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(54) **TREADMILL BELT**

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(57) **ABSTRACT**

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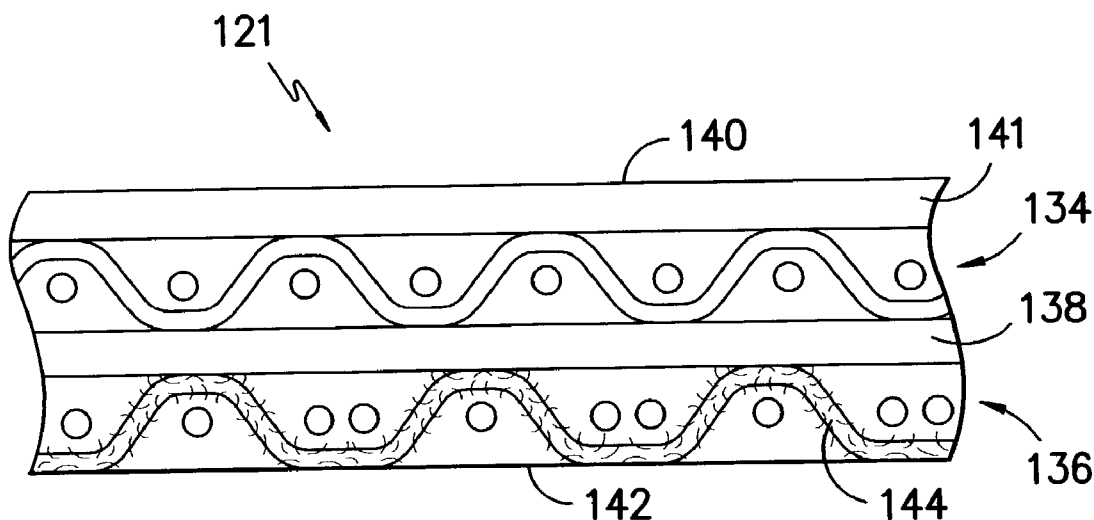
An endless treadmill belt includes a bottom-ply fabric that at least partially forms a bottom surface of the belt, and bottom surface of the belt is for sliding across a treadmill deck. The bottom-ply fabric includes textured synthetic yarns that at least partially form the bottom surface of the belt. The bottom-ply fabric has warp yarns for at least partially forming the bottom surface of the belt, and it is preferred for at least a majority of, or all of, the warp yarns to be textured synthetic fibers. It is most preferred for all of the warp and weft yarns of the bottom-ply fabric to be textured synthetic fibers.

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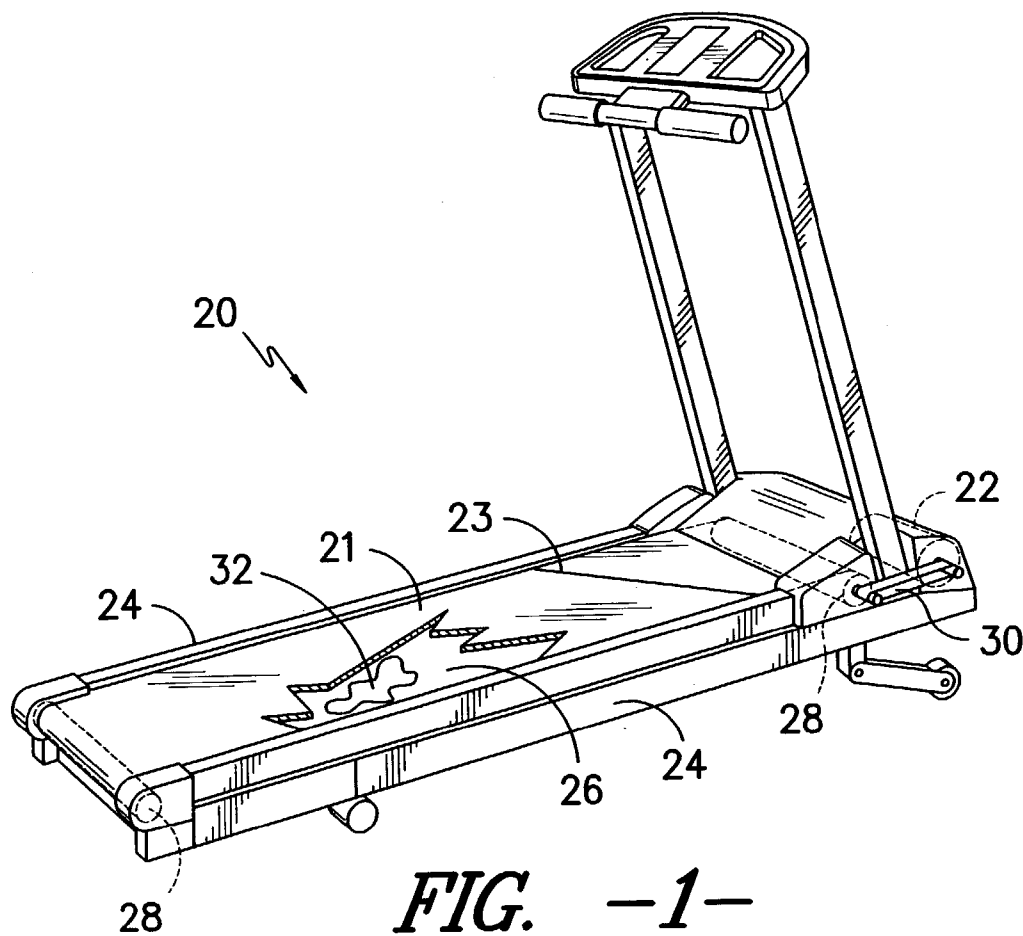


