

Aug. 10, 1965

J. J. CAVANAUGH ETAL

3,199,512

VALVED DILATING DEVICE FOR HYGIENIC IRRIGATION

Filed Feb. 1, 1963

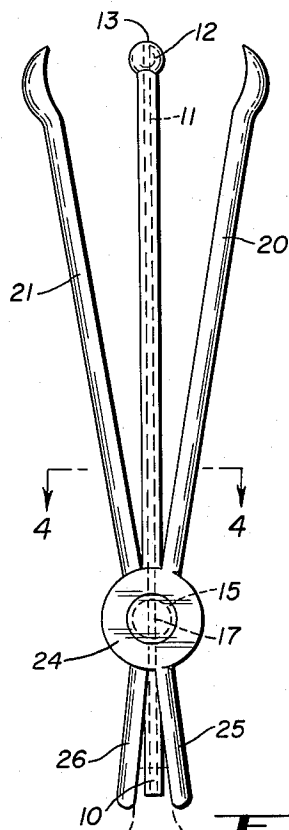


Fig. 1

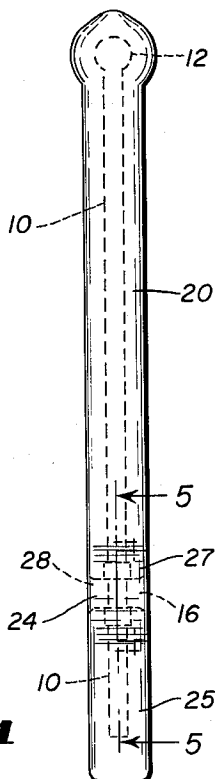


Fig. 2

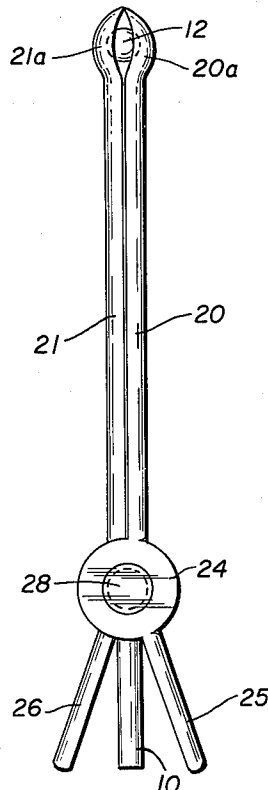


Fig. 3

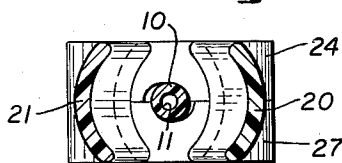


Fig. 4

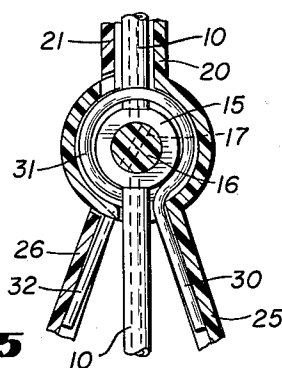


Fig. 5

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3,199,512 VALVED DILATING DEVICE FOR HYGIENIC IRRIGATION

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Filed Feb. 1, 1963, Ser. No. 255,434

1 Claim. (Cl. 128-244)

This invention relates to hygiene devices and more particularly to hygiene devices arranged to open normally closed body cavities and subjecting such cavities to a douche for cleansing, application of medicaments and the like.

Commonly used devices for cleansing body cavities involve merely a rigid or semi-rigid tubular attachment to a source of fluid, with the tubular attachment being inserted into the body cavity. Some of the body cavities requiring such treatment, such as the rectum or vagina, are normally closed cavities and the mere insertion of the hollow tube simply does not subject all of the walls of the cavity to the injected fluid, and the inner surface folds (mucosa rugae) of the cavity may not be contacted at all with the cleansing fluid or the medicament. Particularly when medicated solutions are indicated for the afflicted cavity, improper medication results in the use of available devices since the inner surface folds of mucosa obliterate before penetration of the fluids to all surfaces of the cavity.

Included among the objects and advantages of the present invention is a hygiene device for opening a body cavity for effective and efficient cleansing and medication treatment. The device in closed position provides for the user a tubular member for inserting into the rectal or vaginal vault, and actuation by the user opens a plurality of speculum arms which painlessly open the body vault to subject inner mucosa folds to a fluid which is injected into the vault through a central tubular supply. In one form of the invention the device provides an improved user operated hygiene system for the painless and safe insertion into the vaginal or rectal orifice, opening the body vault, exposing maximum wall surface and injecting a cleansing or medicinal douche from a pressurized container for complete and cleansing coverage of the vaginal vault or lower gastro-intestinal tract.

