

July 6, 1965

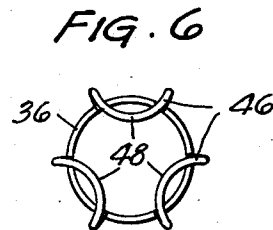
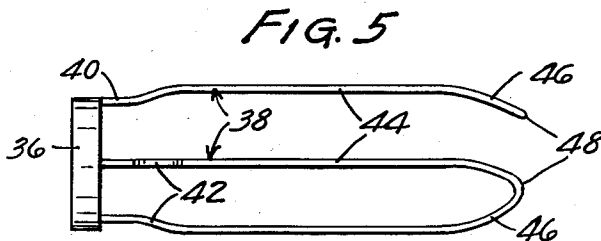
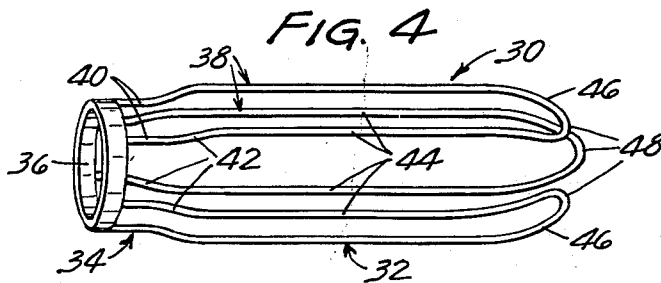
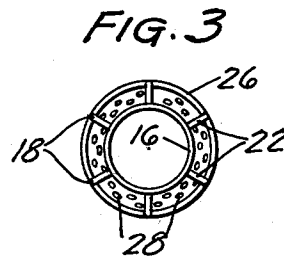
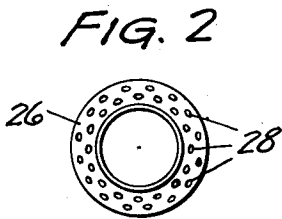
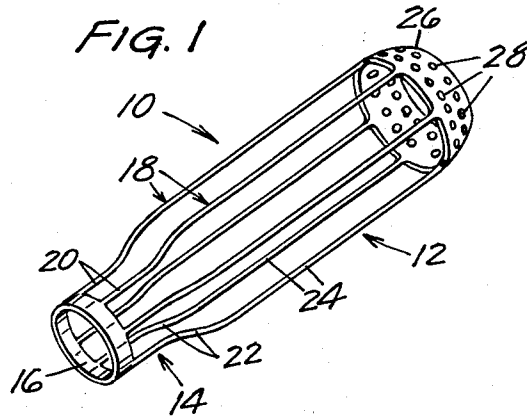
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3,192,928

GYNECOLOGIC APPLIANCE FOR VAGINAL DISTENTION

Filed May 2, 1961

2 Sheets-Sheet 1



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FIG. 7

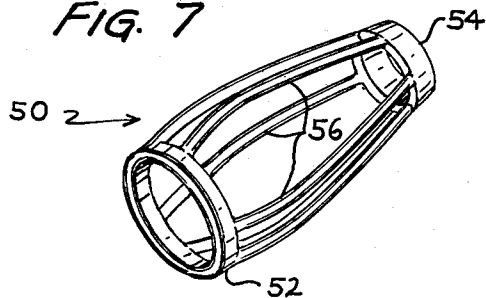


FIG. 8

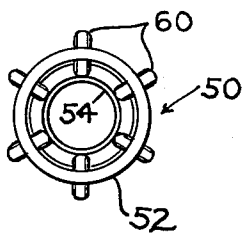


FIG. 9

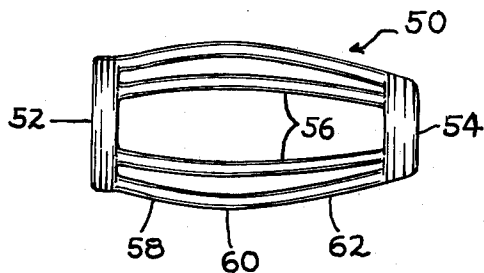
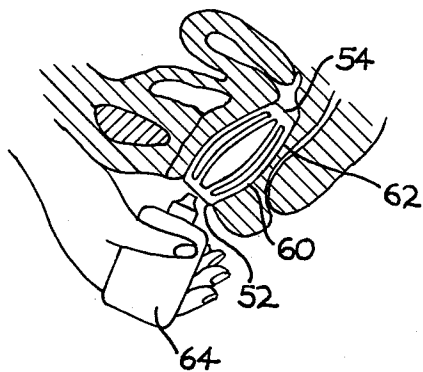


