Antimicrobial shoe incorporating a removable sole

DESCRIPTION OF THE INVENTION

The present invention refers to a detachable anti-bacterial shoe, comprising a sole to whose main body a front tread and a rear tread are attached by means of a magnetic joint, which facilitates the assembly and disassembly of the same.

The treads infer the antimicrobial characteristics to the footwear as a whole, as they are made from a polymeric material, thermoplastic polyurethane (TPU), mixed with silver nanoparticles, which are responsible for the antibacterial effect.

These silver nanoparticles confer an antibacterial nature that makes the footwear especially useful for use in healthcare settings where a large number of pathogenic bacteria proliferate.

For this reason, these shoes are highly effective against pathogens, and prevent cross-contamination, which is very common in the healthcare and food sectors, as the treads can be easily replaced when the user moves to other areas.

TPU is a material of significant stiffness so the front and rear treads incorporate certain design elements that offer a mechanical performance that makes the whole bottom assembly more flexible, so that during use it is perceived by the user as more comfortable. The treads have in their design transverse bellows located in the front tread, and grooves located in both the front and rear tread, ensuring an anti-slip effect by promoting the drainage of any potential fluids present in the contact surface of the tread with the floor.

MARKET APPLICATION SECTORS

The invention could be applied to the use of occupational footwear in healthcare and food industry settings.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

The present invention entails the following advantages:

- Anti-bacterial sole with the possibility of replacing the front and rear treads without the use of auxiliary tools, the only requirement being that the user applies a force opposite to the joint between the body of the footwear and the tread to facilitate its removal.
- The user who wears the footwear of the invention will not need to take off his/her shoes to replace the treads, as they can be replaced manually with the shoes on.
- The use of footwear with interchangeable soles prevents the transfer of pathogens from one room to another, avoiding the recurrent cross-contamination by people's movement that is very common in hospitals and industrial kitchens.
- The detachable antibacterial footwear described in this invention is economically advantageous, since during its use it allows the easy replacement of the antibacterial treads at a low cost, as the body of the footwear remains unchanged, and only the specific accessories that come into contact with the floor are removed,

i.e. the removable treads or accessories that confer on the footwear its detachable nature.

CURRENT STATE OF DEVELOPMENT

The efficacy of this technology has been proved by means of laboratory antimicrobial assays and wear trials conducted in Elda's General Hospital, Valencia Region.

INTELLECTUAL PROPERTY RIGHTS

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COLLABORATION SOUGHT

- Footwear sole manufacturing companies.
- Occupational footwear manufacturing companies.

RELATED IMAGES

See attached images.

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