FIG. -1-

PRIOR ART

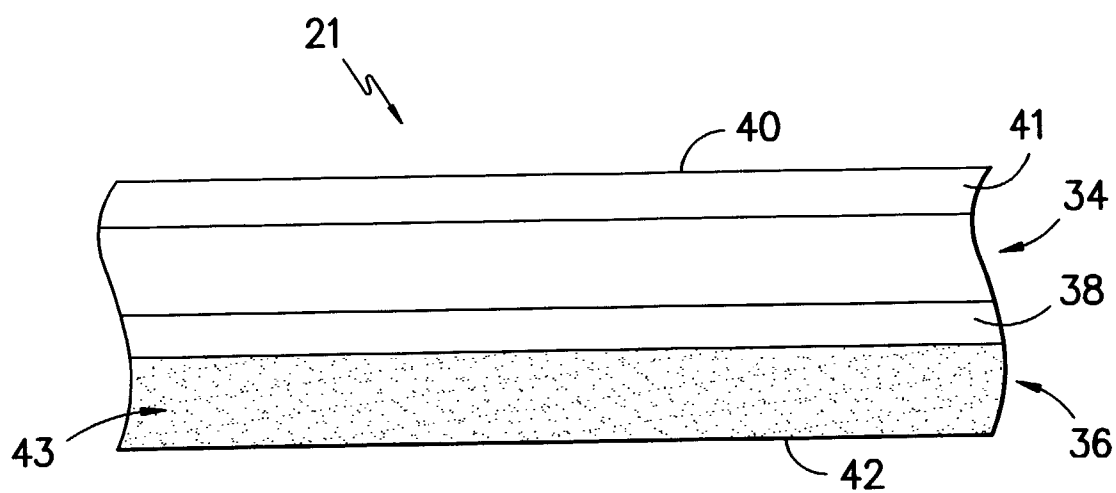


FIG. -2-

PRIOR ART

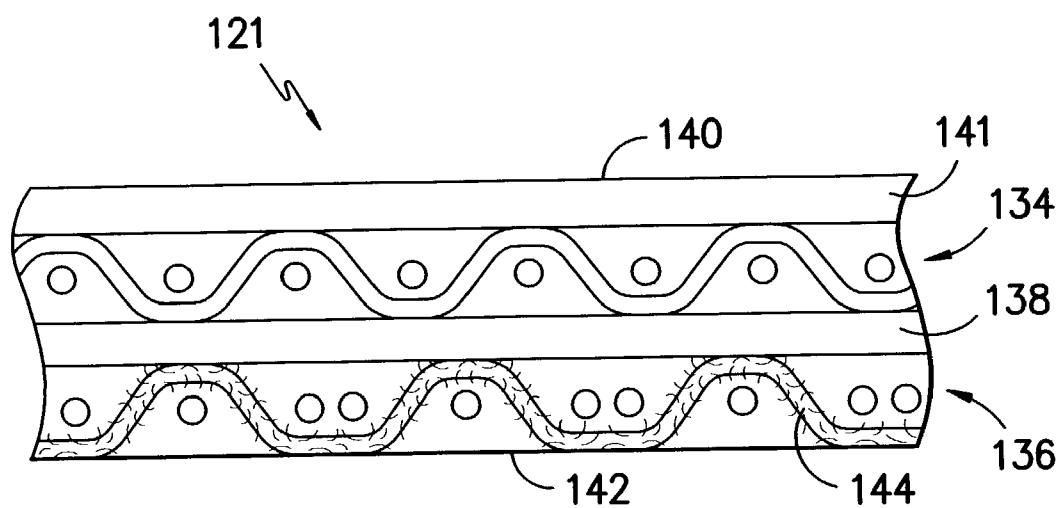


FIG. -3-

TREADMILL BELT

BACKGROUND OF THE INVENTION

[0001] The present invention relates to belts, and more particularly to endless belts for tread mills having a textured fabric.

[0002] Treadmills used for exercise are well known and very popular. A prior art exercise treadmill typically includes an endless belt that is driven by a motor so that the bottom surface of an upper run of the belt slides across an upper surface of a stationary deck. In use, a person using the treadmill engages the top surface of the upper run of the belt at a position above the deck, which contributes to a friction between the bottom surface of the upper run and the upper surface of the deck. Over the years, efforts have been made to reduce this friction, in an effort to reduce: the power required to drive the belt, friction-induced heating, and friction-induced noise. Reducing friction can enhance the operation and life of the belt. It is known to reduce the friction between treadmill belts and decks through the use of lubrication, and there are several known lubricants and associated methods.

[0003] It is prior art to apply a lubricant, such as a lubricant consisting of polypropylene wax, a polyurethane binder and a solvent, to rolls of belt material before forming endless belts (e.g., "light duty" belts, which are discussed below in this Background section) from the belt material. Then, the solvent is driven off by heating, so that the resultant lubricant is impregnated in the belt material and is substantially in solid form at room temperature. Thereafter, sections are cut from the belt material and joined (e.g., spliced) end-to-end to form the endless belts that are used as treadmill belts. Although the foregoing method of lubricating is very efficient in some regards, it can only be used with a limited type of lubricants, because some lubricants will interfere with splicing.