FIG. 10



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3,192,928 GYNECOLOGIC APPLIANCE FOR VAGINAL DISTENTION

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Filed May 2, 1961, Ser. No. 107,270
2 Claims. (Cl. 128—341)

This application is a continuation-in-part of my co-
pending application, Serial No. 3,522, filed January 20,
1960, now abandoned. This invention relates to a gyn-
ecologic appliance and more particularly relates to a gyn-
ecologic device for insertion into the vagina to facilitate
treatment of the vaginal canal and cervix.

In the treatment of infections and for simple cleansing
of the vaginal canal and cervix, heretofore about the only
device available to hold the vaginal canal in a distended
state for treatment was the doctor's speculum, the use of
which is restricted as to time, place, and duration of dis-
tension. It is an important object of this invention to
provide a simple, inexpensive, patient or doctor adminis-
trable device for ready insertion into and removal from
the vagina which device will upon insertion into the vagi-
nal canal remain completely housed comfortably there-
within for extended periods of time while permitting nor-
mal activity and yet maintaining the vaginal lining, and
particularly the rugal folds thereof, in an open, accessible,
distended state.

It is another important object of this invention to pro-
vide such a device which will, while in place, permit rela-
tively unobstructed drainage, aeration, drying and the ap-
plication of medication, by insufflation or otherwise, to the
vaginal tract throughout the tract length.

Another object of the invention is to provide a vaginal
distending device which is so constructed as to be com-
fortably retained in place within the vagina by the ana-
tomical structure of the vagina.

Other and further objects and advantages will be ap-
parent as the description proceeds.

Essentially the gynecologic device of this invention
comprises a readily and safely insertable and removable
vaginal distender formed from an elongated tubular body
for maintaining the vaginal lining in a distended accessible
state. The tubular body is so constructed as to be self-
positioning and self-retained in position in the vagina
and comprises a structurally open skeletal framework, of
preferably, thin, circumferentially spaced fingers or the
like, substantially throughout its length, and connecting
the open ends of the device to one another whereby the
body is open to generally unobstructed passage there-
through of fluids and medicaments to facilitate drainage,
drying, ventilation and other treatments of the vaginal
lining.

Prior to this invention, vaginal infections have been
treated most effectively only in doctor's offices where spec-
ulum distention of the vaginal canal could be conveniently
carried out; any self-treatment by the patient to supple-
ment visits to the doctor was limited to the application of
creams, suppositories, solutions and the like in such man-
ner as could be best arranged. Such self-treatment is
usually effective only if supplemented with frequent visits
to a doctor or clinic wherein speculum distention is pos-
sible to permit adequate drying, and ventilation of the
vaginal tract along with insufflation or similar medicinal
application during distention in order to adequately treat
the fold areas of the vaginal lining.

Since most infections of the vaginal tract and cervix are
surface infections which require adequate drainage, dry-

ing, aeration and penetration of medication to the infected
areas, the more adequately these requirements are fulfilled
the more quickly and simply the infection is eradicated.
The present invention provides a device which greatly fa-
cilitates the adequate fulfillment of these requirements.

The invention will be further described with reference
to the accompanying drawings wherein:

FIGURE 1 is an isometric view of a form of the device;

FIGURE 2 is a top view of the device of FIGURE 1;

FIGURE 3 is a bottom view of the device of FIGURES
1 and 2;

FIGURE 4 is an isometric view of a somewhat modified
form of the device;

FIGURE 5 is a side view of the device of FIGURE 4;
and

FIGURE 6 is a top view of the device of FIGURE 4.

FIGURE 7 is a perspective view of a presently pre-
ferred device made in accordance with this invention;

FIGURE 8 is an end view of the device of FIGURE 7;

FIGURE 9 is a side elevational view of the device of
FIGURE 7; and

FIGURE 10 is a partially schematic illustration of the
device in place within the vagina.

