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THE SPECIAL PRODUCTS WITH AN ACTIVE INFLUENCE ON THE REFLEX POINTS OF THE FOOT

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Annotation. The work is devoted to the development of the design and technology of the manufacture of massage insoles on the basis of complex studies of the properties of the seeds of fruit plants and their effects on the reflex points of the foot to improve the general state of human health.

The pressure of the seeds of fruit plants on the planar surface of the foot is estimated, depending on the type and crowding of their placement in the massage insoles and it is proved that the massage effect created by the seeds of fruit plants is within the pressure created by the fingers of the masseur on the reflex points of the foot.

The indexes of hygienic properties of developed massage insoles are determined, which fully correspond to normative and testify to creation of comfortable conditions for the consumer.

It is proved that the use of massage insoles improves the indicators of functional state and performance of people, improves blood circulation in the lower limbs, that is, it helps to reduce the symptoms of hypodynamia.

An important prerequisite for creating competitive products, in particular shoes, is the introduction of innovative technologies for product design and manufacturing.

It is known that on the plantar surface of the foot, which occupies only 2% of the total area of the skin, there are more than 60 active zones and points of concentration of nerve endings that connect the organs of the human body [1]. The feet of a modern person are in contact with flat insoles, which through the sole rest on a rigid base (asphalt, concrete, floor), causing them zone overload. To this must be added the negative consequences of irrational use of shoes. Under the influence of such factors, the feet deform over time.

The development of civilization (wearing shoes, using transport for moving) has led to a decrease in the natural stimulation of nerve endings and as a consequence - impaired circulation in the legs[2].

In view of the specified at the Department of Design and Technology of Leather Products Kyiv National University of Technologies and Design was developed an assortment of special purpose insoles with active influence on the reflex points of the foot.

Insoles are composed of two layers of material, between which are protrusions that are rigid and have a geometric shape, preferably spherical or elliptical, at the same time, the bones of fruit plants, mainly dogwood, were selected as the acting elements [3-4].

It is suggested that the layers of insole be made of genuine leather or textile, or in such a way that one of the layers is made of genuine leather and the other is made of imitation leather or textile material, which meets the requirements for materials intended for the manufacture of footwear.

The use of protruding elements in insoles as fillers gives them a volumetric shape with a special profile that forms a surface that causes plastic deformation of the muscles and vigorous rubbing of the human foot even with slight movements [5-6]. Selected as the protruding elements the bones of fruit plants, preferably dogwood or cherry, make these insoles are lightweight, natural and capable of rapid heat accumulation.

During intensive use of these insoles, the disadvantages were found in the form of insufficient fixation of the protruding rigid elements, which sometimes led to their accumulation, thus breaking the massage surface of the insole and worsening the effectiveness of the massage at the biologically active points of the foot.

In order to improve the technology of assembly of insoles, it was proposed to use new leather materials with improved physical and mechanical properties [7], which have high shape resistance. Pre-formation of recesses on the surface of the leather layer of the insole allows to achieve reliable fixation of the protruding elements, which creates a stable massage surface in the insole and provides an increase in the functional and technological properties of the massage insoles (Fig. 1).

