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(54) **Sock with Grip**

(57) A sock (10) for helping to retain a pant leg (14) in position on a leg (12) of a wearer of the sock, includes a leg portion (24) that extends along the leg of the wearer and over the pant leg, the leg portion having a grip (30) on its inner surface (32) for gripping the pant leg to resist upward movement of the pant leg along the leg of the wearer. The sock can also be used alone with the grip helping to reduce slippage of the sock on the wearer's leg. The sock also can help to maintain athletic equipment in place on the wearer's leg.

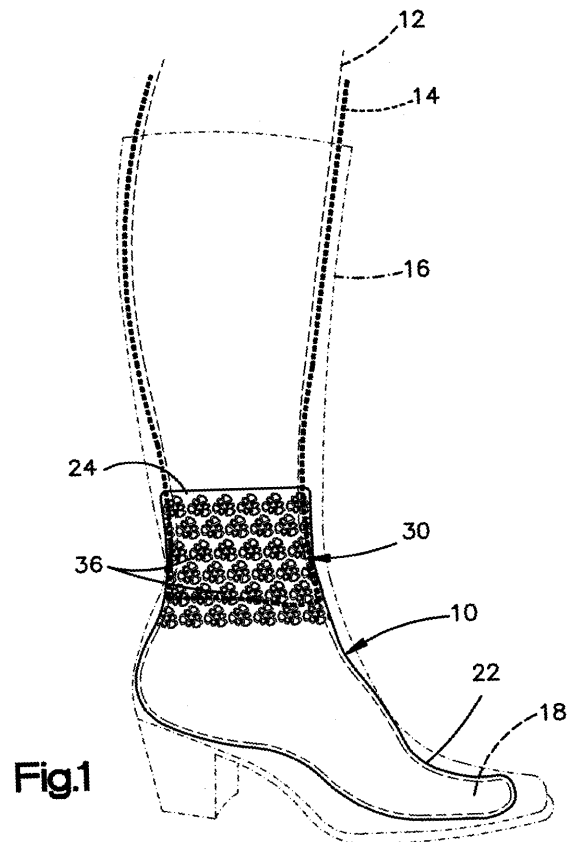


Fig.1

Description

Related Applications

[0001] This application claims the benefit of the filing date of US Provisional Patent Applications Nos. 61/170,682 filed April 20, 2009, and 61/291,062 filed December 30, 2009, the entire disclosures of which are incorporated by reference.

Background of the Invention

[0002] Pants, such as jeans, are sometimes worn with boots, and with the lower portion of the pant leg tucked inside the boot. The pant leg can easily ride up out of the boot, and can "bunch" above the top of the boot, in an unsightly fashion. It is, therefore, desirable to prevent this from happening—that is, to retain the pant leg inside the boot. Also, women find it frustrating when their socks or leg warmers slip down around their ankles. Socks or leg warmers (the term may be used interchangeably herein) of the present invention will stick to the bare leg or to most fabrics and ensure that the socks and leg warmers stay up at the desired length.

Brief Description of the Drawings

[0003] Features of the invention will become apparent to one of ordinary skill in the art to which the invention pertains upon a reading of the following description in conjunction with the attached drawings, in which:

[0004] Fig. 1 is an illustration of a sock that is a first embodiment of the invention, shown in association with a wearer's leg, pant leg, and boot;

[0005] Fig. 2 is a view similar to Fig. 1 of a sock that is a second embodiment of the invention;

[0006] Fig. 3 is a view similar to Fig. 1 of a sock that is a third embodiment of the invention; and

[0007] Fig. 4 is a view similar to Fig. 1 of a sock that is a fourth embodiment of the invention;

[0008] Fig. 5 is an illustration of a grip that forms part of the sock of Fig. 1;

[0009] Fig. 6 is a schematic sectional view illustrating the spatial relationship between the sock, the wearer's leg, the pant leg, and the boot;

[0010] Fig. 7 is an illustration of a sock that is worn directly on the wearer's bare leg; and

[0011] Fig. 8 is an illustration of a use of the sock in association with a piece of athletic equipment.

