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No. 07-011573- -00001-0000

Fecha: 2007-12-13 17:06:12 Dep: 2020 NUECREACIONE
Tra: 11 PATENTEIYII Eva: 378 FASENACIONALI
Act: 538 PETICION Fotos: 2

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Trámite : 011
Evento : 378
Actuación : 538

Referencia : Expediente No. 07.011.573
Asunto : Solicitud de Patente para **SILLIN DE BICICLETA**
Solicitante : **M. D'A. FRANCESCO RIONDATO**
Clase : B62J 001/000
Publicada en : La Gaceta No. 578 Del 31 de julio de 2007
Fecha de Solicitud : 6 de febrero de 2007

1. Yo, Emilio FERRERO, identificado como aparece al pie de mi firma, actuando como apoderado en el asunto de la referencia, atentamente, solicito se efectúe el examen de patentabilidad de la solicitud en referencia presentada de acuerdo con el Capítulo I del PCT y según lo establecido en el artículo 44 de la Decisión 486 de la Comisión de la Comunidad Andina. Para tal efecto presento junto con este escrito el recibo por valor de \$404.000.00, que corresponde a la tasa fijada según lo dispuesto en la resolución No. 36155 de 28 de diciembre de 2006.

2. Ruego atentamente a la Señora Jefe se sirva ordenar que se anexe este recibo para que se efectúe dicho examen y se continúe con el trámite de la solicitud.

Señora Jefe,

EMILIO FERRERO
T.P.A. No. 31.929

COLO-15753-841-002-6
ASG\NNJ\ID-114102\WPC15753
No. M-2007-114102\ASG

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 07-11573

EL EXTRACTO DE LA PRESENTE SOLICITUD DE PATENTE DE INVENCION

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No 578 DE

FECHA 31 DE JULIO DE 2007 EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL 26 DE OCTUBRE DE 2007

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

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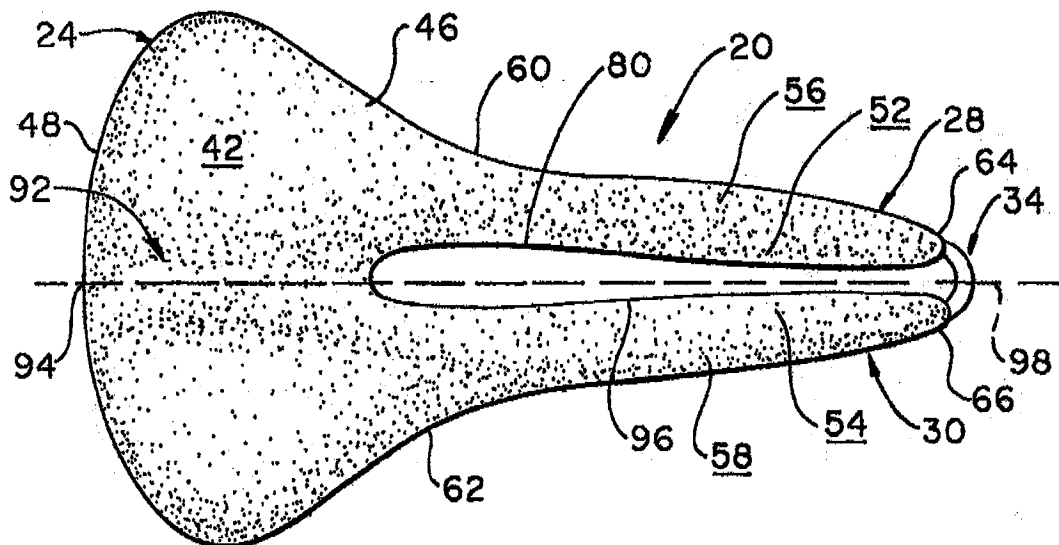
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : B62J 1/00		A1	(11) International Publication Number: WO 99/14103 (43) International Publication Date: 25 March 1999 (25.03.99)
(21) International Application Number: PCT/US98/19310 (22) International Filing Date: 16 September 1998 (16.09.98) (30) Priority Data: 60/059,106 17 September 1997 (17.09.97) US 29/083,941 20 February 1998 (20.02.98) US (71) Applicant: TOLLEFSON, Thomas, D. [US/US]; 107 Fenley Avenue #C8, Louisville, KY 40207 (US). (72) Inventor: ROBINSON, Perry; 82 Western Avenue, Kennebunkport, ME 04043 (US). (74) Agents: HIENZ, William, M., III et al.; Patterson & Keough, P.A., 4800 IDS Center, 80 South 8th Street, Minneapolis, MN 55402-2100 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BE, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	

(54) Title: **BICYCLE SEAT AND METHOD**



(57) Abstract

A seat or saddle (20, 200, 400) mountable on a bicycle is provided. The seat includes a unitary base (24, 204, 404) and two supporting members (28-30, 208-210, 408-410) extending from the front of the base (24). The base (24, 204, 404) and supporting members (28-30, 208-210, 408-410) cooperate to define a generally medial perineal accommodation (92, 262, 486). One portion of the perineal accommodation is defined by inner surfaces (52-54, 228-230, 430-432) of the supporting members (28-30, 208-210, 408-410). The defined perineal accommodation (92, 262, 486) includes a cross-sectional dimension sufficient to prevent or greatly reduce the likelihood of perineal injury to persons using the seat. Both the seat (20, 200, 400) and the supporting members (28-30, 208-210, 408-410) taper toward ends (64-66, 240-242, 442-444) of the supporting members (28-30, 208-210, 408-410). Corresponding methods are also disclosed.

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BICYCLE SEAT AND METHOD

CROSS-REFERENCE TO RELATED APPLICATIONS

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This application claims priority under 35 U.S.C. § 119 (e) to U.S. Provisional Application No. 60/059,106, filed September 17, 1997, and under 35 U.S.C. § 120 to U.S. Design Application No. 29/083,941, filed February 20, 1998, both of which are incorporated herein by reference.

10

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to a support for the rider of a bicycle, for example, a road bicycle, mountain bicycle, hybrid bicycle, or stationary/exercise bicycle. More particularly, embodiments of the invention relate to bicycle seats which reduce the likelihood of injury or discomfort to the groin or perineum of the bicycle rider.

2. Description of Related Art

Bicycle riding has long been recognized as an enjoyable way to exercise and as imparting many healthful benefits to the rider. However, one disadvantage of bicycle riding is potential injury to, or discomfort in, the organs proximate the perineum, hereinafter the perineal anatomy. Although particularly acute in males, this problem can affect the female population as well.

Bicycle seats, of course, are known in the art. Some prior-art bicycle seats include a partially recessed area in a portion thereof, for example, a central portion thereof. U.S. Patent No. 612,972 to Leech, for example, includes a seat with two forwardly extending horns created by cutting away a portion of a conventional bicycle seat along its medial line. To support the horns, a spring member passes beneath the recessed portion and engages a clip. Upstanding sides of the clip and an associated hook member occupy the space directly beneath the

- 2 -

recess in the seat. This presents a significant disadvantage in that these components beneath the central recess can, in certain circumstances, impact the rider's perineal anatomy and potentially cause injury.

U.S. Patent No. 5,387,025 illustrates another prior-art bicycle seat, specifically a split seat having an open central area extending entirely along the seat from front to back. Each half of the seat is independently pivotable about a transverse horizontal axis to accommodate movement of the rider's leg while the rider is pedaling. The seat halves are not connected at their rear portion to the seat. Thus, the overall strength of the seat is significantly reduced. A seat post also underlies the open central area and is thus a potential hazard if the seat post contacts the rider's perineal anatomy.

Other prior-art patents, for example U.S. Patent No. 4,898,422, describe bicycle seats with a central open portion and with closed forward and rearward portions as well. The closed forward portion is disadvantageous because the bicycle rider can potentially slip forward on the seat and contact the forward portion thereby causing an injury.

There is then a need for a bicycle seat which will reduce the likelihood of perineal injury, especially, for example, to males who ride bicycles frequently and/or over rough terrain.

SUMMARY OF THE INVENTION

The present invention substantially meets the aforementioned needs of the industry by providing a bicycle seat or saddle mountable on a bicycle. The saddle includes a base and a plurality of supporting members. The plurality of supporting members may extend integrally and forwardly from the base. The base and supporting members may cooperate to define a generally medial accommodation. The generally medial accommodation may extend forwardly, proximate a rear periphery of the base and may at least partially separate the supporting members. The accommodation may be characterized by a cross-sectional dimension sufficient to prevent or reduce the likelihood of injury to a user's perineal anatomy.

- 3 -

There is also provided a seat mountable on a bicycle, the seat including a unitary base, first and second generally elongate support members, and a bridging element. The unitary base includes upper and lower surfaces, a rear edge, and a front. The first and second support members may extend from the front of the base, each support member including a rear portion, a front end, and upper and lower surfaces. The rear portion of each support member may adjoin the front of the base. The support members may be one piece with the base and cooperate with the base to define a generally medial perineal accommodation. The perineal accommodation may extend between the rear edge of the base and the front ends of the support members. The perineal accommodation may further include a base portion and a support portion. The upper surface of the base may define the base portion and the support members may cooperate to define the support portion therebetween. The perineal accommodation includes a cross-sectional dimension sufficient to reduce pressure on the perineal anatomy of a user. The bridging element may include first and second ends. The first and second ends of the bridging element may be connected to and extend between the respective first and second support members. The bridging element may be free of structure for mounting the seat to the bicycle.

There is also provided a saddle mountable on a bicycle, the saddle including a unitary base, a pair of generally elongate extensions, a bridge member, and means for protecting a user's perineal anatomy. The unitary base may include upper and lower surfaces and rear and front ends. The elongate extensions may include a front, a rear portion, and upper and lower surfaces. Rear portions of the extensions may extend generally unitarily from the front end of the base. The bridging member spans the extensions and includes opposite ends. Each opposite end of the bridging member may be embedded, or otherwise disposed in an extension. The bridging member may extend between the lower surfaces of the extensions. The perineal protecting means may be defined by the upper surface of the base and by a cooperation of the extensions. The perineal protecting

- 4 -

means may extend between the rear end of the base and the front end of each extension. The saddle may be generally tapered from the front end of the base to the front portions of the extensions.

There is also provided a saddle mountable on a bicycle, the saddle including a substantially unitary base and a pair of generally elongate extensions. The unitary base may include upper and lower surfaces and rear and front ends. Each of the extensions may include a front, a rear portion, and upper and lower surfaces. The extensions may also include facing inner surfaces. Rear portions of each extension may extend generally unitarily from the front end of the base. Each extension may generally taper from the rear portion of the extension to the front of the extension. The base and extensions may cooperate to define a substantially medial perineal accommodation. The perineal accommodation may include a base portion and an extension portion. The base portion of the perineal accommodation may be defined by the upper surface of the base. The extension portion of the perineal accommodation may be defined between the inner surfaces of the extensions. The depth of the base portion of the perineal accommodation may be tapered from proximate the extension portion to proximate the rear end of the base portion. The perineal accommodation may be characterized as having a cross-sectional dimension sufficient to reduce pressure on the perineal anatomy of a user. The saddle may be generally tapered from the rear end of the base to the front portions of the extensions.

There is finally provided a method of mounting a seat to a bicycle, the method including the steps of providing the seat and attaching the seat to the bicycle. The provided seat may include a unitary base, first and second generally elongate support members, and a bridging element. The unitary base may include upper and lower surfaces, a rear edge, and a front. The first and second support members may extend from the front of the base. Each support member may include a rear portion, a front end, and upper and lower surfaces. The rear portion may adjoin the front of the base and be one piece with the base. The rear portion and base may

cooperate to define a generally medial perineal accommodation. The perineal accommodation may extend between the rear edge of the base and the front ends of the support members. The perineal accommodation may include a base portion and a support portion. The upper surface of the base may define the base portion and the support members may cooperate to define the support portion therebetween. The perineal accommodation may be characterized by a cross-sectional dimension sufficient to reduce pressure on the perineal anatomy of a user. The bridging element may include first and second ends. The first and second ends of the bridging element may be connected to, and extend between, respective first and second support members. The bridging element may be free of structure for mounting the seat to the bicycle.

15 BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the invention will be described with reference to the figures in which like numerals denote like elements and in which:

Figure 1 is a top view of one embodiment of the present invention;

20 Figure 2 is a side view of the seat of Figure 1, with a support bar depicted partially in phantom;

Figure 3 is a side view of the seat of Figure 1, with an alternate embodiment of the support bar in phantom;

Figure 4 is a bottom perspective, exploded view of the seat of Figure 1;

25 Figure 5 is a longitudinal cross-sectional view of the seat of Figure 1;

Figure 6 is a rear cross-sectional view of the seat of Figure 1;

Figure 7 is a perspective view of the seat of Figure 1;

Figure 8 is a top view of an alternate embodiment of the seat of Figure 1; Figure 9 is a side view of the seat of Figure 1;

30 Figure 10 is a bottom view of the seat of Figure 1;

Figure 11 is a front view of the seat of Figure 1;

Figure 12 is a rear view of the seat of Figure 1;

- 6 -

Figure 13 is a perspective view of a first alternate embodiment of the seat of Figure 1;

Figure 14 is a top plan view of the seat of Figure 13;

Figure 15 is a side view of the seat of Figure 13;

5 Figure 16 is a bottom plan view of the seat of Figure 13;

Figure 17 is a front view of the seat of Figure 13;

Figure 18 is a rear view of the seat of Figure 13;

Figure 19 is a perspective view of a second alternate embodiment of the seat of Figure 1;

10 Figure 20 is a top view of a third view of a third alternate embodiment of the seat of Figure 1;

Figure 21 is a front view of the seat of Figure 20;

Figure 22 is a side view of the seat of Figure 20;

Figure 23 is a rear view of the seat of Figure 20; and

15 Figure 24 is a bottom view of the seat of Figure 20.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

In Figures 1-12, embodiments of a seat/saddle of the present invention are indicated generally at 20. Seat 20 broadly includes base 24, support members or extensions 28-30, bridging element 34, and support bar 38. In this embodiment, support members 28-30 are one-piece extensions of base 24. Although it is possible for support members 28-30 to be separately formed and attached to base 24 by any of several means known to the art, the one-piece construction generally is perceived as providing greater structural strength. Base 24 displays upper and lower surfaces 42-44, front portion 46, and rear end/periphery 48. Respective support members 28-30 display inner surfaces 52-54, outer surfaces 56-58, rear portions 60-62, and front ends 64-66. As best seen in Figure 4, respective support members 28-30 display lower surfaces 68-70, partitions 72-74, and terminal lower surfaces 76-78. Inner surfaces 52-54 of support members 28-30 define opening 80. Figure 8 shows an alternative opening 82, which is more rounded than opening 80 proximate rear portions 60-62.

- 7 -

As best seen in Figures 4-6, structural components of seat 20 preferably include shell 84, padding layer 86, and cover 88. Rim 89 is present around the periphery of shell 84. Lip 90 extends from rim 89 in a central position proximate rear end 48 of base 24. Shell 84 may be constructed from substantially resilient or rigid synthetic resin. Padding layer 86 includes foam and/or gel or other substances to provide cushioning and protection against shock. Padding 86 may be formed to generally follow the peripheral shape and contours formed by upper surface 42, inner surfaces 52-54 and outer surfaces 56-58. Cover 88 overlays padding layer 86 and is secured in place by any of several means known to the art. Suitable materials for cover 88 include nylon, CORDURA, SPANDURA, SPANDURA II, KEVLAR, leather, vinyl, sparkle vinyl and others known to the art.

As best seen in Figures 1 and 6, base 24 and support members (or elements) 28-30 cooperate to define perineal accommodation 92. Perineal accommodation 92, in turn, may be considered as including base portion 94 and support member/extension portion 96. Perineal accommodation 92 is defined generally medially, proximate longitudinal axis 98 of seat 20. Base portion 94 is a depressed portion defined by upper surface 42 of base 24. Base portion 94 extends from or proximate rear end 48 to the portion of opening 80 proximate rear portions 60-62 of respective support members 28-30. Extension portion 96 of perineal accommodation 92 is defined between inner surfaces 52-54 of respective support members 28-30. Extension portion 92 is coextensive with opening 80 in this embodiment and extends from the portion of opening 80 proximate rear portions 60-62 to the portion of opening 80 proximate front ends 64-66. Base portion 94 and extension portion 96 may be characterized by cross-sectional dimensions such as depth and width thereof. These cross-sectional dimensions may vary among embodiments, but are sufficient to at least partially accommodate e.g. a male perineal anatomy and thereby reduce pressure on the perineal anatomy of a user. The reduced pressure on a user's perineal anatomy will greatly reduce the likelihood of perineal

injury or physical discomfort which might otherwise result.

As best seen in Figures 1-3 and 5-8, bridging element 34 preferably is a unitary U-shaped member generally extending between lower surfaces 76-78 of respective support members 28-30. Exemplary bridging element 34 is continuous with support bar 38 in this embodiment. Figure 4 shows bridging element 104, an alternative embodiment of bridging element 34. Bridging element 104 is separately formed from, thus not continuous with, support bar 38. Because ends of bridging element 34 are embedded, however, the discontinuity is hidden from view. Bridging elements 34, 104 are substantially round in cross-section. However, bridging elements of the present invention may be provided in any of a number of cross-sectional geometries. Bridging elements 34, 104 are preferably made from stiff, weather-resilient materials, such as synthetic resin, various metals such as vanadium, titanium, steel, flash steel, chromology, hollow chromology, as well as other materials known to the art. Bridging elements 34, 104 may also be directed toward the rear of seat 20, instead of toward the front. Bridging elements 34, 104 are not used in attaching seat 20 to a bicycle or other suitable vehicle in this embodiment. Hence, bridging elements 34, 104 are free or substantially free of structure for mounting seat 20 to the bicycle or other vehicle.

