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H. P. MANVILLE

1,840,241

ARTICLE OF FOOTWEAR

Filed Nov. 13, 1930

Fig. 1.

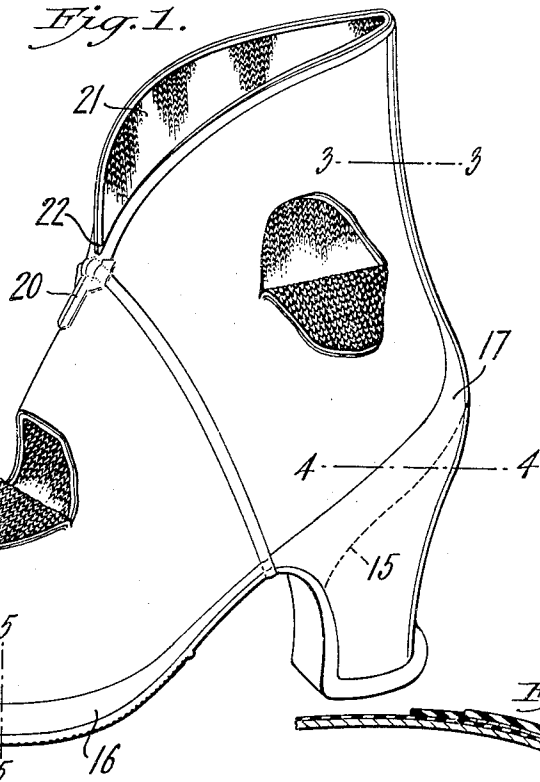


Fig. 3.

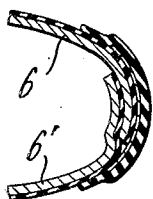


Fig. 4.

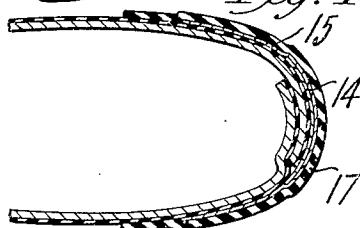


Fig. 2.

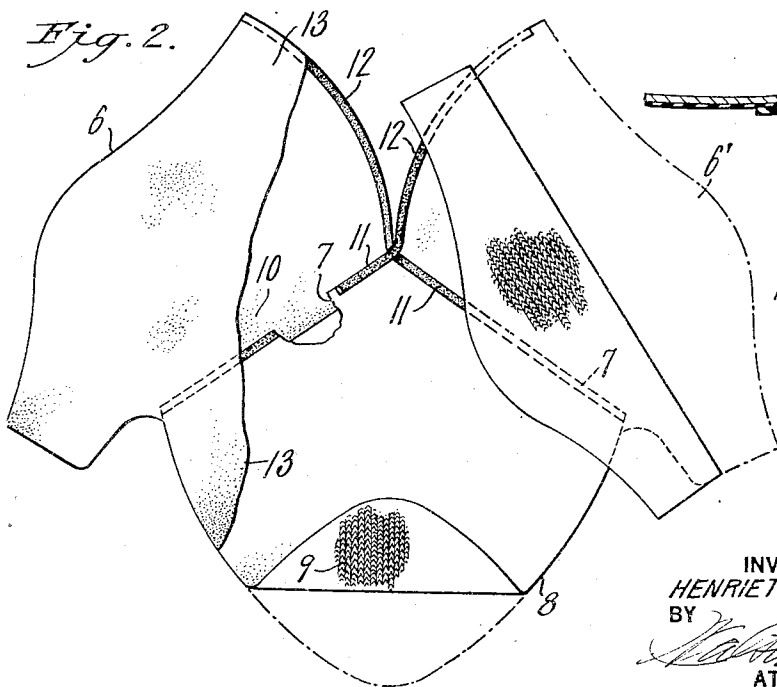
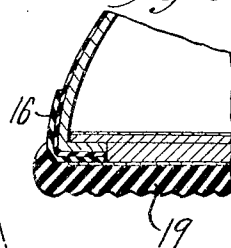


Fig. 5.



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ARTICLE OF FOOTWEAR

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This invention relates to the manufacture of waterproof footwear, more particularly of the type known as gaiters.

