A sock which reduces and substantially eliminates creasing of the instep of footwear, such as shoes, sneakers, boots or the like when worn with such footwear. The sock includes conventional sock portions, such as an ankle portion, a heel portion, a toe portion and an instep portion, and at the instep portion one or more pads are provided such that when the sock is worn the pads override the instep of the foot of the wearer and underlie the instep of the footwear of the wearer. Pressure created during walking or running is transferred from the foot through the crease reducing pad or pads to the instep of the footwear thereby reducing or eliminating creasing thereof.
SOCK FOR REDUCING FOOTWEAR INSTEP CREEsing

BACKGROUND OF THE INVENTION

[0001] This invention relates to improving wear of footwear insteps when being worn by substantially reducing or eliminating creasing at the instep generally in the instep region between the toe and tongue of footwear, such as casual, dress and sport footwear including shoes, boots, sneakers, etc.

[0002] Heretofore it was conventional to use a so-called “shoe tree” for preserving the shape of a shoe, though not necessarily thereby preventing the formation of shoe instep creases. The conventional shoe tree is a foot-shaped device which is inserted into a shoe and generally can be lengthened through the utilization of a screw or a toggle lever to straighten the shoe which normally tends to “set” to a curved shape after appreciable wear. Incidental reduction in the formation of creases might well occur when a shoe tree is utilized on a continuous basis in its normal fashion. However, until recently there were no known devices which can appreciably lessen, reduce or eliminate footwear instep creasing when the footwear, such as shoes, boots, sneakers or the like are being worn. Presently, there is in the marketplace so-called toe box de-creasers sold under the trademark Force-Fields by NewRide, a division of Penguin Brands, Inc. A pair of de-creasers are used to protect against creasing and wear in sneakers, shoes and boots by inserting a left de-creaser and a right de-creaser inside the toe box of new shoes. Each de-creaser has two bands of adhesive covered by backing tape which is removed, and once each de-creaser is fit all the way to the toe of the shoe pressing upwardly will stick each de-creaser to the top of the shoe.

SUMMARY OF THE INVENTION

[0003] The invention is directed to a sock which includes at least an upper foot region adapted to overlie an upper portion of a person’s foot when wearing the sock and underlie an instep region when worn with footwear. The sock includes at its instep or upper foot portion means for at least reducing footwear creasing in the form of gel material, foam material or the like which can be formed as a pad or as a foam or fluid medium housed in a pouch of the sock instep foot region. The material of the footwear creasing reducing means preferably is relatively resilient, and as one example might be silicone or similar polymeric/copolymeric synthetic plastic material having a shore durometer hardness ranging between substantially 10 to 65 on the OO scale, but preferably 15 to 35 on the OO scale. The sock preferably includes an upper opening which opens into an instep pocket which can be permanently or temporarily closed after the creasing reducing means has been inserted therein. Though the creasing reducing means is preferably formed from a single piece of material, the same may be formed of two separate masses of material with the mass of material most adjacent the footwear instep being more firm than the mass of material more remote therefrom. Additionally, the mass or masses of material can have openings therethrough to assure breathability and may include antifungal, odor eliminating and/or moisture absorbing characteristics.

[0004] The invention as just described takes into consideration the fact that many people in our modern age regard footwear as more than just a means to protect one’s feet. Many view that which is worn on our feet as a reflection of our own sense of style, professionalism and/or individuality. Moreover, average and high quality shoes, boots, sneakers and the like are also relatively expensive and it therefore makes good sense to preserve the aesthetic appeal of new non-creased shoes, boots and sneakers and preserve the new, fresh and crease-free appearance thereof for as long as possible. The latter is achieved by the present invention through the manufacture and utilization of a sock as described heretofore which can be a conventional sock modified through the addition of a pad which at least reduces footwear instep creasing when utilized by a wearer. Walking and running and attendant normal foot movement creates upward outward pressure from the foot and particularly the foot instep to the pad which is transferred by the pad to an inside surface of the footwear. This outward pressure, caused by the addition of the footwear crease reducing pad, greatly reduces or eliminates creasing of the shoe, boot or sneaker which typically occurs from foot bending during everyday activities, such as walking, running, climbing stairs or the like. Thus, in accordance with the present invention, shoe, boot and sneaker creasing is substantially reduced or eliminated during wear through everyday activities created by and during foot movement, such as walking, running or the like. In this fashion appearance and longevity of footwear is greatly enhanced. Most importantly, the latter-mentioned advantages of the present invention are virtually guaranteed because each footwear crease reducing pad is housed virtually immobile within its sock and when the sock is placed upon the foot of the wearer and inserted in a shoe, sneaker or boot, no further effort is required to effect reduction or elimination of footwear creasing because (a) accurate location is assured, (b) shifting when in use is prevented by the fact that the footwear is laced to the foot of the wearer, and (c) deterioration through wear is virtually precluded. Only one pair of the crease reducing means of the present invention are required no matter the number of footwear owned by a user because the crease reducing means or pad is preferably removable with respect to its associated sock and therefore only several pairs of socks coordinated to the user’s clothing would be required, and obviously each pair of socks would be laundered after the crease reducing pads were removed to increase the life of the crease reducing pads.