Detailed Description

[0012] The present invention relates to devices for retaining a pant leg in a boot, and for keeping socks and leg warmers at the desired length, and for keeping objects such as athletic equipment in place. As representative of the invention, Fig. 1 illustrates a retainer in the form of a sock 10 that is a first embodiment of the invention. The

sock 10 is adapted to be used on a wearer's leg 12 to help retain a pant leg 14 in position on the leg, inside a boot 16.

[0013] The sock 10 is configured as a leg warmer or sock that is worn over the wearer's foot 18 and that extends up the wearer's leg 12 for a distance that depends on the length of the sock. The sock 10 has a foot portion 22 that covers the foot 18 and a leg portion 24 that extends up the leg 12. The leg portion 24 of the sock 10 is made from an elastic material that, when worn, exerts an inwardly directed force on the wearer's leg 12. As a result, the leg portion 24 of the sock 10 can squeeze or clamp the pant leg 14 against the wearer's leg 12 to help prevent the pant leg from riding up and bunching over the top of the boot 16.

[0014] In the embodiment of Fig. 1, the sock 10 is relatively short, and extends up the leg 12 only far enough to cover the ankle and the lowermost portion of the calf. In other embodiments, as discussed below, the leg portion 24 of the sock 10 is of a different length.

[0015] The sock 10 includes an adhesive grip 30 that is located on the inner surface 32 of the leg portion 24 of the sock. The grip 30 may be formed by deposition or printing of a flexible, permanently plasticized material 34, such as Plastisol, or a silicone resin, on the inner surface 32 of the leg portion 24 of the sock 10. The grip 30 could be formed as dots or letters 36 of material in a high density repeat logo print as shown enlarged in Fig. 5, for example. The grip 30 preferably extends 360 degrees circumferentially around the inner surface 32 of the leg portion 24 of the sock 10. The grip 30 may, alternatively, have a different overall configuration on the sock inner surface, such as in strips or other configurations extending vertically up the length of the sock.

[0016] If the grip 30 is formed as discrete elements, such as dots, the spacing of the dots on the inner surface of the sock can be random or in a pattern. It may be preferable to provide a grip 30 that has a decorative or logo pattern, as shown in Fig. 5. Functionally, it is only necessary for enough gripping material 34 to be provided so as to satisfactorily engage the pant leg 14, as described below, to prevent upward vertical movement of the pant leg.

[0017] The gripping action arises partially because the pieces of gripping material 34 are not flat on the inner surface 32 of the sock 10 but rather project inward and have surfaces 38 that extend transverse to the inner surface of the sock. This is shown in Fig. 6. The engagement of the pant leg 14 with the transverse surfaces 38 resists movement of the pant leg in a direction along the length of the leg portion 24 of the sock 10.

[0018] The gripping action also arises partially from the soft gripping surface characteristics of the gripping material 34 itself. A gripping material 34 is selected that has a higher coefficient of friction compared to the material of the sock 10 itself, so that it is more difficult for the pant leg 14 to slide along the gripping material and thereby slide along the sock.

[0019] In use, the wearer dons the pants and the sock

10. The leg portion 24 of the sock 10 is arranged to cover the lower end or hem of the pant leg 14. The grip 30 that is on the inner surface 32 of the leg portion 24 of the sock 10 engages the pant leg 14.

[0020] The elasticity of the sock leg portion 24 helps to hold the pant leg 14 inward on the leg 12. This force resists upward movement of the pant leg 14 along the wearer's leg 12. In addition, the grip 30 abuttingly engages the pant leg 14, and the friction between them resists movement of the pant leg along the wearer's leg 12. As a result, the pant leg 14 is prevented from riding up on the wearer's leg 12, and from unsightly bunching over the top of a boot 16 that is being worn over the pant leg.