With particular reference to gaiters for use by women whose thin sheer hosiery and low quartered shoes make it necessary, or at least advisable, to provide for them a type of gaiter which not only protects the foot, and the shoe clad foot, from inclement weather, but also, and particularly, the hosiery against splashing the region well above the ankle, if not in proximity to the calf of the leg, this invention aims to provide a construction of gaiter serving these purposes, and at the same time, eliminating the necessity of providing a gaiter with a fastening construction, such as the so-called "multiple fasteners" or a pleated construction, such as "pockets" in what the public at large knows as arctic footwear. The invention in eliminating the so-called "multiple fasteners" and "pockets" cheapens the cost of manufacturing such footwear, and also the gaiters may be made form fitting to the enhancement of their appearance.

With the manufacture of gaiters for women particularly in mind, and without intention to limit more than is required by the prior art, the invention briefly stated consists in a gaiter with an upper that is complete, unbroken and without expansible folds to a height approximating the ankle joint at least in the front of the shoe, in the back thereof being higher. The material of the upper and its method of assembly permit such relatively high type of footwear to be slipped on and off the foot with celerity and facility.

One embodiment of the invention is illustrated in the accompanying drawings, in which:

Figure 1 shows a gaiter in perspective, parts of it being turned to expose the construction;

Fig. 2 is a plan view of the vamp and quarters of the upper in flat assembled relation prior to lasting;

Fig. 3 is a cross-section on the line 3—3 of Fig. 1;

Fig. 4 is a cross-section on the line 4—4 of Fig. 1; and

Fig. 5 is a cross-section on the line 5—5 of Fig. 1.

Referring to the drawings, particularly Figure 2, the quarters 6 and 6' are shown united by overlapping their margins indicated at 7 and 7' with a vamp 8. The quarters and vamp are of substantially identical construction excepting as to their shape, each being composed of a piece of knit lining material 9 the inner surface of which is not coated with rubber thereby being rendered as frictionless as possible to facilitate donning and doffing. The wales of each section of the knit lining 9 extend in the direction illustrated in the drawings so as to permit the assembled upper to stretch in directions transverse the path of movement of the foot when it is introduced or removed from the shoe. That is to say, the vamp is extensible across the front, and the quarters are extensible on a line parallel to the plane of the sole. At right angles, both the vamp and quarters are relatively inextensible.

In manufacturing the shoe the sections of the knit lining 9 are preferably first lightly rubberized on their outer surfaces by the application of a lining coat, or otherwise as convenient, in order to insure a good bonding thereto of an outer layer of rubber of substantial thickness (preferably around .015 of an inch but thicker or thinner if desired) of a rubber composition capable, after vulcanization, of stretching readily, if not to an optimum extent.

After the two quarters 6 and 6' and the vamp 8 have been initially rubberized as indicated at 10, and then united together by overlapping their margins as at 7 and 7', the joints are preferably, but not necessarily, reinforced by laying on a narrow bead of vulcanizable rubber composition 11. This bead 11 is desirably extended as indicated at 12 to reinforce what becomes the upper free edge of the gaiter. Then, over the assembled sections of the lining is applied a layer of substantial thickness of composition 13 which, as before indicated, is capable of stretching readily after its cure. This stock 13 is preferably made in one piece so that the surface of the finished shoe is smooth and

unbroken through its extent, excepting of course at the rear where its rear edges are joined together. This uniting of the parts of the upper proper is preferably effected before lasting, and in the overlapping relation shown in Fig. 4. After lasting, a back stay 14 is applied and over this in the region of the heel is applied a second reinforcement 15 also of thin rubberized fabric. A foxing 16, a gum heel piece 17, and a toe cap reinforcement 18 are then applied, these parts being preferably of vulcanizable rubber composition, after which the outsole and heel 19 are placed and stitched down.

A reinforcement 20 is preferably applied to the front of the shoe immediately at the juncture of the two quarters to resist the relatively great tendency to rupture at this point incident to the application or removal of the gaiter. While this reinforcement may be of any suitable material, it is preferably made of a substantial thickness of vulcanizable rubber composition and of a not unattractive appearance. It may be applied at any suitable and convenient time and preferably is applied immediately after the quarters and vamp have been assembled together in the flat and covered with the main waterproof layer 13, in the condition illustrated in Fig. 2 of the drawings. Instead of all rubber composition for this reinforcement, however, it in turn may be strengthened by incorporation of a piece of fabric (preferably bias cut or knit), if and as desired.

