

A CONTOURED SHOE INSOLE THAT PROVIDES FOOT ARCH SUPPORT

TECHNICAL FIELD OF THE INVENTION

5 This invention relates to a shoe insole that provides foot arch support for footwear, and more particularly to a shoe insole that provides arch support contoured to the arches of the foot to stimulate cleansing, rejuvenation, and soothing of the human body.

10

BACKGROUND OF THE INVENTION

The arches of the foot supports the weight of the human body in the upright position with minimal pressure. There are two conditions that prevalently affect the arches of the foot. Firstly, flat foot (low-arched feet) is a condition where the
15 arches of the feet are low, or when there are no arches. This condition may cause strain to the muscles and ligaments of the arch, making it painful to walk. Secondly, cavus foot (high-arched feet) is the opposite condition where the foot arch is abnormally high, and is likely to be caused by a bone or nerve condition. High-arched feet causes strain on the section of the foot between the ankle and
20 toes, which also causes pain when walking.

Among the suggested treatments for these foot conditions are the use of orthotic devices, modified shoes, braces, or casts. There are plenty of orthotic devices available in the market, but it is particularly difficult to obtain an orthotic insole
25 that offers health benefits to the entire human body.

Tourmaline is a complicated mineral group which includes several minerals, which exhibit different properties. Due to its chemical nature and structure, tourmaline generates negative ions when external pressure is applied to it.
30 Negative ions are believed to be important in alleviating symptoms of certain health conditions such as eczema, difficulty sleeping, and high blood glucose. As tourmaline is a mineral that emits negative ions, it is believed that tourmaline can be used to improve quality of life and provide health benefits to the human body.

Therefore, it is desirable that tourmaline be included in the insole providing arch support for footwear to treat arch conditions while offering positive therapeutic, health, and biological effects to the entire human body.

5 China patent application no. 2556963Y disclosed a utility model that provides insole with tourmaline. US patent application publication no. 20060090369 A1 disclosed an insole made of a fiber layer mixed with bonding agent, foaming agent, and Dravite powder. US patent application publication no. 20140230273 A1 disclosed an orthotic massaging insoles utilising glycerine gel infused with
10 negative ion minerals and sealed in a pocket. It can be seen that the insole of the prior arts are not contoured to the arches of the foot and is made of different materials that do not warrant a secured fix to the footwear.

Accordingly, it can be seen in the prior arts that there exists a need to provide an
15 arch support contoured to the arches of foot for treating arch conditions while offering positive therapeutic, health, and biological effect to the entire human body.

20 SUMMARY OF THE INVENTION

It is an objective of the present invention to provide an insole providing arch support contoured to the arches of foot to stimulate cleansing, rejuvenation, and soothing of the human body. It is also an objective of the present invention to provide an insole providing arch support contoured to the arches for treating
25 high-arched and low-arched feet.

It is another objective of the present invention to provide an insole containing tourmaline and provides foot arch support.

30 These objectives may be achieved by the disclosure of the following embodiments of the present invention. The present invention discloses a contoured insole providing arch support for footwear, comprising: a foot pad positioned beneath the arch of a foot; an arch mould positioned on the sole of a

footwear; and a locking layer fixed to the bottom of the arch mould for securing the arch mould to the footwear. The foot pad is made of a pliable material while the locking layer is made of thermoplastic material such as polypropylene (PP), low-density polyethylene (LDPE), or polyvinyl chloride (PVC); or thermoplastic elastomer (TPE) compound such as thermoplastic rubber (TPR).

The arch mould further comprises a mixture of 15 – 20% carbon black, 80 – 85% tourmaline powder, and 10 – 15% titanium oxide, moulded to include a front portion as a base to the metatarsals, a rear portion as a base to the heel, an elevated portion to support the lateral longitudinal arch and medial longitudinal arch, and a cut-away central portion with reduced thickness for relieving pressure on the plantar fascia.

BRIEF DESCRIPTION OF THE DRAWINGS

The features of the invention will be more readily understood and appreciated from the following detailed description when read in conjunction with the accompanying drawings of the preferred embodiment of the present invention, in which:

20

Figure 1 shows a cross-section view of a contoured insole that provides arch support.

Figure 2 shows a perspective view of the contoured insole that provides arch support.

25

DETAILED DESCRIPTION OF THE INVENTION

The above mentioned and other features and objects of this invention will become more apparent and better understood by reference to the following detailed description. It should be understood that the detailed description made known below is not intended to be exhaustive or to limit the invention to the precise disclosed form as the invention may assume various alternative forms.

30

On the contrary, the detailed description covers all the relevant modifications and alterations made to the present invention, unless the claims expressly state otherwise. The present invention will now be described with reference to Figures 1 - 2.

5

The following embodiments describe a contoured insole providing arch support for footwear to stimulate cleansing, rejuvenation, and soothing of the human body. Referring to Figures 1 and 2, the contoured insole providing arch support comprises: a foot pad (10) positioned beneath the arch of a foot; an arch mould
10 (20) positioned on the sole (40) of a footwear; and a locking layer (30) fixed to the bottom of the arch mould (20) for securing the arch mould (20) to the footwear. In an embodiment of the present invention, the foot pad (10) is made of a pliable material comprising rubber. In a further embodiment of the present invention, the locking layer (30) is made of thermoplastic material such as
15 polypropylene (PP), low-density polyethylene (LDPE), or polyvinyl chloride (PVC); or thermoplastic elastomer (TPE) compound such as thermoplastic rubber (TPR). In an embodiment of the present invention, the present invention implements an eco-friendly process by using recycled rubber crumbs obtained from recycled rubber products (e.g. tyres) as a raw material.

20

The arch mould (20) further comprises a mixture of 15 – 20% carbon black, 80 – 85% tourmaline powder, and 10 – 15% titanium oxide, moulded to include a front portion as a base to the metatarsals, a rear portion as a base to the heel, an elevated portion to support the lateral longitudinal arch and medial longitudinal
25 arch, and a cut-away central portion with reduced thickness for relieving pressure on the plantar fascia.

In another embodiment of the present invention, the contoured insole providing arch support further comprises anti-bacterial and/or anti-odour agents. It is also
30 an embodiment of the present invention that the insole providing arch support is contoured to high-arched feet and low-arched feet for reducing pain while walking.

Although the present invention has been described with reference to specific embodiments, it will be apparent for those skilled in the art that many variations and modifications can be done within the scope of the invention as described in the specification and defined in the following claims.

CLAIMS

1. A contoured insole providing arch support for footwear to stimulate cleansing, rejuvenation, and soothing of the human body, comprising:
 - 5 a) a foot pad (10) positioned beneath the arch of a foot;
 - b) an arch mould (20) positioned on the sole (40) of a footwear; and
 - c) a locking layer (30) fixed to the bottom of the arch mould (20) for securing the arch mould (20) to the footwear;
 - characterised in that:
 - 10 d) the arch mould (20) comprises a mixture of 15 – 20% carbon black, 80 – 85% tourmaline powder, and 10 – 15% titanium oxide, moulded to include a front portion as a base to the metatarsals, a rear portion as a base to the heel, an elevated portion to support the lateral longitudinal arch and medial longitudinal arch, and a cut-
 - 15 away central portion with reduced thickness for relieving pressure on the plantar fascia.