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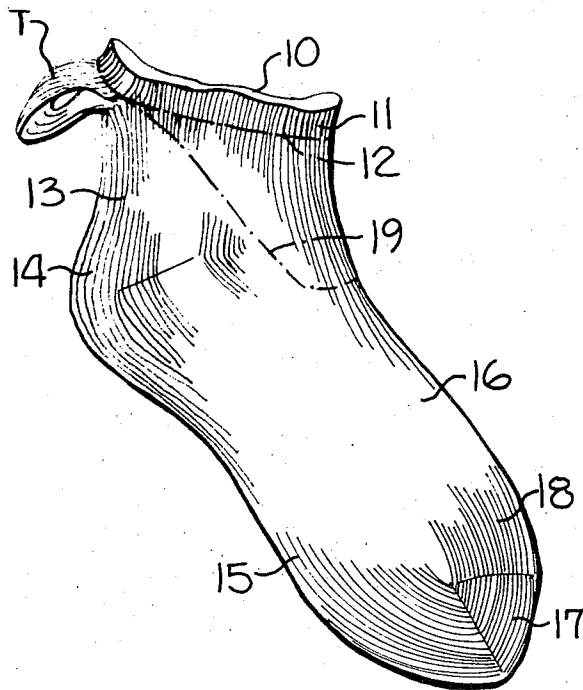
[54] **LOW-CUT SOCK AND METHOD**  
**6 Claims, 4 Drawing Figs.**

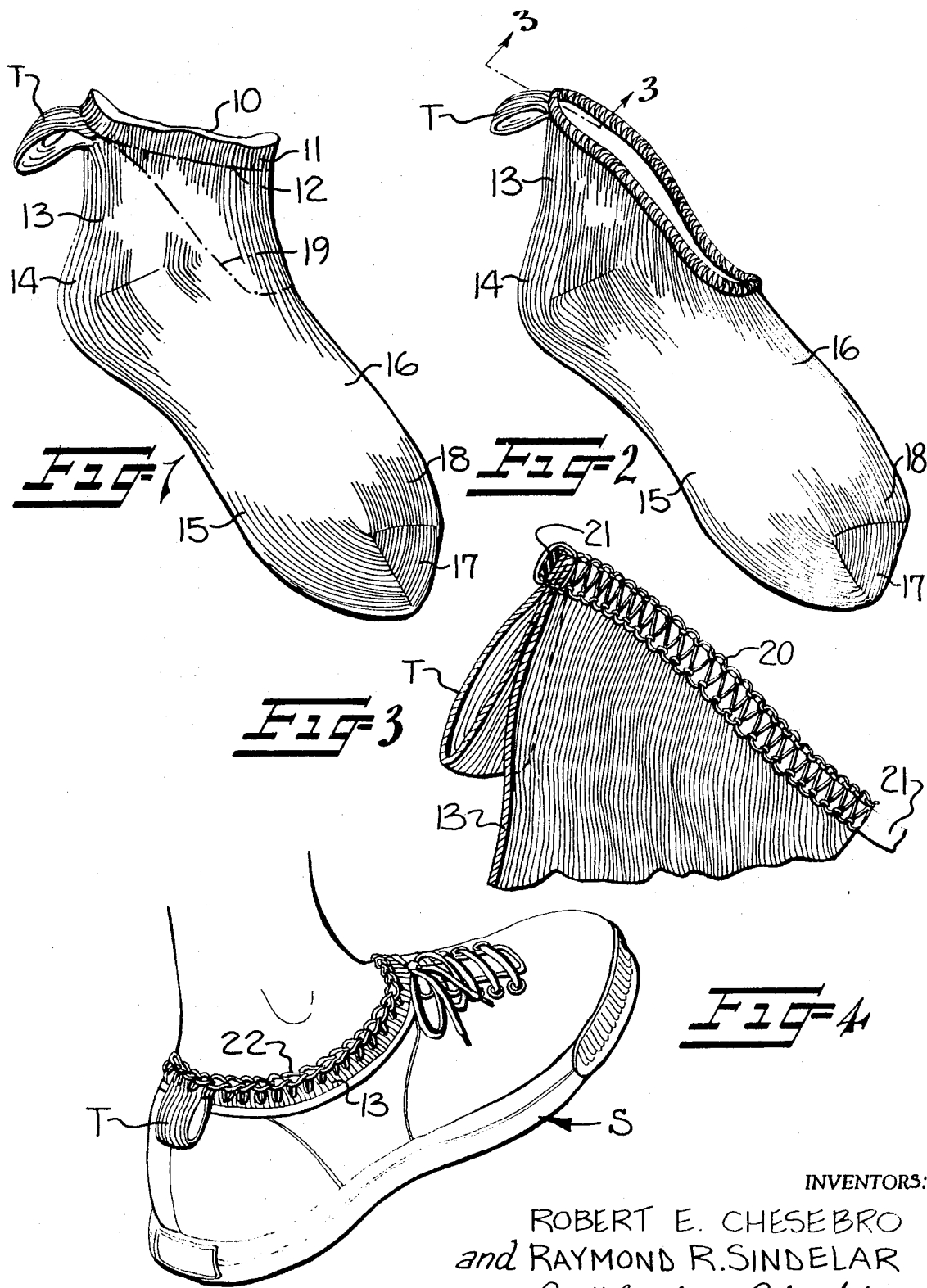
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**ABSTRACT:** A support tab is formed above the heel-embracing portion of the sock and is adapted to extend downwardly over the heel portion of a shoe to prevent the rear portion of the sock from sliding down into the shoe. The support tab is in the form of a loop and is formed as an integral part of the blank from which the sock is to be formed. The support loop includes a plurality of partial courses of equal length having selvaged opposite side edges and forming a relatively narrow knit strip. Opposite end portions of the knit strip are joined together by edge binding stitching surrounding the opening which is adapted to receive the foot of the wearer therethrough.