[0004] It is prior art to apply a liquid silicone lubricant to the bottom surface of an endless treadmill belt. When using a liquid silicone lubricant, the lubricant is typically individually sprayed or rolled onto individual treadmill belts after the treadmill belts have been formed/made endless. According to one prior art method, an endless belt is placed on a lubricating fixture having three rollers that the belt extends around such that the "bottom" (i.e., "inner") surface of the belt engages the pulleys and the "top" (i.e., "outer") surface of the belt faces away from the pulleys. One of the pulleys is driven and an applicator applies the silicone lubricant to the bottom surface as the belt travels relative to the applicator.

[0005] The liquid silicone provides adequate lubrication, but since it remains in liquid form, it has a tendency to migrate to the top surface of the belt, to any packaging materials used when shipping the belt, or to other locations where lubrication is not desired. Additionally, if too much silicone liquid is applied, belt tracking problems can result, meaning that the belt can become misaligned around the pulleys of the treadmill. If too little silicone liquid is used, belts are inadequately lubricated, which can disadvantageously increase the amount of power required to drive the belt, as well as the heat and noise generated by the belt sliding across the deck, which can negatively impact the life and operation of the belt. Finally, lubricating endless belts

individually is slow and labor intensive compared with coating rolls of belting prior to forming endless belts therefrom. Typically, liquid silicone cannot be efficiently applied to rolls of belting before making numerous endless belts therefrom because the liquid silicone will interfere with bonding/adhesion that is necessary for satisfactorily splicing.

[0006] It is also prior art to apply wax to the upper surface of the deck of a treadmill. The wax can provide adequate lubrication only if a sufficient quantity is used. If too much is used, wax clings to treadmill rollers resulting in excessive noise and tracking difficulties. After a period of use, wax is typically lost from the deck such that some form of relubrication is necessary. As one example, U.S. Pat. No. 3,659,845 discloses a treadmill with a stationary support surface over which the upper run of a belt travels, and the upper surface of the support surface is formed from canvas that is impregnated with a wax, such as carnauba wax.