In the form of the invention illustrated in FIGURES
1-6, one end portion of the tubular device is of reduced
diameter and provides an entrance into the length of the
tubular body; this reduced end portion is formed to pro-
vide a shoulder at the juncture thereof with the main por-
tion of the body. The reduced end portion of the device
is adapted to rest in the hymeneal ring area of the vagina
which area constricts itself to conform to this reduced
diameter whereby the vaginal lining above the hymeneal
ring forms a seat against which the shoulder of the device
rests to maintain the device in place within the vaginal
canal. The reduced end of the device being open, the
device can be easily and rapidly removed simply by wedg-
ing a finger or the like into the open lower end of the
device and thereafter extracting the device. The other
end of the device is rounded or otherwise smoothly blunt-
ed to facilitate insertion of the device into the vagina with-
out discomfort or injury.

Referring now to the accompanying drawings in detail
the device of FIGURES 1-3 is designated in its entirety
by the numeral 10 and comprises essentially an elongated
structurally open tubular body having a main body por-
tion 12 and a reduced end portion 14. The general ap-
pearance of the device is that of an open, skeletal tubular
framework.

Beginning with the reduced end portion 14, the device
10 comprises essentially a rigid ring or collar 16 from
which project, preferably, although not necessarily, at
equidistantly spaced circumferential intervals, relatively
rigid fingers 18 which are disposed generally parallel
to the axis of the ring. As the shorter portions 20 of
fingers 18 forming the reduced end portion 14 join the
main body portion 12 of the device 10, they are flared
outwardly from the reduced end portion to provide a
shoulder 22 on the tubular body at the juncture of the
long main body portion 12 of the device to the shorter
reduced end portion 14 thereof. The major portions 24
of the fingers 18 forming the main body portion 12 of
the device are disposed generally parallel to the axis of
the collar 16 on the reduced end portion 14 of the device
and are diametrically outwardly offset from the shorter
portions 20.

At their free ends these fingers 18 are connected to a
blunt truncated dome-like head or cap 26 which permits
ready insertion of the device into the vagina without in-
jury. The cap 26 is truncated to facilitate access to the
cervix, and to aid in aeration when the device is in place

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the truncated dome-like cap or head 26 is preferably further provided with a plurality of apertures 28 or the like to provide a sieve-like effect.

The blunt end of the device need not be in the form of a truncated dome-shaped head as at 26, as will be apparent from examination of the modification shown in FIGURES 4 through 6; however, this structure is preferable when the device is made of plastic and equivalent materials as the shell-like dome 26 provides added structural support for the skeletal body of the device. While this dome need not be truncated, and may be completely closed, the central opening provided by the truncated structure is preferred to provide unobstructed access to the cervix and posterior fornix of the vagina. The reduced end collar 16 serves as an entrance to the tubular body for aeration and drying as well as for the insertion of medication into the vagina.

In the device of FIGURES 4 through 6, a somewhat different structure is depicted than that shown in FIGURES 1 through 3. The device of these figures is designated in its entirety by the numeral 30 and is again seen to comprise a main body portion, 32, and a reduced end portion, 34, the reduced end portion being formed of a collar or ring 36 from which project fingers 38. The fingers 38 are paired, each pair being equidistantly spaced from its adjacent pairs, and the fingers extend in an overall direction generally parallel to the axis of the device 30 to form an open tubular body. The short portions of the fingers 38 forming reduced end portions 34 flare outwardly at the juncture of the reduced end portion 34 to the main body portion 32 of the device to provide a shoulder 42 joining the elongated main body forming portions 44 of the fingers 38 to the reduced end portion 34 of the device. Each pair of fingers 38 are intumed at their upper ends toward the body axis and curved toward the device axis to provide a smoothly curved blunt end on the device 30. The fingers 38 of each pair converge toward one another as at 46 and are joined at their converging ends by means of a connecting web 48. This construction although somewhat different from that described with reference to FIGURES 1-3, performs the same function, being however better adapted for formation from metal, taking advantage of the structural resiliency and strength of metals to provide a somewhat more open structure than that shown in the device of FIGURES 1-3.