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### LOW-CUT SOCK AND METHOD

This invention relates generally to a cuffless-type sock and to the method of forming the same, and more particularly to a low-cut or cuffless sock which includes a novel support tab that is provided above the heel-embracing portion of the sock to support the heel-embracing portion of the sock on the shoe and to restrict downward sliding movement thereby.

There are many different kinds of cuffless-type socks presently available which are particularly adapted for use by the participants in sporting events, particularly golf. The upper edge of this type sock terminates below the wearer's ankle to provide the maximum exposure to the sun of the lower portion of the leg. Several of these known types of cuffless socks include heel-support tabs which extend down over the outside of the heel of the shoe to restrict slippage of the heel of the sock down into the shoe. However, these known types of support tabs are not completely effective to prevent slippage and do not provide a convenient vehicle by which the heel portion of the sock may be pulled up.

With the foregoing in mind, it is an object of the present invention to provide a cuffless sock and method of forming the same wherein the sock includes an improved heel-support tab in the form of a relatively narrow loop which provides a convenient means for pulling the heel portion of the sock up above the shoe, in a similar manner to a bootstrap.

It is another object of the present invention to provide a method of knitting a low-cut sock while integrally knitting a heel support tab, and which method may be carried out on a conventional hosiery knitting machine with very little modification of the machine.

According to the preferred embodiment of the present invention, the support tab loop is integrally knit with the sock blank and is formed of a plurality of partial courses of equal length with selvaged opposite side edges. The opposite ends of the support tab are connected to each other and to the edge of the foot-receiving opening by a line of overedge stitching so that the support tab extends downwardly over the heel of the shoe and restricts downward slippage of the sock.

