Oct. 11, 1938. P. L. CLARK, JR 2,133,079

INSERTER FOR DIAPHRAGMS

Filed Jan. 13, 1938

Fig. 1.

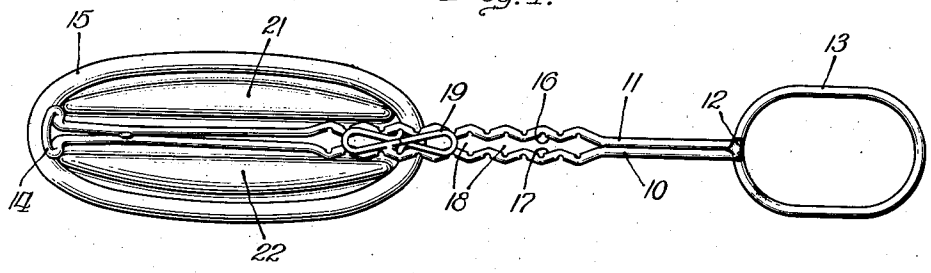


Fig. 2.

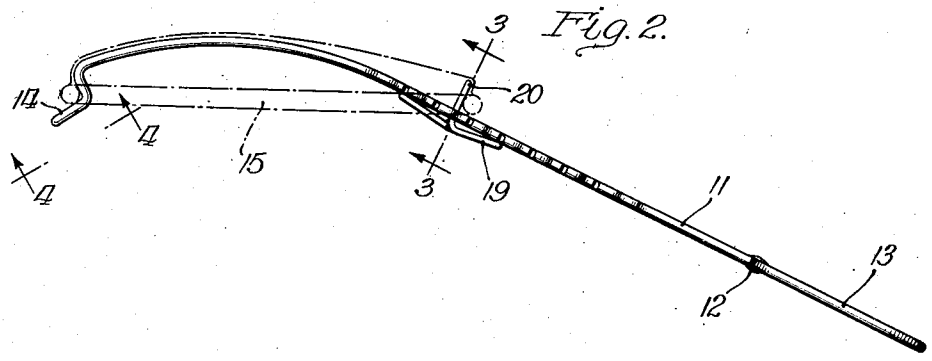


Fig. 3.

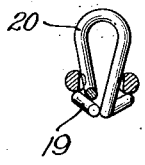
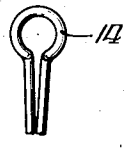


Fig. 4.



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INSERTER FOR DIAPHRAGMS

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Application January 13, 1938, Serial No. 184,747

4 Claims. (Cl. 128—127)

My invention relates to medicinal applicators and particularly to an inserter adapted for use with hemispherical or Mensinga diaphragms.

In the use of devices of the class described, it is somewhat difficult for the average woman to properly insert the diaphragm into the vagina with assurance that the ring entirely surrounds the cervix and is seated securely against the upper wall of the vaginal cavity in such manner as to avoid possible displacement.

To overcome this difficulty, a number of mechanical devices have been suggested, but in many cases there has been no provision for adaptation to different sizes of diaphragms. It is well understood that the hemispherical diaphragms are manufactured in diameters from 55 to 90 millimeters, the variations being by 5 millimeters. In practice, therefore, it has been necessary to keep a supply of inserters for all of those sizes, an objection that has interfered very materially with their use.

An object of my invention is to provide a universal adaptor, so arranged that the device is adapted for use in connection with any of the standard sizes of hemispherical diaphragms. Furthermore, the device is so simply constructed that the cost is very small and there are no parts that may become out of order.

The invention will be more readily understood by reference to the accompanying drawing; in which,

Fig. 1 is a bottom plan view of an inserter such as contemplated by me, a hemispherical diaphragm being held thereby in distended relation, ready for insertion;

Fig. 2 is a side elevation of the device in the position of use, ready for insertion, the diaphragm being shown in dotted lines;

Fig. 3 is a sectional view on the line 3—3 of Fig. 2, the parts being somewhat enlarged; and,

Fig. 4 is a fragmentary view on the line 4—4 of Fig. 2.

In the form of the device shown in the drawing, I provide a single wire, doubled on itself to provide two parallel body portions 10—11, joined at 12 and provided with a handle 13. At the opposite end, the two wires are disposed somewhat at an angle and are bent to provide the hook 14, adapted to engage the inside edge of the flexible rim 15 of a hemispherical diaphragm.