These and other objects and advantages of the invention may be readily ascertained by referring to the following description and appended illustrations in which:

FIG. 1 is a front elevational view of a device according to the invention showing an open position of the speculum arms of the device, and in phantom outline pressurized container containing the fluid for use with the invention;

FIG. 2 is a side elevational view of the device of FIG. 1;

FIG. 3 is a front elevational view of the device in closed position;

FIG. 4 is a cross-sectional view of the open device of FIG. 1 taken along section line 4-4; and

FIG. 5 is an enlarged detail view illustrating the valving and retrieving spring of the invention.

In the embodiment of invention illustrated in the drawings a central tube 10 provided with a bore 11 therethrough has a bulbous end 12 provided with a liquid outlet 13 therein. The bulb 12 may be provided with a single outlet or a plurality of outlets disposed around the periphery thereof depending upon the choice of the user. The lower end of the tube 10 is arranged to be fitted to a pressurized fluid container 14, not shown in detail since such containers and their method of operation are well known. Thus the lower end of the tube

may be made of a configuration to fit a desired container.

Above and adjacent the lower end of the tube 10 is a cylindrical-shaped member 15 having its bore at right angles to the bore in the tube 10 and secured thereto. The bore in the member 15 communicates with the tube 10 through openings on opposed sides of the wall of member 15. A plug valve member 16, with a passage 17 therethrough, telescoped in member 15 provides a simple valve for tube 10.

A pair of speculum arms 20 and 21, which are arcuate inside and out so that in closed position they form a partially circular tube, are mounted on each side of the tube. The speculum arm 20 is secured to a cylindrical member 24 and an arm or handle 25 is secured to the opposite side of the member 24. The arm 20, member 24 and handle 25 may be formed of one piece where desired.

The other speculum arm 21, also, has a circular portion 27 attached thereto and a lower handle 26. The circular portion 27 preferably includes the cylindrical valve portion 16, attached thereto in position to extend through the member 15 on tube 10 and extends through the flat wall of the circular member 24 where it is riveted over at 28 to secure the parts of the device together. Prior to securing the parts together, a circular spring 31 is mounted to normally bias the handles apart. Spring end 30 extends into the handle 25 while the circular portion is mounted around the circular parts of the device, and spring end 32 extends into handle 26. The circular portion of the spring may be one or two turns to provide the necessary spring tension for holding the handles outwardly with the speculum arms closed. The cylindrical valve portion 16 may be integrally attached to the circular portion 27 or may be subsequently welded thereto as by heat sealing. The end 28 should be pivotable in the circular portion 24 to permit opening the speculum arms and valve simultaneously.

The device is used by initially attaching it to a pressurized container 14, as by inserting the end of the tube 10 into the container, which opens contents of the container to the valve through the lower end of the tube 10. The device is then inserted into the body cavity by the user and with two fingers the handles 25 and 26 are pressed together, which turns the valve to open position, opens the speculum arms and opens the body cavity, concurrently releasing the fluid into the cavity. By depressing the arms 25 and 26 the speculum arms are opened in the body cavity, fully exposing the inner surfaces of the folds of the mucosa of the cavity to the fluid issuing from the tube.

In closed position the speculum arm ends 20a and 21a, which are rounded and partially hollowed out, close over the tip 12 of the tube 10 preventing clogging of the opening in the tip. The shanks of the speculum arms close together making a generally cylindrical member, with smooth, rounded surfaces.

For normal usage the device may be made of a rigid or semi-rigid, resilient plastic such as polyethylene, a polyvinyl, polypropylene and the like, which is easily cleaned and not easily broken. It may be made of metal or a combination of metal and plastic. The device may be made with dimensions not substantially greater than that of commercially available tubes used for such purposes, which means that it may be used essentially painlessly and safely for cleansing various body cavities.

While the device has been illustrated with reference to a particular embodiment, there is no intent to limit the spirit or scope of the invention to the precise details set forth except insofar as defined in the following claim.

We claim:

A device of the character described comprising a cen-

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tral tube having one end arranged for attachment to a source of fluid, a fluid discharge arranged on the opposite end of said tube, rotatable plug valve means intermediate the ends of said tube arranged to open and close the passage in said tube, a pair of speculum arms mounted externally of said tube and movable from a closed position substantially encompassing said tube to an open position extended away from said central tube, a pivot member interconnected with each said arm with one telescoped in the other and both mounted on said valve means, a handle interconnected with each said speculum arm arranged to open said speculum when said handles are pressed together, means interconnecting the pivot member of one of said speculum arms with one end of the plug of said valve whereby moving said handles together simultaneously opens said valve and

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said speculum arms, and means for pivotally securing the other said pivot member to the opposite end of said plug.

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