Other objects of the invention will appear as the description proceeds, when taken in connection with the accompanying drawings, in which:

FIG. 1 is a side elevational view of a cuffless sock blank knit in accordance with the present invention;

FIG. 2 is a view similar to FIG. 1 showing the first overedge stitching around the foot opening for securing the opposite ends of the support tab to each other and to the upper edge and indicating the manner in which the upper portion of the sock blank is cut to define the foot-receiving opening;

FIG. 3 is an enlarged vertical sectional view through the upper edge portion of the heel of the sock and illustrating the manner in which the inner end portions of the support tab are secured to each other and to the upper edge of the sock by the overedge seam, and

FIG. 4 is an enlarged perspective view showing the finished cuffless sock of the present invention on the foot of the wearer and in a shoe, and illustrating the final crochet chain of decorative stitching formed around the foot-receiving opening and covering the first overedge seam.

Referring particularly to FIG. 4, the cuffless sock is adapted to be substantially covered by a low quarter shoe, illustrated as a "sneaker" and broadly indicated at S, so that only the small portion surrounding the foot-receiving opening is exposed and the complete ankle of the wearer is uncovered. In the drawings, the sock is lined to indicate the direction in which the wales of the knit fabric portions extend, it being understood that the courses extend perpendicular to the wales. The sock blank (FIG. 1) may be knit on any one of a number of different types of knitting machines having provision for holding stitch loops on a certain group of adjacent needles while continuing to knit on the remaining needles for a predetermined number of courses and then for again knitting on all of the needles.

For example, the cuffless sock blank of the present invention may be knit on a circular hosiery knitting machine having 72 needles in the cylinder and provided with means for knitting during both rotary and reciprocatory motion of the needle cylinder. The machine must also be provided with means for switching selected needles to an inactive, stitch-holding position while reciprocatorily knitting partial courses on a selected group of adjacent needles to form a relatively narrow strip of knit fabric having opposite selvaged side edges.

The blank (FIG. 1) may be knit of any suitable-type yarn and includes a conventional makeup 10 at the upper end thereof. The makeup is formed in the usual manner by laying a yarn in front of and behind alternate needles during one or more rotations of the needle cylinder. The yarn is then fed to all of the needles to knit a plurality of complete courses, forming a selvage portion indicated at 11. It is preferred that the selvage portion, down to the dash-dot line 12, include about 12 circular courses, however, it is to be understood that any suitable number of courses may be formed before knitting a support tab, broadly indicated at T.

Upon the completion of the knitting of the desired number of complete courses in the selvage portion 11, the needle cylinder is reciprocated while the major portion of the needles in the cylinder is switched to an inactive position to hold the stitch loops formed during the knitting of the last course of the selvage portion 11. A small group of adjacent needles remains in an active or knitting position as reciprocation of the needle cylinder continues. This small group of active needles preferably includes about eight or 10 needles which continue to form stitch loops with swinging movement of the needle cylinder in each direction to form a plurality of successive partial courses of equal width. Preferably, about 40 partial courses are knit to complete the knitting of the tab T.

The needle cylinder then switches to continuous rotation and during the first rotation, the inactive needles are shifted to an active position and pick up yarn and form stitch loops, along the dash-dot line 12. The stitch loops of this full course are drawn through the stitch loops of the last course of the selvage portion 12, which were held on the inactive needles, to thereby join the major portions of these courses together so that the narrow tab T forms an outwardly extending open loop of fabric. As the needles at opposite sides of the tab T again form stitch loops, the fabric at opposite sides is joined and the inner end portions of the knit strip forming the tab T are drawn together but are not directly joined together. The knitting of full courses continues to form an ankle portion 13 which is positioned above a heel-embracing portion at the rear of the sock. The heel-embracing portion preferably includes a heel pocket, 14 formed in the conventional manner of narrowed and widened gussets which are knit with reciprocation of the needle cylinder.

Upon completion of the knitting of the heel pocket 14, the machine again switches into rotary knitting to knit a tubular foot portion which includes a lower sole portion 15 and an upper instep portion 16. A toe portion may be formed in any suitable manner, such as by narrowing and widening in the conventional manner to form a toe pocket 17. The toe is subsequently closed along a looper or seam line, indicated at 18.

