H. M. GUENTHER.

VENTILATING OVERSOCK FOR BOOTS AND SHOES.

APPLICATION FILED JUNE 4, 1907.

945,036. Patented Jan. 4, 1910.

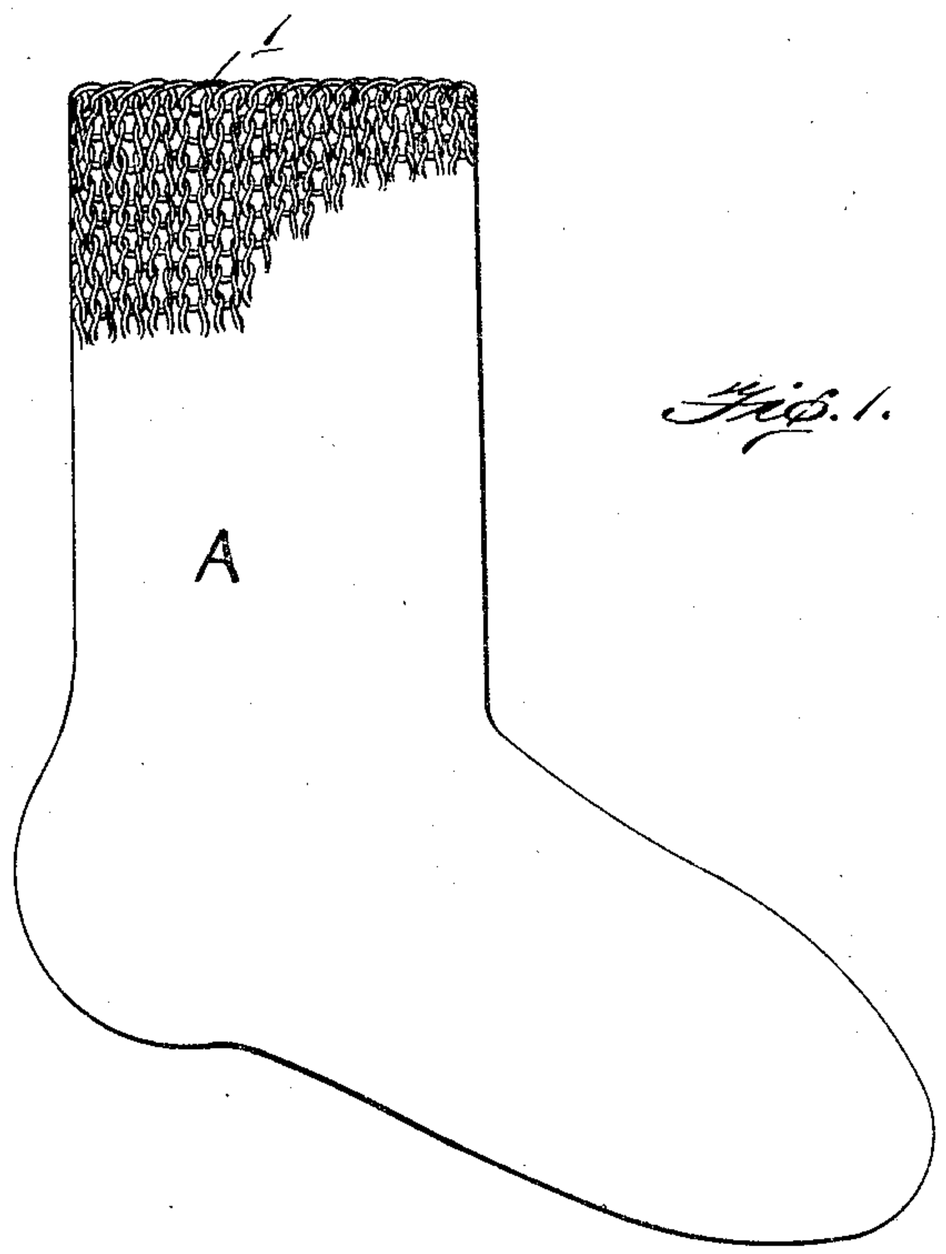


Fig. 1.