[0007] Whether or not a lubricant is used, the underlying construction of a treadmill belt can also affect the amount of friction resulting from the treadmill belt sliding across the deck. For example, a prior art "light duty" treadmill belt, which is particularly well suited for use in homes, will now be described. The light-duty belt has all polyester top and bottom plies that are joined by an adhesive (e.g., polyurethane or PVC) positioned between the top and bottom plies. The top ply is a plain weave of 1000 denier multifilament polyester yarns, and the bottom ply, which includes the bottom surface that slides across the deck, is a plain weave, with both weft and warp yarns being spun polyester yarns formed from staple fibers. This "light-duty" belt is formed by cutting a section from a roll of belt material after the belt material has been lubricated as described above, so that the bottom surface of the bottom ply of the belt is impregnated with a lubricant mixture of polypropylene wax and polyurethane binder. The endless belt is formed by splicing the opposite ends of the cut section together. The splice is a "Z" splice, meaning that opposite ends of the section are cut in a zigzag pattern and then meshed together, with a PVC strip hot-pressed at the meshed area, over the top surface of the top ply.

[0008] It is also known to use certain types of fabric to affect the friction of conveyor belts in general. For example, in U.S. Pat. No. 5,840,636, woven fabric backing including staple fiber yarn and a twill weave with an inclination angle of 10° to 70° relative to the moving direction of the conveyor belt was employed to achieve a low noise level. Although this type of fabric operates reasonably well to reduce friction, staple fiber yarn typically has flaws or defects resulting in less of a smooth and even belt. These flaws are a result of the nature of manufacturing of the staple fibers, which are cut lengths of fibers.

[0009] Although prior treadmill belts operate reasonably well, there still remains a need for new treadmill belts that provide an improved balance of properties.

SUMMARY OF THE INVENTION

[0010] One aspect of the present invention is the provision of belt materials and/or belts that provide an improved balance of properties, and methods of making and using the belts and/or belt materials. A more specific aspect of the present invention is the provision of endless treadmill belts

that are each for extending around and sliding across a treadmill deck, and that provide an improved balance of properties. Preferably the improved balance of properties results from fabric(s) of the belts. One aspect of the present invention is the fabric(s) which are preferably, but not limited to being, bottom-ply of the belts.

[0011] In accordance with one aspect of the present invention, an endless treadmill belt is preferably multi-ply and includes a bottom-ply fabric that at least partially forms a bottom surface of the belt, and the bottom surface is for sliding across a treadmill deck. In accordance with this aspect, the bottom-ply fabric includes textured synthetic yarns that at least partially form the bottom surface of the belt. Preferably, the bottom-ply fabric has warp yarns for at least partially forming the bottom surface of the belt, and it is preferred for at least a majority of, or all of, the warp yarns to be textured synthetic fibers. It is most preferred for all of the warp and weft yarns of the bottom-ply fabric to be textured synthetic fibers.

[0012] The endless treadmill belt of the present invention is preferably used in combination with a deck, so that the belt extends around and slides across the deck. The combination preferably further includes a frame to which the belt extends, and a motor mounted to the frame and operative for causing the belt to travel relative to the deck, so that the bottom surface of the belt slides across the upper surface of the deck. The improved balance of properties according to one aspect of the present invention pertains to there being an acceptably low coefficient of friction at the interface between the bottom surface of the belt and the upper surface of the deck.

[0013] A feature of the present invention is the use of textured filament synthetic yarns in the bottom ply of treadmill belts. By replacing the typically used spun polyester yarns with textured filament yarns, the friction-induced noise level of the treadmill belts is reduced. Further, textured filament yarns are more uniform than spun yarns. Therefore, the use of textured yarns results in a smoother belt having fewer defects in the woven fabric. Finally, the use of textured filament yarns eliminates the need of using alternating "S" and "Z" twist in the warp yarns. The alternating "S" and "Z" twist contributes to the straight tracking of the treadmill belts.

