March 3, 1959 W. J. HEUBOSKI ET AL 2,875,755

PESSARY

Filed June 21, 1954 2 Sheets-Sheet 1

FIG. 1

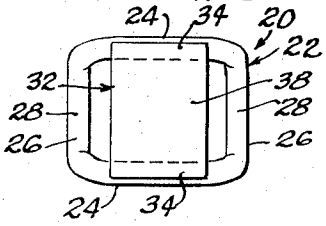


FIG. 2

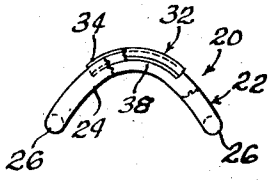


FIG. 3

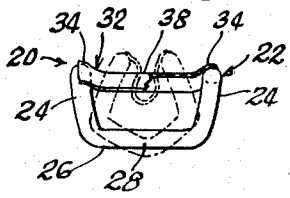


FIG. 4

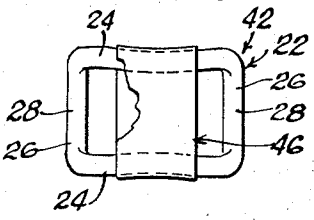


FIG. 5

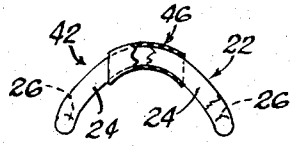


FIG. 6

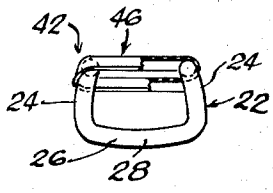


FIG. 9

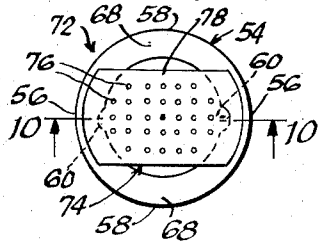


FIG. 10

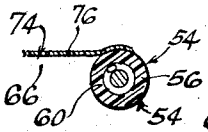


FIG. 7

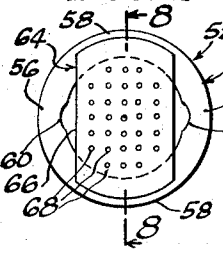


FIG. 8

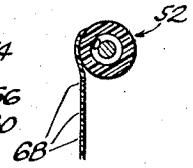
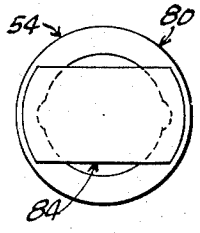


FIG. 11



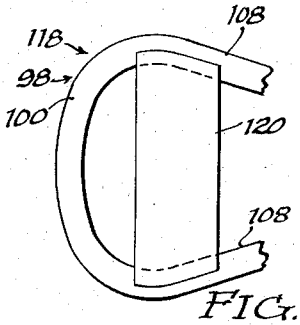


FIG. 12

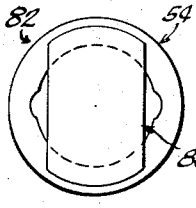


FIG. 17

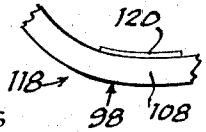


FIG. 13

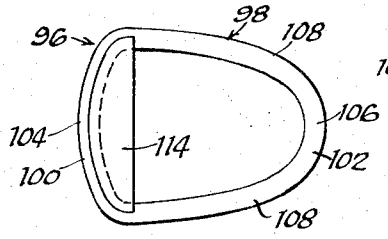


FIG. 16

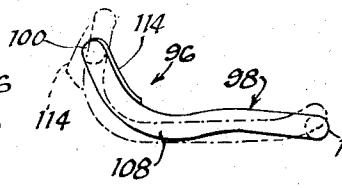


FIG. 15

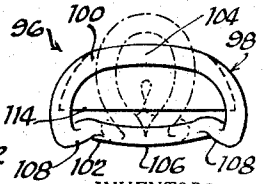


FIG. 14

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PESSARY

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United States Patent Office 2,875,755 Patented Mar. 3, 1959

2,875,755

PESSARY

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Application June 21, 1954, Serial No. 438,274

22 Claims. (Cl. 128—127)

This object relates to pessaries.