Fig. 2.

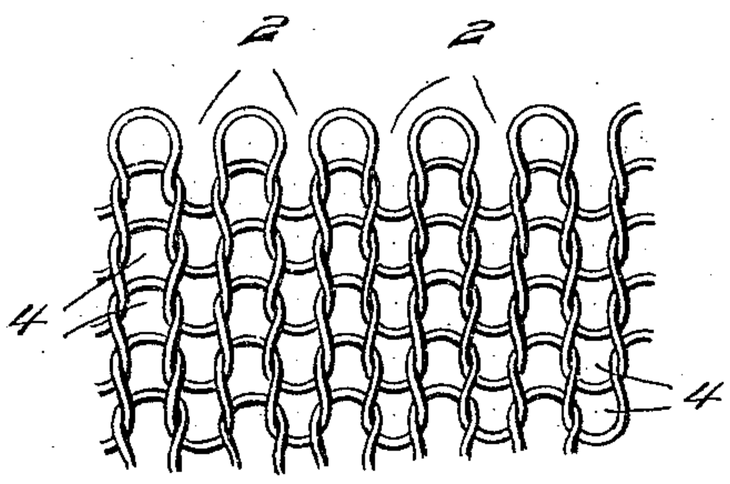
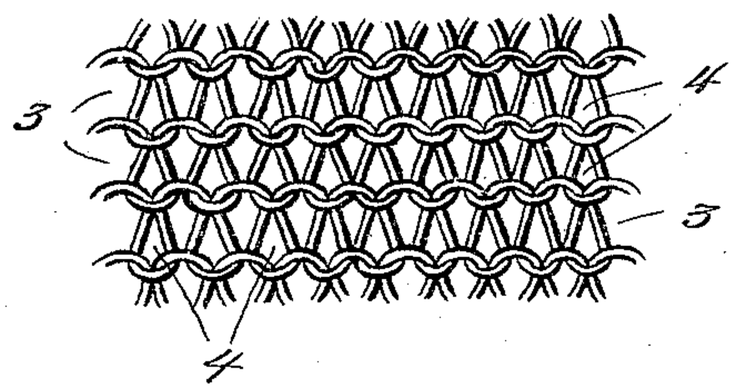


Fig. 3



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UNITED STATES PATENT OFFICE.

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VENTILATING-OVERSOCK FOR BOOTS AND SHOES.

945,036. Specification of Letters Patent. Patented Jan. 4, 1910.

Application filed June 4, 1907. Serial No. 377,195.

To all whom it may concern:

Be it known that I, HERMANN MAX GUENTHER, a citizen of the German Empire, residing at Centralia, in the county of Lewis and State of Washington, have invented certain new and useful Improvements in Ventilating-Oversocks for Boots and Shoes, of which the following is a specification.

My invention relates to an improvement in ventilating means for water tight boots and shoes.

The main object of my invention is to keep the feet dry while wearing water tight boots or shoes by providing a new and convenient ventilating device in the form of a sock made of a hard, non-felting fiber loosely knitted together, which, owing to the non-felting properties of the fiber, provides and maintains air spaces and channels suitable for the purpose of ventilation.

Socks or oversocks made of a soft material do not permit of the circulation of air within the boot or provide any means for ventilation, but felt and mat together under the action of the perspiration and the pressure of the foot in the act of walking. Moreover when a sock made of ordinary material gets thoroughly wet it becomes a comparatively good conductor of heat, so that in cold weather the foot of the wearer rapidly becomes chilled. If the weather is warm, on the contrary the confinement of the heated moisture absorbed by the sock or oversock in proximity to the foot itself tends to cause the "scalding" of the latter and the consequent discomfort arising from it.

The purpose of the present invention is to provide an article which obviates the objections noted above and which possesses other features that tend to make up a comfortable, while at the same time a durable and efficient ventilating means in the form of an oversock.