[0021] The grip 30 may extend over the entire leg portion 24 of the sock 10, as in the embodiment of Fig. 1. Alternatively, the grip 30 may extend for only a portion of the length of the leg portion 24 of the sock 10. The selected length of sock 10 to be worn depends on several factors. If the pant leg 14 extends quite far down the leg 12, as in Fig. 1, then a relatively short sock 10 can be used. If the pant leg 14 terminates farther up the leg 12, then a longer sock 10 might be appropriate, as shown for example in the embodiment of Fig. 2 wherein the sock is of medium length and extends farther up the calf past the ankle. In the embodiment of Fig. 3, the sock 10 is even longer, and extends even farther up the leg 12, to an over the calf position. In the embodiment of Fig. 4, the sock 10 is long enough so that the upper end of the sock can be folded over the top of the boot 16. A longer sock 10 and longer grip 30 can provide more gripping force, as desired.

[0022] A sock of the present invention is not limited to use in the manner discussed above. One example is the use of a sock such as the sock 10 alone, as illustrated in Fig. 7. People often experience a problem with socks staying up on the leg. This can be whether or not there is an associated pant leg. With the sock 10, because it has the grip 30 on its inner surface 32, the leg portion 24 of the sock will grip directly on the bare leg 12 if there is no intervening pant leg 14. This will help the sock 10 to stay up on the leg 12, resisting downward movement of the sock on the leg. In this sense, then, the sock is usable alone, rather than to hold down a pant leg under a boot. The sock 10 is also better at staying up against leggings, tights, stockings, etc.

[0023] Also, a sock of the present invention can be useful in keeping athletic equipment in place over the leg, as illustrated in Fig. 8. For example, those participating in sports such as soccer, field hockey, skiing, golf, and ice hockey wear long socks as part of their athletic equipment. Providing a sock such as the sock 10 the sock with a grip 30 as shown, on its inner surface, can help to maintain the sock (either upward or downward) in the desired position, either on the bare leg or on top of a piece of athletic equipment, such as a shin guard shown schematically at 40, for example. The gripping action of the sock can also help to maintain a piece of athletic equipment in place over the leg.

Claims

1. A sock for helping to retain a pant leg in position on a leg of a wearer of the sock, the sock comprising:
 - a foot portion for covering the foot of the wearer; and
 - a leg portion extending from the foot portion, for extending along the leg of the wearer and over the pant leg;
 - the leg portion having a grip on its inner surface for gripping the pant leg to resist upward movement of the pant leg along the leg of the wearer.
2. A sock as set forth in claim 1 wherein the grip is made from a gripping material having a higher coefficient of friction than the material of the leg portion of the sock.
3. A sock as set forth in claim 2 wherein the grip is made from a flexible, permanently plasticized material.
4. A sock as set forth in claim 1 wherein the grip comprises a plurality of discrete gripping elements that project inward from the inner surface of the sock.
5. A sock as set forth in claim 4 wherein each one of the gripping elements includes surfaces that extend transverse to the inner surface of the leg portion of the sock to resist movement of the pant leg in a direction along the length of the leg portion of the sock.
6. A sock as set forth in claim 5 wherein the gripping elements are formed on the inner surface of the leg portion of the sock in a high density repeat logo print.
7. A sock as set forth in claim 1 wherein the gripping elements are dots or designs of a plastic material.
8. A sock as set forth in claim 1 wherein the leg portion of the sock is formed of an elastic material that clamps inwardly upon the pant leg to hold the grip elements against the pant leg.
9. A sock for helping to retain a pant leg in position on a leg of a wearer of the sock, the sock comprising:
 - a foot portion for covering the foot of the wearer; and
 - a leg portion extending from the foot portion, for extending along the leg of the wearer and over the pant leg;
 - the leg portion having a grip on its inner surface for gripping the pant leg to resist upward movement of the pant leg along the leg of the wearer, the grip being made from a gripping material having a higher coefficient of friction than the material of the leg portion of the sock, the grip

comprising a plurality of discrete gripping elements that project inward from the inner surface of the sock, and wherein each one of the gripping elements includes surfaces that extend transverse to the inner surface of the leg portion of the sock to resist movement of the pant leg in a direction along the length of the leg portion of the sock. 5