An object of the invention is to provide a pessary which may be made without resorting to molding.

A further object is to provide a pessary, the several parts of which may be expeditiously assembled by hand or with the use of simple tools.

Another object is to provide a prolapse pessary which affords direct support for the cervix.

An additional object is to provide a prolapse pessary which supports the uterus directly as well as indirectly through the muscles about the uterus.

It is also an object to provide a cystocele pessary which affords support for substantially the entire width of the depressed upper vaginal wall.

Another object is to provide improved pessary construction.

Further objects and advantages of the invention will appear as the description proceeds.

The invention will be better understood upon reference to the following description and the accompanying drawings, in which:

Figs. 1 to 3 are respectively top plan and side and end elevational views of a foldable cystocele pessary embodying features of the invention, Figs. 2 and 3 being partly in section, and Fig. 3 showing in dot-dash lines a folded shape of the pessary.

Figs. 4 to 6 are similar to Figs. 1 to 3 but show a modification.

Fig. 7 is similar to Fig. 1 but shows a foldable prolapse pessary embodying features of the invention.

Fig. 8 is a fragmentary enlarged sectional view taken as indicated by the line 8—8 in Fig. 7.

Figs. 9 and 10 are similar to Figs. 7 and 8 but show a modification.

Figs. 11 and 12 are similar to Figs. 7 and 9 but show further modifications.

Figs. 13 and 15 are similar to Figs. 1 to 3 but show a foldable retro-displacement pessary embodying features of the invention.

Figs. 16 and 17 are respectively plan and fragmentary side elevational views of a modification of the structure shown in Figs. 13 to 15.

Figs. 18 and 19 show successive stages of completion of another pessary rim construction, the completed rim taking various shapes as shown in other figures of the drawings.

Figs. 20 and 22 show successive stages of completion of the prolapse type of pessary rim shown in Figs. 7 to 12.

Figs. 23 to 25 show a pessary rim in successive stages of completion in accordance with the invention, the completed form being shown variously in lower numbered figures of the drawings.

Referring now more particularly to the drawings, disclosing illustrative embodiments of the invention, there is shown (Figs. 1 to 3) a foldable cystocelic pessary 20 comprising a rim 22 having bowed relatively stiff sides 24, its ends 26 being resilient at their midportions 28

so that the sides may be moved toward each other about an axis passing through said midportions, pursuant to pressure of the thumb and forefinger of one hand of the physician, to facilitate insertion into and removal from the vaginal canal, and so that, upon release of such pressure, the sides will be flexed away from each other by the midportions and will be pressed against opposite wall portions of the canal to give lateral as well as upward support to such wall portions of the canal.

A hammock or saddle 32 of flexible sheet material is cemented or bonded or otherwise suitably secured at its ends 34 to the intermediate parts of the bowed sides 24 and spans the space therebetween, and its intermediate portion 38 may be substantially taut when the pessary 20 is free, but, being flexible, will yield and thus will not interfere with the relative approach of said sides nor with the insertion and removal of the pessary. When the pessary 20 is inserted and as the sides 24 recede from each other, the saddle portion 38 approaches a taut condition and will be moved into engagement with the unduly depressed upper wall of the vaginal canal (due to the cystocelic condition of the patient) and will give support thereto.

A modified form of foldable cystocelic pessary 42 is shown in Figs. 4 to 6, wherein the saddle is in the form of a wide elastic band 46 expanded onto and about the sides 24 of the rim 22 so that it cannot accidentally become separated from the rim. The band 46 is substantially centrally positioned between the rim ends 26, and, like the saddle 32, will not interfere with insertion nor with removal of the pessary 42, and the upper intermediate portion 48 of the band will afford support for the unduly depressed upper wall of the vaginal canal.