My invention is illustrated in the accompanying drawings which form a part of this specification and in which—

Figure 1 is an outline view of my invention in the form of an oversock. Fig. 2 is an enlarged, detail outside view of a section of my invention. Fig. 3 is an enlarged inside view of a section.

Referring to Fig. 1, A represents my invention in the form of a sock which may be made of any desired shape. The material from which it is made is a comparatively hard fiber, preferably hemp. The hemp fiber is spun and the sock knitted on machinery suitably constructed for the purpose, a description of which however forms no part of this present application. The ventilating sock is made of comparatively large strands 1 of fiber, knitted by what is known as the "loop" stitch, as clearly shown in Figs. 2 and 3. An inspection of Fig. 2 will show that this manner of knitting provides a fabric having a series of approximately parallel vertical channels 2 on one side while on the reverse side the channels 3 are horizontal as shown in Fig. 3. The fabric is loosely woven to provide air spaces 4 and to provide room for a movement or play of the strands 1, the latter feature constituting an important part of my invention as will be shown hereinafter.

With ventilating socks such as described above a wearer of rubber boots may keep his feet warm and dry. The perspiration is not absorbed by the fiber but collects on the surface of the strands. Owing to the loose texture of the fabric, the movement of the strands upon one another, following the motion of the foot draws air into and expels it from the air spaces 4 and the channels 2 and 3. The numerous horizontal and vertical channels permit the passage of the heated moisture and it is carried away. Thus the ventilation of the boot is accomplished automatically. In practice it has been found that the amount of air drawn in and expelled in the act of walking is sufficient to maintain the sock in a uniformly dry condition. It will be seen at once that this is an important function that cannot be performed by a sock made of some soft absorbent material even if it should be loosely woven. Such a fabric would absorb the moisture, felt and mat together and thus prevent the circulation of any air within the boot or shoe and around the foot, and would moreover become a good conductor of heat. This is precisely what occurs with the use of soft absorbent oversocks. Especially is this true of the boots worn by placer miners who work for hours in cold streams. The oversock becomes damp from perspiration and the cold of the stream is communicated to the foot of the miner through the damp matted fabric.

The non-felting, non-absorbing and non-conducting properties of my ventilating oversock together with the fact that the loosely knit fabric is adapted to automatic-

ally ventilate the boot of the wearer makes the article particularly useful for the purpose for which it was invented.

My ventilating sock may be worn as a sock is usually worn with ordinary shoes in moderate climates, and when so used, the part extending above the shoe top can be made of any other material, either lighter or finer.

It is obvious that my improved fabric might be used for other articles of wear such as linings for slippers, gloves, etc. I therefore do not wish to limit myself to the form herein described but desire to include all such forms as fairly fall within the spirit and scope of my invention.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A ventilating device for boots and shoes, comprising a foot-covering of loosely knitted fabric, made of a non-felting and non-conducting hard fiber, whereby air spaces and channels are provided and maintained to permit the circulation and escape of the air and moisture.

2. A ventilating device for boots and shoes, comprising a foot-covering of loosely knitted fabric, having air spaces and continuous channels and made entirely of a non-felting, non-absorbent and non-conducting hard fiber, whereby said air spaces and channels are maintained in operative condition around the foot of the wearer, to permit the circulation and escape of the air and moisture.

3. A ventilating device for boots and shoes comprising a sock made of a non-felting and non-conducting hard hemp fiber, loosely knitted together, whereby air spaces and channels are provided and maintained around the foot of the wearer to permit the circulation and escape of the air and moisture, substantially as described.

4. A ventilating device of the character described, having a foot portion and an integral leg portion, said foot and leg portions being made entirely of a loosely knitted fabric having air spaces and continuous channels, and made of a non-felting, non-absorbent and non-conducting hard hemp fiber, whereby said air spaces and channels are maintained in operative condition around the foot and leg of the wearer, said channels constituting passages to permit the circulation and escape of the air and moisture.

In testimony whereof I have affixed my signature in presence of two witnesses.

HERMANN MAX GUENTHER.

Witnesses:
H. L. Rust,
Edward M. Weeks.