Upon completion of the knitting of the sock blank, as shown in FIG. 1, a foot-receiving opening is formed by cutting the blank along the dotted line 19 (FIG. 1) which extends diagonally downwardly from the upper inner end of the support tab T, into and across the upper portion of the instep 16, then diagonally upwardly across the other side of the blank, and across the upper inner end of the support tab T. Preferably, an overedge seam 20 (FIG. 2) is formed by a sewing machine having cutting blades which cut the blank immediately prior to the formation of the overedge stitching. A strip of elastic tape 21 is incorporated in the overedge seam 20, as indicated in FIG. 4.

As the overedge seam 20 and corresponding cut are made across the juxtapositioned inner ends of the support tab T, the folded upper end of the inner layer of the support tab and the

upper end of the ankle, and the free end of the outer layer of the support tab are joined together by the overedge seam 20 (FIG. 3). These connected together ends, along with the elastic tape 21, form a thickened ridge at the upper edge of the heel-embracing portion and above the heel pocket 14 to aid in supporting the sock in the shoe. Also, the overedge seam 20 maintains the support tab T in the downwardly extending folded position shown in FIGS. 3 and 4.

A line of decorative stitching, indicated at 22 in FIG. 4, is preferably formed around the foot-receiving opening and over the first overedge seam 20. In the embodiment illustrated in the drawings, the seam 22 is formed of a larger, looser thread than the seam 20 and is formed of crochet stitches, which may be formed by hand or a crochet machine such as model FJ crochet machine manufactured by Merrow Machine Co. The crochet stitches 22 impart an improved decorative appearance to the upper edge of the cuffless sock and do not unduly limit the amount the foot-receiving opening may be stretched. In addition, the seam 22 reinforces the upper edge of the sock and aids in maintaining the support tab T in the downwardly folded position. Also, the elastic tape 20, the overedge seam 21, and the decorative seam 22 result in a substantial thickened portion at the upper edge of the rear of the low-cut sock to form a thickened portion or bulge around the opening, which aids in supporting the upper edge of the sock above the heel of the shoe.

The cuffless sock is preferably knit of a natural yarn plated with a synthetic stretchable yarn so that the sock has sufficient stretch to fit a predetermined range of foot sizes. Also, it is preferred that the natural yarn form terry loops in selected portions of the inside of the sock. The terry loops provide a "cushion sole" in the sock and are preferably formed on the inside of the partial courses forming the support tab T, on the inside of the rear half of the full courses forming the ankle portion 13, in the heel pocket 14, in the lower half of the full courses forming the sole portion 15, and in the toe pocket 17.

The support tab T should be relatively narrow and, although it is referred to as being knit on eight or ten needles, the invention is not to be so limited. The width of the support tab T is not intended to exceed about one-fourth of the length around the tubular body of the sock. Therefore, the support tab is preferably knit on less than one-fourth of the number of needles in the needle cylinder. The relatively narrow support loop is thus convenient to utilize in pulling the heel of the sock up, should it slip down in the shoe, in somewhat the same manner as a bootstrap is used in pulling boots onto the foot. That is, the finger can be easily inserted in the loop support, between the upper and lower layers, to provide a firm grip on the support tab.

In the drawings and specification there has been set forth a preferred embodiment of the invention and although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation.

We claim:

1. A knit sock adapted to be worn inside of a shoe and to be substantially covered thereby, said sock comprising

- a. a seamless tubular body including an upper edge defining an opening therein adapted to receive the foot of the wearer therethrough and to provide access to the interior thereof, said tubular body including a closed toe portion, and a heel-embracing portion,
- b. a relatively narrow support tab positioned above said heel-embracing portion and comprising a knit strip integrally knit with said tubular body and including opposed ends, said knit strip being folded intermediate the ends to provide a loop having upper and lower layers with open opposed sides, and
- c. means connecting together the ends of said upper and lower layers of said looped support tab and connecting the same to said upper edge whereby said support tab extends downwardly therefrom and is adapted to be disposed on the outside of the heel portion of the shoe to support the heel-embracing portion of said sock thereon

and to restrict the same from sliding downwardly into the shoe, said looped support tab providing a convenient means to pull the heel of the sock up, should it slip down in the shoe.