[0014] This and other features and their advantages will become apparent to those skilled in the art of treadmill belts from a careful reading of the Detailed Description of Preferred Embodiment, accompanied by the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Having thus described the invention in general terms, reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, and wherein:

[0016] FIG. 1 is a schematic, perspective view of portions of a prior art treadmill in accordance with a comparative embodiment, and FIG. 1 is illustrative of features of an exemplary embodiment of the present invention;

[0017] FIG. 2 is a schematic, elevational, partial view of a longitudinally extending edge of an upper run of the prior art belt of FIG. 1, in accordance with the comparative embodiment;

[0018] FIG. 3 is a schematic, elevational, partial view of a longitudinally extending edge of an upper run of a treadmill belt, in accordance with the exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0019] The present invention now will be described more fully hereinafter with reference to the accompanying drawings, in which some, but not all embodiments of the invention are shown. Indeed, the invention may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will satisfy applicable legal requirements. Like numbers refer to like elements throughout.

[0020] A treadmill belt having a bottom ply made of textured filament yarns of an exemplary embodiment of the present invention has an improved balance of properties. Nonetheless, some features of the exemplary embodiment of the present invention are not novel per se. Accordingly, in the following, a comparative embodiment, which is prior art to the present invention, is first described with reference to FIGS. 1-3, followed by a description of the exemplary embodiment of the present invention. FIGS. 1-3 are diagrammatically/generally illustrative of some features of the exemplary embodiment of the present invention.

[0021] Comparative Embodiment

[0022] FIG. 1 is a schematic, perspective view of portions of a prior art treadmill 20 in accordance with a comparative embodiment. The treadmill 20 includes an endless belt 21 that is carried by a frame and driven by a motor 22. The belt 21 is endless by virtue of opposite ends of the belt being joined together at a joint 23, which is preferably in the form of a splice. That is, the joint 23 is diagrammatically illustrative of a splice. The belt 21 is substantially uniform along its length, except for at the joint 23.

[0023] The frame includes a pair of longitudinally extending frame members 24 that are spaced apart from one another in a lateral direction. The belt 21 is partially cut away in FIG. 1, to more fully show a stationary deck 26 that is mounted to and extends laterally between medial portions of the frame members 24. Front and rear pulleys 28 are rotatably mounted to the frame members 24 and extend laterally between the frame members. The pulley 28 at the front of the frame is driven, via a drive belt 30, by the motor 22, which is mounted to the frame. The belt 21 extends around the pulleys 28 and the deck 26 so that the bottom surface of the upper run of the belt engages the pulleys 28 and the deck 26 so that the bottom surface of the upper run of the belt engages the pulleys and deck and the top surface of the upper run faces away from the pulleys and deck. In use, the feet of a person using the treadmill engage the top surface of the belt 21 at a position above the deck 26, which contributes to the friction resulting from the bottom surface of the belt sliding across the upper surface of the deck. In some cases, the upper surface of the deck 26 is unwaxed, or the upper surface of the deck 26 can have wax 32 thereon, in an effort to reduce the friction.

[0024] FIG. 2 is a schematic, elevational, partial view of a longitudinally extending edge of the upper run of the prior

art belt **21**, in accordance with the comparative embodiment. The belt **21** includes top and bottom plies **34**, **36** that are each woven polyester, and the top and bottom plies are joined to one another by an intermediate ply/adhesive **38** therebetween. In use, the feet of a person using the treadmill **20** engage a top surface **40** of the belt **21** at a position above the deck **26**. The top surface **40** is defined by a PVC coating **41** that is adhered to and covers the top ply **34**. The bottom ply **36** includes the bottom surface **42** of the belt that slides across the upper surface of the deck **26** (**FIG. 1**). The belt **21** includes a coating **43** that is impregnated in the bottom ply **36** and is proximate the bottom surface **42**. In **FIG. 2**, the coating **43** is schematically illustrated by stippling (i.e., dots and flicks) in the bottom ply **36**.

[0025] Exemplary Embodiment

[0026] An exemplary embodiment of the present invention is like the comparative embodiment described above, except for variations noted and variations that will be apparent to those of ordinary skill in the art. Accordingly, elements of the exemplary embodiment that at least generally correspond to elements of the comparative embodiment are respectively identified by the same reference numerals, increased by a hundred.

[0027] **FIG. 3** is a schematic, elevational, partial view of a longitudinally extending edge of the upper run of the belt **121** of the exemplary embodiment of the present invention. The belt **121** includes top and bottom plies **134**, **136** that are joined by an intermediate ply/adhesive **138** therebetween. The top surface **140** of the belt **121** is preferably substantially planar and is preferably defined by a coating **141**, which is preferably PVC, that is adhered to and covers the top ply **134**. The coating **141** is preferably embossed with an amorphous, orange-peel-like pattern. Embossing a treadmill coating with an amorphous, orange-peel-like pattern is not novel per se.

