Jan. 13, 1953 T. YOUNG 2,625,154

LATERALLY COLLAPSIBLE PESSARY

Filed June 10, 1948

Fig. 1.

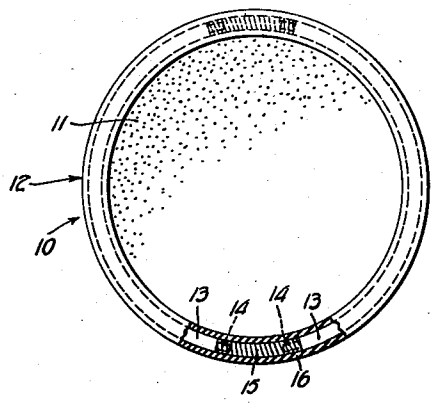


Fig. 2.

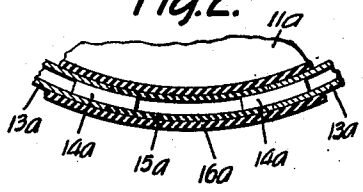


Fig. 4.

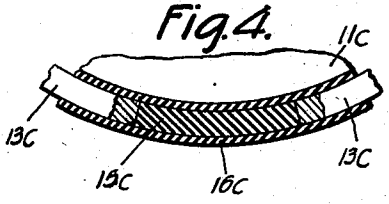


Fig. 3.

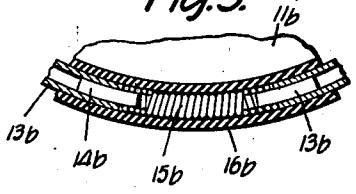
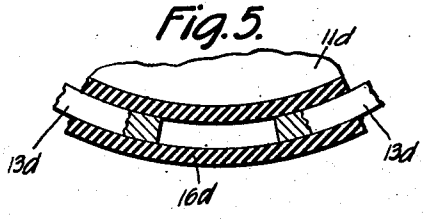


Fig. 5.



INVENTOR.
Thomas Young

BY

Moses, Wolfe, Crews & Berry
ATTORNEYS

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LATERALLY COLLAPSIBLE PESSARY

Thomas Young, New York, N. Y., assignor to Durex Products, Incorporated, New York, N. Y., a corporation of New York

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5 Claims. (Cl. 128—127)

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This invention relates to pessaries, and is applicable alike to pessaries of the occlusive diaphragm type and to pessaries of the open ring type.

The present invention is in the nature of an improvement upon the invention disclosed and claimed in my copending application, Serial No. 613,131, filed August 28, 1945, for Pessaries, now Patent No. 2,443,943.

In said application disclosure is made of a pessary having a rim which comprises a pair of manually deformable but normally rigid core segments, spaced from each other to provide bending zones, an endless helical spring enclosing the cores, and a molded rim member of soft resilient material enclosing the spring and the core segments. The construction referred to is a practical and advantageous one and has proved successful commercially.

I have found, however, that it is unnecessary to extend the helical spring completely around the rim of the pessary, and that the elimination of the core-surrounding spring has a number of advantages such as reduction of expense and reduction of weight and bulk.

In accordance with certain forms of the present invention, core segments are provided in alternation with flexible members, the flexible members being disposed in end to end relation with the core members and being desirably of substantially the same external diameter as the core members. With this kind of arrangement the reduction in the amount of metallic material employed considerably reduces the weight of the construction. The rubber rim member which encloses the core segments and the spring members can be made smaller than heretofore if desired, or the reduction of bulk of the core segments and the flexible members may be taken advantage of to provide a thicker walled, more cushioning enclosing rim member.

In accordance with some forms of the invention the flexible members consist of metallic springs inserted between the core segments and disposed in end to end relation to the latter.

In accordance with one form of the invention the core members are made hollow and the core members are secured in end to end relation with metallic springs by means of inserted pins.

In accordance with a second form of construction hollow core members are secured by means of inserted pins in end to end relation with flexible hollow members which may or may not be of resilient material. If the flexible members are non-resilient, the molded enclosing member, which is resilient, is made of sufficient wall thickness to cause the pessary when collapsed and released in service to recover its normal shape.

In a third form of the invention solid core segments and flexible spacers are disposed in end to end relation and are permanently enclosed

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and retained in end to end relation by the molded resilient rim member.

In a fourth form of the invention there is neither a helical spring employed nor a flexible spacer between the core segments. The core segments are secured in fixed space relationship within a relatively massive molded resilient rim member, the latter member being vulcanized to the core segments.

Other objects and advantages will hereinafter appear.

In the drawing forming part of this specification

Fig. 1 is a plan view showing an occlusive diaphragm pessary embodying features of the present invention, parts being broken away to reveal more clearly the internal construction;

Fig. 2 is a fragmentary sectional view showing another form of construction which embodies features of the invention;

Fig. 3 is a view similar to Fig. 2 but showing still another form of construction;

Fig. 4 is a view similar to Fig. 2 showing a fourth form of construction; and

Fig. 5 is a view similar to Fig. 2 showing a fifth form of construction.

Referring first to Fig. 1 there is shown a pessary 10 including a membrane 11 of rubber or other suitable flexible resilient impermeable material, and a marginal rim member 12 whose outer portion is of the same material. The rim member 12 may be of any desired shape, but it is illustrated as circular because the various desirable shapes are well known, and such variations form no part of the present invention.

The rim portion 12 includes a pair of wire inserts or core segments 13 which are spaced apart at their ends, the spacing being introduced so that bending zones may be formed between the adjacent ends of the core segments. Each core segment 13 includes a reduced end portion 14 which may be formed integral with the segment.