Exemplary support bar 38 is formed from a single piece of material. However, support bar 38 may include legs 108-110 and cross member 112. Respective legs 108-110 terminate in tips 114-116 and join cross member 112 at bends 118-120. Leg 108 is further divided into sections 122-126. As seen in Figure 4, sections 122-126 are formed by bends 130-132. In a like manner, leg 110 is divided into sections 136-140 by bends 144-146. While each leg 108-110 is divided into three sections in this embodiment, the number of sections formed is not critical to the invention. The number of sections formed in legs 108-110 is rather determined by factors such as the width and depth of shell 84 as well as requirements for mounting seat 20 to a particular bicycle or other structure. Generally, support bar 38 may be made from similar materials and with similar dimensions as bridging

element 34. Tips 114-116 preferably are disposed inside partitions 72-74 and cross member 112 is disposed between lower surface 44 and lip 90 when support bar is attached to the embodiment depicted in Figure 4. However, as previously discussed, support bar 38 may be continuous with bridging element 34. If so, support bar 38 and bridging element 34 may be considered as being separated by bends (not depicted).

As best seen in Figure 1, seat 24 may be considered as presenting a generally tapering appearance as viewed from rear end 48 to front ends 64-66 of support members 28-30. Support members 28-30 may also be viewed as presenting a generally tapering appearance from rear portions 60-62 to front ends 64-66. Opening 80, hence, extension portion 96 of perineal accommodation 92, represents a proportion of the longitudinal dimension of saddle 20. The proportion of the longitudinal dimension of saddle 20 occupied by opening 80 may be between about 25% and 75%, between about 33% and 75%, between about 50% and 67%, or about 67%. In one embodiment, seat 20 is about 10.5 inches in length and about 5.5 inches in width; base 24 is about 4.5 inches in length and about 5.5 inches in width; and extensions 28-30 are about 6.0 inches in length and about 0.75 inches in width. Other embodiments of seat 20 may be between about 8 and 12 inches long and about 4 and 7 inches wide. Corresponding bases 24 may be between about 4 and 6 inches in length; corresponding extensions 28-30 may be between about 4 and 8 inches in length and between about 0.5 and 1.0 inch wide; and opening 80 may be between about 0.25 and 1 inch wide. Of course, other lengths and widths of base 24 and support members 28-30 are contemplated as well. Factors determining these dimensions include desired overall seat size and particular uses for which seat 20 is contemplated.

In Figures 13-18, another embodiment of the present invention is depicted generally as seat/saddle 200. Seat 200 broadly includes base 204 and support members 208-210. A bridging element, such as bridging element 34, is not present in this embodiment. A support bar such as support bar 38, may be used in connection with seat 200 to enable seat 200

- 10 -

to be mounted to a bicycle or some other suitable vehicle. Base 204 displays upper and lower surfaces 214-216, front portion 218, and rear end/periphery 220. As best seen from Figure 16, base 204 displays rim 222 and includes lip 224. Lip 224 extends from rim 222 proximate a central portion of rear end 220.

Support members 208-210, respectively, display inner surfaces 228-230, outer surfaces 232-234, rear portions 236-238, front ends 240-242, and lower surfaces 244-246. Partitions 248-250 are present on respective support members 208-210 and lower surfaces 252-254 extend between partitions 248-250 and front ends 240-242. Respective inner surfaces 228-230 of support members 208-210 define opening 256. Web 258 spans opening 256.

Base 204 and support members 208-210 cooperate to define perineal accommodation 262. Perineal accommodation 262 includes base portion 264 and extension portion 266. Base portion 264 is defined by upper surface 214 of base 204. Extension portion 266 is coextensive with web 258 and is thus bounded by inner surfaces 228-230 and an upper surface of web 258. In this embodiment, base and extension portions 264-266 are disposed medially and generally linearly along seat 200. Base portion 264 is generally wider and deeper proximate opening 256 than at a more shallow and narrow portion proximate rear end 220. Extension portion 266 of perineal accommodation 262 tapers toward front ends 240-242. Base and extension portions 264-266 may be characterized by cross-sectional dimensions such as width and depth. These cross-sectional dimensions are sufficient to accommodate the perineal anatomy of a user as discussed and described above. As best seen from Figures 14-16, seat 200 generally tapers from rear end 220 toward tips or front ends 240-242 of respective support members 208-210. A further tapering may be observed with respect to opening 256. Opening 256 tapers toward tips 240-242 as well. Moreover, support members 208-210 also generally taper toward tips 240-242.

Referring to Figure 19, a second alternate embodiment of the present invention is indicated generally at 300. Seat 300 includes base 304,

- 11 -

support members 308, 310, bridging element 314, and optionally includes support bar 318. Support bar 318 may be similar to support bars 38, 150 as discussed above. Base 304 includes or displays upper surface 322, front portion 324 and rear end 326. Support members 308, 310 include or display
5 respective inner surfaces 330, 332, outer surfaces 334, 336, rear portions 338, 340, and front ends 342, 344. Web 348 extends between lower surfaces of support members 308, 310. Web 348 may be an extension of a cover resembling cover 88 (discussed above) and may be made of similar materials. Lower surfaces of seat 300 may be substantially similar to those
10 for previously discussed embodiments. Peripheral portions of base 304 cooperate with outer surfaces 334, 336 to present a general tapering from base 304 to front ends 342, 344. Moreover, a cross-sectional dimension of base portion 352 tapers as it nears rear end 326. Optionally support portion 354 may also taper in width toward front ends 342, 344.

15 Generally medial perineal accommodation 350 is formed or displayed by the cooperation of base 304 and support members 308, 310 and includes base portion 352 and support portion 354. Base portion is defined by upper surface 322. Inner surfaces 330, 332 and web 348 define and partially bound base portion 352. Seat 300 differs from other embodiments
20 of the present invention in that both bridging element 314 and web 348 are present.

A third alternate embodiment is depicted in Figures 20-24 generally as seat 400. Seat 400 includes base 404, support members 408, 410, and optionally includes support bars 414, 416. Base 404 includes or displays
25 upper surface 420, lower surface 422, front portion 424, and rear end 426. Support members 408, 410 include or display respective inner surfaces 430, 432, outer surfaces 434, 436, rear portions 438, 440, front ends 442, 444, and lower surfaces 446, 448. Gripping members 450, 452 may be present on respective lower surfaces 446, 448. Inner surfaces 430, 432 define opening
30 454. Seat 400 differs from other embodiments in the lack of both a bridging element and a web. Base 404 and support members 408, 410 cooperate to form and define perineal accommodation 486. Perineal accommodation

- 12 -

486 may be considered to include base portion 488 and extension portion 490. Base portion 488 is defined by upper surface 420 and support portion 490 is defined between inner surfaces 430, 432 of respective support elements 408, 410.

5 Peripheral edges of base 404 and outer surfaces 434, 436 of support members 408, 410 cooperate to generally taper toward front ends 442, 444. Moreover, tapering may be present with respect to perineal accommodation 486 as well. A cross-sectional dimension of base portion 488 may taper as base portion 488 nears rear end 426. While not depicted as
10 such, a cross-sectional dimension of support portion 490 may taper as support portion nears front ends 442, 444 of respective support members 414, 416.

 In contrast to single-piece support bars 38, 150, support bars for seat 400 may lack a cross piece and may be deployed in pairs. Such support bars
15 are depicted as support bars 414, 416. Support bars 414, 416 include respective first portions/sections 456, 458, second portions/sections 460, 462, and curved portions/sections 464, 466. First portions 456, 458 and second portions 460, 462 are separated by bends 468, 470 on respective support bars 414, 416. First portions 456, 458 and curved portions 464, 466
20 are separated by bends 472, 474 on respective support bars 414, 416. While first, second and curved portions are described and depicted, the number of portions present on support bars 414, 416 is not critical to the invention and is governed by similar considerations as discussed above with respect to support bars 38, 150. Tips 476, 478 are optionally present on ends of
25 respective second portions 460, 462 and tips 480, 482 are optionally present on ends of respective curved portions 464, 466. Support bars 414, 416 may be made of similar materials as support bars 38, 150. Tips 476, 478, 480, 482 may be made of resilient materials such as synthetic resins, natural rubber and other materials known to the art.

30 The present invention is intended to include other embodiments which include generally medial perineal accommodations with sufficient cross-sectional dimensions to accommodate a portion of a user's perineal

- 13 -

anatomy. Such other embodiments include those in which support members are connected toward the front ends or tips thereof. Moreover, the respective proportions of the base and support portions of the perineal accommodations of the present invention may vary as well.

5 Shell 84 may be formed by molding, injection molding, or other methods known to the art. Padding layer 86 may be affixed to shell 84 by various glues. Cover 88 may then be placed over padding layer 88 and wrapped such that edges of cover 88 fold under shell 84 and can be stapled or glued to lower surface 44.

10 Because numerous embodiments may be made of this invention without departing from the spirit thereof, the scope of the invention is not to be limited to the embodiments illustrated and described. Rather, the scope of the invention is to be determined by appended claims and their equivalents.

15

WHAT IS CLAIMED IS:

1 1. A seat, the seat mountable on a bicycle and comprising:
2 a unitary base comprising upper and lower surfaces, a rear edge and
3 a front;
4 first and second generally elongate support members extending
5 from the front of the base, each support member comprising
6 a rear portion, a front end, and upper and lower surfaces, the
7 rear portion adjoining the front of the base, the support
8 members being one-piece with the base and cooperating with
9 the base to define a generally medial perineal accommodation
10 extending between the rear edge of the base and the front
11 ends of the support members, the perineal accommodation
12 comprising a base portion and a support portion, the upper
13 surface of the base defining the base portion and the support
14 members cooperating to define the support portion
15 therebetween, the perineal accommodation having a cross-
16 sectional dimension sufficient to reduce pressure on the
17 perineal anatomy of a user; and
18 a bridging element comprising first and second ends, the first and
19 second ends of the bridging element extending between the
20 respective first and second support members, the bridging
21 element being substantially free of structure for mounting the
22 seat to the bicycle.

1 2. The seat of claim 1, in which the first and second ends of the
2 bridging element are embedded in the respective first and second support
3 members.

1 3. The seat of claim 1, in which the bridging element extends between
2 lower surfaces of the support members.

- 15 -

1 4. The seat of claim 1, in which a depth at a location of the base portion
2 of the perineal accommodation is less than a depth of the support portion
3 of the perineal accommodation.

1 5. The seat of claim 1, in which the support portion of the perineal
2 accommodation is completely open from top to bottom.

1 6. The seat of claim 1, in which the support portion of the perineal
2 accommodation is completely open at the front of the seat.

1 7. The seat of claim 1, further comprising a web extending between
2 lower surfaces of the first and second support members, the support
3 portion of the perineal accommodation being bounded by an upper surface
4 of the web.

1 8. The seat of claim 1, in which the bridging element is continuous
2 with the support bar.

1 9. The seat of claim 1, in which the bridging element is separately
2 formed from the support bar.

1 10. The seat of claim 1, further comprising a support bar operably
2 disposed proximate the lower surfaces of the base and elongate members.

1 11. The seat of claim 10, the support bar comprising a first end and a
2 second end, and in which the first and second ends of the support bar are
3 disposed in respective first and second support members.

1 12. The seat of claim 1, in which each support member is generally
2 tapered toward the front end thereof.

- 16 -

1 13. The seat of claim 1, further comprising a padding layer disposed
2 over and formed to upper surfaces of the base and support members.

1 14. The seat of claim 13, in which the padding layer comprises foam
2 rubber.

1 15. The seat of claim 13, further comprising a cover disposed over the
2 padding layer.

1 16. The seat of claim 1, in combination with a bicycle.

1 17. A saddle, the saddle mountable on a bicycle and comprising:
2 a unitary base comprising upper, lower, and outer surfaces and rear
3 and front ends;
4 a pair of generally elongate extensions, each extension comprising a
5 front, a rear portion, and upper, lower, inner, and outer
6 surfaces, rear portions of the extensions extending generally
7 unitarily from the front end of the base;
8 a member bridging the extensions and comprising opposite ends,
9 each end of the bridging member embedded proximate the
10 lower surface of one extension; and
11 means for protecting a user's perineal anatomy, the perineal
12 protecting means being defined by the upper surface of the
13 base and the inner surfaces of the extensions, the perineal
14 protecting means extending between the rear end of the base
15 and the front end of each extension,
16 the saddle being generally tapered from the rear end of the base to
17 the front portions of the extensions.

1 18. The saddle of claim 17, in which the protecting means is
2 substantially medially disposed.

- 17 -

1 19. The saddle of claim 17, in which the protecting means includes a
2 base portion defined by the upper surface of the base and an extension
3 portion defined by the inner surfaces of the extensions.

1 20. The saddle of claim 19, in which the protecting means includes a
2 web extending between the lower surfaces of the extensions and in which a
3 portion of the perineal protecting means is bounded by the web.

1 21. The saddle of claim 17, in which the outer surfaces of the base and
2 extensions cooperate to present a profile generally tapering toward the
3 front ends of the extensions.

1 22. The saddle of claim 17, in which each extension generally tapers
2 toward the front thereof.

1 23. A saddle, the saddle mountable on a bicycle and comprising:
2 a substantially unitary base comprising upper and lower surfaces
3 and rear and front ends; and
4 a pair of generally elongate extensions, each of the extensions
5 comprising a front, a rear portion, and upper and lower
6 surfaces, the extensions also comprising facing inner surfaces,
7 rear portions of each extension extending generally unitarily
8 from the front end of the base, each extension generally
9 tapering from the rear portion of the extension to the front of
10 the extension,
11 the base and extensions cooperating to define a substantially medial
12 perineal accommodation, the perineal accommodation
13 comprising a base portion and an extension portion, the base
14 portion of the perineal accommodation being defined by the
15 upper surface of the base and the extension portion of the
16 perineal accommodation being defined between the inner
17 surfaces of the extensions, the base portion of the perineal

- 18 -

18 accommodation being tapered from proximate the extension
19 portion to proximate the rear end of the base portion, the
20 perineal accommodation having a cross-sectional dimension
21 sufficient to reduce pressure on the perineal anatomy of a
22 user,
23 the saddle being generally tapered from the rear end of the base to
24 the front portions of the extensions.

1 24. The saddle of claim 23, further comprising a member bridging the
2 extensions and comprising opposite ends, each end of the bridging
3 member embedded in an extension, the bridging member extending from
4 the lower surfaces of the extensions.

1 25. The saddle of claim 23, in which the extension portion of the
2 perineal accommodation is defined such that the extension portion tapers
3 toward the front portions of the extensions.

1 26. A method of mounting a seat to a bicycle, comprising the steps of:
2 providing the seat, the seat comprising
3 a unitary base comprising upper and lower surfaces, a rear
4 edge and a front,
5 first and second generally elongate support members extending
6 from the front of the base, each support member comprising
7 a rear portion, a front end, and upper and lower surfaces, the
8 rear portion adjoining the front of the base, the support
9 members being one-piece with the base and cooperating with
10 the base to define a generally medial perineal accommodation
11 extending between the rear edge of the base and the front
12 ends of the support members, the perineal accommodation
13 including a base portion and a support portion, the upper
14 surface of the base defining the base portion and the support
15 members cooperating to define the support portion

16 therebetween, the perineal accommodation having a cross-
17 sectional dimension sufficient to reduce pressure on the
18 perineal anatomy of a user, and
19 a bridging element comprising first and second ends, the first and
20 second ends of the bridging element being connected to and
21 extending between the respective first and second support
22 members, the bridging element being free of structure for
23 mounting the seat to the bicycle; and
24 attaching the seat to the bicycle.

