible tubing leading from a parenteral solution container.

There have been different kinds of "flashback indicators." One kind includes a round cylindrical section of rubber tubing. Another one includes a round tubular rubber member with an enlarged central chamber. When a nurse or physician makes a venous puncture, he squeezes the rubber tubular member and then releases it. If blood is drawn back through the hypodermic needle into the adapter he knows the needle is properly in the patient's vein. Once the parenteral liquid administration is begun, he can inject supplemental medication into the tubular rubber member and the medication will flow into the patient.

These previous flashback indicators have several disadvantages. When injecting supplemental medication into these round flashback indicators they were grasp in the same area used for flashback squeezing and releasing. These round tubular members could easily roll between the fingers and cause the operator to jab himself with a hypodermic needle. If the operator pinched the tubular member very tightly to prevent its rolling, this closed off the interior bore making it difficult to inject the medicament.

Previous round tubular flashback indicators also tended to roll when being taped down to the patient's arm. This could be painful to the patient because these flashback indicators were taped down while the hypodermic needle was in the patient's vein.

I have overcome these disadvantages by a unique construction of a flashback indicator between a hypodermic needle adapter and a flexible administration tube. This improved construction can be better understood with reference to the following drawings, in which:

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FIGURE 1 is a top plan view showing an operator holding the flashback indicator and adding supplemental medication by means of a pointed cannula;

FIGURE 2 is a side elevational view showing the flashback indicator in section;

FIGURE 3 is a side elevational view similar to FIGURE 2 but showing the operator pinching the squeezable section of the flashback indicator; and

FIGURE 4 is a rear elevational view of the flashback indicator.

Referring now to the drawings, the rubber tubular flashback indicator 1 is shown connected at one end to a rigid adapter 2 and at an opposite end to a flexible tubing 3. A hypodermic needle (not shown) attaches to a tapered portion of adapter 2 and has an orientation of its beveled point shown by an indicator arrow 90. The important construction of my flashback indicator lies between an end 6 of adapter 2 and an end 7 of flexible tube 3. In this area, as shown in FIGURES 1, 2 and 3, I have two separate sections. The first is an elongated squeezable section 10 immediately rearward of end 6 of adapter 2. Thus, as in FIGURE 3 the operator can easily squeeze this thin-walled section.

A separate elongated grasping or manipulating section 11 is rearward of squeezable section 10. This manipulating section 11 has a wall 15 substantially thicker than the wall in squeezable section 10. The operator can grasp the flashback indicator in this area and hold it while inserting a cannula 20 into the manipulating section 11. When he removes cannula 20, manipulating section 11 reseals. Manipulating section 11 has a series of substantially flat planar surfaces 16 for the operator to grip and which prevent the flashback indicator from rolling when he adds supplemental medicament or tapes it to a patient's arm.

Guide rings 80 indicate the proper location for piercing the manipulating section 11 and indicator rings 50 show where to squeeze squeezable section 10.

When an administration set including my flashback indicator is connected with a patient's vein, parenteral liquid flows through flexible tubing 3 and along a smoothly and continuously tapered bore 30 to adapter 2 and then through a hypodermic needle into the patient's vein. In blood administration this smoothly contoured path minimizes turbulence and avoids breaking down red blood cells.

In the above specification, I have used a specific example to explain my invention. It is understood that those skilled in the art can make certain modification to this example without departing from the spirit and scope of my invention.

I claim:

1. In a parenteral liquid administration set having a tubular resilient flashback indicator connected between a rigid needle adapter and a flexible tube, an improved construction of the flashback indicator between ends of the needle adapter and the flexible tube, said improvement comprising:

- (a) an elongated manually squeezable thin-walled section adjacent the needle adapter;
- (b) an elongated manipulating section adjacent the flexible tube having a wall thickness substantially greater than said squeezable section and adapted to be pierced by a hypodermic needle and to reseal upon withdrawal of the needle, said manipulating

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section having an outer surface formed by at least three substantially flat planar surfaces giving a series of facets for grasping; and

- (c) said construction having a bore that tapers smoothly and continuously, diverging from said flexible tube end to said adapter end over the extent of said thin-walled and manipulating sections to provide for even nonturbulent flow between the flexible tube and adapter.

2. An improvement in a flashback indicator as set

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forth in claim 1 wherein the outer surface of the manipulating section has a hexagonal cross-section.

References Cited

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DALTON L. TRULUCK, *Primary Examiner*.