July 5, 1938. C. F. WIEGAND 2,122,995

VAGINAL SYRINGE

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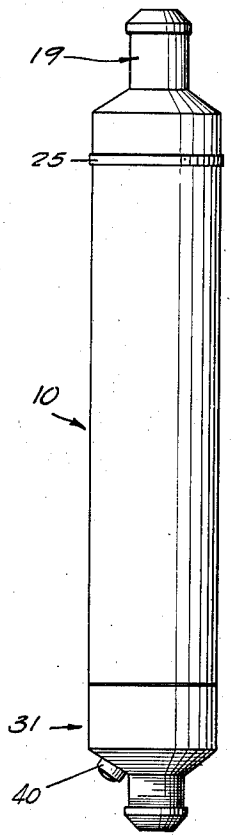


FIG. 1

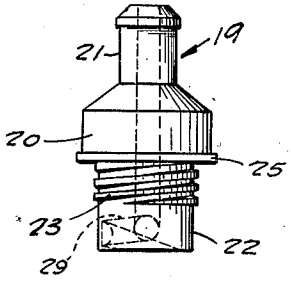


FIG. 2

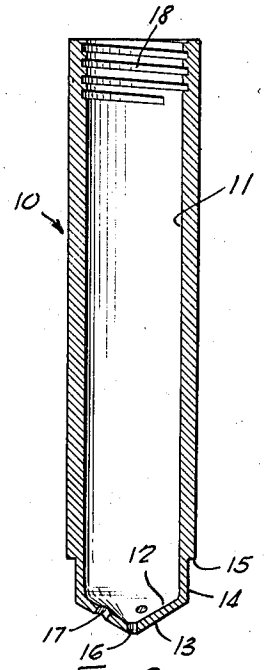


FIG. 3

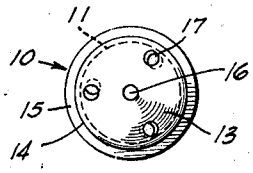


FIG. 4



FIG. 8

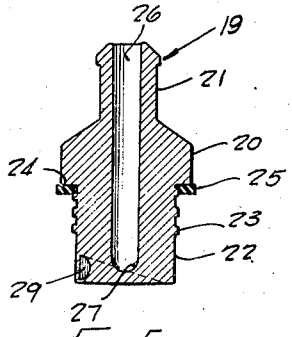


FIG. 5

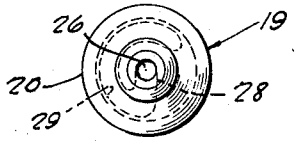


FIG. 6

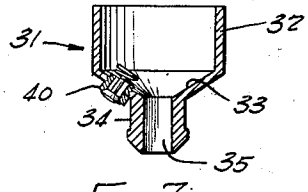


FIG. 7

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VAGINAL SYRINGE

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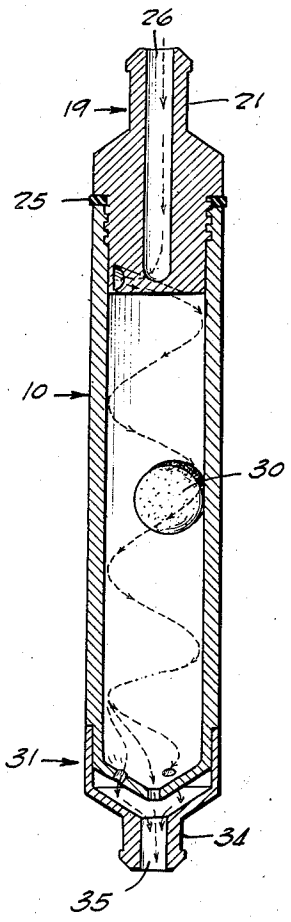


FIG. 9

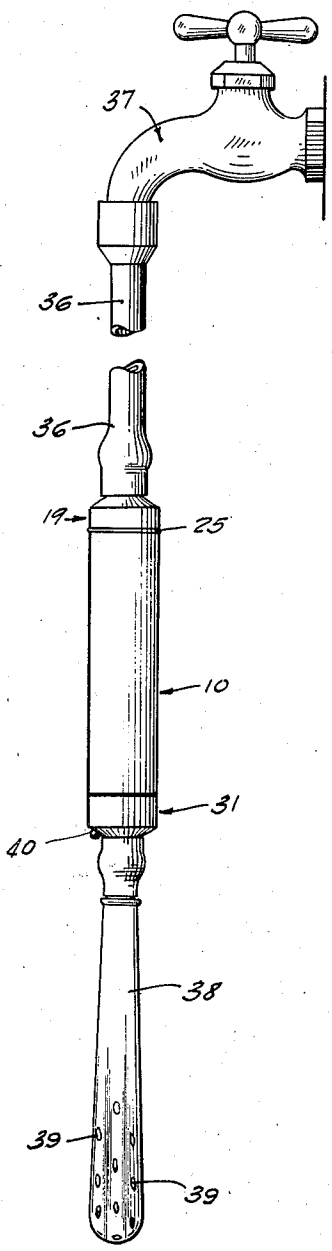


FIG. 10

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VAGINAL SYRINGE

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7 Claims. (Cl. 128—229)