A foldable corrective pessary for first or second degree prolapse is shown at 52 (Figs. 7 and 8), and comprises a rim 54 which is substantially circular or ring-like when free, the rim being relatively stiff except at two diametrically opposite portions 56 thereof, which are resilient and tend to maintain the rim circular. The intermediate relatively stiff arcuate portions 58 of the rim 54 may be moved in response to pressure thereon by the thumb and forefinger of one hand of the physician to fold the rim at said resilient portions 56 to give the rim a generally crescent shape and thus facilitate insertion into and removal from the vaginal canal. After the rim 54 is thus inserted, the physician relaxes his pressure so that the rim assumes its substantially normal circular shape, and then he gives the rim a quarter turn substantially in its own plane until the resilient portions 56 are engaged with substantially directly opposite portions of the side walls of the vaginal canal, where the stiffness of said intermediate portions of the rim offers the desired lateral support. The rim 54 may be notched as at 60 adjacent the resilient portions to enable the physician by the sense of touch to assure himself that he has adequately turned the rim. When the rim 54 is to be removed from the canal, the physician gives the rim a quarter turn and then folds it and removes it.

The rim 54 in accordance with one form of the invention may be provided with a flexible saddle or cross support 64 like the saddle 32. The intermediate part 66 of the saddle 64 is formed with small perforations 68 for cervical drainage, and will hang like a sling from the intermediate parts of the rim sides 58 when the rim 54 is folded, so that the saddle portion 66 will pass to a position under the unduly depressed cervix, and thus, when the rim is released and then turned, the saddle will assume a taut condition under and will engage and give support to the cervix. The saddle 64 accordingly will not interfere with insertion nor with removal of the pessary 52.

A modified foldable prolapse pessary is shown at **72** (Figs. 9 and 10) and is similar to the pessary **52** but its flexible saddle **74**, likewise perforated as at **76**, extends from and between the diametrically opposite resilient hinge portions **56** of the rim **54**. When the pessary **72** is folded, the saddle **74** will clear the cervix and thus will not interfere with insertion nor with removal of the pessary, and, when the pessary is adjusted to proper position in the vaginal canal, the intermediate portion **78** of the saddle will engage under and give support to the cervix.

The modifications of the ring type prolapse pessary shown at **80** and **82** (Figs. 11 and 12) are identical with those shown in Figs. 7 and 9, respectively, except that the saddles **84** and **86** are imperforate.

To hold up and back the cervix where it is attached to the vagina and also to splint the vagina and stretch the uterosacral ligaments upward and backward, in cases of first and second degree prolapse, the use of a retro-displacement pessary such as that shown at **96** (Figs. 13 to 15) is advisable. The pessary **96** comprises a rim **98**, which, when free, has a relatively wide upstanding end portion **100** and a lower relatively narrow opposite end portion **102**, both end portions being intermediately resiliently flexible as indicated at **104** and **106**, the portions beyond the flexible zones **104** and **106** constituting the sides of the pessary, and generally indicated at **108**, being relatively stiff so as to swing toward each other as the rim is manually folded and away from each other as the rim unfolds when the folding pressure is withdrawn. In inserting the rim **98**, the physician holds it in folded condition (dot-dash lines, Figs. 14 and 15) in such manner as to position the wider end portion **100** behind the cervix, with the resilient zone **104** in the cul-de-sac behind the cervix, and sees to it that the anterior end **102** of the rim is located in the symphasis pubis, before removing his finger.

The rim **98** may be provided with a flexible saddle **114** cemented or otherwsie suitably attached to and disposed at the wider part **100** of the rim in a position to engage under and give support to the cervix. The saddle **114** will clear the cervix and thus will not interfere with insertion nor with removal of the pessary.

A pessary **118** (Figs. 16 and 17) similar to the pessary **96** may be provided with the saddle **120** connected to the sides **108** and spaced from the ends **100** and **102** of the rim **98** and arranged directly under the cervix when the pessary is in proper position. The saddle **120** may be perforate or imperforate.

The several saddles may be cemented or otherwise suitably anchored to the rims associated therewith, and, when so anchored, may be elastic or at least flexible.

The several rims may be of various constructions, certain ones being noted below.

