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(54) **SOLED SOCK WITH NON-SKID BOTTOM**

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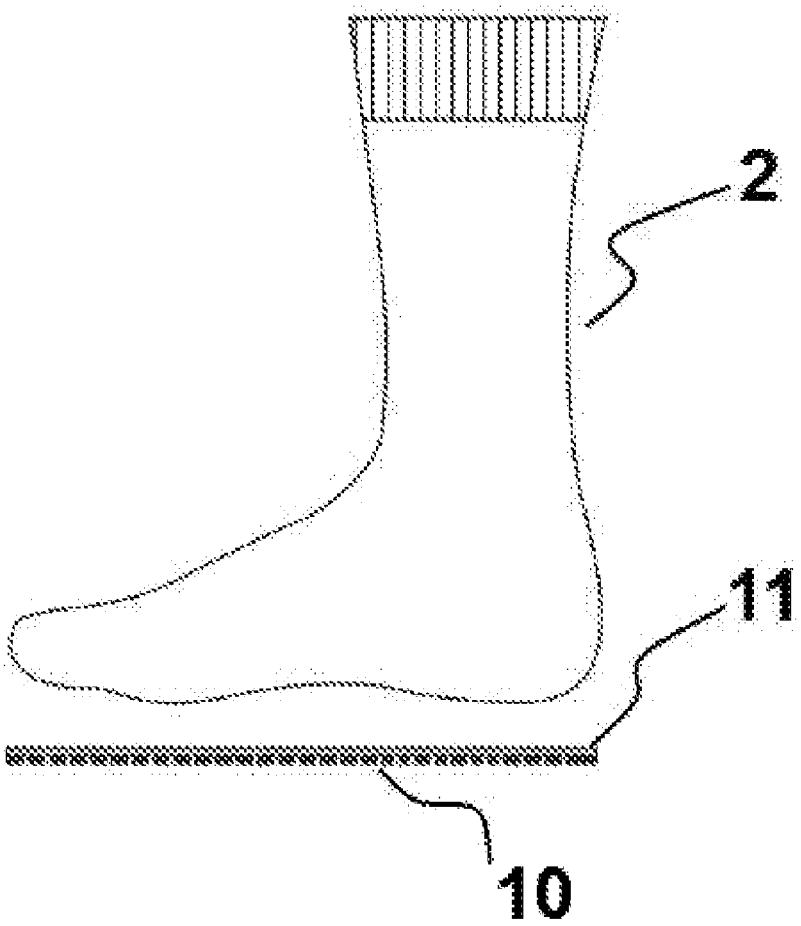
(57) **ABSTRACT**

Soled socks with non-skid bottom which are formed by placing a sole of woven or non-woven fabric material onto the soft plastic material.