Fig. 1 1/10

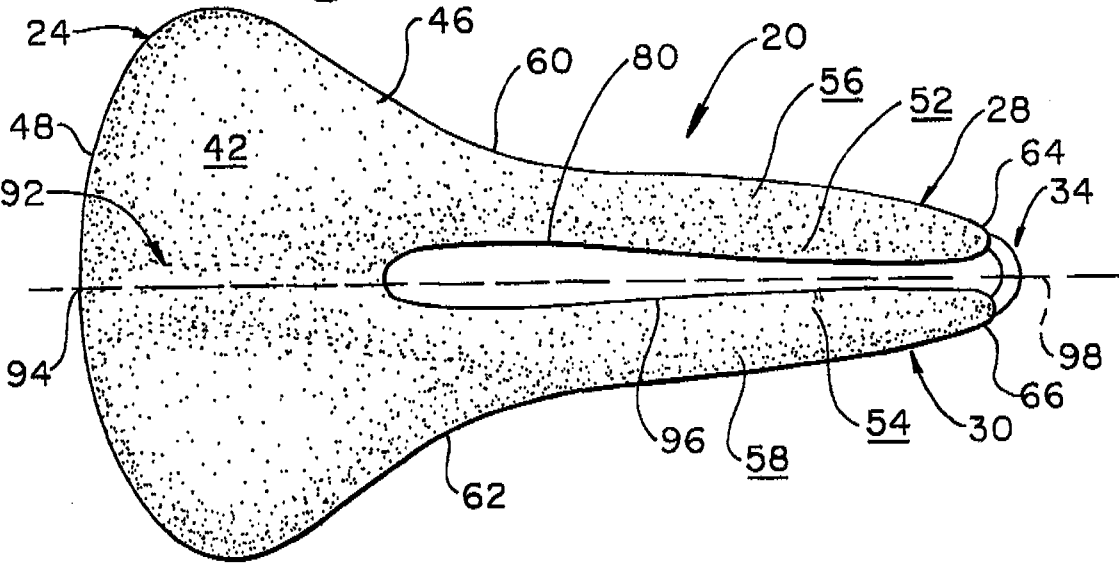


Fig. 2

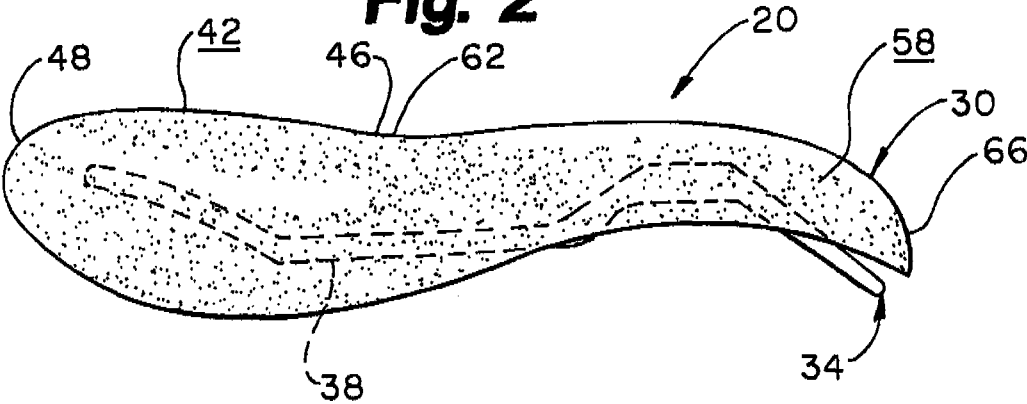
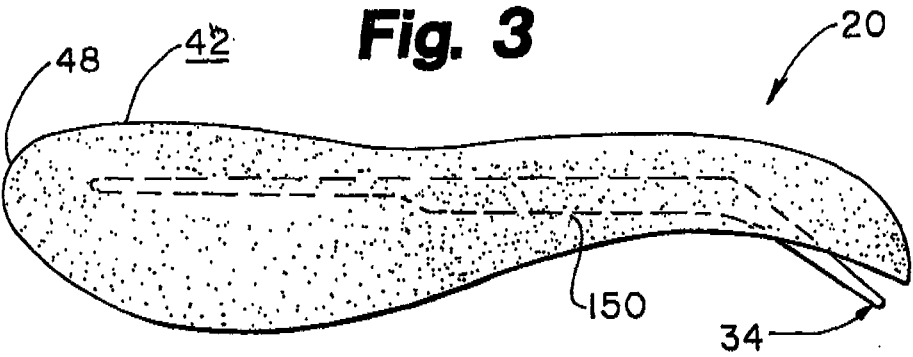
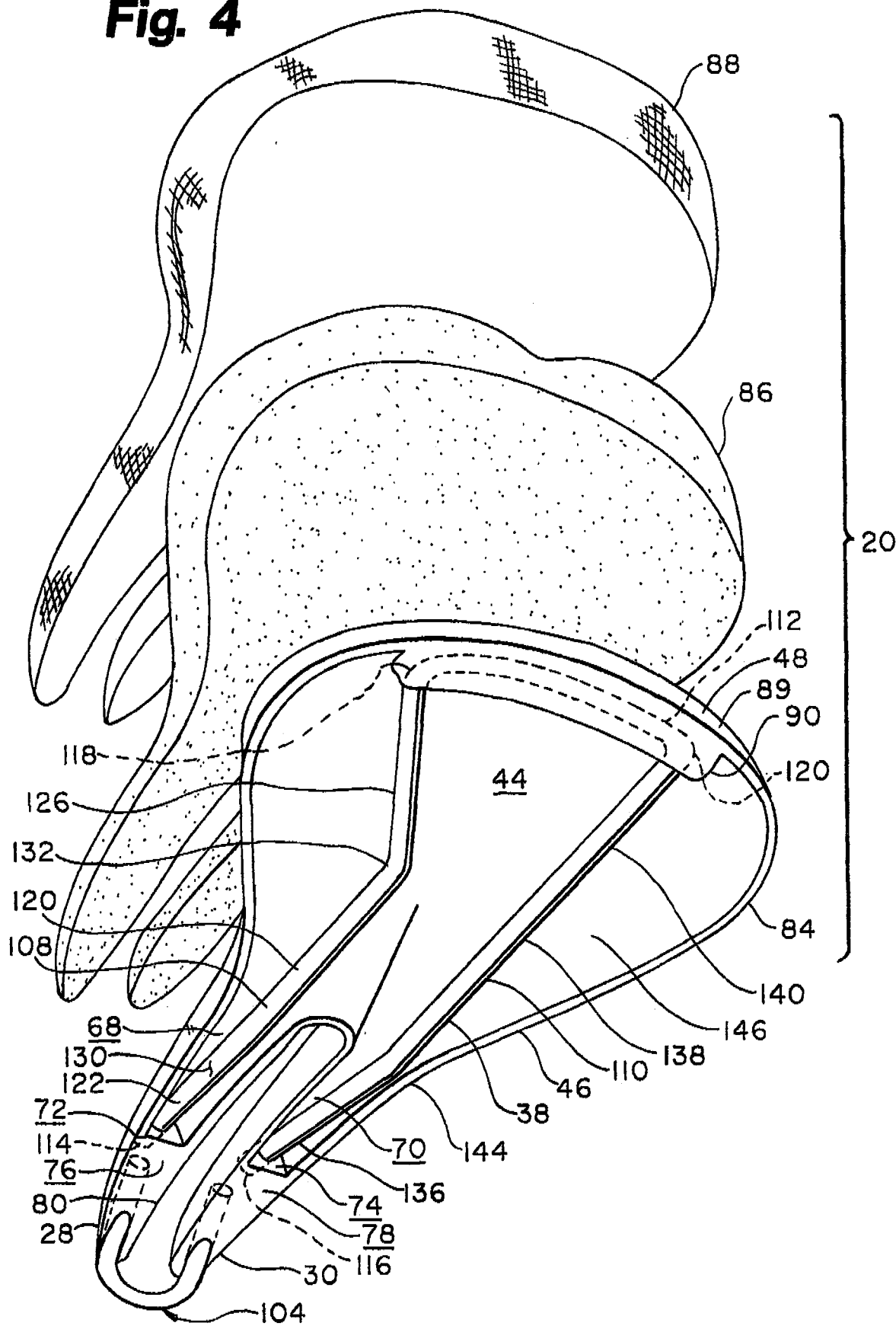


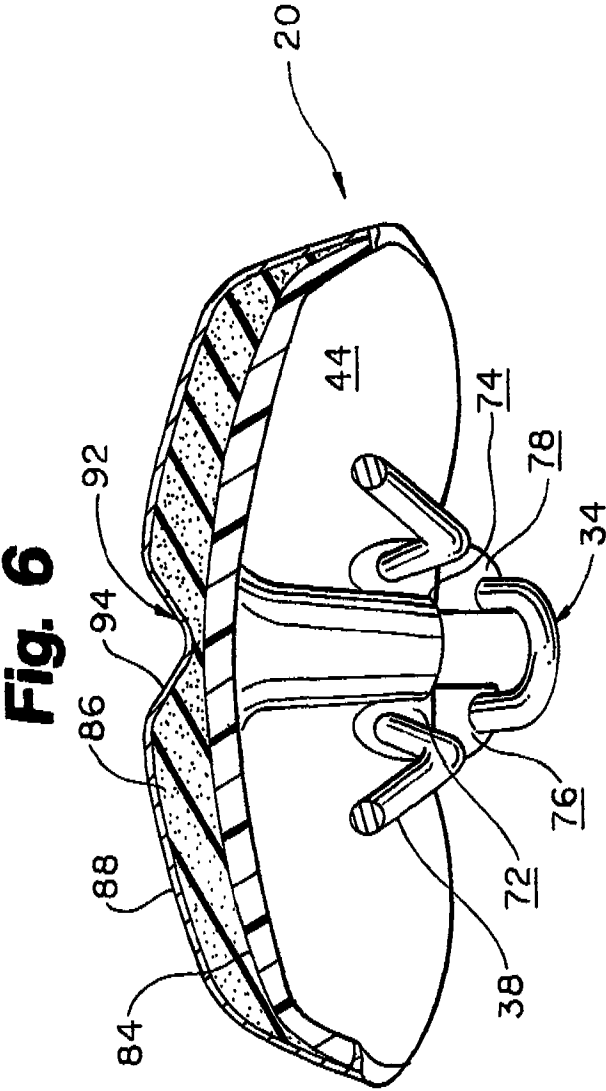
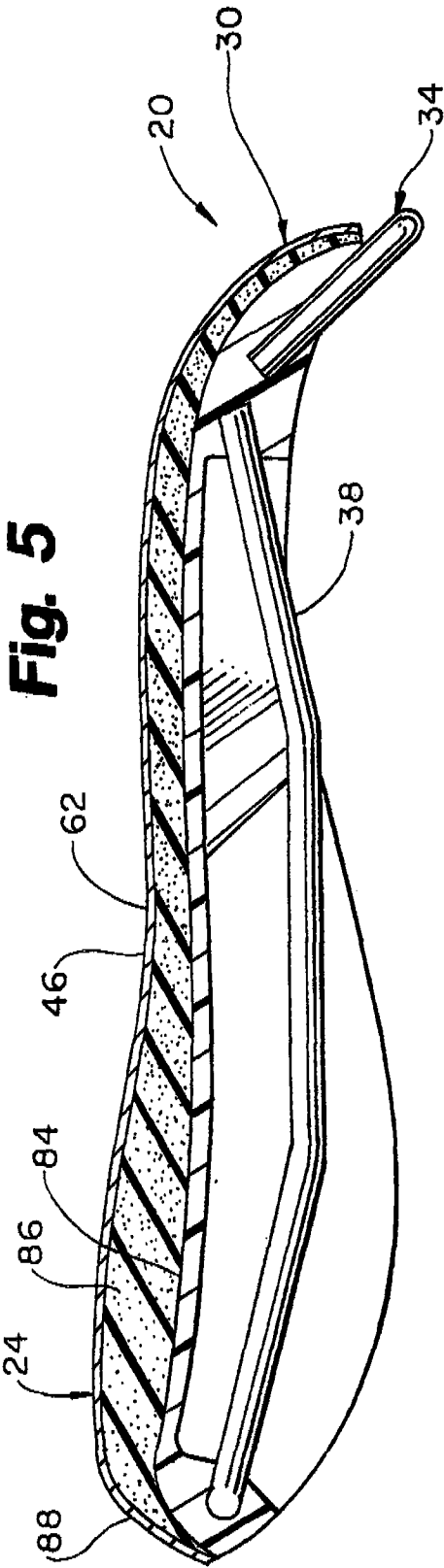
Fig. 3

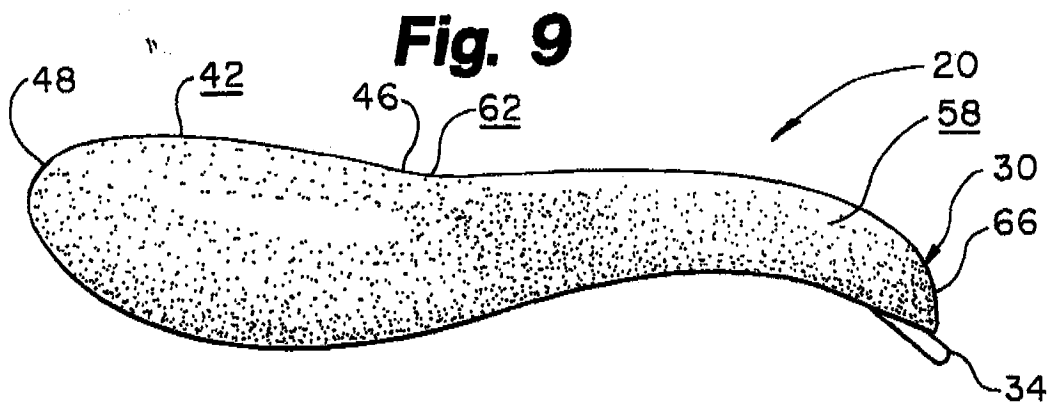
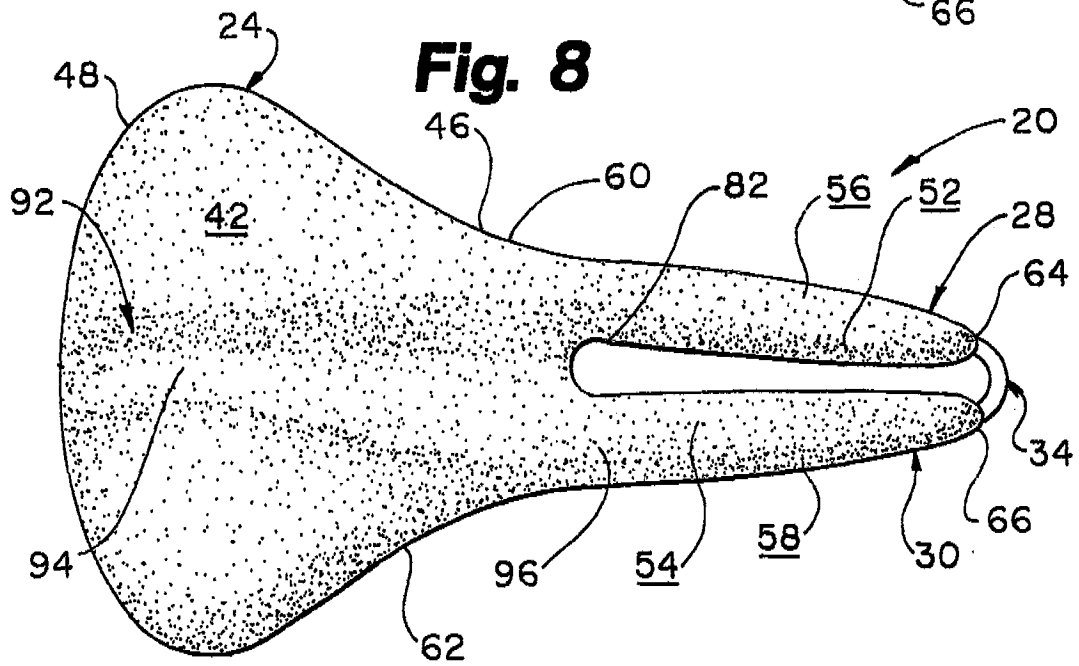
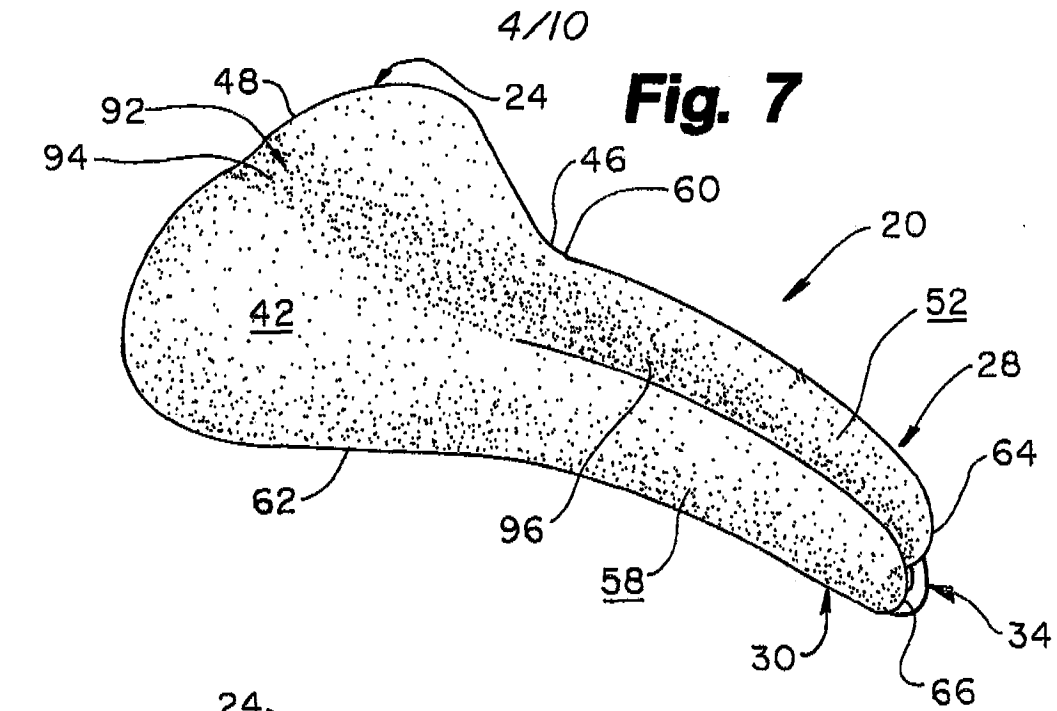