In one form of rim construction (Fig. 18), two rods **128** and **130** are telescoped less than half way into the opposite end portions of and soldered as at **132** to a coil spring **134**, and telescoped through and beyond relatively short sleeves **136** and **138**, respectively, one rod end portion **140** being telescoped into and soldered as at **142** to a second coil spring **144** with the sleeve **138** substantially abutting both springs, a flexible preferably smooth tube **146** is telescoped about this structure so that one end **148** of the tube is intermediate the ends of the sleeve **136** and the other end **150** of the tube extends beyond the end **152** of the spring **144** a distance substantially equal to the distance the sleeve **136** projects beyond the tube end **148**, the tube end **150** is then telescopically worked into abutment with the tube end **148**, so that the rod end **154** is telescoped part way into but substantially spaced from the rod end **140**, and the tube ends are cemented as at **158** together and to the sleeve **136**. The rods **128** and **130** have preferably a sliding fit with the springs **134** and **144**, the sleeves **136** and **138** are preferably of substantially the same outside diameter as the springs, and the tube **146** has a fairly close fit about the springs and sleeves yet is capable of being telescoped about them quickly and without too much effort. Instead of using cement, fusing or other means or method may be employed to join the tube ends **148** and **150** together and to the sleeve **136**. In any event, the juncture is then preferably smoothed to give the tube **146** an appearance of being endless. The rim may be given any desired shape, according to the use to which it is to be put. The rods may be of such rigidity as to be manually inflexible, or they may be such as to be capable of being manually bent to an altered shape to enable the physician to more accurately fit a given rim to the patient, and in the latter case the rods should be unalterable in shape by vaginal muscular pressures.

For the prolapse ring type pessary, manually inflexible arcuate rods are preferred. For the cystocelic and other types of pessary, stiff yet manually bendable rods are generally preferred.

In making a prolapse ring type pessary (Figs. 20 to 22), two rods, two sleeves, two springs, and a tube may be employed as in Fig. 18. However, as the rods **162** are initially arcuate when assembled with the other parts, no further shaping thereof is required. Since the tube ends, when first placed in substantially mutual abutment, diverge from each other (Fig. 21), the spaced end portions of the tube are pulled toward each other until they are in substantially full surface engagement (Fig. 22) and so held until they are cemented or otherwise connected together and to the sleeve about which they meet, as indicated at **164**, and the juncture is then preferably smoothed to give the tube and endless appearance.

In making any of the other types of pessary, the rods may be initially straight and, after the parts are assembled and the tube ends anchored as noted above, the assembly is bent to the desired shape, which may be permanent or variable manually as noted above according to the type of rod material used. The shaping is preferably initially effected by means of simple tools.

A modified rim construction wherein, in addition to a pair of rods and a tube, only one spring and one sleeve are required, the combined length of the spring and sleeve being substantially the same as the length of the tube, is shown in Figs. 23 to 25. Such a construction may take the ultimate shape of a ring or it may take other than a ring shape.

One form of the latter construction comprises a spring **172**, a relatively short rod **174** centrally and slidably telescoped into and soldered as at **176** to the spring, a second relatively short rod **178** slidably telescoped into and soldered as at **180** to an end portion of the spring so as to be substantially spaced from the first rod, the intervening part **182** of the spring thus constituting a region or zone of flexure, a sleeve **184** substantially shorter than the second rod and telescoped about the latter and engaged with the adjacent end of the spring, with the end **186** of the second rod projecting substantially beyond the sleeve, and a flexible tube **188** telescoped about the spring and sleeve so that one end **190** is about an intermediate part of the sleeve, and the other end **192** of the tube extends beyond the spring a distance substantially equal to the distance the sleeve extends beyond the tube end **190**. This structure is flexed about the spring region **182**, and the tube ends **190** and **192** are brought into substantial abutment (Fig. 24) and cemented or otherwise suitably joined together and to the sleeve **184**, as indicated at **194**, in the same manner as in the other construction above described, so that the part **196** of the spring **172** constitutes a second region or zone of flexure. This assembly is then shaped according to the service to which it is to be put.

The prolapse ring type pessary using the construction just described but with initially formed arcuate rods could be assembled and completed in a manner obvious from the foregoing.

The rim tubes and saddles are of material which is

thermosetting, at least to the extent that they will not be affected by sterilizing temperatures. The sleeves for the ring type pessaries may be stiff or flexible, and for the other shapes are flexible. The springs are preferably piano wire, and in several of the figures are shown in single line for convenience, the coils actually being preferably closer together than shown. The rods may be of steel or other suitable material.

Figs. 18, 19, and 23 to 25 show certain preferred structures which may be incorporated in the rims of certain of the pessaries. However, such rims may be variously constructed to afford relatively stiff sides and resilient end zones, and, if desired, the non-circular rims could for some purposes be rigid throughout.