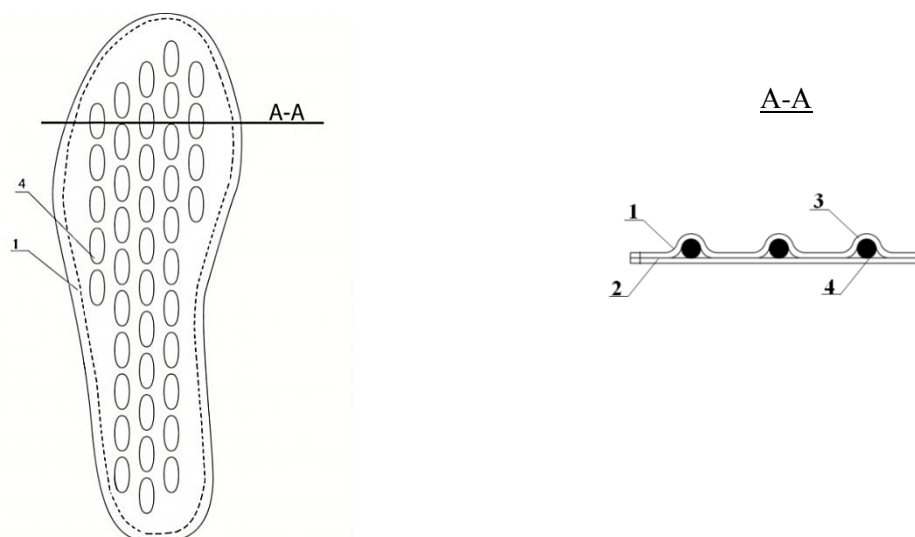


Figure 1 – Technical drawing of special purpose insole with preformed upper insole layer

The massage insole consists of two layers of upper 1 and lower 2 materials, which are connected together in a contour. The top layer 1 has recesses 3, arranged uniformly along its entire surface, which houses projecting rigid members 4, which are preferably globular or ellipsoidal in geometric form.

As one way of fixing the filler, it is also suggested to use an additional layer with perforated holes in the insert of the insole in which the insole fillers are placed. Thus, the use of new leather materials and an additional layer with perforated holes led to the improvement of the design of the special purpose insole with active influence on the reflex points of the foot (Fig. 2) [8].

The special purpose insole with an additional layer with holes (Fig. 2) consists of two layers of materials - the upper 1 and the lower 2, which are connected to each other along the contour, between which there is an additional layer 3 having holes 4, in which arranged the protruding rigid elements 5 preferably spherical or elliptical in shape.

Insole is placed inside any shoe, the upper layer 1 under the influence of the heat of the foot and the load of the human body is formed by the profile of the protruding rigid elements 5, which are located in the holes 4 of the additional layer 3 (Fig. 2), such as felt located between layers 1 and 2. The protruding rigid members 5 provide flexible bundle contact with the muscles and joints

of the foot, which affects the biologically active points and promotes blood circulation, air exchange processes during walking, that is to say provides ventilation and good hygienic properties of the insole.

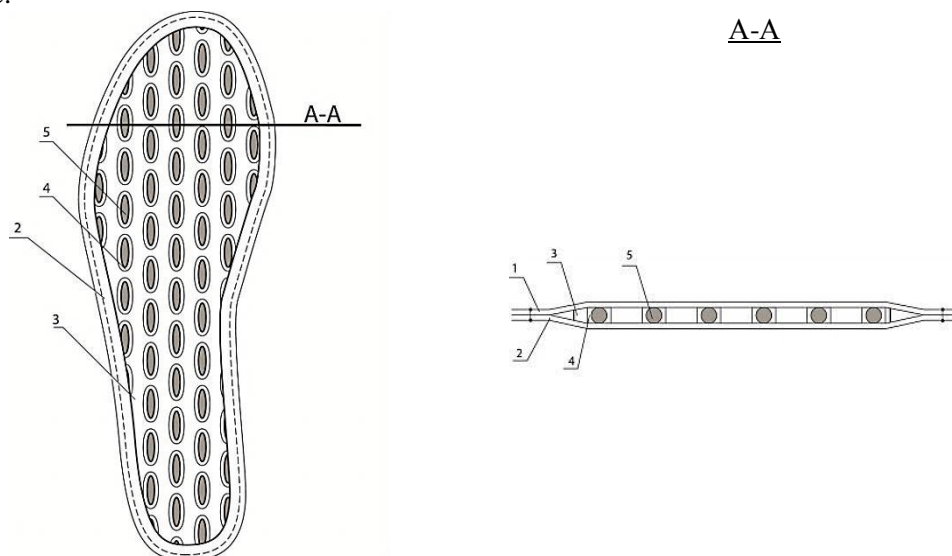


Figure 2 – Technical drawing of special purpose insole without top layer with an additional layer with holes

The use of such an insole during walking provides a preventive and well-being effect due to the mobility and appropriateness of the placement of the protruding rigid elements, which are firmly fixed between the layers of material, the location of biologically active points on the foot. Such an insole can be either embedded in the shoe, or connected to the sole and made as one piece with the workpiece upper.

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