[0028] The bottom ply **136** includes a bottom surface **142** that slides across the upper surface of the deck **26** (**FIG. 1**). Between the pulleys **28** (**FIG. 1**), the bottom surface **142** is preferably substantially planar, except for the texture of the fabric of the bottom ply **136** and any discontinuity in the region of the splice **23** (**FIG. 1**). The exemplary embodiment of the present invention is not limited to the type of deck **26** or type of treadmill **20** illustrated and described with reference to **FIG. 1**, because the belt **121** of the exemplary embodiment of the present invention operates advantageously with a wide range of different types of decks and treadmills, and with a wide variety of other types of conveyor structures.

[0029] In accordance with the exemplary embodiment of the present invention, the belt **121** is preferably formed by splicing together opposite ends of a section of belt material. Preferably the splice (e.g. see splice **23** in **FIG. 1**) extends at an oblique angle relative to the longitudinally extending edges of the endless belt **121**, and the belt **121** is substantially uniform along its length, except for in the region of the splice. The splice is preferably a "Z" splice, meaning that opposite ends of the section are cut in a zigzag pattern and then meshed together, with a PVC strip hot-pressed at the meshed area, over the top surface of the top ply **134**.

[0030] As noted above, the belt **121** beneficially includes three layers: a top ply **134**, an intermediate ply/adhesive **138**

and a bottom ply **136**. In accordance with the exemplary embodiment illustrated in **FIG. 3**, the top ply **134** is preferably a woven fabric. Advantageously, the woven fabric is a plain weave. The top ply **134** may be formed of any woven fabric exhibiting sufficient durability, such as a woven fabric formed from polyester yarns, particularly multifilament polyester yarns having a denier of approximately 1000. As used herein, the term "yarn" refers to any continuous strand of textile fibers, filaments or material in a form suitable for knitting, weaving, or otherwise intertwining to form a textile fabric. The top ply **134** may have any fabric weight known in the art for use in conjunction with treadmills and the like. The top ply **134** beneficially has a fabric weight ranging from about 6.0 to 10.0 oz/sq. yd. An exemplary fabric for use as the top ply **134** is 075520, commercially available from Milliken & Co. Spartanburg, S.C.

[0031] The intermediate ply/adhesive **138** is advantageously formed from an elastomeric material. In beneficial embodiments the intermediate ply/adhesive **138** is formed from a cured elastomeric material, such as a cured polyurethane.

[0032] The bottom ply **136** may be formed from any fabric providing sufficient strength and durability to the resulting belt construction. In accordance with the exemplary embodiment of the present invention, the fabric of the bottom ply **136** is preferably lofty. Although not wishing to be bound by theory, Applicant hypothesizes that the incorporation of a bottom **136** exhibiting sufficient loftiness/bulkiness reduces the noise resulting from friction between the bottom surface **142** and the deck **26** (**FIG. 1**) while the treadmill is in operation.

[0033] In beneficial embodiments, the bottom ply **136** is formed from a lofty woven fabric that includes an effective amount of textured synthetic yarns in at least the warp direction. As used herein, the term "textured" yarn refers to yarns having increased bulk in comparison to comparable yarns which have not been subjected to a texturizing process. Hence the terms "bulky" and "textured" are used interchangeably throughout the remainder of the application. Textured yarns are generally characterized by the presence of crimps or random loops down the length of the yarn. Advantageously, the bottom ply **136** includes textured synthetic continuous filament yarns in the warp and/or weft direction, particularly continuous multifilament yarns. In advantageous embodiments, at least a portion of the warp and/or weft yarns within the bottom ply **136** are formed from textured polyester continuous filament yarns.

[0034] The bottom ply **136** generally includes a sufficient amount of the textured synthetic yarn in at least the warp direction to provide an effective amount of bulking to the resulting fabric. For example, approximately 50 to 100% of the warp yarns within the bottom ply may be formed from textured synthetic yarns. Advantageously, all of the warp yarns within the bottom ply **136** are formed from textured synthetic yarns. In further beneficial embodiments, at least some of the weft yarns are formed from bulky synthetic continuous filament yarns. For example, approximately 50 to 100% of the weft yarns within the bottom ply **136** may be formed from textured synthetic yarns. Beneficially, all of the weft yarns within the bottom ply **136** are formed from textured synthetic yarns.