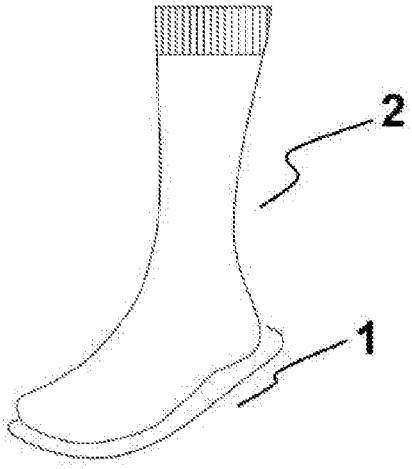



Fig. 1

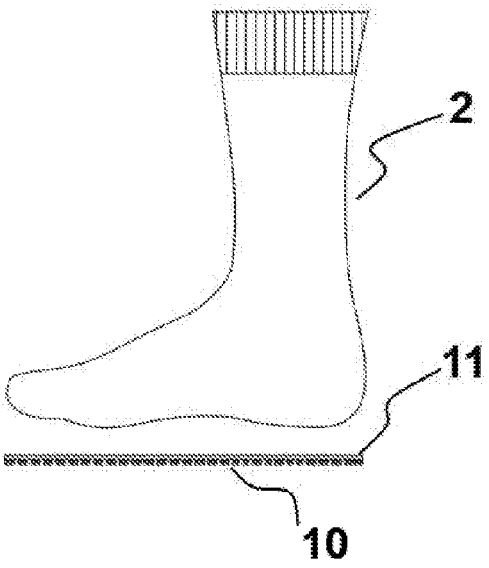



Fig. 2

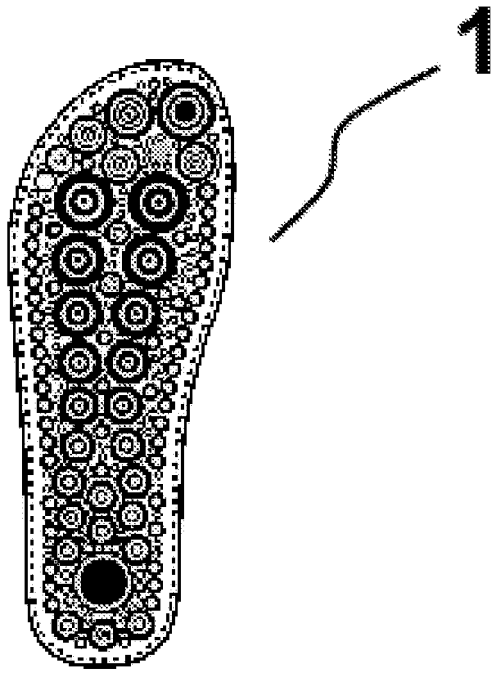



Fig. 3

# SOLED SOCK WITH NON-SKID BOTTOM

## CROSS-REFERENCE TO RELATED U.S. APPLICATIONS

**[0001]** Not applicable.

## STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

**[0002]** Not applicable.

## NAMES OF PARTIES TO A JOINT RESEARCH AGREEMENT

**[0003]** Not applicable.

## REFERENCE TO AN APPENDIX SUBMITTED ON COMPACT DISC

**[0004]** Not applicable.

## BACKGROUND OF THE INVENTION

**[0005]** 1. Field of the Invention

**[0006]** The invention relates to soled socks with non-skid bottom which are formed by placing a sole of woven or non-woven fabric material onto the soft plastic material, sewed on bottom of sock.

**[0007]** 2. Description of Related Art Including Information Disclosed Under 37 CFR 1.97 and 37 CFR 1.98.

**[0008]** One of the unexpected accidents in home or other indoor places is skidding of the socks used on the floor. A number of injuries and damages on body may occur because of such accidents. In order to avoid this kind of accidents, socks with non-skid bottoms thereunder are used in our day. However, there are a number of disadvantages of these non-skid socks used in state of art.

**[0009]** One of them is the silicone prints applied underside of the socks in the serigraph models. Said silicone print is performed directly onto the socks. Accordingly, they are not real bottoms. As the lower surface is silicone, adequate heating cannot be provided and this situation leads to health problems.

**[0010]** Another disadvantage is the short lifetime of the socks with silicone printed surfaces on the bottom thereof. The silicone printed surface may cause problems during or after the wash. Washing the socks with silicone printed surfaces causes the socks to stick and this causes the dirt and dust to stick thereon. As the socks stick, it is difficult to split the sticky surfaces. Trying to split these sticky silicone surfaces causes the socks to be torn on their sides.

**[0011]** Another disadvantage is that silicone is a carcinogenic material. Contacting this silicone material directly with skin is very harmful, which is very important especially for babies.

**[0012]** One of the applications confronted during the searches conducted in the literature is a utility model application with publication no. TR2014/09874 belonging to the Applicant Strumps Ayakkabi Ve Giyim Sanayi Ticaret Anonim Sirketi. The invention consists of 3 superimposed main layers and 1 optional layer. These main layers are made of soft plastic material, fabric material and ethyl vinyl acetate (EVA) and the optional layer is made of leather. Some of the layers used herein have some disadvantages.

**[0013]** One of the disadvantages is that ethyl vinyl acetate (EVA) layer goes up to the invisible part inside the bottom (between the socks surface and bottom). As the optional leather layer is non-breathable, there is a need for making holes on the leather. When a hole is made, The EVA material comes out from the holes between the socks surface and bottom and it causes trouble during walking

**[0014]** Using leather material optionally in the present invention is for usage of the product in the cold countries where the temperature is under 0° C. However, when leather material is used, some problems may occur during washing the product. When leather material is optionally used, the washing water should be at low degrees and when they are exposed to water of high degrees as a result of unconscious usage, they can be damaged.

**[0015]** A similar disadvantage in the present invention is that obtained bottom is not very soft and that it is very heavy as it comprises a number of layers. Moreover, a number of layers cause loss in manufacture process in terms of time and cost.

**[0016]** Consequently, above mentioned problems and the inefficiency of the existing solutions necessitate a development in the related technical field.

## BRIEF SUMMARY OF THE INVENTION

**[0017]** The present invention relates to soled socks with non-skid bottom developed in order to eliminate the above mentioned disadvantages and to provide new advantages in the related technical field.

**[0018]** The object of the invention is to provide a sole to a sock with non-skid bottom comprising of woven or non-woven fabric material placed onto the soft plastic material, the sole then is sewed on bottom of socks.

**[0019]** Another object of the invention is to provide profit during manufacture process in terms of time and cost thanks to the few number of layers.

**[0020]** A similar object of the invention is to provide a softer product thanks to its 2 layers compared to 3 main layers and 1 optional layer used in state of art.

**[0021]** Another object of the invention is to provide a lighter product thanks to its 2 layers. By this means, ease of use is provided.

**[0022]** Another object of the invention is to provide layers made of easy wash material and to provide a faster drying period after washing thanks to these layers.

**[0023]** A similar object of the invention is to meet the customer satisfaction as it is cold-proof thanks to its real non-skid bottom.

**[0024]** Another object of the invention is to provide more long-lasting socks with non-skid bottom compared to the normal and silicone printed socks.

**[0025]** Another object of the invention is to provide semi-orthopedic socks. Thanks to its bottom structure made of soft plastic material having a special impact absorber form, a massage effect is provided by applying pressure to the front, middle and rear foot sites of the user's sole.