Metallic coil springs 15, desirably of the same external diameter as the core segments 13, receive the pins 14 within their hollow ends. The pins 14 may be large enough to fit snugly into the ends 15 so as to hold the core segments and the springs securely in assembled end to end relation. Whether or not the parts are securely joined independently of the molded surrounding member 16, the latter member encloses and confines the parts so as to retain them against relative shifting and may, if desired, be vulcanized to the metallic parts.

With the pessary constructed as described, the rim can, if desired, be made of less external diameter than in former constructions. In those instances where a reduction in diameter is not particularly to be desired, the molded member may be made with thicker walls than in prior constructions so as to provide a more complete

cushioning effect. The structure employs considerably less metal and is considerably lighter than prior devices.

In the construction described, the resiliency of the bending zones is attributable in part to the metallic springs 15 and in part to the enclosing molded material.

In Fig. 2 the construction in general bears a close resemblance to that of Fig. 1. The occlusive pessary fragmentarily illustrated comprises core members 13a which, while generally similar to the core members 13 of Fig. 1, are shown as of hollow construction throughout. These core members have pins 14a driven into their ends. The protruding ends of the pins are inserted in the ends of flexible tubular members 15a which take the place of the springs 15 of Fig. 1. The sleeve members 15a may be made resilient or not as desired but they are definitely of a flexible material. They may consist of rubber tubing, or, for example, of tubing formed of rubberized fabric. An enclosing rim member 16a similar to the rim member 16 of Fig. 1 is provided. If the sleeve members 15a are of non-resilient material, the walls of the resilient enclosing rim member 16a are made thicker to provide a desired resiliency.

Still another form of occlusive pessary generally like the disclosures of Figs. 1 and 2 is fragmentarily shown in Fig. 3. In this form parts 13b, 14b and 16b are the same as parts 13a, 14a and 16a of Fig. 2. A coil spring 15b similar to the spring 15 of Fig. 1 is employed in the manner already described in connection with Fig. 1.

In Fig. 4 a fragmentary disclosure is made of still another form of occlusive pessary. The core members 13c may be hollow, or they may be solid metallic members the same as the members 13 of Fig. 1 except that the reduced end portions 14 of Fig. 1 are omitted. Solid flexible members 15c are interposed in end to end relation with the core members 13c. A molded resilient enclosing rim member 16c is provided as in the other illustrations. In this form of construction the rim member 16c is relied on exclusively for holding the parts in their assembled relationships.

In Fig. 5 solid metallic core members 13d are provided with open spaces between their ends. A relatively massive molded enclosing resilient rim member 16d is provided, this member having sufficient body and resiliency to cause the rim member to spring back to its normal shape when it is collapsed and released in service.

While occlusive pessaries have been described in connection with each of the figures it will be appreciated that the diaphragrm portions 11, 11a, 11b, 11c and 11d, can be omitted in the various illustrated forms wherever simple ring pessaries are desired. In all instances the soft resilient portion of the rim can be made of rubber and can be vulcanized to the metallic parts. Vulcanization is particularly desirable, however, in connection with the form of construction illustrated in Fig. 5.

I have described what I believe to be the best embodiments of my invention. I do not wish, however, to be confined to the embodiments shown, but what I desire to cover by Letters Patent is set forth in the appended claims.

I claim:

1. A pessary comprising, in combination, a pair of core segments each of rigid but manually pliable material so that the pessary is adapted to be manually shaped and will hold its shape, flexible members arranged in alternate relation with the core segments to provide bending zones, said members being secured in end to end relation to the core segments, and a continuous, integral molded rim member of uniformly soft resilient material enclosing and fitting directly against the core segments and the flexible members throughout substantially its entire length.

2. A pessary comprising, in combination, a pair of core segments each of rigid but manually pliable material so that the pessary is adapted to be manually shaped and will hold its shape, coil springs arranged in alternate relation with the core segments to provide bending zones, said springs being secured in end to end relation to the core segments, and a molded rim member of soft resilient material enclosing and fitting directly against the core segments and the coil springs throughout substantially its entire length.

3. A pessary comprising, in combination, a pair of core segments each of rigid but manually pliable material so that the pessary is adapted to be manually shaped and will hold its shape, each core member having reduced end portions at the opposite ends thereof, coil springs disposed between the core segments, and having their end portions surrounding the reduced end portions of the cores and spacing said end portions substantially from one another, the springs providing bending zones between the core segments, and a molded rim member of soft resilient material which encloses and fits directly against the core segments and the springs throughout substantially its entire length and confines them in substantially end to end relation.

4. A pessary comprising, in combination, a pair of core segments each of rigid but manually pliable material so that the pessary is adapted to be manually shaped and will hold its shape, a pair of flexible members of substantially the same cross section as the core segments disposed in alternation and in end to end relation with the core segments, and means for retaining the core segments and flexible members in substantially end to end relation comprising a continuous, integral molded rim member of soft resilient material throughout which encloses and fits directly against the core segments and the flexible members throughout substantially its entire length.

5. A pessary comprising, in combination, a pair of hollow core segments each of rigid but manually pliable material so that the pessary is adapted to be manually shaped and will hold its shape, hollow flexible members disposed in alternation with the core segments and in end to end relation thereto, connecting pins disposed within the hollow core segments and the flexible members and spanning the joints between them, and a continuous, integral, molded rim member of soft resilient material throughout enclosing and fitting the core segments and the flexible members.

THOMAS YOUNG.

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