10. A sock as set forth in claim 9 wherein the grip is made from a flexible, permanently plasticized material. 10

11. A sock as set forth in claim 9 wherein the gripping elements are formed on the inner surface of the leg portion of the sock in a high density repeat logo print. 15

12. A sock as set forth in claim 9 wherein the leg portion of the sock is formed of an elastic material that clamps inwardly upon the pant leg to hold the grip elements against the pant leg. 20

13. A sock for use on a wearer's leg, comprising:

a foot portion for covering the foot of the wearer; and 25
a leg portion extending from the foot portion, for extending along the leg of the wearer;
the leg portion having an adhesive grip on its inner surface for gripping the wearer's bare leg to keep the sock in position on the wearer's bare leg. 30

14. A sock for use on a wearer's leg, comprising:

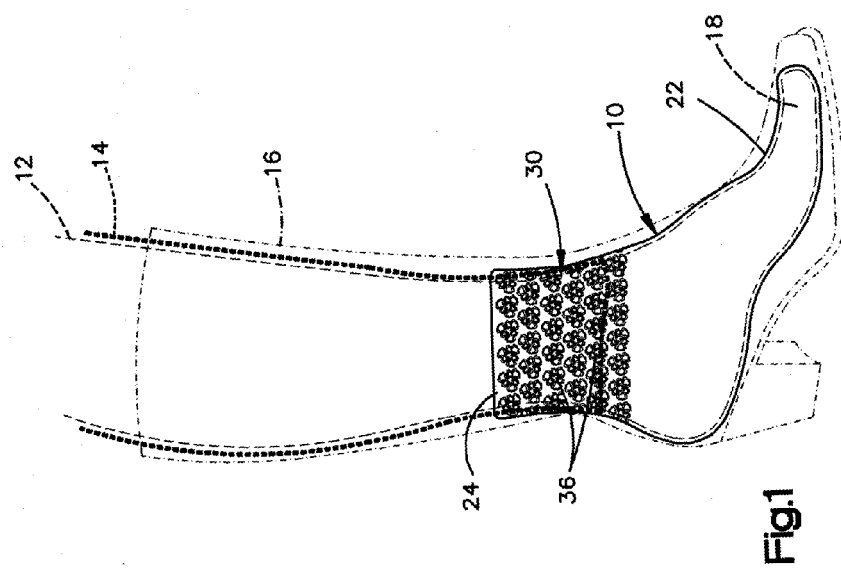
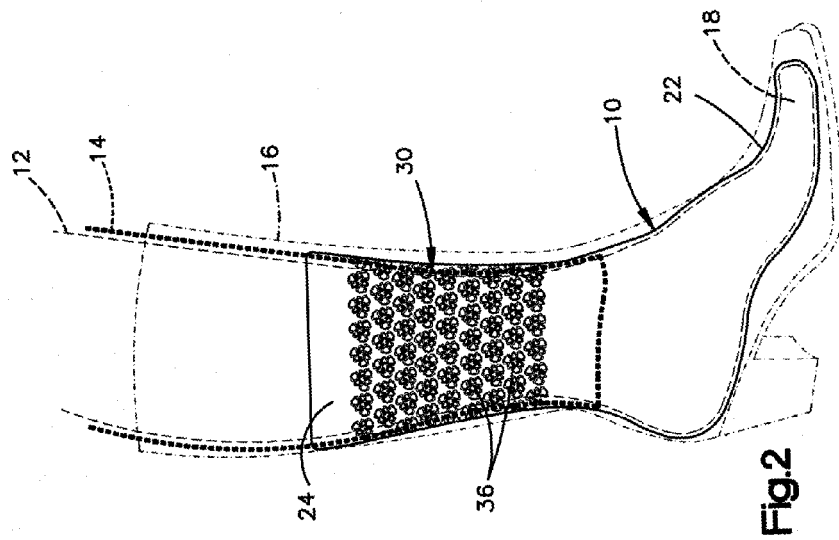
a foot portion for covering the foot of the wearer; and 35
a leg portion extending from the foot portion, for extending along the leg of the wearer;
the leg portion having an adhesive grip on its inner surface for gripping athletic equipment worn on the wearer's leg to resist movement of the sock along the athletic equipment and to help maintain the athletic equipment in place on the leg. 40