**[0026]** Another object of the invention is to provide socks with non-skid bottom made of non-carcinogen and non-deleterious materials by eliminating the disadvantages caused by the use of silicone in state of art.

**[0027]** The structural and characteristic features and all of the advantages of the present invention mentioned below can be understood more clearly thanks to the drawings and the detailed description given with reference to these drawings. Therefore, the assessment should be performed by taking these drawings and detailed description into account.

## BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

**[0028]** FIG. **1** is the perspective view of an alternative embodiment of the socks with non-skid bottom of the present invention.

**[0029]** FIG. **2** is a view showing the non-skid bottom layers of the socks with non-skid bottom of the present invention in an alternative embodiment.

**[0030]** FIG. **3** is the view of the non-skid bottom from below.

## DESCRIPTION OF PART REFERENCES

**[0031]** **1**. Non-skid bottom

**[0032]** **10**. Soft plastic material

**[0033]** **11**. Fabric material

**[0034]** **2**. Socks

## DETAILED DESCRIPTION OF THE INVENTION

**[0035]** In this detailed description, the preferred embodiment alternatives of the socks (**2**) with non-skid bottom of the present invention is described only for clarification of the subject and should not be considered as limiting the scope of the invention.

**[0036]** In FIG. **1**, a perspective view of an alternative embodiment of the socks (**2**) with non-skid bottom (**1**) of the present invention can be seen; and layers of the non-skid bottom can be seen in FIG. **2**. The non-skid bottom (**1**) of the present invention comprises woven or non-woven fabric material (**11**) placed onto the soft plastic material (**10**).

**[0037]** First of all, the soft plastic material is placed into the mold according to the structure and size of the foot to be used. After a curtained period of time, the material is taken out of the mold, placed into the oven and it is solidified after being held at a certain temperature for a certain period and waited. Woven or non-woven fabric material (**11**) is placed onto the solidified soft plastic material (**10**). In a preferred embodiment of the present invention the fabric material (**11**) is felt. The bottom structure (**1**) of the present invention is formed by combining the soft plastic material (**10**) with woven or non-woven fabric material (**11**) in a heating press machine (FIG. **3**).

**[0038]** The soft plastic material (**10**) constituting the bottom (**1**) of the present invention is one of the followings selected from a group consisting of polyvinyl chloride (PVC), polyethylene (PE), high-density polyethylene (HDPE), cross-linked polyethylene (XLPE), thermoplastic, liquid crystal (Thermochormic), polybenzimidazole (PBI), thermoplastic polyurethane (TPU), vinyl polymer, thermoplastic elastomer (TPE), polyolefin (POE), polyisobutylene (PIB), ethylene-propylene rubber (EPR), ethylene-propylene diene rubber (EPDM), polypropylene (PP), polybutylene (PB), natural rubber, silicone rubber, polyisoprene synthetic rubber, latex, polytetrafluoroethylene (PTFE), elastomer, thermoplastic rubber, liquid silicone rubber, polyurethane (PU), ethyl vinyl acetate (EVA), phthalate, bioplastic and biopolymer or combinations thereof.

**[0039]** The fabric material (**11**) constituting the bottom (**1**) of the present invention can be made from woven or non-woven fabric.

**[0040]** The fabric material (**11**) constituting the bottom (**1**) of the present invention can be made from tricot fabric.

**[0041]** The soft plastic material (**10**) constituting the bottom (**1**) of the present invention has a bottom structure with a special impact absorber form.

**[0042]** Said non-skid bottom (**1**) is manufactured in the form of a foot and then it is stitched to the socks. Therefore, socks (**2**) with non-skid bottom (**1**) are obtained.

**1**. Socks with a non-skid bottom engaged to an underside thereof, characterized in that, said non-skid bottom comprises a fabric material placed onto the soft plastic material.

**2**. Socks according to claim **1**, characterized in that, said fabric material is a woven fabric.

**3**. Socks according to claim **1**, characterized in that, said fabric material is a non-woven fabric.

**4**. Socks according to claim **1**, characterized in that, said fabric material is felt.

**5**. Socks according to claim **1**, characterized in that, said fabric material is tricot.

**6**. Socks according to claim **1**, characterized in that, said soft plastic material has a bottom structure with a special impact absorber form.

**7**. Socks according to claim **1**, characterized in that, said soft plastic material comprises one of the followings selected from a group consisting of polyvinyl chloride, polyethylene, high-density polyethylene, cross-linked polyethylene, thermoplastic, liquid crystal, polybenzimidazole, thermoplastic polyurethane, vinyl polymer, thermoplastic elastomer, polyolefin, polyisobutylene, ethylene-propylene rubber, ethylene-propylene diene rubber, polypropylene, polybutylene, natural rubber, silicone rubber, polyisoprene synthetic rubber, latex, polytetrafluoroethylene, elastomer, thermoplastic rubber, liquid silicone rubber, polyurethane, ethyl vinyl acetate, phthalate, bioplastic and biopolymer or combinations thereof.

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