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3,234,938

INTRA-UTERINE U STEM PESSARY

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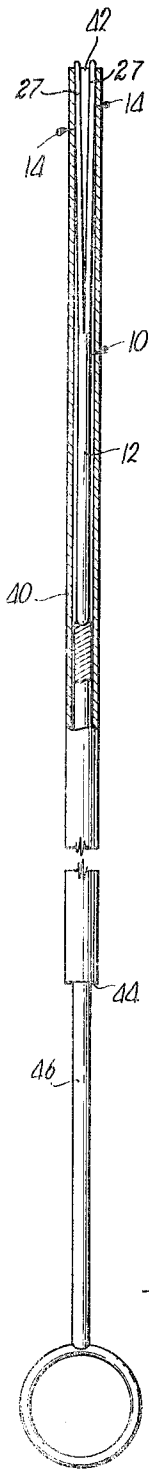


Fig. 1.

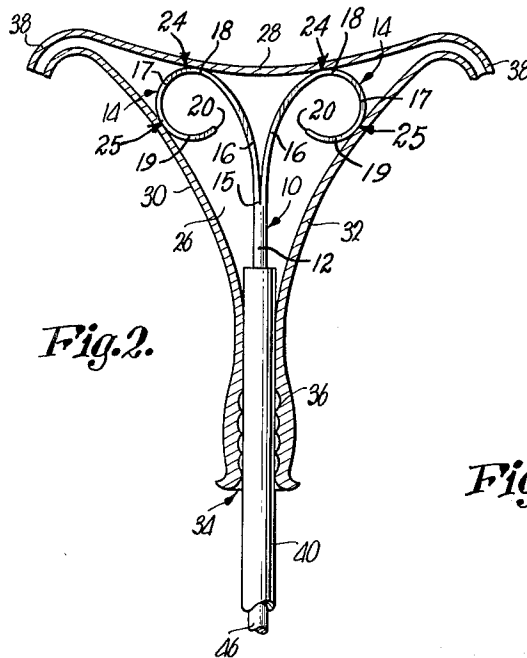


Fig. 2.

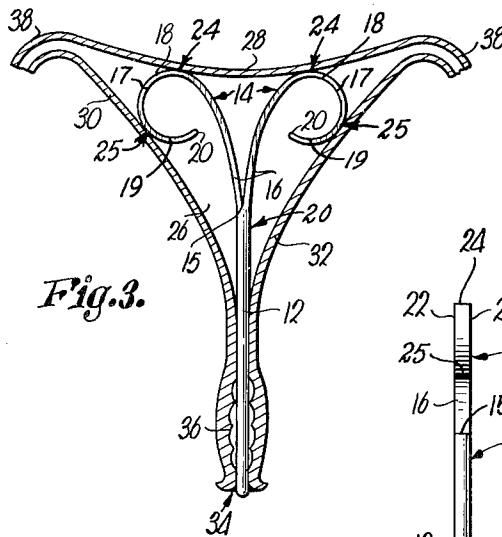


Fig. 3.

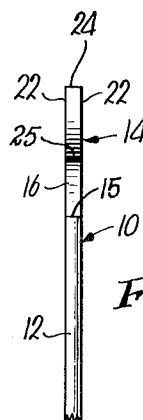


Fig. 4.

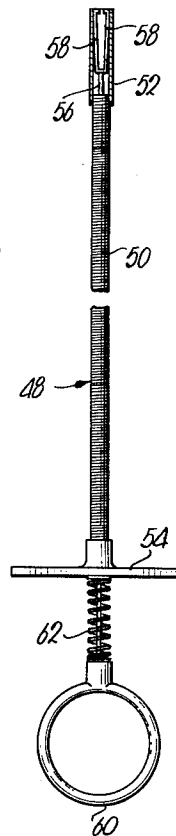


Fig. 5.

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INTRA-UTERINE U STEM PESSARY

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This invention relates to a pessary for use in correcting anatomical defects, and has as its primary object the provision of a pessary of improved construction which may be inserted and worn within the uterine cavity with a minimum of irritation to the wearer thereof and which substantially eliminates cramping and the complications associated therewith experienced by wearers of pessaries heretofore utilized.

Another important object of the present invention is the provision of a pessary which may be readily inserted within and removed from the uterus while at the same time providing means for substantially blocking the Fallopian tubes leading to the uterus and preventing any substantial implantation of ovum in the uterus even if such Fallopian tubes are not completely blocked.

Still another important object of the present invention is the provision of a pessary having a pair of resilient normally arcuate elements coupled with a shank and being capable of distortion relative to the latter into a configuration with the elements being disposed straight and parallel so that the pessary may be quickly and easily inserted in and removed from the uterus with the elements in the aforesaid configuration notwithstanding the fact that the elements resume their normal, arcuate shape when the pessary is fully inserted within the uterus.