This invention has to do with syringes such as are commonly employed in feminine hygiene, and is primarily concerned with that type of syringe known as a vaginal syringe.

The invention has in view as an important objective the provision of a syringe of this type, in which an ordinary household water faucet is availed of as a source of supply for fluid under pressure, and the syringe itself is characterized as including a suitable mixing or dissolving chamber for dissolving a proper medicament having desired antiseptic values in the stream of water coming from the source of supply.

An important object of the invention is the provision of a mixing chamber which is provided with means for introducing the water under pressure thereinto with a swirling action, whereby an erosion of the tablet or other form of antiseptic material in the chamber will take place to effectively enhance the mixing and dissolving action of the water therein.

More in detail the invention contemplates an arrangement involving a cylindrical mixing chamber with which is associated a helically disposed groove or passage that introduces the stream of water thereinto in a direction in which it will helically follow the cylindrical wall. As a result, any antiseptic materials which may be in engagement with the wall are eroded, and a thorough agitation takes place to complete the mixing and dissolving action.

Another more detailed object of the present invention is the provision of means for introducing the fluid from the mixing chamber into a suitable vaginal nozzle. In attaining this objective it is important that the pressure of the water not exceed a certain degree, or injurious results might be forthcoming.

Accordingly, this invention proposes an arrangement in which the cylindrical mixing chamber is closed by a conical head which is formed with a central opening, and a plurality of openings eccentric thereto which are angularly disposed so as to substantially align with the direction of the swirling action in the mixing chamber. Associated with this head is a cap including a conical seat which is slightly spaced from the head of the mixing chamber.

The fluid passes through the openings and strikes against this conical seat with a further mixing action resulting from the impingement, and at the same time any forceful streams of the fluid are destroyed. The conical seat of this removable cap terminates in a projection having an opening to which the vaginal nozzle is designed to be attached. This seat may also be provided with a safety valve for preventing fluid passing through the opening with an unsafe high pressure.

Yet another object of the present invention is to provide a vaginal syringe of the character described which includes a mixing chamber which is connected to a tube leading to a source of supply of water under pressure, with the connection between the tube and mixing chamber of such a character that upon a certain point in the pressure of the water being exceeded the connection will be broken, discontinuing the supply of fluid to the mixing chamber.

This arrangement presents a condition which eliminates the possibility of water under an unsafe degree of pressure passing into the vagina.

Various other more detailed objects and advantages such as those which arise in carrying out the above noted thoughts in a practical embodiment will in part become apparent, and in part be hereinafter stated, as the description of the invention proceeds.

The invention, therefore, comprises a vaginal syringe consisting of a mixing chamber having means at one end for conductively connecting the same to a source of supply of water under pressure, and this means is structurally designed to introduce the water into the mixing chamber with a swirling action which has desired eroding effects, on any antiseptic material which may be contained in the chamber. At the opposite end the chamber is closed by a conical head formed with openings, and a cap member is placed over this head with a conical seat spaced therefrom. This seat is formed with a projection having an opening, and a vaginal nozzle is detachably connected to this projection. A safety valve is also carried by this seat.

For a full and more complete understanding of the invention reference may be had to the following description and accompanying drawings wherein

Figure 1 is an elevational showing of the mixing chamber and associated parts of a vaginal syringe made in accordance with the precepts of this invention,

Figure 2 is a view in side elevation of a connecting member located at one end of the mixing chamber,

Figure 3 is a longitudinal section taken through the mixing chamber,

Figure 4 is an end view of the closed end of the mixing chamber,

Figure 5 is a vertical section taken through the connecting member 19,

Figure 6 is a top plan view of the connecting member shown in Figures 2 and 5,

Figure 7 is a transverse section through a removable cap member,

Figure 8 is a detailed view in perspective of a tablet of antiseptic material which is intended to be dissolved in the mixing chamber,

Figure 9 is a section through the syringe as assembled; the dotted lines bringing out the swirling action of the water, and

Figure 10 is an elevational showing of the syringe as assembled with a nozzle and tube leading to the source of water supply.