2. A knit sock according to claim 1 wherein said knit strip comprises a plurality of knit courses of equal length having opposed selvage ends.

3. A knit sock according to claim 1 wherein the length of the knit courses forming said support tab is less than one-fourth the length around said tubular body.

4. A knit sock blank adapted to be formed into a cuffless-type sock to be worn inside of a shoe and to be substantially covered thereby and including a support tab thereon which is adapted to be disposed on the outside of the heel portion of a shoe to support the sock thereon, said knit sock blank comprising

- a. a toe portion, a heel-embracing portion, and sole and instep portions connecting the toe and heel-embracing portions,
- b. a plurality of complete seamless courses forming an ankle portion integrally knit with said heel-embracing portion and said instep portion and extending upwardly therefrom,
- c. a plurality of complete courses forming a selvage portion positioned above said ankle portion, adjacent courses of said selvage and ankle portions being connected throughout at least a major portion of their length, and
- d. a plurality of knit partial courses of equal length having opposed selvage edges and forming a knit strip having opposite ends, one end of said knit strip being integrally knit with a minor portion of said adjacent course of said selvage portion and the other end being integrally knit with a minor portion of said adjacent course of said ankle portion and forming a loop protruding outwardly from said blank and above said heel-embracing portion with open opposed sides, said outwardly protruding loop being adapted to form said support tab for said cuffless sock.

5. A method of knitting a sock blank to be formed into a cuffless-type sock having a support tab thereon adapted to be disposed on the outside of a heel portion of a shoe for supporting the sock thereon, said method comprising the steps of

- a. knitting a plurality of complete seamless courses to form an upper selvage edge portion,
- b. knitting a plurality of partial courses of equal length integral with a few wales of the last course of said selvage edge portion while holding the stitch loops in the remaining wales of the last of said selvage courses, said plurality of partial courses having opposed selvage edges and forming a relatively narrow knit strip,
- c. knitting a plurality of complete seamless courses to form an ankle portion while joining the stitch loops in the corresponding wales of the first course of said ankle portion with the held stitch loops in the wales of the last course of said selvage portion, and while joining the stitch loops in the corresponding wales of the first course of said ankle portion with the stitch loops in the wales of the last partial course of said knit strip so that said knit strip forms an outwardly protruding loop between said selvage portion and said ankle portion, said loop having open opposed sides,
- d. knitting a heel-embracing portion centered beneath said outwardly protruding loop, and
- e. knitting a sole portion, an instep portion, and a toe portion to complete said blank.

6. A method of forming a cuffless sock having a support tab thereon adapted to be disposed on the outside of a heel portion of a shoe for supporting the sock thereon, said method comprising the steps of

- a. knitting a plurality of complete seamless courses to form an upper selvage edge portion,
- b. knitting a plurality of partial courses of equal length integral with a few wales of the last course of said selvage edge portion while holding the stitch loops in the remain-

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- ing wales of the last of said selvage courses, said plurality of partial courses having opposed selvage edges and forming a relatively narrow knit strip,
- c. knitting a plurality of complete courses to form an ankle portion while joining the stitch loops in the corresponding wales of the first course of said ankle portion with the held stitch loops in the wales of the last course of said selvage portion, and while joining the stitch loops in the corresponding wales of the last partial course of said knit strip so that said knit strip forms an outwardly protruding loop between said selvage portion and said ankle portion, said loop having open opposed sides 10
- d. knitting a heel-embracing portion centered beneath said

- outwardly protruding loop,
- e. knitting a sole portion, an instep portion, and a toe portion to complete the knitting of a foot portion,
- f. cutting away a portion of said instep portion and the front part of the ankle portion and through said selvage portion and forming a foot-receiving opening, and
- g. stitching around the edge of said foot-receiving opening and connecting the ends of said outwardly protruding loop to the edge of said foot-receiving opening to normally maintain said loop in depending relation above said heel-embracing portion.

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