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Fig. 4







5/10

Fig. 10

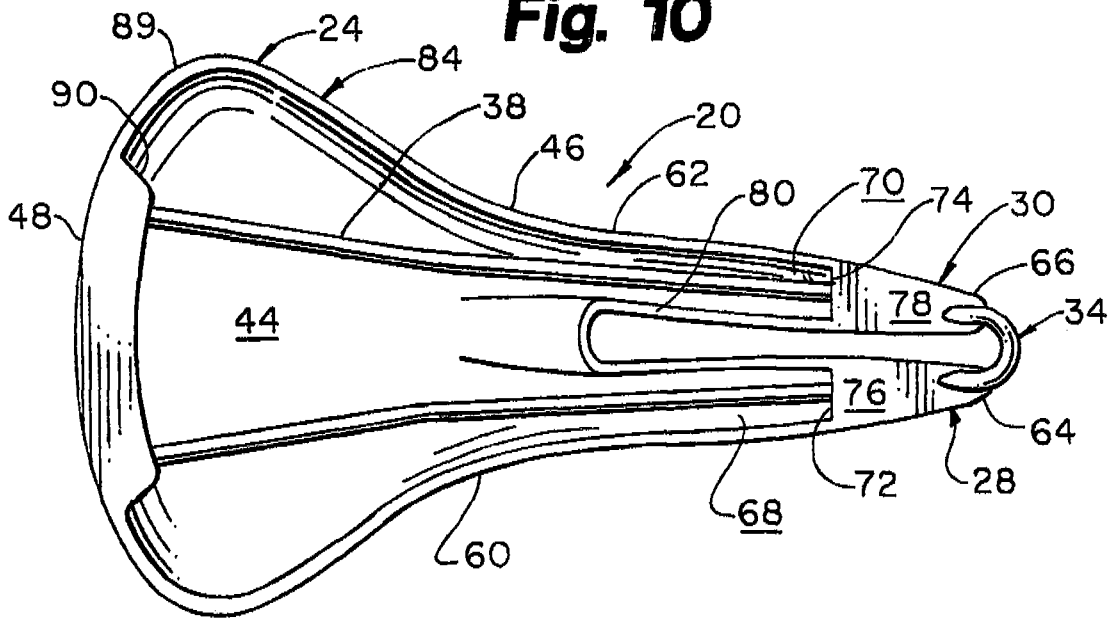


Fig. 11

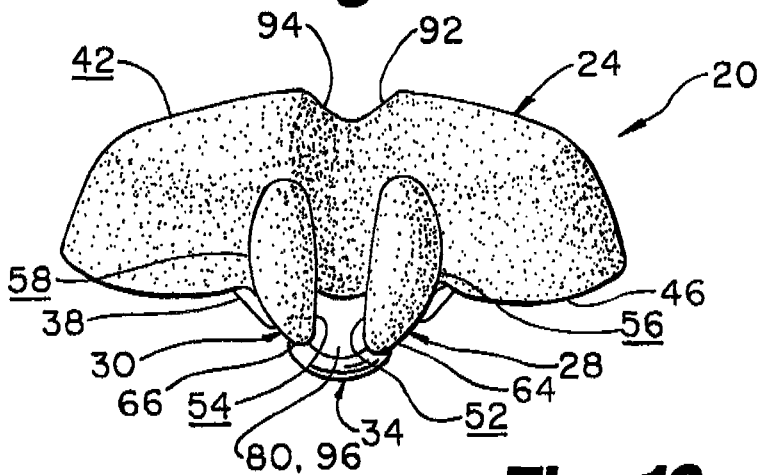
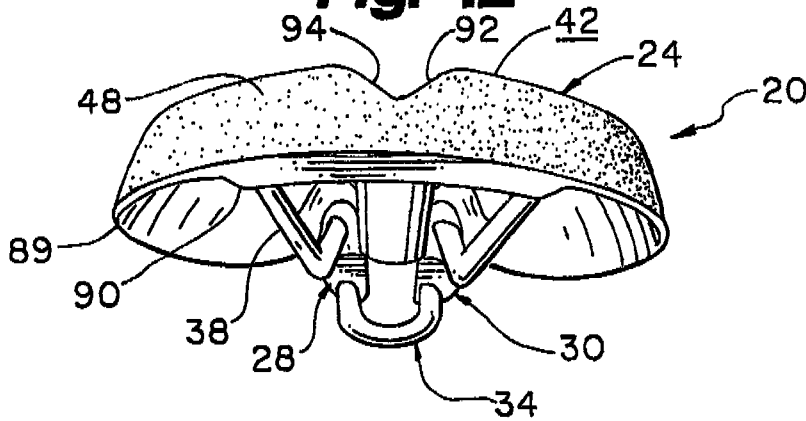
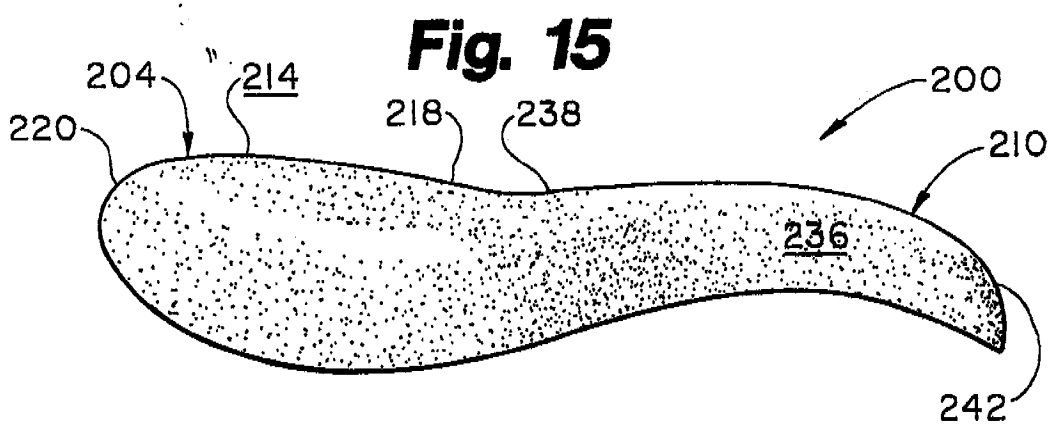
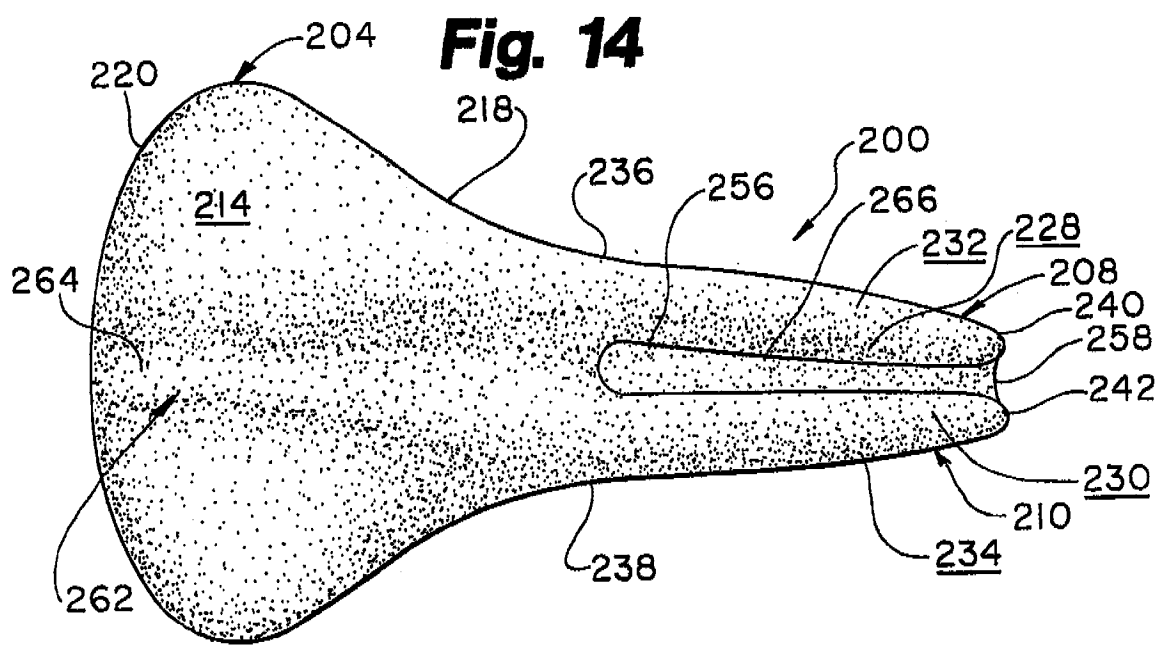
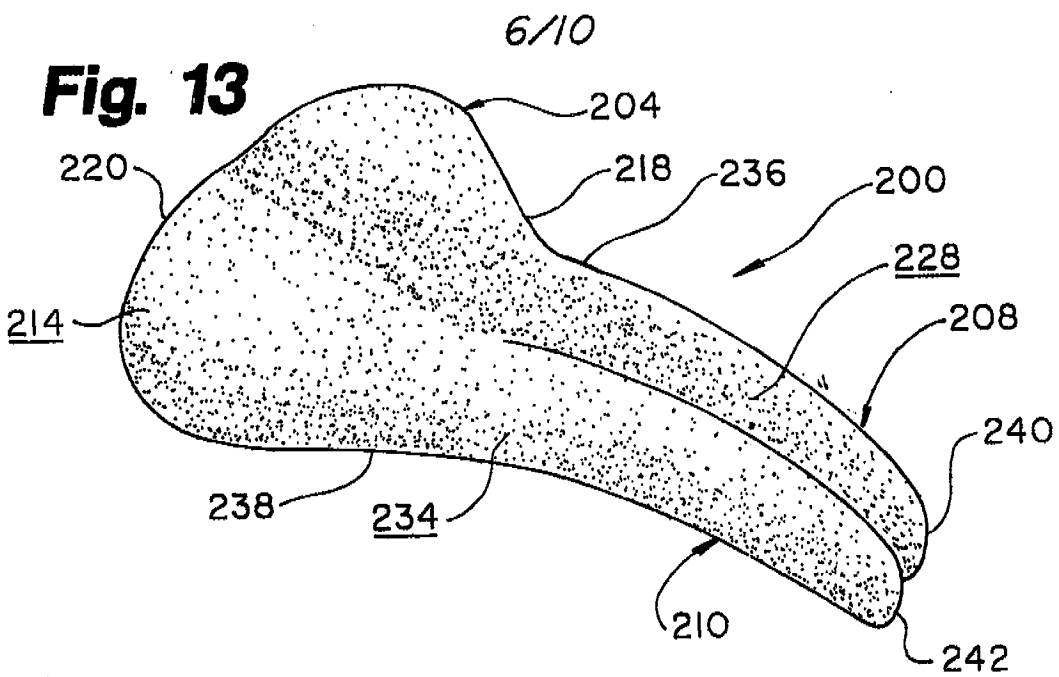
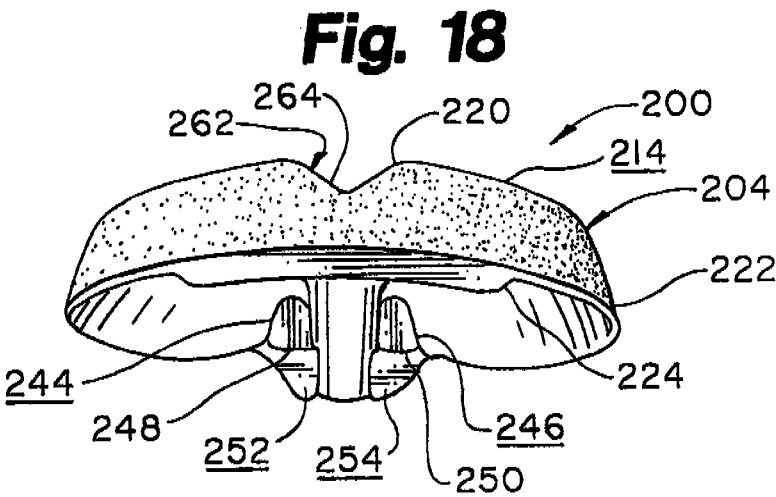
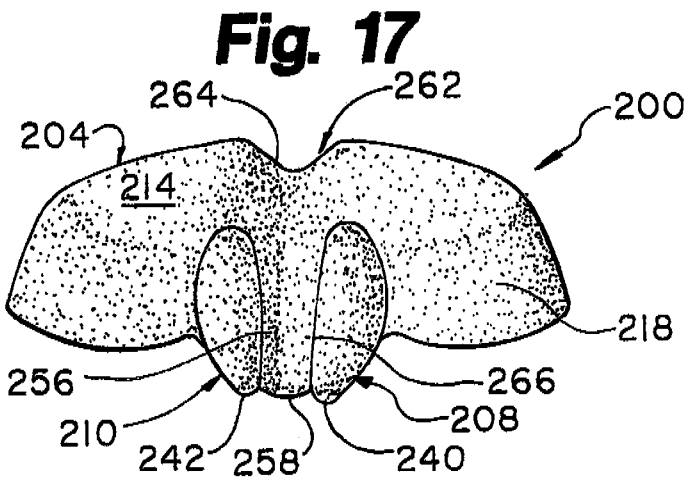
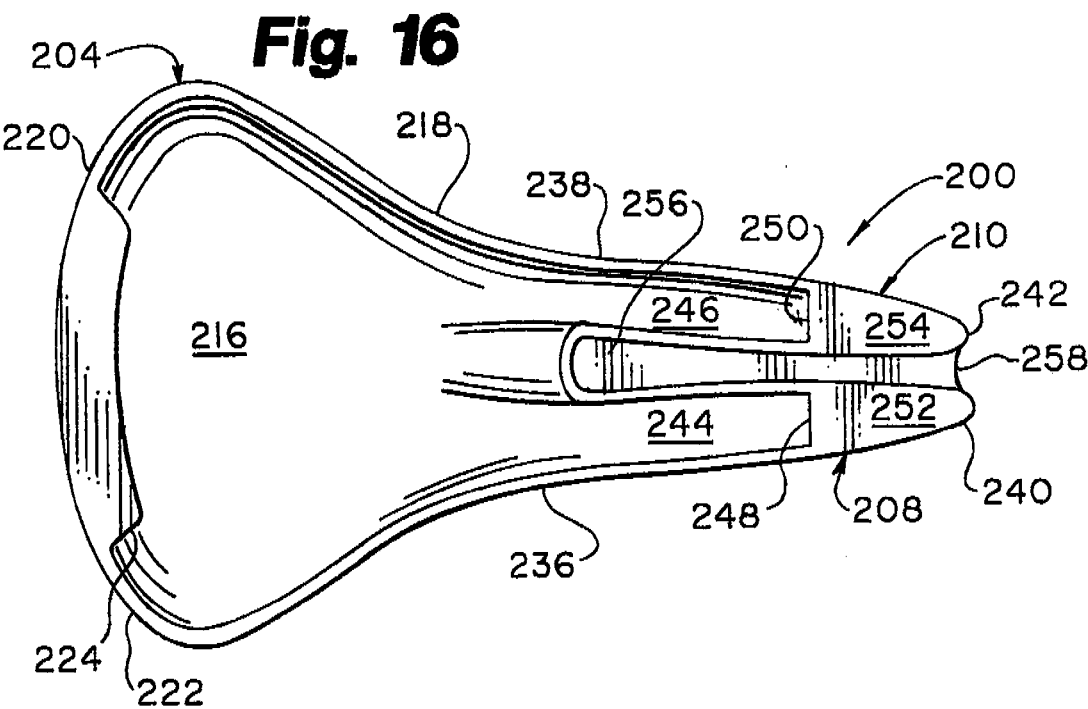


Fig. 12





7/10



8/10

Fig. 19

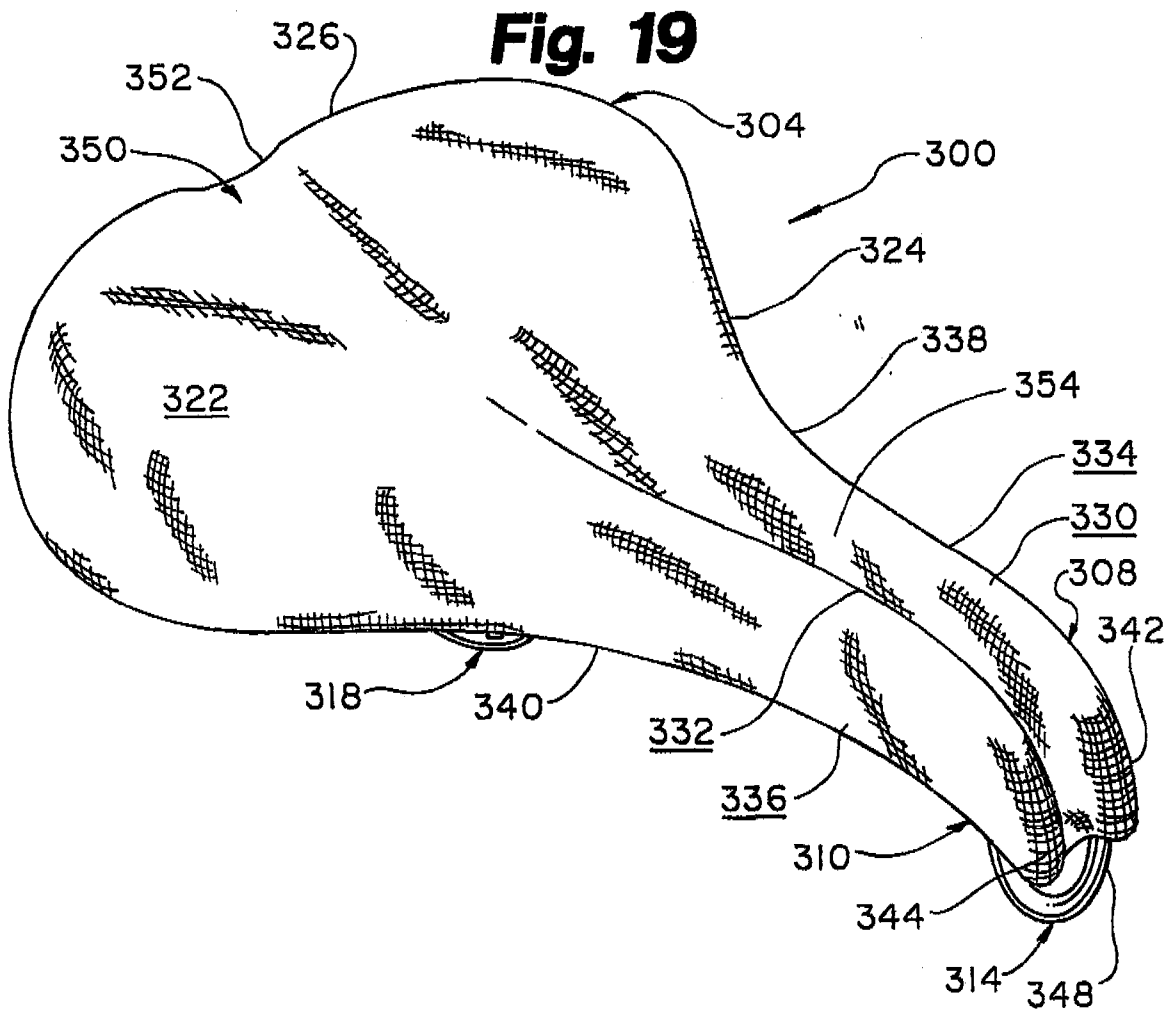
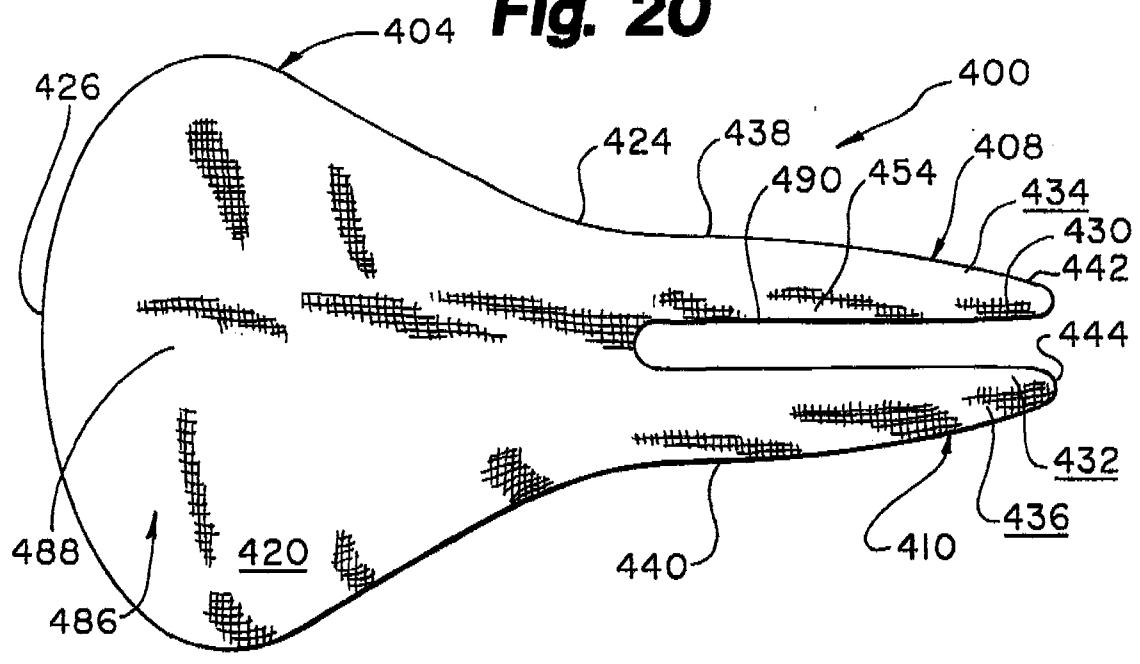


