

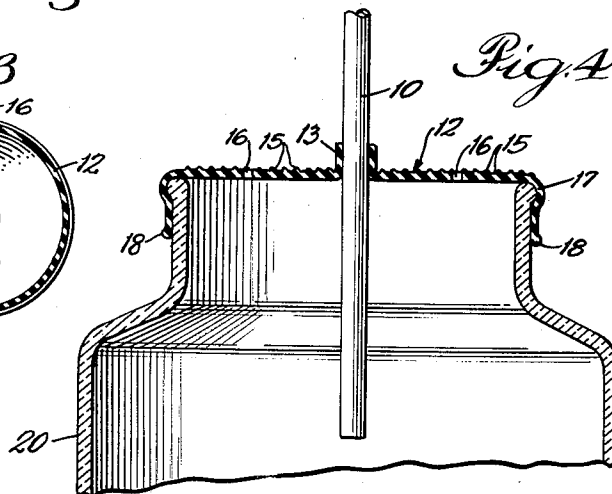
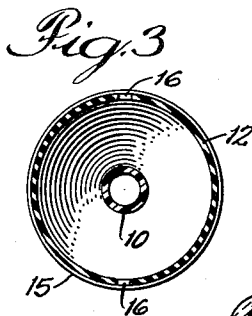
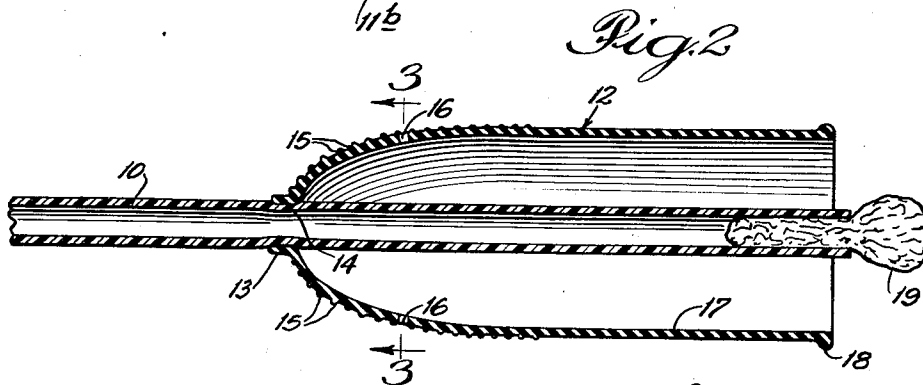
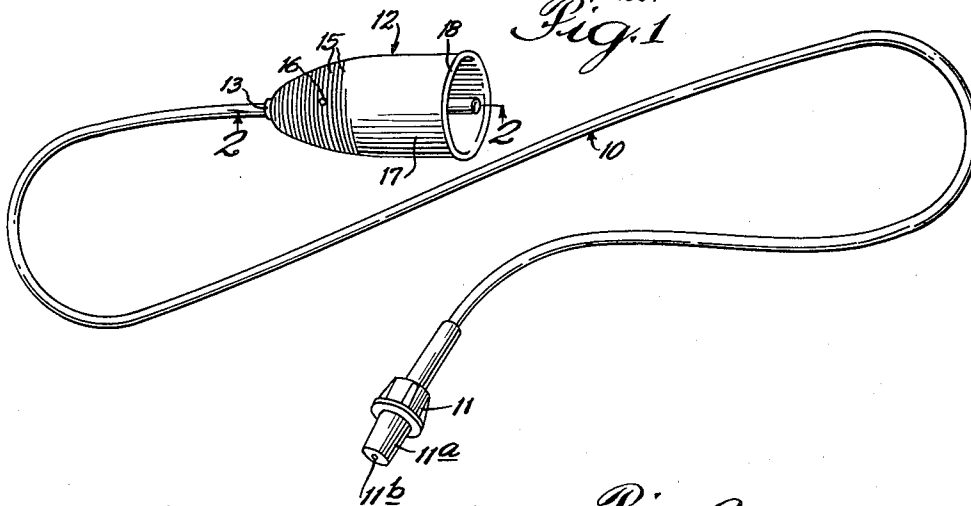
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DRAINAGE TUBE AND HOOD

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DRAINAGE TUBE AND HOOD

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This invention relates to a drainage tube and hood, and is particularly useful in connection with a urethral catheter and drainage vessel, the structure also being especially useful as a disposable or expendable device.

In the provision of a drainage tube and hood for hospital use, there has long been a problem in view of the fact that the drainage vessels are of widely-varying size and effective connection must be made therewith in the use of the structure. To provide a structure which fits a small bottle or jar while also fitting a very wide jar, and in each instance giving an effective seal while providing an air bleed, has long presented a problem.

An object of the present invention is to provide a structure meeting the above requirements and solving the problem described. More specifically, it is an object of this invention to provide a hood structure which will fit various sizes of drainage bottle openings for the connection of drainage tubes thereto. Another object is to provide a structure effective for slowly bleeding air from a vessel as it is being filled while at the same time forming an effective seal therewith and centering the drain tube therein. A further object is to provide a hood which will effectively and sealingly hold the end of a drain tube within a collecting bottle, thereby preventing escape of the bottle contents even though the bottle is accidentally moved or upset. Yet a further object is to provide a tubular hood sealed to a drain tube and extending about the drain tube to provide a cylinder of substantially uniform diameter while at the same time providing for the escape of air irrespective of the size of the vessel to which the hood is attached. Other objects and advantages will appear as the specification proceeds.

