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2,291,191

MEDICAL APPLIANCE

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Fig. 1.

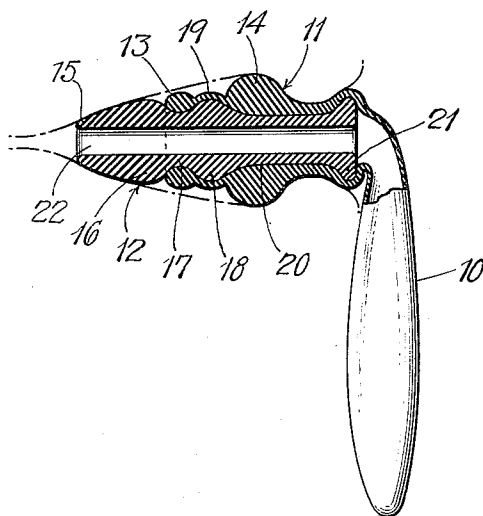
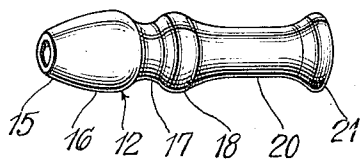


Fig. 2.



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MEDICAL APPLIANCE

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2 Claims. (Cl. 128—294)

This invention relates to an improved surgical or medical appliance which may be employed to apply medicament to the lining of the urethra, or as a receptacle for the discharge therefrom, for example, in certain forms of urethritis. The device involves various improvements over the general type of device described in the patent to Doud, No. 1,240,125, granted September 11, 1917.

The objects of the invention include the provision of an appliance of the above indicated character which may be easily inserted, yet retained in its applied position with a high degree of certainty, and so as to apply the medicament or receive the discharge without possibility of leakage.

Various further and more specific objects, features and advantages of the invention will appear from the description given below, taken with the accompanying drawing illustrating by way of example a preferred form of the invention. The invention consists in such novel features and combinations of parts as may be shown and described in connection with the apparatus herein disclosed.

In the drawing, Fig. 1 is a side view of the appliance, parts thereof being shown in section, and Fig. 2 is a perspective view of a portion of the device.

Referring now to the drawing in detail, the device in the form shown may comprise a thin walled flexible and collapsible sack as at 10, formed of suitable material such as rubber or a latex composition, and impervious to moisture. The sack may be shaped to include an inlet portion 11, adapted to removably embrace a tubular member as at 12, which is preferably formed of some suitable solid material not subject to corrosion, for example, glass, hard rubber or a plastic composition.

The inlet portion 11 of the sack at its terminus is preferably formed to include an annular beaded area as at 13, to prevent tearing and for other purposes hereinafter explained. Also at an area somewhat spaced from the beaded portion 13, a substantially larger annular beaded portion 14 may be formed, to cooperate with the other beaded portion and for purposes hereinafter explained.

The tubular member 12 is preferably of its smallest diameter at its inlet end 15, for purposes of easy insertion and to fit the urethra, and is gradually tapered externally to a larger diameter as at 16. Starting at the area 16 such member is then preferably tapered gradually to a smaller diameter as at 17 to provide an annular recessed portion adapted to receive and to be embraced by the beaded portion 13. Starting at the por-

tion 17, the tubular member is preferably again tapered to a larger diameter so as to form an annular beaded portion 18 adapted to be securely embraced by that portion 19 of the sack inlet located between the beaded portions 13 and 14. Starting at the beaded portion 18 the member 12 is preferably again tapered down to a portion 20 of smaller diameter, which extends for a considerable distance and is finally merged into an annular beaded portion 21 at the outlet end of the tubular member 12.

The tubular member 12 is preferably formed with a uniform cylindrical passage 22, extending from the inlet end 15 and opening into the sack 10.

The member 12 as embraced by the inlet portion 11 of the sack is adapted for insertion into the fossa navicularis in a position such as indicated in Fig. 1, wherein the dot-dash lines indicate the normal interior shape of this cavity when slightly distended for the reception of the device.

When the device is to be inserted, the greater part of the air is preferably first pressed out of sack 10, and the neck portion of the sack is then stretched somewhat, in a direction outwardly of the end portion 21 of the tubular member 12. This may be done by pinching this part of the neck portion with the fingers. Stretching of the inlet portion of the sack in this manner has the effect of pulling the annular beaded portion 14 away from the enlarged portion 18 on the tubular member 12. The beaded portion 14 is normally so positioned that it is drawn firmly against the beaded portion 18 and is thereby somewhat enlarged in diameter. However, upon occurrence of the stretching action above described, with the consequent pulling of the beaded portion 14 to a position around the smaller area 20, the diameter of the beaded portion 14 decreases somewhat in conforming to the portion 20. Thus with slight stretching in the manner above explained the beaded portion 14 will decrease in diameter and become elongated to an extent such that it may be readily passed through the constricted part of the urethra, or orificium externum. After the beaded portion 14 has thus passed in, the stretching tension is released whereby the beaded portion 14 will be drawn up against the beaded portion 18 on the tubular member 12, by the action of the portions 13 and 19. This causes enlargement again of the portion 14 because of the released stretching tension and the camming action against the portion 18. As the portion 14 increases in diameter it is accordingly forced tight-

ly against that portion of the walls of the fossa navicularis which is just inside the constriction of the urethra. The annular beaded portion 13 by its firm embracing engagement with the recessed portion 17, together with the interaction of the enlargement 18 and the area 19, will insure that during the above described stretching operation, the terminal portions of the inlet 11 will remain firmly in position on the tubular member 12. Then after the device is in position these parts will further cooperate in drawing the enlarged beaded portion 14 back into the position shown in Fig. 1, with an expanded diameter for firm sealing relationship both with the tubular member 12 and the inside areas of the constricted portion of the urethra, and at the same time prevent any danger that the appliance will slip out of place. The device may be readily removed upon stretching same as during its insertion.

The tubular members 12 may be formed of various sizes with considerable variation of shape as may be necessary, but the detachable sack members 10, including the inlet portions thereof, may generally all be made substantially of a predetermined or standardized size, readily applicable to tubular members 12 of various sizes and shapes.

Although I have shown and described only one embodiment of my invention, it is understood that various modifications thereof, additions thereto, and changes in the shape, size, and arrangement of the parts or other details of construction may be made without departing from the scope of the invention as set forth in the following claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. A medical appliance comprising a flexible sack formed with a resilient tubular inlet, a tubu-

lar member removably embraced by said inlet and adapted for insertion into the fossa navicularis, said inlet being formed with an annular beaded portion at its end, the surface of said tubular member being formed with an annular depression on a portion thereof adapted to be normally well within the urethra, said beaded portion resiliently embracing said depression, said tubular member being formed with another annular depression which is more extended axially and adapted to be normally within the orificium externum, and another and relatively large beaded portion formed on said inlet and for normally resiliently embracing the latter depression at a region just inside the orificium externum, said latter beaded portion being adapted to decrease in diameter upon being stretched along the latter depression during insertion of the appliance and to then expand against the inner walls of the urethra at said region upon release of the stretching tension.

2. A medical appliance comprising a flexible sack formed with a resilient tubular inlet, a tubular member removably embraced by said inlet and adapted for insertion into the fossa navicularis, means normally securing the end of said inlet on said tubular member at a position which will be well within the urethra, and an annular beaded portion formed on said inlet at a position spaced from its said end, said beaded portion being adapted to decrease in diameter upon stretching said inlet along said member during insertion of the appliance and to then expand in sealing relationship against the walls of the urethra, adjacent to the orificium externum upon release of the stretching tension, thereby also retaining the appliance in position.

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