[0035] As known in the art, bulk and/or crimp may be imparted to continuous filament yarns by a variety of

texturing processes, including false twist texturing, air entangling and the like. Textured continuous filament yarns suitable for use in the bottom ply **136** may have any suitable denier known for use in treadmills and the like. Advantageously, textured continuous filament yarns included in the warp and/or weft yarns within the bottom ply **136** have a denier ranging from about 150 to 1100, such as a denier of about 300. The bottom ply **136** is further generally characterized by a fabric weight typically ranging from about 5.0 to 10.0 oz/sq. yd. One exemplary lofty/bulky fabric for use in the bottom ply **136** is a continuous filament polyester fabric Style No. 930392 available from Milliken & Company of Spartanburg, S.C.

[0036] In accordance with alternative embodiments of the present invention, yarns formed from staple fibers, such as synthetic staple fibers, are used in conjunction with the bulky continuous filament yarns described above. Alternatively, the bottom ply **136** may include a mixture of yarns formed from staple and textured continuous filaments. In beneficial aspects of such alternative embodiments, the synthetic staple yarn is formed from polyester.

[0037] The bottom ply **136** may be formed from any fabric construction providing sufficient durability and suitable modulus or deformation properties. In beneficial aspects of the invention, the bottom ply **136** may be formed from a twill weave. Alternatively, the bottom ply **136** may be formed from a plain weave.

[0038] Fabric specifications for advantageous embodiments of bottom ply **136** in accordance with the exemplary embodiment of the present invention are provided below:

[0039] the fabric of the bottom ply **136** may be a twill weave, preferably a 2/1 twill weave, meaning that where the bottom surface **142** of the upper run engages the deck **26** (FIG. 1), for each warp yarn, the warp yarn passes under two weft yarns for every weft yarn it passes over, so that the long, floating portions of the warp yarns contact the upper surface of the deck **26** that the belt slides across, with the belt traveling in the direction in which the warp yarns extend;

[0040] the weft and warp yarns of the fabric of the bottom ply **136** may each be about 300 denier yarns, and preferably, the total denier in the weft direction is between 16,000 and 26,000 per inch and the total denier in the warp direction is between 20,000 and 35,000 per inch, and most preferably, weft yarns are 300 denier 2 ply yarns (i.e., two ends of 300 denier yarn that has been textured together) and the warp yarns are 150 denier 2 ply yarns; and

[0041] the fabric of the bottom ply **136** may have about 83×30 yarns per inch, and most preferably have about 74×40 yarns per inch (i.e., 74 warp ends per inch in the longitudinal direction, and 40 weft ends per inch in the lateral direction).

[0042] Belt **121** formed in accordance with the exemplary embodiment of the present invention typically exhibit an elasticity differential between plies. More particularly, the fabric of the bottom ply **136** can be stretched more easily than the fabric of the top ply **134**, and the fabric of the bottom ply **136** has a greater range of elasticity than the fabric of the top ply **134**. Applicant hypothesizes that the

textured nature of the bottom ply **136** provides a relatively higher stretchability and relatively larger range of elasticity. That is, and very generally described, the bottom ply **136** exhibits relatively greater “springiness” in the longitudinal direction than the top ply **134**, and the top ply **134** exhibits relatively greater “stiffness” in the longitudinal direction than the bottom ply **136**. More specifically, the bottom ply **136** has a lower modulus of elasticity than the top ply **134**, in the longitudinal direction. Advantageously, the relatively greater “stiffness” of the top ply **134** compensates for the relatively greater “springiness” of the bottom ply **136**, so that the resulting belt **121** is not too “springy” in the longitudinal direction.

[0043] As at least alluded to above, the bulkiness of at least the warp yarns in the bottom ply **136** is believed to reduce the friction between the bottom surface **142** of the belt **121** and the deck **26** (FIG. 1). As another advantage, using bulky fibers in the bottom ply results in a quietly running belt. An additional advantage is realized when the bottom ply of the belt of the exemplary embodiment is fabricated from textured multifilament yarn, because the use of textured multifilament yarn can result in fewer belt defects than when using spun polyester yarn.