Referring now to the drawings, wherein like reference characters denote corresponding parts, a syringe is shown as comprising a central mixing chamber which is identified as 10. This member 10 is of the cylindrical formation shown in Figure 3 having a central bore 11 which terminates at one end in the conical seat 12 that is defined by the conical structure of the head 13. It is notable that the conical head 13 is connected to the cylindrical wall of the main member 10 by a reduced portion 14 terminating in a shoulder 15.

At this point it is well to note that the conical head 13 is provided with a central opening 16, and a plurality of eccentric openings 17 that are angularly disposed with respect to the axis of the mixing chamber 10; this being brought out in Figure 4 for a purpose to be later described in detail.

The member 10 may be made from any appropriate material, but I prefer to employ a phenol-resin product of a plastic material which is susceptible to appropriate manufacturing processes, and which will provide a finished product of a transparent nature. In a syringe of this type this is important, as one using the syringe may inspect the same to be sure it is clean whenever it is to be used.

At the end opposite from the head 13 the bore 11 is provided with screw threads identified at 18. Referring now more particularly to Figures 2, 5, and 6, a connecting member which is identified generally by the reference character 19 is shown as comprising a main body portion 20, which carries on one side a nipple 21 and on its opposite side a plug member 22 formed with screw threads 23 which are complemental to the screw threads 18 on the member 10.

It is notable that a shoulder 24 is disposed between the main body portion 20 and plug 22, and a packing member in the form of a gasket 25 may be carried on the plug member 22 in engagement with the shoulder 24.

A passageway 26 extends through the nipple 21 and main body portion 20, and into the plug 22 where it terminates short of the closed end thereof, as indicated at 27. Where the axial extent of the passageway 26 stops, a radial passage 28 extends therefrom, and this radial passage terminates in a helical passage 29 that is disposed just beneath the cylindrical wall of the plug 22 and which helical passage 28 opens into the end wall of the plug 22. This helical passage 29 terminates in the cylindrical wall of the plug 22, and when the connecting member 19 is assembled with the screw threads 23 threaded into the threads 18 the open termination of the helical passage 29 is substantially flush with the cylindrical bore 11 of the member 10.

A tablet of an appropriate antiseptic material is shown in Figure 8, and identified by the reference character 30. Obviously the invention is not to be limited to tablets of any particular size, shape, form or material, and this disclosure is intended merely as exemplary. While the invention in its preferred embodiment is intended to be used in conjunction with an antiseptic material in tablet form, obviously it would be just as effective were the antiseptic material introduced into the mixing chamber in the form of a powder, or, in fact, in any other form.

The size and number of the tablets 30 will, of course, depend on the particular antiseptic material used, and the strength desired in the cleansing solution.

Referring now more particularly to Figure 7, a removable cap is identified generally by the reference character 31, and is shown as consisting of a cylindrical portion 32 which is intended to fit over the reduced portion 14 with the end of the cylindrical portion 32 engaging the shoulder 15. The cylindrical portion 32 merges into a conical seat 33 which terminates in a nipple 34 having a central passage 35 which opens into the conical seat 33.

Referring now more particularly to Figure 9, the relationship of the conical seat 33 with respect to the head 13 when the cap 31 is assembled on the member 10 is clearly brought out. It is evident that the pressure of any fluid coming through the openings 17 will be materially reduced by impinging against the conical seat 33. This impinging also imparts a further mixing action to the fluid and material which may be in suspension or solution therein, and this space between the head 13 and conical seat 33 is constituted, for all effective purposes, an auxiliary mixing chamber, and the solution coming through the passageway 35 will be of a sufficiently low pressure to eliminate the possibilities of injurious results caused by high pressure.

To this same end of precluding the possibility of the water engaging the membranes of the vagina under a dangerously high pressure a safety valve 40 is provided. This valve 40 is of a well-known construction, and is effective to bypass fluid from the opening 35 when a certain predetermined pressure is exceeded.

As shown in Figure 10, a piece of rubber tubing 36 is connected at one end to the nipple 21, and extends to the suitable source of supply of water under pressure, such as the ordinary household faucet indicated at 37. The extremity of the rubber tubing 36 and nipple 21 are so designed that if the pressure of water from the faucet 37 exceeds a predetermined safe point the tubing 36 will fly off the nipple 21 in a well-known manner, thus interrupting the supply of water to the mixing chamber 10.

Figure 10 also shows the vaginal nozzle 38 as connected to the nipple 34. This nozzle 38 may be of conventional design, and its particular size and shape does not enter into this invention.