Gaiters made according to the above invention have an attractive appearance as is illustrated in Fig. 1 of the drawings. The opening 21 therein through which the foot is inserted and removed is preferably made about as shown with its low point 22 approximately in a plane passing through the ankle joint of the wearer and parallel to the sole. It should not be made lower than such plane if it is to afford the desired waterproof construction from the sole to such an elevation above the ground. It should not be cut so that this low point 22 in the opening 21 comes much higher than the aforementioned plane if the donning and doffing of the gaiter over a shoe clad foot is to be rendered easy and expeditious. On the other hand, the rear portion of the opening 21 is desirably made high, and about as shown, in order to protect the hosiery of the wearer from splashing in bad weather. This cut of the opening 21 not only protects and warms some of the leg, but when the shoes, as frequently happens, are worn in cold but fair weather, also permits the rear portion to be turned down to provide a cuffed effect varying the appearance of the gaiter to suit the whim of the wearer.

With the gaiter of the present invention the wearer may inexpensively provide her-

self with a neat, practical, stylish, footwear covering whose appearance may be slightly varied at will in any kind of weather, whether it be rainy, or snowy, or merely cold. The gaiter may be put on and taken off with celerity and without any chance of its becoming "locked" on the foot as has happened in connection with the so-called "multiple fasteners" compelling their destruction to remove.

The main feature of construction is the selection of the knit lining material and its outer covering of vulcanized rubber composition 13 whose thickness and whose character permit the composite wall afforded by their vulcanized union to not only be stretched, without rupture, to an extent permitting ingress and egress of the foot, but also resumption of the gaiter to normal size or to snug position about the ankle and leg of the wearer in service. The last named feature is particularly important and desirable if the gaiter is to meet the merchandising requirements of neat and stylish appearance. This end is attained particularly by suitably compounding the stock constituting the layer 13. While any number of suitable compositions may be employed one such suitable composition is as follows:—

Ingredients	Parts by weight	
Rubber-----	69.4	95
Sulphur-----	1.0	
An accelerator of the nitro phenol ester of dithiocarbamic acid class, one of which is known as "Safex"---	0.3	100
Zinc oxide-----	6.7	
Soft gas black, an example of which is known as "Fumónex"-----	5.3	
Whiting-----	17.3	105

The gaiter of this invention is extremely light and the wearer will not become unduly tired when occasion may demand a lengthy walk. It is perfectly waterproof because of its unbroken and continuous wall structure from the sole to a point at least as high as the ankle joint.

From the above the principle of the invention as applied to the manufacture of women's footwear of the gaiter type should be apparent. The invention is not limited to footwear for women as it may also be applied to men's footwear. Further, it is not limited to the details of construction above recited, and reference should therefore be made to the accompanying claims for an understanding of the scope and limits of the invention.

Having thus described my invention, what I claim and desire to protect by Letters Patent is:—

1. A waterproof gaiter comprising a sole and a flexible upper extending substantially to the sole for snugly fitting the form of a shoe-clad foot and ankle, said flexible upper

comprising a fabric ply and a rubber ply vulcanized to one surface of said fabric ply, said plies being extensible in directions substantially transverse to the path taken by a shoe-clad foot with respect to the gaiter when being donned or doffed through an opening at the top of the gaiter, the said opening being defined by the top edges of said upper, and said upper being so shaped that its top edges slope upwardly from the front of the gaiter and from near the height of the ankle toward the back of the gaiter and to a substantial distance above the ankle, the said upper being thereby formed with a relatively low cut front portion about which the gaiter may be pivoted on the front of the foot and ankle for facilitating the said donning and doffing, and with a relatively high back portion for protection against splashing.

