

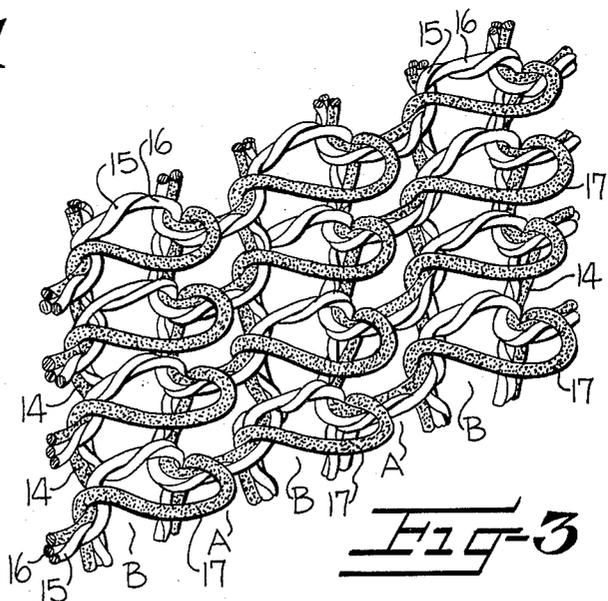
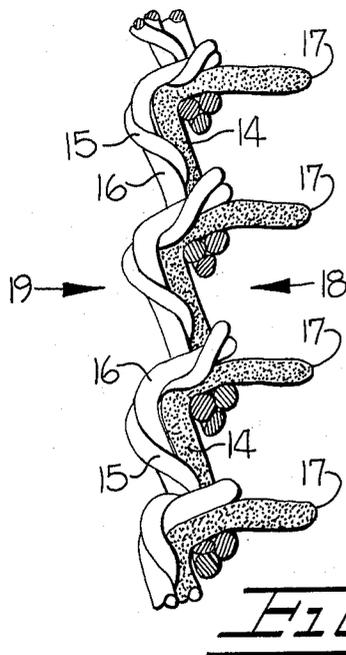
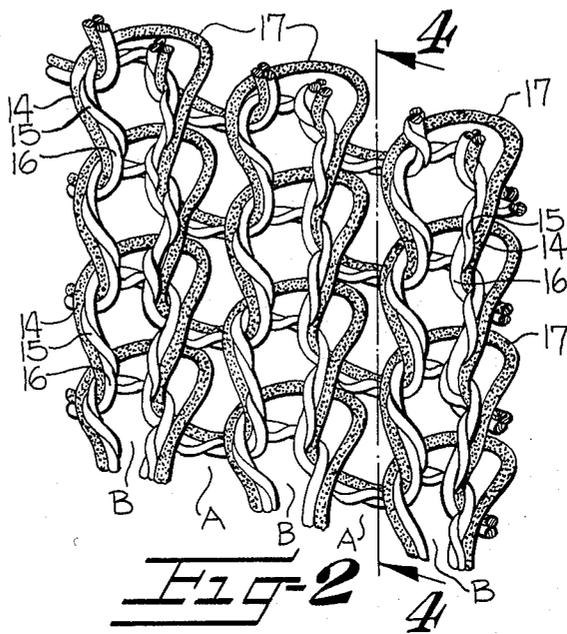
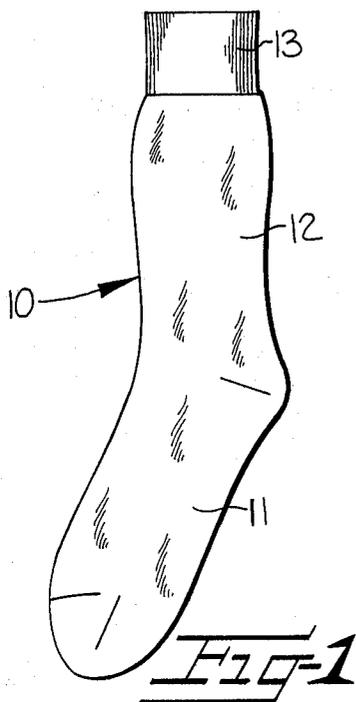
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3,250,095

SOCK FOR ACTIVE PARTICIPATOR SPORTS

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SOCK FOR ACTIVE PARTICIPATOR SPORTS

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5 Claims. (Cl. 66-178)

This invention relates to a sock for active participator sports and more particularly to a sock which will wick and hold the moisture away from the skin of the sports participator while retaining the warmth, comfort and hand desired in a sport sock of this type.