Fig. 20



9/10

Fig. 21

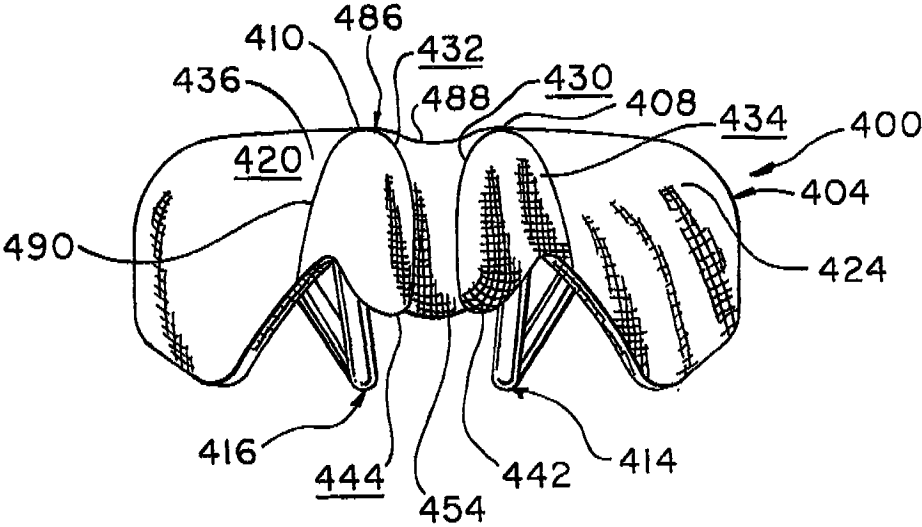
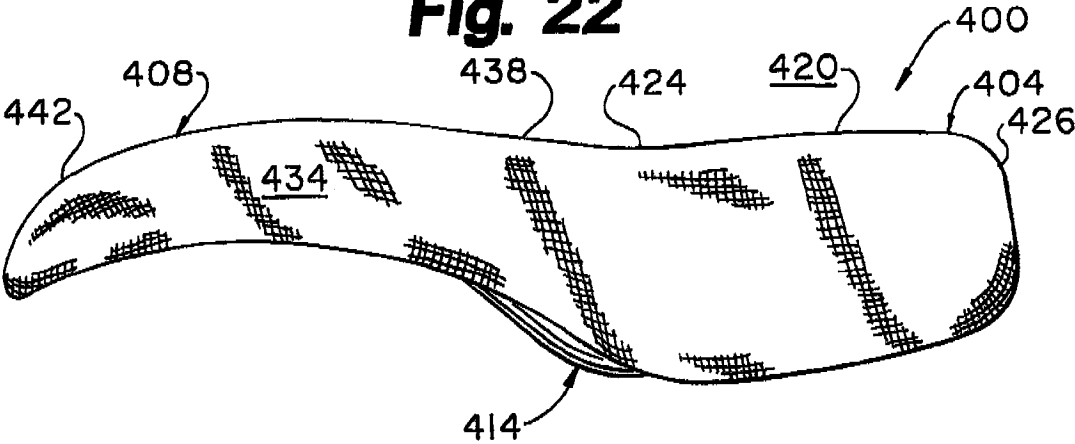


Fig. 22



10/10

Fig. 23

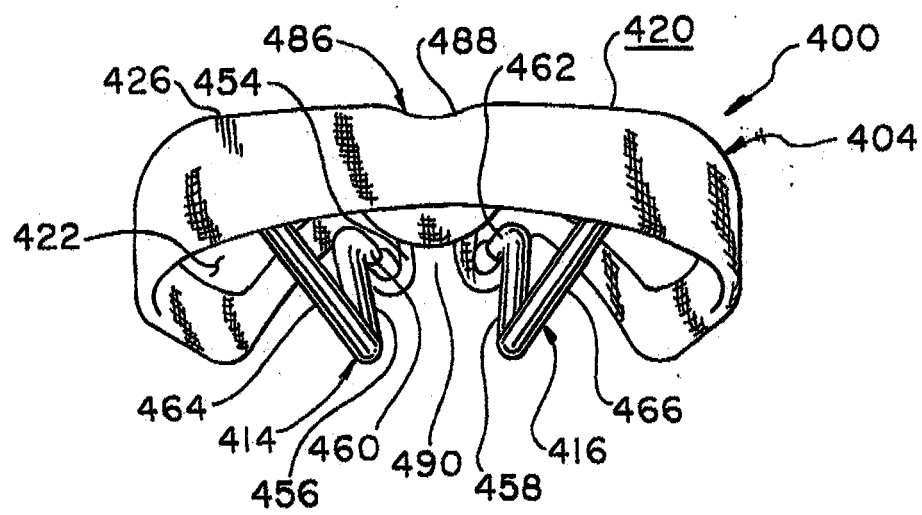
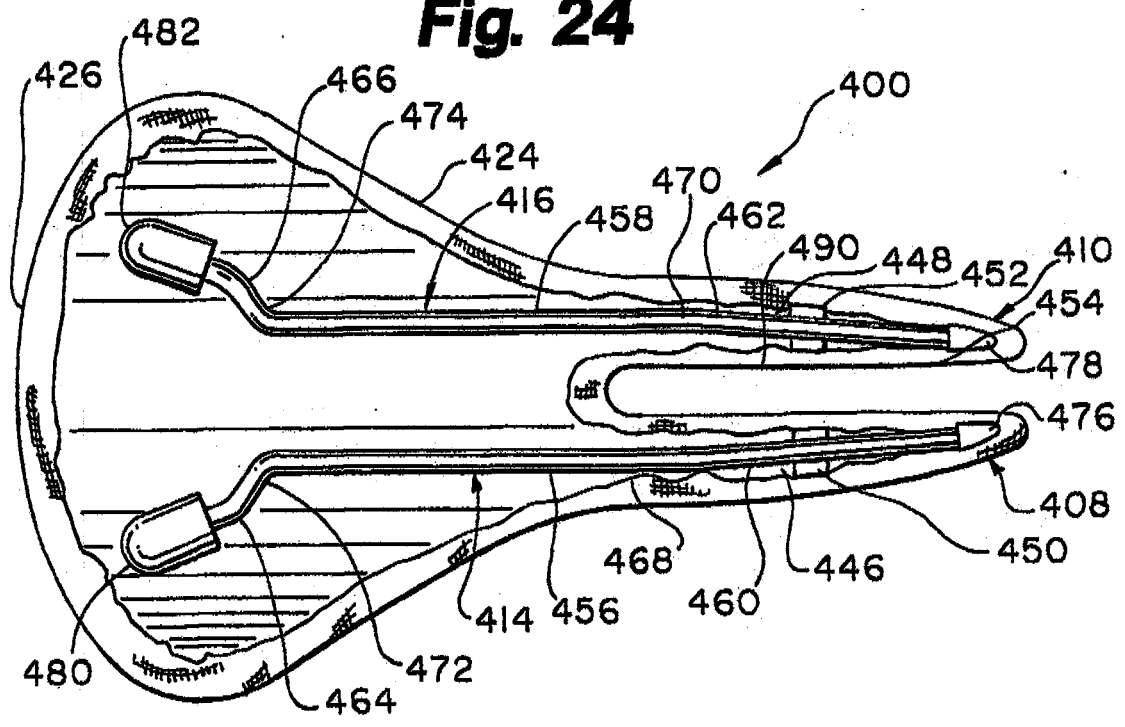


Fig. 24





US006257662B1

(12) **United States Patent**
Yates

(10) **Patent No.:** **US 6,257,662 B1**
(45) **Date of Patent:** **Jul. 10, 2001**

(54) **LOUNGE BICYCLE SADDLE**

(76) **Inventor:** **Paul M. Yates, 5814 Briar Tree, La Canada, CA (US) 91011**

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** **09/558,274**

(22) **Filed:** **Apr. 25, 2000**

(51) **Int. Cl. 7** **B62J 1/18**

(52) **U.S. Cl.** **297/214; 297/202; 297/215.16**

(58) **Field of Search** **297/195.1, 202, 297/214, 215, 215.16, DIG. 2**

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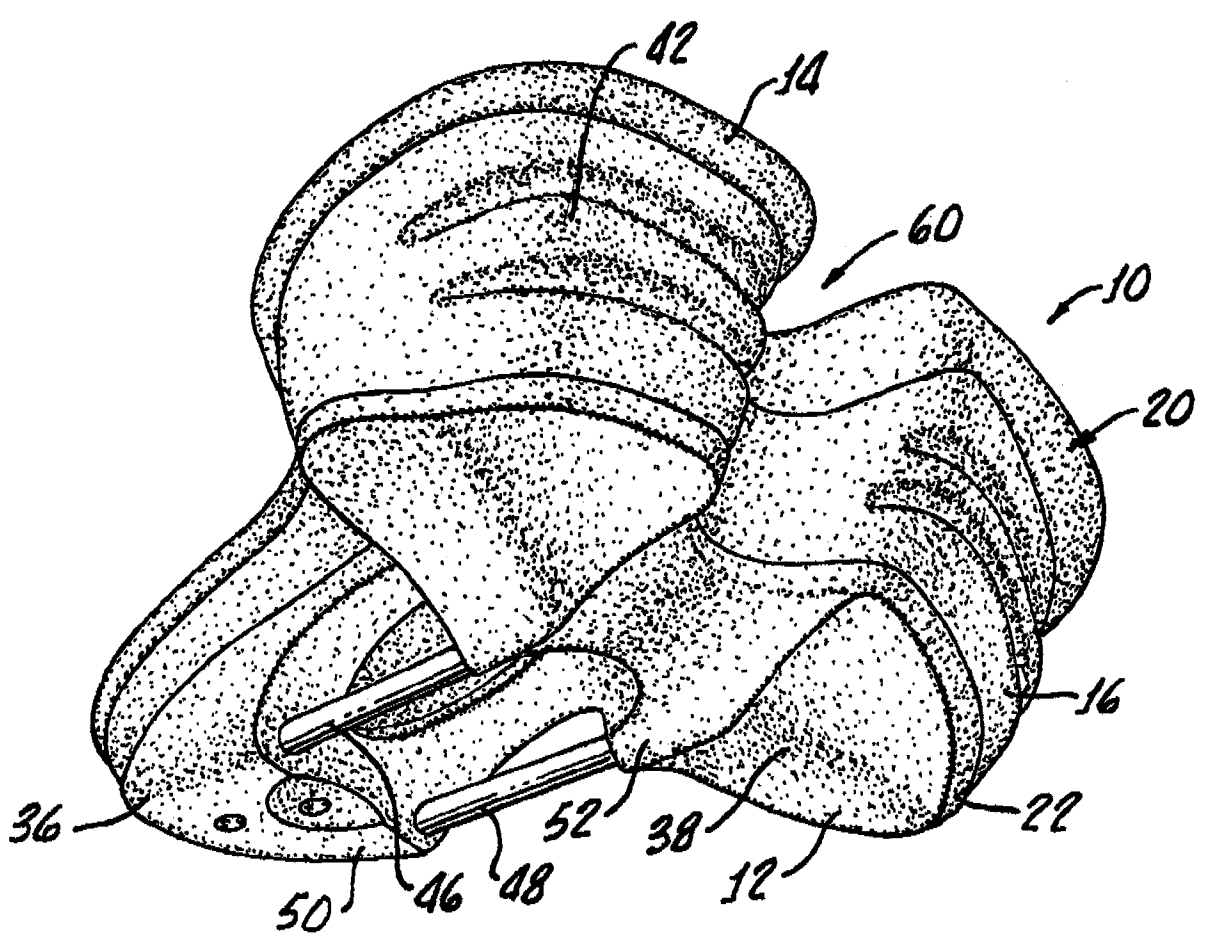
Primary Examiner—Milton Nelson, Jr.

(74) *Attorney, Agent, or Firm*—Walter A. Hackler

(57) **ABSTRACT**

A springless bicycle saddle is provided which includes a molded unitary shell and pad. Rails attached to the shell enable the saddle to be mounted on a bicycle seat and a resilient component disposed between the shell and the pad provides for cushioning. In addition, the three components may be assembled through the use of screws which also provide adjustment of the resiliency of the resilient component disposed between the pad and shell. The shell may include two pods with an arched member interconnecting the pods providing enhanced resiliency without contact with the rails. Upturned edges of the pod enables nesting of the pad and resilient component in the pods which eliminates stapling or sewing steps, thus reducing production costs.

19 Claims, 5 Drawing Sheets



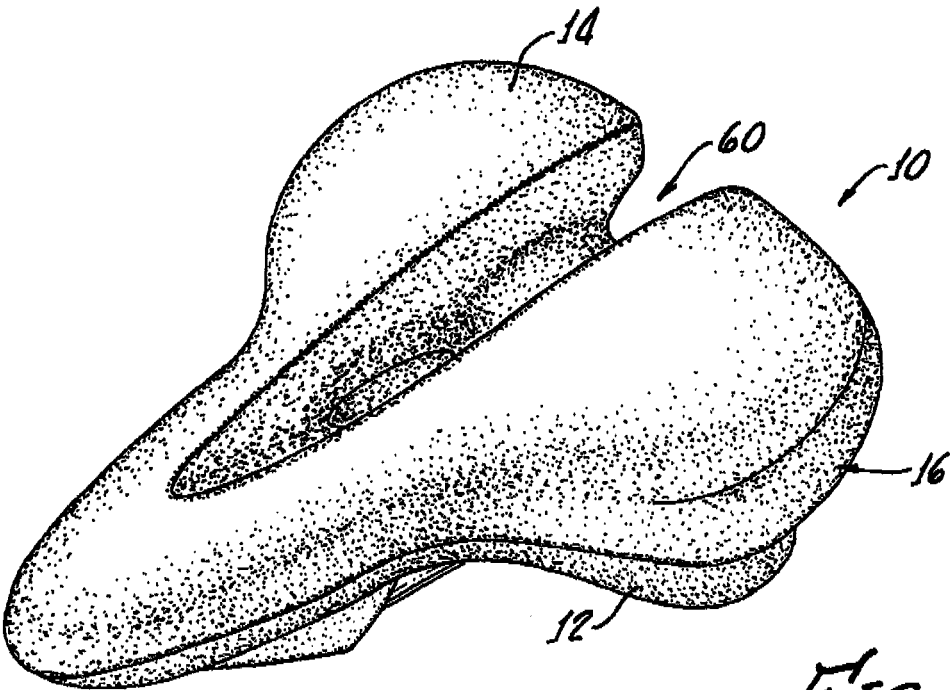


FIG. 1.