[0005] With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawings.

BRIEF DESCRIPTIONS OF THE DRAWINGS

[0006] FIG. 1 is a top perspective view of a sock constructed in accordance with this invention, and illustrates at an upper portion of an instep portion thereof between a toe portion and an ankle portion a slit for introducing means for at least reducing footwear creasing of footwear when worn in association with the sock.

[0007] FIG. 2 is an enlarged cross-sectional view taken generally along line 2-2 of FIG. 1, and illustrates the footwear crease reducing means or device in the form of two pads of synthetic polymeric/copolymeric plastic material adhered together and housed in a pocket of the sock with breathability openings therethrough.

[0008] FIG. 3 is a cross-sectional view taken generally along line 3-3 of FIG. 1, and illustrates further details of the invention.
DESCRIPTION OF THE PREFERRED EMBODIMENT

A novel sock constructed in accordance with this invention for at least reducing footwear creasing when worn in association with the sock is illustrated in FIGS. 1 through 4 of the drawings and is generally identified by the reference character 10.

The sock 10 is, for the most part, of a conventional construction and is preferably knitted from natural or synthetic threads or textiles, such as polyester, a blend of cotton and polyester, nylon, etc.

The sock 10 includes a lower leg portion 11, an ankle portion 12, a reinforced heel portion 13, an instep portion 14, a lower foot portion 15, a front toe portion 16, and an upper foot portion 17 of the instep portion 14 delineated between a pair of broken lines L1, L2 in FIGS. 1 and 3 which is generally the area between the front toe portion 16 and the ankle portion 12 within the upper instep portion 14 and more specifically the region at which the toes are anatomically joined to the instep of a person’s foot and because of the bending thereof during walking, running and/or climbing results in conventional transverse creasing of conventional footwear when worn for a reasonable length of time. FIG. 3 diagrammatically illustrates a portion of a foot F within the sock 10 with the phalanges or toes T being joined to metatarsals M by five metatarsal phalangeal joints J at the ball B of the foot F. The metatarsal phalangeal joints J delineate the area at which maximum flexure of footwear occurs during walking, running, climbing or the like, and therefore the area of this joint delineated generally within the dashed lines L1, L2 of FIG. 3 sets-off therebetween a region of substantially maximum flexure of the upper foot portion 17.

The piece of fabric material 18 may also be formed of low friction fabric material or a low friction fabric coating C (FIG. 3) can be applied thereto to ease the sliding thereof and the instep portion 14 into an associated shoe, hoor or of openings passing therethrough are provided for effecting breathability and may also be provided with antifungal, odor eliminating and/or moisture absorbing characteristics and may in addition be encased in a fabric cover of low friction material to ease the insertion of the footwear crease reducing means 30 into the pocket 25 through the slit 20 when opened as necessary, and after full insertion of the footwear crease reducing means 30 into the pocket 25, the footwear crease reducing means 30 inherently rebounds to its “normal” shape and configuration and thereby intimately conforms to the interior shape, size and volume of the pocket 25, as is readily apparent from FIGS. 2 and 3 of the drawings.

When the footwear crease reducing means 30 is formed of two pads 31, 32 of resilient material, such as gel material, the two pads 31, 32 are bonded by adhesive A to each other in a conventional manner and means 35 in the form of openings passing therethrough are provided for effecting breathability and may also be provided with antifungal, odor eliminating and/or moisture absorbing characteristics and may in addition be encased in a fabric cover of low friction material to ease the insertion of the footwear crease reducing means 30 into the pocket 25 through the slit or slot 20. Preferably the upper pad or body of material 31 is firmer than the softer pad or body of material 32 to respectively (a) increase upward directed foot pressure created during walking by the pad 31 against the inner surface of footwear (not shown) and (b) achieve comfort through the softer pad 32 intimately overlying the wearer’s foot F.

In the case of a single pad defining the footwear crease reducing means 30, when constructed from gel, silicone or the like, the material preferably has a shore durometer hardness ranging between substantially 10 to 65 on the OO scale, but preferably 15 to 35 on the OO scale. When the footwear crease reducing means 30 is formed of two pads, such as the two pads 31, 32, the pad 31 is preferably 15-35 shore on the OO scale whereas the pad 32 may range between 10% 50% softer on the same scale. In use as a person’s foot F flexes, particularly at the metatarsal phalangeal joints J, upward pressure-created thereby is transmitted by the relatively softer pad 32 to the harder pad 31 and therefrom to the overlying area of the footwear (not shown) to substantially reduce, lessen or eliminate transverse creasing of the upper portion of the associated shoe (not shown) whereas the softer shore durometer hardness of the pad 32 assures comfort to the underlying portion of the foot F.