In knitted socks used in active participator sports, such as hunting and skiing, perspiration on the skin of the wearer due to the bulk of these socks and the heavy boots normally worn therewith has caused considerable discomfort and even chapping to the skin of the wearer. When this perspiration forms on the skin of the wearer, the prior sport socks, which were usually heavy and knit on coarse gage machines with coarse yarns, became soaked with perspiration causing the yarns to pack down and mat with use destroying the desired softness and hand and also destroying or reducing the thermal insulating quality of the socks. It is manifest that a perspiration soaked athletic sock is uncomfortable and unhealthy to the wearer both in the active participator sports, such as hunting and skiing where thermal insulating properties are required in the sock, and in other active participator sports, such as basket ball, tennis, etc., where irritation to the skin can be caused from a perspiration soaked sock.

It is an object of this invention to provide a knitted sock for use in active participator sports which will retain the softness and hand desired in this type of sock regardless of the amount of perspiration formed on the skin of the wearer due to the physical activity of the sport or due to the nature of the boots or shoes worn therewith.

It is a further object of this invention to provide a knitted sock for active participator sportswear which will wick, absorb and hold perspiration away from the skin of the wearer to prevent discomfort and chapping and which will retain the thermal insulating properties desired in the sock and which will not become matted or packed down with use.

It is a further object of this invention to provide a knitted sock for use in active participator sports which has hydrophobic yarns disposed against and in contact with the skin of the wearer to wick perspiration away from the skin of the wearer and which has hydrophilic yarns disposed away from the skin of the wearer to absorb and hold the perspiration away from the skin of the wearer and which has elastic yarns therein which will maintain the sock in contact with the skin of the wearer to insure the wicking, absorbing and holding action of the hydrophobic and hydrophilic yarns.

It is a more specific object of this invention to provide a knitted sock for use in active participator sports which will wick and hold perspiration away from the skin of the wearer. This object may be accomplished by knitting the sock throughout with hydrophobic yarns, hydrophilic yarns and elastic yarns. The hydrophobic yarns form terry loops on the inside of the sock, which stand out therefrom to provide softness and hand, so that the inside of the sock covering the foot and a portion of the leg is comprised predominately of hydrophobic yarns to contact the skin of the wearer for wicking perspiration away from the skin of the wearer. The terry loops so disposed further provide thermal insulating qualities by providing air spaces between the terry loops. The hydrophilic yarns are plated with the hydrophobic yarns on the

outside of the sock so that the outside of the sock is comprised predominately of hydrophilic yarns to absorb and hold perspiration away from the skin of the wearer. With hydrophilic yarns being so disposed and adapted to hold perspiration away from the skin of the wearer, it is manifest that this perspiration will not affect the softness and hand of the terry loops which will remain dry and will not affect the thermal insulating qualities produced by the air spaces between the terry loops on the inside of the sock. An elastic yarn is incorporated in the sock to provide stretchability to urge the inner surfaces of the sock into contact with the skin of the wearer to insure the wicking action of the hydrophobic yarns and thus remove substantially all of the moisture from the skin of the wearer.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is a side elevational view of the sock of this invention;

FIGURE 2 is an enlarged isometric view of a portion of stitches forming the outside surface of the sock of this invention;

FIGURE 3 is an enlarged isometric view of a portion of stitches forming the inside surface of the sock of this invention; and

FIGURE 4 is a vertical sectional view taken substantially along the line 4-4 of FIGURE 2.

Referring now to the drawings, there is illustrated in FIGURE 1 a knitted sock **10** having a foot portion **11**, a leg portion **12**, and a cuff portion **13**.

The sock **10** is preferably knitted on a circular knitting machine using hydrophobic yarns **14**, hydrophilic yarns **15** and elastic yarns **16** throughout the foot and leg portion. As shown in FIGURES 2 and 3, the needle wales are generally referred to by the reference character **A** and the sinker wales by the reference character **B**. As may be seen in these figures, the sock is so knitted that the hydrophobic yarns form terry loops **17** in the sinker wales **B** on the inside surface of the sock, generally indicated by the reference numeral **18**, so that the inside surface **18** of the sock is comprised of predominately hydrophobic yarns. The terry loops **17** are preferably formed on the inside surface of the sock **10** so as to cover the toe portion, foot portion, heel portion, and the part of the leg portion not including the cuff portion which would be covered by a boot worn therewith. These terry loops tend to stand out from the inner surface of the sock to form a plurality of air spaces or pockets between the terry loops and the body of the sock to enhance the thermal characteristics of the sock.