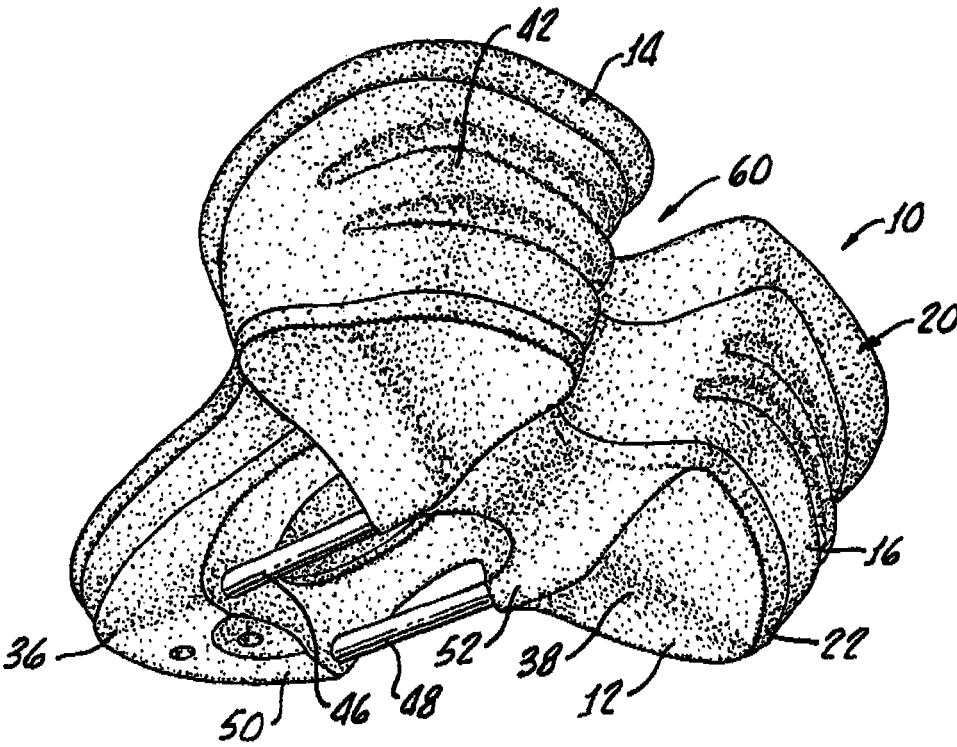
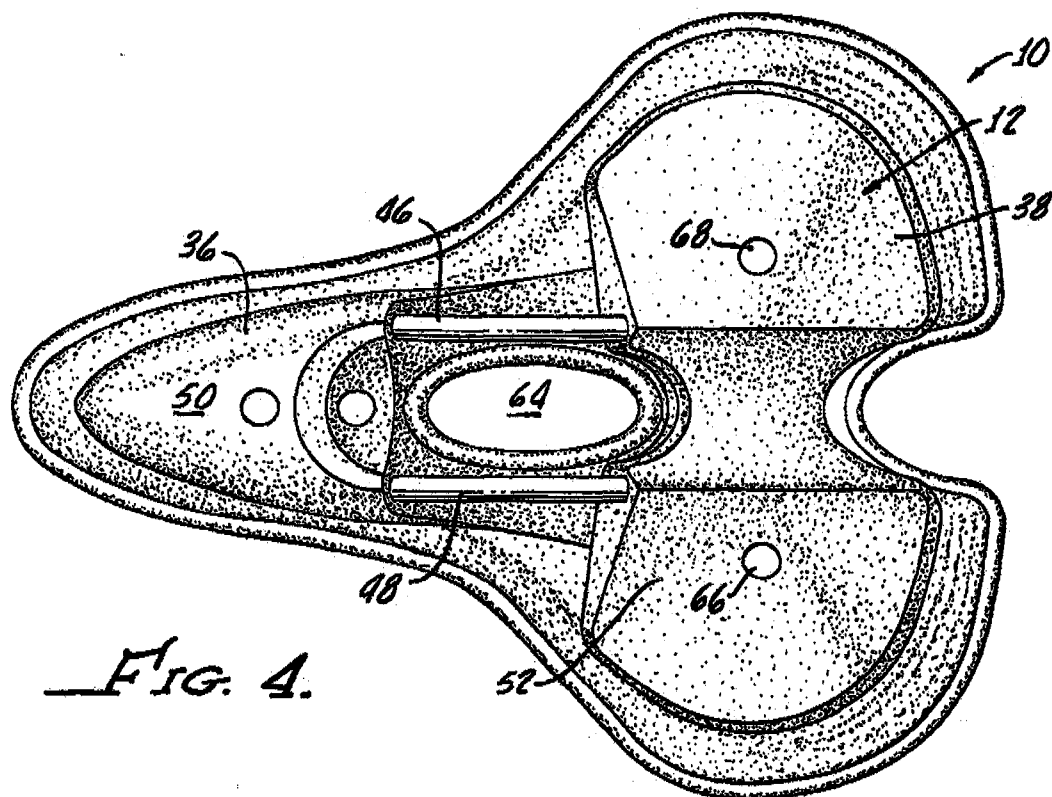
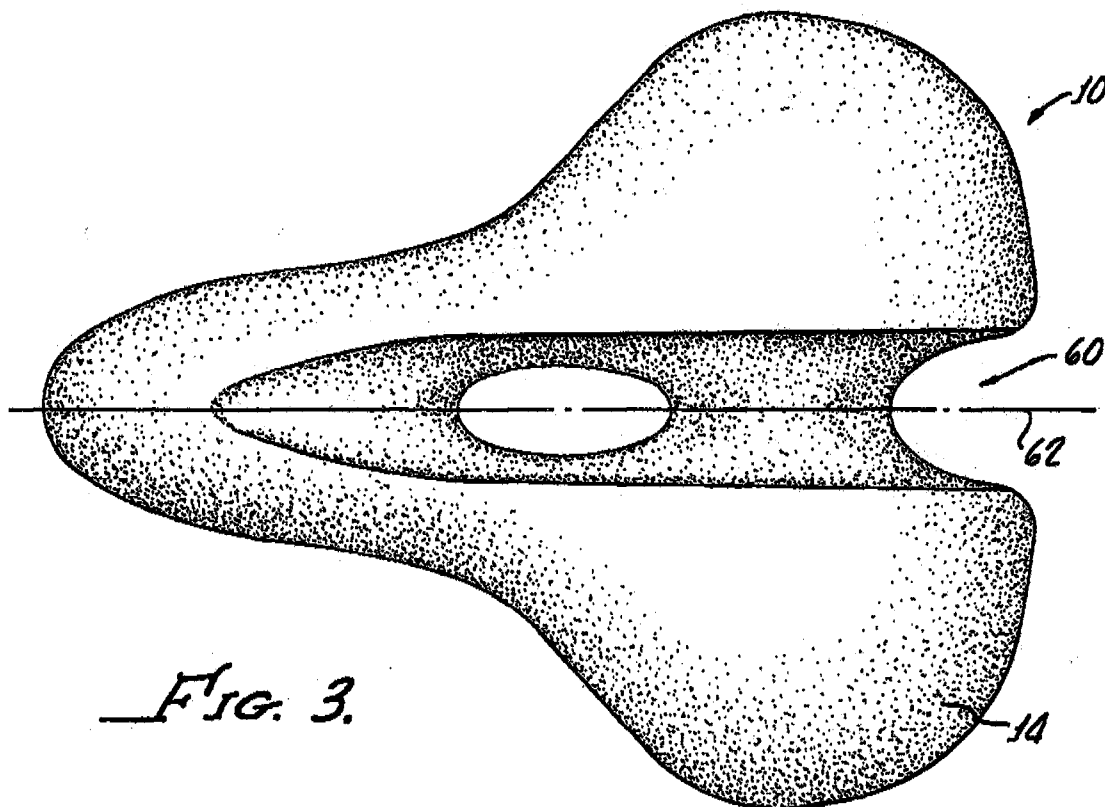
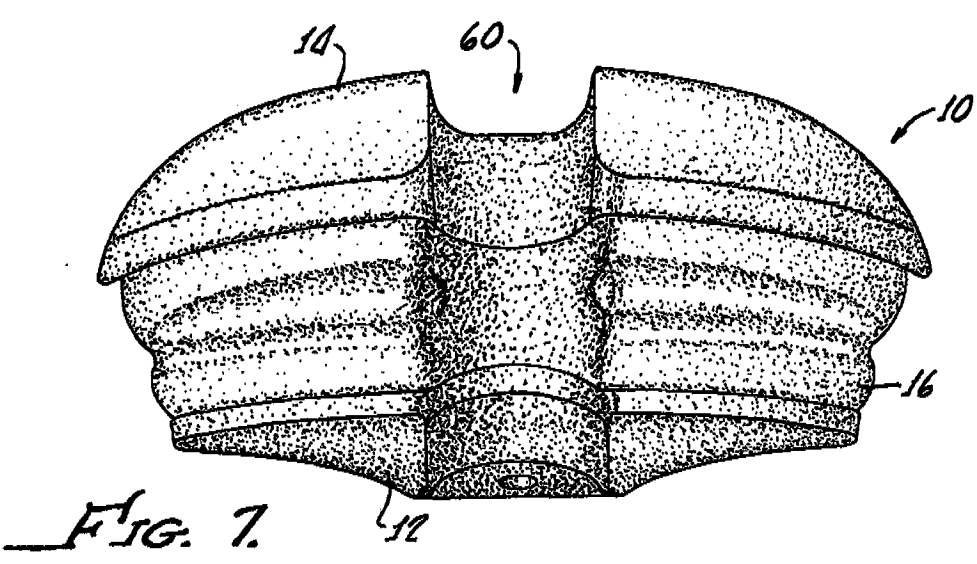
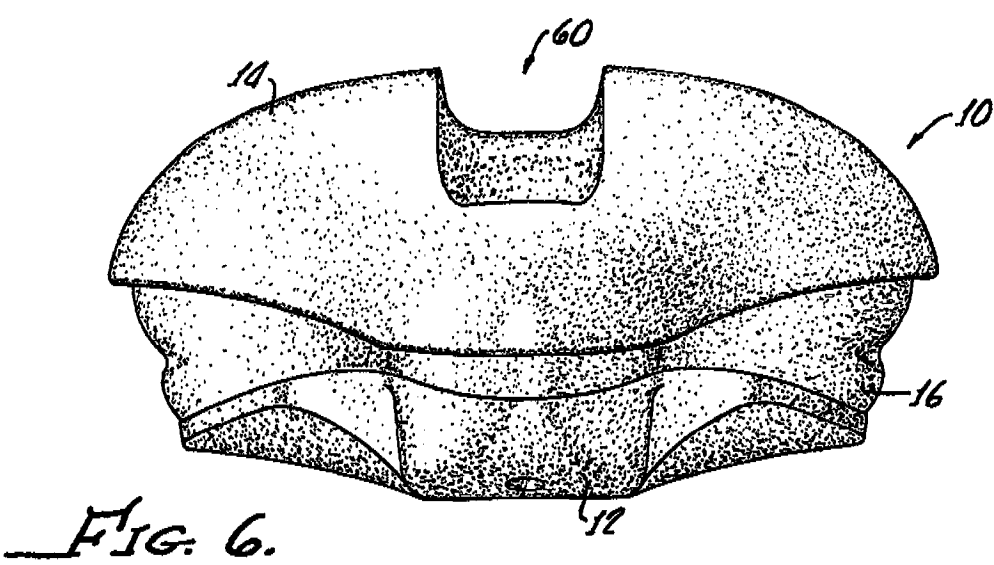
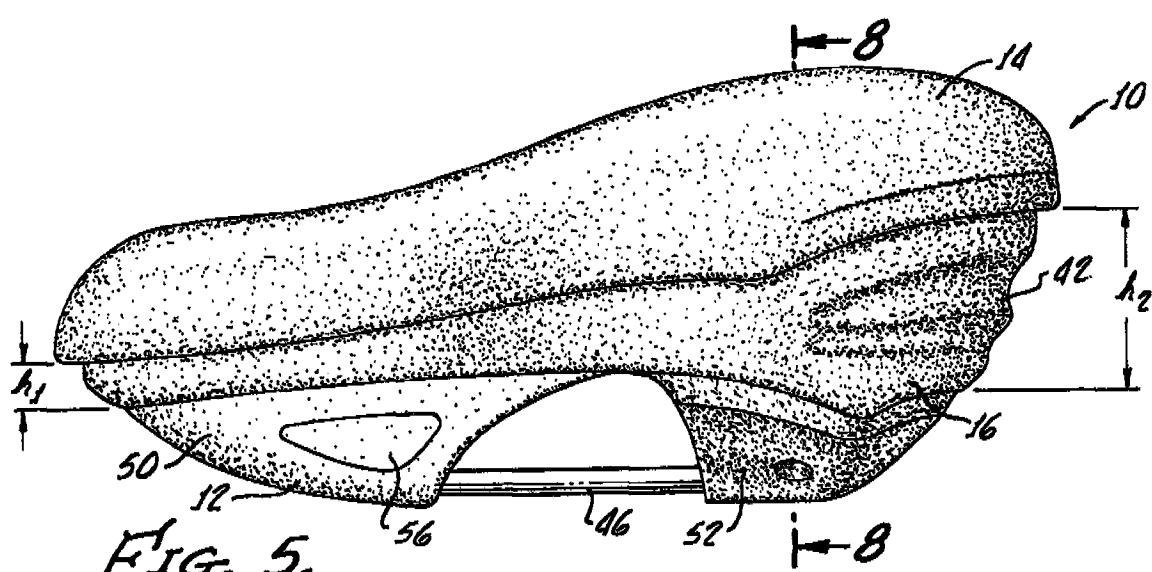


FIG. 2.





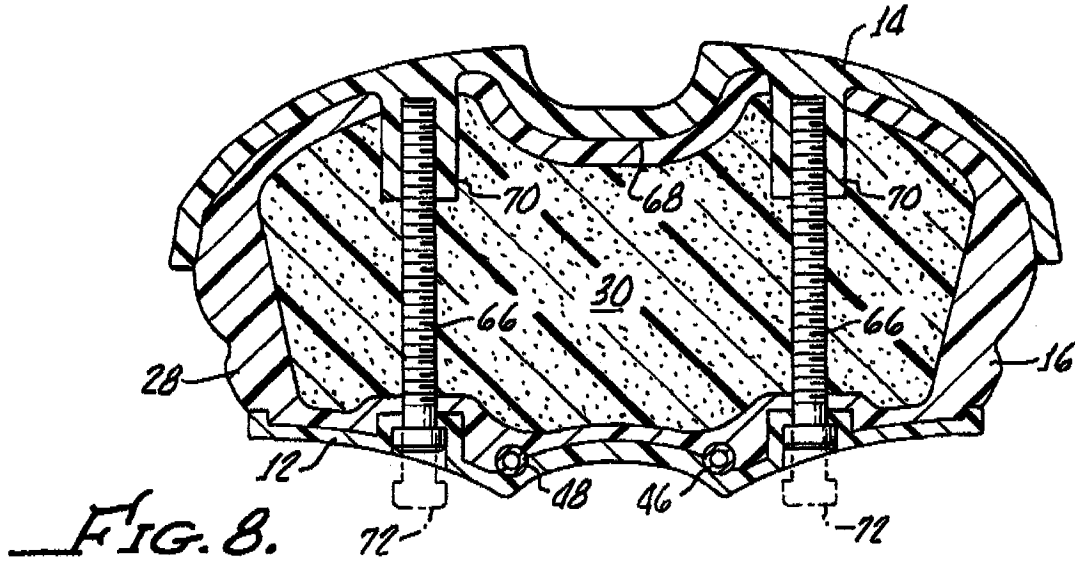


FIG. 8.

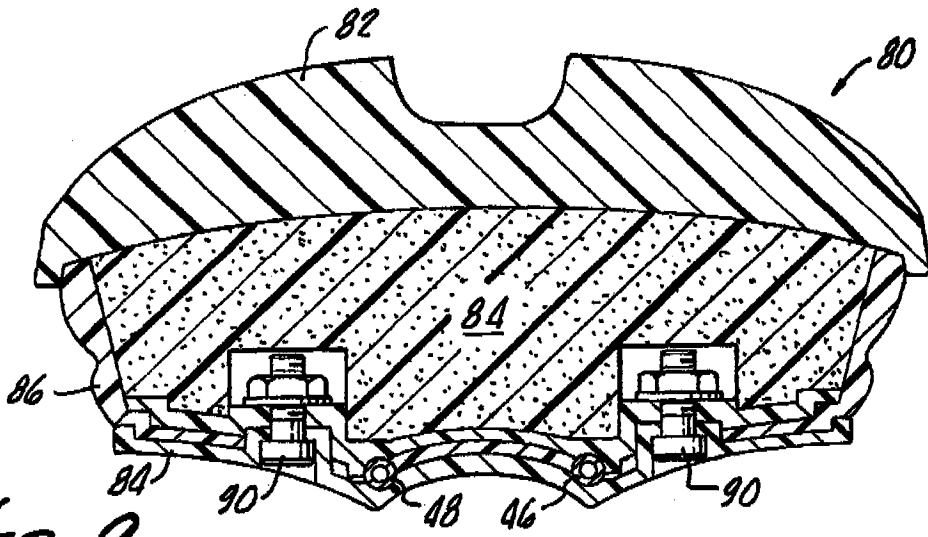


FIG. 9.

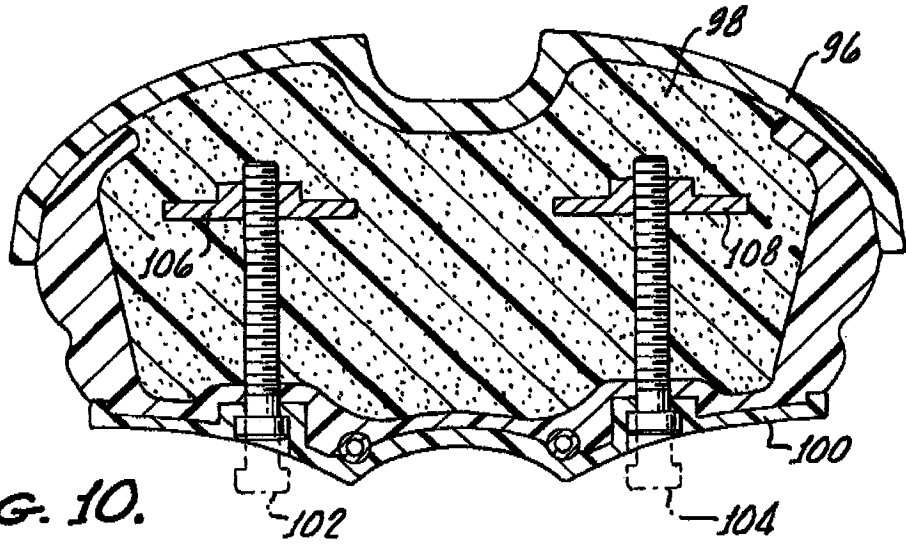


FIG. 10.