Various modifications may suggest themselves to those skilled in the art without departing from the spirit of the invention. Hence we do not wish to be restricted to the specific forms shown or uses mentioned, except to the extent indicated in the appended claims, which are to be interpreted as broadly as the state of the art will permit.

We claim:

1. A pessary rim comprising a coil spring, a rod telescoped entirely within said spring, the ends of said spring extending beyond the ends of said rod, a sleeve, a second rod telescoped entirely through and extending outside of both ends of said sleeve, the ends of said second rod being telescoped within the ends of said spring in spaced relation to the ends of the first rod, and a non-porous non-metallic flexible tubular sheath bonded to said sleeve and hermetically enclosing said spring, sleeve, and rods.

2. A pessary rim comprising a coil spring, a rod telescoped entirely within said spring, the ends of said spring extending beyond the ends of said rods, a sleeve, a second rod telescoped entirely through and extending outside of both ends of said sleeve, the ends of said second rod being telescoped within the ends of said spring in spaced relation to the ends of the first rod, and a non-porous non-metallic flexible length of tube having a normal inside diameter slightly greater than the outside diameter of said spring and sleeve and telescoped about said spring, sleeve, and rods, the ends of said tube being hermetically bonded together and to said sleeve.

3. A supportive pessary comprising a rim and a cradle member connected to and extending across said rim in a position to engage under and shore up a part of the anatomy unduly depressed into the vaginal canal, said rim being resiliently foldable at opposite portions thereof, said cradle member being yieldable in response to folding of said rim and being substantially taut when in engagement with said part of the anatomy.

4. A prolapse pessary comprising a rim and a member secured to and extending across said rim in a position to underlie and shore up the cervix, said member being perforated to allow the cervix to drain, said rim being resiliently foldable at opposite portions thereof.

5. A retro-displacement pessary comprising a rim having a portion adapted to straddle the cervix and extend into the posterior fornix and an opposite portion formed to extend into the pubic notch, and a member secured to and extending across the first-mentioned portion in a position to engage and exert an upward pressure on the cervix without occluding the cervical passage.

6. A pessary comprising a rim having opposite resilient portions alternating with relatively stiff portions whereby said stiff portions may be swung at said resilient portions, said stiff portions being substantially spaced from each other when said rim is free, and a piece of flexible sheet material carried by said rim for supporting a part of the anatomy depressed into the vaginal canal, said piece being spaced from said resilient portions and being substantially taut when in supporting position.

7. A pessary comprising a rim having opposite resilient portions alternating with relatively stiff portions whereby said stiff portions may be swung at said resilient portions, said stiff portions being substantially spaced from each other when said rim is free, and a piece of flexible sheet material carried by said rim for supporting a part of the anatomy depressed into the vaginal canal, said piece being spaced from said resilient portions and extending from each stiff portion to the other stiff portion and being substantially taut when in supporting position.

8. A pessary comprising a rim and a stretched wide rubber band enveloping opposite portions of and self-retained on and extending across said rim in a position to support a part of the anatomy depressed into the vaginal canal.

9. A pessary comprising a rim having opposite bowed portions, and a stretched wide thin membrane-like rubber band enveloping and conforming to the curvature of and self-retained on said portions and extending across said rim in a position to support a part of the anatomy depressed into the vaginal canal.

10. A resiliently foldable pessary comprising a rim having opposite resilient portions separated by relatively stiff portions, and a thin wide rubber band conforming to and enveloping said stiff portions and extending across said rim in a position to support a part of the anatomy depressed into the vaginal canal, said band being substantially taut when said rim is in proper position in the vaginal canal.

11. A foldable pessary rim comprising a core including a pair of coil springs, a pair of relatively stiff rods, and a pair of sleeves alternating with said springs, said rods being telescoped entirely through the respective sleeves and into the ends of said springs and being spaced apart so that opposite portions of the springs are unoccupied by said rods, a flexible tube telescoped about said core, and a flexible hammock extending across said rim in a position to support a part of the anatomy depressed into the vaginal canal, the ends of said tube being bonded to one of said sleeves and to said hammock and being hermetically bonded together, said hammock being also bonded to a part of said tube opposite said tube ends.