Still another object of the present invention is the provision of a pessary of the type described which may be carried completely within an insertion tube prior to the insertion of the pessary within the uterus, whereby the tube may be extended through the cervical opening of the uterus to serve as a guide for the pessary as the same is directed out of the tube and into the uterus.

A further object of the present invention is the provision of a pessary having generally arcuate elements presently convex, outermost surfaces which are engageable with the inner wall of the uterus for supporting the same to maintain the proper shape thereof, notwithstanding the fact that the elements are normally disposed to substantially block the Fallopian tubes when the pessary is disposed within the uterus.

A further object of the present invention is the provision of a pessary of the type described which may be disposed completely within the uterus and cervix thereof and which may be removed therefrom without requiring the use of additional structure carried by the pessary and projecting outwardly from the cervix of the uterus as has been heretofore required with conventional pessary devices.

In the drawing:

FIGURE 1 is an elevational view of a pessary constructed pursuant to the concepts of the present invention and illustrating the same in an insertion tool prior to the insertion of the pessary into the uterus;

FIG. 2 is a fragmentary view of the tube inserted into the cervical opening of the uterus and further illustrating the normal disposition of the pessary when the same is disposed within the uterus;

FIG. 3 is a view similar to FIG. 2 and showing the tube removed from the cervical opening of the uterus;

FIG. 4 is an end elevational view of the pessary; and

FIG. 5 is a side elevational view of an instrument for removing the pessary from the uterus.

The pessary which forms the subject of the present invention is broadly denoted by the numeral 10 and includes

a relatively rigid shank 12 and a pair of oppositely looped elements 14 secured to and extending outwardly from one end 15 of shank 12 as is clear in FIGS. 2 and 3. Preferably, elements 14 are integral with shank 12 and are formed from a nonmetallic, yieldable material such as a suitable plastic. In this respect it is conceivable that pessary 10 may be molded by any of the well known molding techniques so that the elements 14, although being substantially resilient, will normally assume the relative dispositions thereof as illustrated in FIGS. 2 and 3.

Each element 14 includes an elongated, upwardly-extending, slightly arcuate upwardly-bowed arm 16 and an arcuate extension 18 merging smoothly with arm 16 at the extremity of the latter remote from shank 12 with arms 16 tangent to extensions 18. It is clear that the radius of curvature of each arm 16 is substantially greater than that of the corresponding extension 18, the radius of curvature of each extension 18 being substantially constant throughout the arcuate length of the latter. The arms 14 converge as end 15 of shank 12 is approached and the extensions 18 project outwardly from arms 14 in opposite directions.

Each extension 18 has an arcuate portion 17 extending downwardly therefrom and each portion 17 has an arcuate, inwardly-extending length 19 thereon. Each length 19 terminates at an extremity of terminus 20 which is normally in relatively close proximity to the medial zone of the corresponding arm 16. In addition, extremity 20 is disposed intermediate a line extending from end 15 of shank 12 to the major portion of the corresponding extension 18.

As shown in FIGS. 2 and 3, arms 16 of elements 14 are substantially divergent as the same recede from end 15. In addition, the elements 14, as is clear in FIG. 4, are each provided with a pair of opposed, arcuate edges 22 extending throughout the length thereof.

Pessary 10 is to be utilized within the uterine cavity 26 defined by the uterine walls 28, 30 and 32. In this position, pessary 10 is disposed so that the end of shank 12 remote from end 15, protrudes slightly at the vertical opening 34 at the outer ring of the cervix 36, as shown in FIG. 3.

Each element 14 is disposed such that outer, convex surfaces 24 and 25 of extensions 18 and portions 17 respectively are in relatively close proximity to or in engagement with the proximal walls 28 and 30-32. For instance, each extension 18 is disposed with its surface 24 in tangential engagement with wall 28. Similarly, each portion 17 is disposed with its surface 25 in tangential engagement with corresponding walls 30 and 32. The interengagement of elements 14 with walls 28, 30 and 32 provides a substantial support for such walls so as to maintain the normal shape of cavity 26. Moreover, elements 14 are disposed within cavity 26 so as to substantially block the path of ovum directed into cavity 26 from the Fallopian tubes 38 at the normal extremities of cavity 26. This is apparent since surfaces 24 and 25 tangentially engage respective walls 28, 30 and 32.

Each terminus 20 is disposed inwardly of surface 25, outwardly of arm 16 and downwardly of surface 24, preferably spaced from the inner surface of the coil segment which constitutes element 14.