In a presently preferred form, illustrated in FIGURES 7-10, the vaginal distender of the invention comprises an elongated tubular plastic body 50 of polyethylene, or other plastic, which is sufficiently inert to permit safe retention within a body cavity. The device 50 comprises a pair of annular end rings 52 and 54 respectively interconnected by circumferentially spaced thin fingers or rod-like elements 56; the device 50 thus formed is a hollow skeletal tube. End ring 54, which forms the distal or insertion end of the device, is smaller than end ring 52, which forms the access or proximal end of the device when the device is in place. Each finger 56 is somewhat bow-like in shape, one end portion 58 of each finger diverging outwardly for a short distance from access end ring 52 to a smoothly arcuate intermediate portion 60, the other end portion 62 of each finger diverging outwardly from the insertion end ring 54 for a somewhat longer distance than end portion 58 before merging into the intermediate portion 60. The tapering end portions 58 and 60 and arcuate intermediate portions 60 of the fingers 56 provide a distender having a circumferentially enlarged shoulder or bulbous intermediate portion with smoothly tapering end portions.

As is evident from FIGURE 10, wherein the device 50 is illustrated in place in the vaginal tract, the elongated tapered portions 62 from the intermediate humps 60 of the fingers 56 toward insertion end 54 of the device facilitate ready and safe insertion of the device. The shorter tapered portions 58 of the fingers 56 toward the access end 52 of the device facilitate ready and safe removal of

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the device. The enlarged or shouldered, intermediate portion of the device formed by portions 60 of the fingers 56 cause the device to be retained in the vagina by the natural contractive resilience of the vaginal lining.

The open skeletal structure of the device maintains the rugate folds of the vaginal lining in an open, readily accessible and comfortable state for medication, cleaning and/or other treatment for long periods of time. The large access end ring 52 enables ready insufflation or the like from a suitable squeeze bottle container or the like 64 into the vagina to treat the vagina effectively while, and in fact because, the device 50 is in place therewithin.

Being of a reasonably stiff, shape retaining form, the device can nevertheless be hand molded to some degree to reduce the diameter of the intermediate portion and consequently lengthen the total length of the device or conversely to reduce the total length of the device and somewhat increase the diameter of the enlarged intermediate shoulder portion thereof. While the natural "memory" of the device will cause it eventually to assume its original form the somewhat yieldable nature of the body is obviously highly advantageous in the prevention of injury or discomfort in the use of the device.

While two modifications of the invention have been specifically illustrated and described it will be obvious that numerous other modifications and changes are possible within the ambit of the invention; for example, the device might be formed of a foraminous body, or the size and/or cross sectional shape of the fingers changed and rearranged and other similar modifications made. Thus, it is intended that the invention shall be limited only as required by the appended claims.

In general, the devices of this invention are from about 2 to 4 inches in length and vary in diameter from about 1/2 to 1 1/2 inches in the main body portion, the reduced end portion being about 1/2 to 3/4 the diameter of the main body portion of the device. These dimensions will cover the normal range of anatomical variations, but may obviously be varied to fit the circumstances without departing from the spirit of the invention.

I claim:

1. A readily insertable and removable vaginal distension device for holding the lining of the vagina in a distended condition accessible from the exterior thereof, said device comprising an elongate skeletal body of generally tubular form, said body comprising proximal and distal end forming rings, circumferentially spaced longitudinally extending skeletal fingers interconnecting said end rings to one another, said fingers bowing outwardly from said end rings and forming an enlarged smoothly arcuate intermediate portion adjacent said proximal end ring and remote from said distal end ring to facilitate retention of the device within the vagina by conformance of the hymeneal ring area of the vagina with said proximal end portion of said body behind said enlarged intermediate portion, said device being adapted for self retention wholly within the vaginal cavity for maintaining the vaginal lining in a distended state while providing minimal structural contact with said lining.

2. A readily insertable and removable vaginal distension device having a length of from about 2 to about 4 inches for holding the lining of the vagina in a distended condition accessible from the exterior thereof, said device comprising an elongate skeletal body tubular in form having proximal and distal end portions interconnected by a main body portion, said device consisting essentially of circumferentially spaced longitudinally extending fingers extending between and joined to aligned proximal and distal end rings, said fingers bowing outwardly from said end rings and forming a circumferentially enlarged smoothly arcuate intermediate shoulder portion on said device to facilitate self-retention of the device wholly within the vaginal cavity, said fingers being yieldable for hand molding the device to the desired length and diameter, said device being adapted to maintain the vaginal

lining in a distended state without interfering with normal movements of the patient while the device is in place.

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