12. A foldable pessary rim comprising a core including a pair of coil springs, a pair of relatively stiff rods, and a pair of sleeves alternating with said springs, said rods being telescoped entirely through the respective sleeves and into the ends of said springs and being spaced apart so that opposite portions of the springs are unoccupied by said rods, a flexible tube telescoped about said core, and a flexible hammock bonded to and extending across said rim in a position to support a part of the anatomy depressed into the vaginal canal, the ends of said tube being bonded to one of said sleeves and hermetically bonded together.

13. A foldable pessary rim comprising a core having resilient opposite portions and intervening relatively stiff portions, an exterior portion of said core beyond said resilient portions being of plastic material, a flexible tube telescoped about said core, the ends of said tube being bonded to said exterior portion of said core, and a flexible hammock bonded to said tube and extending across said rim in a position to support a part of the anatomy depressed into the vaginal canal.

14. A supportive pessary comprising a rim and a cradle member connected to and extending across and over said rim in a position to engage under and shore up a part of the anatomy unduly depressed into the vaginal canal, said rim being resiliently foldable at opposite portions thereof, said cradle member being yieldable in response to folding of said rim and being taut when in engagement with said part of the anatomy.

15. A supportive pessary comprising a rim resiliently foldable at opposite portions thereof, and a member secured to and extending across said rim in a position to underlie and shore up the cervix, said member being perforated to allow the cervix to drain, said rim having locating means to guide the physician by the sense of

touch in arranging said pessary in proper supporting position.

16. A supportive pessary comprising a rim having opposite resilient portions alternating with relatively stiff portions whereby said stiff portions may be swung at said resilient portions, said stiff portions being substantially spaced from each other when said rim is free, and a piece of flexible sheet material carried by and overlying said rim in a position to support a part of the anatomy unduly depressed into the vaginal canal, said piece being taut when in supporting position.

17. The structure of claim 4, the perforations being sufficiently small to preclude substantial protrusion of the cervix tissue thereinto.

18. A supportive pessary comprising a rim having two opposite resilient portions alternating with two relatively stiff U-portions whereby said rim is foldable at said resilient portions, and a piece of flexible sheet material carried by said rim in a position to support a part of the anatomy unduly depressed into the vaginal canal, said piece being substantially taut when said rim is free so that it follows the general contour of the rim throughout its extent.

19. A supportive pessary comprising a rim, and a piece of flexible sheet material carried by and overlying and extending with little or no slack across said rim so as to follow the general contour of the rim throughout its extent be held taut by and support a part of the anatomy unduly depressed into the vaginal canal.

20. A supportive pessary comprising an elongated rim having resilient end portions alternating with relatively stiff U-shaped side portions whereby said rim is foldable at said resilient portions, said rim when resting substantially free on a horizontal surface being substantially oval in plan view and substantially hockey-stick-shaped in side edge view so that one resilient portion is at a greater elevation than the other and is adapted to project into the cul-de-sac behind the cervix while the other resilient portion projects into the pubic notch, and a piece of flexible sheet material bridging said rim adjacent said one resilient portion in a position to be held taut by and support the cervix, said piece being unconnected to a part of said rim so that said rim is unoccluded.

21. A supportive pessary comprising an elongated rim having resilient end portions alternating with relatively stiff U-shaped side portions whereby said rim is foldable at said end portions, said rim when in proper position in the vaginal canal having its posterior portion inclined upward across a retro-displaced cervix with the adjacent resilient portion disposed in the cul-de-sac behind the cervix, and a piece of flexible sheet material bridging and substantially coextensive with said inclined portion with little or no slack therein so as to follow the general contour of the rim throughout its extent engage and be held taut by the posterior part of the cervix clear of the cervical canal so as to exert forward and upward pressure on the cervix preventing drainage thereof.

22. A supportive pessary comprising a folded rim having resilient end portions and arcuate side portions biased by said end portions into a relation resembling a pair of inverted rocking chair feet, and a piece of flexible sheet material bridging the crest of said rim with little or no slack therein so as to follow the general contour of the rim throughout its extent be held taut by and cradle a cystocelic part of the vaginal anatomy while said end portions rest on the floor of the vaginal canal.

References Cited in the file of this patent

UNITED STATES PATENTS

1,949,863	Hay	Mar. 6, 1934
2,538,478	Snell	Jan. 16, 1951

FOREIGN PATENTS

216,457	Great Britain	May 29, 1924