

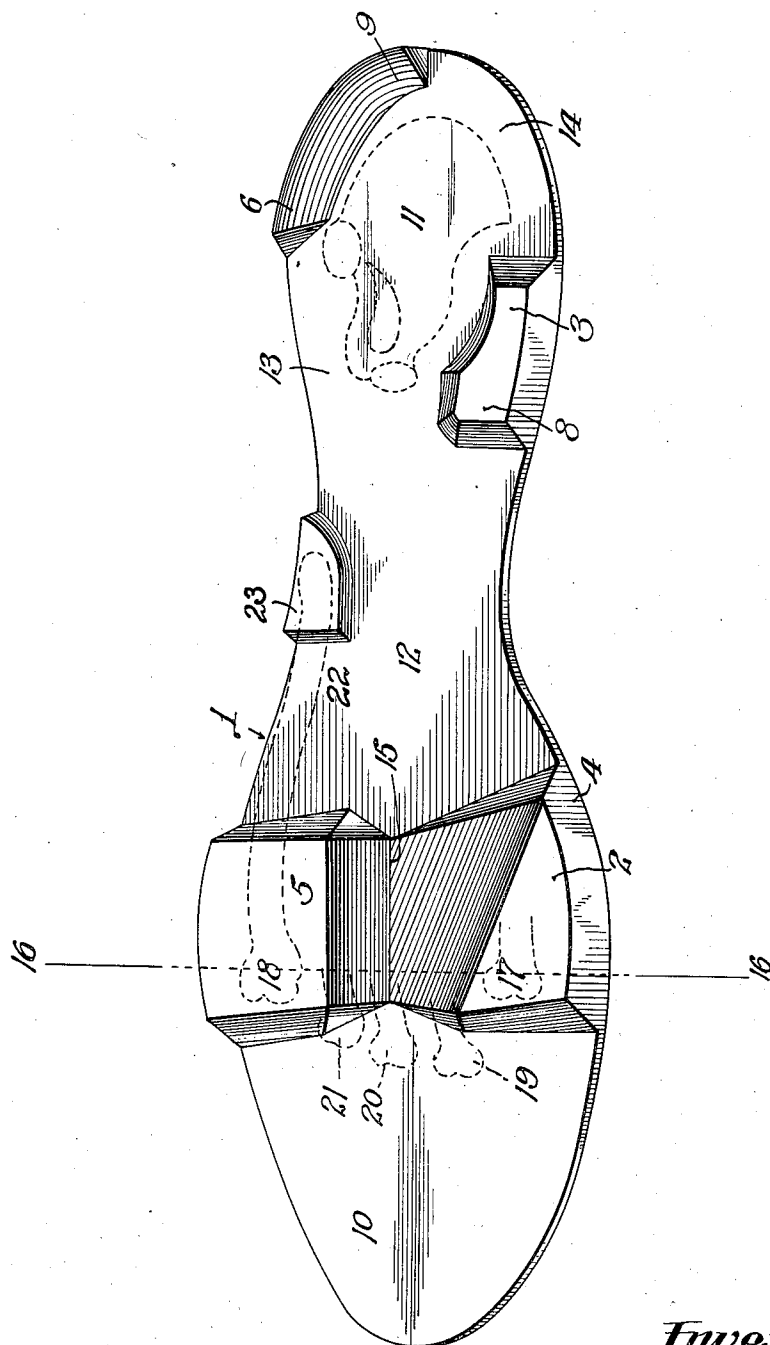
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All previous ideas of making insoles for shoes appear to have been to make them conform to the shape of the sole of the foot. My invention is made with the opposite idea, namely:

The prominent parts, instead of having a depression under them, as is now used, are elevated still higher.

The arches or hollows of the sole of the foot which are raised above the surface we are walking on, instead of having a raise under them, as is now used, have these parts lowered, making the hollow still greater than nature has provided and so working with nature.

I also provide for the rocking of the foot while walking, the heel raising and lowering while the anterior part of the foot rocks up and down.

I attain these objects in the following way:

By using a thick part, which extends across the foot, under the heads of the inner and outer metatarsal bones each becoming thinner as they approach the centre of the foot, causing a depression in the centre under the metatarsal arch.

There is also a depression under the internal arch and under the superficial arch at the front of the heel on its outer side. Another depression at the back of the heel on the inside to facilitate the sliding backwards of the heel which is necessary to correct flat feet, and another depression under the shaft of the outer metatarsal bone.

The purpose of raising the prominent parts by the insole so as to carry the weight will be obvious, nature has made them with no tender structures under them.

The purpose of the depressions under the arches will also be obvious, nature having made them arched for the protection of muscles, tendons, blood vessels and nerves from receiving pressure from below.

The depression under the toes and under the heads of the second, third and fourth metatarsal bones, these heads extending farther forward in the foot than the inner and outer heads, allows these parts to drop downwards as the wheel is raised in walking, the foot rocking on the axis which passes across the foot under the prominences on the under side of the heads of the inner and outer metatarsal bones.

All these thickenings and depressions tend to place the foot in the position and assume the shape which nature has intended, and correct the troubles that have been caused by badly shaped soles in modern footwear. This must be obvious as foot trouble only occurs in races who are wearing such footwear.