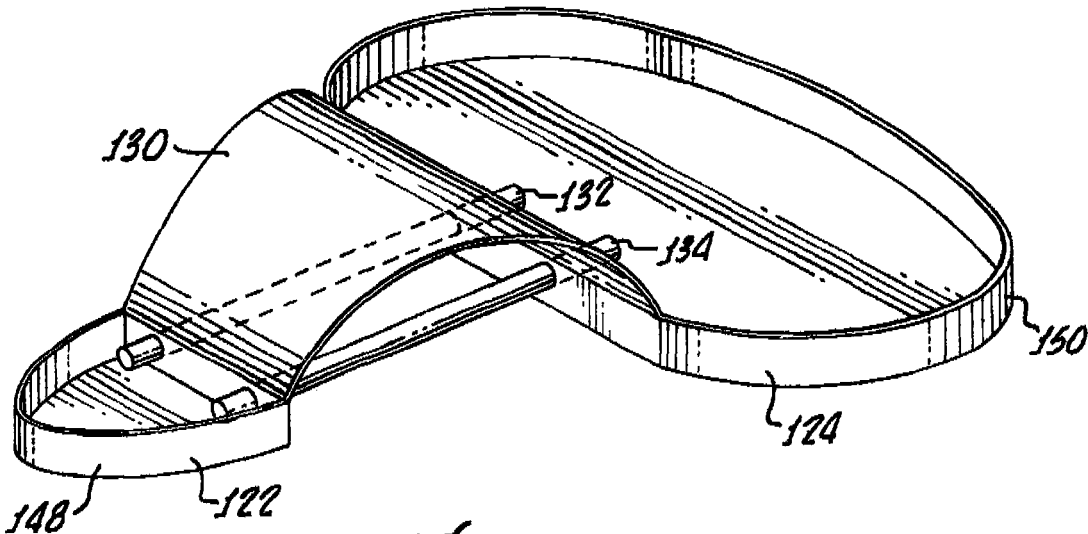


FIG. 11.

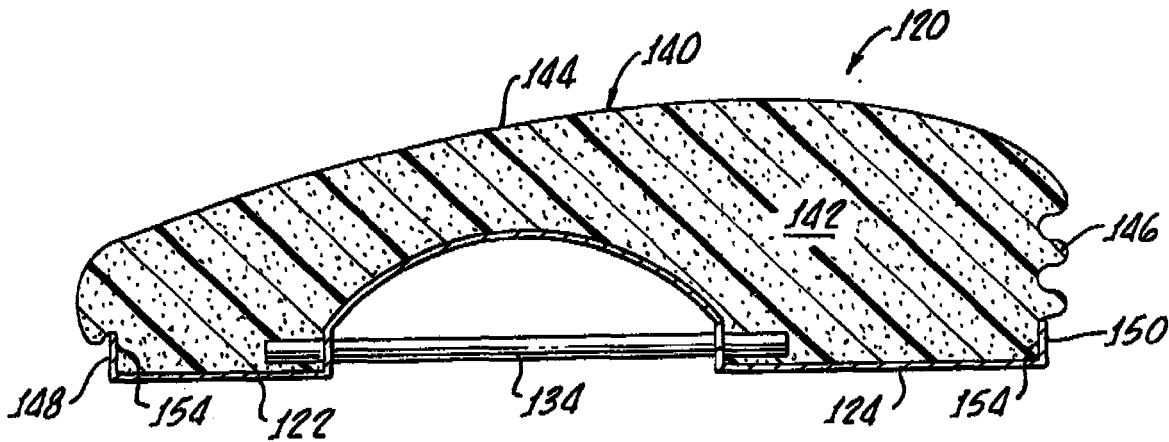


FIG. 12.

1
LOUNGE BICYCLE SADDLE

The present invention relates to an improved anatomical bicycle saddle and particularly relates to a saddle having a resilient component disposed between molded unitary top and bottom shells.

The comfort in bicycle riding is extremely important, particularly during long distance riding. Accordingly, many bicycle saddles have been designed to improve comfort for a rider over long periods of time.

Early seat construction materials have utilized rigid metal or plastic shells which are covered by a leather or plastic sheet material.

A number of cushions have also been designed for use between a leather or plastic sheet material and in underlying rigid metal or plastic frame or shells. These pods or cushions have been provided in an attempt to avoid or relieve pressure to the ischial bone ends of the rider's body. Further improvement to the saddle have included openings or cavities beneath such bone ends in order to prevent pressure thereto.

However, such earlier designed seats have not provided sufficient comfort for the rider, particularly when the seat is used in long distance bicycle riding. In such long distance riding, a "lounge" type seat is preferable in order to provide the ultimate end comfort for the rider.

A number of saddle cushion covers or pods have also been developed and sold in the market place which are attached on top of a conventional seat. Unfortunately, prior art designs involved multiple components which are both difficult to manufacture, not only due to the manual assembly required, for example, sewing or stitching, but the assembly of the components themselves.

The present invention provides for a comfortable "lounge" type saddle which is amenable for mass production because it includes a few components, and the structural design of the components also facilitates assembly of the saddle with minimal labor requirements.

Importantly, the saddle can eliminate any need for springs. This not only eliminates components hereinbefore used in a majority of prior art saddles, but also, because of spring elimination, even support for the rider is enabled without the necessity of accommodating for high pressure points which may be introduced through the use of springs.

SUMMARY OF THE INVENTION

A bicycle saddle in accordance with the present invention includes front and rear pods with a pair of rails extending therebetween. An arched member interconnects the pods and is disposed over the rails. A cushion is disposed in the front and rear pods and over the arched member. The arched member is resilient in order to provide enhanced cushioning in a midsection of the saddle without contacting the rails. Each of the pods may include upturned edges for covering a perimeter of the cushion.

The cushion may comprise a resilient pad with a resilient component therein, and may be integrally molded. The saddle includes no separate springs and accordingly is of simple manufacture.

In another embodiment of the present invention includes a molded shell having a relatively narrow fore portion and a relatively wide aft portion. Rail means are provided and attached to the shell for enabling the saddle to be mounted on a bicycle post. A molded pad is provided and a resilient component, or material, is disposed between the shell and pad. In one embodiment of the present invention, the pad and resilient component may be molded together. In another

embodiment of the present invention, the shell, pad and resilient component may be molded together. This provides for an economically manufactured bicycle saddle.

In yet another embodiment of the present invention, means are provided for partially compressing the resilient component between the shell and pad in order to provide uniform cushioning effect therebetween.

More particularly, in a further embodiment, the resilient pad has an exterior wall and a hollow interior, with the exterior wall having a perimeter generally matching the pad perimeter. Preferably, the resilient component exterior wall includes accordion folds which controls and/or enhances the compressibility of the resilient component.

More preferably, the accordion folds are present in the rear portion of the exterior wall. The means for partially compressing the resilient component comprises a plurality of screws extending between the shell and the pad. More specifically, the resilient component includes a top and a bottom, which interconnect with the exterior wall and each of the shell, pad and resilient component are contoured with a longitudinal groove down the entry of the shell, pad and resilient component. The longitudinal groove may establish an opening or a hole through the saddle. This structural feature enables relief for a bicycle rider by avoiding pressure contacts with sensitive areas.

The shell includes fore and aft undercarriages and the rail means is disposed between the fore and aft undercarriages.

It is to be appreciated that the means for partially compressing the resilient component between the bottom and the top shells also provides a means for adjusting the resiliency of the resilient component between the shell and the pad. When the resilient component is compressed less, the total overall movement enabled by the gel is much greater than when the resilient component is under higher compression. Thus, the softness of the ride can be adjusted at any time by the rider by turning the plurality of screws extending the shell, pad and through the resilient component.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention may be more clearly understood with reference to the following detailed description in conjunction with the appended drawings, in which:

FIG. 1 is a top perspective view of one embodiment of a bicycle saddle in accordance with the present invention;

FIG. 2 is a bottom perspective view of the saddle shown in FIG. 1;

FIG. 3 is a top view of the saddle shown in FIG. 1, more clearly showing a shell, pad, and resilient cushion, in a contoured configuration with a longitudinal groove down the center thereof with a hole through the saddle;

FIG. 4 is a bottom plan view of the bicycle saddle shown in FIG. 1, more clearly showing the position of rails extending between shell undercarriages and screws for not only assembling the bicycle saddle, but providing a means for compressing the resilient component which in turn provides a means for adjusting resiliency of the gel between the pad and shell;

FIG. 5 is a side elevational view of the bicycle saddle shown in FIG. 1;

FIG. 6 is a front elevational view of the bicycle saddle shown in FIG. 1;

FIG. 7 is a rear elevational view of the bicycle saddle shown in FIG. 1;

FIG. 8 is a cross sectional view of the saddle shown in FIG. 5 taken along the line 8—8;

3

FIGS. 9 and 10 are alternate embodiments for securing the shell to the pad and resilient material;

FIG. 11 is a perspective view of an alternative pad arrangement showing an arched member interconnecting front and rear pods with a pair of rails therebetween; and

FIG. 12 is a cross-sectional view of a saddle in accordance with the present invention utilizing the pods of FIG. 12 along with a cushion disposed thereon and behind upturned edges of the rail.

DETAILED DESCRIPTION

With reference to FIGS. 1-9, there is shown a bicycle saddle 10, which generally includes a shell 12 and a molded pad 14, with a resilient component 16 disposed between the shell 12 and pad, 14.

The shell 12, and pad 14 may be molded in any conventional manner, such as, for example, compression molded or injection molding, and may be formed from any suitable plastic material suitable for such forming. In view of the fact that the shell 12 and pad 14 are injection molded, it is clear that little manual labor is required. As shown in FIGS. 5-7, the shell 12 and pad 14 and resilient component may be molded together, using molding techniques disclosure, are U.S. Pat. Nos. 5,679,193; 5,756,184; 5,774,966; 5,904,396; 5,932,046; 5,993,584; and 6,007,149 which are incorporated herewith in their entirety.

The shape of the shell 12 and pad 14 is as shown in FIGS. 1-7, with the molded unitary pad 14 having a perimeter 20 generally matching a perimeter 22 of the shell 12. This conformity of perimeters provides for directly overlying the pad 14 on the shell 12, which provides comfort to the rider by eliminating any separately protruding portions.

The resilient component 16 disposed between the shell 12 and pad, 14 may be of any suitable gel or foam which can preferably be molded. As shown in the embodiment of FIG. 8, the resilient gel or foam 16 has an exterior wall 28 and a hollow interior 30.

The resiliency of the gel, and the wall 28, can be enhanced through the use of molding accordion folds 42 into the gel 16. Selective positioning of the accordion folds 42 also may be utilized to adjust the overall resiliency of the gel or foam 16. That is, while primarily shown in the aft portion 38 of the lower shell 12, the accordion folds 42 may extend totally around the perimeter of the gel or foam 16 between the shell 12 and pad 14.

Rails 46, 48 attached to the shell 12, preferably between fore and aft undercarriages 50, 52 (see FIG. 5) provide a means for enabling the saddle 10 to be mounted on a bicycle post (not shown) in a conventional manner.

An opening 56 disposed in the fore undercarriage 50 may be provided for providing greater wall strength in the fore undercarriage 50 and to lighten the saddle 10.

In order to enhance the comfort of the saddle and eliminate pressure points to a rider, the pad 12 and shell 14 and resilient gel or foam 16 may be contoured with a longitudinal groove 60 down a longitudinal axis 62. As best shown in FIGS. 3 and 4, the groove may include an opening 64 therethrough in order to provide additional comfort and ventilation to the rider. All of these configurations are included in the molds for the shell 12, pad 14 and gel or foam 16. Accordingly, no manual steps such as sewing, trimming and the like, are required in the manufacture of the saddle 10 in accordance with the present invention.

Importantly, as shown in the cross section of FIG. 8, the three major components of the saddle 10, namely, the shell

4

12, pad 14 and gel or foam, may be held together by screws, or bolts, 66, extending between the shell 12, pad 14 and through the gel or foam 16. The screws are secured to an underside 68 through the use of tapable posts 70 molded into the underside 68 of the pad 14.

The screws 66 not only maintain assembly of the saddle 10, but importantly, provide a means for adjusting the initial resiliency of the gel or foam 16 between the shell 12 and pad 14. By turning the screws 66 farther into the posts 70, the gel 16 is compressed between the shell 12 and pad 14, the compression of the gel or foam changing the initial resiliency thereof between the shell 12 and pad 14.

The screws 66 do not engage the shell 12 enabling further compression of the gel 30 by a rider, not shown. Such further compression causes the screws 66 and heads 72 to protrude from the shell 12 as shown in dashed line in FIG. 8.

Additionally, in view of the spaced apart relationship between the screws 66, the resiliency of the gel 16 or foam may be adjusted differently over the fore portion 50 of the shell 12 and the aft portion 52 of the shell 12. Thus, customized resiliency adjustment is provided with the structure of the present invention.

FIG. 9 is an alternative embodiment 80 of the present invention utilizing a pad 82, and shell 84 and a gel 86 disposed therebetween with a foam-like plastic 88 therein. The pad 82 is adhered or molded to the plastic 88 and shell 82 and the latter is fixed to the shell 84 by way of screws 90.

FIG. 10 shows another variation in which a shell 96 and gel 98 are attached to a shell 100 by way of bolts 102, 104 engaging threaded washers 106, 108 imbedded in the gel 98. As in the embodiment shown in FIG. 8, the bolts 102, 104 do not engage the shell 98 thereby enabling further compression of the gel 98.

Yet another bicycle saddle embodiment 120 is shown in FIGS. 11 and 12. In this instance, there is included a front pod 122 and a rear pod 124 interconnected by an arched member 130 and a pair of rails 132, 134, the rails being secured in the pods 122, 124 in any suitable manner. The arch member 130 may be molded integrally with the pods 122, 124 and provides enhanced resiliency of the saddle 120 without contacting the rails.

A cushion 140 is nested in the pods 122, 124 and conforms to the arched member 130. The cushion 140 may be adhered to the rails 122, 124 or integrally molded therewith as hereinbefore described. The cushion includes a gel 142, as hereinbefore described and a cover, or pad 144, also hereinbefore described. Accordion folds 146 also may be included such as shown in FIGS. 2 and 5.

Importantly, upturned edges, or rims, 148, 150 receive the cushion 140 in a nested manner covering a perimeter 154 of the cushion. Accordingly, no attachment means, such as staples or sewing, is necessary for connecting the shell, or covering, 148 with the gel 142 along the perimeter 154.

Although there has been hereinabove described a springless bicycle saddle in accordance with the present invention for the purpose of illustrating the manner in which the invention may be used to advantage, it will be appreciated that the invention is not limited thereto. Accordingly, any and all modifications, variations or equivalent arrangements which may occur to those skilled in the art, should be considered to be within the scope of the invention as defined in the appended claims.

What is claimed is:

1. A bicycle saddle comprising:
front and rear pods;

5

a pair of straight rails interconnecting said front and rear pods;
an arched member interconnecting the front and rear pods and disposed over said pair of straight rails;
a cushion disposed in said front and rear pods and on said arched member, the arched member enabling enhanced resiliency of the saddle without contacting said pair of rails.

2. The bicycle saddle according to claim 1 wherein each of the pods includes upturned edges for covering a perimeter of said cushion.

3. The bicycle saddle according to claim 2 wherein said cushion comprising a resilient shell with a resilient component thereunder.

4. The bicycle saddle according to claim 3 wherein said resilient shell and resilient component are molded together.

5. The bicycle saddle according to claim 3 wherein the shell, resilient component and pods are molded together.

6. A bicycle saddle comprising:
a molded shell having a relatively narrow fore portion and a relatively wide aft portion;
rail means, attached to the shell, for enabling the saddle to be mounted on a bicycle post;
molded pad having a perimeter generally matching a perimeter of the shell;
a resilient component disposed between the shell and the pad, said resilient component having an exterior wall and a hollow interior, said exterior wall having a perimeter generally matching the pad perimeter; and
means for partially compressing the resilient component between the shell and the pad.

7. The saddle according to claim 6 wherein the resilient component exterior wall includes accordion folds.

8. The saddle according to claim 7 wherein the resilient component exterior wall includes accordion folds in a rear portion of the exterior wall.

9. The saddle according to claim 6 wherein the means for partially compressing the resilient component comprises a plurality of screws extending between the shell and the pad and through the resilient component.

10. The saddle according to claim 9 wherein said resilient component includes a top and a bottom, interconnecting the exterior wall.

6

11. The saddle according to claim 10 wherein each of the shell, pad and resilient component are contoured with a longitudinal groove down a center of each of the shell, pad and resilient component.

12. The saddle according to claim 11 wherein the shell includes fore and aft undercarriages and said rail means is disposed between the fore and aft undercarriages.

13. A bicycle saddle comprising:
a molded shell having a relatively narrow fore portion and a relatively wide aft portion;
rail means, attached to the shell, for enabling the saddle to be mounted on a bicycle post;
a molded pad having a perimeter generally matching a perimeter of the shell;
a resilient component disposed between the shell and pad, said resilient component has an exterior wall including accordion folds; and
means for adjusting the resilience of the resilient component between the shell and pad.

14. The saddle according to claim 13 wherein the resilient component has an a hollow interior, said exterior wall having a perimeter generally matching the pad perimeter.

15. The saddle according to claim 14 wherein the resilient component exterior wall includes accordion folds in a rear portion of the exterior wall.

16. The saddle according to claim 14 wherein the means for adjusting the resiliency of the resilient component comprises a plurality of screws extending between the shell and the pad and through the resilient component.

17. The saddle according to claim 16 wherein said resilient component includes a top and a bottom, interconnecting the exterior wall.

18. The saddle according to claim 17 wherein each of the shell, pad and resilient component are contoured with a longitudinal groove down a center of each of the shell, pad and resilient component.

19. The saddle according to claim 18 wherein the shell includes fore and aft undercarriages and said rail means is disposed between the fore and aft undercarriages.

* * * * *

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154

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIRECCION DE NUEVAS CREACIONES

2020
Bogotá, D.C.,

Abogado
Dr. EMILIO FERRERO.