2. A waterproof gaiter having a sole portion united to an upper, said upper comprising a knit lining the inner surface of which is substantially free of rubber composition and the outer surface of which is covered with and has vulcanizingly united thereto a layer of vulcanized rubber composition of substantially uniform thickness rendering it waterproof, said upper normally being of a predetermined shape approximately corresponding to a shoe clad foot in which shape said knit lining is substantially unstretched and consequently possesses its normal capacity to stretch, said upper being distensible in directions transverse the direction in which the shoe clad foot is moved relative the gaiter in its introduction and removal therefrom, said upper being complete and unbroken between the plane of the sole and a second plane parallel thereto but on the opposite side of the ankle joint, and said upper being substantially higher at the rear than at the front, whereby the introduction and removal of the foot is facilitated while protection is afforded against splashing at and adjacent the rear of the article.

3. A waterproof gaiter having a sole portion united to an upper, said upper comprising a lining of extensible knit fabric surfaced with vulcanized rubber on its exterior face by which said upper has a capacity to regain its form after being stretched over a shoe-clad foot, said upper normally being of a shape approximately corresponding to a shoe clad foot, said upper at the front center of the gaiter terminating adjacent a plane passing through the ankle joint of the wearer and parallel to the tread surface of the gaiter, said upper being higher at the rear than at the front center of the gaiter and terminating at the rear at an elevation protecting the leg of the wearer well above the ankle joint, the upper edge of said upper being reinforced against rupture incident to its distention in donning and doffing.

4. A waterproof gaiter having a sole portion united to an upper, said upper comprising a knit lining the inner surface of which is substantially free of rubber composition and the outer surface of which is covered with and has vulcanizingly united thereto a layer of vulcanized rubber composition of substantially uniform thickness rendering it waterproof, said upper normally being of a predetermined shape approximately corresponding to a shoe clad foot in which shape said knit lining is substantially unstretched and consequently possesses its normal capacity to stretch, said upper being distensible in directions transverse the direction in which the shoe clad foot is moved relative the footwear in its introduction and removal therefrom, said upper being complete and unbroken between the plane of the sole and a second plane parallel thereto but on the opposite side of the ankle joint, the knit lining of said upper being composed of two quarters and a vamp and the wales of which knit lining extend in an up and down direction relative the foot and leg to which the gaiter is to be applied, said quarters and vamp being joined together to make at least two seams extending from the sole in the region of the instep to a point in proximity to the lowest portion of the opening through which the foot of the wearer is moved in donning and doffing the gaiter.

5. A waterproof gaiter having a sole portion united to an upper, said upper comprising a lining portion of fibrous material not substantially resisting the introduction and removal of a shoe-clad foot and comprising also a layer of rubber composition substantially covering the lining and rendering it waterproof, said upper normally being of a predetermined shape approximately corresponding to a shoe-clad foot in which shape said lining is substantially unstretched, any cross section of the upper approximately corresponding to the outline of a similarly located cross section through a shoe-clad foot adapted to be received by the gaiter, the lining and rubber covering the lining together constituting an upper distensible in directions transverse to the direction in which a shoe-clad foot is moved, and to regions approximating the union of the upper to the sole portion, said upper being complete and unbroken between the plane of the sole and a second plane parallel thereto but on the opposite side of the ankle joint, said upper being provided with an opening for the introduction and removal of a shoe-clad foot, the top edges of the upper which define the opening appearing in side elevation as an approximate continuation of the portions of the upper which overlie the instep.

6. A waterproof gaiter comprising a sole portion and a flexible upper portion extending substantially to the sole for snugly fitting

the form of a shoe-clad foot and ankle, said flexible upper portion comprising a fibrous layer and a rubber layer vulcanized together and of sufficient body to maintain the gaiter in a shape approximately corresponding to a shoe-clad foot when disposed in service position, said combined layers being extensible in directions substantially transverse to the path taken by a shoe-clad foot with respect to the gaiter when being donned or doffed through an opening at the top of the gaiter, and said upper being so shaped that a material portion thereof adjacent said opening lies above and covers the ankle joint of the wearer and slopes upwardly from the front toward the rear of the gaiter, the front of said opening terminating near the height of the ankle and far enough up on the upper so that the portion of the upper thereabove closely conforms to the leg at and above the ankle by reason of the self-supporting and resilient characteristics of the material of the upper.

Signed at New Haven, county of New Haven, State of Connecticut, this 10 day of November, 1930.

HENRIETTA PORR MANVILLE.

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