The invention is shown, in an illustrative embodiment, by the accompanying drawing, in which—

Figure 1 is a perspective view of a urethral catheter and hood therefor embodying my invention;

Figure 2, a broken longitudinal sectional view, the section being taken as indicated at line 2—2 of Figure 1;

Figure 3 a transverse sectional view, the section being taken as indicated at line 3—3 of Figure 2; and

Figure 4, a broken sectional view showing the hood attached to a drainage vessel.

In the illustration given, 10 designates a tube formed of plastic or other suitable material of a flexible character and provided at one end with a nipple or connector 11 having the connector end covered with a plastic cover 11a. At an intermediate point along the tube 10, and preferably near the opposite end, is secured a hood 12. The hood is joined to the tube 10 at 13 by any sealing means so as to effect a complete airtight seal with the tube. The seal may be accomplished by adhesive, or, in some instances, by heat-sealing, or by employing a resilient hood 12 formed of elastic rubber or the like. The sealing at 13 may be effected by the tight engagement of the resilient material about the small opening 14 in the

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hood itself, the pressure of the walls of the hood being sufficient to effect the tight seal shown.

Adjacent the point of connection with the tube 10, the hood 12 may be provided with a series of circular ribs or rings 15 which serve several advantages. The ribs reinforce the hood at the point where it joins the tube 10 and provide a reinforced tight connection therewith. The ribs also rigidify this portion of the hood to facilitate the functioning of the vents 16.

The hood 12 tapers outwardly from its point of junction with the tube 10 into an elongated cylindrical portion 17 which terminates in a bead 18. I have discovered that such a long tubular hood of generally uniform diameter is extremely effective in forming a seal with vessels of widely ranging diameters. For example, the hood is effectively sealed to a bottle of 1" diameter while at the same time effectively sealing a vessel of 5" diameter, etc. Irrespective of the size of the bottle to which the hood 12 is attached, an effective bleeding of air is accomplished because of the location of the air vents near the upper end or top portion of the hood. The vents, which may be of pinhole size, are effective in releasing air pressure from the interior of the vessel while at the same time preventing the escape of odor into the room and preventing the entrance of foreign matter from the outside into the drainage vessel.

The hood may be formed of rubber or other resilient material and its elasticity gives little chance of the drainage bottle being tipped over by movement of the drainage tube to one side or the other; in the instance where the drainage vessel is large, the elasticity of the hood permits stretch, while in the instance where the drainage vessel is small, the bottle tends to slide along the movement of the drainage vessel. Furthermore, the elasticity of the hood provides a secure connection to the bottle so that even if the bottle is accidentally moved or tipped the contents will not spill from the bottle mouth. Since drainage bottles are ordinarily placed on the floor adjacent or beneath the patients' beds, attendants, nurses, etc. might inadvertently bump or upset them as they move about the beds. In view of this, the importance of a secure connection between the drain tube and collection bottle is believed readily apparent.

As above stated, the vents 16 are effective whether the hood be attached to a vessel with a small neck or to a vessel with a large neck, permitting sufficient air to escape from the vessel as it fills up so that back pressure is not created to prevent the draining liquid from getting into the drainage vessel.

When the expendable tube and hood structure is packed for shipment, it is preferred to close the hood end of the tube 10 with cotton 19 or other suitable fibrous material, while the nipple or connector end is closed with the plastic cover 11a which, if desired, may be provided with a vent 11b.

In the operation of the structure, the plastic cover 11a of the connector 11 is removed and the connector joined to the catheter leading into the body cavity of the patient. The cotton or closure material 19 is removed from the other end of the tube 10. The rubber hood is then stretched over the neck of the drainage bottle or vessel, as illustrated by the numeral 20 in Figure 4. If the drainage vessel consists of a small bottle, the tubular hood 17 is found to form an effective seal therewith as the bead 18 is drawn about the bottle. If a large-necked bottle or vessel is used, the tubular portion 17 can be expanded widely to form the connection with such wide diameter neck. In either operation, the vents 16 are provided in operative position with the vessel so as to permit the slow escape of air and to prevent the forming of back pressure, as above referred to. The effectiveness of the vents 16 is further enhanced by the

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ribs 15 which provide a stiffening effect about the vents and cooperate with the highly elastic portion 17 which expands or stretches to a wide degree in the forming of the diaphragm or closure at the top of the vessel.

While, in the foregoing specification, I have set forth a specific structure in considerable detail for the purpose of illustrating the invention, it will be understood that such details of structure may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. A drainage tube and hood structure adapted to be connected to receptacles of varying diameters, comprising a flexible tube, and a highly stretchable elastic hood having one end thereof sealed to said tube and having an elongated and imperforate tubular portion terminating in an open opposite end, said tubular portion of said hood being adapted to be stretched about the mouth of a receptacle for providing a secure connection therewith, said flexible tube extending into said hood, and said hood having an air bleed vent therein adjacent its point of connection with said tube.

2. A drainage tube and hood structure adapted to be connected to receptacles of varying diameters, comprising a flexible tube, and a highly stretchable elastic hood having one end sealed to said tube at an intermediate point therealong, said hood also having an elongated and im-

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perforate tubular portion of generally uniform diameter terminating in an open opposite end, said tubular portion of said hood being adapted to be stretched about the mouth of a receptacle for providing a secure connection therewith, and being provided adjacent said open end with a circumferential bead, said tube extending into said hood, and said hood having an air bleed vent therein adjacent its point of connection with said tube.

3. A drainage tube and hood combination adapted to be connected to receptacles of varying diameters, comprising a flexible tube, and a stretchable elastic hood having one end sealed to said tube and having an open opposite end adapted to be stretched about the mouth of a receptacle for providing a secure connection therewith, said hood having its open end portion terminating in an annular bead and having its other end portion provided with annular reinforcing ribs, the ribbed portion of said hood being provided with vent openings.

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