The piece of fabric material 18 may also be formed of low friction fabric material or a low friction fabric coating C (FIG. 3) can be applied thereto to ease the sliding thereof and the instep portion 14 into an associated shoe, hoo or of openings passing therethrough are provided for effecting breathability and may also be provided with antifungal, odor eliminating and/or moisture absorbing characteristics and may in addition be encased in a fabric cover of low friction material to ease the insertion of the footwear crease reducing means 30 into the pocket 25 through the slit or slot 20. Preferably the upper pad or body of material 31 is firmer than the softer pad or body of material 32 to respectively (a) increase upward directed foot pressure created during walking by the pad 31 against the inner surface of footwear (not shown) and (b) achieve comfort through the softer pad 32 intimately overlying the wearer’s foot F.

Reference is made to FIG. 6 of the drawing which illustrates the same sock 10 of FIGS. 1 through 4 bearing like reference characters. However, crease reducing means 30 is instead formed of two pads 31, 32 of the material which are substantially identical to the respective upper and lower pads or bodies 31, 32 of FIG. 2 except being formed of synthetic foam plastic material which may be sufficiently porous to preclude the necessity of the breathability effecting means, bores, holes or openings 35.

Referring to FIG. 5 of the drawings, a sock 10" thereof is identical to the sock 10 of FIGS. 1 through 4 and 6 and like though double-printed reference characters have been applied thereto to identify structure corresponding substantially identically to the sock 10. The two differences between the socks 10 and 10" is that the sock 10" is a so-called
“ankle” sock lacking the lower leg portion 11 of the sock 10 and a virtually nonexistent ankle portion 12" having an opening O immediately adjacent a reinforced heel portion 13". Additionally and most importantly, though the sock 10" also includes footwear crease reducing means 30", the piece of material 18" lacks a slit corresponding to the slit 20 of the sock 10", and in lieu thereof the footwear crease reducing means 30" is first placed upon the upper foot portion 17", thereafter the piece of material 18" is placed thereupon, and peripheral stitching 5" closes the pocket 25" in a permanent fashion. Because of the permanent nature of the closed pocket 25", the footwear crease reducing means 30" is preferably a fluid medium FM (gas or liquid), such as silicon or saline, housed within a flexible bag 35" permanently located between the upper foot portion 17" and the piece of material 18" by virtue of the stitching S" peripherally closing the pocket 25".

Although a preferred embodiment of the invention has been specifically illustrated and described herein, it is to be understood that minor variations may be made in the article without departing from the spirit and scope of the invention, as defined by the appended claims.

What is claimed is:

1. A sock comprising at least an upper foot region adapted to overlie an upper portion of a person's foot when wearing the sock, and means associated with at least a portion of said upper foot region for at least reducing footwear creasing of footwear when worn in association with said sock.

2. The sock as defined in claim 1 wherein said creasing reducing means is gel material.

3. The sock as defined in claim 1 wherein said creasing reducing means is a pad of gel material.

4. The sock as defined in claim 1 wherein said creasing reducing means is foam material.

5. The sock as defined in claim 1 wherein said creasing reducing means is a pad of foam material.

6. The sock as defined in claim 1 wherein said creasing reducing means is foam-gel material.

7. The sock as defined in claim 1 wherein said creasing reducing means is a pouch filled with foam material.

8. The sock as defined in claim 1 wherein said creasing reducing means is a fluid medium filled pouch.

9. The sock as defined in claim 1 wherein said creasing reducing means is silicon.

10. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material having a Shore durometer hardness ranging between substantially 10 to 65 on the OO scale.

11. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material having antifungal properties.

12. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material having dispersing heat therefrom.

13. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material, and said mass of material includes means for effecting breathability thereof.

14. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material, and said mass of material includes means for effecting breathability thereof, and said breathability effecting means are openings in said mass of material.

15. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material, said mass of material includes means for effecting breathability thereof, and said breathability effecting means are openings through said mass of material.

16. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material, said mass of material includes means for effecting breathability thereof, and said breathability effecting means are openings through said mass of material.

17. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material having odor eliminating properties.

18. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material having moisture absorbing properties.

19. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material.

20. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material, and said mass of material is encased in low friction fabric.

21. The sock as defined in claim 1 wherein said creasing reducing means is a mass of material having a textured bottom surface.

22. The sock as defined in claim 1 including means for forming a pocket in said upper foot region, and said creasing reducing means is hosed in said pocket.

23. The sock as defined in claim 1 including means for forming a pocket in said upper foot region, said creasing reducing means is housed in said pocket, and means for temporarily closing said pocket.

24. The sock as defined in claim 1 including means for forming a pocket in said upper foot region, said creasing reducing means is housed in said pocket, and means for permanently closing said pocket.

25. The sock as defined in claim 1 wherein said creasing reducing means is defined by upper and lower masses of material with the upper mass of material being more firm than the softer lower mass of material.

26. The sock as defined in claim 1 wherein the sock is an ankle sock.

27. The sock as defined in claim 1 wherein the sock is devoid of an ankle portion.

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