The hydrophilic yarns **15** are plated with the hydrophobic yarns **14** in the needle wales **A** so as to be positioned on the outside surface of the sock, generally indicated by reference numeral **19**, so that the outside surface of the sock is comprised of predominately hydrophilic yarns.

The elastic yarns **16** are incorporated in the sock **10** to provide a stretch sock which will be in constant contact with the skin of the wearer. These elastic yarns **16**, as illustrated in the drawings, are plied together with the hydrophilic yarns **15** to be knitted in every course and wale. However, the elastic yarns **15** may be incorporated in the sock **10** in any desirable manner, as by laying in, etc., to provide a stretch sock which will remain in substantially constant smooth even contact with the skin of the wearer.

The cuff portion **13** of the sock **10** may be of any suitable construction and is preferably mock rib without terry loops.

The yarns 14 forming the terry loops may be any suitable hydrophobic yarn, which will wick perspiration from the skin of the wearer, such as the following synthetic yarns or combinations thereof: cellulose triacetate, polyamide, polyvinyl chloride, polypropylene, acrylic, modacrylic and polyester. A particularly suitable hydrophobic yarn for commercial production has been found to be Orlon acrylic spun with nylon staple.

The yarns 15 predominately on the outer surface may be any suitable hydrophilic yarn which will absorb and hold perspiration away from the skin of the wearer, such as the following yarns or combinations thereof: cotton, rayon, wool and silk. A particularly suitable hydrophilic yarn for commercial production has been found to be cotton or rayon.

The yarn 16 may be any suitable elastic yarn and it has been found that stretch nylon yarn will be suitable for such use. However, other types of elastic yarn such as rubber, elastomers, etc., may be used.

When the sock 10, knitted as described above, is placed in position on the wearer, the terry loops 17 of the hydrophobic yarns 14 will be in contact with the skin of the wearer. This contact will be retained by action of the elastic yarns 16. The hydrophilic yarns 15 will be disposed on the outside of the sock and away from the skin of the wearer. Since the terry loops tend to be spaced from the body of the sock, when perspiration or moisture appears on the skin of the wearer this moisture will be wicked away from the skin of the wearer by the loop portions of the hydrophobic yarns 14 in contact with the skin and absorbed and held away from the skin of the wearer by the hydrophilic yarns 15.

Thus it may be seen, that this invention has provided a knitted sock construction which will wick and hold moisture away from the skin of the wearer effectively through the combined use of hydrophobic yarns, hydrophilic yarns and elastic yarns so that the sock will retain the softness, hand and thermal insulating properties, produced by the terry loop, will not become matted and packed down, and will not cause chapping to the skin of the wearer.

In the drawings and specification there has been set forth a preferred embodiment of this invention and, although specific terms are employed, they are used in a

generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

What is claimed is:

1. A knitted sock for wicking and holding perspiration away from the skin of the wearer comprising a foot portion and a leg portion formed with hydrophobic yarns, hydrophilic yarns and elastic yarns, said hydrophilic and elastic yarns together forming the base fabric of the sock, said hydrophobic yarns being incorporated in the base fabric in substantial physical contact with the hydrophilic yarns and forming terry loops extending from the base fabric on the inside surface of the sock so as to be disposed predominately on the inside surface of the sock in contact with the skin of the wearer when worn to wick perspiration away from the skin of the wearer, said hydrophilic yarns being disposed predominately on the outside surface of the sock away from the skin of the wearer when worn to absorb and hold the perspiration away from the skin of the wearer, and said elastic yarn urging said hydrophobic yarns into intimate contact with the skin of the wearer when worn to insure the wicking action.

2. A knitted sock as set forth in claim 1, in which said elastic yarns and said hydrophilic yarns are plied.

3. A knitted sock, as set forth in claim 1, in which said hydrophobic yarns are a combination of acrylic and nylon.

4. A knitted sock, as set forth in claim 1, in which said hydrophilic yarns are cotton.

5. A knitted sock, as set forth in claim 1, in which said elastic yarns are stretch nylon.

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