The body portions 10—11 are bent to provide complementary notches 16—17, thereby providing between the respective notches the openings 18 preferably spaced apart a distance corresponding to requirements as follows:

While, as stated, the standard diaphragms vary in diameter from 55 to 90 millimeters in 5 millimeter steps, the spacing of the notches should be greater than 5 millimeters, preferably about .28 inch. This will insure the proper deformation when the diaphragm is engaged as hereafter described.

In order to provide a complementary hook for engagement with the diametrically opposite portion of the rim of the diaphragm, I provide a bracket, preferably composed of a single length of wire bent to provide a head 19, generally of the shape of an elongated figure eight, and a rightangularly projecting body 20 having a greater width at its outer end than at its point of juncture with the head. This projection may be formed by looping the wire as shown. The construction is such that in order to enter the bracket into one of the notches, the parallel parts 10—11 must be sprung apart and when the bracket enters the opening, the parts will snap back into place, thus holding the bracket firmly in position. In the position shown in the drawing, a diaphragm of 65 mm. diameter is shown in place, the respective notches being designed to accommodate diaphragms having a diameter of 55 millimeters with the bracket in the notch at the extreme left and a diaphragm of 90 millimeters diameter with the bracket in the notch at the extreme right.

In operation, the dealer having sold a diaphragm of 65 millimeters diameter, the bracket is placed in the third notch from the left and delivered to the customer. The user places the curved end of the inserter inside of the diaphragm with the hook 14 engaging one side of the rim. By exerting some force, the rim is deformed in order to cause it to engage behind the bracket 20. In that position the soft rubber diaphragm will shape itself to form uniform folds 21—22 alongside of the wire body reversely shown in Fig. 1, and within the troughs so provided any suitable medicament may be located. Thus the medicament, usually in the form of a jelly, is confined or held in such position that it is not likely to be squeezed out during the process of insertion.

After the inserter and diaphragm have been projected into the vagina to the proper point, the finger of the user is employed to press upwardly on the point of the rim of the diaphragm that engages around the bracket 20 until it slips over the end of the projection, whereupon the ring will assume its normal circular shape and

locate itself against the upper wall of the vaginal cavity. The inserter is thereafter easily removed, leaving the diaphragm in place.

The extreme simplicity and adaptability of the device will commend itself to users, and the universality of its construction renders it desirable to dealers in this type of merchandise.

While I have shown the construction as composed of wire throughout, it will be understood that modifications and variations in this and other features may be made without departure from the spirit of my invention.

I claim:

1. An inserter for diaphragms, comprising, in combination, a body portion composed of two parallel closely adjacent parts having complementary notches therein, one end of the body being disposed at an angle and terminating in a hook, and a projection adapted to cooperate with said hook to hold a diaphragm in laterally distended relation, said projection being insertable in and removable from any one of the notches in said body by springing apart the parallel parts of said body.

2. An inserter for Mensinga diaphragms comprising, in combination, a pair of parallel body parts joined at their ends and adapted to be sprung apart at a point intermediate their ends, the facing portions of said parts having a series of notches longitudinally spaced apart a distance corresponding to standard variations in diameters of said diaphragms, said body parts terminating in a hook at one end, a bracket adapted to cooperate with said hook to engage a diaphragm in laterally distended relation, said bracket being adapted to be located in any one of said notches by springing the body parts apart, and held therein against removal except by the same springing action.

3. In combination, a pair of parallel wires joined at their ends only, whereby they are adapted to be sprung apart, at least one of said wires being bent to provide a series of spaced apart notches intermediate the joined ends, the said spacing being that of the variation in diameter of common Mensinga diaphragms, one end of said wires being disposed at an angle and terminating in a hook, a bracket adapted, with said hook, to engage and hold in distended position, the rim of a diaphragm, said bracket being constructed to be snapped into a selected notch corresponding to the diameter of said diaphragm.

4. In combination, a wire doubled on itself and having a hook at its doubled end and being joined and provided with a handle at its opposite end, the wire being bent to provide a series of notches at points intermediate the ends, a bracket having a head and a body portion that is wider at its outer end than at the point of juncture with the head, said body portion being adapted to be seated in a selected notch by springing apart the said wires.

PERCY L. CLARK, JR.