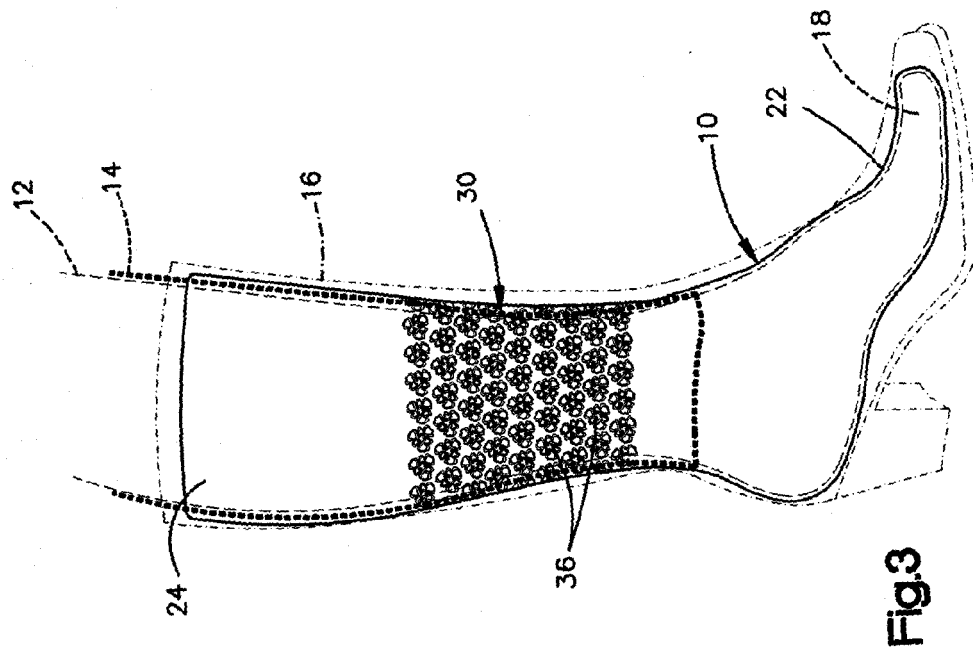
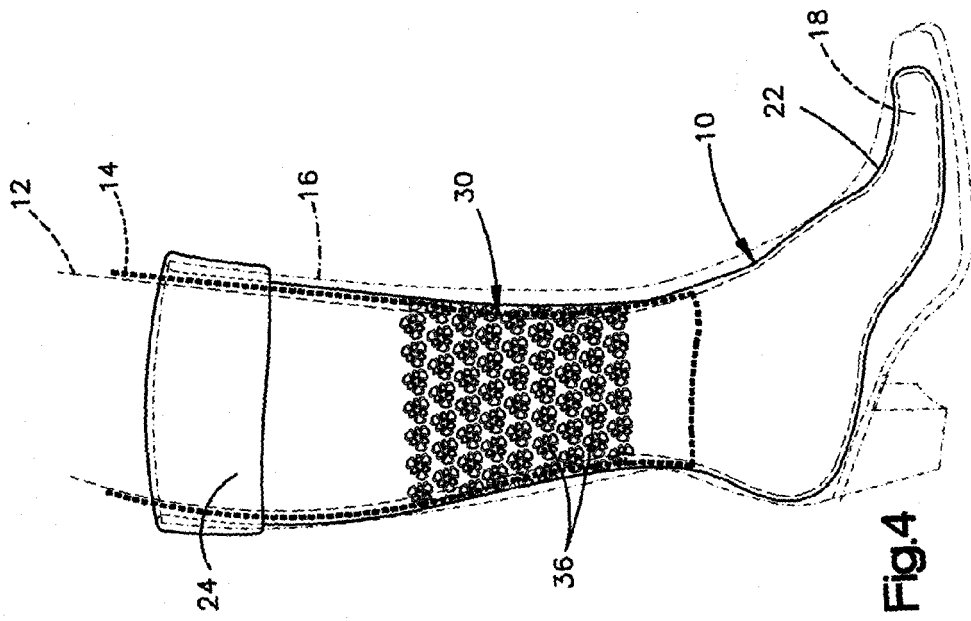
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