It has been found that even if elements 14 do not completely block the path of ovum passing from tubes 38, pessary 10 prevents the implantation of the ovum on the uterine walls 28, 30 and 32. This is believed due to a stimulated foreign body reaction. Such reaction causes no substantial tissue changes in the walls themselves and, therefore, the same can be considered a benign condition.

Means for inserting pessary 10 within cavity 26 includes a tube 40 having a pair of open ends 42 and 44 and provided with a plunger 46 movable into and out of tube

40 at end 44 thereof. Pessary 10 is of such a nature that elements 14 may assume straight and parallel configurations as they are inserted into tube 40 at end 42. As shown in FIG. 1, pessary 10 is completely received within tube 40 with the shank 12 of pessary 10 being first received therein, the elements 14 thereupon becoming unlooped into side-by-side, elongated members 27.

In use, tube 40 is extended through the cervix 36 and partially into cavity 26 as shown in FIG. 2. Plunger 46 is then urged into tube 40 and against shank 12 to force pessary 10 into cavity 26. As the member 27 move out of tube 40 and into cavity 26, the elements 14 re-loop and resume their normal arcuate coil segments. Plunger 46 continues to force the pessary 10 out of tube 40 until surfaces 24 of extensions 18 contact wall 28. Tube 40 is then retracted from within cervix 36 and pessary 10 assumes the disposition illustrated in FIG. 3.

The method of insertion of pessary 10 within cavity 26 results in a minimum of irritation since the pessary 10 automatically assumes the normal configuration as the same emanates from tube 40. Also, tube 40 may be of a material and of a construction to minimize any irritation to the adjacent walls forming the cervix 36 as the tube is inserted and removed therefrom.

To remove pessary 10 from cavity 26, an instrument 48 is utilized, the latter including a resilient, tubular shank 50 having a sleeve 52 secured thereto at one end thereof, and a finger engaging bar 54 at the opposite end thereof. A rod 56 of small diameter extends through and is shiftable within shank 50. One end of rod 56 is coupled to a pair of resilient jaws 58 which are carried within sleeve 52 and normally diverge as jaws 58 move out of sleeve 52. The opposite end of rod 56 is coupled with a grasping ring 60, the latter being normally spaced from bar 54 by a bias spring 62. As ring 60 is urged toward bar 54, jaws 58 move out of and project outwardly from sleeve 52.

To remove pessary 10 from cavity 26, instrument 48 is disposed with the outer end of sleeve 52 in relatively close proximity to the end of shank 12 at opening 34. Ring 60 is then urged toward bar 54 to force jaws 58 outwardly until the same surround the corresponding end of shank 12. Jaws 58 are then moved into position grasping shank 12, and shank 50 is then shifted in a direction to draw pessary 10 out of cavity 26.

It is to be noted that as pessary 10 is drawn out of cavity 26, walls 30 and 32 are of such rigidity as to cause elements 14 to unloop and assume the straight configuration of members 27 as illustrated in FIG. 1. Thus, as elements 14 pass through the cervix 36, they will be in the nature of substantially straight and parallel members 27. To this end, the extremities 20 may be sufficiently rounded to minimize any irritation to walls 30 and 32 and the wall forming cervix 36.

The present invention provides a pessary which may be inserted in and removed from the uterus with a mini-

imum of irritation to the walls of the uterus while at the same time providing means for substantially blocking the Fallopian tubes leading to the uterus and for preventing any substantial implantation of ovum in the uterine cavity. The material forming pessary 10 is of a nature such that pessary 10 does not erode the uterine cavity so as to cause cramping and other complications associated therewith.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. An intra-uterine pessary comprising:
 - a shank having a pair of oppositely looped elements on the upper end thereof,
 - said elements having upwardly-extending arms converging as said end of the shank is approached,
 - said arms having extensions thereon projecting outwardly in opposite directions,
 - each of said extensions having a portion extending downwardly therefrom,
 - each of said portions having an inwardly-extending length thereon,
 - the extensions and the portions each having an outer, uterus-engaging surface,
 - each of said lengths having a terminus disposed inwardly of said surface of the corresponding portion, outwardly of the corresponding arm, and downwardly of said surface of the corresponding extension,
 - said elements being of resilient, self-sustaining material, permitting the same to be unlooped into side-by-side, elongated members extending upwardly from said end of the shank, and thereafter, in response to the memory of said material, to re-loop upon release of said members from the upwardly-extending condition thereof.
2. The invention of claim 1, said surfaces being convex.
3. The invention of claim 1, said extension and portion of each element comprising an arcuate coil segment and said arm of each element being disposed tangentially to the extension thereof.
4. The invention of claim 1, said extension, said portion and said length of each element comprising an arcuate coil segment and said arm of each element being upwardly bowed and disposed tangentially to the extension thereof.

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