[0044] Many modifications and other embodiments of the invention set forth herein will come to mind to one skilled in the art to which this invention pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. It is to be understood that the invention is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in generic and descriptive sense only and not for the purposes of limitation.

What is claimed is:

1. An endless treadmill belt for extending in a longitudinal direction around and traveling relative to a deck, the belt comprising:

a fabric that at least partially forms a bottom surface of the belt and is for sliding across the deck, with the fabric including a plurality of textured synthetic yarns that at least partially form the bottom surface of the belt and are for sliding across the deck.

2. An endless treadmill belt according to claim 1, wherein the belt is in combination with and extends around the deck, and the combination further comprises:

a frame to which the deck is mounted;

a pulley rotatably mounted to the frame and around which the belt extends, with the pulley carrying the belt; and

a motor mounted to the frame and operative for causing the belt to travel relative to the deck, so that the bottom surface of the belt slides across an upper surface of the deck.

3. An endless treadmill belt according to claim 1, wherein the fabric is a first ply, and the belt further comprises a second ply that is laminated to an upper surface of the first ply, with the first ply having a lower modulus of elasticity than the second ply.

4. An endless treadmill belt according to claim 1, wherein the fabric has a plurality of weft yarns extending in a lateral direction that is substantially perpendicular to the longitudinal

dinal direction, and a plurality of warp yarns extending in the longitudinal direction for at least partially forming the bottom surface of the belt and slidingly engaging the deck, wherein at least a majority of the warp yarns are textured synthetic fibers.

5. An endless treadmill belt according to claim 4, wherein at least a majority of the weft yarns are textured synthetic fibers.

6. An endless treadmill belt according to claim 4, wherein the fabric has approximately 83×30 yarns per inch.

7. An endless treadmill belt according to claim 4, wherein the fabric has approximately 74×40 yarns per inch.

8. An endless treadmill belt according to claim 4, wherein the warp yarns are 150 denier 2 ply yarns.

9. An endless treadmill belt according to claim 4, wherein the weft yarns are 300 denier 2 ply yarns.

10. An endless treadmill belt according to claim 1, wherein the fabric is a 2/1 twill weave.

11. An endless treadmill belt according to claim 4, wherein the fabric has a total denier in the warp direction between 20,000 and 35,000 per inch.

12. An endless treadmill belt according to claim 4, wherein the fabric has a total denier in the weft direction between 16,000 and 26,000 per inch.

13. An endless treadmill belt for extending in a longitudinal direction around and traveling relative to a deck, the belt comprising:

a fabric having a first ply that is a plain weave and a second ply that is laminated to an upper surface of the first ply, wherein the first ply has a lower modulus of elasticity than the second ply, and wherein the second ply includes a plurality of textured synthetic yarns that at least partially form the bottom surface of the belt and are for sliding across the deck.

14. An endless treadmill belt according to claim 12, wherein the belt is in combination with and extends around the deck, and the combination further comprises:

a frame to which the deck is mounted;

a pulley rotatably mounted to the frame and around which the belt extends, with the pulley carrying the belt; and

a motor mounted to the frame and operative for causing the belt to travel relative to the deck, so that the bottom surface of the belt slides across an upper surface of the deck.

15. An endless treadmill belt according to claim 13, wherein the second ply has a plurality of weft yarns extending in a lateral direction that is substantially perpendicular to the longitudinal direction, and a plurality of warp yarns extending in the longitudinal direction for at least partially forming the bottom surface of the belt and slidingly engaging the deck, wherein at least a majority of the warp yarns are textured synthetic fibers.

16. An endless treadmill belt according to claim 15, wherein at least a majority of the weft yarns are textured synthetic fibers.

17. An endless treadmill belt according to claim 15, wherein the fabric has approximately 83×30 yarns per inch.

18. An endless treadmill belt according to claim 15, wherein the fabric has approximately 74×40 yarns per inch.

19. An endless treadmill belt according to claim 15, wherein the warp yarns are 150 denier yarns.

20. An endless treadmill belt according to claim 15, wherein the weft yarns are 300 denier yarns.

21. An endless treadmill belt according to claim 15, wherein the fabric has a total denier in the warp direction between 20,000 and 35,000 per inch.

22. An endless treadmill belt according to claim 15, wherein the fabric has a total denier in the weft direction between 16,000 and 26,000 per inch.

23. An endless treadmill belt according to claim 13, wherein the fabric is a 2/1 twill weave.

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