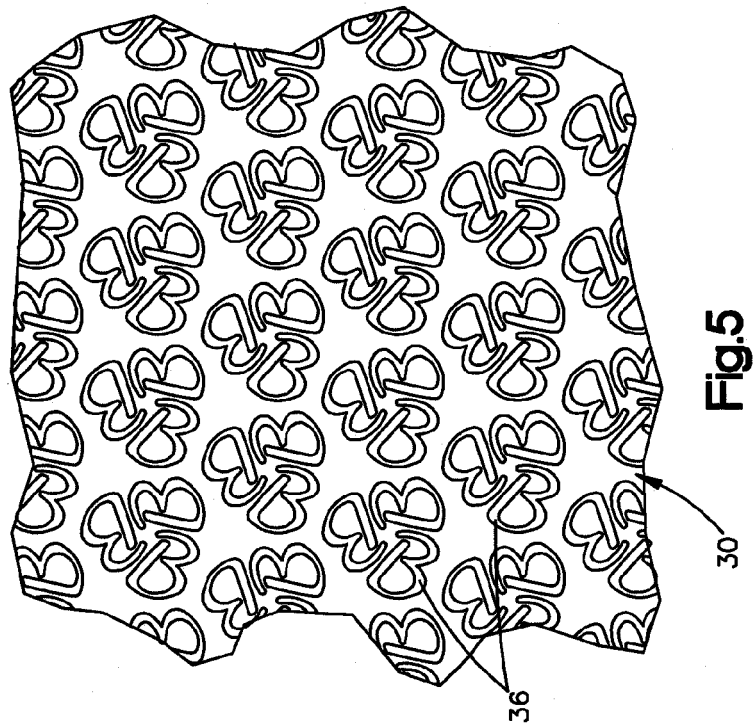
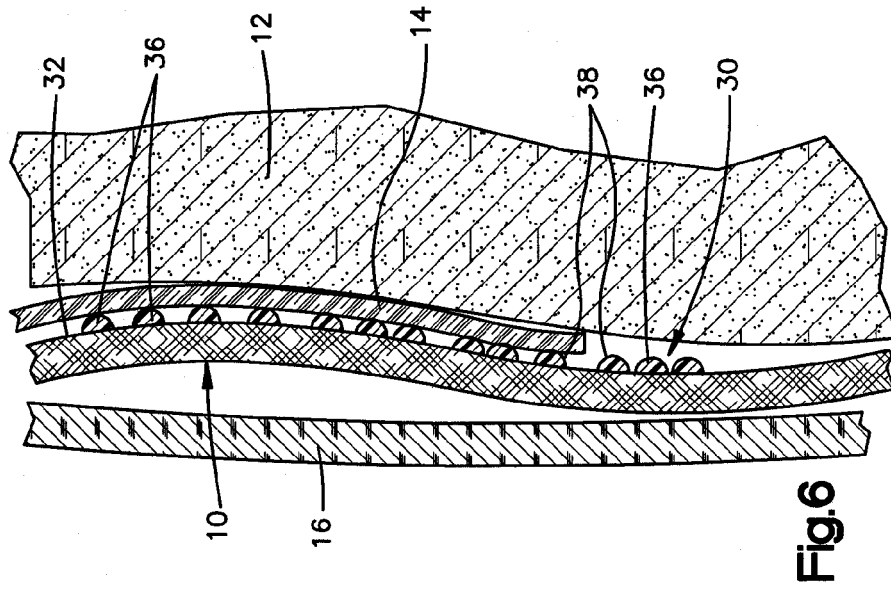
15. A sock for use on a wearer's leg, comprising:

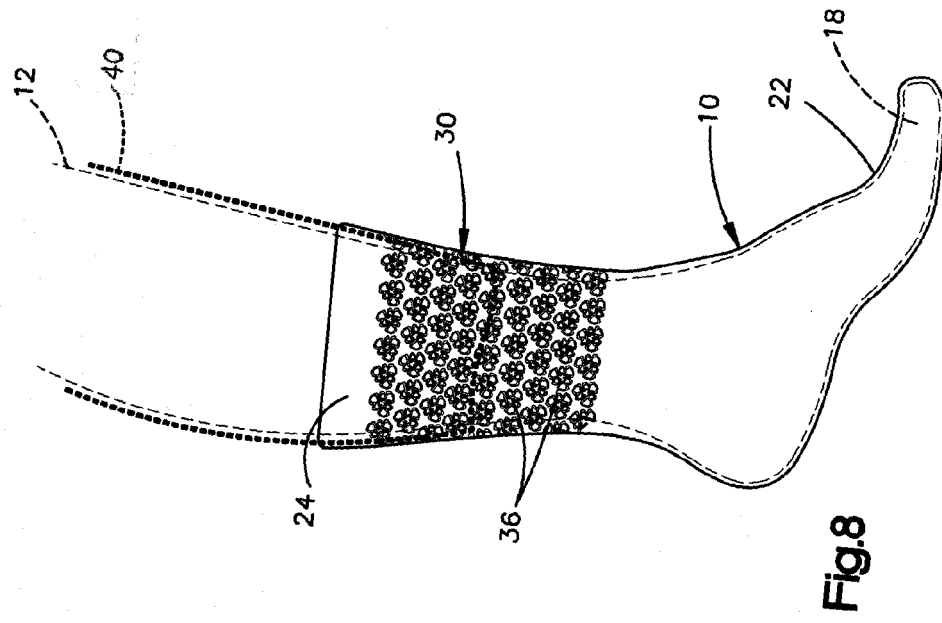
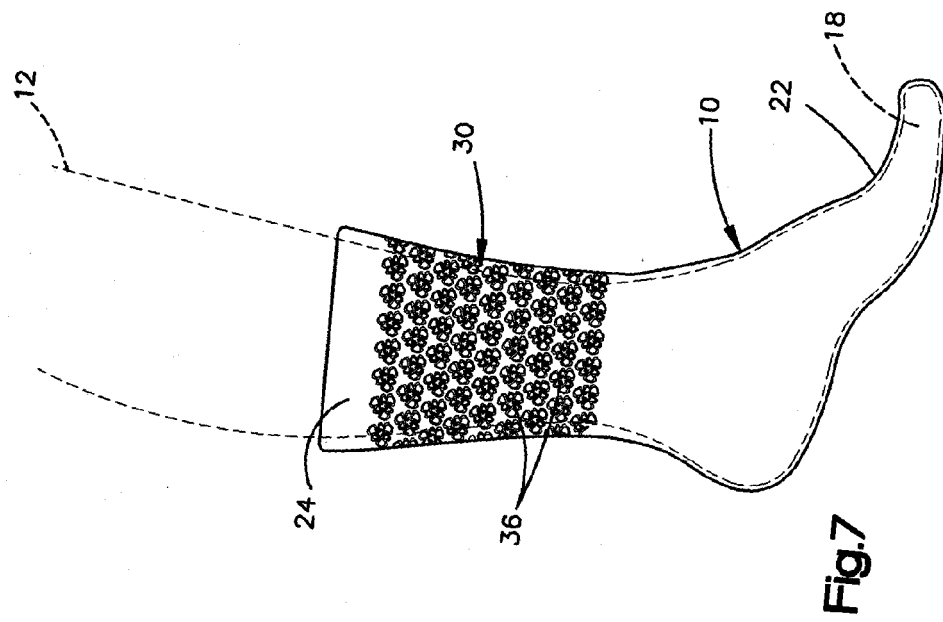
a foot portion for covering the foot of the wearer; and
a leg portion extending from the foot portion, for extending along the leg of the wearer; 50
the leg portion having an adhesive grip on its inner surface for gripping inwardly toward the wearer's leg. 55

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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