At the front under the toes and under the

heads of the second, third and fourth metatarsal bones, the whole thickness of the insole may be removed, which will permit less thickening under the heads of the inner and outer metatarsal bones, leaving the shoe smaller and still give sufficient depression for the parts at the front to drop downwards when the heel is raised.

My invention is illustrated in the following drawing:

The figure is a view of the upper surface of the insole showing the parts that are depressed and the parts that are left the original thickness of the insole.

1 represents the complete insole showing the depressions and the portions which are left the original thickness in position.

2 represents the inner portion of the section which extends across the insole and is left the original thickness at the inner side under the head of the inner metatarsal bone.

5 represents the outer portion of the section which extends across the insole and is left the original thickness at the outer side under the head of the outer metatarsal bone.

2 and 5 become thinner as they approach the centre of the insole and together form a depression 15 under the metatarsal arch in order to protect the soft and tender parts therein.

4 represents the inner edge of the insole.

3 and 8 represent a portion of the insole at the inner and anterior part of the heel which is left the original thickness and becomes thinner as it passes inwards and backwards and assists in forming a depression 14 at the inner and back part of the heel to facilitate the sliding back of the heel in the relief of flat feet. It also assists in forming the depressed portion 12 under the internal arch, the depressed portion 13 under the superficial arch at the front of the heel on the outer side, both 12 and 13 are depressed for the protection of the soft and tender parts contained in each of them from pressure from below.

6 and 9 represent a portion of the insole at the outer and posterior part of the heel which is left the original thickness and becomes thinner as it approaches the centre and front part of the heel, and assists in forming 13 the depression at the front and outside of the heel under the superficial arch at the front of the heel.

10 represents the depression under the toes and under 19, 20 and 21 which represent the heads of the second, third and fourth metatarsal bones respectively, in order to allow these parts to drop downwards when the heel is raised in

walking, while the foot rocks on the axis 16 which passes under the most prominent part under 17 and 18 representing the heads of the inner and outer metatarsal bones respectively.

5 11 represents the centre of the heel.

12 represents the internal arch which is depressed in order to protect the soft and tender structures therein from pressure from below.

10 14 represents the depression at the back and inside of the heel which is lowered to facilitate the sliding of the heel backward and thus correcting flat foot.

5 and 14 acting together twist the anterior part of the foot inwards and relieve flat foot.

15 In flat foot the toes are always turned outwards, causing the weight to be carried on the inside of the foot and the heel to slide inwards and forwards. 5 turns the toe inwards, throwing more of the weight onto the outside of the foot. 20 14 slides the heel backwards and outwards, and acting in combination with 5, holds the foot in the straight and normal position.

25 This can be demonstrated by placing the fingers under the internal arch and turning the toes to the extreme outward position. As the toes are brought inwards, the arch is felt to rise and thus flat foot is relieved.

2 and 13 acting together twist the anterior part of the foot outwards and relieve turning in of the toes.

5 and 14 acting with 2 and 13 retain the foot in the proper normal position.

35 10, 15, 12, 13, and 22 form a continuous depression for the protection of the soft and tender structures while 10 provides for the rocking of the foot on the axis 16.

22 represents the depressed portion under the shaft of the outer metatarsal bone.

40 23 represents a section under the posterior end of the outer metatarsal bone which is left the original thickness.

I claim:

45 1. In a shoe, an insole to be built into a shoe or which may be removable, a thickening restricted approximately to that portion of the insole that underlies the outer metatarsal heads of the superimposed foot, in combination with

a depression under the inner posterior part of the heel extending forward beyond the place where the heel bone normally rests on the insole, in order to twist the anterior part of the foot inwards, slide the heel backwards, and thus raise 5 the internal arch.

2. In a shoe, an insole to be built into a shoe or which may be removable, a thickening restricted approximately to that part of the insole that underlies the inner metatarsal heads of the 10 superimposed foot, in combination with a depression anterior to a thickening (9) at the back of the heel of the shoe extending backwards beyond the place where the heel bone normally rests on the insole, in order to twist the anterior 15 part of the foot outwards, slide the heel forwards, lower the internal arch and protect the soft and tender parts in the superficial arch in front of the outer side of the heel, against pressure from below. 20

3. In a shoe, an insole to be built into a shoe or which may be removable, provided with thickenings under the heads of the inner and outer metatarsal bones, a depression under the five 25 toes and heads of the second, third and fourth metatarsal bones which is continuous with the depression under the metatarsal arch, which in turn is continuous with a depression under the internal arch, while the depression under the internal arch is continuous with a depression 30 under the small superficial arch at the front and outer side of the heel, and with a depression under the posterior and inner part of the heel, in order to support the foot in the normal position, protect all the soft and tender parts in the 35 arches of the foot, and provide for the rocking of the foot, as the heel is raised and lowered in walking.

4. In a shoe, an insole to be built into a shoe or which may be removable, provided with a thickening restricted approximately to that part of the 40 insole which underlies the posterior end of the outer metatarsal bone of the superimposed foot, thus forming depressions in front of and behind the said thickening, in order to protect the soft 45 and tender parts of the foot above the depressions.

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