While the use of the above described syringe is believed to be obvious, it may be briefly summarized by noting that when the syringe is to be availed of for the purpose of giving a vaginal syringe an appropriate amount of antiseptic material, such as one or two of the tablets 30, is first introduced into the mixing chamber 10. The cap 31 is positioned as shown in Figure 9, and the nozzle 38 is positioned on the nipple 34.

The connecting member 19 is then threaded into position with the threads 23 engaging the threads 18. The tubing 36 is now connected at

one end to the water faucet **37**, and at the other end to the nipple **21**. When the water faucet **37** is turned on water under pressure passes through the tubing **36**, the passage **26**, radial passage **28**, and helical passage **29** from which it is introduced into the bore **11** of the mixing chamber **10** in a stream which conforms to the cylindrical wall of the chamber **10**. This swirling action follows the cylindrical wall of the chamber **10** in a spiral manner, and causes an erosion of the antiseptic material **30** to cause the same to become dissolved in the fluid. In this condition the mixture passes through the openings **16** and **17**, and a further mixing action results in the space between the conical head **13** and seat **33**.

The fluid mixture now passes through the passage **35** into the nozzle **38** which is formed with the openings **39** which pass the mixture against the membranes which are to be treated thereby.

It is well to note that the above described syringe may be used in applying medicaments for curative purposes in the giving of treatments, as well as for preventive purposes in using the ordinary antiseptics.

While a preferred specific embodiment of the invention is hereinbefore set forth, it is to be clearly understood that I am not to be limited to the exact construction illustrated and described, because various modifications of these details may be provided in putting the invention into practice within the purview of the appended claims.

I claim:

1. A syringe of the character described comprising a mixing chamber adapted to receive an antiseptic material which is to be put into solution, a connecting member at one end of the mixing chamber, said connecting member being formed with an axial passage, and with a helical passage which is in communication with the axial passage, and means for connecting the axial passage with a source of supply of water under pressure.

2. A syringe of the character described comprising a mixing chamber adapted to receive an antiseptic material which is to be put into solution, a connecting member at one end of the cylindrical mixing chamber, said connecting member being formed with an axial passage, and with a helical passage which is in communication with the axial passage, said helical passage terminating at the cylindrical bore of the mixing chamber with said axial passage extending through a nipple which constitutes a means for connecting the same with a source of supply of water under pressure.

3. A syringe of the character described comprising a cylindrical mixing chamber having a bore which is open at one end and which has a head closing the other end, and a connecting member in the open end of the mixing chamber and including means for introducing a source of supply of water under pressure into the mixing chamber with a swirling action, said head being of a conical formation and formed with openings at least some of which are angularly disposed with respect to the axis of the mixing chamber.

4. A syringe of the character described comprising a cylindrical mixing chamber having a bore which is open at one end and which has a head closing the other end, a connecting member disposed in the open end of the mixing chamber and including means for introducing water under pressure into the mixing chamber with a swirling action, said head being of a conical formation and formed with a plurality of openings, and a cap member having a conical seat spaced from the conical head.

5. A syringe of the character described comprising a cylindrical mixing chamber having a bore which is open at one end and which has a head closing the other end, a connecting member disposed in the open end of the mixing chamber and including means for introducing water under pressure into the mixing chamber with a swirling action, said head being of a conical formation and formed with a plurality of openings, and a cap member having a conical seat spaced from the conical head, said cap member being carried by the mixing chamber and having a nipple constituting a means for mounting a vaginal nozzle thereon.

6. A vaginal syringe of the character described comprising a mixing chamber formed with a cylindrical bore which is open at one end, and which is closed at the other end by a conical head, a connecting member having a plug fitted in the open end of the bore, said plug being formed with a helical passage which terminates at the cylindrical wall of the mixing chamber, said connecting member being formed with a central passage in communication with the helical passage, said central passage extending through a nipple constituting a means for connecting a rubber tubing to the connecting member, a removable cap carried by the mixing chamber at the end opposite from the connecting member, the said removable cap being formed with a conical seat which is spaced from the conical head, the conical head being formed with a plurality of openings which are angularly disposed with respect to the axis of the mixing chamber, said cap being formed with a nipple, and a vaginal nozzle carried by said nipple.

7. A syringe of the character described comprising a cylindrical mixing chamber having a bore which is open at one end and which has a head closing the other end, a connecting member disposed in the open end of the mixing chamber and including means for introducing water under pressure into the mixing chamber with a swirling action, said head being of a conical formation and formed with a plurality of openings, and a cap member having a conical seat spaced from the conical head, said conical seat being provided with a safety valve.

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