ASUNTO	Radicación	07 - 11573
	Trámite	011
	Evento	379
	Actuación	430
	Oficio	12592
	Folios	24

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☐		
Vía PCT (fase nacional)	☒	Cap. I	☒
		Cap. II	☐

No. Sol. Internacional	<u>PCT/EP2005/008212</u>
Fecha de Presentación Internal.	<u>2005/28/07</u>

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se comunica:

1. Documentos estudiados

<u>Descripción:</u>	Folios: 67 a 90 Como se radico inicialmente.
<u>Reivindicaciones:</u>	Folios: 91 a 96 Como se radico inicialmente.
<u>Dibujos:</u>	Folios: 98 a 116 Como se radico inicialmente.
<u>Prioridad:</u>	Folios: 1 (IT) 2004-VI2004A000204 (2004/08/11).

2. Objeto de la invención

Titulo de la invención: **"SILLIN DE BICICLETA". (Folio 1).**

Problema Técnico Planteado:

- Evitar la compresión en las estructuras vasculares perineales, en las estructuras del piso pélvico y las arterias y venas profundas del pene sobre el arco púbico cuando el ciclista se sienta sobre el sillín de la bicicleta.
- Evitar la fricción contra los músculos gracilis y aductores cuando el ciclista ejerce la acción del pedaleo.

Solución:

- La solución a los problemas técnicos planteados es proporcionar un sillín para bicicleta que tiene dos porciones idénticas simétricas longitudinales con un canal central largo ubicado en su parte frontal de su zona media, cada una de estas porciones idénticas presenta cada una, una parte trasera donde tiene su respectiva ángulo de inclinación, estas partes traseras están unidas por una sección conformada hueca y tiene además un nicho que presenta de forma sustancial una forma de cola de paloma cuyos extremos esta a una distancia reciproca, terminando en un extremo frontal en una forma semicircular, la cual también se une a la sección conformada hueca. Este sillín también cuenta con dos porciones frontales cerradas inclinadas en forma de pico de águila con forma semicircular con su respectivo ángulo de inclinación.

IPC: **B62J1/00.**

3. Análisis de la solicitud de Patente

Título

Claridad:

- Se evidencia que el título del petitorio "*Sillín de bicicleta*", según como esta expuesto, es muy general y no esta definiendo de manera clara y concreta la materia en particular que esta exponiendo y que se desea proteger de la invención, con base en lo ilustrado en su capitulo descriptivo junto con su graficas o dibujos y su capitulo reivindicatorio.

Se le sugiere al solicitante que redacte nuevamente el título colocándolo de manera claro, concreto y especifico, de tal manera que defina la materia en particular que esta exponiendo y que se desea proteger de la invención, como por ejemplo "*Sillín de bicicleta que tiene dos porciones idénticas simétricas longitudinales con un canal central largo ubicado en su parte frontal de su zona media*".

Reivindicaciones (artículo 30 D 486, Art 22 PCT).

Claridad:

- En la reivindicación independiente No.1 y sus dependientes, se evidencia que esta ilustrando términos que no son claros, imprecisos y ambiguos, en el caso de los rangos de las medidas dimensionales del sillín y su respectivos ángulos de inclinación, así:
 - "*un ancho no limitante trasero total de 13 y 14 cm*".
 - "*un ancho no limitante de 18-22 cm*".
 - "*un ángulo no limitante de aproximadamente 10°-20°*".
 - "*un ancho no limitante total de aproximadamente de 7 cm*".
 - "*un ángulo de aproximadamente 45°-60°*".
 - "*una longitud de aproximadamente 4-6 cm*".
 - "*una profundidad de aproximadamente 1.5 cm*".
 - "*un ángulo no limitante de aproximadamente de 5°*".
 - "*un ángulo de no limitante de aproximadamente 10°-20°*".

- "una distancia aproximadamente 4-3.5 cm".
- "un ángulo no limitante de 30° a 45°".
- "un ángulo no limitante de 75°".
- "con un diámetro de aproximadamente 3.5-4 cm".
- "con un diámetro de aproximadamente 4-5 cm, para los sillines de turismo, de 3.5 cm para el sillín de ciclismo aficionado, de aproximadamente 3 cm para los sillines de carrera así como también una parte mas estrecha de aproximadamente de 2.5 cm".

Se le sugiere al solicitante presentar una nueva reivindicación independiente No.1 junto con sus dependientes, redactando de manera concreta los rangos de las medidas dimensionales del sillín y sus ángulos de inclinación con sus máximos y un mínimos, eliminando los términos imprecisos como "aproximadamente", "un ancho no limitante", "un ángulo no limitante de aproximadamente", "longitud de aproximadamente", "una profundidad de aproximadamente", "un ángulo no limitante", etc., junto con los términos que anteriormente se enunciaron.

Se le recuerda al solicitante que no se puede admitir términos imprecisos de este tipo de términos como "aproximadamente", "un ancho no limitante", "un ángulo no limitante de aproximadamente", etc., ya que el alcance y ámbito de las reivindicaciones dejan de ser precisas y por lo tanto claras y no permiten una comparación con el estado de la técnica.

Se le sugiere al solicitante presentar una nueva reivindicación independiente No.1, que contenga en el preámbulo los elementos conocidos en el estado de la técnica y en la parte caracterizadora presentar los elementos y/o características novedosas e inventivas que lo hacen diferente del estado de la técnica.

Se le recuerda al solicitante que en la reivindicación independiente, la parte caracterizadora, que suele seguir al preámbulo precedida por la frase "**caracterizado por**", recoge las características técnicas que van hacer protegidas y que constituyen la novedad frente al objeto conocido del estado de la técnica.

- En los siguientes grupos de reivindicaciones independientes y dependientes, se evidencia que ilustran elementos, características, componentes o términos, que no son claros, no se definen de manera específica y concreta a que elementos se están refiriendo y/o cuales elementos pertenecen, así:
 - No.1. "Lados (2''', 2''')".
 - No.2. "Almohadilla superior suave", "Concha rígida inferior".
 - No.2. "Riel de sostén".
 - No.3 y 5. "Almohadilla".
 - No.4, 5 y 9. "Concha",

Se le sugiere al solicitante que coloque de manera específica y concreta a que elementos, características, componentes o términos, se esta refiriendo, colocando al frente de la característica o del elemento, el numero de referencia guardando correspondencia con el capítulo descriptivo, las graficas o dibujos y dicho capítulo reivindicatorio, con el objetivo de comprender mejor la invención al momento de hacer el análisis y distinguir los elementos de dicha invención.

- En la reivindicación dependiente No.3, se evidencia que a partir de la almohadilla que emplea el sillín se quiere caracterizar el material en que esta hecho esta almohadilla, además se observa en esta reivindicación que se esta exponiendo es un efecto que causa el material y sus respectiva ventaja sobre la fisonomía del ciclista.

Se le sugiere al solicitante que suprima o elimine esta reivindicación. Se le recuerda al solicitante que las ventajas, usos o funcionamientos no son características patentables.

- En las reivindicaciones dependientes No.4, 5, 6, 7, 8, 9 y No.10, se evidencia que esta exponiendo son los efectos y ventajas que causan las características particulares llamadas "almohadilla", "concha" para la No.4, No.5 y No.9, "riel de sostén o especial (13)" para la No.4 y No.5, "placas de material (22, 22')" para la No.4, "lomo (18)" para la No.4, "partes (9, 9)" para la No.6, "puntos (8, 8')" para la No.6, No.7 y No.8, "partes o porciones frontales (7, 7')" para la No.6, No.7, No.9 y No.10, "hueco (21)" para la No.7, "canal 20" para la No.5 y No.8 y "dos elementos sobresalientes (16)", para la No.4, en donde estas características particulares se encuentran contenidas en estas reivindicaciones dependientes.

Se le sugiere al solicitante que redacte nuevamente estas reivindicaciones dependientes colocando de manera correcta las características técnicas particulares que conforman el sillín de bicicleta, e igualmente suprimiendo o eliminando de estas reivindicaciones las ventajas o efectos. Se le recuerda al solicitante que las ventajas, usos o funcionamientos no son características patentables.

- En la reivindicación dependiente No.10, se evidencia que presenta en su preámbulo un error de redacción "EL SILL+IN".

Se le sugiere al solicitante que redacte nuevamente esta reivindicación redactando de manera correcta su preámbulo colocando "El sillín,.....".

Descripción (artículo 30 D 486).

Claridad:

- En las graficas o dibujos de la solicitud, se evidencia que no aparece los números de referencia (22, 22') asignado al elemento llamado "dos pequeñas placas del mismo material".

Se le sugiere al solicitante que presente nuevamente las graficas o dibujos según corresponda, colocando de manera clara el numero de referencia (22, 22') ubicando y señalando con este número de referencia en el dibujo o grafica el elemento o característica llamada "dos pequeñas placas del mismo material". Se le recuerda al solicitante que al presentar las graficas o dibujos, no puede ampliar la materia de la invención.

4. Determinación del Estado de la Técnica

Teniendo en cuenta la fecha de presentación nacional, con fecha del 06 de Febrero del 2007, se encontraron los siguientes documentos relevantes:

Nº	Documento	Título	Fecha de Publicación
D1	WO9914103	BICYCLE SEAT AND METHOD	1999/03/25
D2	US6257662	LOUNGE BICYCLE SADDLE	2001/07/10

1. Respecto al estado de la técnica:

El documento **D1 WO9914103** ilustra un sillín para bicicleta y su método, la cual esta diseñado para evitar lesiones de tipo circulatorio en la parte interna de los órganos que esta ubicados cerca a la ingle e igualmente a la anatomía perineal y genital de un ciclista. (Ver "Abstract" "Hoja 1 a 13 (ver folios 133 a 148)" y las "figuras No.1 a 24").

El documento **D2 US6257662** ilustra un sillín para bicicleta diseñado para su mejoramiento anatómico y de fabricación; Este sillín cuenta muelles y se conforma de un armazón unitario junto con una almohadilla, también tiene rieles unidos al armazón la cual permiten que sea montado en la bicicleta, asimismo el material flexible o resistente dispuesto entre el armazón unitario y la almohadilla proporciona optima amortiguación para el ciclista y al mismo tiempo se evita que en la fabricación del sillín se recurra a los pasos de fabricación de grapado y cocido, disminuyendo así los costos de manufactura. (Ver "Abstract" "Columna 1 a 6 (ver folios 149 a 153)" y las "figuras No.1 a 12").

5. Análisis de Patentabilidad (Art 14 D486):

Nivel Inventivo (Art 18 D486)

2. Respecto a la solicitud en estudio:

La reivindicación No.1 dice: "Un sillín de bicicleta del tipo que tiene dos porciones idénticas (1, 1') longitudinalmente simétricas....., esta **caracterizado porque** estado porciones idénticas presentan las siguientes parte componentes: -Dos partes traseras (2, 2') que sean unidas recíprocamente por un hueco (21), las partes en proximidad mas cercana (2'', 2''') al hueco central (21), las partes (2, 2') tienen una configuración similar a un nicho (3), de los cuales los dos extremos (5', 5''), dicho nicho estando sustancialmente conformado iniciando desde la parte trasera del hueco (21) que sirve como un elemento de unión entre las dos partes (2, 2'), las dos porciones frontales (7'', 7''') a las cuales están unidas las partes traseras (2'', 2'''); las dos secciones de los extremos frontales (9, 9') están inclinadas en una dirección hacia abajo en una configuración de pico de águila, que el canal central (20) que inicia en la parte mas interna del hueco (21), presenta una zona que es mas amplia en su parte interna, ..., los puntos (8, 8') hasta el extremo frontal de la punta del sillín". (Ver folios 91 a 92).

Para efectos del examen, se toma en cuenta como características técnicas esenciales las que se encuentran subrayadas por el examinador.

3. Análisis de las diferencias con respecto al estado de la técnica:

En la tabla No.1 se ilustran en las casillas de comparación, la explicación de Afirmativa si las reivindicaciones están comprendidas dentro del estado de la técnica (documentos D1 y D2), en caso contrario se enunciará como No es Afirmativa.

Tabla No.1

ESTUDIO DE NIVEL INVENTIVO		
Características esenciales de la Solicitud en estudio	Documento D1	Documento D2
.....-Dos partes traseras (2, 2') que sean unidas reciprocamente por un hueco (21), las partes en proximidad mas cercana (2", 2''') al hueco central (21)	Afirmativa (Ver "Abstract" Hoja 1 a 6 (lin 1 a 32), Hoja 7 a 13 (lin 1 a 32), figuras 1 a 24).	Afirmativa (Ver "Abstract" Columna 3 a 4 (lin 1 a 67), Columna 5 a 6 (lin 1 a 44) figuras 1 a 12).
las partes (2, 2') tienen una configuración similar a un nicho (3), de los cuales los dos extremos (5', 5''), dicho nicho estando sustancialmente conformado iniciando desde la parte trasera del hueco (21) que sirve como un elemento de unión entre las dos partes (2, 2')	No Afirmativa	Afirmativa (Ver "Abstract" Columna 3 a 4 (lin 1 a 67), Columna 5 a 6 (lin 1 a 44) figuras 1 a 12).
las dos porciones frontales (7", 7''') a las cuales están unidas las partes traseras (2", 2''')	Afirmativa (Ver "Abstract" Hoja 1 a 6 (lin 1 a 32), Hoja 7 a 13 (lin 1 a 32), figuras 1 a 24).	Afirmativa (Ver "Abstract" Columna 3 a 4 (lin 1 a 67), Columna 5 a 6 (lin 1 a 44) figuras 1 a 12).
las dos secciones de los extremos frontales (9, 9') están inclinadas en una dirección hacia abajo en una configuración de pico de águila	Afirmativa (Ver "Abstract" Hoja 1 a 6 (lin 1 a 32), Hoja 7 a 13 (lin 1 a 32), figuras 1 a 24).	No Afirmativa
que el canal central (20) que inicia en la parte mas interna del hueco (21), presenta una zona que es mas amplia en su parte interna,	Afirmativa (Ver "Abstract" Hoja 1 a 6 (lin 1 a 32), Hoja 7 a 13 (lin 1 a 32), figuras 1 a 24).	Afirmativa (Ver "Abstract" Columna 3 a 4 (lin 1 a 67), Columna 5 a 6 (lin 1 a 44) figuras 1 a 12).
los puntos (8, 8') hasta el extremo frontal de la punta del sillín"	Afirmativa (Ver "Abstract" Hoja 1 a 6 (lin 1 a 32), Hoja 7 a 13 (lin 1 a 32), figuras 1 a 24).	No Afirmativa

4. Respecto a la reivindicación independiente No.1, **D1** es el documento del estado de la técnica más cercano, debido a que ilustra un sillín para bicicleta y su método, la cual está diseñado para evitar lesiones de tipo circulatorio en la parte interna de los órganos que están ubicados cerca a la ingle e igualmente a la anatomía perineal y genital de un ciclista. (Ver "Abstract" "Hoja 1 a 13 (ver folios 133 a 148)" y las "figuras No.1 a 24").

Realizada la comparación y el análisis del documento **D1**, con respecto a la reivindicación independiente No.1, mediante la tabla No.1, se evidencia que la diferencia existente que se encontró fue "....., las partes (2, 2') tienen una configuración similar a un nicho (3), de los cuales los dos extremos (5', 5'')....., dicho nicho estando sustancialmente conformado iniciando desde la parte trasera del hueco (21) que sirve como un elemento de unión entre las dos partes (2, 2')".

Por su parte, el problema técnico objetivo de la solicitud es como evitar la compresión en las estructuras vasculares perineales, en las estructuras del piso pélvico y las arterias y venas profundas del pene sobre el arco púbico cuando el ciclista se sienta sobre el sillín de la bicicleta, y al mismo tiempo evitar la fricción contra los músculos gracilis y aductores cuando el ciclista ejerce la acción del pedaleo. El documento **D2** enseña un sillín para bicicleta que está diseñado para su mejoramiento anatómico y de fabricación; Este sillín cuenta con un armazón unitario (12) que tiene una almohadilla (14) la cual posee dos secciones, la cual están hechas de un material flexible o resistente (16) y están moldeadas en el mismo armazón unitario (12), asimismo este sillín cuenta con un nicho, agujero o ranura longitudinal (60) que inicia en la parte trasera del sillín, la cual tiene una apertura (64) para proporcionarle al ciclista una buena posición ergonómica y una buena ventilación y por último este sillín cuenta con rieles de soporte (46, 48) que están unidos al armazón unitario (12) para montarse sobre la bicicleta. (Ver "Abstract" "Columna 3 (lin 12 a 53 y lin 54 a 61) (ver folio 152)" y las "figuras No.1 a 10").

Por lo tanto, para una persona versada en la materia, que tenga que evitar la compresión en las estructuras vasculares perineales, en las estructuras del piso pélvico y las arterias y venas profundas del pene sobre el arco púbico cuando el ciclista se sienta sobre el sillín de la bicicleta, y al mismo tiempo evitar la fricción contra los músculos gracilis y aductores cuando el ciclista ejerce la acción del pedaleo y que conozca el estado de la técnica, haría la combinación de la solución propuesta del documento **D2** (un sillín para bicicleta diseñado para su mejoramiento anatómico y de fabricación) con **D1** (un sillín para bicicleta y su método), llegando de esta manera al contenido de la reivindicación independiente No.1.

Por tal razón la presente solicitud se ve afectada en su nivel inventivo.

Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

N°	Documento N°	Reivindicaciones Afectadas	Requisito que Afecta
D1	WO9914103	1 a 10	Nivel Inventivo
D2	US6257662	1 a 10	Nivel Inventivo

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2 literal e), del capítulo quinto del título primero de la circular única, No. 10 del 2001.



ALIX CESPEDÉS DE VERGEL
Director de Nuevas Creaciones (C)

El anterior requerimiento fue notificado por fijación en lista, de fecha **24 SET. 2010**

CONCEPTO TECNICO Numero: 2858	EXAMINADOR TECNICO Código No. 202072
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